MCP

MCP

OBJECT /MCP
==========

MCP

```
$SET LIST                                                                    C  00001:0
COMMENT *****   4/7/75  TJP *****;                                            C  00001:0
$SET TAPE SINGLE LIST                                                        C  00001:0
%B 5 7 0 0   M C P   M A R K    XV.3.00                    02/07/74          00001000 T  00001:0
%                                                                            00002000 T  00001:0
  COMMENT: * TITLE: B5500/B5700 MARK XV SYSTEM RELEASE                  *    00002010 T  00001:0
           * FILE ID: SYMBOL/MCP    TAPE ID: SYMBOL1/FILE000             *    00002011 T  00001:0
           * THIS MATERIAL IS PROPRIETARY TO BURROUGHS CORPORATION       *    00002012 T  00001:0
           * AND IS NOT TO BE REPRODUCED, USED, OR DISCLOSED             *    00002013 T  00001:0
           * EXCEPT IN ACCORDANCE WITH PROGRAM LICENSE OR UPON           *    00002014 T  00001:0
           * WRITTEN AUTHORIZATION OF THE PATENT DIVISION OF             *    00002015 T  00001:0
           * BURROUGHS CORPORATION, DETROIT, MICHIGAN 48232              *    00002016 T  00001:0
           * COPYRIGHT (C) 1965, 1971, 1972, 1973                        *    00002017 T  00001:0
           *       BURROUGHS CORPORATION                                 *    00002018 T  00001:0
           *  AA759915    AA320206    AA393180                           *;   00002019 T  00001:0
 $ SET OMIT = NOT(DEBUGGING)                                                 00002100 T  00001:0
BEGIN                                                                        00003000 T  00001:0
DEFINE MIXMAX=  9#;          COMMENT:  MIXMAX MAY NOT BE LARGER THAN 29;     00004000 T  00001:0
DEFINE JOBNUMAX=40#;         COMMENT:  JOBNUMAX SHOULD BE ABOUT              00005000 T  00001:0
                                       2×MIXMAX+30;                          00005001 T  00001:0
DEFINE   MARKLEVEL=          % MARK LEVEL IN ALPHA                           00005010 T  00001:0
                "XV.3"                                                       00005020 T  00001:0
       #, PATCHLEVEL=        % PATCH RELEASE LEVEL IN ALPHA                  00005030 T  00001:0
                "00"                                                         00005040 T  00001:0
       #, LOCALEVEL=         % LOCAL LEVEL IN ALPHA                          00005050 T  00001:0
                " "                                                          00005060 T  00001:0
       #;                                                                    00005070 T  00001:0
DEFINE   MCPTYPE        = 63#,                                               00005100 T  00001:0
         DCINTYPE       = 62#,                                               00005120 T  00001:0
         TSSINTYPE      = 61#;                                               00005140 T  00001:0
COMMENT THE ESPOL COMPILER APPROPRIATELY TYPES THE MCP &                     00005160 T  00001:0
    INTRINSICS FILE HEADERS SO THAT A VALIDITY CHECK MAY BE MADE             00005180 T  00001:0
    DURING INITIALIZATION AND AT CI AND CM TIME.  HEADER[4].[36:6]           00005185 T  00001:0
    IS THE FIELD USED TO CONTAIN THE TYPE;                                   00005190 T  00001:0
DEFINE ESAD = [1:15]#,                                                       00005200 T  00001:0
       UNUM = [16:5]#,                                                       00005210 T  00001:0
       BYBY(BYBY1,BYBY2) =                                                   00005220 T  00001:0
            BEGIN STREAM(A:=SPACE(10): );                                    00005230 T  00001:0
                BEGIN DI:=A; DS:=BYBY2 LIT BYBY1; END;                       00005240 T  00001:0
                PUNT(0);                                                     00005250 T  00001:0
            END#;                                                            00005260 T  00001:0
 DEFINE RESERVEDISKSIZE=2000#;                                               00005300 T  00001:0
    COMMENT TRACESIZE IS THE SIZE OF THE CORE AREA USED TO STORE TRACE       00005500 T  00001:0
                INFORMATION BEFORE IT IS WRITTEN ON DISK.                    00005600 T  00001:0
            TRACAREASTART IS THE ABSOLUTE DISK ADDRESS OF THE TRACE          00005700 T  00001:0
                AREA ON DISK.                                                00005800 T  00001:0
            TRACAREASIZE IS THE SIZE (IN DISK SEGMENTS) OF THE TRACE         00005900 T  00001:0
                AREA ON DISK;                                                00005950 T  00001:0
DEFINE TRACESIZE=30#,TRACAREASTART=10000#,TRACAREASIZE=480#;                 00006000 T  00001:0
```

```
DEFINE HANG=DO UNTIL FALSE#;                                                    00006100 T  0000:0
DEFINE LEFTARROW = "←"#;                                                        00006150 T  0000:0
 $ SET OMIT = NOT(SAVERESULTS)                                                  00006200 T  0000:0
 REAL JUNK=S;%                                                                  00007000 T  0000:0
    DEFINE PSEUDOMAX    = 31 #,     % MAX NO OF PSEUD-RDRS 0-ORIGIN            00007050 T  0000:0
           PSEUDOMAX1   = 32 #,     % MAX NO OF PSEUD-RDRS 1-ORIGIN            00007055 T  0000:0
           PSEUDOMAXT   = 63 #;     % # ENTRIES IN TINU TABLE -2               00007060 T  0000:0
COMMENT TO REDEFINE MAX NO. OF PSEUDO RDRS,SIZE AND INITIALIZATION              00007061 T  0000:0
        OF TINU[*] AT 00241900 MUST ALSO BE MODIFIED ACCORDINGLY;               00007062 T  0000:0
    COMMENT : PSEUDOMAX  MUST BE ≥0 AND ≤ 31                                    00007065 T  0000:0
              PSEUDOMAX1 MUST BE ≥ 0 AND ≤ 32                                   00007070 T  0000:0
              PSEUDOMAXT MUST BE ≥ 31 AND ≤ 63;%                                00007075 T  0000:0
COMMENT TO ADJUST THE PRIORITY, CORE ESTIMATE, AND STACK SIZE                   00007200 T  0000:0
        OF LIBMAIN/DISK, SEE SEQUENCE NUMBER 45075470;                          00007210 T  0000:0
 LABEL GOGOGO,NORMALERROR,P2BUSY,TIMER,EXTERNAL,INQUEST,                        00008000 T  0000:0
       PROCSWIT,P2FAKE,KEYBOARDREQUEST,RETURN,COMINIT,MEMORYPARITY  %WF         00009000 T  0000:0
       ;                                                                        00010000 T  0000:0
DEFINE GETUSERDISK(GETUSERDISK1)=PETUSERDISK(GETUSERDISK1,0)#;%                 00012001 T  0000:0
 $ SET OMIT = NOT(DUMP OR DEBUGGING)                                            00012159 T  0000:0
    INTEGER RRRMECH=@201;%                                                      00013000 T  0000:0
DEFINE SPACE(SPACE1) =(GETSPACE(SPACE1,0,0) + 2)#;                              00013500 T  0000:0
DEFINE MCP=M[1]#; %PRIVILEDGED USERCODE STORED IN M[1]                          00013600 T  0000:0
DEFINE % KEYIN TABLE DEFINE VALUES FOR "REPLY"                                  00013700 T  0000:0
   VAX = 01#,                                                                   00013710 T  0000:0
   VIL = 02#,                                                                   00013720 T  0000:0
   VUL = 03#,                                                                   00013730 T  0000:0
   VQT = 04#,                                                                   00013740 T  0000:0
   VOU = 05#,                                                                   00013750 T  0000:0
   VWY = 06#,                                                                   00013760 T  0000:0
   VRM = 12#,                                                                   00013770 T  0000:0
   VOK = 22#,                                                                   00013780 T  0000:0
   VFM = 23#,                                                                   00013790 T  0000:0
   VFR = 24#,                                                                   00013800 T  0000:0
   VOF = 25#,                                                                   00013810 T  0000:0
   VCC = 21#,                                                                   00013820 T  0000:0
   VIF = 32#;                                                                   00013830 T  0000:0
DEFINE                                                                          00013850 T  0000:0
 $ SET OMIT = AUXMEM                                                            00013860 T  0000:0
       SPACESTACKSIZE = 80#;                                                    00013870 T  0000:0
 $ SET OMIT = NOT(AUXMEM)                                                       00013880 T  0000:0
SAVE INTEGER PROCEDURE GETSPACE(SIZE,TYPE,SAVEF);%                              00014000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00000
                    VALUE SIZE,TYPE,SAVEF;%                                     00015000 T  0000:0
                    INTEGER SIZE,TYPE;%                                         00016000 T  0000:0
                    BOOLEAN SAVEF;          FORWARD;%                           00017000 T  0000:0
SAVE REAL PROCEDURE WAITIO(IOD,MASK,U);%                                        00018000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00000
                  VALUE IOD,MASK,U; REAL IOD,MASK,U; FORWARD;%                  00019000 T  0000:0
SAVE PROCEDURE DISKWAIT(CORE,SIZE,DISK);                                        00019100 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00000
     VALUE CORE,SIZE,DISK;                                                      00019200 T  0000:0
     REAL CORE,SIZE,DISK;                                                       00019300 T  0000:0
     FORWARD;                                                                   00019400 T  0000:0
PROCEDURE ERRORFIXER(TYPE); VALUE TYPE; REAL TYPE; FORWARD;                     00019500 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
SAVE PROCEDURE SNOOZE(PRYR,ADDRESS,MASK);  VALUE PRYR,ADDRESS,MASK;             00020000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00000
    REAL PRYR; NAME ADDRESS; ARRAY MASK[*]; FORWARD;                            00021000 T  0000:0
DEFINE SLEEP(SLEEP1,SLEEP2)=SNOOZE(PRYOR[P1MIX],SLEEP1,SLEEP2)#;                00021500 T  0000:0
ARRAY PRYOR[*];                                                                 00021600 T  0000:0
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REAL P1MIX,P2MIX;   % SEE 00105000                                          00021700 T  0000:0
ARRAY SLATE[*],%                                                             00022000 T  0000:0
REAL NSLATE,LSLATE;%                                                         00023000 T  0000:0
     DEFINE SLATESIZE=16#,SLATENU=SLATESIZE-1#;%SIZE MUST BE TWO POWER       00023100 T  0000:0
REAL NT1=@160,NT2=@161,NT3=@162,NT4=@163,NT5=@164,NT6=@165,NT7=@166;         00024000 T  0000:0
COMMENT NT1 THRU NT7 ARE USED BY THE MCP FOR TEMPORARY STORAGE.              00024010 T  0000:0
        ALL PROCESSES THAT USE THESE VARIABLES ASSUME THAT IF CONTROL        00024020 T  0000:0
        IS LOST, THEIR CONTENT MAY HAVE BEEN CHANGED BY THE TIME             00024030 T  0000:0
        THAT CONTROL IS REGAINED.                                            00024040 T  0000:0
END COMMENT;                                                                 00024050 T  0000:0
ARRAY TSKA = NT3[*];                                                         00024060 T  0000:0
REAL MCPBASE;                                                                00024100 T  0000:0
COMMENT MCPBASE CONTAINS THE DISK ADDRESS (OCTAL) OF THE BEGINNING           00024200 T  0000:0
        OF THE MCP THAT IS CURRENTLY IN USE. THIS ADDRESS IS PASSED TO       00024210 T  0000:0
        THE MCP BY THE LOADER ROUTINE AT EACH HALT/LOAD IN M[0].[18:30].     00024220 T  0000:0
        WHEN THE ESPBIT ROUTINE IS CALCULATING THE DISK ADDRESS              00024230 T  0000:0
        OF AN MCP SEGMENT, IT ADDS MCPBASE TO THE ADDRESS THAT               00024240 T  0000:0
        IS CONTAINED IN THE PRT CELL FOR THAT SEGMENT.                       00024250 T  0000:0
END COMMENT;                                                                 00024260 T  0000:0
LABEL NOTHINGTODO,INITIATE,START,STACKOVERFLOW,IOBUSY;                       00024270 T  0000:0
 $ SET OMIT = NOT(AUXMEM OR MONITOR)                                         00024299 T  0000:0
DEFINE MCPNAMESEG = (DIRECTORYTOP-7)#;                                       00024910 T  0000:0
COMMENT MCPNAMESEG CURRENTLY CONTAINS THE FOLLOWING:                         00024920 T  0000:0
WORD[ 0]-WORD[15] - FILE IDS OF THE AUXDATA FILES FOR MCP & INTRINCS.        00024930 T  0000:0
WORD[16]-WORD[19] - CONTAIN THE WORD "AUXMEM " AS A MARKER.                  00024940 T  0000:0
WORD[20]-WORD[27] - FILE IDS OF THE MCP"S AT HALT/LOAD.                      00024950 T  0000:0
WORD[28] - USED BY DISKSQUASH FOR COMM. BETWEEN SHAREDISK SYSTEMS.           00024960 T  0000:0
;                                                                            00024970 T  0000:0
 $ SET OMIT = NOT(NEWLOGGING)                                                00024999 T  0000:0
 $ SET OMIT = NEWLOGGING                                                     00025299 T  0000:0
DEFINE STARTLOG(STARTLOG1,STARTLOG2)=                                        00025300 T  0000:0
        PROCTIME[STARTLOG1]←(*P(DUP))-CLOCK-P(RTR)#,                         00025400 T  0000:0
      STOPLOG(STOPLOG1,STOPLOG2)=                                            00025500 T  0000:0
        PROCTIME[STOPLOG1] ←(*P(DUP))+CLOCK+P(RTR)#;                         00025600 T  0000:0
 $ POP OMIT                                                                  00025601 T  0000:0
SAVE PROCEDURE ESPBIT; COMMENT PRESENCE BIT ROUTINE FOR ESP SEGMENTS ;%      00025900 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00000
    BEGIN INTEGER PRTLOC,SYLLABLE,LOC,SIZE;%                                 00026000 T  0000:0
        DEFINE MAYBEWORKEDON=[7:1]#;%                                        00027000 T  0000:0
        ARRAY MYSELF=ESPBIT[*];%                                             00028000 T  0000:0
        REAL RCW=+0,DISKREAD;%                                               00029000 T  0000:0
        LABEL MAKEPRESENT;%                                                  00030000 T  0000:0
 $ SET OMIT = NOT(NEWLOGGING)                                                00030099 T  0000:0
       PRTLOC←(RCW INX 0)&RCW[30:10:2];%                                     00031000 T  0000:0
       STREAM(RSLT←[SYLLABLE],CL←PRTLOC);%                                   00032000 T  0003:2
            BEGIN SI←CL; SI←SI-2; DI←RSLT; DI←DI+6; DS←2 CHR END;            00033000 T  0004:2
       PRTLOC ← IF SYLLABLE THEN NT4%                                        00034000 T  0005:3
                          ELSE SYLLABLE.[36:10];%                            00035000 T  0006:3
       IF MEMORY[PRTLOC].MAYBEWORKEDON THEN%                                 00036000 T  0008:3
MAKEPRESENT: BEGIN MEMORY[PRTLOC].MAYBEWORKEDON←FALSE;%                      00037000 T  0010:1
            SIZE←MEMORY[PRTLOC].[8:10];%                                     00038000 T  0013:2
            LOC←GETSPACE(SIZE,1,0);%                                         00039000 T  0015:2
 $ SET OMIT = NOT(AUXMEM)                                                    00039099 T  0017:1
            DISKREAD←(LOC+1)&SIZE[8:38:10]&@14[21:42:6]        %E            00040000 T  0017:1
                    &((SIZE+29) DIV 30)[27:42:6];%                           00041000 T  0019:1
           STREAM(L:=LOC+1,N:=M[PRTLOC].[18:15]+MCPBASE,D:=0);               00042000 T  0022:2
            BEGIN SI←LOC N; DI←L; DS←8 DEC END;%                             00043000 T  0026:1
           SYLLABLE←WAITIO(DISKREAD,0,18);%                                  00044000 T  0027:1
 $ SET OMIT = NOT(AUXMEM)                                                    00044099 T  0029:0
            MEMORY[LOC]←MEMORY[LOC]&0[2:47:1]&0[9:42:6];%                    00045000 T  0029:0
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                    MEMORY[LOC+1]←PRTLOC&SIZE[18:33:15];%                    00046000 T  0033:1
                    MEMORY[PRTLOC]←MEMORY[PRTLOC]&1[7:47:1]%                 00047000 T  0035:3
                                  &(LOC+2)[33:33:15];%                       00048000 T  0037:3
$ SET OMIT = MONITOR OR NOT(AUXMEM)                                          00048099 T  0040:0
                    END ELSE%                                                00049000 T  0040:0
                    BEGIN SLEEP([MEMORY[PRTLOC]],0&1[7:47:1]);%              00050000 T  0040:0
                    IF (MEMORY[PRTLOC] INX 0)=(MYSELF INX 0) THEN%           00051000 T  0043:2
                        GO TO MAKEPRESENT;%                                  00052000 T  0046:1
                    END;%                                                    00053000 T  0046:3
$ SET OMIT = NOT(NEWLOGGING)                                                 00053099 T  0046:3
                    POLISH(0,RDF,0,XCH,FCX,STS);%                            00054000 T  0046:3
                    GO TO POLISH(MEMORY[PRTLOC]);%                           00055000 T  0048:3
                GO TO START; % PLACE DESC. IN PRT FOR MCP TO AUXMEM TRANSFER 00055100 T  0050:0
                END ESPBIT;%                                                 00056000 T  0050:2
                                                                                   SIZE= 0051 WORDS
LABEL FINDIT;                                                                00057100 T  0000:0
REAL    RESULT1=12 ,RESULT2=13 ,RESULT3=14 ,RESULT4=15 ;%                    00058000 T  0000:0
DEFINE SIZE=[8:10]#,                FILEBIT=[1:1]#,OWNBIT=[2:1]#,%           00060000 T  0000:0
     DIMENSIONS=[3:5]#,BLKCNTR=[8:10]#,MOM=[18:15]#,CURBLKCNTR=16#,%         00061000 T  0000:0
    TSX=22#, SFINTX=27#, INTRPTX=28#,                                        00061100 T  0000:0
      AITNDX=6#,PBIT=[2:1]#;%                                                00062000 T  0000:0
 DEFINE  FF=18:15#,%                                                         00063000 T  0000:0
         MSFF = [16:1]#,                                                     00063100 T  0000:0
         CF=33:15#,%                                                         00064000 T  0000:0
         CTP=18:33:15#,%                                                     00065000 T  0000:0
         FTF=18:18:15#,%                                                     00066000 T  0000:0
         CTC=33:33:15#,%                                                     00067000 T  0000:0
         FTC=33:18:15#,                                          %PB         00067100 T  0000:0
         DELTA=11#;%                                                         00068000 T  0000:0
 INTEGER AVAIL;%                                                             00069000 T  0000:0
             COMMENT AVAIL CONTAINS THE ADDRESS OF THE STOPPER%              00070000 T  0000:0
                     FOR AVAILABLE STORAGE LINKS ITS VALUE IS%               00071000 T  0000:0
                     THE HIGHEST AVAILABLE ADDRESS-1;%                       00072000 T  0000:0
 INTEGER MSTART;%                                                            00073000 T  0000:0
             COMMENT MSTART CONTAINS THE ADDRESS OF THE%                     00074000 T  0000:0
                     FIRST AREA OF STORAGE AFTER END OF%                     00075000 T  0000:0
                     ESP PROGRAM;%                                           00076000 T  0000:0
 INTEGER MEND;%                                                              00077000 T  0000:0
             COMMENT THIS POINTS TO LAST STORAGE LINK IN%                    00078000 T  0000:0
                     MEMORY;%                                                00079000 T  0000:0
ARRAY TAR[*]; %CONTAINS TOGLE BITS SET BY EACH JOB                           00079100 T  0000:0
DEFINE LOCKTOG(LOCKTOG1)= BEGIN TOGLE:=TOGLE AND NOT LOCKTOG1;               00079200 T  0000:0
                TAR[P1MIX]:=TAR[P1MIX] OR LOCKTOG1; END#;                    00079300 T  0000:0
DEFINE UNLOCKTOG(UNLOCKTOG1)= BEGIN TOGLE:=TOGLE OR UNLOCKTOG1;              00079400 T  0000:0
                TAR[P1MIX]:=TAR[P1MIX] AND NOT UNLOCKTOG1; END#;             00079500 T  0000:0
 REAL TOGLE;                                                                 00080000 T  0000:0
 DEFINE HP2TOG          = TOGLE.[47:1]#, HP2MASK        =   @1#              00080100 T  0000:0
        ,STATUSBIT      = TOGLE.[46:1]#, STATUSMASK     =   @2#              00080200 T  0000:0
        ,SHEETFREE      = TOGLE.[45:1]#, SHEETMASK      =   @4#              00080300 T  0000:0
        ,STACKUSE       = TOGLE.[44:1]#, STACKMASK      =  @10#              00080400 T  0000:0
        ,STOREDY        = TOGLE.[43:1]#, STOREMASK      =  @20#              00080500 T  0000:0
        ,USERDISKREADY= TOGLE.[42:1]#, USERDISKMASK=  @40#                   00080600 T  0000:0
        ,HOLDFREE       = TOGLE.[41:1]#, HOLDMASK       = @100#              00080700 T  0000:0
        ,NSECONDREADY   = TOGLE.[40:1]#, NSECONDMASK    = @200#              00080800 T  0000:0
        ,ABORTABLE      = TOGLE.[39:1]#, ABORTMASK      = @400#              00080900 T  0000:0
        ,BUMPTUTIME     = TOGLE.[38:1]#, BUMPTUMASK     =@1000#              00080950 T  0000:0
        ,KEYBOARDREADY  = TOGLE.[37:1]#, KEYBOARDMASK   =@2000#              00081000 T  0000:0
        ,NOBACKTALK     = TOGLE.[36:1]#, NOBACKTALKMASK=@4000#               00081100 T  0000:0
        ,QTRDY          = TOGLE.[35:1]#, QTRDYMASK     =@10000#              00081200 T  0000:0
        ,INTFREE        = TOGLE.[34:1]#, FREEMASK      =@20000#              00081300 T  0000:0
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,SPOEDNULLOG  = TOGLE.[33:1]#                                          00081400 T  0000:0
,REMOTELOGFREE = TOGLE.[32:1]#, REMOTELOGMASK = @100000#               00081500 T  0000:0
,EGGSELECTSTOPPED = TOGLE.[31:1]#                                      00081600 T  0000:0
,STARTOG        = TOGLE.[30:1]#                                        00081610 T  0000:0
,NINETEENNOTREADING=TOGLE.[29:1]#, NINETEENMASK=@1000000#              00081620 T  0000:0
,SMWSTOPPED=TOGLE.[28:1]#, SMWSTOPPEDMASK=@2000000#                    00081630 T  0000:0
,DCWAITING=TOGLE.[27:1]#                                               00081640 T  0000:0
,DCQPTSTOPPED=TOGLE.[26:1]#                                            00081650 T  0000:0
,INQUPTSTOPPED=TOGLE.[25:1]#                                           00081660 T  0000:0
,MCPFREE=TOGLE.[24:1]#, MCPMASK=@40000000#                             00081670 T  0000:0
        % USED TO PROTECT DISK SEGMENT ZERO                            00081675 T  0000:0
,SCRATCHDIRECTORYREADY = TOGLE.[23:1]#,                                00081680 T  0000:0
                    SCRATCHDIRECTORYMASK = @100000000#                 00081690 T  0000:0
        % USED TO PROTECT THE SCRATCHDIRECTORY                         00081695 T  0000:0
,FINDINGADDRESS=TOGLE.[22:1]#                                          00081700 T  0000:0
        % SET TRUE WHENEVER THE INDEPENDENT RUNNING ROUTINE             00081705 T  0000:0
        % "FINDFREEADDRESS" IS STARTED SO THAT ONLY ONE COPY            00081706 T  0000:0
        % WILL BE RUN AT ONE TIME.                                      00081707 T  0000:0
,CDFREE=TOGLE.[21:1]#,CDMASK=@400000000#                               00081710 T  0000:0
        % SET TRUE WHEN CONTROL DECK QUEUE IS FREE                      00081711 T  0000:0
,NOMEM=TOGLE.[15:6]# %GETSPACES HANGING                                00081950 T  0000:0
,BREAKTOG=TOGLE.[14:1]# %BREAKOUT TOG                                  00081960 T  0000:0
,BREAKMASK=@100000000000#                                              00081970 T  0000:0
,SEPTICTANKING = TOGLE.[13:1]#                                         00081972 T  0000:0
,DIRECTORYTOG = TOGLE.[12:1]#                                          00081974 T  0000:0
,DIRECTORYMASK = @400000000000#                                        00081976 T  0000:0
;                                                                      00081999 T  0000:0
STREAM PROCEDURE MOVE(N)"WORDS FROM"(HERE)"TO"(THERE);%                00082000 T  0000:0
            VALUE N,HERE,THERE;%                                       00083000 T  0000:0
COMMENT     WILL MOVE 0 TO 4095 WORDS;%                                00084000 T  0000:0
        BEGIN LOCAL NDIV64;%                                           00085000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00051
            SI←LOC N; DI←LOC NDIV64; SI←SI+6; DI←DI+7; DS←1 CHR;       00086000 T  0000:0
            SI←HERE; DI←THERE;%                                        00087000 T  0001:1
            NDIV64(DS←32 WDS; DS←32 WDS); DS←N WDS;%                   00088000 T  0001:3
        END MOVE;%                                                     00089000 T  0003:2
                                                                          SIZE= 0004 WORDS
PROCEDURE STOPM(B); VALUE B; BOOLEAN B; FORWARD;                       00089100 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
LABEL DIFFCOM;
SAVE PROCEDURE FORGETSPACE(LOC);%                                      00089200 T  0000:0
                                                                       00090000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00055
            VALUE LOC;%                                                00091000 T  0000:0
            REAL LOC;%                                                 00092000 T  0000:0
FORWARD;%                                                              00093000 T  0000:0
ARRAY BED[*];                                          %  4MIXMAX+4    00094000 T  0000:0
        COMMENT ENTRIES IN THE BED HAVE TWO WORDS.%                    00095000 T  0000:0
        THE FIRST WORD HAS THE FOLLOWING FORMAT:%                      00096000 T  0000:0
            0- 2 = 5%                                                  00097000 T  0000:0
            3- 7 = MIXINDEX%                                           00098000 T  0000:0
            8-17 = 0%                                                  00099000 T  0000:0
            18-32 = F REGISTER SETTING%                                00100000 T  0000:0
            33-47 = ADDRESS OF WORD TO BE TESTED.%                     00101000 T  0000:0
        THE SECOND WORD IS A MASK IF BIT 0 IS OFF.%                    00102000 T  0000:0
        THE SECOND WORD IS AN ACCIDENTAL ENTRY DESCRIPTOR IF BIT 0     00103000 T  0000:0
        IS ON;%                                                        00104000 T  0000:0
COMMENT P1MIX,P2MIX NOW DECLARED AT 00021700;                          00105000 T  0000:0
        COMMENT P1MIX IS THE MIX INDEX FOR THE JOB BEING CURRENTLY%    00106000 T  0000:0
        PROCESSED.  P1MIX = 0 MEANS NO JOB IS CURRENTLY BEING%         00107000 T  0000:0
        PROCESSED.  P2MIX IS THE MIX INDEX FOR THE JOB BEING%          00108000 T  0000:0
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                    CURRENTLY PROCESSED ON PROCESSOR 2.  IF PROCESSOR IS IDLE          00109000 T  0000!0
                    THEN P2MIX = 0.  IF THERE IS NO PROCESSOR 2 THEN P2MIX=-1;         00110000 T  0000!0
REAL DATE=@167;                                                                        00111000 T  0000!0
          COMMENT DATE CONTAINS TODAYS DATE;%                                          00112000 T  0000!0
REAL CLOCK=@170;                                                                       00113000 T  0000!0
REAL XCLOCK=@171;                                                                      00114000 T  0000!0
          COMMENT CLOCK CONTAINS THE NUMBER OF TIME INTERVAL INTERRUPTS%               00115000 T  0000!0
                    PROCESSED SINCE HALT-LOAD IN 9-41;%                                00116000 T  0000!0
REAL READY=@172;                                                                       00121000 T  0000!0
          COMMENT READY CONTAINS THE CONTENTS OF THE READY REGISTER ON%                00122000 T  0000!0
                    THE LAST READ;%                                                    00123000 T  0000!0
          COMMENT STATUSBIT IS FALSE IF THE STATUS ROUTINE IS RUNNING AND              00125000 T  0000!0
                    TRUE OTHERWISE.  THIS PREVENTS TWO COPIES OF STATUS FROM%          00126000 T  0000!0
                    RUNNING TOGETHER;%                                                 00127000 T  0000!0
     ARRAY PRT[*,*];%                                                                  00128000 T  0000!0
          COMMENT PRT[I,*] CONTAINS A DATA DESCRIPTOR WITH PROPER SIZE%                00129000 T  0000!0
                    FIELD POINTING AT PRT FOR JOB WITH MIX INDEX = I;%                 00130000 T  0000!0
 ARRAY PRTROW=PRT[*];                                    %  MIXMAX+1%                 00131000 T  0000!0
          COMMENT PRTROW IS DOPE VECTORS FOR PRT;%                                     00132000 T  0000!0
          ARRAY  JAR[*,*];%                                                            00133000 T  0000!0
%   JAR HOLDS INFO OF JOBS IN PROCESS%                                                 00134000 T  0000!0
 $ SET OMIT = NOT(WORKSET)                                                             00134100 T  0000!0
 ARRAY INTRNSC[*];  REAL INTSIZE;%  RE-ENTRANT INTRINSICS ON USER DISK                 00135000 T  0000!0
     ARRAY INTABLE[*,*], INTABLEROW=INTABLE[*];%                                       00135100 T  0000!0
 $ SET OMIT = NOT(AUXMEM)                                                              00135199 T  0000!0
 ARRAY SHEET[*];                                         %  5%                         00136000 T  0000!0
 ARRAY JARROW=JAR[*];                                    %  MIXMAX+1%                 00138000 T  0000!0
 DEFINE TABCNT[TABCNT1] = JARROW[TABCNT1].[FF]#;                                       00138100 T  0000!0
          COMMENT TABCNT IS THE NUMBER OF PROCESSES WHICH HAVE CHECKED                 00138110 T  0000!0
                    JARROW AND ARE CURRENTLY ACCESSING MIX TABLES. IT ASSURES          00138120 T  0000!0
                    THAT THE TABLES DONT VANISH BENEATH THOSE PROCESSES;               00138130 T  0000!0
          COMMENT ENTRIES IN THE SLATE HAVE TWO WORDS.  EACH ENTRY%                    00140000 T  0000!0
                    DESCRIBES AN INDEPENDENT ROUTINE WHICH NEEDS TO BE STARTED         00141000 T  0000!0
                    RUNNING.  NOTHING TO DO STARTS THESE ROUTINES.%                    00142000 T  0000!0
                    THE FIRST WORD OF AN ENTRY IS A PARAMETER TO THE ROUTINE.          00143000 T  0000!0
                    THE SECOND WORD OF AN ENTRY IS THE PRT ADDRESS OF THE%             00144000 T  0000!0
                    ROUTINE.%                                                          00145000 T  0000!0
                    NSLATE AND LSLATE ARE POINTERS TO THE SLATE.%                      00146000 T  0000!0
                    NSLATE POINTS AT LAST ENTRY WHICH WAS STARTED.%                    00147000 T  0000!0
                    LSLATE POINTS AT LAST ENTRY PLACED IN THE SLATE;%                  00148000 T  0000!0
     REAL JOBNUM;%                                                                     00149000 T  0000!0
          COMMENT JOBNUM POINTS AT LAST ENTRY IN BED;%                                 00150000 T  0000!0
          COMMENT STACKUSE IS TRUE IF THE INDEPEDENT STACK IS NOT IN USE,              00152000 T  0000!0
                    OTHERWISE FALSE;%                                                  00153000 T  0000!0
     BOOLEAN NOPROCESSTOG;%                                                            00154000 T  0000!0
          COMMENT   NOPROCESSTOG IS TRUE IF NORMAL STATE PROCESSING IS%                00155000 T  0000!0
                    ALLOWED, OTHERWISE IT IS FALSE.  IT IS USED BY OVERLAY AND         00156000 T  0000!0
                    OTHERS TO PREVENT CONFUSION;%                                      00157000 T  0000!0
REAL SOFTI; % NUMBER OF JOBS IN MIX HAVING SOFTWARE INTERRUPTS DECLARED                00157100 T  0000!0
REAL WITCHINGHOUR,WORDOFEASE;                                                          00157500 T  0000!0
          COMMENT THESE USED TO BE CONSTANTS IN THE OUTER BLOCK BUT WERE               00157600 T  0000!0
                    MOVED HERE SO EVERYONE COULD USE THEM. THEY CONTAIN:               00157700 T  0000!0
                         WITCHINGHOUR    5184000                                       00157800 T  0000!0
                         WORDOFEASE      @2525252525252525                             00157900 T  0000!0
          ;                                                                            00158000 T  0000!0
 DEFINE NDX=3#;     % NUMBER OF ENTRIES PER JOB IN NFO ARRAY                           00158100 T  0000!0
 ARRAY NFO[*];                                                   %MIXMAX*NDX           00158200 T  0000!0
     COMMENT NFO CONTAINS THE FOLLOWING FOR EACH ACTIVE MIX INDEX;                     00158300 T  0000!0
     %    NFO[(MIX-1)*NDX]          = FILE PARAMETER BLOCK DATA DESCRIPTOR            00158400 T  0000!0
     %    NFO[(MIX-1)*NDX+1]        = SEGMENT DICTIONARY NAME DESCRIPTOR              00158500 T  0000!0
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%     NFO[(MIX-1)×NDX+2],[CF] = LOCATION OF BOTTOM OF STACK (B-WORD)          00158600 T  0000!0
%     NFO[(MIX-1)×NDX+2],[FF] = ESTIMATED CORE REQUIREMENTS                   00158700 T  0000!0
%     NFO[(MIX-1)×NDX+2],[1!17] = CLOCK TIME AT BOJ                           00158800 T  0000!0
ARRAY ISTACK[*];                                          %  128%             00159000 T  0000!0
ARRAY PROCTIME[*];                                        %  MIXMAX+1%        00161000 T  0000!0
        COMMENT PROCTIME[I] CONTAINS PROCESSOR TIME FOR JOB WITH%             00162000 T  0000!0
            MIX INDEX = I;%                                                   00163000 T  0000!0
ARRAY IOTIME[*];                                          %  MIXMAX+1%        00164000 T  0000!0
        COMMENT IOTIME[I] CONTAINS I-O TIME FOR JOB WITH MIX INDEX =I;        00165000 T  0000!0
$ SET OMIT = NOT(NEWLOGGING)                                                  00165009 T  0000!0
DEFINE EUIOHOLDER=DIRECTORYTOP-5#,                                            00165800 T  0000!0
       EUTAPER=.98#,                                                          00165810 T  0000!0
       DISKAVAILTABLEMAX=130#;                                                00165820 T  0000!0
INTEGER NEUP;  ARRAY EUIO[*];  ARRAY PEUIO[*] ;                               00166000 T  0000!0
$ SET OMIT = NOT(SHAREDISK )                                                  00166002 T  0000!0
$ SET OMIT = SHAREDISK                                                        00166005 T  0000!0
ARRAY AVTABLE[*] ;                                                            00166006 T  0000!0
$ POP OMIT                                                                    00166007 T  0000!0
       COMMENT NEUP.[CF] CONTAINS THE NUMBER OF EUS ON DKA.                   00166010 T  0000!0
               NEUP.NEUF CONTAINS THE TOTAL NUMBER OF EUS ON THE SYSTEM.      00166025 T  0000!0
               EUIO AND PEUIO CONTAIN THE I-O TIME USED BY A GIVEN EU.        00166030 T  0000!0
               THIS INFORMATION IS USED BY GETUSERDISK IN AN ATTEMPT TO       00166040 T  0000!0
               MINIMIZE  EU CONFLICT;                                         00166050 T  0000!0
   DEFINE MIXF = [3!5]#;%                                                     00168000 T  0000!0
ARRAY CHANIO[*];                                                              00169000 T  0000!0
ARRAY CHANNEL[*];                                         %  5%               00170000 T  0000!0
        COMMENT CHANNEL[I] CONTAINS LOGICAL UNIT OF LAST DESCRIPTOR%          00171000 T  0000!0
               SENT OUT ON CHANNEL I;%                                        00172000 T  0000!0
ARRAY FINALQUE[*];                                        %  32%              00173000 T  0000!0
ARRAY LOCATQUE[*];                                        %  32%              00174000 T  0000!0
        COMMENT IOQUE,FINALQUE, AND LOCATQUE TOGETHER WITH UNIT FORM%         00175000 T  0000!0
               THE I-O QUEUE.  AN I-O REQUEST FOR LOGICAL UNIT U REQUIRES     00176000 T  0000!0
               THREE WORDS OF SPACE IN THE I-O QUEUE.  IF THE REQUEST%        00177000 T  0000!0
               OCCUPIES POSITION S IN THE I-O QUEUE, THEN IOQUE[S] )%         00178000 T  0000!0
               I-O DESCRIPTOR FOR THIS REQUEST, FINAL[S] = I-O DESCRIPTOR     00179000 T  0000!0
               SKELETON TO BE USED AT I-O COMPLETE TIME TO REBUILD%           00180000 T  0000!0
               I-O DESCRIPTOR, LOCATQUE[S] = LOCATION OF I-O DESCRIPTOR%      00181000 T  0000!0
               AT TIME OF REQUEST.  LOCATQUE[S] CONTAINS SOME ADDITIONAL      00182000 T  0000!0
               INFORMATION.  IN PARTICULAR:%                                  00183000 T  0000!0
                     0- 2 = 5%                                                00184000 T  0000!0
                     3- 7 = MIX INDEX OF REQUESTER%                           00185000 T  0000!0
                        8 = I/O IS READ LOCK WHICH HAD ERROR (SHAREDISK).     00185100 T  0000!0
                        9 = DLAY I/O (IOFINISH PLACES RESULT ON ERROR).       00185500 T  0000!0
                       10 = NO MEM MESSAGE.                                   00186000 T  0000!0
                       11 = ERROR RECOVERY IN PROCESS ON THIS I-O             00186100 T  0000!0
                    12-17 = LOGICAL UNIT NUMBER%                              00187000 T  0000!0
                    18-32 = INDEX OF NEXT REQUEST TO BE DONE ON THIS UNIT     00188000 T  0000!0
                            OR @77777 IF NO NEXT REQUEST%                     00189000 T  0000!0
                    33-47 = ORIGINAL LOCATION OF I-O DESCRIPTOR.%             00190000 T  0000!0
                UNIT[U] CONTAINS INFORMATION ABOUT LOGICAL UNIT U.%           00191000 T  0000!0
                     1- 4 = TYPE OF I/O DEVICE%                               00192000 T  0000!0
                     5-12 = ERROR FIELD OF LAST I/O DONE ON THIS UNIT%        00193000 T  0000!0
                       13 = UNIT NOT READY BIT%                               00194000 T  0000!0
                       14 = ERROR BIT (ON IF ERROR)%                          00195000 T  0000!0
                       15 = WAIT BIT (ON IF UNIT IS WAITING FOR A CHANNEL     00196000 T  0000!0
                    16-17 = PROCESS BITS (USUALLY BOTH ON IF UNIT IS IN%      00197000 T  0000!0
                            PROCESS OR BOTH OFF.  WITH PRINTERS THE%          00198000 T  0000!0
                            I-O FINISH SETS OFF 16 AND THE PRINTER%           00199000 T  0000!0
                            FINISH SETS OFF 17)%                              00200000 T  0000!0
                    18-32 = INDEX OF FIRST I-O REQUEST FOR WHICH SERVICE      00201000 T  0000!0
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                                IS NOT COMPLETE%                                        00202000 T  0000:0
                        33-47 = INDEX OF LAST UNSERVICED I-O REQUEST.%                  00203000 T  0000:0
                  THE SPACES NOT USED IN THE I-O QUEUE ARE LINKED TOGETHER%             00204000 T  0000:0
                  THROUGH IOQUE.  THE FIRST AVAILABLE IS IN IOQUEAVAIL;%                00205000 T  0000:0
            REAL IOQUESLOTS,IOQUEAVAIL;                                                 00205500 T  0000:0
            ARRAY IOQUE[*];                                                             00206000 T  0000:0
            DEFINE RETURNIOSPACE(RETURNIOSPACE1) =                                      00206500 T  0000:0
                  BEGIN IOQUESLOTS:=IOQUESLOTS+1;                                       00207000 T  0000:0
                        IOQUE[RETURNIOSPACE1]:=IOQUEAVAIL;                              00207500 T  0000:0
                        IOQUEAVAIL:=RETURNIOSPACE1;                                     00208000 T  0000:0
                  END#;                                                                 00208500 T  0000:0
        ARRAY UNIT[*];                                                                  00209000 T  0000:0
            COMMENT UNIT NOW FILLED IN INITIALIZE;                                      00210000 T  0000:0
        ARRAY TINU[*];                                                                  00241700 T  0000:0
            COMMENT TINU NOW FILLED IN INITIALIZE;                                      00241800 T  0000:0
        ARRAY WAITQUE[*];                                   %  8%                       00278000 T  0000:0
           REAL NEXTWAIT,FIRSTWAIT;%                                                    00279000 T  0000:0
              COMMENT WAITQUE IS A QUEUE OF UNITS FOR WHICH THERE ARE%                  00280000 T  0000:0
                  REQUESTS BUT NO CHANNEL IS AVAILABLE.  NEXTWAIT AND%                  00281000 T  0000:0
                  FIRSTWAIT ARE POINTERS AT THE WAITQUE.  NEXTWAIT IS THE%              00282000 T  0000:0
                  NEXT AVAILABLE SLOT IN WAITQUE AND FIRSTWAIT POINTS AT%               00283000 T  0000:0
                  NEXT UNIT TO BE USED WHEN A CHANNEL IS AVAILABLE;%                    00284000 T  0000:0
        ARRAY LABELTABLE[*];                                %  32%                     00285000 T  0000:0
        ARRAY MULTITABLE[*];                                %  32%                     00286000 T  0000:0
        ARRAY RDCTABLE[*];                                  %  32%                     00287000 T  0000:0
        ARRAY PRNTABLE[*];%                                                             00288000 T  0000:0
        ARRAY REPLY[*];%                                                                00289000 T  0000:0
       COMMENT LABELTABLE, MULTITABLE, AND RDCTABLE CONTAIN LABEL INFORMATION%          00290000 T  0000:0
              BY LOGICAL UNIT NUMBER AS FOLLOWS:%                                       00291000 T  0000:0
              LABELTABLE[I] CONTAINS THE FILE ID FOR LOGICAL UNIT I.%                   00292000 T  0000:0
              MULTITABLE[I] CONTAINS THE CORRESPONDING MULTI-FILE ID.%                  00293000 T  0000:0
              RDCTABLE[I] CONTAINS THE CORRESPONDING REEL NUMBER (IN [14:10]),          00294000 T  0000:0
              CREATION DATE (IN [24:17]), AND CYCLE (IN [41:7]);%                       00295000 T  0000:0
        $ SET OMIT = NOT(SHAREDISK)                                                     00295999 T  0000:0
       REAL OPTION;%                                                                    00297000 T  0000:0
       REAL ILL,INQCT;                                                                  00299000 T  0000:0
       REAL PINGO;                                                                      00301000 T  0000:0
        REAL READQ,RRNCOUNT;  DEFINE PUT=SET#;                                          00301100 T  0000:0
        $ SET OMIT = NOT(DATACOM )                                                      00301200 T  0000:0
        ARRAY TRANSACTION[*];                               %  32%                      00304000 T  0000:0
        DEFINE ETRLNG = 5#;    % LENGTH OF ENTRY IN FILE BLOCK%                          00305000 T  0000:0
       SAVE REAL PROCEDURE TWO(N); VALUE N; INTEGER N;                                  00306000 T  0000:0
                                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00055
                  BEGIN REAL T=+1;                                                      00307000 T  0000:0
                        STREAM(N:=N:=47-N,T:=[T]);                                      00308000 T  0000:0
                        BEGIN SKIP N UB; DS:=SET; END;                                  00308500 T  0002:1
                  END TWO;%                                                             00309000 T  0003:1
                                                                                   SIZE= 0004 WORDS
           REAL SYLLABLE;%                                                              00310000 T  0000:0
        $ SET OMIT = NOT(SHAREDISK)                                                     00310099 T  0000:0
        $ SET OMIT = SHAREDISK                                                          00310199 T  0000:0
       DEFINE SYSNO=0#, SYSMAX=1#;                                                      00310200 T  0000:0
        $ POP OMIT                                                                      00310201 T  0000:0
              COMMENT ANALYSIS PLACES THE SYLLABLE THAT CAUSED THE INTERRUPT            00311000 T  0000:0
                  IN SYLLABLE.  THIS IS USED BY PRESENCE BIT, FLAG BIT, AND             00312000 T  0000:0
                  VARIOUS ERRORS;%                                                      00313000 T  0000:0
       PROCEDURE FORGETUSERDISK(A,L);VALUE A,L;REAL A,L;FORWARD;%                       00316000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
       REAL PROCEDURE PETUSERDISK(N,T);VALUE N,T;REAL N,T;FORWARD ;                     00316100 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
```

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 $ SET UMIT = NOT DEBUGGING                                          00316999 T  0000!0
 $ SET OMIT = NOT DEBUGGING                                          00330999 T  0000!0
 ARRAY DALOC[*,*], DALOCROW=DALOC[*];                                00333000 T  0000!0
 $ SET OMIT = NOT(BREAKOUT)                                          00333099 T  0000!0
REAL MEMASK;%                                                        00335000 T  0000!0
 REAL OLAYMASK;%   FOR LOCKING OUT GETMOREOLAYDISK BY MIX INDEX      00336000 T  0000!0
PROCEDURE USERDISKSPECIALCASE(Q,R,U,J);VALUE Q,J;REAL Q,R,J;         00336100 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
          ARRAY U[*]; FORWARD ;                                      00336110 T  0000!0
 DEFINE BASE=30268#,%                                                00338000 T  0000!0
        CHUNKSIZE=500#;%                                             00339000 T  0000!0
 REAL LEFTOFF;    COMMENT POINTER TO CYCLE FOR OLAY;%                00341000 T  0000!0
 SAVE PROCEDURE DISKRTN(SEGNO, SIZE);                                00363000 T  0000!0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00059
    VALUE     SEGNO, SIZE;                                           00363100 T  0000!0
    INTEGER   SEGNO, SIZE;                                           00363200 T  0000!0
        FORWARD;                                                     00363300 T  0000!0
PROCEDURE FORGETESPDISK(SEG);VALUE SEG;REAL SEG;FORWARD;             00364000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
SAVE INTEGER PROCEDURE DISKSPACE(NWORDS,P1MIX,AUX);%                 00365000 T  0000!0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00059
    VALUE NWORDS,P1MIX,AUX;                                          00366000 T  0000!0
    INTEGER NWORDS,P1MIX;REAL AUX;                                   00367000 T  0000!0
            FORWARD;%                                                00368000 T  0000!0
 PROCEDURE STATUS;%                                                  00369000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
        FORWARD;%                                                    00370000 T  0000!0
PROCEDURE INTERRUPT(TYPE);VALUE TYPE;REAL TYPE; FORWARD;             00370500 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
REAL PROCEDURE FINDOUTPUT(MID,FID,TYPE,FORMS,REEL,CDATE,CYCLE,KIND);%  00371000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
          VALUE MID,FID,TYPE,FORMS,REEL,CDATE,CYCLE,KIND;%           00372000 T  0000!0
          REAL  MID,FID,TYPE,FORMS,REEL,CDATE,CYCLE,KIND; FORWARD;%  00373000 T  0000!0
REAL PROCEDURE FINDINPUT(MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN);  00374000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
          VALUE MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN;%       00375000 T  0000!0
          REAL  MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN; FORWARD;  00376000 T  0000!0
PROCEDURE STARTIMING(FN,U); VALUE FN,U; REAL FN,U; FORWARD;%         00377000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
 PROCEDURE FILEOPEN(X,A); VALUE X,A; INTEGER X,A; FORWARD;           00379000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
 SAVE PROCEDURE SAVEOPEN(A); VALUE A; REAL A;                        00379100 T  0000!0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00059
        BEGIN FILEOPEN(2,A) END;                                     00379200 T  0000!0
                                                                     SIZE= 0002 WORDS
PROCEDURE MIXPRINT(Q); VALUE Q; REAL Q; FORWARD;                     00379400 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
% TYPES <JOB SPECIFIERS> FOR EACH ACTIVE MIX INDEX                    00379500 T  0000!0
PROCEDURE JOBMESS(MIX,Q,A,B,C,D);VALUE MIX,Q,A,B,C,D;                00379600 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
    REAL MIX,Q,A,B,C,D; FORWARD;                                     00379700 T  0000!0
PROCEDURE SETNOTINUSE(U,RWL); VALUE U,RWL; REAL U,RWL; FORWARD;      00380000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
DEFINE STOPTIMING=STARTIMING#;                                       00382000 T  0000!0
PROCEDURE FILLBUFFERS(CURRENT,FINAL,COBOL,NR);                       00385000 T  0000!0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
    VALUE CURRENT,FINAL,COBOL,NR;  REAL CURRENT,FINAL,COBOL,NR;      00385500 T  0000!0
    FORWARD;                                                         00386000 T  0000!0
DEFINE GETBUFFERS=FILLBUFFERS#;                                      00387000 T  0000!0
 PROCEDURE REALFILECLOSE(A); VALUE A; REAL A; FORWARD;               00389000 T  0000!0
```

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                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
SAVE PROCEDURE FILECLOSE(A); VALUE A; REAL A;                       00389100 T  0000:0
                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00061
        BEGIN REALFILECLOSE(A) END;                                 00389200 T  0000:0
                                                                    SIZE= 0001 WORDS
REAL PROCEDURE DISKADDRESS(MID,FID,FPB3,A,H,IO);                    % (SHM)  00390000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
    VALUE MID,FID,FPB3,A,H,IO;                                      % (SHM)  00390100 T  0000:0
    REAL MID,FID,FPB3,A,IO;  ARRAY H[*];                            % (SHM)  00390200 T  0000:0
      FORWARD;%                                                             00391000 T  0000:0
PROCEDURE BLASTQ(U); VALUE U; REAL U; FORWARD;%                             00392000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
REAL PROCEDURE FILEHEADER(MID,FID,NROWS,SIZE,BLEN,RLEN,S);%         00393000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
                VALUE   MID,FID,NROWS,SIZE,BLEN,RLEN,S;%            00394000 T  0000:0
                REAL    MID,FID;%                                   00395000 T  0000:0
                INTEGER         NROWS,SIZE,BLEN,RLEN,S; FORWARD;%   00396000 T  0000:0
PROCEDURE PURGEIT(U); VALUE U; INTEGER U; FORWARD;%                 00397000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
REAL ESPTAB,ESPCOUNT;                                               00399000 T  0000:0
REAL DIRDSK=@177;                                                   00400500 T  0000:0
REAL ESPDISKBOTTOM; % LOWEST ADDRESS OF ESPDISK                     00401000 T  0000:0
REAL ESPDISKTOP; % HIGHEST ADDRESS OF ESPDISK                       00401100 T  0000:0
 REAL  MESSAGEHOLDER;%                                              00402000 T  0000:0
    DEFINE USEDRA = OPTION.[47:1]#,%                                00403000 T  0000:0
        USEDRB = OPTION.[46:1]#,%                                   00404000 T  0000:0
        BOJMESS     =OPTION.[45:1]#,%                               00405000 T  0000:0
        EOJMESS     =OPTION.[44:1]#,%                               00406000 T  0000:0
        OPNMESS     =OPTION.[43:1]#,%                               00407000 T  0000:0
        TERMGO    =OPTION.[42:1]#,%                                 00408000 T  0000:0
            GIVEDATE = OPTION.[41:1]#,%                             00409000 T  0000:0
            GIVETIME = OPTION.[40:1]#,%                             00410000 T  0000:0
            SAMEBREAKTAPE=OPTION.[39:1]#,  % NOT CURRENTLY USED, 3/73  00411000 T  0000:0
            AUTOPRINT=OPTION.[38:1]#,                               00412000 T  0000:0
            CLEARWRS=OPTION.[37:1]#,                                00413000 T  0000:0
            NOTIFYOP=OPTION.[36:1]#,%                               00414000 T  0000:0
            DISCONUC = OPTION.[36:1]#,                              00414100 T  0000:0
            COMMESS=OPTION.[35:1]#,%                                00415000 T  0000:0
            CLOSEMESS=OPTION.[34:1]#,%                              00416000 T  0000:0
            ERRORMSG=OPTION.[33:1]#,                                00416050 T  0000:0
            RETMSG=OPTION.[32:1]#,                                  00416100 T  0000:0
            LIBMSG=OPTION.[31:1]#,                                  00416200 T  0000:0
            SCHEDMSG=OPTION.[30:1]#,                                00416300 T  0000:0
            SECMSG=OPTION.[29:1]#,                                  00416400 T  0000:0
            DSKTOG=OPTION.[28:1]#,                                  00416500 T  0000:0
            RELTOG=OPTION.[27:1]#,                                  00416520 T  0000:0
            PBDREL=OPTION.[26:1]#,                                  00416550 T  0000:0
            CHECKLINK = OPTION.[25:1]#,                             00416560 T  0000:0
            DISKMSG=OPTION.[24:1]#,                                 00416570 T  0000:0
            USEPBD=OPTION.[21:1]#,%                         %DS     00416600 T  0000:0
            SVPBT =OPTION.[20:1]#,%                                 00416610 T  0000:0
            RSTOG=OPTION.[19:1]#,                                   00416620 T  0000:0
            AUTOUNLD=OPTION.[18:1]#,                                00416630 T  0000:0
            RNALL=OPTION.[17:1]#,                                   00416710 T  0000:0
            COBEOLAY=OPTION.[16:1]#,                                00416730 T  0000:0
            COREST=OPTION.[15:1]#,                                  00416740 T  0000:0
            DATAOLAY=OPTION.[14:1]#,                                00416750 T  0000:0
            HALTSET=OPTION.[13:1]#,                                 00416751 T  0000:0
            STOPTEST= OPTION.[8:1]#,                                00416760 T  0000:0
            PUNCHLCK=OPTION.[7:1]#,                                 00416770 T  0000:0
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                CDONLY=OPTION.[6:1]#,                                   00416780 T  0000:0
                PKTONLY=OPTION.[5:1]#,                                  00416790 T  0000:0
                SEPARATE=OPTION.[4:1]#,                                 00416800 T  0000:0
            MOD3IOS=OPTION.[2:1]#,                                      00416990 T  0000:0
                AUTOMESS = OPTION.[1:1]#,                               00416992 T  0000:0
            XXXXXX= OPTION.[0:0]#;%                                     00417000 T  0000:0
        DEFINE BOJBIT = 45[18:42:6]#,                                   00417010 T  0000:0
               EOJBIT = 44[18:42:6]#,                                   00417020 T  0000:0
               OPNBIT = 43[18:42:6]#,                                   00417030 T  0000:0
               COPNBIT= 35[18:42:6]#,                                   00417040 T  0000:0
               CLOSEBIT=34[18:42:6]#,                                   00417050 T  0000:0
               ERRRBIT = 33[18:42:6]#,                                  00417052 T  0000:0
               LIBBIT = 31[18:42:6]#,                                   00417060 T  0000:0
               SCHEDBIT=30[18:42:6]#,                                   00417070 T  0000:0
               SECBIT = 29[18:42:6]#,                                   00417075 T  0000:0
               RSBIT  = 19[18:42:6]#,                                   00417080 T  0000:0
               NEVERBIT=62[18:42:6]#,                                   00417090 T  0000:0
               ALWAYSBIT=63[18:42:6]#;                                  00417100 T  0000:0
        REAL USERDISKBOTTOM;                                            00418000 T  0000:0
            % DISK ADDRESS OF USER DISK AVAILABLE TABLE                 00418010 T  0000:0
        REAL DIRECTORYTOP;                                              00418050 T  0000:0
            % DISK ADDRESS OF DIRECTORYTOP SEGMENT--STORED IN M[1]      00418060 T  0000:0
            %BY MCP LOADER AND STORED IN MCP PRT(DIRECTORYTOP)          00418070 T  0000:0
        REAL DISKBOTTOM;                                                00418100 T  0000:0
            % DISK ADDRESS OF TOP OF BYPASS DIRECTORY. USED IN SCRAMBLE. 00418200 T  0000:0
         $ SET OMIT = NOT(SHAREDISK)                                    00418799 T  0000:0
         $ SET OMIT = SHAREDISK                                         00418849 T  0000:0
        REAL HOLDER,NEXTSLOT,BYPASS;                                    00418850 T  0000:0
         $ SET OMIT = NOT STATISTICS OR OMIT                            00418859 T  0000:0
        DEFINE HOLDMAX = 30#;          % MAXIMUM NUMBER OF ENTRIES IN HOLDLIST 00418900 T  0000:0
        COMMENT THE HOLDLIST CONTAINS A ONE WORD ENTRY FOR EACH PROCESS 00418910 T  0000:0
                THAT IS WAITING TO USE A FILE THAT IS ALREADY IN USE.   00418915 T  0000:0
                    HOLDLIST[I].[FF]=THE CORE ADDRESS OF THE WORD THAT THE 00418920 T  0000:0
                        WAITING PROCESS IS SLEEPING ON.                 00418925 T  0000:0
                    HOLDLIST[I].[CF]=THE DISK ADDRESS OF THE FILE HEADER 00418930 T  0000:0
                        THAT IS BEING WAITED FOR.                       00418935 T  0000:0
                    HOLDLIST[I].[10:8]=MIX INDEX OF THE PROCESS THAT MADE THE 00418937 T  0000:0
                        ENTRY. (TSSMCP ONLY)                            00418938 T  0000:0
                    HOLDLIST[I].[2:2]=THE SYSTEM NUMBER (SYSNO) OF THE SYSTEM 00418940 T  0000:0
                        THAT MADE THE ENTRY (SHAREDISK ONLY).           00418945 T  0000:0
                    HOLDLIST[I].[1:1] IS SET BY A SYSTEM TO NOTIFY ANOTHER 00418950 T  0000:0
                        SYSTEM TO AWAKEN THE PROCESS THAT MADE THE ENTRY. 00418955 T  0000:0
                        THE NSECOND ROUTINE EXAMINES THE HOLDLIST IN    00418960 T  0000:0
                        ORDER TO CHECK FOR THIS CONDITION (SHAREDISK ONLY). 00418965 T  0000:0
                DIRECTORYSEARCH, NSECOND, AND CLEANOUT ARE THE PROCEDURES 00418970 T  0000:0
                THAT MANIPULATE THE HOLDLIST.                           00418975 T  0000:0
                                                                        00418980 T  0000:0
                THE WORDS ASSOCIATED WITH DIRECTORY HANDLING ARE:       00418985 T  0000:0
                    HOLDER.[CF] = DISK ADDRESS OF HOLDLIST.             00418990 T  0000:0
                          .[FF] = NUMBER OF ENTRIES IN HOLDLIST.        00418995 T  0000:0
                    NEXTSLOT    = DISK ADDRESS OF FIRST HEADER IN QUEUE OF 00419000 T  0000:0
                                  EMPTY SPOTS IN DIRECTORY (NEXTSLOT QUEUE). 00419005 T  0000:0
                    BYPASS.[CF] = LOWEST ADDRESS OF THE BYPASS DIRECTORY. 00419010 T  0000:0
                          .[FF] = HIGHEST ADDRESS OF THE MAIN DIRECTORY. 00419015 T  0000:0
                ON SHAREDISK, HOLDER, NEXTSLOT AND BYPASS ARE KEPT IN THE FIRST 00419020 T  0000:0
                THREE WORDS OF THE DISK SEGMENT LOCATED AT DIRECTORYTOP+2. A 00419025 T  0000:0
                READ LOCK MUST BE DONE BEFORE ACCESSING THE HOLDLIST OR NEXTSLOT 00419030 T  0000:0
                QUEUE OR EXPANDING EITHER THE MAIN OR BYPASS DIRECTORIES. 00419035 T  0000:0
        END COMMENT;                                                    00419040 T  0000:0
        INTEGER RESTARTING;   %PASSLEVEL CONTROL   (RS)                 00419100 T  0000:0
```

```
 $ SET OMIT = NOT(BREAKOUT)                                                  00419104 T  0000:0
DEFINE SCRAMBLE(SCRAMBLE1,SCRAMBLE2)=(-2x                                    00419110 T  0000:0
     ((SCRAMBLE1.[6:18]+SCRAMBLE1.[24:24]) MOD MODULUS×MODULUS+              00419120 T  0000:0
      (SCRAMBLE2.[6:18]+SCRAMBLE2.[24:24]) MOD MODULUS) +                    00419130 T  0000:0
       DISKBOTTOM)#,                                                         00419140 T  0000:0
      MODULUS=13#,  DIRMOD=169#;                                             00419150 T  0000:0
COMMENT                                                                      00419210 T  0000:0
         THE RELATIONSHIP BETWEEN MODULUS AND DIRMOD IS:                     00419220 T  0000:0
         DIRMOD := MODULUS × MODULUS, WHERE MODULUS IS A LOW                 00419230 T  0000:0
         ODD PRIME. (THE RECOMMENDED VALUE OF MODULUS IS 13).                00419240 T  0000:0
         FOR SYSTEMS WITH ONLY 4 MEMORY MODS, MODULUS MUST BE                00419250 T  0000:0
         SET TO A SMALLER VALUE SO THAT DIRECTORYBUILDER WILL                00419260 T  0000:0
         NOT GET A NO-MEM, MAKING IT IMPOSSIBLE TO HALT/LOAD.                00419270 T  0000:0
         IT IS SUGGESTED THAT MODULUS BE SET TO 11, DIRMOD TO 121            00419280 T  0000:0
         FOR A SYSTEM WITH 4 MODS, IT MAY BE NECESSARY TO SET IT             00419290 T  0000:0
         SMALLER, DEPENDING UPON DISK CONFIGURATION;                         00419300 T  0000:0
ARRAY FS[*,*]; ARRAY FSROW=FS[*];                                            00419400 T  0000:0
 ARRAY USERDISK[*];                                                          00419900 T  0000:0
 $ SET OMIT = NOT DEBUGGING AND NOT DUMP                                     00419999 T  0000:0
 $ SET OMIT = SHAREDISK                                                      00421099 T  0000:0
DEFINE LOCKDIRECTORY =                                                       00421100 T  0000:0
          BEGIN IF NOT DIRECTORYTOG THEN SLEEP([TOGLE],DIRECTORYMASK);       00421200 T  0000:0
                LOCKTOG(DIRECTORYMASK);                                      00421300 T  0000:0
           END#,                                                             00421400 T  0000:0
      UNLOCKDIRECTORY =                                                      00421500 T  0000:0
           BEGIN                                                             00421600 T  0000:0
                UNLOCKTOG(DIRECTORYMASK);                                    00421700 T  0000:0
           END#;                                                             00421800 T  0000:0
 $ POP OMIT                                                                  00421801 T  0000:0
 $ SET OMIT = NOT SHAREDISK                                                  00422490 T  0000:0
REAL LOGFREE,IOMASK,SAVEWORD;                                                00425000 T  0000:0
REAL CORE;            %USED FOR SELECTION PURPOSES                           00426000 T  0000:0
    COMMENT                                                                  00426100 T  0000:0
       CORE.[4:14] = MULTIPROCESSING FACTOR (×100)                           00426200 T  0000:0
       CORE.[18:15] = SUM OF CORE ESTIMATES FOR ALL JOBS                     00426300 T  0000:0
                      NOW ACTIVE IN THE MIX (DIV 64)                         00426400 T  0000:0
       CORE.[33:15] = AMOUNT OF CORE MEMORY INITIALLY AVAILABLE FOR          00426500 T  0000:0
                      PROCESSING NORMAL STATE JOBS (DIV 64);                 00426600 T  0000:0
 PROCEDURE SELECTRUN(F); VALUE F; REAL F; FORWARD;                           00426700 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
DEFINE SELECTION = INDEPENDENTRUNNER(P(.SELECTRUN),0,160)#;                  00426800 T  0000:0
PROCEDURE CONTROLCARD(A);VALUE A;REAL A; FORWARD;%                           00427000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
REAL  PROCEDURE  DIRECTORYSEARCH(A,B,C);VALUE A,B,C;%                        00428000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
          REAL  A,B,C; FORWARD;%                                             00429000 T  0000:0
 DEFINE HEADERUNLOCK=HU#,                                                    00430000 T  0000:0
       HU(HU1,HU2,HU3)=                                                      00430100 T  0000:0
        P(MKS,HU3,HU1,HU2,9,DIRECTORYSEARC,DEL)#;                            00430200 T  0000:0
REAL DIRECTORYSEARC=DIRECTORYSEARCH;                                         00430225 T  0000:0
   %%HEADERUNLOCK CAN BE USED TO WRITE IN THE DIRECTORY A CHANGED            00430250 T  0000:0
   %%  HEADER, TURN OFF THE INTERLOCK BIT AND DO THE FORGETSPACE             00430275 T  0000:0
   %%  IT MAY BE CALLED ONLY AFTER A DIRECTORYSEARCH(A,B,4)                  00430300 T  0000:0
   %% THE PARAMETERS PASSED MUST BE (A,B,DS);                                00430400 T  0000:0
   %%  WHERE A,B ARE THE SAME AS PASSED TO THE DIRECTORYSEARCH               00430500 T  0000:0
   %%   AND DS IS THE RESULT OF THAT DIRECTORYSEARCH                          00430600 T  0000:0
REAL OLDIDLETIME;                                                            00430900 T  0000:0
 PROCEDURE ARTN(A,N); VALUE A,N; ARRAY A[*]; INTEGER N; FORWARD;%            00431000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
 SAVE PROCEDURE DISKIO(L,C,S,D); VALUE C,S,D; REAL L; INTEGER C,S,D;%        00432000 T  0000:0
```

```
                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00062
          FORWARD;%                                                 00433000 T  0000!0
ARRAY MESSAGETABLE[*];                                              00435000 T  0000!0
DEFINE MESSAGETABLESIZE = 5#; % NUMBER OF MESSAGETABLE ENTRIES      00436000 T  0000!0
DEFINE                                                              00437000 T  0000!0
     OPTIONSZ = (MESSAGETABLE[0],[8:10])#,                          00438000 T  0000!0
     TERMSGSZ = (MESSAGETABLE[1],[8:10])#,                          00439000 T  0000!0
     KEYMSGSZ = (MESSAGETABLE[2],[8:10])#,                          00440000 T  0000!0
     CCTABLSZ = (MESSAGETABLE[3],[8:10])#;                          00441000 T  0000!0
 $ SET OMIT = PACKETS                                               00449999 T  0000!0
DEFINE                                                              00450000 T  0000!0
     SPOUTIT(SPOUTIT1,SPOUTIT2)=SPOUT(SPOUTIT1)#,                   00450100 T  0000!0
     SPOUTER(SPOUTER1,SPOUTER2,SPOUTER3)=SPOUT(SPOUTER1)#;          00450200 T  0000!0
PROCEDURE SPOUT(MESSAGE);                                           00450300 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
     VALUE MESSAGE;                                                 00450400 T  0000!0
     REAL MESSAGE;                                                  00450500 T  0000!0
     FORWARD;                                                       00450600 T  0000!0
DEFINE                                                              00450700 T  0000!0
     FILEMESSAGE=FMS#,                                              00450800 T  0000!0
     FMS(FMS1,FMS2,FMS3,FMS4,FMS5,FMS6,FMS7,FMS8)=                  00450900 T  0000!0
     FILEMESS(FMS1,FMS2,FMS3,FMS4,FMS5,FMS6,FMS7)#;                 00451000 T  0000!0
PROCEDURE FILEMESS(I,K,M,F,R,D,C);                                  00451100 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
     VALUE I,K,M,F,R,D,C;                                           00451200 T  0000!0
     REAL I,K,M,F,R,D,C;                                            00451300 T  0000!0
     FORWARD;                                                       00451400 T  0000!0
 $ POP OMIT                                                         00451401 T  0000!0
 $ SET OMIT = NOT(PACKETS)                                          00451499 T  0000!0
PROCEDURE LBMESS(FN,SN,I1,I2,E,UNITNO,X);                           00454000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
     VALUE FN,SN,I1,I2,E,UNITNO,X;                                  00454100 T  0000!0
     REAL  FN,SN,I1,I2,E,UNITNO,X;                                  00454200 T  0000!0
     FORWARD;                                                       00454300 T  0000!0
PROCEDURE TERMINATE(MIX); VALUE MIX; REAL MIX; FORWARD;             00463100 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
SAVE PROCEDURE TERMINALMESSAGE(N); VALUE N; REAL N; FORWARD;        00463200 T  0000!0
                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00062
BOOLEAN PROCEDURE SYSTEMFILE(A,B);VALUE A,B; REAL A,B; FORWARD;     00463300 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE ENTERSYSFILE(N); VALUE N; REAL N; FORWARD;                00464000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE COM5;   FORWARD;%                                         00469000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
$ SET OMIT = NOT(STATISTICS)                                        00469099 T  0000!0
PROCEDURE ASR;    FORWARD;%                                         00474000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE COM11;  FORWARD;%                                         00475000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE COM13;  FORWARD;%                                         00477000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE COMMUNICATE0; FORWARD;                                    00478000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE COMMUNICATE1; FORWARD;                                    00478500 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE LIBRARYLOAD; FORWARD;                                     00479000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE LIBRARYZERO; FORWARD;                                     00479500 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE LIBRARYDUMP;  FORWARD;                                    00480000 T  0000!0
```

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                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
 $ SET OMIT = NOT(DUMP OR DEBUGGING)                                 00480099 T  0000:0
 PROCEDURE COM19;  FORWARD;%                                         00483000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
 PROCEDURE COM23; FORWARD;%                                          00487000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
PROCEDURE INTRINSICTABLEBUILDER(FH);                                 00489000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
     VALUE FH; REAL FH; FORWARD;                                     00490000 T  0000:0
PROCEDURE MESSAGETABLEBUILDER; FORWARD;                              00491000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
ARRAY PUNTER[*];                                                     00643000 T  0000:0
DEFINE PUNTSIZE = 11                                                 00643100 T  0000:0
 $ SET OMIT = NOT SHAREDISK                                          00643200 T  0000:0
                 #;                                                  00643700 T  0000:0
 $ SET OMIT = NOT AUTODUMP                                           00644000 T  0000:0
SAVE PROCEDURE RESULT;                                               00646000 T  0000:0
                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00062
BEGIN                                                                00647000 T  0000:0
    GO TO P([18]);                    % TIMER IS A LOOP ON INTERRUPTS 00648000 T  0000:0
END;                                                                 00649000 T  0000:2
                                                                                 SIZE= 0001 WORDS
SAVE PROCEDURE PUNT(I);  VALUE I;  REAL I;                           00650000 T  0000:0
                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00063
        BEGIN REAL T=-3;                                             00650250 T  0000:0
              REAL TMB, RSLT=RESULT;                                 00650500 T  0000:0
              LABEL HA,HB;                                           00650750 T  0000:0
              I:=IF I=0 THEN T ELSE PUNTER INX I;                    00651000 T  0000:0
              STREAM(Q:=P(0,RDF); I,                                 00651800 T  0003:3
                   A:=18, D:=I:=PUNTER INX 0);                       00652000 T  0005:1
              BEGIN DS:=13 LIT"-SYS HANG, F=";                       00652400 T  0007:1
                   SI:=LOC Q; SI:=SI+3;                              00652600 T  0009:1
                   5(DS:=3 RESET;                                    00652800 T  0009:3
                     3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB));  00653000 T  0010:1
                   DS:=2 LIT": "; SI:=I;                             00653200 T  0012:2
                   63(IF SC≠"←" THEN DS:=CHR); DS:=LIT"←";           00653400 T  0013:1
                   DI:=A; DS:=8 LIT"29290+JI";    % INI,INI,4,BBW    00653600 T  0015:0
                   SI:=A; DS:=44 WDS;                                00653800 T  0016:2
                   DI:=A; DI:=DI+8;               % IOBUSY-          00654000 T  0017:0
                        DS:=4 LIT"002(";          %     0,RTN         00654200 T  0017:2
                   DI:=DI+28;                     % IOCOMPLETE-LOD R,RTN 00654400 T  0018:1
                   DS:=32 LIT"0 +A+:2(0U+A+:2(0Y+A+:2(0≠+A+:2(";     00654600 T  0018:2
              END;                                                   00654800 T  0022:3
              P(HP2);                                                00655000 T  0023:0
     HA:      TMB:=I&60[3:42:6];                                     00655200 T  0023:1
              P([TMB],IIO);                                          00655400 T  0025:0
     HB:      DO IF (TMB:=P(MKS,RSLT)) = 0 THEN  % IO BUSY           00655600 T  0025:2
                BEGIN P(MKS,RSLT,DEL); GO HA END                     00655800 T  0027:0
              UNTIL TMB.[3:6]=60;                                    00656000 T  0028:3
              IF TMB.[CF]<I THEN GO TO HB;                           00656200 T  0030:2
              IF TMB.[FF]≠0 THEN GO TO HA;                           00656400 T  0032:1
 $ SET OMIT = NOT AUTODUMP                                           00656500 T  0034:0
              DO UNTIL FALSE;                                        00657800 T  0034:0
        END;                                                         00662000 T  0034:3
                                                                                 SIZE= 0035 WORDS
 $ SET OMIT = DATACOM                                                00689990 T  0000:0
    $ RESET SEPTICTANK                                               00690000 T  0000:0
 $ POP OMIT                                                          00699990 T  0000:0
 $ SET OMIT = NOT DATACOM                                            00699999 T  0000:0
 $ SET OMIT = NOT(DFX)                                               00999999 T  0000:0
```

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SAVE PROCEDURE STARTIO(U);  VALUE U;  REAL U;  FORWARD;                    01165000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00098
SAVE PROCEDURE COMPLEXSNOOZE(PRI,CODE); VALUE PRI; REAL PRI,CODE;          01240000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00098
    BEGIN SNOOZE(PRI,1,P(,CODE,LOD)); END;                                 01240100 T  0000:0
                                                                              SIZE= 0002 WORDS
DEFINE COMPLEXSLEEP(COMPLEXSLEEP1)=COMPLEXSNOOZE(PRYOR[P1MIX],             01240200 T  0000:0
        COMPLEXSLEEP1)#;                                                   01240300 T  0000:0
PROCEDURE USASITAPE(AREA,TYPE,FROM,U,DIR);                %RHR             01250100 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00002
        VALUE AREA,FROM,U,DIR; REAL AREA,TYPE,FROM,U,DIR;                  01250200 T  0000:0
BEGIN REAL PTN,Y;                                                          01250300 T  0000:0
      ARRAY ULAB[*];                                                       01250400 T  0000:0
      LABEL EXIT,ERROR,VOL,BAD,WAIT,TIP,ETIP;                              01250500 T  0000:0
    SUBROUTINE LABELSPACE;                                                 01250600 T  0000:0
        BEGIN ULAB:=[M[SPACE(11)]]&10[8:38:10];                            01250700 T  0001:0
              MOVE(10,ULAB.[CF]-1,ULAB.[CF]);                              01250800 T  0004:3
        END LABELSPACE;                                                    01250900 T  0008:1
    SUBROUTINE VOL1FILL;                                                   01251000 T  0008:2
        BEGIN STREAM(AREA,ULAB);                                           01251100 T  0009:0
              BEGIN DS:=8 LIT " LABEL  "; DI:=DI+1; SI:=AREA;              01251200 T  0010:1
                    SI←SI+11;IF SC=" " THEN DS←7LIT"0" ELSE DS←7CHR;       01251300 T  0012:0
                    DI←DI+37; %MID                                         01251310 T  0014:2
                    SI:=AREA; SI:=SI+5; DS:=5 CHR; %PHYSICAL TAPE NO.      01251400 T  0014:3
              END;                                                         01251500 T  0015:2
        END VOL1FILL;                                                      01251600 T  0015:3
    SUBROUTINE HDR1CHK;                                                    01251700 T  0016:0
        BEGIN STREAM(Y:=0:AREA,X:=0);                                      01251800 T  0016:0
              BEGIN DI:=LOC X; DS:=4 LIT "HDR1";                           01251900 T  0017:2
                    SI:=AREA; DI:=LOC X;                                   01252000 T  0018:2
                    IF 4 SC=DC THEN TALLY:=1;                              01252100 T  0019:0
                    Y:=TALLY;                                              01252200 T  0019:3
              END;                                                         01252300 T  0020:0
              Y:=P;                                                        01252350 T  0020:1
        END HDR1CHK;                                                       01252400 T  0020:3
    SUBROUTINE HDR1FILL;                                                   01252500 T  0021:0
        BEGIN STREAM(AREA,ULAB);                                           01252600 T  0021:0
              BEGIN SI:=AREA; SI:=SI+4;                                    01252700 T  0022:1
                    DI:=DI+17; DS:=7 CHR; %FID                             01252800 T  0022:3
                    SI:=SI+17; DS:=3 CHR; %REEL                            01252900 T  0023:1
                    SI:=SI+11; DS:=5 CHR; %C-DATE                          01253000 T  0023:3
                    SI:=SI-8; DS:=2 CHR; %CYCLE                            01253100 T  0024:1
                    SI:=SI+7; DS:=5 CHR; %P-DATE                           01253200 T  0024:3
                    DI:=DI+1; SI:=SI+2;                                    01253300 T  0025:1
                    DS:=5 CHR; %BLOCK COUNT                                01253400 T  0025:3
                    DS:=7 CHR; %RECORD COUNT                               01253500 T  0026:0
              END;                                                         01253600 T  0026:1
        END HDR1FILL;                                                      01253700 T  0026:2
    SUBROUTINE HARDFILL;                                                   01253800 T  0026:3
        BEGIN PTN:=PRNTABLE[U].[30:18];                                    01253900 T  0027:0
              STREAM(PTN,AREA,ULAB);                                       01254000 T  0028:2
              BEGIN SI:=LOC PTN; DI:=DI+53;                                01254100 T  0030:0
                    DS:=5 DEC; DI:=ULAB; %PHYSICAL TAPE NO.                01254200 T  0030:2
                    DS:=8 LIT " LABEL  ";                                  01254300 T  0031:0
              END;                                                         01254600 T  0032:1
              ULAB[1]:=MULTITABLE[U];                                      01254650 T  0032:2
        END HARDFILL;                                                      01254700 T  0034:0
    LABELSPACE;                                                            01254800 T  0034:1
    IF FROM=1 THEN                                                         01254900 T  0037:0
        BEGIN VOL1FILL;                                                    01255000 T  0037:3
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                    P(WAITIO(@140000005,@377,U),DEL);                                  01255100 T  0039:0
                    P(WAITIO(AREA INX @120540000000,@377,U),DEL);                      01255200 T  0040:2
                    HDR1CHK;                                                           01255300 T  0042:2
                    IF Y THEN HDR1FILL ELSE GO TO ERROR;                               01255400 T  0044:0
                    P(WAITIO(@340000005,@55,U),DEL);                                   01255450 T  0046:0
                    P(WAITIO(@340000005,@55,U),DEL);                                   01255500 T  0047:2
                    GO TO WAIT;                                                        01255600 T  0049:0
               END;                                                                    01255700 T  0053:0
          IF FROM =2 THEN                                                              01255800 T  0053:0
               BEGIN IF TYPE=1 THEN                                                    01255900 T  0053:3
                    BEGIN VOL1FILL;                                                    01256000 T  0055:0
          VOL:           P(WAITIO(AREA INX @120540000000,@377,U),DEL);                01256100 T  0057:0
                         HDR1CHK;                                                      01256200 T  0059:0
                         IF Y THEN HDR1FILL ELSE GO TO ERROR;                          01256300 T  0060:0
                         P(WAITIO(@340000005,@377,U),DEL);                             01256400 T  0062:0
                         GO TO WAIT;                                                   01256500 T  0063:2
                    END;                                                               01256600 T  0066:0
                     IF TYPE=2 THEN                                                    01256700 T  0066:0
                    BEGIN HDR1FILL;                                                    01256800 T  0066:3
                         HARDFILL;                                                     01256900 T  0068:0
                         GO TO EXIT;                                                   01257000 T  0069:0
                    END;                                                               01257100 T  0069:2
               END;                                                                    01257200 T  0069:2
          IF FROM=3 OR FROM=4 THEN                                                     01257300 T  0069:2
               BEGIN IF TYPE=1 THEN                                                    01257400 T  0071:1
                    BEGIN VOL1FILL;                                                    01257500 T  0072:2
                         GO TO VOL;                                                    01257600 T  0074:0
                    END;                                                               01257700 T  0074:2
                    IF TYPE=2 OR TYPE=4 THEN                                           01257800 T  0074:2
                    BEGIN HDR1FILL;                                                    01257900 T  0076:1
                         HARDFILL;                                                     01258000 T  0078:0
                         GO TO EXIT;                                                   01258100 T  0079:0
                    END;                                                               01258200 T  0079:2
                    IF TYPE=3 OR TYPE=5 THEN                                           01258300 T  0079:2
                    BEGIN IF DIR=0 THEN                                                01258400 T  0081:1
                         BEGIN P(WAITIO(@340000005,@377,U),DEL);                       01258500 T  0082:2
                               P(WAITIO(@340000005,@377,U),DEL);                       01258600 T  0084:2
                               P(WAITIO(AREA INX @120540000000,@377,U),DEL);           01258700 T  0086:0
                         END ELSE                                                      01258800 T  0088:0
                               P(WAITIO(AREA INX @120740000000,@377,U),DEL);           01258900 T  0088:0
                         HDR1CHK;                                                      01259000 T  0093:0
                         IF Y THEN HDR1FILL ELSE GO TO ERROR;                          01259100 T  0094:0
                         HARDFILL;                                                     01259200 T  0096:0
                         GO TO WAIT;                                                   01259300 T  0097:0
                    END;                                                               01259400 T  0099:0
                    IF TYPE=6 THEN                                                     01259500 T  0099:0
                         BEGIN HDR1FILL;                                               01259600 T  0099:3
                               HARDFILL;                                               01259700 T  0101:0
                               STREAM(ULAB);                                           01259800 T  0102:0
                               BEGIN DI:=ULAB; DI:=DI+39;                              01259900 T  0103:0
                                    DS:=1 LIT "1";                                     01260000 T  0103:2
                               END;                                                    01260100 T  0104:0
                               GO TO EXIT;                                             01260200 T  0104:1
                         END;                                                          01260300 T  0104:3
               END;                                                                    01260400 T  0104:3
          WAIT:     PTN:=0;                                                            01260425 T  0104:3
          TIP:      IF((TWO(U) AND P(RRR)) ≠0) THEN                                    01260450 T  0105:2
                    GO TO EXIT ELSE SLEEP([CLOCK], NOT CLOCK);                         01260455 T  0107:1
                    PTN:=PTN+1;                                                        01260460 T  0109:2
                    IF(PTN>120)THEN GO TO EXIT ELSE GO TO TIP;                         01260465 T  0110:3
```

```
ERROR:      P(WAITIO(@4200000000,@377,U),DEL);                          01260500 T  0112:2
            STREAM(T:=TINU[U],ULAB);                                    01260600 T  0114:0
                BEGIN SI:=LOC T; SI:=SI+5;                              01260700 T  0115:2
                      DS:=LIT "#"; DS:=3 CHR;                           01260800 T  0116:0
                      DS:=22 LIT " INVALID USASI,  RW/L+";              01260900 T  0116:3
                 END;                                                   01261000 T  0119:3
            SPOUT(ULAB.[CF]); LABELTABLE[U]:=@314;                      01261100 T  0120:0
            TYPE←0; PTN←0;                                              01261150 T  0122:3
ETIP:       IF((TWO(U) AND P(RRR)) ≠0) THEN                             01261160 T  0124:2
            GO TO BAD ELSE SLEEP([CLOCK], NOT CLOCK);                   01261170 T  0126:1
            PTN←PTN+1;                                                  01261180 T  0128:2
            IF(PTN>120) THEN GO TO BAD ELSE GO TO ETIP;                 01261200 T  0129:3
EXIT:       MOVE(10,ULAB.[CF],AREA.[CF]);                               01261300 T  0131:2
            FORGETSPACE(ULAB.[CF]);                                     01261400 T  0134:1
BAD:                                                                    01261450 T  0135:3
END USASITAPE;                                  %RHR                    01261500 T  0135:3
                                                                                 SIZE= 0137 WORDS
SAVE PROCEDURE SNOOZE(NEWPRI,ADDRESS,MASK);                             02000000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00100
      VALUE NEWPRI, ADDRESS, MASK;                                      02001000 T  0000:0
      REAL NEWPRI;                                                      02002000 T  0000:0
      NAME ADDRESS;                                                     02002500 T  0000:0
      ARRAY MASK[*];                                                    02003000 T  0000:0
      BEGIN                                                             02004000 T  0000:0
            REAL TRYHERE=NT1;                                           02004500 T  0000:0
 $ SET OMIT = NOT(NEWLOGGING)                                           02004599 T  0000:0
            LABEL BEDENTER;                                             02004900 T  0000:0
            IF (JOBNUM:=JOBNUM+2) GEQ JOBNUMAX THEN PUNT(9);            02005000 T  0000:0
      PRYOR[P1MIX],[FF]← NEWPRI← NEWPRI+1;                              02006000 T  0003:0
            FOR TRYHERE←JOBNUM STEP -2 UNTIL 2 DO                       02007100 T  0006:0
                BEGIN                                                   02007200 T  0007:0
      IF PRYOR[(BED[TRYHERE]←BED[TRYHERE-2]).[3:5]].[FF]                02007300 T  0007:0
                ≤ NEWPRI THEN GO TO BEDENTER;                           02007400 T  0009:2
                BED[TRYHERE+1] ← BED[TRYHERE-1];                        02007500 T  0011:2
                END;                                                    02007600 T  0014:0
            BEDENTER:                                                   02008000 T  0016:1
            BED[TRYHERE] ← P(ADDRESS & P1MIX[3:43:5], RDF);             02008100 T  0016:1
            BED[TRYHERE+1] ← MASK;                                      02008200 T  0019:0
            STOPLOG(P1MIX,1);                                           02008300 T  0021:0
            GO TO NOTHINGTODO;                                          02008400 T  0023:2
      END SLEEP;                                                        02009000 T  0024:0
                                                                                 SIZE= 0025 WORDS
SAVE PROCEDURE INDEPENDENTRUNNER(ROUTINE,PARAMETER,SSZ);                02012000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00125
      VALUE ROUTINE,PARAMETER,SSZ;                                      02013000 T  0000:0
      ARRAY PARAMETER[*];                                               02014000 T  0000:0
      REAL ROUTINE,SSZ;                                                 02015000 T  0000:0
      BEGIN LSLATE:= LSLATE+2 AND SLATEND;%                             02016000 T  0000:0
      IF NSLATE=LSLATE THEN PUNT(7);                                    02017000 T  0002:1
            SLATE[LSLATE] ← PARAMETER;%                                 02018000 T  0004:1
            SLATE[LSLATE+1]:=ROUTINE&SSZ[CTF];                          02019000 T  0005:3
      END;%                                                             02020000 T  0008:0
                                                                                 SIZE= 0009 WORDS
REAL KEYBOARDCOUNTER;                                                   02020500 T  0000:0
 REAL PROCEDURE KEYIN(B); VALUE B; BOOLEAN B;  FORWARD;%                02021000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00007
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                   02021099 T  0000:0
 BOOLEAN PROCEDURE WHYSLEEP(MASK); VALUE MASK; REAL MASK; FORWARD;%     02022000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00007
 LABEL P1PROCESS,P2PROCESS;%                                            02023000 T  0000:0
```

```
REAL ONEOHONE = @101,ONEOHTWO = @102;%                                  02024000 T  0000:0
SAVE PROCEDURE RUN(MIX); VALUE MIX; REAL MIX;%                          02025000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00134
        BEGIN P1MIX ← MIX;%                                             02026000 T  0000:0
$ SET OMIT = NEWLOGGING                                                 02026999 T  0000:3
            STARTLOG(MIX,0);                                            02027000 T  0000:3
$ POP OMIT                                                              02027001 T  0003:1
            STACKUSE ← TRUE;%                                           02028000 T  0003:1
            GO TO EXTERNAL;%                                            02029000 T  0005:0
        END;%                                                           02030000 T  0005:2
                                                                                SIZE= 0006 WORDS
REAL NUMESS;%                                                           02031000 T  0000:0
SAVE PROCEDURE SAVEMIX(MIX); VALUE MIX; REAL MIX;%                      02032000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00140
        BEGIN INDEPENDENTRUNNER(P(,RUN),MIX,0);                         02033000 T  0000:0
$ SET OMIT = NEWLOGGING                                                 02033999 T  0001:1
            STOPLOG(MIX,0);                                             02034000 T  0001:1
$ POP OMIT                                                              02034001 T  0003:3
        END;%                                                           02035000 T  0003:3
                                                                                SIZE= 0004 WORDS
SAVE PROCEDURE HALT;%                                                   02036000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00144
        BEGIN NOPROCESSTOG ← NOPROCESSTOG+1;%                           02037000 T  0000:0
            IF P2MIX > 0 THEN%                                          02038000 T  0001:1
                BEGIN P(HP2);%                                          02039000 T  0002:0
$ SET OMIT = NOT(NEWLOGGING)                                            02039099 T  0002:3
                    SNOOZE(-1,1,1);                                     02040000 T  0002:3
                    IF P2MIX > 0 THEN%                                  02041000 T  0004:1
                        BEGIN SAVEMIX(P2MIX);%                          02042000 T  0005:0
                            P2MIX←0; TOGLE←TOGLE AND NOT HP2MASK;       02043000 T  0006:1
                        END;%                                           02044000 T  0008:2
                END;%                                                   02045000 T  0008:2
        END;%                                                           02046000 T  0008:2
                                                                                SIZE= 0009 WORDS
SAVE PROCEDURE KILL(A); VALUE A; ARRAY A[*];%                           02047000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00153
        BEGIN P(64,STS);%                                               02048000 T  0000:0
            FORGETSPACE(A);%                                            02049000 T  0000:3
            GO TO NOTHINGTODO;%                                         02050000 T  0001:3
        END;%                                                           02051000 T  0002:1
                                                                                SIZE= 0003 WORDS
REAL PBCOUNT;                                                           02052200 T  0000:0
BOOLEAN PROCEDURE DLAY(LOC); VALUE LOC; REAL LOC; FORWARD;              02052500 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00007
PROCEDURE SEEKNAM(A,B,C,D,E,N); VALUE A,B;REAL A,B,C,D,E,N; FORWARD;    02052600 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00007
PROCEDURE UNHOOQUE(MIX);%                                               02053000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00007
            VALUE MIX;%                                                 02054000 T  0000:0
            INTEGER MIX;%                                               02055000 T  0000:0
    BEGIN%                                                              02056000 T  0000:0
        REAL U,S,SN,T,X,I,PROCE;%                                       02057000 T  0000:0
        NAME OLDQ=X;                                                    02057500 T  0000:0
        LABEL DOLP,DELINKIT;                                            02058000 T  0000:0
            FOR U←0 STEP 1 UNTIL 31 DO%                                 02059000 T  0000:0
                BEGIN%                                                  02060000 T  0003:0
                    IF(S←UNIT[U],[FF])≠@77777 THEN                      02061000 T  0003:0
                    BEGIN%                                              02062000 T  0005:1
                        WHILE (SN←LOCATQUE[S],[FF])≠@77777 DO%          02063000 T  0005:3
                        BEGIN IF (T←NFLAG(LOCATQUE[SN])),[3:5] =%       02064000 T  0008:2
```

```
                                        MIX THEN%                                   02065000 T  0010:1
                                   IF LOCATQUE[SN],[11:1] THEN S←SN ELSE            02065100 T  0010:3
                                   BEGIN%                                           02066000 T  0013:2
                                        LOCATQUE[S]←LOCATQUE[S]&T[F]F];%            02067000 T  0015:0
                                        RETURNIOSPACE(SN);                          02068000 T  0017:0
                                   END                              ELSE%           02070000 T  0020:1
                                   S←SN;%                                           02071000 T  0020:1
                              END%                                                  02072000 T  0021:2
                         END                                                        02072100 T  0021:2
                    END;                                                            02072200 T  0022:0
          $ SET OMIT = NOT DFX;                                                     02072490 T  0024:1
     DOLP:     FOR U←0 STEP 1 UNTIL 31 DO%                                          02075000 T  0024:1
                    BEGIN%                                                          02076000 T  0025:0
                         IF (S←(T←UNIT[U]).[FF])≠@77777 THEN                        02077000 T  0025:0
                         BEGIN%                                                     02078000 T  0027:3
                              IF LOCATQUE[S].[3:5]=MIX THEN%                        02079000 T  0028:1
                              BEGIN%                                                02080000 T  0029:3
                                   IF (X←T.[13:5])=0 OR X=16 THEN                   02081000 T  0030:1
                                     GO DELINKIT;                                   02082000 T  0033:0
                                   IF X=4 THEN%                                     02087000 T  0033:3
                                   BEGIN%                                           02088000 T  0034:2
                                        IF LOCATQUE[S].[FF]=@77777 THEN%            02089000 T  0035:0
                                        BEGIN%                                      02090000 T  0036:3
                                             I←FIRSTWAIT;%                          02091000 T  0037:1
                                             WHILE WAITQUE[I]≠U%                    02092000 T  0038:0
                                             DO I ← I+1 AND 31;%                    02093000 T  0038:2
                                             WAITQUE[I]←%                           02094000 T  0043:0
                                             WAITQUE[NEXTWAIT←NEXTWAIT%             02095000 T  0043:2
                                                  +31 AND 31];%                     02096000 T  0043:2
                                             UNIT[U]←T&@77777[13:28:20];            02097000 T  0046:0
                                        END ELSE                                    02097200 T  0048:1
     DELINKIT:                                UNIT[U]:=T&LOCATQUE[S][FTF];          02097400 T  0048:1
          $ SET OMIT = NOT DFX                                                      02097590 T  0052:0
                                        RETURNIOSPACE(S);                           02100000 T  0052:0
                                   END ELSE                                         02100400 T  0055:1
                                   PROCE←((U≠23 AND U≠24) OR X=3)                   02101000 T  0055:1
                                        AND X≠25 OR PROCE;                          02101100 T  0058:0
                              END%                                                  02102000 T  0060:2
                         END%                                                       02103000 T  0060:2
                    END      ;%                                                     02104000 T  0060:2
               IF PROCE THEN%                                                       02105000 T  0062:3
                    BEGIN%                                                          02106000 T  0063:0
                         SLEEP(1,1);PROCE←0;GO TO DOLP%                             02107000 T  0063:2
                    END;%                                                           02108000 T  0066:1
     END UNHOOQUE;%                                                                 02109000 T  0066:1
                                                                                         SIZE= 0067 WORDS
INTEGER TERMIX;%                                                                    02110000 T  0000:0
REAL PROCEDURE GETESPDISK;FORWARD;%                                                 02111000 T  0000:0
                                                                         START OF REL SEGMENT; DISK ADDRESS = 00010
PROCEDURE CHANGEMCP(KTR); VALUE KTR; REAL KTR; FORWARD;                             02111100 T  0000:0
                                                                         START OF REL SEGMENT; DISK ADDRESS = 00010
PROCEDURE CHANGEINTRINSICFILE(KTR); VALUE KTR; REAL KTR; FORWARD;                   02111200 T  0000:0
                                                                         START OF REL SEGMENT; DISK ADDRESS = 00010
 $ SET OMIT = NOT(DEBUGGING)                                                        02111299 T  0000:0
REAL PROCEDURE ANALYSIS; FORWARD;                                                   02111400 T  0000:0
                                                                         START OF REL SEGMENT; DISK ADDRESS = 00010
PROCEDURE SHORTCOMMUNICATE; FORWARD;                                                02111500 T  0000:0
                                                                         START OF REL SEGMENT; DISK ADDRESS = 00010
PROCEDURE CONTINUITYBIT; FORWARD;                                                   02111600 T  0000:0
                                                                         START OF REL SEGMENT; DISK ADDRESS = 00010
```

```
REAL CCTBLWORD;                                                          02112000 T  0000:0
DEFINE CCCOUNT    = CCTBLWORD.[FF]#,                                     02112100 T  0000:0
       CCTBLADDR = CCTBLWORD.[CF]#;                                      02112200 T  0000:0
REAL READERA,READERB;                                                    02112500 T  0000:0
 $ SET OMIT = NOT(PACKETS)                                               02113079 T  0000:0
 PROCEDURE MESSAGEWRITER;%                                               02114000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00010
        BEGIN REAL RCW=+0, MSCW=-2;                                      02115000 T  0000:0
              REAL T=+1;%                                                02116000 T  0000:0
              LABEL L;%                                                  02117000 T  0000:0
              P(0);                                                      02118000 T  0000:0
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                    02119009 T  0000:1
 $ SET OMIT = DCSPO                                                      02119019 T  0000:1
L:                                                                       02119020 T  0000:1
 $ POP OMIT                                                              02119021 T  0000:1
              P(WAITIO(MESSAGEHOLDER INX 1,0,25));                       02120000 T  0000:1
              P(DEL);%                                                   02121000 T  0002:0
                NUMESS ← NUMESS-1;%                                      02122000 T  0002:1
              T ← M[MESSAGEHOLDER].[18:15];                              02123000 T  0003:2
                  FORGETSPACE(MESSAGEHOLDER INX 1);                      02124500 T  0005:3
              IF T ≠ 0 THEN%                                             02125000 T  0007:0
                  BEGIN MESSAGEHOLDER.[33:15] ← T;%                      02126000 T  0007:3
                      GO TO L%                                           02127000 T  0009:2
                  END;%                                                  02128000 T  0010:0
              MESSAGEHOLDER ← 0;%                                        02129000 T  0010:0
              KILL([MSCW]);                                              02130000 T  0010:3
        END;%                                                            02131000 T  0011:2
                                                                                SIZE= 0012 WORDS
 $ SET OMIT = NOT(DCSPO AND DATACOM  )                                   02131005 T  0000:0
 $ SET OMIT = PACKETS                                                    02131999 T  0000:0
PROCEDURE SPOUT(MESSAGE);                                                02132000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00011
     VALUE MESSAGE;                                                      02132100 T  0000:0
     REAL MESSAGE;                                                       02132200 T  0000:0
 $ POP OMIT                                                              02132201 T  0000:0
 $ SET OMIT = NOT(PACKETS)                                               02132299 T  0000:0
        BEGIN REAL MKSCW=MESSAGE-1;                                      02133000 T  0000:0
              INTEGER MIX;                                               02133010 T  0000:0
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                    02133011 T  0000:0
 $ SET OMIT = NOT(PACKETS)                                               02133129 T  0000:0
 $ SET OMIT = NOT(DATACOM AND DCSPO)                                     02133499 T  0000:0
              MESSAGE ← P(.MESSAGE,LOD).[33:15]-1;%                      02134000 T  0000:0
              MIX ← M[MESSAGE-1].[9:6];                                  02134005 T  0002:1
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                    02134008 T  0004:3
 $ SET OMIT = NOT(PACKETS)                                               02134889 T  0004:3
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                    02134899 T  0004:3
              BEGIN                                                      02134906 T  0004:3
              IF MESSAGEHOLDER = 0 THEN%                                 02135000 T  0004:3
                  BEGIN MESSAGEHOLDER ← MESSAGE;%                        02136000 T  0005:2
                      INDEPENDENTRUNNER(P(.MESSAGEWRITER),0,64);         02137000 T  0006:3
                  END%                                                   02138000 T  0008:0
              ELSE M[MESSAGEHOLDER.[18:15]].[18:15] ← MESSAGE;           02139000 T  0008:0
              M[MESSAGE]←0&MIX[4:43:5];                                  02140000 T  0011:1
              MESSAGEHOLDER.[18:15] ← MESSAGE;%                          02141000 T  0013:3
              END;                                                       02141020 T  0015:0
              M[MESSAGE-1].[9:6] ← 0;%                                   02142000 T  0015:0
              IF P(MKSCW,[33:15],DUP)  = 0 THEN%                         02143000 T  0018:1
              BEGIN                                                      02143050 T  0019:3
              STREAM(N←0:X←MESSAGE+1);                                   02144500 T  0020:1
                  BEGIN SI ← X;%                                         02145000 T  0022:0
```

```
L:          IF SC ≠ "+" THEN%                                          02146000 T  0022:1
                BEGIN IF SC= " " THEN%                                 02147000 T  0022:3
                    BB:  BEGIN SI← SI+1;                               02148000 T  0023:1
                             IF SC=" " THEN GO BB;                     02149000 T  0023:2
                             IF SC = ALPHA THEN%                       02150000 T  0024:1
                                 BEGIN SI ← SI-1;%                     02151000 T  0024:3
                                     DS ← CHR;%                        02152000 T  0025:0
                                 END ELSE GO TO L;%                    02154000 T  0025:1
                         END;%                                         02155000 T  0025:3
                    IF SC = @14 THEN%                                  02156000 T  0025:3
                         BEGIN DS ← CHR;%                              02157000 T  0026:1
                         Q:   IF SC = @14 THEN%                        02158000 T  0026:2
                                 BEGIN SI ← SI+1;%                     02159000 T  0027:0
                                     GO TO Q;%                         02161000 T  0027:1
                                 END;%                                 02162000 T  0027:2
                             GO TO L;%                                 02163000 T  0027:2
                         END;%                                         02164000 T  0027:3
                    DS ← CHR;%                                         02165000 T  0027:3
                    GO TO L;%                                          02167000 T  0028:0
                END;%                                                  02168000 T  0028:1
            DS ← CHR;%                                                 02169000 T  0028:1
            N ← DI;                                                    02171000 T  0028:2
        END;%                                                          02172000 T  0028:3
    NT1←P;NT1←((NT1,[33:15]-(MESSAGE+1))×8+NT1,[30:3])×6;              02173000 T  0029:0
    END ELSE        NT1 ← P × 6;                                       02173050 T  0033:3
$ SET OMIT = NOT(PACKETS)                                              02173069 T  0035:1
    IOTIME[P1MIX] ← *P(DUP)+NT1;%                                      02174000 T  0035:1
$ SET OMIT = NOT(DCSPO AND DATACOM )                                   02174005 T  0037:1
$ SET OMIT = DCSPO                                                     02175002 T  0037:1
    IF (NUMESS← NUMESS+1)>0 THEN                                       02175003 T  0037:1
$ POP OMIT                                                             02175004 T  0039:0
        BEGIN                                                          02175010 T  0039:0
$ SET OMIT = NOT(DATACOM AND DCSPO )                                   02175020 T  0039:2
            SLEEP([NUMESS],-0);%                                       02176000 T  0039:2
            END;                                                       02176100 T  0041:1
    END;%                                                              02177000 T  0041:1
                                                                                   SIZE= 0042 WORDS
PROCEDURE ENDOFDECK(R,TUSTA);VALUE R,TUSTA; REAL R,TUSTA;  FORWARD;    02177100 T  0000:0
                                                                       START OF REL SEGMENT; DISK ADDRESS = 00013
PROCEDURE PBIO(A,B); VALUE A; REAL A,B; FORWARD;                       02178500 T  0000:0
                                                                       START OF REL SEGMENT; DISK ADDRESS = 00013
REAL TERMINALCLOCK, STOPJOB;                                   %ST     02179000 T  0000:0
PROCEDURE TERMINATE(MIX); VALUE MIX; REAL MIX;%                        02180000 T  0000:0
                                                                       START OF REL SEGMENT; DISK ADDRESS = 00013
    BEGIN IF MIX LEQ 0 THEN BYBY("MCP DS-ED←",10);                     02181000 T  0000:0
        COMPLEXSLEEP(TERMIX = @1777 OR                                 02181500 T  0006:2
            TERMIX,[33:15] = MIX,[33:15]);%                            02182000 T  0006:2
ACCIDENTAL ENTRY AT 15
        IF TERMIX = @1777 THEN%                                        02183000 T  0013:3
            BEGIN TERMINALCLOCK ← CLOCK+P(RTR);%                       02184000 T  0014:2
                TERMIX ← MIX;%                                         02185000 T  0016:1
            END;%                                                      02186000 T  0017:0
        IF STOPJOB=MIX THEN STOPJOB←@1777;                     %ST     02186100 T  0017:0
    END;%                                                              02187000 T  0019:0
                                                                                   SIZE= 0020 WORDS
REAL PROCEDURE PLACEFINDER(S, A, L);                                   02187100 T  0000:0
                                                                       START OF REL SEGMENT; DISK ADDRESS = 00014
    VALUE S, A;                                                        02187200 T  0000:0
    REAL  S, A, L;                                                     02187300 T  0000:0
    FORWARD;                                                           02187400 T  0000:0
```

```
ARRAY CIDROW[*],CIDTABLE=CIDROW[*,*];                                   02187500 T  0000:0
 PROCEDURE TERMINALMESSAGA(N); VALUE N; REAL N;                         02188000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00014
        BEGIN LABEL FOUND,DOIT,OWT,TOIT;                                02189000 T  0000:0
              REAL A,T,S,ADR;%                                          02190000 T  0000:0
              NAME B;%                                                  02191000 T  0000:0
              ARRAY FIB[*];                                             02191500 T  0000:0
              REAL BLEN,NBUF;                                           02191600 T  0000:0
    REAL MIXER,TOPIO,LUN,L;%                                            02192000 T  0000:0
              INTEGER I=S; LABEL QZ;%                                   02193000 T  0000:0
    LABEL STT;%                                                         02194000 T  0000:0
    SUBROUTINE SLAPITOFF;%                                              02195000 T  0000:0
        IF LUN GEQ 32 THEN                                              02195100 T  0001:0
 $ SET OMIT = PACKETS                                                   02195199 T  0001:3
        ENDOFDECK(LUN-32,0)                                             02195200 T  0001:3
 $ POP OMIT                                                             02195201 T  0003:2
        ELSE                                                            02195300 T  0003:2
        BEGIN SLEEP([TOGLE],STATUSMASK);                                02196000 T  0003:3
              READY ← NOT (I ← TWO(LUN)) AND READY;%                    02197000 T  0005:3
              RRRMECH ← NOT I AND RRRMECH OR I AND SAVEWORD;%           02198000 T  0008:1
              LABELTABLE[LUN] ← @114;%                                  02199000 T  0010:3
              MULTITABLE[LUN] ← RDCTABLE[LUN] ← 0;%                     02200000 T  0012:0
        END;%                                                           02201000 T  0014:1
    LABEL LB,LBI;%                                                      02202000 T  0014:2
 $ SET OMIT = NOT(NEWLOGGING)                                           02202049 T  0014:2
              NOMEM:=NOMEM-TAR[P1MIX].[20:1]; %IF THIS JOB HAD A NOMEM  02202100 T  0014:2
              TAR[P1MIX].[20:1]:=0;          %CONDITION = CLEAR IT      02202200 T  0021:2
              UNLOCKTOG(TAR[P1MIX]);                                    02202500 T  0024:0
              REPLY[P1MIX]←0;%                                          02203000 T  0028:0
              TERMINALCLOCK ← 0;%                                       02204000 T  0029:1
              TERMIX.[33:15] ← P1MIX;%                                  02205000 T  0030:0
              PRYOR[P1MIX]←-1;                                          02205100 T  0031:1
              IF STOPJOB=P1MIX THEN STOPJOB:=@1777;                     02205200 T  0032:3
              A ← IF N < 0 THEN ABS(N) ELSE GETSPACE(10,0,0)+2;%        02206000 T  0034:3
              B ← PRT[P1MIX,4];%                                        02207000 T  0039:1
              IF P(M[L←PRT[P1MIX,8].[CF]],TOP,XCH,DEL)THEN        %TR   02208000 T  0040:3
               S←ADR←0 ELSE                                       %TR  02209000 T  0044:1
          DO BEGIN IF P(M[L],TOP,XCH,0,INX,.ADR,←) THEN% OVERLAID RCWTR 02210000 T  0046:0
                  BEGIN IF NOT M[L].[33:1] THEN%NOT TYPE 13 INT         02211000 T  0049:0
                        BEGIN S←ADR; %SEGNO IN RCW                      02211010 T  0051:1
                    T←0;ADR←M[M[L].MOM].[CF]; % AND THE MSCW      %TR  02212000 T  0052:2
                        END ELSE S←-1;                                  02212100 T  0056:3
                  END ELSE % ITS PRESENT: WEVE GOT TO WORK        %TR  02213000 T  0058:1
                  BEGIN T←0;                                      %TR  02214000 T  0058:1
                        WHILE (S:=M[T].[CF]) LSS ADR DO                 02215000 T  0059:2
                        IF S GTR T THEN T:=S ELSE PUNT([PUNTER[25]]);   02215500 T  0062:2
                        S←IF M[T].[3:6]=1 THEN M[T+1].[CF] ELSE 0;  %TR 02216000 T  0066:2
          T←T+2;        END;                                      %TR  02216100 T  0072:1
                  IF PRT[P1MIX,8].[CF]≠L OR M[L-1].MSFF%STACK IS MARKED 02216200 T  0073:2
                  THEN DO L←M[L].MOM UNTIL NOT M[L].MSFF;%GET LAST MSCW 02216300 T  0076:1
                  L←M[L].MOM;%POINT L TO NEXT RCW,JUST IN CASE.   %TR  02216400 T  0082:3
        END UNTIL (IF S≠0 THEN  IF S=(-1) THEN 0 ELSE                   02216500 T  0085:0
                            (B[0]<S OR NOT B[S].PBIT)                   02216510 T  0088:2
                  ELSE (P(M[T-2].[3:12],DUP)≠@700  AND P(XCH)≠@1500));  02216600 T  0089:2
    FOUND:  ADR ← ADR-T;%                                               02217000 T  0096:0
              T:=PLACEFINDER(S,ADR,S);                                  02217100 T  0097:1
              IF N GTR 0 THEN                                           02217200 T  0099:0
              BEGIN                                                     02217300 T  0099:3
              B ← [M[SPACE(TERMSGSZ)]];                                 02218000 T  0100:1
              DISKWAIT(-(B INX 0),TERMSGSZ,MESSAGETABLE[1].[22:26]);    02219000 T  0103:3
```

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                    END ELSE N:=0;                                                  02220000 T  0107:1
                    STREAM(Z:=N≠0,X:=T,T:=6,J:=[JAR[P1MIX,0]],                      02221000 T  0108:2
                        P1MIX,INDX←PRT[P1MIX,8] INX NOT 2 INX 0,                    02222000 T  0111:0
                        DSZE←IF P(M[P(DUP)+1],TOP) THEN P ELSE P.[8:10],            02222200 T  0113:2
                        TOG←(N=7), Q←[B[N]], A);                                    02223000 T  0116:3
                        BEGIN C1 ← CI+Z; GO TO L1;%                                 02224000 T  0118:3
                            DS:=LIT "="; SI:=Q;                                     02225000 T  0119:2
                L:          SI:=SI+1;                                               02226000 T  0120:1
                            IF SC = "8" THEN SI:=SI+1 ELSE                          02227000 T  0120:2
                            BEGIN A:=DI; DI:=LOC T;                                 02228000 T  0121:2
                                DS:=OCT; DI:=A;                                     02229000 T  0122:0
                            END;                                                    02230000 T  0122:2
                            DS:=T CHR;                                              02231000 T  0122:2
                            IF TOGGLE THEN GO TO L;                                 02232000 T  0123:0
                            DS ← LIT " "; GO TO L2;%                                02234000 T  0123:2
                L1:         SI ← A;%                                                02235000 T  0124:1
                            IF SC ≠ "←" THEN%                                       02236000 T  0124:2
                                BEGIN SI ← SI+1; A ← SI;%                           02237000 T  0125:0
                                    GO TO L1;%                                      02238000 T  0125:2
                                END;%                                               02239000 T  0125:3
                            DI ← A;%                                                02240000 T  0125:3
                L2:%                                                                02241000 T  0126:0
                            SI ← J; SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";%           02242000 T  0126:0
                            SI ← SI+1; DS ← 7 CHR; DS ← LIT "=";%                   02243000 T  0127:1
                        SI←LOC P1MIX; DS←2DEC; A←DI;                                02244000 T  0128:1
                        DI←DI-2; DS←FILL; DI←A;                                     02244500 T  0129:0
                        SI:=X; DS:=20 CHR; A:=DI;                                   02245000 T  0129:3
                            TOG(DI←A;  DS←2 LIT ", ";  A←DI;  SI←INDX;              02251010 T  0130:2
                                SKIP SB;  IF SB THEN BEGIN DI←INDX;                 02251020 T  0132:1
                                SKIP DB;  DS←RESET;  DI←A;  TOG←TALLY;              02251030 T  0133:1
                                DS←12 LIT "EFF INX IS -";  END;                     02251040 T  0134:1
                                A←DI;  SI←INDX;  DI←LOC Q;  DS←8 DEC;               02251050 T  0136:0
                                SI←LOC Q;  7(IF SC>"0" THEN JUMP OUT;               02251060 T  0137:0
                                    TALLY←TALLY+1;  SI←SI+1);  DI←A;                02251070 T  0138:2
                                T←TALLY;  DS←8 CHR;  DI←DI-T;                       02251080 T  0139:2
                                T(DS←LIT " ");  DI←DI-T;  A←DI);                    02251090 T  0140:2
                            TOG(SI←LOC DSZE;  DI←LOC Q;  DS←4 DEC;                  02251100 T  0142:3
                                DI←A;  DS←5 LIT " GEQ ";  SI←LOC Q;                 02251110 T  0144:0
                                TALLY←0;  3(IF SC>"0" THEN JUMP OUT;                02251120 T  0145:2
                                    TALLY←TALLY+1;  SI←SI+1);                       02251130 T  0147:0
                            T←TALLY;  DS←4 CHR;  DI←DI-T;                           02251140 T  0147:3
                                T(DS←LIT " ");  DI←DI-T;  A←DI);                    02251150 T  0148:3
                            DI ← A; DS ← LIT "←";%                                  02252000 T  0151:0
                        END;%                                                       02253000 T  0151:3
                    IF N≠0 THEN FORGETSPACE(B);                                     02253050 T  0152:0
                    S←B;                                                            02254000 T  0154:0
                STREAM(B←S,A←A+GETSPACE(17,0,0)+2);%                                02255000 T  0154:3
                    BEGIN 17(DS←8 LIT"*"); SI←B;DI←A;DI←DI+8;DS←2 LIT" ";%           02255100 T  0157:3
                        17(8(IF SC≠"←" THEN DS←CHR ELSE JUMP OUT 2 TO L1)) ;         02255200 T  0160:3
                        L1: DS←2 LIT" ";%                                           02255500 T  0163:2
                    END;%                                                           02256000 T  0164:0
                    SPOUT(S);                                                       02256500 T  0164:1
                    IF NOT TERMGO THEN BEGIN HALT;%                                 02257000 T  0165:0
                        COMPLEXSLEEP(-100=NUMESS);%                                 02258000 T  0167:0
02182000    ACCIDENTAL ENTRY AT NUMESS
                        DO UNTIL KEYIN(0)=1;                                        02258100 T  0173:0
                        NOPROCESSTOG ← NOPROCESSTOG-1; END;%                        02258200 T  0174:3
                    JAR[P1MIX,1] ←-JAR[P1MIX,1];%                                   02259000 T  0176:0
                    UNHOOQUE(P1MIX);%                                               02260000 T  0178:3
                    MI≠ER← @300+P1MIX;%                                             02261000 T  0179:2
```

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                IF N=35 THEN                                  % ES-ED                    02261050 T  0180:3
                IF (JAR[P1MIX,0] EQV "PRNPBT ") = NOT 0 THEN                            02261100 T  0181:2
                IF (JAR[P1MIX,1] EQV (-("DISK   "))) = NOT 0 THEN                       02261150 T  0184:1
                IF (L:=PRT[P1MIX,@25]) ≠ 0 THEN                                         02261200 T  0187:1
                BEGIN IF (LUN:=L.[38:5])<16 THEN SLAPITOFF;                             02261300 T  0189:3
                      LUN:=L.[43:5];                                                    02261400 T  0194:0
                      SLAPITOFF;                                                        02261500 T  0195:1
                END; % PRNPBT/DISK ESED: TO CLEAR UNITS.                                02261750 T  0196:0
            STT: T←MSTART;%                                                             02262000 T  0196:0
                WHILE(L←T.[CF])≠0 DO%                                                   02263000 T  0196:3
                      IF (T←M[L]).[3:12]=MIXER AND T>0%                                 02264000 T  0199:0
                        THEN%                                                           02265000 T  0202:0
        BEGIN LUN ← (TOPIO ← NFLAG(M[L+2])).[12:6];                                     02266000 T  0202:2
            IF LUN ≥32 THEN                                                             02266100 T  0206:1
                BEGIN                                                                   02266200 T  0207:0
                      FILECLOSE(TOPIO INX 0);                                           02266300 T  0207:2
                      GO TO STT;                                                        02266400 T  0208:3
                END;                                                                    02266500 T  0212:0
            IF UNIT[LUN].[13:5] = @20                                                   02267000 T  0212:0
                THEN BEGIN%                                                             02268000 T  0213:1
            QZ:%                                                                        02269000 T  0214:0
                      SLAPITOFF;                                                        02270000 T  0214:0
                      UNIT[LUN].[13:5]:=@20;% MARK IT NOT READY ANYWAYS                 02270500 T  0215:0
                      FORGETSPACE(L INX 2);%                                            02271000 T  0217:2
                      GO TO STT;%                                                       02272000 T  0218:3
                      END ELSE                                                          02273000 T  0219:1
            BEGIN T ← 0;                                                                02274000 T  0219:1
                FIB ← M[TOPIO INX NOT 2];                                               02275000 T  0220:2
                ADR ← NBUF ← FIB[13].[1:9]-1;                                           02275100 T  0222:3
            IF P(M[TOPIO].[3:5],DUP)=22 OR P(XCH)=26 THEN                               02275150 T  0225:1
                BEGIN  FOR S ← 1 STEP 1 UNTIL ADR DO                                    02275200 T  0228:2
                TOIT:  IF NOT M[TOPIO INX S].[19:1] THEN                                02275250 T  0230:0
                DOIT:  IF LUN≤18 THEN                                                   02275300 T  0232:1
                          BEGIN  M[TOPIO INX S].[20:1] ← 0;                             02275350 T  0233:2
                                 M[M[TOPIO INX S] INX 17] ← M[TOPIO INX S]              02275400 T  0237:1
                                        & FIB[5] [FTC];                                 02275450 T  0240:0
                                 FIB[5] ← P(DUP,LOD,0,1,CFX,+);                         02275500 T  0242:2
                                 IF NOT PRTROW[P1MIX].[7:1] THEN                        02275550 T  0245:0
                                    IF FIB[14].[CF]=FIB[14].[FF] THEN                   02275600 T  0246:1
                                    BEGIN  PBIO(TOPIO INX S,FIB[14]);                   02275650 T  0249:1
                                           SLEEP([M[TOPIO INX S]],IOMASK);              02275700 T  0252:3
                                    END ELSE                                            02275750 T  0255:0
                                    BEGIN  STREAM(C←M[TOPIO INX S],                     02275800 T  0255:1
                                                  Z←FIB[14].[FF]);                      02275850 T  0257:2
                                           BEGIN SI ← C; DS ← 18 WDS; END;              02275900 T  0259:0
                                           FIB[14].[FF] ← P(DUP).[FF]-18;               02275950 T  0259:2
                                    END;                                                02276000 T  0262:3
                          END ELSE                                                      02276050 T  0262:3
                          BEGIN  IF WAITIO(M[TOPIO INX S],@357,LUN).[45:1]              02276100 T  0262:3
                                 THEN GO OWT;                                           02276150 T  0265:3
                                 FIB[6] ← *P(DUP)+1;                                    02276200 T  0267:0
                          END;                                                          02276250 T  0269:0
                IF ADR<0 THEN                                                           02276260 T  0271:1
                          BEGIN  IF ADR THEN FIB[17] ← BLEN; GO OWT;                    02276270 T  0272:0
                          END;                                                          02276280 T  0275:0
                S ← 0;                                                                  02276290 T  0275:0
                IF FIB[17] < (BLEN+FIB[18].[3:15]) THEN                                 02276300 T  0275:3
                          BEGIN  IF NOT FIB[13] THEN                                    02276350 T  0278:0
                                 FIB[17] ← *P(DUP)-(FIB[5].[46:2]-3);                   02276360 T  0279:1
                                 M[TOPIO] ← FLAG(FIB[16]);                              02276370 T  0283:0
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                                STREAM(N←FIB[17],D←M[TOPIO].[CF]);                  02276400 T  0285:0
                                BEGIN  N(DS ← 8 LIT " "); END;                      02276450 T  0287:2
                                ADR ← -1; GO DOIT;                                  02276500 T  0289:3
                            END ELSE ADR ← -2;                                      02276550 T  0291:1
                        GO TOIT;                                                    02276600 T  0292:3
                    END ELSE                                                        02276700 T  0293:1
                OWT: FOR NT1 ← 0 STEP 1 UNTIL NBUF DO                               02276750 T  0293:1
                        M[TOPIO INX NT1] ← *P(DUP) OR IOMASK;%                      02277000 T  0295:0
                IF LUN≤22 AND LUN≥20 OR (LUN≤18 AND % LP OR CP BK-UP                02278000 T  0300:0
                (P(M[TOPIO],[3:5],DUP)=22 OR P(XCH)=10))                            02278100 T  0302:2
                    THEN                                                            02278500 T  0305:3
                BEGIN IF LUN ≤ 18 THEN % UNIT IS BACKUP                             02279000 T  0306:1
                    BEGIN S←17;%                                                    02280000 T  0307:2
                        STREAM(A,D←L+4);                                            02281000 T  0308:3
                        BEGIN SI←A; DS←17 WDS END;%                                 02282000 T  0310:1
                        NT4←M[TOPIO INX NOT 2] INX 0;%                              02283000 T  0311:0
                        NT1←M[NT4+14];%                                             02284000 T  0313:3
                        NT2←NT1.[FF]; NT1←NT1.[CF];%                                02285000 T  0315:3
                        IF M[TOPIO].[3:5]=22 THEN % NOT CP BK-UP                    02285100 T  0318:1
                        IF NT1=NT2-72 THEN%                                         02286000 T  0320:1
                        BEGIN NT1←M[NT4+5].[FF];%                                   02287000 T  0322:0
                            M[NT4+5].[FF]←NT1+1;%                                   02287100 T  0325:1
                            M[NT2+17]← @154000400200000 &NT1[CTC];%                 02287110 T  0328:2
                            M[NT4+14].[FF]←NT2-18;%                                 02287120 T  0331:0
                        END ELSE%                                                   02287130 T  0334:1
                            IF M[NT2+35].[27:6]=0 THEN M[NT2+35].[28:1]←1;          02287140 T  0334:1
                        FIB[17] ← -1;                                               02287200 T  0342:1
                        M[TOPIO] ← FLAG(FIB[16]&0[20:47:1]&S[8:38:10]);             02287210 T  0343:3
                    END ELSE %                                                      02287230 T  0347:3
                    BEGIN T←(A INX @540000000000000) &(LUN≠22)[32:47:1]%            02287240 T  0347:3
                            &17[8:38:10];%                                          02287250 T  0349:3
                IF LUN≠22 THEN %IF PUNCH FILE, IGNORE                               02287254 T  0352:0
                        IF WAITIO(@4002000000,@357,LUN).[45:1] THEN GO QZ;          02287255 T  0352:3
                        T←WAITIO(T,@357,LUN);%                                      02287260 T  0355:3
                        IF T.[45:1] THEN GO TO QZ;%                                 02287270 T  0357:2
                    END;                                                            02287280 T  0359:0
                END ELSE%                                                           02290000 T  0359:0
                    IF LUN=23 OR LUN=24 THEN%                                       02291000 T  0359:0
                    BEGIN ADR←L+4;%                                                 02292000 T  0363:3
                        LBI:  IF(T←UNIT[LUN]).[13:5]=25 THEN%                       02293000 T  0365:2
                    BEGIN ADR ← IOQUE[S←T.[FF]].[33:15];%                           02294000 T  0367:2
                        STREAM (A←"END":ADR); BEGIN SI ← ADR;%                      02295000 T  0370:2
                L:SI ← SI +1; IF SC = " " THEN GO TO L;%                            02296000 T  0372:0
            $ SET OMIT = PACKETS                                                    02296999 T  0373:0
                    DI ← LOC A; DI ← DI+5; IF 3 SC ≠ DC THEN TALLY ← 1; A ←%        02297000 T  0373:0
            $ POP OMIT                                                              02297001 T  0374:1
            $ SET OMIT = NOT(PACKETS)                                               02297009 T  0374:1
                TALLY END;  IF P THEN BEGIN%                                        02298000 T  0374:1
                                        RETURNIOSPACE(S);                           02300000 T  0375:1
                                        UNIT[LUN]←@7777777777%                      02301000 T  0378:2
                                END                                                 02302000 T  0379:1
                    ELSE BEGIN M[TOPIO]←M[TOPIO]OR@2004000000; T←0;%                02303000 T  0379:3
                    M[M[TOPIO]]←"END.   "&@14[1:43:5]; END;%                        02304000 T  0386:2
                    END;                                                            02305000 T  0389:3
                        IF T≠0 THEN%                                                02306000 T  0389:3
                            BEGIN%                                                  02307000 T  0390:2
                            LBI:T←WAITIO(@40000000+ADR,@367,LUN);%                  02308000 T  0391:0
                    IF T.[45:1] THEN GO TO QZ;%                                     02309000 T  0393:1
                                IF T.[42:1] THEN GO TO LB ELSE%                     02310000 T  0394:3
                                GO TO LBI%                                          02311000 T  0395:2
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                    END              END;%                                   02312000 T  0396:2
                     IF T=0 THEN                                             02313000 T  0396:2
                         IF FIB[5].[42:1]                                    02313500 T  0397:1
                             THEN FORGETSPACE(L INX 2)                       02313600 T  0398:0
                             ELSE FILECLOSE(TOPIO INX 0);                    02314000 T  0400:0
                    GO TO STT                                                02315000 T  0405:1
               END; END;                                                     02316000 T  0405:3
                    FORGETSPACE(A);%                                         02317000 T  0406:1
                    T←MSTART;MIXER←@400+P1MIX;%                              02318000 T  0407:0
                    WHILE(L←T.[CF])≠0 DO%                                    02319000 T  0409:0
                         IF(T←M[L]).[3:12]=MIXER AND T>0 THEN%               02320000 T  0411:1
                             IF M[M[L+4].[CF]+5].[41:1] THEN FILECLOSE(L+7); 02321000 T  0414:3
                    T←MSTART;MIXER←@600+P1MIX;%                              02322000 T  0421:1
                    WHILE(L←T.[CF])≠0 DO%                                    02323000 T  0423:1
                         IF(T←M[L]).[3:12]=MIXER AND T>0 THEN%               02324000 T  0425:2
                         IF M[L+7].[41:1] THEN FILECLOSE(M[L+1] INX 3);%     02325000 T  0429:0
                    FOR LUN ← 0 STEP 1 UNTIL 31 DO%                          02326000 T  0435:0
                         IF RDCTABLE[LUN].[8:6] = P1MIX THEN%                02327000 T  0436:0
                             SLAPITOFF;%                                     02328000 T  0437:2
                         PRT[P1MIX,8]:=T:=NFO[(P1MIX-1)×NDX+2]INX 2;         02328100 T  0441:1
                         M[T]:=-FLAG(0);M[T-1]:=-FLAG(0&(PRT)[6:33:9]);      02328200 T  0445:3
                    P(.COM5); GO TO DIFFCOM;                                 02329000 T  0451:2
               END;%                                                         02330000 T  0452:1
                                                                                   SIZE= 0453 WORDS
          SAVE PROCEDURE TERMINALMESSAGE(N); VALUE N; REAL N;                02330100 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00156
               BEGIN NT1 ← N;                                                02330200 T  0000:0
                    P(0,STF);                                                02330300 T  0000:3
                    TERMINALMESSAGA(NT1);                                    02330400 T  0001:2
               END;                                                          02330500 T  0002:1
                                                                                   SIZE= 0003 WORDS
          $ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                           02330599 T  0000:0
          ARRAY UNITCODE[*];                                                 02347100 T  0000:0
           BOOLEAN PROCEDURE READEMFROMDISK(H,IB);                           02347150 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00030
                    VALUE H,IB; ARRAY H[*],IB[*]; FORWARD;                   02347160 T  0000:0
          $ SET OMIT = NOT(PACKETS)                                          02347199 T  0000:0
          REAL PROCEDURE UNITIN(TINU,WHAT); VALUE WHAT; REAL WHAT;           02348000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00030
             ARRAY TINU[*];                                                  02348500 T  0000:0
             BEGIN REAL HOLD; INTEGER I;%                                    02349000 T  0000:0
                    STREAM(A←0:WHAT);%                                       02350000 T  0000:0
                    BEGIN SI ← WHAT;%                                        02351000 T  0002:0
                    L:    IF SC = " " THEN                                   02352000 T  0002:1
                              BEGIN SI ← SI + 1; GO TO L; END;%              02353000 T  0002:3
                              DI ← LOC A; DI ← DI + 5; DS ← 3 CHR;%          02353500 T  0003:1
                    END STREAM;%                                             02354000 T  0004:0
                    HOLD ← POLISH;%                                          02355000 T  0004:1
          $ SET OMIT = NOT(SHAREDISK)                                        02355999 T  0004:3
          $ SET OMIT = SHAREDISK                                             02356499 T  0004:3
                    FOR I←0 STEP 1 UNTIL 64 DO                               02356500 T  0004:3
          $ POP OMIT                                                         02356501 T  0006:0
                    IF TINU[I].[30:18]=HOLD.[30:18] THEN                     02357000 T  0006:0
                    BEGIN                                                    02357500 T  0008:0
                         HOLD←I;                                             02357600 T  0008:2
                         I←70;                                               02357700 T  0009:1
                    END;                                                     02357800 T  0010:0
                    UNITIN←IF I<70 THEN 69 ELSE HOLD;                        02358000 T  0012:1
             END UNITIN;                                                     02359000 T  0015:0
                                                                                   SIZE= 0016 WORDS
```

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PROCEDURE IDLETIME;%                                                    02360000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00031
    BEGIN REAL C,N;%                                                    02361000 T  0000:0
        INTEGER T;%                                                     02362000 T  0000:0
        HALT;%                                                          02363000 T  0000:0
        C ← ((P2MIX≥0)+1)×(CLOCK+P(RTR));%                              02364000 T  0001:1
        FOR T ← 1 STEP 1 UNTIL MIXMAX DO%                               02365000 T  0004:0
            IF JAR[T,*] ≠ 0 THEN%                                       02366000 T  0005:0
                BEGIN N ← N+1;%                                         02367000 T  0006:0
                    C ← -JAR[T,3]-PROCTIME[T]+C;                        02368000 T  0007:3
                END;%                                                   02369000 T  0010:3
        IF N ≠ 0 THEN%                                                  02370000 T  0013:0
            T ← (C-OLDIDLETIME)/N;%                                     02371000 T  0013:3
        OLDIDLETIME ← C;%                                               02372000 T  0016:0
        FOR N ← 1 STEP 1 UNTIL MIXMAX DO%                               02373000 T  0016:3
            IF JAR[N,*] ≠ 0 THEN%                                       02374000 T  0018:0
                JAR[N,7] ← *P(DUP)+T;%                                  02375000 T  0019:0
        NOPROCESSTOG ← NOPROCESSTOG-1;%                                 02376000 T  0024:1
    END;%                                                               02377000 T  0025:2
                                                                                SIZE= 0026 WORDS
DEFINE ENTERUSERFILE(ENTERUSERFILE1,ENTERUSERFILE2,ENTERUSERFILE3)=     02378000 T  0000:0
 P(EUF(ENTERUSERFILE1,ENTERUSERFILE2,ENTERUSERFILE3),DEL)#;             02378500 T  0000:0
REAL PROCEDURE EUF(A,B,L); VALUE A,B,L; REAL A,B,L; FORWARD;            02379000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00032
 INTEGER PROCEDURE CALCULATEPURGE(PURGE);%                              02380000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00032
    VALUE PURGE; REAL PURGE;%                                           02381000 T  0000:0
    BEGIN REAL Y,D;%                                                    02382000 T  0000:0
        REAL J;%                                                        02383000 T  0000:0
        REAL C=+1;;%                                                    02384000 T  0000:0
        STREAM(A←[DATE],B←[Y]);%                                        02385000 T  0001:0
            BEGIN SI←A; SI←SI+3; DS ← 2 OCT; DS ← 3 OCT END;%           02386000 T  0002:0
        J ← (D ← ( Y+3) DIV 4×1461+(Y+3) MOD 4 × 365 +D+PURGE-%         02387000 T  0003:1
            1) DIV 1461;%                                               02388000 T  0008:0
        IF (Y ← (D ← D MOD 1461) DIV 365) = 4 THEN%                     02389000 T  0010:0
            BEGIN Y ← 3; D ← 365 END ELSE D ← D MOD 365;%               02390000 T  0012:3
        CALCULATEPURGE ← (4×J+Y-3)×1000+D+1;%                           02391000 T  0018:1
        STREAM(C←[C]); BEGIN SI←C; DS ← 8 DEC END;%                     02392000 T  0022:0
    END;%                                                               02393000 T  0023:2
                                                                                SIZE= 0024 WORDS
PROCEDURE CHANGEDATE(BUFF); VALUE BUFF; REAL BUFF; FORWARD;             02393100 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00033
DEFINE MIDNIGHT =  BEGIN XCLOCK:=XCLOCK-WITCHINGHOUR;                   02393200 T  0000:0
                        DATE:=CALCULATEPURGE(1);                        02393225 T  0000:0
                        CHANGEDATE(SPACE(10));                          02393250 T  0000:0
                    END#;                                               02393300 T  0000:0
REAL PROCEDURE TAPELABEL(M,F,R,C,P); VALUE M,F,R,C,P;          %AI      02393400 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00033
    REAL M,F,R,C,P; FORWARD;                                    %AI     02393500 T  0000:0
 $ SET OMIT = NOT(DEBUGGING OR DUMP)                                    02393999 T  0000:0
PROCEDURE LOGCOMMENT (Q); VALUE Q; REAL Q;  FORWARD;                    02434790 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00033
 $ SET OMIT = NOT(DEBUGGING)                                            02434999 T  0000:0
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                   02522099 T  0000:0
 PROCEDURE NAMEID(A,KTR);%                                              02603000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00033
    REAL A,KTR;%                                                        02604000 T  0000:0
    BEGIN;%                                                             02605000 T  0000:0
        STREAM(A←[A];KTR);%                                             02606000 T  0000:0
        BEGIN DI ← A; DS ← 8 LIT "0       ";%                           02607000 T  0001:1
```

```
                    DI ← DI-7; SI ← KTR;%                                   02608000 T  0002:3
               L:   IF SC = " " THEN%                                       02609000 T  0003:1
                         BEGIN SI ← SI+1; GO TO L END;%                     02610000 T  0003:3
                    IF SC = """ THEN%                                       02611000 T  0004:1
                         BEGIN SI ← SI+1;%                                  02612000 T  0004:3
                              7(IF SC = "←" THEN JUMP OUT TO EXIT;%         02613000 T  0005:0
                                   DS ← CHR;%                               02614000 T  0006:1
                                   IF SC = """ THEN JUMP OUT TO LQ;);%      02615000 T  0006:2
               LQ:            SI ← SI+1;%                                   02616000 T  0007:3
                              GO TO EXIT;%                                  02617000 T  0008:0
                         END;%                                              02618000 T  0008:1
                    IF SC = ALPHA THEN%                                     02619000 T  0008:1
                         BEGIN 7(DS ← CHR;%                                 02620000 T  0008:3
                              IF SC = ALPHA THEN GO TO LA;%                 02621000 T  0009:1
                              JUMP OUT TO EXIT;%                            02622000 T  0010:0
               LA:            );%                                           02623000 T  0010:2
               LE: IF SC = ALPHA THEN  %                                    02623500 T  0010:3
                         BEGIN SI←SI+1; GO TO LE; END;  %                   02623501 T  0011:1
                              GO TO EXIT;%                                  02624000 T  0011:3
                         END;%                                              02625000 T  0012:0
                    IF SC = "←" THEN%                                       02626000 T  0012:0
                         BEGIN DS ← CHR; SI ← SI-1; GO TO EXIT END;%        02627000 T  0012:2
                    IF SC = "=" THEN%                                       02628000 T  0013:1
                         BEGIN DS←2 LIT"←←"; SI←SI+1; GO TO EXIT END;       02629000 T  0013:3
                    DS ← CHR;%                                              02630000 T  0014:3
               EXIT:A ← SI;%                                                02631000 T  0015:0
               END;%                                                        02632000 T  0015:1
               KTR ← P(XCH);%                                               02633000 T  0015:2
          END;%                                                             02634000 T  0016:2
                                                                                   SIZE= 0017 WORDS
     REAL PROCEDURE TAPELABEL(MULFID,FID,REELNO,CYCLE,PURGE);%              02635000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00034
                    VALUE MULFID,FID,REELNO,CYCLE,PURGE;%                   02636000 T  0000:0
                    REAL MULFID,FID,REELNO,CYCLE,PURGE;%                    02637000 T  0000:0
          BEGIN     REAL LBL;%                                              02638000 T  0000:0
                    LBL←GETSPACE(10,0,0)+2;%                                02639000 T  0000:0
                    STREAM(%                                                02640000 T  0002:3
                     DATE, MULFID,FID,REELNO,CYCLE,PU←CALCULATEPURGE(PURGE),%  02641000 T  0003:0
                          LBL);%                                            02642000 T  0005:0
                         BEGIN%                                             02643000 T  0005:2
                              DS←8 LIT" LABEL  ";%                          02644000 T  0005:2
                              SI←LOC MULFID;%                               02645000 T  0006:3
                              DS←WDS;%                                      02646000 T  0007:0
                              DS←WDS;%                                      02647000 T  0007:1
                              DS←3 DEC;%                                    02648000 T  0007:2
                              SI ← LOC DATE; SI ← SI+3;%                    02649000 T  0007:3
                              DS ← 5 CHR;%                                  02650000 T  0008:1
                              SI←LOC CYCLE;%                                02651000 T  0008:2
                              DS← 2 DEC;                                    02652000 T  0008:3
                              SI←LOC PU; SI←SI+3;%                          02653000 T  0009:0
                              DS←5 CHR; DS←1 LIT"0";%                       02654000 T  0009:2
                              5(DS←8 LIT"00000000")%                        02655000 T  0010:1
                         END;%                                              02656000 T  0012:0
                    TAPELABEL←LBL;%                                         02657000 T  0012:1
          END;%                                                             02658000 T  0013:0
                                                                                   SIZE= 0014 WORDS
     REAL PROCEDURE LABELASCRATCH(LBL); VALUE LBL;REAL LBL;%                02659000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00035
          BEGIN%                                                            02660000 T  0000:0
                    REAL LUN,TM,REEL,T;                                     02661000 T  0000:0
```

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                    LBL ←  P(.LBL,LOD).[33:15];%                                    02662000 T  0000:0
                    STREAM(L←LBL+3,R←[REEL]);                                       02662100 T  0002:3
                    BEGIN SI←L; DS←3 OCT END;                                       02662200 T  0004:1
                    LUN←FINDOUTPUT(M[LBL+1],M[LBL+2],REEL,0,0,2,0,TM);              02663000 T  0005:0
                    IF LUN≥0 THEN                                                   02663100 T  0010:2
                    BEGIN;                                                          02663200 T  0011:1
                    STREAM(A←PRNTABLE[LUN].[30:18],T←[T],L←LBL+6);                  02664000 T  0011:3
                    BEGIN DI←DI+5; SI←LOC A; DS←5DEC; SI←SI-8; DI←T;                02664100 T  0014:1
                          DS←8DEC; DI←DI-7; DS←6FILL;                END;           02665000 T  0015:2
                    RDCTABLE[LUN].[8:6]←P1MIX;                                      02665100 T  0016:2
                    MULTITABLE[LUN]←M[LBL+1];                                       02665150 T  0019:0
                    RRRMECH←TWO(LUN) OR RRRMECH;                                    02665200 T  0021:2
                    P(WAITIO(LBL OR @120500000000,0,LUN),DEL);%                     02666000 T  0023:1
                    TM←0&"2←"[1:37:11];%                                            02667000 T  0025:1
                    P(WAITIO([TM],0,LUN),DEL);%                                     02668000 T  0027:0
          $ SET OMIT = PACKETS                                                      02668099 T  0028:2
                    IF OPNMESS THEN                                                 02668100 T  0028:2
          $ POP OMIT                                                                02668101 T  0029:1
                    FILEMESSAGE(" OUT"&TINU[LUN][6:30:18],T,                        02668500 T  0029:1
                              M[LBL+1],M[LBL+2],REEL,0,0,OPNMESS);                  02668600 T  0029:1
                    END;                                                            02668800 T  0035:3
                    LABELASCRATCH←LUN%                                              02669000 T  0035:3
                END LABELASCRATCH;%                                                 02670000 T  0035:3
                                                                                          SIZE= 0039 WORDS
PROCEDURE NSECOND;FORWARD;%                                                         02692000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00037
 DEFINE  CHECKSTACKSPACE = IF P(PRT[P1MIX,*] INX 0)-P(0,RDS)<128     %WF          02693000 T  0000:0
                    THEN BEGIN P(64,STS);  GO TO STACKOVERFLOW;  END#;   %WF      02694000 T  0000:0
ARRAY USERCODE[*];                                                                  02695000 T  0000:0
REAL PROCEDURE SECURITYCHECK(M,F,U,H);                                              02696000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00037
VALUE M,F,U; REAL M,F,U,H; FORWARD;                                                 02696100 T  0000:0
PROCEDURE MAKEPRESENT(C); VALUE C; REAL C; FORWARD;                                 02696200 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00037
PROCEDURE SIGNOFF(V,F,W);VALUE V,F,W;ARRAY V[*],F[*];REAL W;FORWARD;                02696300 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00037
SAVE PROCEDURE IOREQUEST(F,I,L); VALUE F,I,L; ARRAY F,L[*]; REAL I;                 02696500 T  0000:0
                                                                      START OF SAVE SEGMENT; BASE ADDRESS = 00159
FORWARD;                                                                            02696600 T  0000:0
BOOLEAN PROCEDURE MTXIN(I,U,B); REAL U,B; INTEGER I; FORWARD;                       02696700 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00037
 $ SET OMIT = NOT(BREAKOUT AND AUXMEM)                                              02697299 T  0000:0
DEFINE CODEADDRESS(CODEADDRESS1,CODEADDRESS2)=                                      02697710 T  0000:0
          ACTUALOVERLAYADDRESS(1,CODEADDRESS1,CODEADDRESS2)#,                       02697720 T  0000:0
      DATADDRESS(DATADDRESS1,DATADDRESS2)=                                          02697730 T  0000:0
          ACTUALOVERLAYADDRESS(0,DATADDRESS1,DATADDRESS2)#;                         02697740 T  0000:0
SAVE INTEGER PROCEDURE ACTUALOVERLAYADDRESS(TYPE,MIX,LOC);                          02697750 T  0000:0
                                                                      START OF SAVE SEGMENT; BASE ADDRESS = 00159
     VALUE TYPE,MIX,LOC; INTEGER TYPE,MIX,LOC; FORWARD;                             02697770 T  0000:0
 $ SET OMIT = NOT(BREAKOUT)                                                         02700000 T  0000:0
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                               03500099 T  0000:0
 SAVE PROCEDURE INITIATEIO(IODESC,MIX,U);%                                          04000000 T  0000:0
                                                                      START OF SAVE SEGMENT; BASE ADDRESS = 00159
          VALUE IODESC,MIX,U;%                                                      04001000 T  0000:0
          REAL MIX,U;%                                                              04002000 T  0000:0
          REAL IODESC;%                                                             04003000 T  0000:0
          BEGIN REAL C=+1;LABEL EXIT;                                               04004000 T  0000:0
 $ SET OMIT = NOT(STATISTICS)                                                       04004099 T  0000:0
          P(TIO);                                                                   04004200 T  0000:0
          CHANNEL[P(DUP)]←U;                                                        04005000 T  0000:1
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            P([IODESC],IIO);                                                    04006000 T  0001:2
            CHANIO[C]←CLOCK+P(RTR);                                             04007000 T  0002:0
      $ SET OMIT = NOT(STATISTICS AND AUXMEM)                                   04007099 T  0003:3
            IF U < 16 THEN                                                      04008000 T  0003:3
                BEGIN                                                           04008100 T  0004:2
                IF IODESC.[22:1] THEN%                                          04009000 T  0005:0
                    BEGIN TRANSACTION[U] ← IF IODESC.[18:1] THEN 0%             04010000 T  0005:3
                              ELSE TRANSACTION[U]=1;%                           04011000 T  0008:1
                          GO TO EXIT;%                                          04012000 T  0010:1
                    END;                                                        04013000 T  0010:3
      $ SET OMIT = NOT(STATISTICS)                                              04013009 T  0010:3
                END                                                             04013100 T  0010:3
                    ELSE                                                        04013200 T  0010:3
            IF (U OR 1)=19 THEN                                                 04013300 T  0010:3
            BEGIN                                                               04014000 T  0012:2
                EUIO[C]←CLOCK+P(RTR);                                           04014002 T  0013:0
      $ SET OMIT = NOT(STATISTICS)                                              04014009 T  0014:3
            END;                                                                04014100 T  0014:3
      $ RESET OMIT                                                              04014105 T  0014:3
            TRANSACTION[U] := P(DUP,LOD)+1;                                     04014500 T  0014:3
        EXIT:END;%                                                              04015000 T  0016:3
                                                                                          SIZE= 0017 WORDS
      SAVE PROCEDURE QUEUEUP(U); VALUE U ; REAL U;%                             04016000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00176
        BEGIN IF U=30 THEN                                                      04016100 T  0000:0
            WAITQUE[FIRSTWAIT:=(FIRSTWAIT+31) AND 31]:=U ELSE                   04016200 T  0000:3
            BEGIN WAITQUE[NEXTWAIT] ← U;%                                       04017000 T  0004:0
                NEXTWAIT ← NEXTWAIT+1 AND 31;%                                  04018000 T  0005:3
            END;%                                                               04019000 T  0007:2
        END;                                                                    04019100 T  0007:2
                                                                                          SIZE= 0008 WORDS
      $ SET OMIT = NOT(DFX)                                                     04019499 T  0000:0
      SAVE PROCEDURE STARTIO(U); VALUE U; REAL U;%                              04020000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00184
        BEGIN REAL T=NT1,R=NT2, S=NT3;%                                         04021000 T  0000:0
      $ SET OMIT = NOT(DFX)                                                     04021099 T  0000:0
                IF (T ← UNIT[U]).[13:5] = 0 THEN%                               04022000 T  0000:0
                IF (S ← T.[18:15]) < @1777 THEN%                                04023000 T  0002:0
      $ SET OMIT = NOT(DFX)                                                     04023099 T  0004:1
                    BEGIN IF P(TIO) ≠ 0 THEN%                                   04024000 T  0004:1
                          BEGIN INITIATEIO(IOQUE[S],LOCATQUE[S],[3:5]           04025000 T  0005:2
                                ,U);%                                           04026000 T  0007:0
                              P(3);%                                            04027000 T  0008:1
                          END%                                                  04028000 T  0008:2
                      ELSE BEGIN QUEUEUP(U);%                                   04029000 T  0008:2
                              P(4);%                                            04030000 T  0009:3
                          END;%                                                 04031000 T  0010:0
                      P(T&P(XCH)[15:45:3],[UNIT[U]],←);%                        04032000 T  0010:0
      $ SET OMIT = DFX                                                          04032999 T  0012:0
                    END;%                                                       04033000 T  0012:0
      $ POP OMIT                                                                04033001 T  0012:0
      $ SET OMIT = NOT(DFX)                                                     04033049 T  0012:0
        END;%                                                                   04034000 T  0012:0
                                                                                          SIZE= 0013 WORDS
      SAVE PROCEDURE PRINTERFINISH(U); VALUE U; REAL U;%                        04035000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00197
            BEGIN                                                               04036000 T  0000:0
      $ SET OMIT = NOT(NEWLOGGING)                                              04036099 T  0000:0
                IF NOT UNIT[U].[16:1] THEN UNIT[U].[17:1] ← 0;                  04036200 T  0000:0
                STARTIO(U);%                                                    04037000 T  0004:1
```

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                GO TO EXTERNAL;%                                                    04038000 T  0005:0
            END;%                                                                   04039000 T  0005:2
                                                                                              SIZE= 0006 WORDS
        SAVE PROCEDURE IOREQUEST(FINAL,IODESC,LOCATION);%                           04040000 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00203
            VALUE FINAL,IODESC,LOCATION;%                                           04041000 T  0000:0
            ARRAY FINAL,LOCATION[*];%                                               04042000 T  0000:0
            REAL IODESC;%                                                           04043000 T  0000:0
            BEGIN REAL U=NT1,T=NT2,S=NT3,R=+1;%                                     04044000 T  0000:0
        $ SET OMIT = NOT(DFX)                                                       04044099 T  0000:0
                IF IOQUESLOTS LEQ                                                   04045000 T  0000:0
                  (U:=IF LOCATION.[9:1] OR P1MIX=0 THEN 0 ELSE 7) THEN              04045100 T  0000:1
                    SLEEP([IOQUESLOTS],@77-U);                                      04045200 T  0004:2
                IOQUEAVAIL ← IOQUE[S:=IOQUEAVAIL];                                  04046000 T  0007:0
        $ SET OMIT = NOT(STATISTICS)                                                04047009 T  0008:2
        $ SET OMIT = NOT(DFX)                                                       04047099 T  0008:2
        $ SET OMIT = NOT(DKBNODFX AND NOT DFX)                                      04048701 T  0008:2
        $ SET OMIT = DFX                                                            04048799 T  0008:2
                IF (T ← UNIT[U ← LOCATION.[12:6]]).[13:5] = 0 THEN                  04048800 T  0008:2
        $ POP OMIT                                                                  04048801 T  0011:3
                    BEGIN IF P(TIO) ≠ 0 THEN%                                       04049000 T  0011:3
                        BEGIN INITIATEIO(IODESC,P1MIX,U);%                          04050000 T  0013:0
                            P(3);%                                                  04051000 T  0014:3
                        END ELSE BEGIN QUEUEUP(U);%                                 04052000 T  0015:0
                            P(4);%                                                  04053000 T  0016:1
                        END;%                                                       04054000 T  0016:2
                        T ← T&P(XCH)[15:45:3]&S[18:33:15];%                         04055000 T  0016:2
                    END ELSE%                                                       04056000 T  0018:3
                        IF T.[18:6] = @77 THEN%                                     04057000 T  0018:3
                            T.[18:15] ← S ELSE%                                     04058000 T  0020:2
                        LOCATQUE[P(T.[33:15],DUP)]←LOCATQUE[R]&%                    04059000 T  0022:1
                            S[18:33:15];%                                           04060000 T  0024:2
        $ SET OMIT = NOT(DFX)                                                       04060099 T  0025:2
                IOQUESLOTS:=IOQUESLOTS-1;                                           04060500 T  0025:2
                LOCATQUE[S] ← LOCATION&P1MIX[3:43:5] OR @7777700000;%               04061000 T  0026:3
        $ SET OMIT = DFX                                                            04061999 T  0029:3
                UNIT[U] ← T&S[33:33:15];%                                           04062000 T  0029:3
        $ POP OMIT                                                                  04062001 T  0031:2
                IOQUE[S] ← IODESC;%                                                 04063000 T  0031:2
                FINALQUE[S] ← FINAL;%                                               04064000 T  0032:3
            END;%                                                                   04065000 T  0034:1
                                                                                              SIZE= 0036 WORDS
        SAVE PROCEDURE FINISHOFFIO(U); VALUE U; REAL U;%                            04067000 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00239
            BEGIN REAL T=NT1, FIN=NT3, V=NT4, IOD=NT6;                              04068000 T  0000:0
                LABEL ON,OFF,C0,C1,C2,C3,C4,C5,C6,C7;%                              04069000 T  0000:0
                SWITCH CSW ← C0,C1,C2,C3,C4,C5,C6,C7;%                              04070000 T  0000:0
                IF FIN > 0 THEN%                                                    04071000 T  0000:0
                IF FIN.[25:1] THEN%                                                 04072000 T  0000:3
                    BEGIN T ← FIN.[3:5];%                                           04073000 T  0002:0
                        FIN ← FIN&IOD[3:3:5]&0[25:25:1];%                           04074000 T  0003:3
                        GO TO CSW[T];%                                              04075000 T  0006:2
                    END ELSE GO ON ELSE GO ON;%                                     04076000 T  0011:2
            C0:  GO TO C0;%                                                         04077000 T  0011:2
            C1:  FIN.[8:10] ← V;%                                                   04078000 T  0012:0
                 GO TO C2;%                                                         04079000 T  0013:3
            C3:  FIN.[8:10] ← V;%                                                   04080000 T  0014:1
            C4:  FIN ← NOT V INX 1 INX FIN;%                                        04081000 T  0016:0
                 GO TO C5;%                                                         04082000 T  0018:0
            C6:  STREAM(A←0:IOD);%                                                  04083000 T  0018:2
```

```
                    BEGIN DI ← LOC A; SI ← IOD; SI ← SI+4; DS←4 OCT END;          04084000 T  0019:3
               T ← P DIV 8-1;%                                                    04085000 T  0021:0
          OFF: FIN.[8:10] ← T;%                                                   04086000 T  0022:2
               GO TO C2;%                                                         04087000 T  0024:1
          C7:  STREAM(A+0:IOD);%                                                  04088000 T  0024:3
                    BEGIN DI ← LOC A; SI ← IOD; DS ← 4 OCT END;%                  04089000 T  0026:0
               T ← P DIV 8-1;%                                                    04090000 T  0027:0
               FIN ← (NOT T INX 1 INX FIN)&T[8:38:10];%                           04091000 T  0028:2
               GO TO C5;%                                                         04092000 T  0031:2
          ON:  IF U < 16 THEN%                                                    04093000 T  0032:0
               IF IOD.[22:1] THEN%                                                04094000 T  0032:3
          C5:       M[IOD INX 1] ← M[NOT V INX IOD INX 1] ← V%                    04095000 T  0034:0
               ELSE%                                                              04096000 T  0037:3
          C2:  M[IOD INX NOT 0] ← V;%                                             04097000 T  0039:0
          END;%                                                                   04098000 T  0041:3
                                                                                        SIZE= 0042 WORDS
     PROCEDURE PROGRAMRELEASE;%                                                   04099000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00037
          BEGIN NAME T; REAL FSX=JUNK;                                            04100000 T  0000:0
               ARRAY R=-4[*];%                                                    04101000 T  0000:0
               REAL IOD=NT1;%                                                     04102000 T  0000:0
               ARRAY LOCN[*];%                                                    04103000 T  0000:0
               REAL S;                                                            04103050 T  0000:0
               CHECKSTACKSPACE;%                                        %WF       04103100 T  0000:0
       LOCN←M[S←(IF(IOD←NFLAG(M[P(T←[M[PRT[P1MIX,9]]],DUP,PRL)]))                 04104000 T  0005:0
                                   .[22:1] THEN 2 ELSE NOT 1) INX IOD];           04105000 T  0008:2
                    IF IOD.[3:5]= 6 THEN                                          04105100 T  0013:3
               BEGIN; STREAM(S:=M[PRT[P1MIX,8]] INX P(DUP,0,XCH,DIA 10,           04105200 T  0015:0
                         DIB 30,TRB 2),0←@600005);                                04105300 T  0018:2
                    BEGIN SI←S; DS←2 CHR END;                                     04105400 T  0019:3
     $ SET OMIT = NOT(STATISTICS)                                                 04105409 T  0020:2
          IF JUNK.[36:12]≠45 AND RELTOG                                           04105500 T  0020:2
               OR M[IOD].[3:6] = 0 AND M[IOD]  LSS (DIRDSK × DSKTOG) THEN         04105510 T  0021:3
       IF (USERCODE[P1MIX] EQV MCP) ≠ NOT 0 THEN %                                04105550 T  0027:3
                    BEGIN TERMINATE(P1MIX); TERMINALMESSAGE(30) END;              04105600 T  0030:3
                    IF(FS[P1MIX,(FSX←P(*(NOT 2 INX LOCN),4,COC).[13:11]           04105650 T  0032:3
                                   DIV 5).[40:4]]                                 04105700 T  0035:3
                         AND TWO(IOD.[24:1]&FSX[43:44:4]))≠0 THEN                 04105750 T  0037:1
                    BEGIN T[0]:=T[0]&1[19:47:1]&0[26:40:7];                       04105800 T  0040:2
                         M[(*((NOT 2)INX LOCN))INX 5 ]:= NABS(*P(DUP));           04105850 T  0043:3
                         GO TO RETURN;                                            04105890 T  0047:2
                    END;                                                          04105900 T  0048:0
                    IF NOT IOD.[24:1] THEN M[S].[11:1]←1;                         04105950 T  0048:0
               END DISK BUSINESS;                                                 04105990 T  0052:1
               IOREQUEST(R,IOD,LOCN);%                                            04106000 T  0052:1
               T[0].[39:1] ← 0;                                                   04107000 T  0054:0
               IF (NT1←P(*(NOT 2 INX LOCN),13,COC).[10:9]-1)≠0 THEN%              04108000 T  0055:3
                    STREAM(NT1,C←T[0],T);                                         04109000 T  0059:3
                         BEGIN SI ← T; SI ← SI+8; DS ← NT1 WDS;%                  04110000 T  0061:2
                              SI ← LOC C; DS ← WDS;%                              04111000 T  0062:2
                         END;%                                                    04112000 T  0063:0
               GO TO RETURN;%                                                     04113000 T  0063:1
          END;%                                                                   04114000 T  0063:3
                                                                                        SIZE= 0065 WORDS
     SAVE PROCEDURE NEWIO;%                                                       04115000 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00281
          BEGIN REAL S=NT3,U=NT4;%                                                04116000 T  0000:0
               S ← UNIT[U←WAITQUE[FIRSTWAIT]].[18:15];%                           04117000 T  0000:0
               INITIATEIO(IOQUE[S],LOCATQUE[S].[3:5],U);%                         04118000 T  0002:2
               FIRSTWAIT ← FIRSTWAIT+1 AND 31;%                                   04119000 T  0004:3
```

```
                UNIT[U].[13:5] ← 3;%                                                    04120000 T  0006:2
            END;%                                                                       04121000 T  0009:0
                                                                                                SIZE= 0010 WORDS
        REAL MDELTA = @11;%                                                             04121050 T  0000:0
        REAL MLOG   = @12;%                                                             04121100 T  0000:0
        REAL MROW   = @13;%                                                             04121150 T  0000:0
        REAL LOGSIZE          = @43;%                                                   04121170 T  0000:0
        REAL LOGHOLDER        = @56;%                                                   04121200 T  0000:0
        REAL NUMAINTMESS      = @57;%                                                   04121250 T  0000:0
        REAL LOGENTRY         = @63;%                                                   04121300 T  0000:0
        REAL NXDISK           = @76;%                                                   04121350 T  0000:0
        ARRAY MAINTLOGARRAY = @77[*];%                                                  04121400 T  0000:0
        PROCEDURE DISKORAUXERROR(R); VALUE R; REAL R; FORWARD;                          04121410 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00040
         PROCEDURE ACTUALIOERR(R);  VALUE R;  REAL R;  FORWARD;                         04121425 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00040
        PROCEDURE LINKUP(TYPE,KEY); VALUE TYPE,KEY; REAL TYPE,KEY; FORWARD;%            04121450 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00040
        PROCEDURE CHECKJOBORFILEMESS(MIX,FIB,U);%                                       04121500 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00040
                VALUE MIX,FIB,U; REAL MIX,FIB,U; FORWARD;%                              04121550 T  0000:0
        PROCEDURE LOGOUTMAINT(B); VALUE B; REAL B; FORWARD;%                            04121600 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00040
        PROCEDURE MAINTLOGGER(B); VALUE B; REAL B; FORWARD;%                            04121650 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00040
        DEFINE                                                                          04121700 T  0000:0
            LOGVERSION=(                    % VERSION NUMBER ON NEXT CARD               04121710 T  0000:0
                        2                                                               04121720 T  0000:0
                       &                    % CURRENT ENTRIES ON NEXT CARD              04121730 T  0000:0
                            21                                                          04121740 T  0000:0
                          [30:42:6])#,                                                  04121750 T  0000:0
            TAPEBUFFERSIZE = 200#;                                                      04121850 T  0000:0
        ARRAY MAINTBUFFER[*];                                                           04121950 T  0000:0
         SAVE PROCEDURE IOFINISH(R,C);  VALUE R,C;  REAL R,C;                           04122000 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00291
            BEGIN BOOLEAN STOP;                                                         04123000 T  0000:0
                COMMENT                                                                 04123010 T  0000:0
                    WHEN E≠0, STOP TAKES THE FOLLOWING VALUES:                          04123020 T  0000:0
                    0     DISK ERROR (OTHER THAN NOT READY ON A DFX SYSTEM).            04123030 T  0000:0
                    1     ANY ERROR OTHER THAN THOSE LISTED FOR 0, 2 OR 3.              04123040 T  0000:0
                    2     LOCKED ADDRESS (SHAREDISK).                                   04123050 T  0000:0
                    3     ANY ERROR OCCURRING WHEN UNIT[U].[5:8]≠0 (A RETRY).           04123060 T  0000:0
                    WHEN E=0, STOP TAKES THESE VALUES:                                  04123070 T  0000:0
                    -2    IO FOR WHICH COMPLETE SHOULD NOT BE SET (DATACOM OR           04123080 T  0000:0
                          DISK WRITE BEFORE READ WITH UNIT OR EU SWITCH).               04123090 T  0000:0
                    1     PRINTER IO.                                                   04123100 T  0000:0
                    0     NORMAL IO.                                                    04123110 T  0000:0
                END COMMENT;                                                            04123120 T  0000:0
                REAL TIM=STOP+1, U=TIM+1;                                               04123500 T  0000:0
                LABEL TEST,NOWAIT,PROC,NEW,QUP,INCR;                                    04124000 T  0000:0
                LABEL ERRORS,DISKERR,DS,X,SW,LP,TAPE,DK,DX,DX1,DC,OK,L1;                04125000 T  0000:0
                REAL T=NT1,S=NT2,S1=NT3,V=NT4,E=NT5,I=NT7;%                             04126000 T  0000:0
                NAME LOCN=E;  REAL IOD=NT6, FIN=S1;                                     04127000 T  0000:0
                SWITCH TYPE ← OK,LP,TAPE,OK,DK,OK,OK,OK,OK,OK,DC;                       04128000 T  0000:0
                                                                                        04128010 T  0000:0
        $ SET OMIT = NOT(DFX)                                                           04128099 T  0000:0
        $ SET OMIT = NOT(NEWLOGGING)                                                    04128799 T  0000:0
                P(CHANIQ[C]);                           % INITIALIZES TIM               04128900 T  0000:0
                S:=(T:=UNIT[P(CHANNEL[C],DUP)]).[18:15];  % INITIALIZES U               04129000 T  0000:0
        $ SET OMIT = NOT SEPTICTANK                                                     04129490 T  0003:2
```

```
ERRORS:                                                                  04129900 T  0003:2
    IF (E ← R.[26:7])+(V ← T.[5:8] ) ≠ 0 THEN%                           04130000 T  0003:2
        BEGIN IF(S1 ← FINALQUE[S]) < 0 THEN%                             04131000 T  0006:3
            IF (E ← S1.[25:8] AND E) = 0 THEN%                           04132000 T  0008:3
                IF V = 0 THEN                                            04133000 T  0011:2
$ SET OMIT = NOT DFX                                                     04133090 T  0012:3
                    GO TO OK;                                            04133500 T  0012:3
            IF (L AND @774) ≠ 16 THEN                                    04134000 T  0013:1
                BEGIN                                                    04134050 T  0014:2
                RDCTABLE[U]:=(*P(DUP))& (C-1)[1:46:2]& R[3:3:5];         04134060 T  0015:0
                IF U=30 THEN                                             04134300 T  0017:3
                    BEGIN                                                04134400 T  0019:3
                    IF (R.[28:5] AND @25) ≠ 0 THEN                       04134500 T  0020:1
                        BEGIN                                            04134600 T  0022:0
                        IF ( NOT R.[32:1] AND R.[28:1]) THEN             04134700 T  0022:2
                            GO TO DC;                                    04134800 T  0024:2
                        GO TO X;                                         04134900 T  0025:1
                        END                                              04134950 T  0025:3
                    ELSE GO TO DC;                                       04134955 T  0025:3
                    END ELSE GO TO X;                                    04134960 T  0025:3
                END;                                                     04134990 T  0025:3
            IF E = 0 THEN%                                               04135000 T  0025:3
                BEGIN     % RECOVERED MASS STORAGE %                     04137000 T  0026:2
                MAINTBUFFER[NXDISK:=NXDISK+4 AND 15]                     04137100 T  0027:0
                   := -0 & U[2:46:2] & LOCATQUE[S][4:3:5] &              04137110 T  0028:3
                      (LOGENTRY:=LOGENTRY+1)[CTF] &                      04137120 T  0031:2
                      RDCTABLE[U][18:1:2];                               04137130 T  0033:0
                IF FINALQUE[S] GTR 0 THEN                                04137140 T  0035:0
                BEGIN                                                    04137150 T  0036:0
                MAINTBUFFER[NXDISK]:=(*P(DUP)) &                         04137160 T  0036:2
                        ((M[M[S1:=LOCATQUE[S] INX NOT 2] INX 4]          04137170 T  0037:2
                            .[13:11] DIV ETRLNG)+1)[9:39:9];             04137180 T  0040:1
                M[S1].[7:1] := 1;                                        04137190 T  0044:0
                END;                                                     04137200 T  0046:3
                P(MAINTBUFFER[NXDISK+2]:=IOQUE[S]);                      04137202 T  0046:3
$ SET OMIT = NOT(AUXMEM)                                                 04137203 T  0048:3
                P(NFLAG(M[P]));                                          04137212 T  0048:3
                P(P&V[1:44:4],[MAINTBUFFER[NXDISK+1]],STD);              04137215 T  0049:3
                MAINTBUFFER[NXDISK+3]:=MAINTBUFFER[U];                   04137220 T  0052:0
                IF (LOGHOLDER INX 0) = 0 THEN                            04137230 T  0054:0
                BEGIN                                                    04137240 T  0055:1
                  LOGHOLDER.[CF]:=[MAINTBUFFER[NXDISK]];                 04137250 T  0055:3
                  INDEPENDENTRUNNER(P(.MAINTLOGGER),0,100);              04137260 T  0057:1
                END ELSE M[LOGHOLDER.[FF]].[CF]:=                        04137270 T  0058:2
                        [MAINTBUFFER[NXDISK]];                           04137275 T  0060:3
                LOGHOLDER.[FF]:=[MAINTBUFFER[NXDISK]];                   04137280 T  0062:0
                NUMAINTMESS:= NUMAINTMESS+1;                             04137290 T  0063:2
                T.[5:8] ← 0;                                             04142000 T  0064:3
                GO TO SW;                                                04142500 T  0066:2
                END;%                                                    04143000 T  0067:0
            IF V = 0 THEN%                                               04144000 T  0067:0
$ SET OMIT = NOT(SHAREDISK)                                              04144099 T  0067:3
                BEGIN % ORIGINAL ERROR ON MASS STORAGE%                  04145000 T  0067:3
                    TINU[U].[18:12] ← P(DUP).[18:12]+1;%                 04146000 T  0068:1
                    MAINTBUFFER[U]:=R&TWO(C)[18:43:4];                   04146100 T  0071:3
                    RDCTABLE[U]:=(*P(DUP))&(C-1)[1:46:2];                04146200 T  0074:2
                    V:=129;                                              04147000 T  0077:2
$ SET OMIT = NOT(SHAREDISK)                                              04147399 T  0078:1
                END%                                                     04148000 T  0078:1
            ELSE BEGIN % RECURRENT ERROR ON MASS STORAGE%                04149000 T  0078:1
```

```
                                P(MAINTBUFFER[U]:=P(DUP,LOD) OR                    04150100 T  0078:3
                                     R&TWO(C)[18:43:4]);                           04150200 T  0079:3
                                IF (V ← V+1) > 137 THEN%                           04151000 T  0082:1
                                BEGIN R:=P;                                        04151200 T  0084:0
                                   IF LOCATQUE[S].[9:1] THEN % OLAY I/O            04151220 T  0085:0
                                      M[LOCATQUE[S]]:=R OR IOMASK;                 04151230 T  0086:0
$ SET OMIT = NOT(AUXMEM)                                                           04151235 T  0088:3
   DISKERR:                                                                        04151300 T  0088:3
$ SET OMIT = NOT(DFX)                                                              04151399 T  0088:3
                                     T.[5:10]:=0;                                  04152400 T  0088:3
                                     GO TO DX;                                     04152600 T  0090:2
                                END;                                               04152800 T  0091:0
                                P(DEL);                                            04152900 T  0091:0
                             END;%                                                 04153000 T  0091:1
                        UNIT[U] ← T&V[5:40:8];%                                    04154000 T  0091:1
   DS:%                                                                            04155000 T  0093:2
                        CHANNEL[P(TIO)] ← U;%                                      04156000 T  0093:2
                        P([IOQUE[S]],IIO);%                                        04157000 T  0094:3
                        GO TO EXTERNAL ;%                                          04158000 T  0095:2
   X:                   STOP ← (V≠0)×2+1;%                                         04159000 T  0096:0
                        T.[5:13] ← 32×E+8;%                                        04160000 T  0098:1
                        GO TO TEST;                                                04161000 T  0101:0
                   END;                                                            04161500 T  0101:2
   SW:: GO TO TYPE[T.[1:4]];%                                                      04162000 T  0101:2
   LP:                                                                             04163000 T  0109:0
                 IF STOP := (T := T&O[16:16:1]).[17:1] THEN                        04164000 T  0109:0
   TEST:            IF FIRSTWAIT = NEXTWAIT THEN GO TO INCR ELSE%                  04165000 T  0111:3
                       GO TO NEW ELSE GO TO NOWAIT;%                               04166000 T  0113:0
   TAPE:                                                                           04167100 T  0114:0
         IF (R.[21:5] AND @23) = @22 THEN          % BINARY READ                  04167200 T  0114:0
         IF R.[15:3] ≠ ((8-R.[22:1]) AND 7) THEN % PARTIAL WORD TRANSFER           04167300 T  0115:3
              IF MOD3IOS THEN                      % IF MODEL III CONTROLS         04167400 T  0119:0
              BEGIN R.[28:1]:=1;                   % TREAT IT AS A PARITY.          04167500 T  0120:1
                   GO TO ERRORS;                                                   04167600 T  0122:2
              END ELSE GO TO OK                                                    04167700 T  0123:0
         ELSE GO TO OK ELSE GO TO OK;                                              04167800 T  0123:0
   DK:                                                                             04167900 T  0123:0
         IF NOT (I:=IOQUE[S]).[24:1] THEN                                          04168000 T  0123:0
         IF FINALQUE[S].[24:1] THEN%                                               04169000 T  0124:3
$ SET OMIT = DFX                                                                   04169090 T  0126:1
         BEGIN                                                                     04169100 T  0126:1
$ SET OMIT = NOT DKBNODFX OR OMIT                                                  04169190 T  0126:3
$ SET OMIT = DKBNODFX OR OMIT                                                      04170750 T  0126:3
              M[IOQUE[S]:=I&1[24:4/:1]]:=*(P(DUP) INX P(0,LNG,XCH));               04170800 T  0126:3
$ POP OMIT                                                                         04170900 T  0131:2
              GO TO DS;                                                            04171000 T  0131:2
         END ELSE GO TO OK ELSE GO TO OK;                                          04171200 T  0132:0
$ POP OMIT                                                                         04171250 T  0132:0
$ SET OMIT = NOT DFX                                                               04171350 T  0132:0
   DC:                                                                             04174000 T  0132:0
$ SET OMIT = NOT(DATACOM )                                                         04174999 T  0132:0
                                                                                   04176000 T  0132:0
$ SET OMIT = DFX                                                                   04176899 T  0132:0
   DX:  DX1:                                                                       04176900 T  0132:0
$ POP OMIT                                                                         04176901 T  0132:0
   OK:  IF FIRSTWAIT = NEXTWAIT THEN                                               04177000 T  0132:0
   NOWAIT:  IF (S1 := LOCATQUE[S].[18:15]) LSS @1777 THEN                          04178000 T  0132:3
                 INITIATEIO(IOQUE[S1],LOCATQUE[S1].[3:5],U)%                       04180000 T  0135:2
            ELSE                                                                   04181000 T  0138:0
   PROC:            T := T&O[16:16:2]                                              04182000 T  0138:1
```

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                    ELSE                                                    04183000 T  0139:1
                    BEGIN%                                                  04187000 T  0140:2
NEW:                     NEWIO;%                                            04188000 T  0141:0
                         IF STOP THEN GO TO INCR;%                          04189000 T  0141:2
QUP:                     IF LOCATQUE[S].[FF] GTR @1777 THEN GO TO PROC;     04190000 T  0142:2
                         QUEUEUP(U);%                                       04191000 T  0144:3
                         T ← T&4[13:43:5];%                                 04192000 T  0145:2
                    END;%                                                   04193000 T  0147:1
INCR:                                                                       04194000 T  0147:1
               IF (TIM←CLOCK+P(RTR)-TIM) LSS 0 THEN TIM←0;                  04194050 T  0147:1
               IOD:=IOQUE[S];                                               04194100 T  0150:3
               IF (U OR 1 )=19 THEN                                         04194200 T  0151:3
               BEGIN                                                        04194300 T  0153:0
                    IF (JUNK:=M[IOD].[5:7])>9 THEN                          04194400 T  0153:2
                      JUNK:=NEUP.[CF]+(JUNK AND @17);                       04194500 T  0156:0
                    IF JUNK<NEUP.[FF] THEN                                  04194550 T  0158:3
                      PEUIO[JUNK]:=P(DUP,LOD)+CLOCK+P(RTR)-EUIO[C];         04194600 T  0160:0
               END;                                                         04194650 T  0163:3
               I←(S1←LOCATQUE[S]).[3:5]; % FIND MIX INDEX                   04194700 T  0163:3
$ SET OMIT = NOT(NEWLOGGING)                                                04194799 T  0165:3
               IOTIME[I]←(*P(DUP))+TIM;                                     04195000 T  0165:3
               IF P(.S1,LOD).[10:1] THEN FORGETSPACE(IOD);  % NO MEM MESSAGE 04195100 T  0167:3
               IF E≠0 THEN                                                  04196200 T  0170:0
                    IF STOP THEN                                            04196400 T  0170:3
                         P(T)                                               04196600 T  0171:2
                    ELSE GO TO L1                                           04196800 T  0172:0
               ELSE BEGIN                                                   04197000 T  0172:1
                         RETURNIOSPACE(S);                                  04199000 T  0172:3
L1:                      P(T&P(.S1,LOD)[FTF]);                              04201000 T  0176:0
                    END;                                                    04202000 T  0177:0
               P([UNIT[U]],STD);                                            04203000 T  0177:0
               FIN ← FINALQUE[S] AND NOT MEMORY;%                           04205000 T  0177:3
               IF (U OR 1) NEQ 17 THEN                                      04205012 T  0179:2
               IF IOD.[24:1] THEN%                                          04206000 T  0180:3
                    BEGIN V ← ABS(IOD.[33:15]-R.[33:15]);%                  04207000 T  0182:0
                         IF IOD.[8:10] < V THEN%                            04208000 T  0185:0
                         IF IOD.[23:1] THEN%                                04209000 T  0186:1
                              V ← IOD.[8:10];%                              04210000 T  0187:2
                         IF U < 16 THEN%                                    04211000 T  0189:1
                         IF IOD.[21:2] = 0 THEN%                            04212000 T  0190:0
                              BEGIN; STREAM(A←0:B←M[S1.[33:15]+V-1]);%      04213000 T  0191:3
                                        BEGIN SI ← LOC B;%                  04214000 T  0195:3
                                             IF SC = "←" THEN TALLY ← 1;%   04215000 T  0196:0
                                             A ← TALLY;%                    04216000 T  0196:3
                                        END;%                               04217000 T  0197:0
                                   V ← -P+V;%                               04218000 T  0197:1
                              END;%                                         04219000 T  0198:2
                    IF U ≠ 30 THEN % NOT DCA                                04219100 T  0198:2
                    FINISHOFFIO(U);%                                        04220000 T  0199:1
                    END;%                                                   04221000 T  0200:2
               IF E ≠ 0 THEN%                                               04222000 T  0200:2
$ SET OMIT = NOT(SHAREDISK)                                                 04222499 T  0201:1
                    BEGIN IF STOP LEQ 1 THEN                                04223000 T  0201:1
                         BEGIN                                              04223500 T  0202:2
                              INDEPENDENTRUNNER(                            04224000 T  0203:0
                                 P(.DISKORAUXERROR)+((U AND @774) NEQ 16),  04224010 T  0203:1
                                 R&S[3:43:5],140)]                          04224100 T  0205:0
                              LOCATQUE[S].[11:1]:=1;                        04224500 T  0206:3
                         END                                                04224750 T  0209:1
                         ELSE IF FIN < 0 THEN P(LOCATQUE[S],R,XCH,←);%      04225000 T  0209:1
```

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                    END%                                                    04226000 T  0212:1
          $ SET OMIT = NOT(SHAREDISK)                                       04226499 T  0212:1
               ELSE BEGIN%                                                  04227000 T  0212:1
                    IF FIN < 0 THEN P(R OR IOMASK,LOCATQUE[S],←)%           04228000 T  0212:3
                    ELSE                                                    04229000 T  0215:2
          $ SET OMIT = NOT (DATACOM OR DFX OR DKBNODFX)                     04229099 T  0215:2
                         BEGIN                                              04229200 T  0215:2
                         LOCN ← [M[LOCATQUE[S]]];%                          04230000 T  0216:0
                         IOD ← IOD.[33:15];%                                04231000 T  0217:2
                         WHILE LOCN[0].[33:15] ≠ IOD DO%                    04232000 T  0218:3
                              LOCN ← 1 INX LOCN;%                           04233000 T  0220:2
                         LOCN[0] ← M OR FIN;%                               04234000 T  0222:1
                    END  END;%                                              04235000 T  0223:2
               IF P1MIX = 0 THEN GO TO NOTHINGTODO;%                        04236000 T  0223:2
               IF I = P1MIX THEN GO TO RETURN;%                             04237000 T  0225:1
               GO TO INITIATE;%                                             04238000 T  0227:0
          END IOCOMPLETE;%                                                  04239000 T  0227:2
                                                                                   SIZE= 0228 WORDS
     SAVE REAL PROCEDURE WAITIO(IOD,MASK,U);%                               04240000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00519
               VALUE MASK,U,IOD;%                                           04241000 T  0000:0
               REAL MASK,U,IOD;%                                            04242000 T  0000:0
               BEGIN%                                                       04243000 T  0000:0
                    REAL T;                                                 04243100 T  0000:0
                    DEFINE OCTADE= DS←3 RESET;3(IF SB THEN DS←SET ELSE      04243200 T  0000:0
                         DS←RESET;SKIP SB)#;                                04243300 T  0000:0
                    IOD ← NFLAG(P(.IOD,LOD))&TINU[U][3:3:5];%               04244000 T  0000:0
                    MASK ← NOT MASK;%                                       04245000 T  0003:0
                      IOREQUEST(NABS(IOD)&MASK[25:40:8],IOD,                04246000 T  0004:0
                         [IOD]&U[12:42:6]);%                                04247000 T  0006:0
                    IOD ← IOD&0[25:25:8]&0[19:19:1];%                       04248000 T  0007:2
                    SLEEP([IOD],IOMASK);%                                   04249000 T  0010:1
                    IF ((WAITIO←IOD.[26:7]) AND MASK AND MASK.[18:15])≠0 THEN 04250000 T  0011:3
                    BEGIN                                                   04251000 T  0015:0
                         T←GETSPACE(12,0,0)+2;                              04251100 T  0015:2
                         STREAM(IOD←IOD.[26:7],MASK←(NOT MASK).[41:7],      04251200 T  0017:3
                              Z←[TINU[U]],T←T);                             04251300 T  0019:3
                         BEGIN DS←20 LIT" UNEXP I-O ERROR ON ";SI←Z;        04251400 T  0020:3
                              SI←SI+5;DS←3 CHR;DS←8 LIT"!RESULT=";          04251500 T  0023:3
                              SI←LOC IOD;SI←SI+6;SKIP 3 SB;3(OCTADE);       04251600 T  0025:2
                              DS←6 LIT",MASK=" ;SI←SI+6;SKIP 3 SB;          04251700 T  0029:0
                              3(OCTADE);DS←2 LIT",←";                       04251800 T  0030:2
                         END;                                               04251900 T  0033:3
                         IF P1MIX = 0 THEN BEGIN P(T); PUNT(0) END;         04252000 T  0034:0
                         IF TERMIX.[CF]≠P1MIX THEN                          04252100 T  0036:1
                         BEGIN                                              04252200 T  0037:2
                              TERMINATE(P1MIX&19[18:33:15]);                04252300 T  0038:0
                              IF JAR[P1MIX,9].[1:1] THEN % "SYSTEM" JOB     04252500 T  0039:1
                              BEGIN                                         04252600 T  0040:3
                                   SPOUT(T);                                04252700 T  0041:1
                                   BLASTQ(U);                               04252800 T  0042:0
                              END ELSE                                      04252900 T  0042:3
                              TERMINALMESSAGE("T);                          04253000 T  0042:3
                         END;                                               04253100 T  0044:1
                    END;                                                    04253200 T  0044:1
               END;                                                         04253300 T  0044:1
                                                                                   SIZE= 0045 WORDS
     REAL PROCEDURE TAPEPARITYRETRY(R,U,KEY);%                              04254000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00040
          VALUE R,U,KEY; REAL R,U,KEY; FORWARD;%                            04255000 T  0000:0
```

```
PROCEDURE DISKORAUXERROR(R); VALUE R; REAL R;                                   04256000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00040
                                                                                04256200 T  0000:0
BEGIN                                                                           04256400 T  0000:0
REAL    MSCW    = -2,                                                           04256600 T  0000:0
        U       = +1,                                                           04256800 T  0000:0
        S       = +2,                                                           04257000 T  0000:0
        E       = +3,                                                           04257200 T  0000:0
        T       = +4,                                                           04257400 T  0000:0
        MK      = +5,       CELL  = MK,                                         04257600 T  0000:0
        IOD     = +6,                                                           04257800 T  0000:0
        MIX     = +7,                                                           04258000 T  0000:0
        FIN     = +8,       PARITY= FIN,                                        04258200 T  0000:0
        KEY1    = +9,                                                           04258400 T  0000:0
        KEY2    = +10,                                                          04258600 T  0000:0
        DISC    = +11,                                                          04258800 T  0000:0
        MASK    = +12,                                                          04259000 T  0000:0
        AREA    = +13,      U1    = AREA,                                       04259200 T  0000:0
        RSLT    = +14,      MSG   = RSLT,                                       04259400 T  0000:0
        PRTMAX  = +15,      T1    = PRTMAX,                                     04259600 T  0000:0
        DISKCELL= +16,      T2    = DISKCELL,                                   04259800 T  0000:0
        TERMSET = +17,                                                          04260000 T  0000:0
        BLAYIO  = +18,                                                          04260200 T  0000:0
        DSKADRS = +19;                                                          04260400 T  0000:0
                                                                                04260600 T  0000:0
NAME    LOCN    = +16;                                                          04260800 T  0000:0
                                                                                04261000 T  0000:0
LABEL DSIT, START, QUIT, RETRY, KILLL, KILLER;                                  04261200 T  0000:0
                                                                                04261400 T  0000:0
$ SET OMIT = NOT(AUXMEM)                                                        04261600 T  0000:0
                                                                                04271200 T  0000:0
SUBROUTINE DISKMESSAGE;                                                         04271400 T  0000:0
  BEGIN                                                                         04271600 T  0001:0
  STREAM(MSG, MK, A:=TINU[U], MIX, B:=DSKADRS,                                  04271800 T  0001:0
       S:=IOQUE[S].[27:6], R, KEY1:=KEY1:=GETSPACE(10,0,0)+2);                  04272000 T  0002:3
    BEGIN                                                                       04272200 T  0006:2
    SI:=LOC MK; SI:=SI+7; DS:=CHR;                                              04272400 T  0006:2
    SI:=SI+5; DS:=3CHR; DS:=LIT" ";                                             04272600 T  0007:1
    CI:=CI+MSG;                                                                 04272800 T  0008:1
    GO L0; GO L1; GO L2; GO L3; GO L4; GO L5; GO L6; GO L7;                     04273000 T  0008:3
L0: DS:= 9LIT"NOT READY";     GO TO MX;                                         04273200 T  0010:3
L1: DS:= 4LIT"BUSY";          GO TO MX;                                         04273400 T  0012:2
L2: DS:= 8LIT"I/O MEM ";                                                        04273600 T  0013:2
L3: DS:= 6LIT"PARITY";        GO TO MX;                                         04273800 T  0014:3
L4: DS:=12LIT"I/O INV ADDR"; GO TO MX;                                          04274000 T  0016:0
L5: DS:= 3LIT"EU ";           GO TO L0;                                         04274200 T  0018:0
L6: DS:=13LIT"INV DISK ADDR";GO TO MX;                                          04274400 T  0019:0
L7: DS:=10LIT"WRITE LOCK";                                                      04274600 T  0021:1
MX: DS:= 6LIT", MIX="; DS:=2DEC;                                                04274800 T  0022:3
    MSG:=DI; DI:=DI-2; DS:=FILL; DI:=MSG;                                       04275000 T  0024:0
    DS:=5LIT", DA="; DS:=8CHR;                                                  04275200 T  0025:0
    DS:=7LIT", SEGS="; DS:=2DEC;                                                04275400 T  0026:1
    DS:=4LIT", R=";                                                             04275600 T  0027:3
    16(DS:=3RESET; 3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB));              04275800 T  0028:2
    SI:=SI-5; DS:=5LIT", IO=";                                                  04276000 T  0031:1
    IF SB THEN DS:=2LIT"4,"; SKIP SB;                                           04276200 T  0032:2
    IF SB THEN DS:=2LIT"3,"; SKIP SB;                                           04276400 T  0033:3
    IF SB THEN DS:=2LIT"2,"; SKIP SB;                                           04276600 T  0035:0
    IF SB THEN DS:=2LIT"1,";                                                    04276800 T  0036:1
    DI:=DI-1; DS:=LIT"+";                                                       04277000 T  0037:1
```

```
            END STREAM STATEMENT;                                                   04277200 T  0038:0
         END SUBROUTINE DISKMESSAGE;                                                04277400 T  0038:1
                                                                                    04277600 T  0038:2
      SUBROUTINE DETAILRECORDENTRY;                                                 04277800 T  0038:2
         BEGIN                                                                      04278000 T  0039:0
         KEY2 := GETSPACE(6,9,0) + 2;                                               04278200 T  0039:0
         M[KEY2] := 0 & RDCTABLE[U][18:1:2];                                        04278400 T  0041:1
         IF MIX NEQ 0 THEN                                                          04278600 T  0044:0
            BEGIN                                                                   04278800 T  0044:3
            M[KEY2] := (*P(DUP)) & MIX[20:43:5] &                                   04279000 T  0045:1
            (IF FINALQUE[S] LSS 0 THEN 0 ELSE                                       04279200 T  0047:2
            (M[M[LOCATQUE[S] INX NOT 2] INX 4],[13:11] DIV ETRLNG)+1)[9:39:9];      04279400 T  0049:3
            END;                                                                    04279600 T  0054:2
         M[KEY2+1] := TRANSACTION[U];                                               04279800 T  0055:3
         IF NOT DISC THEN                                                           04280000 T  0058:0
            BEGIN                                                                   04280200 T  0058:2
            STREAM(S:=IOD,[FF], D:=KEY2+2);                                         04280400 T  0059:0
               BEGIN                                                                04280600 T  0061:0
               SI:=LOC S; DS:=8DEC;                                                 04280800 T  0061:0
               END;                                                                 04281000 T  0061:2
            END                                                                     04281200 T  0061:3
         ELSE M[KEY2+2] := DSKADRS;                                                 04281400 T  0061:3
         M[KEY2+3] := IOQUE[S];                                                     04281600 T  0064:1
         M[KEY2+4] := R & RDCTABLE[U][3:3:5];                                       04281800 T  0066:2
         M[KEY2+5] := IF FINALQUE[S] LSS 0 THEN 0 ELSE LOCATQUE[S] INX NOT 2;       04282000 T  0069:3
         END DETAILRECORDENTRY;                                                     04282200 T  0075:0
                                                                                    04282400 T  0075:1
         SUBROUTINE FINISHDETAIL;                                                   04282600 T  0075:1
            BEGIN                                                                   04282800 T  0076:0
            IF MIX NEQ 0 THEN CHECKJOBORFILEMESS(MIX,M[KEY2+5],U);                  04283000 T  0076:0
            LINKUP(4+DISC,KEY2);                                                    04283200 T  0079:3
            END;                                                                    04283400 T  0081:1
                                                                                    04283600 T  0081:2
         R(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0);                04283800 T  0081:2
                                                                                    04284000 T  0086:3
         DISC:=(U:=LOCATQUE[S:=R.[3:5]].[12:6]).[46:1];                             04284200 T  0086:3
         MIX:=LOCATQUE[S].[3:5];                                                    04284400 T  0090:1
         IF (OLAYIO := ((FINALQUE[S] LSS 0) AND (LOCATQUE[S].[9:1]))) THEN          04284600 T  0091:3
            BEGIN                                                                   04284800 T  0094:2
            STREAM(S:=0&FINALQUE[S][CTC]&FINALQUE[S][21:8:12], D:=[DSKADRS]);       04285000 T  0095:0
               BEGIN                                                                04285200 T  0098:0
               SI:=LOC S; DS:=8DEC; % DISK ADDRESS IN FINALQUE FOR OLAY I/O         04285400 T  0098:0
               END;                                                                 04285600 T  0098:2
            END ELSE DSKADRS := M[IOQUE[S]];                                        04285800 T  0098:3
         MK:="*"; MSG:=(-1);                                                        04286000 T  0101:0
         R:=R&IOQUE[S][3:3:5]; % RESTORE HARDWARE UNIT TYPE                         04286200 T  0102:3
         IOD := IOQUE[S];                                                           04286400 T  0104:3
         IF DISC THEN                                                               04286600 T  0105:3
            BEGIN                                                                   04286800 T  0106:0
            IF R.[30:1] THEN % DISK NOT READY                                       04287000 T  0106:2
               BEGIN                                                                04287200 T  0107:1
      $ SET OMIT = NOT(DFX)                                                         04287400 T  0107:3
               UNIT[U]:=(*P(DUP))&@77777[5:20:28];                                  04295400 T  0107:3
               MSG:=0; MK:="#"; % NOT READY                                         04295600 T  0110:1
               DISKMESSAGE;                                                         04295800 T  0111:3
               DETAILRECORDENTRY;                                                   04296000 T  0113:0
               READY   := NOT TWO(U) AND READY;                                     04296200 T  0114:0
               RRRMECH := NOT TWO(U) AND RRRMECH;                                   04296400 T  0116:0
               UNIT[U].[5:10] := 2;                                                 04296600 T  0118:0
               GO TO KILLL;                                                         04298800 T  0120:2
```

```
                 END; % IF NOT READY                                                  04299000 T  0122:0
              LOCATQUE[S].[FF] := NOT 0;                                              04299200 T  0122:0
           IF R.[26:7] NEQ 1 AND NOT OLAYIO THEN % NOT BUSY OR SPECIAL I/O            04299600 T  0124:1
              BEGIN                                                                   04299800 T  0126:1
              PARITY := (IOD.[24:1] AND (R.[26:7]=16)); % PARITY CONDITION            04300000 T  0126:3
              IF FINALQUE[S] GTR 0 THEN % OBJECT JOB ERROR                            04300200 T  0129:2
                 BEGIN                                                                04300400 T  0130:2
                 IF PARITY THEN GO TO START; % RECOVERABLE ERROR                      04300500 T  0131:0
DSIT:            TERMINATE(MIX&20[CTF]);                                              04300600 T  0132:0
                 END % OBJECT ERROR                                                   04301000 T  0133:1
              ELSE                                                                    04301200 T  0133:1
                 BEGIN % MCP I/O                                                      04301400 T  0133:1
                 IF MIX NEQ 0 THEN                                                    04301600 T  0133:3
                    BEGIN                                                             04302000 T  0134:2
                    IF JAR[MIX,9].[1:1] THEN % "SYSTEM" JOB                           04302200 T  0135:0
                          IF PARITY THEN GO TO START;                                 04302600 T  0136:2
                    % DONT DS LIBMAIN/DISK ON PARITY ERROR                            04302800 T  0138:0
                    GO TO DSIT;                                                       04303000 T  0138:0
                    END; % NON-ZERO MIX                                               04303200 T  0138:2
                 END; % MCP I/O                                                       04303400 T  0138:2
              END; % NOT BUSY OR SPECIAL I/O                                          04303600 T  0138:2
                                                                                      04303800 T  0138:2
START:                                                                                04304000 T  0138:2
                                                                                      04304200 T  0138:2
              TRANSACTION[U] := TRANSACTION[U]-1;                                     04304400 T  0138:2
              MASK := IF (FIN := FINALQUE[S]) LSS 0 THEN FIN.[25:8] ELSE @377;        04304600 T  0140:2
              IF (E := R.[25:8] AND MASK) = 0 THEN % ERRORS ARE ACCETABLE             04304800 T  0144:2
                 BEGIN % FIX UP IOQUE                                                 04305000 T  0146:3
QUIT:                                                                                 04305200 T  0147:1
                 IF MSG NEQ (-1) AND DISC THEN DISKMESSAGE;                           04305400 T  0147:1
                 DETAILRECORDENTRY;                                                   04305600 T  0150:0
$ SET OMIT = NOT(AUXMEM);                                                             04305800 T  0151:0
                 RETURNI@SPACE(S);                                                    04309200 T  0151:0
                                                                                      04309400 T  0154:1
                 FIN:=FINALQUE[S] AND NOT MEMORY;                                     04309600 T  0154:1
                 IF (T1:=FIN) LSS 0 THEN % MCP I/O                                    04309800 T  0156:0
                    BEGIN                                                             04310000 T  0157:1
                    IF NOT OLAYIO THEN % I/O FINISH PLACES RESULT DESC. FOR OLAY      04310200 T  0157:3
                       M[LOCATQUE[S]]:=R&E[25:40:8]&IOD[3:3:5] OR IOMASK;             04310400 T  0158:1
                    END % IF MCP I/O                                                  04310600 T  0163:0
                 ELSE                                                                 04310800 T  0163:0
                    BEGIN                                                             04311000 T  0163:0
                    IF E NEQ 0 THEN % ERRORS                                          04311200 T  0163:2
                       BEGIN                                                          04311400 T  0164:1
                       P(.T1,PRL);                                                    04311600 T  0164:3
                       T1 := T1&E[25:40:8];                                           04311800 T  0165:2
                       END                                                            04312000 T  0167:1
                    ELSE P(.T1,IOR);                                                  04312200 T  0167:1
                    LOCN := [M[LOCATQUE[S]]];                                         04312400 T  0168:1
                    IOD := IOD.[33:15];                                               04312600 T  0169:3
                    WHILE LOCN[0].[33:15] NEQ IOD DO LOCN := 1 INX LOCN;              04312800 T  0171:0
                    LOCN[0] := P(.T1,LOD);                                            04313000 T  0174:2
                    END;                                                              04313200 T  0175:2
                 GO TO KILLL;                                                         04313600 T  0175:2
                 END;                                                                 04313800 T  0176:0
              IF E THEN % BUSY                                                        04314000 T  0176:0
                 BEGIN                                                                04314200 T  0176:1
                 MSG:=1; % BUSY                                                       04314400 T  0176:3
RETRY:                                                                                04314600 T  0177:2
$ SET OMIT = NOT(AUXMEM)                                                              04314790 T  0177:2
```

```
                DISKMESSAGE;                                                    04314820 T  0177:2
                DETAILRECORDENTRY;                                              04315000 T  0179:0
        $ SET OMIT = NOT(AUXMEM)                                                04315190 T  0180:0
                T1:=(IF DISC THEN IOQUE[S]&6[3:43:5] ELSE IOQUE[S]);            04315400 T  0180:0
                RETURNI@SPACE(S);                                               04315600 T  0183:3
                                                                                04315800 T  0187:0
                P1MIX:=MIX;                                                     04316000 T  0187:0
                IF NOT OLAYIO THEN % RETRIES ARE OK                             04316400 T  0187:3
                   IOREQUEST(FINALQUE[S], T1,                                   04316600 T  0188:1
                            (IF DISC THEN LOCATQUE[S]&@22[12:42:6] ELSE         04316800 T  0189:3
                             LOCATQUE[S]));                                     04317000 T  0192:2
                P1MIX:=0;                                                       04317200 T  0193:1
                GO TO KILLER;                                                   04317400 T  0194:0
                END; % IF BUSY                                                  04317600 T  0194:2
            IF E.[46:1] THEN % I/O MEMORY PARITY                                04317800 T  0194:2
                BEGIN                                                           04318000 T  0195:1
                MSG:=2;                                                         04318200 T  0195:3
                E:=@1537;                                                       04318400 T  0196:2
                GO TO QUIT;                                                     04318600 T  0197:1
                END;                                                            04318800 T  0197:3
            IF E.[41:1] THEN % INVALID ADDRESS                                  04319000 T  0197:3
                BEGIN                                                           04319200 T  0198:2
                MSG:=4;                                                         04319400 T  0199:0
                E:=@1537;                                                       04319600 T  0199:3
                GO TO QUIT;                                                     04319800 T  0200:2
                END;                                                            04320000 T  0201:0
        $ SET OMIT = NOT(SHAREDISK)                                             04320200 T  0201:0
            IF NOT E.[43:1] THEN % NOT PARITY,CHECK DISK ADDRESS                04325400 T  0201:0
                BEGIN                                                           04325600 T  0202:0
                STREAM(DA:=MASK:=DSKADRS : EU:=MASK.[6:6], A:=0,                04325800 T  0202:2
                EUA:=[MULTITABLE[16+2×MASK.[5:1]]]);                            04326000 T  0204:3
                   BEGIN                                                        04326200 T  0207:0
                   SI:=LOC DA;                                                  04326400 T  0207:0
                   IF SC GTR "1" THEN GO TO BAD;                                04326600 T  0207:1
                   IF SC LSS "0" THEN GO TO BAD;                                04326800 T  0208:0
        $ SET OMIT = SHAREDISK                                                  04327000 T  0208:3
                   7(                                                           04327200 T  0208:3
        $ POP OMIT                                                              04327400 T  0209:0
        $ SET OMIT = NOT(SHAREDISK)                                             04327600 T  0209:0
                   IF SC LSS "0" THEN JUMP OUT TO BAD; SI:=SI+1;                04328200 T  0209:0
                   IF SC GTR "9" THEN JUMP OUT TO BAD);                         04328400 T  0210:1
        $ SET OMIT = SHAREDISK                                                  04328600 T  0211:2
                   SI:=SI-5;                                                    04328800 T  0211:2
        $ POP OMIT                                                              04329000 T  0211:3
        $ SET OMIT = NOT(SHAREDISK)                                             04329200 T  0211:3
                   DI:=LOC DA; DS:=2 OCT;                                       04329800 T  0211:3
                   SI:=EUA; SI:=SI+14; SKIP EU SB;                              04330000 T  0212:1
                   DI:=LOC A; DI:=DI+7; SKIP 2 DB;                              04330200 T  0213:1
                   IF SB THEN SKIP DB;                                          04330400 T  0214:0
                   SI:=LOC DA; SI:=SI+6;                                        04330600 T  0214:3
                   IF SC NEQ "0" THEN GO TO BAD; SI:=SI+1;                      04330800 T  0215:1
                   4(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB);               04331000 T  0216:1
                   SI:=LOC A; SI:=SI+7; IF SC GTR "4" THEN GO BAD;              04331200 T  0218:1
                   IF SC LSS "0" THEN GO BAD;                                   04331400 T  0219:2
                   SI:=EUA; SI:=SI+EU; SKIP SB; SKIP A SB;                      04331600 T  0220:1
                   IF SB THEN GO TO OK;                                         04331800 T  0221:3
        BAD:       TALLY:=1;                                                    04332000 T  0222:2
        OK:        DA:=TALLY;                                                   04332200 T  0222:3
                   END;                                                         04332400 T  0223:0
                IF (MASK:=P) OR E.[42:1] THEN % BAD ADDRESS OR EU NOT READY     04332600 T  0223:1
```

```
                    BEGIN                                                   04332800 T  0224:3
                    MSG:=5+MASK; % 5=EU NOT READY, 6=INVALID DISK ADDRESS   04333000 T  0225:1
                    IF NOT MASK THEN MK:="#";                               04333200 T  0226:2
                    IF (MIX NEQ 0) OR OLAYIO THEN                           04333400 T  0228:1
                       BEGIN                                                04333600 T  0229:2
                       E:=@1537; GO TO QUIT;                                04333800 T  0230:0
                       END;                                                 04334000 T  0231:1
                    DISKMESSAGE;                                            04334200 T  0231:1
                    DETAILRECORDENTRY;                                      04334400 T  0232:0
                    GO TO KILLER; % LET IT HANG                             04334600 T  0233:0
                    END                                                     04334800 T  0233:2
                 ELSE                                                       04335000 T  0233:2
                    BEGIN % MUST BE E.[44:1], MEM.PAR.                      04335200 T  0233:2
                    MSG:=2; E:=@1537; GO TO QUIT;                           04335400 T  0234:0
                    END;                                                    04335600 T  0236:0
                 END; % IF NOT PARITY                                       04335800 T  0236:0
              IF IOQUE[S].[24:1] THEN % DISK PARITY ON READ                 04336000 T  0236:0
                 BEGIN                                                      04336200 T  0237:0
                 MSG:=3; % PARITY                                           04336400 T  0237:2
                 E:=@20;                                                    04336600 T  0238:1
                 GO TO QUIT;                                                04336800 T  0239:0
                 END;                                                       04337000 T  0239:2
              MSG:=7; % WRITE LOCK                                          04337200 T  0239:2
              E:=@1537;                                                     04337400 T  0240:1
              GO TO QUIT;                                                   04337600 T  0241:0
              END; % IF DISK                                                04337800 T  0241:2
                                                                            04338000 T  0241:2
           $ SET OMIT = NOT(AUXMEM)                                         04338200 T  0241:2
        KILLL:                                                              04351600 T  0241:2
           LOCATQUE[S].[11:1]:=0;                                           04351800 T  0241:2
        KILLER:                                                             04352000 T  0244:0
           IF KEY1 NEQ 0 THEN SPOUTER(KEY1,PSEUDOMIX[MIX],35);              04352200 T  0244:0
           IF KEY2 NEQ 0 THEN FINISHDETAIL;                                 04352400 T  0246:0
           IF TERMSET THEN TERMINATE(MIX&20[CTF]);                          04352600 T  0248:0
           KILL([MSCW]);                                                    04352800 T  0250:0
           END PROCEDURE DISKORAUXERROR;                                    04353000 T  0250:3
                                                                                   SIZE= 0251 WORDS
        PROCEDURE ACTUALIOERR(R);  VALUE R;  REAL R;                        04353200 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00049
           BEGIN                                                            04353400 T  0000:0
           REAL     MSCW     = -2,                                          04353600 T  0000:0
                    E        = +1,                                          04353800 T  0000:0
                    T        = +2,                                          04354000 T  0000:0
                    S        = +3,                                          04354200 T  0000:0
                    F        = +4,                                          04354400 T  0000:0
                    U        = +5,                                          04354600 T  0000:0
                    T1       = +6,                                          04354800 T  0000:0
                    T2       = +7,                                          04355000 T  0000:0
                    T3       = +8,                                          04355200 T  0000:0
                    KEY      = +9,                                          04355400 T  0000:0
                    FIN      = NT3,                                         04355600 T  0000:0
                    IOD      = NT6,                                         04355800 T  0000:0
                    MASK     = +10,                                         04356000 T  0000:0
                    DISC     = +11,                                         04356200 T  0000:0
                    TYPE     = +12;                                         04356400 T  0000:0
                                                                            04356600 T  0000:0
           NAME     LOCN = T3;                                              04356800 T  0000:0
                                                                            04357000 T  0000:0
           LABEL L1, L2, D17, D19, D22, START, NOTREADYMESS, NTRDY,         04357200 T  0000:0
                 EOF, REALEOF, TAPERETRY, SIX, SEVEN, FIX, LEAVE,           04357400 T  0000:0
```

```
        REWINDING, NOCODE, CLEAR, KILLL, KILLER;                          04357600 T 0000:0
    LABEL READER, PRINTER, TAPE, DRUM, DISK, SPO, PUNCH,                  04357800 T 0000:0
        PAPERPUNCH, PAPER, DATACOM;                                       04358000 T 0000:0
                                                                          04358200 T 0000:0
    SWITCH W := READER,PRINTER,TAPE,DRUM,DISK,SPO,PUNCH,NOCODE,           04358400 T 0000:0
                PAPERPUNCH,PAPER,DATACOM;                                 04358600 T 0000:0
                                                                          04358800 T 0000:0
    SUBROUTINE MAKEMESS;                                                  04359000 T 0000:0
       BEGIN                                                              04359200 T 0001:0
       STREAM(S1:=F.[43:5], S2:=F.[38:5], A:=TINU[U],                     04359400 T 0001:0
            MX:=LOCATQUE[S].[3:5], KEY:=KEY:=GETSPACE(10,0,0)+2);         04359600 T 0003:1
        BEGIN                                                             04359800 T 0006:3
        SI:=LOC A; SI:=SI+5;                                              04360000 T 0006:3
        DS:=LIT"*"; DS:=3 CHR; DS:=LIT" ";                                04360200 T 0007:1
        CI:=CI+S1; GO TO LL;                                              04360400 T 0008:2
        GO L1; GO L2; GO L3; GO L4; GO L5; GO L6; GO LL; GO LL;           04360600 T 0009:1
        DS:=19 LIT"BLANK TAPE ON WRITE";   GO TO MXX;                     04360800 T 0011:1
L1:     DS:= 4 LIT"BUSY";                  GO TO MXX;                     04361000 T 0014:1
L2:     DS:= 8 LIT"I/O MEM ";                                             04361200 T 0015:1
L3:     DS:= 6 LIT"PARITY";                GO TO MXX;                     04361400 T 0016:2
L4:     DS:=12 LIT"I/O INV ADDR";          GO TO MXX;                     04361600 T 0017:3
L5:     DS:= 9 LIT"I/O ERROR";             GO TO MXX;                     04361800 T 0019:3
L6:     DS:=10 LIT"WRITE LOCK";            GO TO MXX;                     04362000 T 0021:2
LL:     GO TO PS;                                                         04362200 T 0023:1
MXX:    GO TO MIXIT;                                                      04362400 T 0023:2
PS:     DI:=DI-5; DS:=LIT"*"; DI:=DI+4;                                   04362600 T 0023:3
        CI:=CI+S2; GO TO LL0; GO TO LL1; GO TO LL2;                       04362800 T 0024:3
NR:     DS:= 9 LIT"NOT READY";             GO TO MIXIT;                   04363000 T 0026:0
LL0:    DS:= 5 LIT"PRINT";                 GO TO CHK;                     04363200 T 0027:3
LL1:    DS:= 4 LIT"READ";                  GO TO CHK;                     04363400 T 0029:0
LL2:    DS:= 5 LIT"PUNCH";                                                04363600 T 0030:0
CHK:    DS:= 5 LIT"CHECK";                                                04363800 T 0031:0
MIXIT:  DS:= 6 LIT", MIX="; DS:=2 DEC; DS:=LIT"+";                        04364000 T 0032:0
        DI:=DI-3; DS:=FILL;                                               04364200 T 0033:3
        END;                                                              04364400 T 0034:1
       END OF MAKEMESS;                                                   04364600 T 0034:2
                                                                          04364800 T 0034:3
    SUBROUTINE DETAILRECORDENTRY;                                         04365000 T 0034:3
       BEGIN                                                              04365200 T 0035:0
       KEY := GETSPACE(ABS(T2),9,0)+2;                                    04365400 T 0035:0
       M[KEY] := (ABS(T2) DIV 5 -1) & RDCTABLE[U][18:1:2];                04365600 T 0037:2
       IF (NT1:=LOCATQUE[S].[3:5]) NEQ 0 THEN                             04365800 T 0041:2
          BEGIN                                                           04366000 T 0043:2
          M[KEY] := (*P(DUP)) & NT1[20:43:5] &                            04366200 T 0044:0
          (IF FINALQUE[S] LSS 0 THEN 0 ELSE                               04366400 T 0046:1
          (M[M[LOCATQUE[S] INX NOT 2] INX 4].[13:11] DIV ETRLNG)+1)[9:39:9]; 04366600 T 0048:2
          CHECKJOBORFILEMESS(NT1,                                         04366800 T 0053:1
          (IF FINALQUE[S] LSS 0 THEN 0 ELSE LOCATQUE[S] INX NOT 2),       04367000 T 0055:0
          U);                                                             04367200 T 0058:2
          END;                                                            04367400 T 0059:0
       M[KEY+1] := TRANSACTION[U];                                        04367600 T 0059:0
       M[KEY+2]:=IF TYPE=2 THEN RDCTABLE[U] & U[3:43:5] ELSE 0;           04367800 T 0061:1
       M[KEY+3] := IOQUE[S];                                              04368000 T 0066:2
       M[KEY+4] := R & RDCTABLE[U][3:3:5];                                04368200 T 0068:3
       IF TYPE=2 THEN                                                     04368400 T 0072:0
          BEGIN                                                           04368600 T 0072:3
          M[KEY+5] := MULTITABLE[U];                                      04368800 T 0073:1
          M[KEY+6] := LABELTABLE[U];                                      04369000 T 0075:2
          M[KEY+7] := PRNTABLE[U];                                        04369200 T 0077:3
          M[KEY+8] := 0;                                                  04369400 T 0080:0
```

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      M[KEY+9] := 16;                                                   04369600 T  0082:0
      END;                                                              04369800 T  0084:0
   IF T2  GTR  0 THEN LINKUP(TYPE+1,KEY);                               04370000 T  0084:0
   END DETAILRECORDENTRY;                                               04370200 T  0086:3
                                                                        04370400 T  0087:0
   DEFINE MAKEMLOG(MAKEMLOG1) =                                         04370600 T  0087:0
      BEGIN                                                             04370800 T  0087:0
      T2:=MAKEMLOG1; DETAILRECORDENTRY;                                 04371000 T  0087:0
      END#;                                                             04371200 T  0087:0
                                                                        04371400 T  0087:0
   P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0);                               04371600 T  0087:0
                                                                        04371800 T  0090:0
 $ SET OMIT = DATACOM                                                   04371900 T  0090:0
% THIS CODE WAS PLACED HERE FROM OUTER BLOCK TO AVOID CAUSING           04371910 T  0090:0
   IF R=0      %  OVERFLOW OF INTERRUPT STACK                           04371920 T  0090:0
     THEN BEGIN STREAM(B:=T:=GETSPACE(10,0,0)+2);                       04371930 T  0090:2
                DS:=42LIT"#DATACOM/INQUIRY INTERRUPT IGNORED BY MCP.";  04371940 T  0094:0
                SPOUT(T);                                               04371950 T  0099:3
                GO KILLER;                                              04371955 T  0100:2
          END;                                                          04371960 T  0101:0
 $ POP OMIT                                                             04371970 T  0101:0
   U:=LOCATQUE[S:=R.[3:5]].[12:6];                                      04372000 T  0101:0
START:                                                                  04372200 T  0103:2
   T:=UNIT[U]&0[13:13:2];                                               04372400 T  0103:2
   TRANSACTION[U] := TRANSACTION[U]-1;                                  04372600 T  0105:2
   TYPE := T.[1:4];                                                     04372800 T  0107:2
   MASK:=IF (T2:=FINALQUE[S]) LSS 0 THEN T2.[25:8] ELSE @377;           04373000 T  0108:3
   IF (E:=T.[5:8] AND MASK) = 0 THEN              % ACCEPTBLE           04373200 T  0112:3
      BEGIN                                                             04373400 T  0115:0
      F:=1; % RETAIN ERROR FIELD                                        04373600 T  0115:2
      GO TO FIX;                                                        04373800 T  0116:1
      END;                                                              04374000 T  0116:3
   IF E THEN                                  % BUSY                   04374200 T  0116:3
      BEGIN                                                             04374400 T  0117:0
      T3:=1 & (U=30)[43:47:1]; % BUSY/INCOMPLETE MASK                   04374600 T  0117:2
      IF U LSS 16 AND TRANSACTION[U] LEQ 0 THEN                         04374800 T  0119:3
         BEGIN                                                          04375000 T  0121:3
         P(0); % DONT SPOUT MESSAGE                                     04375200 T  0122:1
         GO TO REWINDING;                                               04375400 T  0122:2
         END;                                                           04375600 T  0123:0
      IF U NEQ 25 THEN % NOT SPO                                        04375800 T  0123:0
         BEGIN                                                          04376000 T  0123:3
         F:=1; % BUSY                                                   04376200 T  0124:1
         MAKEMESS;                                                      04376400 T  0125:0
         SPOUTER(KEY,PSEUDOMIX[LOCATQUE[S].[3:5]],35);                  04376600 T  0126:0
         END;                                                           04376800 T  0126:3
      MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                               04377000 T  0126:3
L1:      DO BEGIN                                                       04377200 T  0131:0
         SLEEP([CLOCK],NOT CLOCK);                                      04377400 T  0131:0
         UNIT[U]:=(*P(DUP))&P(T,XCH)[CTC];                              04377600 T  0132:3
         STARTIO(U);                                                    04377800 T  0135:0
         SLEEP([UNIT[U]],@100000000000);                                04378000 T  0135:3
         TRANSACTION[U] := TRANSACTION[U]-1;                            04378200 T  0137:2
         END UNTIL (UNIT[U].[5:8] AND T3) = 0;                          04378400 T  0139:2
      TRANSACTION[U] := TRANSACTION[U]+1;                               04378600 T  0142:0
      IF (UNIT[U].[5:8] AND MASK) = 0 THEN GO TO CLEAR;                 04378800 T  0144:0
      GO TO START;                                                      04379000 T  0146:2
      END;                                                              04379200 T  0148:0
                                                                        04379400 T  0148:0
   IF E.[45:1] THEN                                  % NOT READY        04379600 T  0148:0
```

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            BEGIN                                                                   04379800 T  0148:3
            IF E.[43:1] THEN                                                        04380000 T  0149:1
              BEGIN                                                                 04380200 T  0150:0
              IF TYPE=0 THEN GO TO READER;  % READ CHECK                            04380400 T  0150:2
              IF TYPE=1 THEN GO TO PRINTER; % PRINT CHECK                           04380600 T  0151:3
              IF TYPE=6 THEN GO TO PUNCH;   % PUNCH CHECK                           04380800 T  0153:0
              END;                                                                  04381000 T  0154:1
            IF U NEQ 25 THEN % NOT SPU.                                             04381200 T  0154:1
              BEGIN                                                                 04381400 T  0155:0
NOTREADYMESS:                                                                       04381600 T  0155:2
              F:=96; % NOT READY                                                    04381800 T  0155:2
              MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                                   04382000 T  0156:1
              MAKEMESS;                                                             04382200 T  0160:0
              P(1); % SPOUT MESSAGE                                                 04382400 T  0161:0
REWINDING:                                                                          04382600 T  0161:1
              READY := NOT TWO(U) AND READY;                                        04382800 T  0161:1
NTRDY:                                                                              04383000 T  0163:1
              RRRMECH:=NOT TWO(U) AND RRRMECH;                                      04383200 T  0163:1
              IF P THEN SPOUTER(KEY,PSEUDOMIX[LOCATQUE[S].[3:5]],35);               04383400 T  0165:1
              END;                                                                  04383600 T  0166:2
            UNIT[U].[5:10] := 2;                                                    04383800 T  0166:2
            GO TO KILLL;                                                            04385400 T  0169:0
            END;                                                                    04385600 T  0169:2
D17:                                                                                04385800 T  0169:2
          IF E.[46:1] THEN                                % I/O MEMORY PARITY      04386000 T  0169:2
            BEGIN                                                                   04386200 T  0170:1
            F:=2; % I/O MEM PARITY                                                  04386400 T  0170:3
L2:         MAKEMESS;                                                               04386600 T  0171:2
            SPOUTER(KEY,PSEUDOMIX[LOCATQUE[S].[3:5]],35);                           04386800 T  0173:0
            MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                                     04387000 T  0173:3
            P(@1537); % ACCEPT EOF/EOT/EOP                                          04387200 T  0178:0
            GO TO SIX;                                                              04387400 T  0178:1
            END;                                                                    04387600 T  0178:3
          IF E.[41:1] AND TYPE NEQ 2 THEN                 % I/O INVALID ADDRESS    04387800 T  0178:3
            BEGIN % [41:1] FOR TAPE = BACKWORD DRIVE                                04388000 T  0180:2
D22:        F:=4; % I/O INVALID ADDRESS                                             04388200 T  0181:0
            GO TO L2;                                                               04388400 T  0181:3
            END;                                                                    04388600 T  0182:1
                                                                                    04388800 T  0182:1
          GO TO W[TYPE];                                                            04389000 T  0182:1
                                                                                    04389200 T  0188:3
D19:        E := 1023; GO TO D17;                                                   04389400 T  0188:3
                                                                                    04389600 T  0190:0
SPO:                                                                                04389800 T  0190:0
          IF E.[43:1] THEN GO TO L1; % ERROR BUTTON                                 04390000 T  0190:0
          GO TO D19;                                                                04390200 T  0191:2
                                                                                    04390400 T  0192:0
PRINTER:                                                                            04390600 T  0192:0
          IF E.[42:1] THEN % END OF PAGE                                            04390800 T  0192:0
            BEGIN                                                                   04391000 T  0192:3
            IF IOQUE[S].[27:6]=0 THEN GO FIX; % NOT SPACING                         04391200 T  0193:1
            COMMENT IGNORE EOP IF NO SPACE OR SKIP;                                 04391400 T  0195:1
            IOQUE[S].[18:15] := @40001; % INHIBIT DATA XFER, SKIP TO CHANNEL        04391600 T  0195:1
            GO TO CLEAR;                                                            04391800 T  0197:1
            END;                                                                    04392000 T  0199:0
          IF E.[43:1] THEN                                                          04392200 T  0199:0
            BEGIN                                                                   04392400 T  0199:3
            F:=0; % PRINT CHECK                                                     04392600 T  0200:1
            MAKEMESS;                                                               04392800 T  0201:0
            SPOUTER(KEY,PSEUDOMIX[LOCATQUE[S].[3:5]],35);                           04393000 T  0202:0
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            IF E.[45:1] THEN GO TO NOTREADYMESS; % PRINTER NOT READY          04393200 T  0202:3
            MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                               04393400 T  0204:1
            P(0); % CLEAR ERROR FIELD                                         04393600 T  0208:0
            TINU[U].[18:12] := P(DUP).[18:12]+1;                              04393800 T  0208:1
            GO TO SIX;                                                        04394000 T  0211:3
            END;                                                              04394200 T  0212:1
         GO TO D19; % PARITY                                                  04394400 T  0212:1
                                                                              04394600 T  0212:3
      READER:                                                                 04394800 T  0212:3
         IF E.[43:1] THEN % READ CHECK                                        04395000 T  0212:3
            BEGIN                                                             04395200 T  0213:2
            TINU[U].[18:12] := P(DUP).[18:12]+1;                              04395400 T  0214:0
            F:=32; % READ CHECK                                               04395600 T  0217:2
            MAKEMLOG(5);                                                      04395800 T  0218:1
            MAKEMESS;                                                         04396000 T  0220:0
            P(1); % SPOUT MESSAGE                                             04396200 T  0221:0
            GO TO NTRDY;                                                      04396400 T  0221:1
            END;                                                              04396600 T  0221:3
         IF E.[42:1] THEN % EOF CARD READER-TREAT AS NOT READY                04396800 T  0221:3
            BEGIN                                                             04397000 T  0222:2
            UNIT[U].[5:8] := 4; % ERROR FIELD=NOT READY                       04397200 T  0223:0
            R.[25:8] := 4;      % RESLT.DESC.=NOT READY                       04397400 T  0225:2
            TRANSACTION[U] := TRANSACTION[U]+1;                               04397600 T  0227:1
            GO TO START;                                                      04397800 T  0229:1
            END;                                                              04398000 T  0229:3
         COMMENT MUST BE D19 - USUALLY INVALID CHARACTOR;                     04398200 T  0229:3
         STREAM(A:=0 : B:=IOQUE[S]);                                          04398400 T  0229:3
            BEGIN                                                             04398600 T  0231:1
            DI := A; SI := B; DI := DI+8;                                     04398800 T  0231:1
            IF SC = @14 THEN A := DI;                                         04399000 T  0232:0
            2(40(DI:=DI+8; SI:= SI+1;                                         04399200 T  0232:3
            IF SC = @14 THEN JUMP OUT 2 TO L);                                04399400 T  0233:3
            DI := DI-8; SI := SI-1;));                                        04399600 T  0235:1
            DI := A;                                                          04399800 T  0236:0
      L:    A := DI;                                                          04400000 T  0236:1
            END;                                                              04400200 T  0236:2
         IF (T1 := P) = 0 THEN GO TO D19; % NOT INVALID CHARACTER             04400400 T  0236:3
         IF T1  NEQ  1 THEN                % NOT IN COLUMN 1                   04400600 T  0238:1
            BEGIN                                                             04400800 T  0239:0
            STREAM(A:=TINU[U],T1,KEY:=KEY:=GETSPACE(10,0,0)+2);               04401000 T  0239:2
               BEGIN                                                          04401200 T  0243:0
               DS := LIT "#"; SI := LOC A; SI := SI+5;                        04401400 T  0243:0
               DS := 3 CHR;                                                   04401600 T  0244:0
               DS := 16 LIT " INV CHR IN COL ";                               04401800 T  0244:1
               DS := 2 DEC; DS := LIT "+";                                    04402000 T  0246:2
               END;                                                           04402200 T  0247:1
            P(1); % SPOUT MESSAGE                                             04402400 T  0247:2
            GO TO NTRDY;                                                      04402600 T  0247:3
            END;                                                              04402800 T  0248:1
         E := @40;                                                            04403000 T  0248:1
         F := @3100001;                                                       04403200 T  0249:0
         GO TO LEAVE;                                                         04403400 T  0249:3
                                                                              04403600 T  0252:0
      PUNCH:                                                                  04403800 T  0252:0
         IF E.[43:1] THEN                                                     04404000 T  0252:0
            BEGIN                                                             04404200 T  0252:3
            F:=64; % PUNCH CHECK                                              04404400 T  0253:1
            MAKEMESS;                                                         04404600 T  0254:0
            SPOUTER(KEY,PSEUDOMIX[LOCATQUE[S],[3:5]],35);                     04404800 T  0255:0
            % NEW PUNCH DOES NOT GO NOT-READY ON PUNCH CHECK                 04405000 T  0255:3
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            IF E.[45:1] THEN GO TO NOTREADYMESS; % NOT READY                    04405200 T  0255:3
            MAKEMLOG(5);                                                        04405400 T  0257:1
            TINU[U].[18:12]:=P(DUP).[18:12]+1;                                  04405600 T  0259:0
            F:=0; % ZERO ERROR FIELD                                            04405800 T  0262:2
            GO TO CLEAR;                                                        04406000 T  0263:1
            END;                                                                04406200 T  0263:3
         GO TO D19; % PARITY                                                    04406400 T  0263:3
                                                                                04406600 T  0264:1
      PAPERPUNCH:                                                               04406800 T  0264:1
         IF R.[27:1] THEN % EOR                                                 04407000 T  0264:1
            BEGIN                                                               04407200 T  0265:0
            P(@40);                                                             04407400 T  0265:2
            GO TO SIX;                                                          04407600 T  0265:3
            END;                                                                04407800 T  0266:1
         GO TO D19; % PARITY                                                    04408000 T  0266:1
                                                                                04408200 T  0266:3
      PAPER:                                                                    04408400 T  0266:3
         IF R.[27:2] NEQ 0 THEN GO TO EOF; % BOT/EOT                            04408600 T  0266:3
         IF E.[44:1] THEN % PARITY                                              04408800 T  0268:2
            BEGIN                                                               04409000 T  0269:1
            P(@20);                                                             04409200 T  0269:3
            GO TO SIX;                                                          04409400 T  0270:0
            END;                                                                04409600 T  0270:2
         GO TO NOCODE;                                                          04409800 T  0270:2
                                                                                04410000 T  0271:0
      DATACOM:                                                                  04410200 T  0271:0
         IF(T3:=1&E[43:43:1])=@21 THEN GO TO L1;                                04410400 T  0271:0
      NOCODE:                                                                   04410600 T  0273:3
         F := 5; % I/O ERROR                                                    04410800 T  0273:3
         GO TO L2;                                                              04411000 T  0274:2
                                                                                04411200 T  0275:0
      DRUM: % DRUM NOW HANDLED IN DISKORAUXERROR                                04411400 T  0275:0
      DISK: % DISK NOW HANDLED IN DISKORAUXERROR                                04411600 T  0275:0
         DO UNTIL FALSE;                                                        04411800 T  0275:0
                                                                                04412000 T  0275:3
      TAPE:                                                                     04412200 T  0275:3
         TRANSACTION[U] := TRANSACTION[U]+1;                                    04412400 T  0275:3
         IF E.[44:1] THEN                                                       04412600 T  0277:3
            IF R.[2:1] THEN % MOD III DESCRIPTOR                                04412800 T  0278:2
               BEGIN % COULD BE MEM.PAR.,BLANK TAPE,BOT,EOT                     04413000 T  0279:3
               IF R.[11:1] THEN GO TO D19; % MEMORY PARITY                      04413200 T  0280:1
               OPTION:=OPTION OR M; % MEANS MOD3IOS:=TRUE                       04413400 T  0281:3
               IF R.[24:1] THEN % READING                                       04413600 T  0283:0
                  BEGIN                                                         04413800 T  0283:3
                  IF R.[13:1] THEN R.[27:1]:=1; % BOT, SET EOF                  04414000 T  0284:1
                  IF R.[14:1] THEN % EOT                                        04414200 T  0287:1
                     IF (E AND @367)=0 THEN % PARITY                            04414400 T  0288:0
                        IF R.[27:1]=0 THEN % NOT EOF                            04414600 T  0289:3
                           GO TO FIX; % FINISH I/O                              04414800 T  0291:2
                  END                                                           04415000 T  0292:0
               ELSE                                                             04415200 T  0292:0
                  BEGIN % WRITING                                               04415400 T  0292:0
                  IF R.[12:1] THEN % BLANK TAPE ON WRITE                        04415600 T  0292:2
                     BEGIN                                                      04415800 T  0293:1
                     F:=9; % BLANK TAPE ON WRITE                                04416000 T  0293:3
                     MAKEMESS;                                                  04416200 T  0294:2
                     SPOUTER(KEY,PSEUDOMIX[LOCATQUE[S].[3:5]],35);              04416400 T  0296:0
                     MAKEMLOG(10);                                              04416600 T  0296:3
                     P(16);                                                     04416800 T  0299:0
                     GO TO SIX;                                                 04417000 T  0299:1
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                    END;                                                    04417200 T  0299:3
                 IF R.[14:1] THEN R.[27:1]:=1 ELSE GO FIX; % EOT,SET EOF BIT  04417400 T  0299:3
                 END;                                                       04417600 T  0302:3
              END % MOD III DESCRIPTOR                                      04417800 T  0302:3
           ELSE GO TO D19; % PARITY                                         04418000 T  0302:3
           IF R.[24:1] THEN                                                 04418200 T  0302:3
              BEGIN                                                         04418400 T  0303:2
              IF E.[41:1] THEN GO TO D22; % INVALID ADDRESS                 04418600 T  0304:0
              IF R.[27:1] THEN % EOT                                        04418800 T  0305:2
EOF:          IF MASK.[42:1] THEN % EOF OK                                  04419000 T  0306:1
                 BEGIN                                                      04419200 T  0307:2
REALEOF:         F:=1&(IF R.[24:1] THEN @31 ELSE 0)[CTF];                   04419400 T  0308:0
                 T.[5:8] := @40;                                            04419600 T  0311:1
                 GO TO FIX;                                                 04419800 T  0313:0
                 END                                                        04420000 T  0313:2
              ELSE                                                          04420200 T  0313:2
                 BEGIN % EOF NOT ACCEPTABLE                                 04420400 T  0313:2
                 P(@40);                                                    04420600 T  0314:0
                 GO TO SIX;                                                 04420800 T  0314:1
                 END;                                                       04421000 T  0314:3
TAPERETRY:                                                                  04421200 T  0314:3
              MAKEMLOG(-TAPEBUFFERSIZE);                                    04421400 T  0314:3
              IF (T:=TAPEPARITYRETRY(R,U,KEY)).[5:8]=32 AND                 04421600 T  0317:0
              LOCATQUE[S].[3:5] NEQ 0 THEN GO TO REALEOF;                   04421800 T  0319:3
              P(T.[5:8]);                                                   04422000 T  0322:1
              GO TO SIX;                                                    04422200 T  0323:0
              END;                                                          04422400 T  0323:2
           IF E.[41:1] THEN % WRITE RING                                    04422600 T  0323:2
              IF E.[43:1] THEN % PARITY,WRITE RING                          04422800 T  0324:1
              BEGIN                                                         04423000 T  0325:2
              F:=6; % WRITE LOCK                                            04423200 T  0326:0
              GO TO L2;                                                     04423400 T  0326:3
              END                                                           04423600 T  0327:1
              ELSE GO TO D22; % INVALID ADDRESS                             04423800 T  0327:1
           IF E.[43:1] THEN GO TO TAPERETRY; % PARITY,WRITE RING ONLY       04424000 T  0327:1
           P(@40);                                                          04424200 T  0328:3
SIX:                                                                        04424400 T  0329:0
           T    := T&P(XCH)[5:40:8];                                        04424600 T  0329:0
           F    := 1;                                                       04424800 T  0330:3
FIX:                                                                        04425000 T  0331:2
           E    := T.[5:8]xF;                                               04425200 T  0331:2
           FIN  := S;                                                       04425400 T  0333:1
           IOD  := IOQUE[S];                                                04425600 T  0334:0
SEVEN:                                                                      04425800 T  0335:0
           RETURNIOSPACE(S);                                                04426000 T  0335:0
                                                                            04426200 T  0338:1
           T.[FF]:=S:=LOCATQUE[S].[FF];                                     04426600 T  0338:1
           IF F = @3100001 THEN                                             04426800 T  0341:0
              IF S NEQ @77777 THEN GO TO SEVEN;                             04427000 T  0341:3
           S:=FIN;                                                          04427200 T  0343:2
           IF FALSE THEN                                                    04427400 T  0344:1
LEAVE:                                                                      04427600 T  0344:2
           IOD := IOQUE[S];                                                 04427800 T  0345:0
           FIN := FINALQUE[S] AND NOT MEMORY;                               04428000 T  0346:0
           IF IOD.[24:1] THEN                                               04428200 T  0347:3
              BEGIN                                                         04428400 T  0348:2
              NT4 := M[IOD INX ( IF IOD.[22:1] THEN 1 ELSE NOT 0)];         04428600 T  0349:0
              FINISHOFFIO(U);                                               04428800 T  0353:1
              END;                                                          04429000 T  0354:0
           IF ( T1:= FIN) LSS 0 THEN                                        04429200 T  0354:0
```

```
P(R&E[25:40:8]&IOD[3:3:5] OR IOMASK,LOCATQUE[S],←)                    04429400 T  0355:1
ELSE                                                                  04429600 T  0359:1
   BEGIN                                                              04429800 T  0359:1
   IF E NEQ 0 THEN                                                    04430000 T  0362:0
      BEGIN                                                           04430200 T  0362:3
      P(.T1,PRL);                                                     04430400 T  0363:1
      T1 := T1&E[25:40:8];                                            04430600 T  0364:0
      END                                                             04430800 T  0365:3
   ELSE P(.T1,IOR);                                                   04431000 T  0365:3
   LOCN := [M[LOCATQUE[S]]];                                          04431200 T  0366:3
   IOD := IOD.[33:15];                                                04431400 T  0368:1
   WHILE LOCN[0].[33:15] NEQ IOD DO LOCN := 1 INX LOCN;               04431600 T  0369:2
   LOCN[0] := P(.T1,LOD);                                             04431800 T  0373:0
   END;                                                               04432000 T  0374:0
UNIT[U] := T;                                                         04432200 T  0374:0
CLEAR:                                                                04432400 T  0375:1
UNIT[U] := (*P(DUP))&F[5:20:13];                                      04432600 T  0375:1
STARTIO(U);                                                           04432800 T  0377:3
KILLL:                                                                04433000 T  0378:2
LOCATQUE[S].[11:1]:=0;                                                04433200 T  0378:2
KILLER:                                                               04433400 T  0381:0
KILL([MSCW]);                                                         04433600 T  0381:0
END;                                                                  04433800 T  0381:3
                                                                                  SIZE= 0382 WORDS
 $ SET OMIT = NOT DEBUGGING                                           04544999 T  0000:0
REAL PROCEDURE TAPEPARITYRETRY(R,U,KEY);%                             04548000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00062
VALUE R,U,KEY;%                                                       04549000 T  0000:0
REAL R,U,KEY;%                                                        04550000 T  0000:0
 BEGIN REAL T1,T2,T3; INTEGER I= T1;%                                 04551000 T  0000:0
    REAL RESULT,IOD,OIOD,SPACEMASK,SPACEIOD,M,N,W,MODE;%              04552000 T  0000:0
    REAL J,K;%                                                        04553000 T  0000:0
    REAL ERASEIOD=SPACEMASK;%                                         04554000 T  0000:0
 REAL Z,Y,MIX,BSIZE;                                                  04554100 T  0000:0
    LABEL XIO,GIVELP;                                                 04554200 T  0000:0
    LABEL RP,LX;                                                      04554300 T  0000:0
    REAL SIZE,T4,LIMIT;                                               04554500 T  0000:0
    REAL PTR,BUFFER,BUFFERSIZE,%                                      04554600 T  0000:0
        PATTERN,PATTERN1,PATTERN2,PATTERNWORD;% DON"T CHANGE ORDER    04554700 T  0000:0
    BOOLEAN TESTING,SPACING;%                                         04554800 T  0000:0
    LABEL XXIT,EXIT;%                                                 04555000 T  0000:0
 SUBROUTINE RECORDRETRY;%                                             04555050 T  0000:0
 BEGIN%                                                               04555100 T  0001:0
   IF PTR-KEY = TAPEBUFFERSIZE-1 THEN%                                04555150 T  0001:0
   BEGIN%                                                             04555200 T  0002:3
     T4:= GETSPACE(TAPEBUFFERSIZE,9,0)+2;%                            04555250 T  0003:1
     MOVE(10,KEY,T4);%                                                04555300 T  0005:2
     MEMORY[KEY+8]:= TAPEBUFFERSIZE-10;%                              04555350 T  0007:0
     MEMORY[KEY+9]:= 1023;%                                           04555400 T  0009:2
     LINKUP(3,KEY);%                                                  04555450 T  0011:2
     KEY:= T4; PTR:= KEY+9;%                                          04555500 T  0012:2
   END;%                                                              04555550 T  0014:2
   MEMORY[PTR:=PTR+1]:= IOD;%                                         04555600 T  0014:2
   MEMORY[PTR:=PTR+1]:= RESULT & RDCTABLE[U][19:1:2];%                04555650 T  0017:0
 END RECORDRETRY;%                                                    04555700 T  0020:3
 SUBROUTINE DOIONOW;%                                                 04556000 T  0021:0
 BEGIN FOR Y+1 STEP 1 UNTIL 18 DO                                     04556100 T  0021:0
    BEGIN IF R.[24:1]THEN                                             04557000 T  0022:0
       BEGIN %WAIT 1/15 SEC BETWEEN READ RETRIES                      04557100 T  0022:3
          WHILE T4>CLOCK+P(RTR) DO SLEEP(1,1);                        04557200 T  0023:1
```

```
        T4←CLOCK+P(RTR)+4;                                          04557300 T  0027:0
    END;                                                            04557400 T  0028:3
    IF IOQUESLOTS=0 THEN SLEEP([IOQUESLOTS],63);                    04558000 T  0028:3
    IOQUESLOTS:=IOQUESLOTS-1;                                       04558500 T  0031:2
    IOQUEAVAIL:=IOQUE[T1:=IOQUEAVAIL];                              04559000 T  0032:3
    IOQUE[T1]← IOD;%                                                04560000 T  0034:1
    LOCATQUE[T1]←LOCATQUE[T2 ←(T3←UNIT[U]),[18:15]]&[RESULT]%       04561000 T  0035:2
        [33:33:15]&T2[18:33:15];%                                   04562000 T  0038:3
    UNIT[U] ← T3&T1[18:33:15]&64[5:35:13];%                         04563000 T  0040:0
    STARTIO(U);%                                                    04564000 T  0042:3
    FINALQUE[T1] ← NABS(IOD)&  0 [25:40:8] OR IOMASK;%              04565000 T  0043:2
    RESULT ← 0;%                                                    04566000 T  0046:2
    SLEEP([UNIT[U]],@100000000000);%                                04567000 T  0047:1
    IF RESULT.[30:1] THEN % NOT READY                               04567010 T  0049:0
       BEGIN                                                        04567020 T  0049:3
       MODE := (-16);                                               04567030 T  0050:1
       GO TO EXIT;                                                  04567040 T  0051:1
       END;                                                         04567050 T  0053:0
    IF RESULT.[29:1] AND RESULT.[2:1] THEN                          04567100 T  0053:0
    BEGIN                                                           04567150 T  0054:3
        IF RESULT.[12:1] THEN   %  BLANK TAPE                       04567200 T  0055:1
        IF IOD.[24:1] THEN      %  READ                             04567250 T  0056:0
            TRANSACTION[U]←TRANSACTION[U]-1&IOD[1:22:1] ELSE        04567300 T  0057:1
        BEGIN;   %   WRITE                                          04567310 T  0059:1
            STREAM(A←TINU[U],T←T2←GETSPACE(3,0,0)+2);               04567320 T  0061:1
            BEGIN SI←LOC A; SI←SI+5; DS←3 CHR;                      04567400 T  0064:2
                DS←21 LIT" BLANK TAPE ON WRITE←";                   04567500 T  0065:1
            END;                                                    04567550 T  0068:1
            SPOUT(T2);                                              04567600 T  0068:2
            GO TO XXIT;%                                            04567700 T  0069:1
        END;                                                        04567750 T  0069:3
        IF RESULT.[11:1] THEN   %  MEM PARITY                       04567770 T  0069:3
        BEGIN;                                                      04567780 T  0070:2
            STREAM(A←TINU[U],T←T2←GETSPACE(3,0,0)+2);               04567790 T  0071:0
            BEGIN SI←LOC A; SI←SI+5; DS←3 CHR;                      04567800 T  0074:1
                DS←13 LIT" I/O MEM PAR←";                           04567810 T  0075:0
            END;                                                    04567820 T  0077:0
            SPOUT(T2);                                              04567830 T  0077:1
XXIT:       MODE := 16;                                             04567840 T  0078:0
            IF TESTING THEN GO XIO;                                 04567845 T  0078:3
            RECORDRETRY;                                            04567850 T  0079:3
            GO TO EXIT;                                             04567855 T  0081:0
        END;                                                        04567860 T  0081:2
        IF RESULT.[13:2]≠0 THEN Y←18;                               04567870 T  0081:2
    END ELSE GO TO XIO;                                             04567900 T  0084:0
  END;%                                                             04568000 T  0084:0
  RESULT.[27:1]←1; MODE←32;                                         04568100 T  0086:1
XIO: IF NOT SPACING THEN RECORDRETRY;                               04568200 T  0088:3
   END DOIONOW;%                                                    04568250 T  0091:0
  SUBROUTINE SPACEBACK;                                             04568300 T  0091:1
  BEGIN                                                             04568310 T  0092:0
    IF TRANSACTION[U]=1 THEN                                        04568320 T  0092:0
    BEGIN                                                           04568330 T  0093:0
        IOD:=@4200000000&DIOD[3:3:5];                               04568340 T  0093:2
        DOIONOW;                                                    04568350 T  0095:1
        I:=TWO(U);                                                  04568360 T  0096:0
        RRRMECH:=RRRMECH OR I;          % MASK OUT STATUS WHILE     04568362 T  0097:1
        T2:=CLOCK+P(RTR)+600;           % WE WAIT FOR REWIND.       04568364 T  0098:2
        COMPLEXSLEEP((P(RRR) AND I)≠0 OR T2<CLOCK+P(RTR));          04568366 T  0100:1
```

02258000 ACCIDENTAL ENTRY AT RTR

```
                    RRRMECH:=RRRMECH AND NOT I;                                   04568368 T  0107:3
                    IF (P(RRR) AND I)=0 THEN          % TIME OUT => NOT READY      04568370 T  0109:1
                    BEGIN MODE:=-16;                                              04568372 T  0110:2
                         GO TO EXIT;                                              04568374 T  0112:0
                    END;                                                          04568376 T  0114:0
               END ELSE                                                           04568380 T  0114:0
               BEGIN                                                              04568390 T  0114:0
                    M:=W;                                                         04568400 T  0114:2
                    IOD:=SPACEIOD;                                                04568410 T  0115:1
                    J:=0;                                                         04568420 T  0116:0
                    SPACING:= TRUE;%                                              04568425 T  0116:3
                    DO BEGIN                                                      04568430 T  0117:2
                         DOIONOW;                                                 04568440 T  0117:2
                         TRANSACTION[U]:=(*P(DUP))+1;                             04568450 T  0119:0
                         J:=J+1;                                                  04568460 T  0121:0
                    END UNTIL ((M:=RESULT.[CF]-SPACEIOD.[CF]+M) LSS 0             04568470 T  0122:1
                         OR RESULT.[27:1]) AND J GTR 1;                           04568480 T  0125:0
                    IF NOT TESTING THEN SPACING:= FALSE;                          04568485 T  0128:0
                    TRANSACTION[U]:=(*P(DUP))-2;                                  04568490 T  0129:3
                    IOD:=SPACEIOD&0[22:47:1];                                     04568500 T  0131:3
                    DOIONOW;                                                      04568510 T  0133:2
                    IF N=0 THEN BSIZE:=RESULT.[CF]-IOD.[CF] ELSE                  04568520 T  0135:0
                    IF BSIZE≠RESULT.[CF]-IOD.[CF] THEN                            04568530 T  0138:2
                    BEGIN                                                         04568540 T  0141:1
                         STREAM(A:=TINU[U],D:=T2:=GETSPACE(10,0,0)+2);            04568550 T  0141:3
                         BEGIN SI:=LOC A;SI:=SI+5;DS:=3 CHR;                      04568560 T  0145:0
                              DS:=13 LIT" ERASE ERROR←";                          04568570 T  0145:3
                         END;                                                     04568580 T  0147:3
                         SPOUT(T2);                                               04568590 T  0148:0
                         GO GIVEUP;                                               04568600 T  0148:3
                    END;                                                          04568610 T  0149:1
               END;                                                               04568620 T  0149:1
          END; % OF SPACEBACK                                                     04568630 T  0149:1
          TINU[U].[18:12] ← P(DUP).[18:12]+1;%                                    04569000 T  0149:2
          OIOD ← NFLAG(IOQUE[UNIT[U].[18:15]]);%                                  04570000 T  0161:1
          PTR:= KEY+9;                                                            04570100 T  0163:2
          IF R.[24:1] THEN%                                                       04571000 T  0164:3
          BEGIN COMMENT READ RETRY;%                                              04572000 T  0165:2
               SPACEMASK ← OIOD.[21:2]×@1111 EQV NOT @0123;%                      04573000 T  0166:0
               SPACEIOD ← OIOD&1[8:38:10]&1[23:47:1];%                            04574000 T  0168:2
               FOR M ← 1 STEP 1 UNTIL 3 DO%                                       04575000 T  0171:1
                    BEGIN SPACEIOD ← SPACEIOD&SPACEMASK[21:46:2];%                04576000 T  0172:0
                         FOR N ← 1 STEP 1 UNTIL 5 DO%                             04577000 T  0173:3
                              BEGIN IOD ← SPACEIOD;%                              04578000 T  0175:0
                                   IF N≠1 OR M≠1 THEN DOIONOW ELSE                04579000 T  0175:3
                                   IF NOT(R.[29:1]AND R.[2:1] AND R.[12:1])       04579100 T  0179:0
                                      THEN DOIONOW;                               04579200 T  0181:1
                                   IF RESULT.[28:1] THEN%                         04580000 T  0184:0
                                      BEGIN MODE ← 0;%                            04581000 T  0184:3
                                           IOD ← OIOD;%                           04582000 T  0186:0
                                      END%                                        04583000 T  0186:3
                                   ELSE BEGIN MODE ← 8;%                          04584000 T  0186:3
                                           IOD ← OIOD&SPACEMASK[21:43:2];%        04585000 T  0188:0
                                      END;%                                       04586000 T  0189:3
                                   DOIONOW;%                                      04587000 T  0189:3
                                   IF NOT RESULT.[28:1] THEN GO TO EXIT;%         04588000 T  0191:0
                                   IF MOD3IOS THEN IF OIOD.[23:1] THEN            04588010 T  0192:1
                                   BEGIN Z←IOD←OIOD&SPACEMASK[21:40:2]            04588020 T  0194:1
                                        &(OIOD.[33:15]+(OIOD.[8:10]-1)            04588030 T  0195:1
          &OIOD[1:22:1])[33:33:15];                                               04588040 T  0197:3
```

```
                    DOIONOW; MODE←0;                                  04588050 T  0200:2
                    IF RESULT.[28:1] THEN                             04588060 T  0202:3
                    BEGIN IOD←OIOD; DOIONOW;                          04588070 T  0203:2
                          IF NOT RESULT.[28:1] THEN                   04588080 T  0206:0
                             GO TO EXIT;                              04588090 T  0207:0
                          IOD←Z&SPACEMASK[21:46:2];                   04588100 T  0207:1
                          DOIONOW; MODE←8;                            04588110 T  0209:0
                          IF RESULT.[28:1] THEN                       04588120 T  0210:3
                          BEGIN IOD←OIOD&SPACEMASK                    04588130 T  0211:2
                                      [21:43:2];                      04588140 T  0212:1
RP:                          DOIONOW;                                 04588150 T  0213:3
                             IF RESULT.[28:1] THEN                    04588160 T  0215:0
                                GO TO LX;                             04588170 T  0215:3
                             GO TO EXIT;                              04588180 T  0216:2
                          END;                                        04588190 T  0217:0
                    END;                                              04588200 T  0217:0
                    Z←ABS(IOD.[33:15]-RESULT.[33:15]);                04588210 T  0217:0
                    IF IOD.[21:2]=0 THEN                              04588220 T  0219:2
                       Z←Z-(RESULT.[15:3]=0);                         04588230 T  0220:3
                    IF IOD.[8:10]<Z THEN                              04588240 T  0223:2
                    BEGIN IOD←OIOD; MODE←0; GO TO RP END;             04588250 T  0224:3
                    IF IOD.[22:1] THEN                                04588260 T  0227:1
                    STREAM(Z,Y←Z DIV 64,                              04588270 T  0228:0
                           S←RESULT.[33:15]+1,                        04588280 T  0229:3
                           SK←(RESULT.[15:3]+1).[45:3],               04588290 T  0231:0
                           GM←(IF IOD.[21:1] THEN 0                   04588300 T  0232:3
                                                 ELSE "←"),           04588310 T  0233:2
                           D←OIOD.[33:15]);                           04588320 T  0235:0
                    BEGIN SI←S; SI←SI+SK;                             04588330 T  0236:0
                          Y(16(DS←32 CHR));                           04588340 T  0236:3
                          Z(DS←8 CHR);                                04588350 T  0238:1
                          SK(DS←LIT "0");                             04588360 T  0239:1
                          DI←DI-SK; SI←LOC GM;                        04588370 T  0240:2
                          SI←SI+7; DS←CHR;                            04588380 T  0241:1
                    END ELSE                                          04588390 T  0241:3
                    STREAM(Z,Y←Z DIV 64,                              04588400 T  0242:0
                           S←RESULT.[33:15]-1,                        04588410 T  0243:3
                           SK←(RESULT.[15:3]+7).[45:3],               04588420 T  0245:0
                           FL←(IF IOD.[21:1] THEN 0                   04588430 T  0246:3
                                                 ELSE @14),           04588440 T  0247:2
                           FK←(8-RESULT.[15:3]).[45:3],               04588450 T  0249:0
                           D←OIOD.[33:15]);                           04588460 T  0250:3
                    BEGIN SI←S; SI←SI+SK; DI←DI+7;                    04588470 T  0251:3
                          Y(16(32(DS←CHR; SI←SI-2;                    04588480 T  0252:3
                                  DI←DI-2)));                         04588490 T  0254:1
                          Z(8(DS←CHR; SI←SI-2; DI←DI-2));             04588500 T  0255:1
                          SI←LOC FL; SI←SI+7;                         04588510 T  0257:1
                          FK(DS←CHR; SI←SI-1; DI←DI-2);               04588520 T  0257:3
                    END;                                              04588530 T  0259:1
                    IOD←@140000005&OIOD[22:22:1]                      04588540 T  0259:2
                                  &OIOD[3:3:5];                       04588550 T  0260:0
                    DOIONOW; GO TO EXIT;                              04588560 T  0262:1
LX:          END;                                                     04588570 T  0265:0
        END;%                                                         04589000 T  0265:0
N ← IF TRANSACTION[U] < 15 THEN%                                      04590000 T  0267:1
            TRANSACTION[U] ELSE 15;%                                  04591000 T  0268:1
IOD ← SPACEIOD&SPACEMASK[21:40:2];%                                   04592000 T  0270:2
SPACING:= TRUE;                                                       04592100 T  0272:1
FOR W ← 1 STEP 1 UNTIL N DO%                                          04593000 T  0273:0
        BEGIN DOIONOW;%                                               04594000 T  0274:0
```

```
                    IF RESULT.[27:1] THEN N←0;%                          04595000 T 0275:0
                END;%                                                    04596000 T 0277:0
            IOD ← SPACEIOD&SPACEMASK[21:37:2];%                          04597000 T 0279:1
            FOR N ← 3 STEP 1 UNTIL W DO DOIONOW;%                        04598000 T 0281:0
            IOD ← OIOD;%                                                 04599000 T 0285:1
            MODE ← 0;%                                                   04600000 T 0286:0
            SPACING:= FALSE;                                             04600100 T 0286:3
            DOIONOW;%                                                    04601000 T 0287:2
            IF NOT RESULT.[28:1] THEN GO TO EXIT;%                       04602000 T 0289:0
        END;%                                                            04603000 T 0290:1
    MODE ← 16;%                                                          04604000 T 0292:2
END ELSE BEGIN COMMENT WRITE RETRY;%                                     04605000 T 0293:1
    LIMIT←@100000;                                                       04605500 T 0293:3
    MIX:=LOCATQUE[UNIT[U].[FF]].[3:5];                                   04605600 T 0294:2
    ERASEIOD ← (SPACEIOD ← OIOD&0[8:38:10]&7[22:45:3]&[T2]%              04606000 T 0297:0
            [33:33:15])&@112[18:41:7];%                                  04607000 T 0299:2
    W ← R.[33:15]-OIOD.[33:15]+2;%                                       04608000 T 0301:3
    WHILE TRUE DO                                                        04609000 T 0304:2
        BEGIN                                                            04610000 T 0305:1
            SPACEBACK;                                                   04611000 T 0305:1
            IF (N:=N+W+128) GTR LIMIT OR                                 04627000 T 0306:0
                (MIX≠0 AND TERMIX.[CF]=MIX) THEN GO GIVEUP;              04627100 T 0308:1
            IOD ← ERASEIOD&N[9:39:9];%                                   04628000 T 0311:2
            SPACING:= TRUE;%                                             04628100 T 0313:1
            FOR J ← 0 STEP 512 UNTIL N DO%                               04629000 T 0314:0
                BEGIN TRANSACTION[U] ← TRANSACTION[U]-1;%                04630000 T 0316:0
                    DOIONOW;%                                            04631000 T 0318:0
                    IOD ← ERASEIOD&1[8:47:1];%                           04632000 T 0319:0
            IF RESULT.[27:1] THEN                                        04633000 T 0320:3
            BEGIN                                                        04633100 T 0321:2
                IF NOT R.[27:1] THEN LIMIT←J+3000;                       04633200 T 0322:0
                R.[27:1]←1;                                              04633300 T 0324:3
            END;                                                         04633400 T 0326:2
                END;%                                                    04634000 T 0326:2
            SPACING:= FALSE;%                                            04634100 T 0328:3
            IOD:= IOD & N[CTC];%                                         04634200 T 0329:2
            RECORDRETRY;%                                                04634300 T 0330:3
            IOD ← OIOD;%                                                 04635000 T 0332:0
            DOIONOW;%                                                    04636000 T 0332:3
            IF RESULT.[27:1] THEN R.[27:1] ← 1;%                         04637000 T 0334:0
            IF NOT RESULT.[28:1] THEN%                                   04638000 T 0337:0
            BEGIN                                                        04638100 T 0338:0
                SIZE←RESULT.[CF]-OIOD.[CF];                              04638200 T 0338:2
                SPACEBACK;                                               04638300 T 0340:3
                IOD←SPACEIOD&0[22:47:1];                                 04638650 T 0342:0
                DOIONOW;                                                 04638700 T 0343:3
                IF NOT(RESULT.[28:1] OR (OIOD.[21:1] AND                 04638800 T 0345:0
                    (RESULT.[CF]-SPACEIOD.[CF]≠SIZE))) THEN              04638900 T 0346:2
                BEGIN                                                    04639000 T 0349:2
                    MODE←0&R[42:27:1];                                   04639100 T 0350:0
                    GO TO EXIT;                                          04639200 T 0351:3
                END;                                                     04640000 T 0354:0
            END;                                                         04641000 T 0354:0
        END;%                                                            04642000 T 0354:0
GIVEUP:                                                                  04642900 T 0354:2
    T2 ← GETSPACE(3,0,0)+2;%                                             04643000 T 0354:2
    STREAM(A←TINU[U],T2);%                                               04644000 T 0356:3
        BEGIN SI ← LOC A; SI ← SI+5; DS ← 3 CHR;%                        04645000 T 0358:0
            DS ← 11 LIT " WR PARITY←";%                                  04646000 T 0358:3
        END;%                                                            04647000 T 0360:2
```

```
                SPOUT(T2);%                                                  04648000 T  0360:3
                MODE ← 16;%                                                  04649000 T  0361:2
            END;%
      EXIT: TAPEPARITYRETRY:= UNIT[U] & MODE[5:40:8];                        04650000 T  0362:1
            MEMORY[KEY+8] := PTR-KEY-9;                                      04651000 T  0362:1
             MEMORY[KEY+9]:=ABS(MODE);                                       04651050 T  0365:0
            MEMORY[KEY] := P(DUP,LOD) & ((PTR-KEY) DIV 5)[39:39:9];          04651100 T  0368:0
            IF (MODE≠16) OR (R.[24:1]) THEN LINKUP(3,KEY) ELSE               04651200 T  0370:1
            BEGIN                                                            04651300 T  0374:0
              BUFFER:= OIOD INX 0;                                           04651400 T  0377:1
              BUFFERSIZE:= OIOD.[8:10];                                      04651500 T  0377:3
              IF NOT OIOD.[21:1] THEN  % ALPHA WRITE - CHECK Q-MARKS         04651600 T  0379:0
              BEGIN                                                          04651700 T  0380:1
                STREAM(T:=0;                                                 04651800 T  0381:1
                        TEMP:=0, SVSI:=0,                                    04651900 T  0381:3
                        BUFFSTART:=BUFFER,                                   04652000 T  0382:1
                        BUFFEND:=BUFFER+BUFFERSIZE);                         04652100 T  0383:0
                BEGIN                                                        04652200 T  0383:1
                  SI:=BUFFEND; DI:=LOC TEMP; DS:= CHR;                       04652300 T  0384:1
                  DI:=BUFFEND; DS:=LIT"-"; DI:=DI-1; DS:=RESET; %Q-MARK      04652400 T  0384:1
                  SI:=BUFFSTART;                                             04652500 T  0385:0
                  IF SC > 9 THEN                                             04652600 T  0386:1
                  BEGIN                                                      04652700 T  0386:2
                L1: SI:=SI+1; IF SC>9 THEN GO L1;                            04652800 T  0387:0
                  END;                                                       04652900 T  0387:0
                L2: SI:=SI+1; IF SC<9 THEN GO L2;                            04653000 T  0388:0
                  SVSI:=SI;                                                  04653100 T  0388:0
                  SI:=LOC SVSI; SI:=SI+5;                                    04653200 T  0389:0
                  DI:=LOC BUFFEND; DI:=DI+5;                                 04653300 T  0389:1
                  IF 3 SC≠DC THEN TALLY:=1;                                  04653400 T  0389:3
                  DI:=BUFFEND; SI:=LOC TEMP; DS:= CHR;                       04653500 T  0390:1
                  T:=TALLY;                                                  04653600 T  0391:0
                END;                                                         04653700 T  0391:3
                I:=POLISH;                                                   04653800 T  0392:0
                MEMORY[KEY+2]:= P(DUP,LOD) & I[1:47:1];                      04653900 T  0392:1
              END;                                                           04654000 T  0392:3
            IF STOPTEST THEN LINKUP(3,KEY) ELSE                              04654100 T  0396:0
            BEGIN                                                            04654200 T  0396:0
              MEMORY[KEY] := NABS(P(DUP,LOD));                               04654300 T  0398:1
              LINKUP(3,KEY);                                                 04654400 T  0398:3
              TESTING:= SPACING:= TRUE; N:=0;                                04654500 T  0400:3
              BUFFERSIZE:= BUFFERSIZE-1;                                     04654600 T  0401:3
              OIOD:= OIOD & 1[18:42:6];                                      04654700 T  0403:3
              PTR:= KEY+8;                                                   04654800 T  0405:0
              STREAM(M@D2IUS:=NOT(MOD3IUS+62), D:=[PATTERN]);                04654900 T  0406:3
              BEGIN                                                          04655000 T  0408:0
                DS:=13 LIT"01248+x+<(,G$";                                   04655100 T  0410:1
                MOD2IOS(DI:=DI-6; DS:=LIT""; DI:=DI+5);                      04655200 T  0410:1
                DS:= LIT""; DS:= LIT"";                                      04655300 T  0412:1
                DS:=3 LIT"]$(";                                              04655400 T  0414:0
              END;                                                           04655500 T  0415:0
              SLEEP([MEMORY[KEY]],@1000000000000000);                        04655600 T  0415:3
              MEMORY[PTR]:= 0; MOVE(191,PTR,PTR+1);                          04655700 T  0416:0
              FOR K:=0 STEP 1 UNTIL 15 DO                                    04655800 T  0418:0
              BEGIN                                                          04655900 T  0421:2
                STREAM(A:=[PATTERN],                                         04656000 T  0424:0
                        K:=K+(K=15), M:=4+4×(K<14), N:=1+(K>13),             04656100 T  0424:0
                        SIZEDIV64:=BUFFERSIZE.[36:6], BUFFERSIZE,            04656200 T  0424:2
                        BUFFER);                                             04656300 T  0428:3
                BEGIN                                                        04656400 T  0429:3
                                                                             04656500 T  0430:1
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                SI:=A; SI:=SI+K;                                                  04656600 T  0430:1
                M(DS:=N CHR; SI:=SI-N);                                           04656700 T  0431:0
                SI:=BUFFER;                                                       04656800 T  0432:3
                SIZEDIV64(DS:=32 WDS; DS:=32 WDS); DS:=BUFFERSIZE WDS;            04656900 T  0433:0
                DI:=A; DI:=DI+24; DS:=WDS;                                        04657000 T  0434:3
              END;                                                                04657100 T  0435:2
              IOD:= OIOD:= OIOD & ((K<7) OR (K>13))[21:47:1];                     04657200 T  0435:3
              DOIONOW;                                                            04657300 T  0439:2
              MEMORY[PTR]:= RESULT & RDCTABLE[U][19:1:2];                         04657400 T  0441:0
              SPACEBACK;                                                          04657500 T  0443:3
              STREAM(SIZEDIV64:=BUFFERSIZE,[36:6],BUFFERSIZE,                     04657600 T  0445:0
                     BUFFER);                                                     04657700 T  0446:1
              BEGIN                                                               04657800 T  0446:3
                DS:=8 LIT" "; SI:=BUFFER;                                         04657900 T  0446:3
                SIZEDIV64(DS:=32 WDS; DS:=32 WDS); DS:=BUFFERSIZE WDS;            04658000 T  0448:1
              END;                                                                04658100 T  0450:0
              IOD:= OIOD & 1[24:47:1];                                            04658200 T  0450:1
              DOIONOW;                                                            04658300 T  0452:0
              MEMORY[PTR+1]:= RESULT & RDCTABLE[U][19:1:2];                       04658400 T  0453:0
              STREAM(A:=[PATTERN] INX 3,                                          04658500 T  0456:1
                     CHRERR:=0, WRDERR:=0, WRDCNT:=0,                             04658600 T  0457:1
                     LOOP:=0, FORSEVEN:=1, LEAPFROG:=0,                           04658700 T  0458:0
                     WDSLEFT:=I:=(J:=IF (SIZE:=ABS(BUFFER-(RESULT INX 0)))        04658800 T  0458:3
                       LEQ BUFFERSIZE THEN SIZE ELSE BUFFERSIZE+1) MOD 63,        04658900 T  0460:0
                     V:=IF J<64 THEN J ELSE 63,                                   04659000 T  0464:3
                     N:=IF J<64 THEN 1 ELSE J DIV 63,                             04659100 T  0467:0
                     RECYCLE:= IF J<64 THEN 0 ELSE IF I=0 THEN 0 ELSE 1,          04659200 T  0469:3
                     TEMP:=0, SVDI:=0,                                            04659300 T  0474:0
                     BITLOCN:=PTR+3, WRDLOCN:=PTR+5,                              04659400 T  0474:2
                     BUFFER);                                                     04659500 T  0476:0
                BEGIN;                                                            04659600 T  0476:2
                  LEAPFROG:= CI; TALLY:=0;  % USED ONLY FOR LEAPFROG RETURN       04659700 T  0476:2
                  N(V(SI:=A) IF 8 SC≠DC THEN                                      04659800 T  0477:0
                    BEGIN                                                         04659900 T  0478:3
                      SI:=WRDERR; SI:=SI+8; WRDERR:=SI;                           04660000 T  0478:3
                FORSEVEN(SVDI:=DI; DI:=BITLOCN; LOOP(DI:=DI+2);                   04660100 T  0479:2
                      SI:=LOC WRDCNT; SI:=SI+6; DS:=2 CHR;                        04660200 T  0481:2
                      DI:=WRDLOCN; LOOP(DI:=DI+8);                                04660300 T  0482:1
                      SI:=SVDI; SI:=SI-8; DS:= WDS;                               04660400 T  0483:2
                      TALLY:=LOOP; TALLY:=TALLY+1; LOOP:=TALLY;                   04660500 T  0484:1
                      SI:=LOC LOOP; SI:=SI+7;                                     04660600 T  0485:2
                      IF SC="7" THEN                                              04660700 T  0486:0
                      BEGIN TALLY:=0; FORSEVEN:=TALLY; END;                       04660800 T  0486:2
                      DI:=SVDI);                                                  04660900 T  0487:0
                      SI:=A; DI:=DI-8; TALLY:=0;                                  04661000 T  0487:2
                      8(IF SC≠DC THEN TALLY:=TALLY+1);                            04661100 T  0488:1
                      TEMP:=TALLY;                                                04661200 T  0489:2
                      SI:=CHRERR; TEMP(SI:=SI+8); CHRERR:=SI;                     04661300 T  0489:3
                    END;                                                          04661400 T  0491:1
                    SI:=WRDCNT; SI:=SI+8; WRDCNT:=SI;                             04661500 T  0491:1
                    ));                                                           04661600 T  0492:0
                RECYCLE(TALLY:=1; N:=TALLY;                                       04661700 T  0492:2
                      TALLY:=WDSLEFT; V:=TALLY;                                   04661800 T  0493:2
                      TALLY:=0; RECYCLE:=TALLY;                                   04661900 T  0494:2
                      JUMP OUT TO TADPOLE);                                       04662000 T  0495:0
                GO TO FROG;                                                       04662100 T  0495:3
TADPOLE:        CI:=LEAPFROG;                                                     04662200 T  0496:0
FROG:           DI:=BITLOCN; DI:=DI-5;                                            04662300 T  0496:1
                SI:=LOC CHRERR; SI:=SI+5; DS:=3 CHR;                              04662400 T  0496:3
                SI:=LOC WRDERR; SI:=SI+6; DS:=2 CHR;                              04662500 T  0497:2
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                END;                                                    04662600 T  0498:1
                IF MEMORY[PTR].[27:1] THEN SPACEBACK;                   04662700 T  0498:2
                PTR:=PTR+12;                                            04662800 T  0502:0
              END;                                                      04662900 T  0503:1
              MEMORY[KEY]:= P(DUP,LOD) & 0[1:1:2] & 39[39:39:9];        04663000 T  0505:2
              MEMORY[KEY+2]:= P(DUP,LOD) & OPTION[2:2:1];               04663100 T  0509:1
              LINKUP(20,KEY);                                           04663200 T  0512:2
            END;END;                                                    04663300 T  0513:2
        END TAPEPARITYRETRY;%                                           04666000 T  0513:2
                                                                                SIZE= 0514 WORDS
        REAL PROCEDURE PLACEFINDER(S, A, L);                            04700000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00080
              VALUE S, A;                                               04701000 T  0000:0
              REAL S, A, L;                                             04702000 T  0000:0
          BEGIN INTEGER I;  ARRAY B[*];                                 04703000 T  0000:0
              REAL T, W, E, J, AA;                                      04704000 T  0000:0
              LABEL NULL, FOUND, EXIT;                                  04705000 T  0000:0
              LABEL SANDA; REAL SS;                                     04705500 T  0000:0
              W ← -1;                                                   04706000 T  0000:0
              B ← [M[T ← GETSPACE(30, 0, 0)+2]]&30[8:38:10];            04707000 T  0003:1
              SS:=S;                                                    04707500 T  0007:2
              IF S=0 THEN                                               04708000 T  0008:1
        NULL: BEGIN STREAM(T); DS:=20 LIT " "; GO EXIT; END;            04709000 T  0009:0
              DISKWAIT(-T,30,JAR[P1MIX,10]);                            04710000 T  0013:3
              IF (JAR[P1MIX,10]=0) OR (AA+B[0].[FF])=0 THEN             04711000 T  0016:0
        SANDA: BEGIN STREAM(S:=SS,A,K:=M[PRT[P1MIX,8]].[10:2],T);       04712000 T  0020:0
                  BEGIN DS←5 LIT ", S =";                               04713000 T  0024:0
                      SI←LOC S;  DS←4 DEC;                              04714000 T  0025:0
                      DS←5 LIT ", A =";                                 04715000 T  0025:2
                      DS←4 DEC;                                         04716000 T  0026:2
                      DS:=LIT ":"; SI:=SI+7; DS:=CHR;                   04716100 T  0026:3
                      DI←T;  DI←DI+5;  DS←3 FILL;                       04717000 T  0027:3
                      DI←T;  DI←DI+14;  DS←3 FILL;                      04718000 T  0028:2
                  END STREAM;                                           04719000 T  0029:1
                  GO TO EXIT;                                           04720000 T  0029:2
              END;                                                      04721000 T  0030:0
              DISKWAIT(-T,30,I:=JAR[P1MIX,AA DIV JAR[P1MIX,8]+10]+      04722000 T  0030:0
                  AA MOD JAR[P1MIX,8]+S DIV 30);                        04723000 T  0033:3
              IF (J←B[S MOD 30])<0 THEN GO TO NULL;                     04725000 T  0037:1
              AA ← I + JAR[P1MIX,J.[CF] DIV JAR[P1MIX,8]+10]+           04726000 T  0039:3
                  J.[CF] MOD JAR[P1MIX,8];                              04727000 T  0043:0
              I←0;  J←J.[FF];                                           04728000 T  0046:1
              DO BEGIN S←(I+J).[36:11];                                 04729000 T  0048:1
                  IF W≠(W:=S DIV 30) THEN DISKWAIT(-T,30,AA+W);         04731000 T  0050:0
                  IF (E ← B[S-W×30].[38:10])=A THEN GO TO FOUND;        04732000 T  0054:1
                  IF E<A THEN I←S ELSE J←S;                             04733000 T  0057:3
              END UNTIL J-I=1;                                          04734000 T  0061:0
              S←I;                                                      04735000 T  0062:3
        FOUND: L ← -B[S MOD 30].[10:28];                                04736000 T  0063:2
              IF L=0 THEN GO TO SANDA;                                  04736500 T  0066:0
              STREAM(L←ABS(L),T);                                       04737000 T  0067:1
              BEGIN DS:=11 LIT ",NEAR LINE ";                           04738000 T  0068:2
                  SI←LOC L;  DS←8 DEC;                                  04739000 T  0070:1
                  DS:=LIT " "; DI:=DI-9; DS:=7 FILL;                    04740000 T  0070:3
              END STREAM;                                               04741000 T  0071:3
        EXIT: PLACEFINDER ← T;                                          04742000 T  0072:0
          END PLACEFINDER;                                              04743000 T  0072:3
                                                                                SIZE= 0074 WORDS
        $ SET OMIT = NOT(DATACOM )                                      04999999 T  0000:0
      PROCEDURE LOGOUT(A); VALUE A; REAL A; FORWARD;                    05607000 T  0000:0
```

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                                                                    START OF REL SEGMENT; DISK ADDRESS = 00083
PROCEDURE LOGSPACE(W,L); % THIS MAY ZIP                                 05700000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00083
VALUE W,L; NAME W; INTEGER L;  % FIRST WORD,WORD COUNT                   05701000 T  0000:0
COMMENT THIS WILL CLOBBER WORDS AROUND THOSE LOGGED;                    05701010 T  0000:0
BEGIN INTEGER B,I,J,K,N; ARRAY A[*]; LABEL OK; DEFINE Z=LOGFREE#;       05702000 T  0000:0
    N←L DIV 5;  %NO REMAINDER ALLOWED                                   05702500 T  0000:0
    A:=[M[B:=GETSPACE(30,0,0)+2]]&30[8:38:10];                          05703000 T  0002:3
    IF Z>0 THEN SLEEP([Z],-0); Z←-Z;                                    05703500 T  0007:0
 $ SET OMIT = NOT(SHAREDISK)                                            05703699 T  0011:0
    DISKWAIT(-B,30,Z);                                                  05704000 T  0011:0
IF (I←A[0])+6+N≥(J←A[1]) THEN BEGIN I←0; K←1 END  %WRAP AROUND          05705000 T  0012:2
ELSE IF I+N+100 GEQ J THEN                                              05706000 T  0017:3
    BEGIN INDEPENDENTRUNNER(P(.LUGOUT),1,128);                          05706100 T  0020:0
        K:=2;                                                           05706200 T  0021:3
    END                                                                 05706300 T  0022:2
ELSE IF I<J DIV 2 AND J DIV 2<I+N  THEN K←3  % HALF FULL                05707000 T  0022:2
ELSE GO TO OK;                                                          05708000 T  0027:0
    STREAM(K:=K-1, J:=J:=SPACE(3));                                     05709000 T  0027:2
    BEGIN CI:=CI+K; GO TO L2; GO TO L1;                                 05710000 T  0031:0
        DS:=14 LIT"#LOG HALF FULL"; GO TO L3;                           05710500 T  0032:0
    L1: DS:=19 LIT" LOG FULL - AUTO LN"; GO TO L3;                      05711000 T  0034:1
    L2: DS:=17 LIT"**LOG WRAP AROUND";                                  05711500 T  0037:1
    L3: DS:=LIT"←";                                                     05712000 T  0039:3
    END;                                                                05713000 T  0040:1
    SPOUT(J);                                                           05714000 T  0040:2
OK: A[0]←N+I; A[3]←K; A[2]←I←I+1;   %WE NOW PUT THE WORDS IN I          05715000 T  0041:1
    W[L]←4;      %    END OF LOG                                       05715100 T  0046:2
    J←(I MOD 6)×5;   %SIZE OF NEIGHBORHOOD (NBD)                        05716000 T  0048:0
 $ SET OMIT = NOT(SHAREDISK)                                            05716999 T  0049:3
    IF (I←I DIV 6)≠0 THEN DISKWAIT(B,30,Z);   %DUMP RECORD ZERO         05722000 T  0049:3
    IF J≠0 THEN   % GET  NBD                                            05723000 T  0053:1
    BEGIN IF I≠0 THEN DISKWAIT(-B,30,Z+I);                              05724000 T  0054:0
        MOVE(30-J,W INX 0,A INX J)                                      05725000 T  0057:3
    END                                                                 05726000 T  0060:1
    ELSE B:=W INX 0;                                                    05727000 T  0061:0
    DISKWAIT(B,30,Z+I);                                                 05728000 T  0062:3
    IF (L+J) GEQ 30 THEN                                                05728100 T  0064:2
    BEGIN K:=L-(J:=30-J)+1;                                             05728120 T  0065:3
        I:=I+1;                                                         05728140 T  0069:0
        DO                                                              05728160 T  0070:1
        BEGIN DISKWAIT(W INX J,IF K>1020 THEN 1020 ELSE K,Z+I);         05728180 T  0070:1
            J:=J+1020;                                                  05728200 T  0074:2
            I:=I+34;                                                    05728220 T  0075:3
        END UNTIL (K:=K-1020) LEQ 0;                                    05728240 T  0077:0
    END;                                                                05728260 T  0079:1
 $ SET OMIT = NOT(STATISTICS)                                           05728299 T  0079:1
    FORGETSPACE(A);                                                     05729000 T  0079:1
 $ SET OMIT = NOT(SHAREDISK )                                           05729199 T  0080:1
    Z:=-Z;                                                              05729300 T  0080:1
END OF LOGSPACE;                                                        05730000 T  0081:1
                                                                                SIZE= 0082 WORDS
DEFINE                                                                  05780000 T  0000:0
      MAXSIZ=[1:20]#, TOMAXSIZ=1:28:20#,                                05780010 T  0000:0
      SPEED = [23:3]#, TOSPEED= 23:45:3#,                               05780020 T  0000:0
      EUNP = [21:1]#, TOEUNP = 21:47:1#,                                05780025 T  0000:0
      STARTWRD=[26:12]#, TOSTARTWRD=26:36:12#,                          05780030 T  0000:0
      NUMENT=[38:10]#, TONUMENT=38:38:10#, NUMENTM=1023#,               05780040 T  0000:0
      DSIZE=[2:20]#, TODSIZE=2:28:20#,                                  05780100 T  0000:0
      DEND=[22:26]#, TODEND=22:22:26#,                                  05780200 T  0000:0
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        TOSIZE=8:38:10#, NEUF=[18:15]#,                                   05780300 T  0000:0
        EUIOFFSET=4 #, % ONE WORD FOR EACH I/O CHANNEL.                   05780310 T  0000:0
        AVDIFFMIN=15#, AVDIFFMAX=50#, % AVDIFFMAX GTR AVDIFFMIN GTR 14.   05780400 T  0000:0
        AVTMAX=3900#, % MAX # WORDS ALLOWED FOR AVAILABLE TABLE ON DISK.  05780500 T  0000:0
                      % IS REFLECTED IN USERDISKBOTTOM & DISKAVAILTABLEMAX 05780505 T  0000:0
        AVSMIN=90 #, AVSMAX=300#, % MIN AND MAX # WORDS TO READ IN @ 1 TIM 05780600 T  0000:0
                                  % AVSMAX GTR AVSMIN GTR 85.             05780605 T  0000:0
                                  % BOTH MUST BE MULTIPLES OF 30.         05780610 T  0000:0
        FIXARRAY(FIXARRAY1,FIXARRAY2,FIXARRAY3)=FIXARRAY1←[M[FIXARRAY2←   05780700 T  0000:0
        SPACE(FIXARRAY3)]]&FIXARRAY3[TOSIZE]# ;                           05780800 T  0000:0
    $ SET OMIT = NOT(SHAREDISK )                                          05800000 T  0000:0
    REAL PROCEDURE PETUSERDISK(N,T); VALUE N,T; REAL N,T ;                05839400 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00086
    % N IS THE NUMBER OF SEGMENTS REQUESTED, AND T IS THE EU# OR THE SPEED#.  05839600 T  0000:0
    % GETUSERDISK WILL RETURN -1, 0, OR THE ABSOLUTE DISK SEGMENT ADDRESS OF  05839700 T  0000:0
    % THE RESULTANT AREA. SEE T.[2:1] FOR THE -1, AND N.[2:1] FOR THE 0.     05839800 T  0000:0
    % T>0 => T IS A PREFERRED SPEED#: T=1,2,3,4,...., OR 31.                 05840000 T  0000:0
    % T<0 => -T IS A PREFERRED EU#: T=-1,-2,-3,-4,...., OR -20.              05840100 T  0000:0
    % T=0 => DONT CARE ABOUT SPEED# OR EU#, USE EU WITH LEAST EU I/O.        05840200 T  0000:0
    % T.[2:1]=1 => IF CANT GET PREFERRED SPEED# OR EU#, RETURN -1.           05840300 T  0000:0
    % T.[2:1]=0 => IF CANT GET PREFERRED SPEED# OR EU#, TREAT AS T=0 (ABOVE) 05840400 T  0000:0
    % N>0 => MAKE A SCRATCHDIRECTORY ENTRY.                                  05840500 T  0000:0
    % N≤0 => DONT MAKE A SCRATCHDIRECTORY ENTRY.                             05840600 T  0000:0
    % N=0 => IMMEDIATELY RETURN WITH A 0.                                    05840700 T  0000:0
    % N.[2:1]=0 => IF CANT FIND ANY USERDISK, AND T.[2:1]=0, NO-USER-DISK.   05840800 T  0000:0
    % N.[2:1]=1 => IF CANT FIND ANY USERDISK, AND T.[2:1]=0, RETURN 0.       05840900 T  0000:0
        BEGIN                                                               05841200 T  0000:0
        INTEGER K=+1, % K IS ALSO "GETUSERDISK"; DONT USE K ABOVE LABEL D.  05841300 T  0000:0
                Z=K+1, NS=Z+1, I=NS+1,                                      05841350 T  0000:0
    $ SET OMIT = NOT(SHAREDISK )                                            05841380 T  0000:0
    $ SET OMIT = SHAREDISK                                                  05841610 T  0000:0
                R=I+1, AVS=R+1, J=AVS+1, H=NT6, L=AVS ;                     05841615 T  0000:0
        REAL M1=NT5, M2=NT4; ARRAY UT=J+1[*]; DEFINE U=AVTABLE # ;          05841620 T  0000:0
    $ POP OMIT                                                              05841621 T  0000:0
        LABEL A,B,C,B,E,F,G,W ;                                             05841650 T  0000:0
    DEFINE GETUSERDISK=PETUSERDISK#;%*************************************** 05841700 T  0000:0
        IF N=0 THEN GO W ;                                                  05842100 T  0000:0
        P(T.[2:1],ABS(N),1,0,0,0,0) ;                                       05842200 T  0001:2
    $ SET OMIT = NOT(SHAREDISK )                                            05842205 T  0004:0
    A:  SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);                 05842300 T  0004:0
    $ SET OMIT = NOT(SHAREDISK )                                            05842390 T  0009:0
    $ SET OMIT = SHAREDISK                                                  05842405 T  0009:0
        M1:=M2:=P(D) ;                                                      05842410 T  0009:0
    $ POP OMIT                                                              05842411 T  0010:1
        L:=NEUP.NEUF ;                                                      05842450 T  0010:1
        IF T LSS 0 THEN IF U[J:=IF -T GTR L THEN L+1 ELSE -T].MAXSIZ GEQ NS 05842475 T  0011:2
                        THEN GO E ELSE IF Z THEN GO C ;                     05842500 T  0017:1
    B:  IF U[I].MAXSIZ≥NS THEN                                              05842700 T  0019:1
            BEGIN                                                           05842800 T  0020:3
            P(EUIO[(NT1:=I-1)+EUIOFFSET]+PEUIO[NT1],.NT2,SND,DUP) ;         05842900 T  0021:1
            IF P LSS M1 THEN BEGIN M1:=NT2; H:=NT1 END ;                    05842930 T  0024:3
            IF P LSS M2 THEN IF U[I].SPEED=T THEN BEGIN M2:=NT2;J:=NT1 END; 05843000 T  0027:1
            END ;                                                           05843100 T  0031:3
        IF (I:=I+1) LEQ L THEN GO B ;                                       05843200 T  0031:3
        IF P(D)≠M1 THEN                                                     05843300 T  0034:0
            BEGIN                                                           05843400 T  0034:3
            IF M2=M2:=P(D) THEN IF Z AND T≠0 THEN                           05843500 T  0035:1
    C:          BEGIN GETUSERDISK←-1; GO G END                              05843600 T  0038:1
            ELSE J←H ;                                                      05843700 T  0040:1
            J:=J+1;  GO E ;                                                 05843800 T  0041:2
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          END ;                                                                  05843900 T  0043:1
      IF Z THEN GO C ;                                                           05843950 T  0043:1
      IF N.[2:1] THEN GO G ;                                                     05844000 T  0044:1
    $ SET OMIT = NOT(SHAREDISK )                                                 05844050 T  0045:3
    $ SET OMIT = SHAREDISK                                                       05844090 T  0045:3
      FIXARRAY(UT,R,30); USERDISKSPECIALCASE(I:=1,R,UT,NS); GO A ;               05844110 T  0045:3
    $ POP OMIT                                                                   05844111 T  0052:3
  D:::@0777777777777777 ;                                                        05844200 T  0052:3
    $ SET OMIT = NOT(SHAREDISK )                                                 05844290 T  0054:0
    $ SET OMIT = SHAREDISK                                                       05844915 T  0054:0
  E:  IF (AVS:=(K:=(T:=U[J] AND NUMENTM)+I:=(Z:=U[J].STARTWRD) MOD 30) MOD       05844920 T  0054:0
        30) NEQ 0 THEN AVS:=30-AVS; AVS:=AVS+K; P(M2) ;                          05844925 T  0058:3
      FIXARRAY(UT,R,AVS); DISKWAIT(-R,AVS,Z+Z DIV 30+USERDISKBOTTOM) ;           05844930 T  0063:2
      M2:=P; P(K-1); NT2:=0; NT3:=K:=U[J].MAXSIZ ;                               05844935 T  0070:3
    $ POP OMIT                                                                   05844936 T  0074:3
  F:  IF (NT1+UT[I].DSIZE)>NT2 THEN IF NT1≠K THEN NT2+NT1 ELSE K:=0 ;            05845000 T  0074:3
      IF NT1≥NS THEN IF NT1<M2 THEN BEGIN M2+NT1; H+I END ;                      05845100 T  0080:2
      IF P(DUP) GTR I:=I+1 THEN GO F ;                                           05845200 T  0084:2
      UT[H].DSIZE+NS+M2-NS ;                                                     05845300 T  0086:3
      IF M1:=M2=NT3 THEN U[J].MAXSIZ:=IF NT2>NS THEN NT2 ELSE NS ;               05845400 T  0090:1
      GETUSERDISK+UT[H].DEND-M2; I:=P ;                                          05845500 T  0096:2
    $ SET OMIT = NOT(SHAREDISK )                                                 05845590 T  0099:0
      IF N+NS=0 THEN BEGIN MOVE(I-H,[UT[H+1]],[UT[H]]);U[J].NUMENT+T-1END;       05845700 T  0099:0
    $ SET OMIT = NOT(SHAREDISK )                                                 05845790 T  0106:3
    $ SET OMIT = SHAREDISK                                                       05846350 T  0106:3
      DISKWAIT(R,AVS,Z) ;                                                        05846360 T  0106:3
    $ POP OMIT                                                                   05846361 T  0108:0
    $ SET OMIT = NOT(SHAREDISK )                                                 05846370 T  0108:0
    $ SET OMIT = SHAREDISK                                                       05846385 T  0108:0
      FORGETSPACE(R) ;                                                           05846390 T  0108:0
  G:  UNLOCKTOG(USERDISKMASK);                                                   05846395 T  0108:3
    $ POP OMIT                                                                   05846396 T  0112:1
  W:  END OF GETUSERDISK ;                                                       05846500 T  0112:1
                                                                                          SIZE= 0113 WORDS
  PROCEDURE FORGETUSERDISK(A,N); VALUE A,N; REAL A,N ;                           05846600 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00090
  % A IS THE ABSOLUTE DISK SEGMENT ADDRESS OF AN AREA N SEGMENTS LONG            05846800 T  0000:0
  % WHICH IS TO BE MADE AVAILABLE AGAIN.                                         05846900 T  0000:0
  % N≤0 => MAKE A SCRATCHDIRECTORY DELETION.                                     05847000 T  0000:0
  % N>0 => DONT MAKE A SCRATCHDIRECTORY DELETION.                                05847100 T  0000:0
  % N=0 => IMMEDIATELY GO AWAY ;                                                 05847200 T  0000:0
      BEGIN                                                                      05847400 T  0000:0
    $ SET OMIT = NOT(SHAREDISK )                                                 05847490 T  0000:0
    $ SET OMIT = SHAREDISK                                                       05847590 T  0000:0
      INTEGER AVS,F=AVS; ARRAY UT[*]; DEFINE U=AVTABLE #;                        05847600 T  0000:0
    $ POP OMIT                                                                   05847601 T  0000:0
      REAL E; INTEGER B,C,D,I,J,R,S,H=NT7,K=NT6,L=NT5,G=NT4,T=NT3,Q=JUNK;        05847700 T  0000:0
      LABEL V,W,X,Y,Z,AZ,BZ,CZ,DZ ;                                              05847800 T  0000:0
      SUBROUTINE SETSHIFT ;                                                      05847900 T  0000:0
          BEGIN                                                                  05848000 T  0001:0
          S:=P(XCH) ;                                                            05848100 T  0001:0
    $ SET OMIT = NOT(SHAREDISK )                                                 05848190 T  0001:3
    $ SET OMIT = SHAREDISK                                                       05848250 T  0001:3
          U[J].STARTWRD:=I+S; G:=D+S ;                                           05848255 T  0001:3
    $ POP OMIT                                                                   05848256 T  0006:0
          K:=G+C-1 ;                                                             05848300 T  0006:0
          END OF SETSHIFT ;                                                      05848500 T  0007:3
      IF N=0 OR (J:=A DIV 1000000) GEQ NEUP.NEUF                                 05848900 T  0008:0
        OR A LSS USERDISKBOTTOM+DISKAVAILTABLEMAX THEN GO BZ ;                   05849000 T  0012:2
      SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);                        05849300 T  0016:0
```

FORGET USER DISK

```
 $ SET OMIT = NOT(SHAREDISK )                                          05849390 T  0021:0
    IF (D:=U[0].MAXSIZ) NEQ 0 AND N GTR 0 THEN IF (TWO(J) AND D) NEQ 0  05849420 T  0021:0
    THEN BEGIN USERDISKSPECIALCASE(3,N,U,A); IF NOT P THEN GO DZ END ;  05849460 T  0025:3
    J:=J+1 ;                                                           05849480 T  0029:1
V:  D←(I←(E←U[J]).STARTWRD) MOD 30 ;                                   05849500 T  0030:2
 $ SET OMIT = NOT(SHAREDISK )                                          05849590 T  0033:2
 $ SET OMIT = SHAREDISK                                                05850105 T  0033:2
    AVS:=30-(S:=(C:=E AND NUMENTM)+D) MOD 30+S ;                       05850110 T  0033:2
    FIXARRAY(UT,R,AVS); DISKWAIT(-R,AVS,B:=I DIV 30+USERDISKBOTTOM) ;  05850120 T  0037:3
    K:=S; L:=D; S:=I+C ;                                               05850130 T  0045:0
 $ POP OMIT                                                            05850131 T  0047:3
    G←I-(NT2:=(P(U[J-1],DUP) AND NUMENTM)+P(XCH).STARTWRD) ;           05850200 T  0047:3
    S←U[J+1].STARTWRD-S; H←K←K-1; IF UT[T←L].DEND≥A THEN GO X ;        05850300 T  0052:0
W:  IF UT[T←(H+L+1)DIV 2].DEND≥A THEN IF UT[H←T-1].DEND≥A THEN GO W ELSE 05850400 T  0058:3
    ELSE IF UT[T←T+1].DEND<A THEN BEGIN L←T+1; GO W END ;              05850500 T  0065:1
X:  IF (L:=A+ABS(N)) GEQ H:=P(UT[Q:=T],DUP).DEND-P(XCH).DSIZE THEN GO Z; 05850600 T  0072:3
    IF S=0 THEN                                                        05850700 T  0077:3
        BEGIN                                                          05850800 T  0079:0
 $ SET OMIT = NOT(SHAREDISK )                                          05850890 T  0079:2
 $ SET OMIT = SHAREDISK                                                05851215 T  0079:2
        IF G=0 OR D=0 THEN GO Y; IF P((G+1)DIV 2,DUP)>D THEN P(DEL,D); 05851220 T  0079:2
 $ POP OMIT                                                            05851221 T  0085:0
        P(SSN);SETSHIFT;MOVE(C,[UT[G-S]],[UT[G]]);T←Q←T+S;             05851300 T  0085:0
        END ;                                                          05851400 T  0090:1
    FOR H←K STEP -1 UNTIL T DO UT[H+1]←UT[H]; H←ABS(N); GO AZ ;        05851500 T  0090:1
Y: USERDISKSPECIALCASE(2,E,UT,J) ;                                     05851600 T  0096:3
 $ SET OMIT = NOT(SHAREDISK )                                          05851650 T  0098:2
    GO V ;                                                             05851675 T  0098:2
Z:  IF P(UT[Q←Q+1],DUP).DEND-P(XCH).DSIZE≤L THEN GO Z ;                05851700 T  0099:0
    IF P(UT[NT1:=Q-1].DEND,DUP) LSS L THEN P(DEL,L) ;                  05851800 T  0103:1
    H:=(L:=P)-(IF A LSS H THEN A ELSE H) ;                             05851850 T  0107:0
    IF NT1 GTR T THEN MOVE(K-NT1,[UT[Q]],[UT[T+1]]) ;                  05851900 T  0110:2
AZ: UT[T]←L&H[TODSIZE]; C←(Q←T-Q+1)←C ;                                05852000 T  0114:3
    IF(S←S-Q)>T←IF AVDIFFMAX>T←C DIV 2 THEN AVDIFFMAX ELSE T THEN IF J=1 05852100 T  0119:3
    OR S←G>T←(IF AVDIFFMAX>T←NT2 DIV 2 THEN AVDIFFMAX ELSE T) THEN GO Y 05852200 T  0125:3
    ELSE BEGIN                                                         05852300 T  0131:1
        IF (NT1←F-1-K)=0 THEN GO Y;                                    05852350 T  0132:0
        IF P((S←G) DIV 2,DUP) GTR NT1 THEN P(DEL,NT1);SETSHIFT;        05852400 T  0134:3
        FOR NT1←K STEP -1 UNTIL G DO UT[NT1]←UT[NT1-S] ;               05852500 T  0139:0
        END ;                                                          05852600 T  0144:1
    U[J]←(NT1←U[J])&C[TONUMENT]&(IF E←(NT1←NT1.MAXSIZ)<H THEN H ELSE   05852700 T  0144:1
        NT1)[TOMAXSIZ] ;                                               05852800 T  0150:1
 $ SET OMIT = NOT(SHAREDISK )                                          05852890 T  0151:3
 $ SET OMIT = SHAREDISK                                                05853420 T  0151:3
    DISKWAIT(R,AVS,B) ;                                                05853425 T  0151:3
 $ POP OMIT                                                            05853426 T  0153:0
 $ SET OMIT = NOT(SHAREDISK )                                          05853490 T  0153:0
 $ SET OMIT = SHAREDISK                                                05853593 T  0153:0
    FORGETSPACE(R) ;                                                   05853595 T  0153:0
DZ: UNLOCKTOG(USERDISKMASK);                                           05853600 T  0153:3
 $ POP OMIT                                                            05853601 T  0157:1
BZ: END OF FORGETUSERDISK ;                                            05853700 T  0157:1
                                                                                SIZE= 0158 WORDS
PROCEDURE DKBUSINESS(BUFF); VALUE BUFF; REAL BUFF;                     05950000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00096
BEGIN                                                                  05950200 T  0000:0
    REAL RCW=+0,                                                       05950400 T  0000:0
         MSCW=-2,                                                      05950500 T  0000:0
         MID=RCW+1,                                                    05950600 T  0000:0
         FID=MID+1,                                                    05950800 T  0000:0
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                TMID=FID+1,                                                 05950900 T  0000:0
                TFID=TMID+1,                                                05950950 T  0000:0
                A=TFID+1,                                                   05951000 T  0000:0
                B=A+1;                                                      05951200 T  0000:0
            INTEGER N=B+1;                                                  05951400 T  0000:0
            ARRAY HD=N+1[*];                                                05951600 T  0000:0
            BOOLEAN RDT=HD+1;                                               05951700 T  0000:0
            INTEGER C=RDT+1,D=C+1,I=D+1,J=I+1,R=J+1,S=R+1,                  05951800 T  0000:0
                    LA=S+1,SA1=NT2,                                         05951900 T  0000:0
                    H=NT7,K=NT6,L=NT5,G=NT4,T=NT3,Q=JUNK;                   05952000 T  0000:0
            REAL E=LA+1;                                                    05952200 T  0000:0
            REAL KTR=B;                                                     05952210 T  0000:0
            REAL TYPE=C;                                                    05952220 T  0000:0
            REAL WORD=D;                                                    05952230 T  0000:0
            REAL HA=J;                                                      05952240 T  0000:0
            REAL HEADER=R;                                                  05952250 T  0000:0
            ARRAY HDR=E[*];                                                 05952260 T  0000:0
            BOOLEAN FILTOG=E+1;                                             05952270 T  0000:0
            REAL SEGS=FILTOG+1;                                             05952300 T  0000:0
        $ SET OMIT = SHAREDISK                                              05952399 T  0000:0
            ARRAY UT=HD[*]; INTEGER AVS=SEGS+1; DEFINE U=AVTABLE#;          05952400 T  0000:0
            INTEGER SLEEPER=AVS+1;                                          05952500 T  0000:0
        $ POP OMIT                                                          05952501 T  0000:0
        $ SET OMIT = NOT(SHAREDISK)                                         05952505 T  0000:0
            LABEL V,W,X,Y,Z,AZ,BZ,CZ,INUSE,EXIT;                            05952600 T  0000:0
            LABEL FILEID,XDFILE,CONFLICT,FOUND,MSG,FINIS;                   05952620 T  0000:0
        $ SET OMIT = NOT(SHAREDISK)                                         05952690 T  0000:0
            REAL SUBROUTINE DECWORD;                                        05952705 T  0000:0
            BEGIN                                                           05952710 T  0001:0
                STREAM(T←0:W←[WORD]);                                       05952715 T  0001:0
                BEGIN                                                       05952720 T  0002:1
                    SI←W; DI←LOC T; DS←8DEC;                                05952725 T  0002:1
                END STREAM;                                                 05952730 T  0003:0
                DECWORD←P;                                                  05952735 T  0003:1
            END DECWORD;                                                    05952740 T  0003:2
            SUBROUTINE SCAN;                                                05952745 T  0003:3
            BEGIN                                                           05952750 T  0004:0
                STREAM(KTR,TYPE←0:T←0,W←[WORD]);                            05952755 T  0004:0
                BEGIN                                                       05952760 T  0005:3
                    SI←KTR;                                                 05952765 T  0005:3
L0:                 IF SC=" " THEN BEGIN SI←SI+1; GO L0; END;               05952770 T  0006:0
                    IF SC="""  THEN    % STRING IDENTIFIER                  05952775 T  0007:0
                    BEGIN                                                   05952780 T  0007:2
                        SI←SI+1; DS←LIT"0";                                 05952785 T  0007:2
                        IF SC="""  THEN                                     05952790 T  0008:1
                        BEGIN                                               05952795 T  0008:3
                            SI←SI+1;                                        05952800 T  0008:3
                            IF SC="""  THEN DS←CHR ELSE DS←LIT" ";          05952805 T  0009:0
                            DS←6LIT" ";                                     05952810 T  0010:2
                        END ELSE                                            05952815 T  0011:2
                        BEGIN                                               05952820 T  0011:3
                            7(IF SC≠"""  THEN DS←CHR ELSE DS←LIT" ");       05952825 T  0011:3
L1:                         IF SC≠"""  THEN BEGIN SI←SI+1; GO L1; END;      05952830 T  0013:3
                            SI←SI+1;                                        05952835 T  0014:3
                        END;                                                05952840 T  0015:0
                        GO T1;                                              05952845 T  0015:0
                    END;                                                    05952850 T  0015:1
                    IF SC=ALPHA THEN IF SC LSS "0" THEN                     05952855 T  0015:1
                    BEGIN              % IDENTIFIER                         05952860 T  0016:1
ID:                     DS←LIT"0";                                          05952865 T  0016:1
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                    7(IF SC=ALPHA THEN DS←CHR ELSE DS←LIT" ");                05952870 T  0016:3
L2:                 IF SC=ALPHA THEN BEGIN SI←SI+1; GO L2; END;               05952875 T  0018:3
T1:                 TALLY←1;                                                  05952880 T  0019:3
                    GO EXT;                                                   05952885 T  0020:0
                END;                                                          05952890 T  0020:1
                IF SC=ALPHA THEN IF SC LEQ "9" THEN                           05952895 T  0020:1
                BEGIN              % NUMBER                                   05952900 T  0021:1
                    SI←SI+1; TALLY←1;                                         05952905 T  0021:1
                    7(IF SC=ALPHA THEN IF SC LSS "0" THEN                     05952910 T  0021:3
                    BEGIN T←TALLY; SI←SI-T; JUMP OUT TO ID; END               05952915 T  0023:0
                    ELSE IF SC LEQ "9" THEN                                   05952920 T  0024:1
                    BEGIN SI←SI+1; TALLY←TALLY+1; END);                       05952925 T  0025:0
                    T←TALLY; SI←SI-T; DS←T OCT;                               05952930 T  0025:3
                    TALLY←2;                                                  05952935 T  0027:0
                    GO EXT;                                                   05952940 T  0027:1
                END;                                                          05952945 T  0027:2
                IF SC≠"←" THEN TALLY←3 ELSE TALLY←5;                          05952950 T  0027:2
                DS←7 LIT"0"; DS←CHR;                                          05952955 T  0028:3
EXT:            TYPE←TALLY;                                                   05952960 T  0030:1
                KTR←SI;                                                       05952965 T  0030:2
            END STREAM;                                                       05952970 T  0030:3
            P(.TYPE,STD,.KTR,STD);                                            05952975 T  0031:0
        END SCAN;                                                             05952980 T  0032:0
        SUBROUTINE MLOGIT;                                                    05952985 T  0032:1
        BEGIN                                                                 05952990 T  0033:0
            S←GETSPACE(15,9,0)+2;                                             05952995 T  0033:0
            STREAM(B:DATE,D←S+1);                                             05953000 T  0035:1
            BEGIN                                                             05953005 T  0037:1
                SI←LOC DATE; DS←8 OCT; DI←DI+8;                               05953010 T  0037:1
                SI←B;                                                         05953015 T  0038:0
                2(63(IF SC≠"←" THEN DS←CHR ELSE JUMP OUT 2 TO LL));           05953020 T  0038:1
LL:             DS←LIT"←"; DI←DI-1; B←DI;                                     05953025 T  0041:0
            END STREAM;                                                       05953030 T  0042:0
            LA← P INX 0;                                                      05953035 T  0042:1
            M[S]← (LA-S) DIV 5;                                               05953040 T  0043:1
            M[S+2]←IF FILTOG THEN -N ELSE SEGS;                               05953045 T  0045:3
            LINKUP(18,S);                                                     05953050 T  0049:2
        END MLOGIT;                                                           05953055 T  0050:2
        SUBROUTINE ENTERFILE;                                                 05953060 T  0050:3
        BEGIN                                                                 05953065 T  0051:0
            FIXARRAY(HD,B,30);                                                05953070 T  0051:0
            MOVE(30,HD-1,HD);                                                 05953075 T  0055:1
            HD[0]←@360003600001C1;                                            05953080 T  0057:3
            STREAM(DATE,XCLOCK,H←HD INX 3);                                   05953085 T  0059:0
            BEGIN                                                             05953090 T  0061:0
                SI←LOC DATE; DS←8OCT;                                         05953095 T  0061:0
                DI←DI-20; SI←SI+4; DS←4CHR;                                   05953100 T  0061:2
                DI←DI-7; SI←H; SI←SI+5; DS←3CHR;                              05953105 T  0062:1
                DI←H; DS←2LIT"+#"; SI←SI-3; DS←3CHR;                          05953110 T  0063:1
            END STREAM;                                                       05953115 T  0064:2
            HD[4].[42:1]:=1; % MAKE FILE NON-MOVEABLE                         05953117 T  0064:3
            HD[7]←(HD[8]←N)-(HD[9]←1);                                        05953120 T  0067:1
            HD[10]←A;                                                         05953125 T  0071:0
            ENTERUSERFILE(MID,FID.[6:42],B-1);                                05953130 T  0072:1
            STREAM(MID,FID,N,TMID,TFID,FILTOG,                                05953135 T  0075:1
            B←IF FILTOG THEN B ELSE BUFF);                                    05953140 T  0077:0
            BEGIN                                                             05953145 T  0079:0
                SI←LOC N; DI←LOC N; DS←8DEC;                                  05953150 T  0079:0
                DI←LOC N; DS←7FILL; DI←B;                                     05953155 T  0079:3
                DS←LIT" "; SI←LOC MID; SI←SI+1; DS←7CHR;                      05953160 T  0080:2
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                DS←LIT"/"; SI←SI+1; DS←7CHR;                                  05953165 T  0081:3
                DS←6LIT" SEGS="; DS←8CHR; DS←8LIT" CREATED";                  05953170 T  0082:3
                FILTOG(DS←6LIT" FROM "; SI←SI+1; DS←7CHR;                     05953175 T  0085:1
                DS←LIT"/"; SI←SI+1; DS←7CHR));                                05953180 T  0087:1
                DS←LIT"←";                                                    05953185 T  0088:2
            END STREAM;                                                       05953190 T  0089:0
            IF FILTOG THEN                                                    05953195 T  0089:1
            BEGIN                                                             05953200 T  0089:2
                MLOGIT;                                                       05953205 T  0090:0
                SPOUT(B);                                                     05953210 T  0091:0
            END ELSE                                                          05953215 T  0091:3
            FORGETSPACE(B);                                                   05953220 T  0091:3
        END ENTERFILE;                                                        05953225 T  0094:3
        P(0,0,0,0,0,BUFF,DUP); BUFF←P.[15:15]-1; P(0,0,B LSS 0);              05953350 T  0095:0
        P(0,0,0,0,0,0,0,0,0,0,0);                                             05953360 T  0099:2
      $ SET OMIT = NOT(SHAREDISK);                                            05953369 T  0102:1
        IF B.[CF]=0 THEN% MAKE RESERVE/DISK                                   05953400 T  0102:1
        BEGIN MID:="RESERVE"; FID:="DISK    ";                                05953600 T  0103:2
            IF (A:=DIRECTORYSEARCH("MID,FID,5))≠0 THEN                        05953800 T  0105:2
            BEGIN STREAM(BUFF);                                               05954000 T  0108:0
                DS:=30LIT" RESERVE/DISK ALREADY PRESENT←";                    05954200 T  0109:1
                GO TO EXIT;                                                   05954400 T  0113:2
            END;                                                              05954600 T  0116:0
            IF (A←GETUSERDISK((N←RESERVEDISKSIZE)&1[2:47:1]))=0 THEN          05954800 T  0116:0
            BEGIN STREAM(BUFF);                                               05955000 T  0119:2
                DS:=32LIT"**NO USER DISK FOR RESERVE/DISK←";                  05955200 T  0120:3
                GO TO EXIT;                                                   05955400 T  0125:1
            END;                                                              05955600 T  0127:0
            GO TO CZ;                                                         05955800 T  0127:0
        END;                                                                  05956000 T  0127:2
        IF RDT THEN                                                           05956250 T  0127:2
        BEGIN P(B); A:=M[BUFF INX 0]; N:=M[BUFF INX 1]; END ELSE              05956300 T  0127:3
        BEGIN                                                                 05956350 T  0132:2
        SCAN;                                                                 05956400 T  0133:0
        IF TYPE=1 THEN % IDENTIFIER                                           05956450 T  0134:0
        BEGIN                                                                 05956500 T  0134:3
            TMID←WORD;                                                        05956550 T  0135:1
            SCAN; IF WORD≠"/" THEN GO EXIT;                                   05956600 T  0136:0
    FILEID:                                                                   05956650 T  0138:1
            SCAN; IF NOT(TYPE=1 OR TYPE=2) THEN GO EXIT;                      05956700 T  0138:1
            TFID←IF TYPE=2 THEN DECWORD ELSE WORD;                            05956750 T  0141:1
            FILTOG←TRUE;                                                      05956800 T  0145:1
            SCAN;                                                             05956850 T  0146:0
        END;                                                                  05956900 T  0147:0
        IF TYPE=2 THEN % NUMBER                                               05956950 T  0147:0
        BEGIN                                                                 05957000 T  0147:3
            A←WORD;                                                           05957050 T  0148:1
            SCAN;                                                             05957100 T  0149:0
            IF TYPE=3 THEN IF WORD="/" THEN                                   05957150 T  0150:0
            BEGIN                                                             05957200 T  0152:0
                WORD←A;                                                       05957250 T  0152:2
                A←0;                                                          05957300 T  0153:1
                TMID←DECWORD;                                                 05957350 T  0154:0
                GO FILEID;                                                    05957400 T  0155:2
            END ELSE SCAN;                                                    05957450 T  0156:0
            IF TYPE=2 THEN N←WORD;                                            05957500 T  0158:0
        END;                                                                  05957550 T  0160:0
        END;                                                                  05957600 T  0160:0
        SEGS←N←N+(N=0);                                                       05957650 T  0160:0
        IF A≠0 THEN                                                           05957700 T  0162:1
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            BEGIN                                                                   05957750 T  0163:0
            STREAM(A,D:=[FID]);                                                     05958600 T  0163:2
            BEGIN SI:=LOC A; DS:=8 DEC; END;                                        05958800 T  0164:2
            IF (J:=A DIV 1000000) GEQ NEUP.NEUF OR A LSS DIRECTORYTOP+4 THEN        05959000 T  0165:1
        V:  BEGIN STREAM(FID,BUFF);                                                 05959200 T  0169:0
                BEGIN DS:=22LIT" INVALID DISK ADDRESS ";                            05959400 T  0170:2
                    SI:=LOC FID; DS:=8CHR; DS:=LIT"←";                              05959600 T  0173:2
                    DI:=DI-9; DS:=7 FILL;                                           05959800 T  0174:2
                END;                                                                05960000 T  0175:0
                GO TO EXIT;                                                         05960200 T  0175:1
            END;                                                                    05960400 T  0177:0
            IF WAITIO([FID]INX@100000000,@64,18+FID.[5:1]).[42:1] THEN GO TO V;     05960600 T  0177:0
            IF (R:=FID.[12:6]) GEQ 2 THEN % CHECK FOR 40 MIL ADDRESS                05960650 T  0181:0
                IF NOT WAITIO([FID]INX @140000000,@64,18+FID.[5:1]).[43:1]          05960660 T  0182:3
                    THEN GO TO V ELSE IF R GEQ 4 THEN GO TO V;% INV ADD             05960670 T  0186:2
            END;                                                                    05960675 T  0188:1
            IF FILTOG THEN GO XDFILE;                                               05960680 T  0188:1
            IF A=0 THEN GO EXIT;                                                    05960685 T  0189:1
            SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);                     05960700 T  0190:2
         $  SET OMIT = NOT(SHAREDISK)                                               05960705 T  0195:2
            J←J+1;                                                                  05960800 T  0195:2
       BZ:  D:=(I:=(E:=U[J]).STARTWRD) MOD 30;                                      05961000 T  0196:3
         $  SET OMIT = NOT(SHAREDISK)                                               05961005 T  0199:3
         $  SET OMIT = SHAREDISK                                                    05961199 T  0199:3
            AVS:=30-(S:=(C:=E AND NUMENTM)+D)MOD 30+S;                              05961200 T  0199:3
            FIXARRAY(UT,R,AVS); DISKWAIT(-R,AVS,B:=I DIV 30+USERDISKBOTTOM);        05961400 T  0204:0
            K:=S; L:=D; S:=I+C;                                                     05961600 T  0211:1
         $  POP OMIT                                                                05961601 T  0214:0
            G:=I-(NT2:=(P(U[J-1],DUP) AND NUMENTM)+P(XCH).STARTWRD);                05961800 T  0214:0
            S:=U[J+1].STARTWRD-S; H:=K:=K-1; IF UT[T:=L].DEND GTR A THEN GO X;      05962000 T  0218:1
        W:  IF UT[T←(H+L+1) DIV 2].DEND > A THEN IF UT[H←T-1].DEND > A THEN GO W    05962200 T  0225:0
            ELSE ELSE IF UT[T←T+1].DEND ≤ A THEN BEGIN L←T+1; GO W END;             05962400 T  0231:2
        X:  IF A GEQ L:=(H:=UT[T].DEND)-(Q:=UT[T].DSIZE) THEN                       05962600 T  0239:3
            IF (LA:=(A+N)) LEQ H THEN GO AZ%AREA AVAILABLE                          05962700 T  0244:0
            ELSE IF LA LEQ SA1:=(UT[T+1].DEND-UT[T+1].DSIZE) THEN                   05962800 T  0246:1
            N:=LA-A:=H ELSE N:=SA1-A:=H ELSE IF (LA:=A+N) GTR L THEN                05962900 T  0251:0
            N:=L-A ELSE RDT:=RDT OR @100000;                                        05963000 T  0257:3
            GO INUSE;                                                               05963100 T  0261:1
        Y:  TMID:=IF RDT THEN "DKTEST " ELSE "BADISK ";                             05963800 T  0263:0
         $  SET OMIT = NOT(DKBNODFX AND NOT DFX)                                    05963809 T  0265:1
            STREAM(TMID,FID,N,MID,B,BUFF);                                          05964000 T  0265:1
            BEGIN DS:=LIT ".."; SI:=LOC TMID; SI:=SI+1; DS:=7 CHR;                  05964200 T  0267:1
                DS:=LIT "/"; SI:=SI+1; DS:=7 CHR;                                   05964400 T  0268:2
                DS:=13 LIT " NOT CREATED("; SI:=SI+8; SKIP SB;                      05964500 T  0269:2
                IF SB THEN ELSE                                                     05964600 T  0272:0
                BEGIN SI:=LOC N; DS:=7 DEC; N:=DI; DI:=DI-7; DS:=7 FILL;            05964800 T  0272:3
                    DI:=N; DS:=5 LIT " SEGS"; SI:=SI+1;                             05964900 T  0274:0
                END; DS:=11 LIT " IN USE BY "; DS:=7 CHR; DS:=LIT"/";               05965000 T  0275:2
                SI:=SI+1; DS:=7 CHR;                                                05965200 T  0278:0
                DS:=2 LIT")←";                                                      05965400 T  0278:2
            END;                                                                    05965600 T  0279:0
            FORGETSPACE(B);                                                         05966100 T  0279:1
            GO EXIT;                                                                05966110 T  0280:0
        INUSE:          % SEARCH THE DIRECTORY TO FIND THE NAME OF THE CONFLICTING   05966200 T  0283:0
                        % FILE.  SINCE USERDISK REMAINS LOCKED, DISK ALLOCATION     05966210 T  0283:0
                        % CANNOT CHANGE.  HENCE, THE DIRECTORY NEED NOT BE LOCKED.  05966220 T  0283:0
            FORGETSPACE(R);                                                         05966400 T  0283:0
            FIXARRAY(UT,R,480);                                                     05966600 T  0283:3
            FOR J:=DIRECTORYTOP+4 STEP 16 WHILE TRUE DO                             05967000 T  0288:0
            BEGIN DISKWAIT(-R,480,J);                                               05967200 T  0292:0
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                    FOR I:=14 STEP -1 UNTIL 0 DO                                  05967400 T  0293:2
                    BEGIN E:=UT[450+2×I];                                         05967600 T  0295:0
                         IF(E EQV @114)=NOT 0 THEN                                05967800 T  0297:0
                         BEGIN MID:="SYSTEM "; B:=FID; GO Z; END;                 05967900 T  0298:2
                         IF (E EQV @14) NEQ NOT 0 THEN                            05968000 T  0302:0
                         BEGIN B:=UT[30×I+9] AND 31;                              05968200 T  0303:2
                              FOR K:=1 STEP 1 UNTIL B DO                          05968400 T  0306:2
                                   IF (C:=UT[30×I+9+K])NEQ 0 THEN                 05968600 T  0308:0
                                   IF A GEQ C THEN IF A LSS                       05968800 T  0311:0
                                   SA1:=(C+D:=UT[30×I+8]) THEN                    05968900 T  0313:0
                                   BEGIN MID:=E&((LA LEQ SA1) AND                 05969000 T  0316:1
                                        (RDT,[18:15]))[1:47:1];                   05969100 T  0317:3
                                        IF A+N GTR SA1 THEN N←SA1-A;              05969150 T  0320:0
                                        B:=UT[451+2×I];                           05969200 T  0323:0
                                        GO TO Z;                                  05969400 T  0325:0
                                   END;                                           05969600 T  0325:2
                         END;                                                     05969800 T  0327:3
                    END;                                                          05970000 T  0327:3
               END;                                                               05970200 T  0330:0
          Z:                                                                      05970300 T  0330:2
           $ SET OMIT = NOT SHAREDISK                                             05970390 T  0330:2
               UNLOCKTOG(USERDISKMASK);                                           05970500 T  0330:2
               GO TO Y;                                                           05970600 T  0334:0
          AZ: IF A NEQ L AND LA NEQ H THEN                                        05970800 T  0334:2
               BEGIN IF S=0 THEN                                                  05971000 T  0336:1
           $ SET OMIT = NOT(SHAREDISK)                                            05971005 T  0337:2
           $ SET OMIT = SHAREDISK                                                 05971095 T  0337:2
                    BEGIN IF G=0 OR D=0 THEN                                      05971200 T  0337:2
                         BEGIN USERDISKSPECIALCASE(2,E,UT,J); GO TO BZ END;       05971400 T  0339:3
                         S:=IF P((G+1) DIV 2,DUP) > D THEN P(DEL,D) ELSE P;       05971600 T  0342:2
                         U[J].STARTWRD:=I-S; G:=D-S; K:=G+C-1;                    05971800 T  0346:2
           $ POP OMIT                                                             05971801 T  0352:2
                         MOVE(C,[UT[D]],[UT[G]]); T:=T-S;                         05972000 T  0352:2
                    END;                                                          05972200 T  0355:3
                    FOR G:=K STEP -1 UNTIL T DO UT[G+1]:=UT[G];                   05972400 T  0355:3
                    UT[T]:=A&(A-L)[TODSIZE];                                      05972600 T  0361:1
                    UT[T+1]:=H&(H-LA)[TODSIZE];                                   05972800 T  0364:0
                    C:=C+1;                                                       05973000 T  0367:1
                    K ← K+1;                                                      05973100 T  0368:2
               END ELSE                                                           05973200 T  0369:3
               IF A=L AND LA=H THEN                                               05973400 T  0369:3
               BEGIN C:=C-1; MOVE(K-T,[UT[T+1]],[UT[T]]); K:=K-1 END              05973600 T  0372:0
               ELSE UT[T]:=(IF A=L THEN H ELSE A)&(Q-N)[TODSIZE];                 05973800 T  0378:0
               U[J].NUMENT:=C;                                                    05974000 T  0383:1
               IF Q=U[J].MAXSIZ THEN                                              05974200 T  0385:3
               BEGIN Q:=UT[H:=K-C+1].DSIZE;                                       05974400 T  0387:1
                    FOR H:=H STEP 1 UNTIL K DO                                    05974600 T  0390:3
                         IF P(UT[H].DSIZE,DUP) GTR Q THEN Q:=P ELSE P(DEL);       05974800 T  0392:0
                    U[J].MAXSIZ:=Q;                                               05975000 T  0397:3
               END;                                                               05975200 T  0400:1
               MID:=IF RDT THEN "DKTEST " ELSE "BADISK ";                         05975400 T  0400:1
           $ SET OMIT = NOT(OKBNODFX AND NOT DFX)                                 05975404 T  0402:2
           $ SET OMIT = NOT(SHAREDISK)                                            05975410 T  0402:2
           $ SET OMIT = SHAREDISK                                                 05975595 T  0402:2
               DISKWAIT(R,AVS,B);                                                 05975600 T  0402:2
           $ POP OMIT                                                             05975601 T  0403:3
               UNLOCKTOG(USERDISKMASK);                                           05975610 T  0403:3
               FORGETSPACE(R);                                                    05975620 T  0407:1
          CZ: ENTERFILE;                                                          05975630 T  0408:0
               GO EXIT;                                                           05975640 T  0409:0
```

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XDFILE:                                                                  05975700 T  0412:0
    IF (HEADER:=DIRECTORYSEARCH(TMID,NFLAG(-TFID OR M),4)) LSS 64 THEN   05975750 T  0412:0
    BEGIN                                                                05975800 T  0415:1
        TYPE:=HEADER;                                                    05975850 T  0415:3
        GO MSG;                                                          05975900 T  0416:2
    END;                                                                 05975950 T  0417:0
    HA←HEADER.[FF];                                                      05976000 T  0417:0
    HDR←[M[HEADER←HEADER INX 0]] & 30[8:38:10];                          05976050 T  0418:1
    MID←-"BADISK ";                                                      05976100 T  0421:2
    S←HDR[8]; % SEGMENTS PER ROW                                         05976150 T  0422:2
    IF A≠0 THEN                                                          05976200 T  0423:2
    BEGIN                                                                05976250 T  0424:1
        FOR I←HDR[9] STEP -1 UNTIL 1 DO                                  05976300 T  0424:3
        IF (LA←HDR[I+9])≠0 THEN                                          05976350 T  0428:3
        IF A GEQ LA AND A LSS LA+S THEN % FOUND ROW                      05976400 T  0430:3
        IF A+N LEQ LA+S THEN GO FOUND ELSE GO CONFLICT;                  05976450 T  0433:2
        TYPE←4;                                                          05976500 T  0439:0
        IF FALSE THEN                                                    05976550 T  0439:3
        BEGIN                                                            05976600 T  0440:0
CONFLICT:       TYPE←3;                                                  05976650 T  0440:2
                SEGS←A+N-LA-S;                                           05976700 T  0441:1
        END;                                                             05976750 T  0443:2
        HEADERUNLOCK(TMID,TFID,HEADER&HA[CTF]);                          05976800 T  0443:2
        GO MSG;                                                          05976850 T  0445:3
FOUND:                                                                   05976900 T  0446:1
        HDR[I+9]←0;                                                      05976950 T  0446:1
        DISKWAIT(HEADER,30,HA);                                          05977000 T  0448:0
        IF (I←A-LA) GTR 0 THEN FORGETUSERDISK(LA,I);                     05977050 T  0449:1
        IF (I←LA+S-(LA+A+N)) GTR 0 THEN FORGETUSERDISK(LA,I);            05977100 T  0452:2
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)                                  05977124 T  0457:1
        ENTERFILE;                                                       05977150 T  0457:1
        GO FINIS;                                                        05977200 T  0458:0
    END;                                                                 05977250 T  0458:2
    N←S; SEGS←0;                                                         05977300 T  0458:2
    FOR I←HDR[9] STEP -1 UNTIL 1 DO                                      05977350 T  0460:0
    IF (A←HDR[I+9])≠0 THEN                                               05977400 T  0464:0
    BEGIN                                                                05977450 T  0466:0
        HDR[I+9]←0;                                                      05977500 T  0466:2
        DISKWAIT(HEADER,30,HA);                                          05977550 T  0468:1
        WORD←A; FID←DECWORD;                                             05977600 T  0469:2
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)                                  05977624 T  0471:2
        ENTERFILE;                                                       05977650 T  0471:2
        SEGS←SEGS+N;                                                     05977700 T  0473:0
    END;                                                                 05977750 T  0474:1
FINIS:                                                                   05977800 T  0474:3
    FORGETSPACE(HEADER);                                                 05977850 T  0474:3
    P(DIRECTORYSEARCH(-TMID,TFID,6),DEL);                                05977900 T  0475:2
    TYPE←5;                                                              05977950 T  0477:1
MSG:                                                                     05978000 T  0478:0
    STREAM(TMID,TFID,SEGS,A,TYPE,BUFF);                                  05978050 T  0478:0
    BEGIN                                                                05978100 T  0480:0
        SI←LOC SEGS; DI←LOC SEGS; DS←8DEC; DS←8DEC;                      05978150 T  0480:0
        DI←LOC SEGS; DS←8FILL; DI←LOC A; DS←8 FILL; DI←BUFF;             05978200 T  0481:0
        DS←LIT"."; SI←LOC TMID; SI←SI+1; DS←7CHR;                        05978250 T  0482:1
        DS←LIT"/"; SI←SI+1; DS←7CHR;                                     05978300 T  0483:2
        DS←11 LIT" NOT XD-ED(";                                          05978350 T  0484:2
        CI←CI+TYPE;                                                      05978400 T  0486:1
        GO T0; GO T1; GO T2; GO T3; GO T4; GO T5;                        05978450 T  0486:3
T0:     DS←11 LIT"NOT ON DISK"; GO EXT;                                  05978500 T  0488:1
T3:     DS←8 CHR; DS←6 LIT" SEGS ";                                      05978550 T  0490:1
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T1:         DS←6 LIT"IN USE"; GO EXT;                                   05978600 T  0491:2
T2:         DS←11 LIT"SYSTEM FILE"; GO EXT;                             05978650 T  0492:3
T4:         SI←SI+8; DS←8 CHR;                                          05978700 T  0494:3
            DS←12 LIT" NOT IN FILE"; GO EXT;                            05978750 T  0495:1
T5:         DI←DI-11;                                                   05978800 T  0497:1
            DS←6 LIT" SEGS="; DS←8 CHR; DS←7 LIT" XD-ED←";              05978850 T  0497:2
            TYPE←DI; DI←BUFF; DS←LIT" "; DI←TYPE; GO EXT;               05978900 T  0500:0
EXT:        DS←2 LIT")←";                                               05978950 T  0501:2
      END STREAM;                                                       05979000 T  0502:0
      A←1; N←SEGS; % FOR LOGGING                                        05979050 T  0502:1
      GO EXIT;                                                          05979100 T  0503:3
EXIT:                                                                   05979310 T  0504:1
      IF A≠0 THEN                                                       05979320 T  0504:1
      BEGIN                                                             05979330 T  0505:3
            B←BUFF;                                                     05979340 T  0506:1
            MLOGIT;                                                     05979350 T  0507:0
      END;                                                              05979360 T  0508:0
        IF RDT THEN M[SLEEPER INX 0] :=1 ELSE SPOUT(BUFF);              05979400 T  0508:0
      BUFF:=0; IF MSCW NEQ 1 THEN KILL([MSCW]); % CALLED AS IND. RUNNER 05979500 T  0512:0
END;                                                                    05979600 T  0514:3
                                                                                  SIZE= 0515 WORDS
 SAVE PROCEDURE DISKIO(LOCIOD,CORE,SIZE,DISK);%                         06000000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00564
            VALUE CORE,SIZE,DISK;%                                      06001000 T  0000:0
            REAL LOCIOD;%                                               06002000 T  0000:0
            INTEGER CORE,SIZE,DISK;%                                    06003000 T  0000:0
            BEGIN REAL IOD, OLAYIO, FIN;                                06004000 T  0000:0
            OLAYIO := SIZE.[3:1]; SIZE.[3:1] := 0;                      06004010 T  0000:0
                IF DISK.[1:1] THEN                                      06005000 T  0003:3
                BEGIN % AUXILIARY MEMORY                                06006000 T  0004:2
      $ SET OMIT = NOT(AUXMEM)                                          06006999 T  0005:0
      $ SET OMIT = AUXMEM                                               06009200 T  0005:0
                BYBY("INVALID AUXMEM I/O←",19);                         06009300 T  0005:0
      $ POP OMIT                                                        06009400 T  0011:2
                END                                                     06009500 T  0011:2
                ELSE BEGIN IOD := ABS(CORE) & SIZE[8:38:10]             06010000 T  0011:2
                          & ((SIZE INX 29) DIV 30 +@1000)[CTF]          06011000 T  0012:3
                          & CORE[24:1:1] & 3[5:46:2];                   06012000 T  0015:1
      $ SET OMIT = NOT(SHAREDISK)                                       06012499 T  0018:0
                     STREAM(DISK,D:=CORE,[CF]);                         06013000 T  0018:0
                         BEGIN SI ← LOC DISK; DS ← 8 DEC END;%          06014000 T  0019:2
                     SIZE ← 2;%                                         06015000 T  0020:1
                  END;%                                                 06016000 T  0021:0
                FIN:=IF OLAYIO THEN IOD&DISK[CTC]&DISK[8:21:12] ELSE IOD; 06016100 T  0021:0
                % ACTUAL DISK ADDRESS IN FINALQUE FOR OLAY I/O-S       06016200 T  0024:3
                IOREQUEST(NABS(FIN)&@377[25:40:8],IOD,[LOCIOD]&%        06017000 T  0024:3
                    (SIZE+16)[12:42:6]&OLAYIO[9:47:1]);                 06018000 T  0027:0
                LOCIOD ← 0;%                                            06019000 T  0029:3
            END DISKIO;%                                                06020000 T  0030:3
                                                                                  SIZE= 0031 WORDS
PROCEDURE FORGETESPDISK(SEGMENT); VALUE SEGMENT; REAL SEGMENT; FORWARD; 06020500 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00114
 REAL PROCEDURE GETESPDISK;%                                            06021000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00114
            BEGIN REAL T=NT1;                                           06022000 T  0000:0
                IF ESPCOUNT=0 THEN                                      06022100 T  0000:0
                BEGIN                                                   06022200 T  0001:0
                    STREAM(D:=T:=GETSPACE(2,0,0)+2);                    06022300 T  0001:2
                        DS←12 LIT " NO ESPDISK←";                       06022400 T  0004:1
                    SPOUT(T);                                           06022500 T  0006:1
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                    SLEEP([ESPCOUNT],NOT 0);                                    06022600 T  0007:0
                END;                                                            06022700 T  0008:3
                STREAM(T←0,A←ESPTAB:X←0);                                       06023000 T  0008:3
                BEGIN SI←A;                                                     06024000 T  0010:1
                L1:  IF SC=""" THEN BEGIN SI←SI+1; GO TO L1 END;                06025000 T  0010:2
                     A←SI; DI←A;                                                06026000 T  0011:2
                L2:  IF SB THEN                                                 06027000 T  0012:0
                     BEGIN TALLY←TALLY+1; SKIP SB; SKIP DB; GO TO L2 END;       06028000 T  0012:2
                     T←TALLY; DS←SET;                                           06029000 T  0013:2
                END;                                                            06030000 T  0014:0
                GETESPDISK←((P(DUP),[CF]-ESPTAB)×8                              06031000 T  0014:1
                +P(XCH),[30:3])×6+P+ESPDISKBOTTOM;                              06032000 T  0015:2
                ESPCOUNT←ESPCOUNT-1;                                            06033000 T  0018:3
            END;                                                                06033100 T  0020:0
                                                                                         SIZE= 0021 WORDS
        PROCEDURE FORGETESPDISK(SEGMENT); VALUE SEGMENT; REAL SEGMENT;%         06036000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00115
            BEGIN REAL S,T;                                                     06037000 T  0000:0
                IF SEGMENT LSS ESPDISKBOTTOM OR                                 06037100 T  0000:0
                     SEGMENT GTR ESPDISKTOP THEN                                06037200 T  0001:1
                BEGIN S ← FLAG(-"ESPDISK"); T ← FLAG(-"ERROR.←");               06037300 T  0002:1
                     S ← WAITIO([SEGMENT] INX 2,0,25);                          06037400 T  0005:1
                     SNOOZE(1023,0,0);                                          06037500 T  0007:2
                END;                                                            06037600 T  0008:3
                T:=(S:=(T:=SEGMENT-ESPDISKBOTTOM) DIV 6)×6-T;                   06037700 T  0008:3
                S←S.[30:15]&S[30:45:3]+ESPTAB;                                  06038000 T  0012:2
                STREAM(T,S); BEGIN SKIP T DB; DS←RESET END;                     06038100 T  0015:1
                ESPCOUNT←ESPCOUNT+1;                                            06038200 T  0017:1
            END;%                                                               06039000 T  0018:2
                                                                                         SIZE= 0021 WORDS
        $ SET OMIT = NOT(DEBUGGING)                                             06045999 T  0000:0
        REAL SCHEDULEIDS; % A BIT IN POSITION X MEANS THAT THERE IS A JOB IN THE 06056099 T  0000:0
                          % SCHEDULE(SHEET) WITH SCHEDULE-ID X.  USED BY COM5, 06056100 T  0000:0
                          % SELECTRUN AND CCFINISH.                            06056200 T  0000:0
        $ SET OMIT = NOT(SHAREDISK)                                             06057000 T  0000:0
        SAVE PROCEDURE DISKWAIT(CORE,SIZE,DISK);                                06061500 T  0000:0
                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00595
            VALUE CORE,SIZE,DISK;                                               06062000 T  0000:0
            REAL CORE,SIZE,DISK;                                                06063000 T  0000:0
            BEGIN REAL T;                                                       06064000 T  0000:0
                DISKIO(T,(ABS(CORE)-1)&CORE[1:1:1],SIZE,DISK);                  06065000 T  0000:0
                SLEEP([T],IOMASK);                                              06066000 T  0003:2
            END;                                                                06067000 T  0005:0
                                                                                         SIZE= 0006 WORDS
        PROCEDURE DISKSQUASH(BUFF);                                             06068000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00116
        VALUE BUFF; REAL BUFF;                                                  06068100 T  0000:0
        BEGIN                                                                   06068200 T  0000:0
        REAL RCW=+0, B=+1, E=B+1, F=E+1, R=F+1, HI=R+1, LO=HI+1,                06068300 T  0000:0
             WSCW=-2,                                                           06068350 T  0000:0
             CNT=LO+1, USE=CNT+1, TOG=USE+1, IOD=TOG+1;                         06068400 T  0000:0
        REAL T=IOD+1, SUM=T;                                                    06068500 T  0000:0
        REAL A1= T+1, A2=A1+1, A3=A2+1, A4=A3+1, A5=A4+1; % ARRAY VARIABLES     06068600 T  0000:0
        REAL X1=A5+1, X2=X1+1, X3=X2+1, X4=X3+1, X5=X4+1; % SCRATCH VARIABLES   06068700 T  0000:0
        REAL LOCIOD=X4, HICNT=X4, LSTCNT=X5;                                    06068800 T  0000:0
        BOOLEAN CONFLICT=X5+1, PASSTWO=CONFLICT+1, EUNOTSQUASHED=PASSTWO+1,     06068900 T  0000:0
             FILEOK=EUNOTSQUASHED+1, SQALL=FILEOK+1;                            06069000 T  0000:0
        INTEGER C=SQALL+1, D=C+1, I=D+1, S=I+1, EU=S+1, AV=EU+1,                06069100 T  0000:0
             AVSIZE=AV+1, DISKAV=AVSIZE+1, SQSIZE=DISKAV+1;                     06069200 T  0000:0
        ARRAY UT=SQSIZE+1[*], MV=UT+1[*], DIR=MV+1[*], EUS=DIR+1[*];            06069300 T  0000:0
```

```
REAL PRTADDR=EUS+1, PRTVALUE=PRTADDR+1;                                  06069400 T 0000!0
 $ SET OMIT = NOT SHAREDISK                                              06069500 T 0000!0
LABEL SCAN,SPOUTERR,CK,OKINUSE,NOTOK,OKBOUNDS,MVEMORE,MVE,               06069900 T 0000!0
      ENDMVE,AGAIN,OK,NEXT,SQIT,STOPSQ,STOPIT,SDXIT,OUT,FIXMV;           06070000 T 0000!0
DEFINE                                                                   06070100 T 0000!0
 $ SET OMIT = SHAREDISK                                                  06070200 T 0000!0
       U          = AVTABLE#,                                            06070300 T 0000!0
 $ POP OMIT                                                              06070400 T 0000!0
       LINK       = [12:10]#,                                            06070500 T 0000!0
       ASIZE      = [3:19]#,                                             06070600 T 0000!0
       LOCKED     = [2:1]#,                                              06070700 T 0000!0
       FACTOR     = 10000#,                                              06070800 T 0000!0
       MINSIZE    = 10#,                                                 06070900 T 0000!0
       MAXMVSIZE  = 900#,                                                06071000 T 0000!0
       KEYINMASK  = [18:15]#;                                            06071100 T 0000!0
COMMENT                                                                  06071200 T 0000!0
       FACTOR:    THE MAXIMUM SEPARATION, IN SEGMENTS, ALLOWED           06071300 T 0000!0
                  BETWEEN TWO AVAILABLE AREAS WHICH ARE TO BE            06071400 T 0000!0
                  SQUASHED. IN GENERAL, FACTOR SHOULD NOT BE MADE        06071500 T 0000!0
                  LARGER THAN THE CAPACITY OF A 20 ML SUBMOD,I.E.,       06071600 T 0000!0
                  10,000 SEGMENTS.                                       06071700 T 0000!0
       MINSIZE:   THE MINIMUM SIZE, IN SEGMENTS, ALLOWED FOR AN          06071800 T 0000!0
                  AVAILABLE AREA TO BE CONSIDERED AS A CANDITATE         06071900 T 0000!0
                  FOR SQUASHING. MINSIZE MAY BE MADE AS SMALL AS         06072000 T 0000!0
                  ONE, BUT AS SQUASH TIME VARIES INVERSLY WITH           06072100 T 0000!0
                  MINSIZE, SMALLER VALUES WILL INCREASE SQUASH-          06072200 T 0000!0
                  ING TIME PROPORTIONALLY. MINSIZE LIMITA-               06072300 T 0000!0
                  TIONS MAY BE OVERRIDEN BY THE LOOKAHEAD                06072400 T 0000!0
                  FACILITY.                                              06072500 T 0000!0
       MAXMVSIZE: LIMITS THE NUMBER OF INDIVIDUAL AREAS IN AN            06072600 T 0000!0
                  IN-USE AREA TO BE AT MOST MAXMVSIZE/3 AREAS            06072700 T 0000!0
                  FOR SQUASHING TO OCCUR.                                06072800 T 0000!0
                  NOTE:                                                  06072900 T 0000!0
                    1) MAXMVSIZE MUST BE LESS THAN 1024,                 06073000 T 0000!0
                    2) MAXMVSIZE MUST BE A MULTIPLE OF 3,        ;       06073100 T 0000!0
DEFINE CELL      = M[PRTADDR]#,                                          06073200 T 0000!0
       STOP      = M[PRTADDR]#,                                          06073300 T 0000!0
       STOPCK    = IF M[PRTADDR] THEN GO STOPSQ#,                        06073400 T 0000!0
       MOVEABLE  = NOT DIR[X3+4].[42:1]#,                                06073500 T 0000!0
       TEMPDSK   = MV[I+2].[1:1]#;                                       06073600 T 0000!0
SUBROUTINE SQUASHMESS;                                                   06073700 T 0000!0
BEGIN                                                                    06073800 T 0001!0
     IF (X1:=P(XCH))>1 THEN X3:=IF SQSIZE≠0 THEN SQSIZE                  06073900 T 0001!0
     ELSE EUS[EU-1].DSIZE;                                               06074000 T 0004!0
     STREAM(A:=EU-1,B:=X1,C:=X3,C1:=0,C2:=0,CX:=0,                       06074100 T 0006!3
          NOSQ:=EUNOTSQUASHED, X2:=X2:=SPACE(10));                       06074200 T 0009!0
     BEGIN                                                               06074300 T 0011!3
          C1:=CI; GO TO L0;                                              06074400 T 0011!3
          SI:=LOC A; DS:=4 LIT" EU "; DS:=2 DEC;                         06074500 T 0012!1
          A:=DI; DI:=DI-2; DS:=FILL; DI:=A; CI:=CX;                      06074600 T 0013!2
     L0:  C2:=CI; GO TO L2; DS:=4 LIT"NULL"; CI:=CX;                     06074700 T 0014!3
     L1:  DS:=7 LIT" SQUASH"; CI:=CX;                                    06074800 T 0016!1
     L2:  CI:=CI+B;                                                      06074900 T 0017!3
          GO TO LL0; GO TO LL0; GO TO LL2; GO TO LL2;                    06075000 T 0018!1
     LL0: CX:=CI; CI:=C1;                                                06075100 T 0019!1
          B(NOSQ(DS:=LIT" "; CX:=CI; CI:=C2));                           06075200 T 0019!3
          CX:=CI; GO TO L1;                                              06075300 T 0022!1
          B(NOSQ(JUMP OUT 2 TO LL1); DS:=2 LIT"ED";                      06075400 T 0022!3
            JUMP OUT TO LL1);                                            06075500 T 0025!1
          DS:=3 LIT"ING";                                                06075600 T 0026!0
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        LL1: GO TO EXT;                                                 06075700 T  0026:3
        LL2: DS:=LIT" "; CX:=CI; CI:=C2;                                06075800 T  0027:0
             CX:=CI; GO TO L1;                                          06075900 T  0028:0
             SI:=B; 2(SI:=SI-8); B:=SI;                                 06076000 T  0028:2
             B(CX:=CI; CI:=C1);                                         06076100 T  0029:3
             DS:=2 LIT" ("; SI:=LOC C;                                  06076200 T  0031:0
             DS:=6 DEC; C:=DI; DI:=DI-6; DS:=5 FILL; DI:=C;             06076300 T  0031:3
             DS:=19 LIT" SEGMENTS AVAILABLE";                           06076400 T  0033:0
             B(JUMP OUT TO LL3); DS:=4 LIT" ON ";                       06076500 T  0035:3
             CX:=CI; CI:=C1;                                            06076600 T  0037:3
        LL3: DS:=LIT")";                                                06076700 T  0038:1
        EXT: DS:=LIT"←";                                                06076800 T  0038:3
        END;                                                            06076900 T  0039:1
        SPOUT(X2);                                                      06077000 T  0039:2
   END PRINTING MESSAGES;                                               06077100 T  0040:1
   SUBROUTINE SCANMESSAGE;                                              06077200 T  0040:2
   BEGIN                                                                06077300 T  0041:0
        X1:=(X5:=NEUP.[FF])-1; X2:=BUFF.[30:18];                        06077400 T  0041:0
        FIXARRAY(EUS,A5,X5);                                            06077500 T  0044:2
        MOVE(X5,A5-1,A5);                                               06077600 T  0048:3
        X5:=-1; % WILL BE GEQ ZERO AFTER FIRST PASS THRU SCAN           06077700 T  0050:3
   SCAN:                                                                06077800 T  0051:3
        STREAM(A:=0,SIZ:=0,EU1:=-1,EU2:=-1,ERRTOG:=0:NO:=0,             06077900 T  0051:3
              B:=X5<0,EU:=@2564000000000000,CX:=0,C1:=0,                06078000 T  0054:1
              C2:=0,KTR:=X2);                                           06078100 T  0055:3
        BEGIN                                                           06078200 T  0056:2
             C1:=CI; GO TO L2;                                          06078300 T  0056:2
             IF SC<0 THEN                                               06078400 T  0057:0
        A0:  BEGIN TALLY:=1; NO:=TALLY; CI:=CX END;                     06078500 T  0057:2
             IF SC=12 THEN GO TO A0;                                    06078600 T  0058:1
             DI:=LOC SIZ;                                               06078700 T  0059:0
        L1:  IF SC GEQ 0 THEN IF SC<12 THEN                             06078800 T  0059:1
             BEGIN                                                      06078900 T  0060:1
                  TALLY:=TALLY+1;                                       06079000 T  0060:1
                  SI:=SI+1;                                             06079100 T  0060:2
                  GO TO L1;                                             06079200 T  0060:3
             END;                                                       06079300 T  0061:0
             NO:=TALLY;                                                 06079400 T  0061:0
             SI:=SI-NO;                                                 06079500 T  0061:1
             DS:=NO OCT;                                                06079600 T  0061:3
             TALLY:=0; NO:=TALLY;                                       06079700 T  0062:1
             CI:=CX;                                                    06079800 T  0062:3
        L2:  C2:=CI; GO TO STR;                                         06079900 T  0063:0
             TALLY:=1; DI:=LOC EU;                                      06080000 T  0063:2
             IF 2 SC=DC THEN % AN EU SPECIFIED                          06080100 T  0064:0
             BEGIN                                                      06080200 T  0064:2
                  CX:=CI; GO TO L3;                                     06080300 T  0064:2
                  IF SC GEQ 0 THEN IF SC<12 THEN                        06080400 T  0065:0
                  BEGIN                                                 06080500 T  0066:0
                       SI:=SI+1; DI:=LOC EU1;                           06080600 T  0066:0
                       IF  SC GEQ 0 THEN IF SC<12 THEN                  06080700 T  0066:2
                       TALLY:=2 ELSE GO TO A1;                          06080800 T  0067:2
                       SI:=SI-1; NO:=TALLY;                             06080900 T  0068:1
                       DS:=NO OCT; TALLY:=0;                            06081000 T  0068:3
                  END ELSE GO TO A1;                                    06081100 T  0069:2
             END;                                                       06081200 T  0070:0
             NO:=TALLY; CI:=A;                                          06081300 T  0070:0
             CI:=A;                                                     06081400 T  0070:2
        L3:  IF SC=" " THEN BEGIN SI:=SI+1; GO TO L3 END; CI:=CX;       06081500 T  0070:3
        STR: SI:=KTR; CI:=CI+B; GO TO L5; GO TO L4;                     06081600 T  0072:0
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L4:  IF SC="←" THEN GO TO EXT;                                  06081700 T 0073:1
     CX:=CI; CI:=C1; % SIZE CHECK                               06081800 T 0074:0
     NO(JUMP OUT TO L5);                                        06081900 T 0074:2
     CX:=CI; GO TO L3;                                          06082000 T 0075:3
     IF SC≠"←" THEN                                             06082100 T 0076:1
A1:  GO TO ERR;                                                 06082200 T 0076:3
     GO EXT;                                                    06082300 T 0077:0
L5:  A:=CI; CI:=C2; % EU CHECK                                  06082400 T 0077:1
     NO(JUMP OUT TO ERR);                                       06082500 T 0077:3
     IF SC="-" THEN                                             06082600 T 0079:0
     BEGIN                                                      06082700 T 0079:2
          SI:=SI+1; CX:=CI; GO TO L3;                           06082800 T 0079:2
          CX:=CI; CI:=C1; % SIZE CHECK                          06082900 T 0080:1
          NO(JUMP OUT TO L6); GO TO L7;                         06083000 T 0080:3
L6:       TALLY:=EU1; EU2:=TALLY;                               06083100 T 0082:1
          A:= CI; CI:=C2; % EU CHECK                            06083200 T 0083:1
          NO(JUMP OUT TO ERR);                                  06083300 T 0083:3
     END;                                                       06083400 T 0085:0
L7:  A:=TALLY; % ZERO OUT A                                     06083500 T 0085:0
     IF SC="←" THEN GO TO EXT;                                  06083600 T 0085:1
     IF SC="," THEN                                             06083700 T 0086:0
     BEGIN SI:=SI+1; A:=SI; GO EXT END;                         06083800 T 0086:2
ERR: TALLY:=1; ERRTOG:=TALLY;                                   06083900 T 0087:1
EXT:                                                            06084000 T 0087:3
END;                                                            06084100 T 0087:3
IF P THEN % ERROR IN INPUT MESSAGE                              06084200 T 0088:0
BEGIN                                                           06084300 T 0088:0
SPOUTERR:                                                       06084400 T 0088:2
     SPOUT(P(BUFF,[15:15]-1,DUP)&M[P-1][9:9:9]);                06084500 T 0088:2
     FORGETSPACE(A5);                                           06084600 T 0092:2
     P(XIT);                                                    06084700 T 0093:1
END;                                                            06084800 T 0093:2
IF (X3:=P) GEQ 0 THEN % AN EU RANGE SPECIFIED.                  06084900 T 0093:2
BEGIN                                                           06085000 T 0094:2
     IF (X4:=P)>X1 OR X3>X1 THEN GO SPOUTERR;                   06085100 T 0095:0
     FOR I:=X3 STEP 1 UNTIL X4 DO EUS[I]:=1;                    06085200 T 0097:3
     P(DEL); GO CK;                                             06085300 T 0103:2
END;                                                            06085400 T 0104:1
X5:=P(XCH); % SIZE OF SQUASH                                    06085500 T 0104:1
IF (X4:=P) GEQ 0 THEN IF X4>X1 THEN GO SPOUTERR ELSE            06085600 T 0105:0
EUS[X4]:=1&X5[TODSIZE] ELSE IF X5=0 THEN SQALL:=1               06085700 T 0107:1
ELSE SQSIZE:=X5;                                                06085800 T 0111:3
CK:  IF (X2:=P)≠0 THEN GO SCAN; % NOT FINISHED YET              06085900 T 0113:3
END SCANNING INPUT MESSAGE;                                     06086000 T 0115:1
SUBROUTINE FIXANDWRITEHEADER;                                   06086100 T 0115:2
BEGIN                                                           06086200 T 0116:0
     M[A4+9+X2,[28:5]]:=C;                                      06086300 T 0116:0
     DISKWAIT(A4,30,X2,[CF]);                                   06086400 T 0119:0
END WRITING NEW HEADER;                                         06086500 T 0120:3
SUBROUTINE BOUNDARYCK;                                          06086600 T 0121:0
BEGIN                                                           06086700 T 0121:0
     LSTCNT:=0; M[A2-1]:=-1;                                    06086800 T 0121:0
MVEMORE:                                                        06086900 T 0124:0
     X3:=HICNT:=0; STOPCK;                                      06087000 T 0124:0
     FOR I:=CNT STEP -3 UNTIL 0 DO                              06087100 T 0127:0
     IF P(MV[I],DUP).DEND>X3 AND P(XCH)>0 THEN                  06087200 T 0128:0
     BEGIN X3:=MV[I].DEND; HICNT:=I END;                        06087300 T 0130:3
     IF X3=0 THEN % RE-ORDERING OF MV ARRAY COMPLETE            06087400 T 0135:3
     BEGIN                                                      06087500 T 0136:2
          MV[LSTCNT+2].LINK:=@1777;                             06087600 T 0137:0
```

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                GO OKBOUNDS;                                                    06087700 T  0140:0
            END;                                                                06087800 T  0140:2
            IF M[A2-1]<0 THEN M[A2-1]:=HICNT ELSE MV[LSTCNT+2].LINK:=HICNT;     06087900 T  0140:2
            MV[LSTCNT:=HICNT]:=NABS(*P(DUP));                                   06088000 T  0148:2
            MV[HICNT+1].[2:26]:=HI;                                             06088100 T  0150:3
            HI:=HI-(X3:=MV[HICNT].DSIZE);                                       06088200 T  0153:3
            IF X3 LEQ UT[AV+1].ASIZE THEN                                       06088300 T  0156:1
        OK: BEGIN                                                               06088400 T  0158:1
                MV[HICNT+2]:=0;                                                 06088500 T  0158:3
                GO MVEMORE;                                                     06088600 T  0160:2
            END ELSE                                                            06088700 T  0161:0
            BEGIN % LOOKING FOR TEMPORARY STORAGE                               06088800 T  0161:0
                FOR I:=S-2 STEP -1 UNTIL D DO                                   06088900 T  0161:2
                IF X3 LEQ UT[I].ASIZE THEN                                      06089000 T  0165:3
                IF NOT UT[I].LOCKED THEN      % OK FOR TEMP STORAGE              06089100 T  0167:1
                BEGIN                                                           06089200 T  0169:0
                    MV[HICNT+2]:=UT[I].DEND&I[2:38:10];                         06089300 T  0169:2
                    GO MVEMORE;                                                 06089400 T  0173:0
                END;                                                            06089500 T  0173:2
            END;                                                                06089600 T  0174:0
            IF PASSTWO THEN % NON-PROTECTED FILE TRANSFER                       06089700 T  0174:0
            BEGIN                                                               06089800 T  0174:1
                DISKWAIT(-A4,30,MV[HICNT+2].[CF]);                              06089900 T  0174:3
                STREAM(A:=[M[A4+MV[HICNT+2].[FF]]],X2:=X2:=SPACE(6));           06090000 T  0177:2
                BEGIN                                                           06090100 T  0183:0
                    DS:=27 LIT" #FILE INTEGRITY CONFLICT: "; SI:=A;             06090200 T  0183:0
                    SI:=SI+1; DS:=7 CHR; DS:=LIT"/"; SI:=SI+1;                  06090300 T  0187:0
                    DS:=7 CHR; DS:=LIT"←";                                      06090400 T  0188:1
                END;                                                            06090500 T  0189:0
                SPOUT(X2); CELL.KEYINMASK:=7;                                   06090600 T  0189:1
                SLEEP((PRIADDR INX M),@77777); STOPCK;                          06090700 T  0192:1
                IF CELL=2 THEN BEGIN CELL:=0&1[CTF]; GO TO OK END;              06090800 T  0196:0
            END ELSE CONFLICT:=TRUE;                                            06090900 T  0202:0
            TOG:=0;                                                             06091000 T  0203:1
        OKBOUNDS:                                                               06091100 T  0204:0
        END BOUNDARY AND CONFLICT CHECKING;                                     06091200 T  0204:0
        BOOLEAN SUBROUTINE INUSEOK;                                             06091300 T  0204:1
        BEGIN                                                                   06091400 T  0205:0
            UT[AV+1].[1:1]:=NOT PASSTWO; TOG:=1; CNT:=0;                        06091500 T  0205:0
            FOR X1:=DIRECTORYTOP+4 STEP 16 WHILE TRUE DO                        06091600 T  0209:3
            BEGIN STOPCK;                                                       06091700 T  0213:3
                DISKWAIT(-A1,480,X1);                                           06091800 T  0215:2
                FOR I:=14 STEP -1 UNTIL 0 DO                                    06091900 T  0217:0
                BEGIN STOPCK;                                                   06092000 T  0218:0
                    IF ((E:=DIR[450+P(I,DUP,+)]) EQV @114)=NOT 0 THEN           06092100 T  0219:3
                    GO TO NOTOK;                                                06092200 T  0223:0
                    IF (E EQV @14)≠ NOT 0 THEN                                  06092300 T  0223:2
                    BEGIN FILEOK:=FALSE; % INITIATE STATUS CHECKING             06092400 T  0225:0
                        B:=DIR[(X3:=30×I)+9].[43:5];                            06092500 T  0226:1
                        FOR X2:=1 STEP 1 UNTIL B DO                             06092600 T  0229:1
                        IF (C:=DIR[X3+9+X2])≠0 THEN                             06092700 T  0230:0
                        IF P(C,DUP)<HI AND P(XCH)>LO THEN                       06092800 T  0232:2
                        IF FILEOK THEN GO FIXMV ELSE     % CHECK STATUS        06092900 T  0235:0
                        IF NOT SYSTEMFILE(E,DIR[450+P(I,DUP,+)+1]) AND          06093000 T  0235:3
                            DIR[X3+4].[12:4]=0 THEN      % NOT SYSTEM FILE      06093100 T  0239:2
                        IF (P(DIR[X3+4],DUP).[1:3] OR P(XCH).[16:20] OR         06093200 T  0241:3
                            DIR[X3+9].[1:28])=0 THEN     % FILE NOT IN USE      06093300 T  0245:0
                        IF MOVEABLE THEN                 % NOT PERMANENT        06093400 T  0247:1
                        BEGIN                                                   06093500 T  0249:2
                            FILEOK:=TRUE; % ELIMINATE STATUS CHECKING           06093600 T  0250:0
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FIXMV:     USE:=USE-(MV[CNT]:=C&DIR[X3+8][TOUSIZE])                06093700 T  0250:3
                                                .DSIZE;            06093800 T  0252:3
           MV[CNT+1]:=(X1+I)&X2[CTF]; % HEADER INFO                06093900 T  0255:1
           IF PASSTWO THEN % SAVE LOC OF FIDS                      06094000 T  0258:0
           MV[CNT+2]:=(X1+15)&(I×2)[CTF];                          06094100 T  0258:1
           IF USE=0 THEN % FOUND ALL USERS OF IN-USE AREA          06094200 T  0262:0
           BEGIN                                                   06094300 T  0262:3
                BOUNDARYCK;                                        06094400 T  0263:1
                GO OKINUSE;                                        06094500 T  0264:0
           END;                                                    06094600 T  0264:2
           IF USE<0 THEN GO TO NOTOK; % DIRECTORY ERROR            06094700 T  0264:2
           IF (CNT:=CNT+3) MOD 150 = 0 THEN                        06094800 T  0265:3
           BEGIN                                                   06094900 T  0268:0
                IF CNT=MAXMVSIZE THEN GO TO NOTOK;                 06095000 T  0268:2
                FIXARRAY(MV,X4,(CNT+150));                         06095100 T  0269:3
                MOVE(CNT,A2,X4);                                   06095200 T  0275:0
                FORGETSPACE(A2);                                   06095300 T  0276:2
                A2:=X4;                                            06095400 T  0277:1
           END;                                                    06095500 T  0278:0
        END ELSE GO TO NEXT ELSE GO TO NEXT;                       06095600 T  0278:0
     END;                                                          06095700 T  0280:1
NEXT:     END;                                                     06095800 T  0280:1
     END;                                                          06095900 T  0282:2
NOTOK:                                                             06096000 T  0283:0
     TOG:=0;                                                       06096100 T  0283:0
OKINUSE:                                                           06096200 T  0283:3
     INUSEOK:=TOG;                                                 06096300 T  0283:3
END SEARCHING IN USE AREAS;                                        06096400 T  0284:1
SUBROUTINE MOVEANDFIX;                                             06096500 T  0284:2
BEGIN                                                              06096600 T  0285:0
     I:=M[A2-1]; STOPCK;                                           06096700 T  0285:0
     WHILE I<@1777 DO                                              06096800 T  0288:3
     BEGIN                                                         06096900 T  0290:0
          DISKWAIT(-A4,30,(X2:=MV[I+1]).[CF]); % READ IN HEADER    06097000 T  0290:0
     MVE: X1:=-30; F:=P(MV[I],DUP).DEND+(B:=P(XCH).ASIZE);         06097100 T  0293:1
          IF P(MV[I+2].DEND=0,DUP) THEN C:=MV[I+1].[2:26] ELSE     06097200 T  0297:2
          MV[I].DEND:=(C:=MV[I+2].DEND)-B;                         06097300 T  0302:1
          WHILE (X1:=X1+30)<B DO                                   06097400 T  0307:2
          BEGIN                                                    06097500 T  0309:3
               IF STOP THEN % STOP SQUASH BUT BE CAREFUL           06097600 T  0309:3
               BEGIN                                               06097700 T  0310:3
                    IF TEMPDSK THEN UT[MV[I+2].[2:10]]:=(*P(DUP))-B;  06097800 T  0311:1
                    UT[AV+1].DEND:=MV[I+1].[2:26];                 06097900 T  0316:2
                    C:=MV[I].DEND; FIXANDWRITEHEADER;              06098000 T  0320:3
                    GO STOPSQ;                                     06098100 T  0323:0
               END;                                                06098200 T  0323:2
               E:=IF P((B-X1),DUP)<30 THEN P ELSE P(DEL,30);       06098300 T  0323:2
               DISKIO(T,1-A3,E×30,F:=F-E);                         06098400 T  0327:0
               IOD:=IOD&(E×30)[8:38:10]&E[27:42:6];                06098500 T  0330:2
               LOCIOD:=0; SLEEP([T],IOMASK);                       06098600 T  0333:3
               STREAM(A:=C:=C-E,B:=A3-1);                          06098700 T  0336:0
               BEGIN SI:=LOC A; DS:= 8 DEC END;                    06098800 T  0338:2
               IOREQUEST(NABS(IOD)&@357[25:40:8],IOD,              06098900 T  0339:1
                         [LOCIOD]&18[12:42:6]);                    06099000 T  0341:1
               SLEEP([LOCIOD],IOMASK);                             06099100 T  0342:3
               IF LOCIOD.[28:1] THEN % WRITE LOCKOUT OCCURED       06099200 T  0344:1
               BEGIN                                               06099300 T  0345:0
                    UT[IF P THEN AV+1 ELSE MV[I+2].[2:10]].LOCKED:=1;  06099400 T  0345:2
                    UT[AV+1].DEND:=MV[I+1].[2:26]; GO ENDMVE;      06099500 T  0351:0
               END;                                                06099600 T  0355:3
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                END;                                                    06099700 T  0355:3
                FIXANDWRITEHEADER;                                      06099800 T  0356:1
                IF NOT P THEN % TEMPORARY DISK STORAGE WAS USED.        06099900 T  0357:0
                BEGIN                                                   06100000 T  0357:1
                     MV[I+2].DEND:=0;                                   06100100 T  0357:3
                     TEMPDSK:=1;                                        06100200 T  0360:3
                     GO TO MVE;                                         06100300 T  0363:3
                END;                                                    06100400 T  0364:1
                I:=MV[I+2].LINK;                                        06100500 T  0364:1
           END;                                                         06100600 T  0366:1
%          WILL NOW RECONFIGURE THE AVAILABLE TABLE                     06100700 T  0366:3
           UT[AV]:=HI&(UT[AV].ASIZE+UT[AV+1].ASIZE)[2:28:20];           06100800 T  0366:3
           MOVE(S-AV,P([UT[AV+2]],DUP),NOT 0 INX P(XCH));               06100900 T  0371:2
           C:=(S:=S-1)-1; FOR I:=C STEP -1 UNTIL D DO                   06101000 T  0375:1
           IF P(UT[I].ASIZE,DUP)>USE THEN USE:=P ELSE P(DEL);           06101100 T  0379:0
           U[EU]:=P(DUP,LOD,DUP)&USE[1:28:20]&(P(XCH).NUMENT-1)[TONUMENT]; 06101200 T  0384:3
           EUNOTSQUASHED:=FALSE;                                        06101300 T  0389:2
           IF NOT SQALL THEN                                            06101400 T  0390:1
           BEGIN                                                        06101500 T  0390:3
                IF P(SQSIZE,DUP)≠0 AND P(XCH) LEQ USE THEN CELL:=1      06101600 T  0391:1
                ELSE IF P(EUS[EU-1].DSIZE,DUP)≠0 AND P(XCH) LEQ USE     06101700 T  0394:2
                THEN  ELSE GO TO ENDMVE;                                06101800 T  0398:1
                P(DEL); GO STOPSQ;                                      06101900 T  0399:2
           END;                                                         06102000 T  0400:1
      ENDMVE:                                                           06102100 T  0400:1
      END FIXING AND MOVING;                                            06102200 T  0400:1
       $ SET OMIT = NOT SHAREDISK                                       06102220 T  0400:2
           P(0,0,0,0,0,0,0,0,0,0);                                      06102500 T  0400:2
           P(0,0,0,0,0,0,0,0,0,0);                                      06102600 T  0403:2
           P(0,0,0,0,0,0,0,0,0,0);                                      06102700 T  0406:0
           P(0,0,0,0,0,0,0,0,0,0);                                      06102800 T  0408:2
           P(.DISKSQUASH,DUP,M[(P)]); % PRTADDR,PRTVALUE                06102900 T  0410:3
      $ SET OMIT = NOT SHAREDISK                                        06103000 T  0412:0
           SCANMESSAGE;                                                 06103300 T  0412:0
      $ SET OMIT = SHAREDISK                                            06103400 T  0413:0
           LOCKDIRECTORY;                                               06103500 T  0413:0
      $ POP OMIT                                                        06103600 T  0419:2
           SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);          06103700 T  0419:2
           HALT; % STOP NORMAL STATE PROCESSING WHILE SQUASHING         06103800 T  0424:2
           A4:=SPACE(30);                                               06103900 T  0425:0
      $ SET OMIT = NOT SHAREDISK                                        06104000 T  0427:1
           FIXARRAY(DIR,A1,480); FIXARRAY(MV,A2,150);                   06107200 T  0427:1
           A3:=SPACE(900);                                              06107300 T  0435:3
           IOD:=@140000100000000&(A3-1)[CTC];                           06107400 T  0438:0
           IF NOT SQALL THEN FOR EU:=1 STEP 1 UNTIL NEUP.[FF] DO        06107900 T  0439:3
           IF (CELL:=(P(SQSIZE,DUP)≠0 AND P(XCH) LEQ U[EU].[1:20]))     06108000 T  0445:0
           THEN BEGIN P(2); SQUASHMESS; GO STOPIT END;                  06108100 T  0448:2
           FOR EU:=1 STEP 1 UNTIL NEUP.[FF] DO %                        06108200 T  0454:2
           IF NOT (E:=U[EU]).EUNP THEN        % NOT A DUMMY EU           06108300 T  0458:3
           IF EUS[EU-1] OR SQALL OR SQSIZE≠0 THEN % SQUASH THIS EU      06108400 T  0460:2
           BEGIN                                                        06108500 T  0463:2
                EUNOTSQUASHED:=TRUE;                                    06108600 T  0464:0
                IF NOT SQALL THEN % CHECK IF SQUASH IS NECESSARY        06108700 T  0464:3
                IF (P(EUS[EU-1].DSIZE,DUP) LEQ E.[1:20] AND P(XCH)≠0)   06108800 T  0465:1
                THEN  BEGIN P(3); SQUASHMESS; GO STOPIT END;            06108900 T  0469:0
                CELL:=0&1[CTF];                                         06109000 T  0471:2
                P(0); SQUASHMESS;                                       06109100 T  0473:2
                D:=(I:=E.STARTWRD) MOD 30;                              06109200 T  0475:0
                AVSIZE:=30-(S:=(E AND NUMENTM)+D) MOD 30+S;             06109300 T  0477:1
                FIXARRAY(UT,R,AVSIZE);                                  06109400 T  0481:0
```

```
                DISKAV:=I DIV 30+USERDISKBOTTOM;                                  06109500 T  0485:1
        $ SET OMIT = NOT SHAREDISK                                                06109600 T  0487:0
                DISKWAIT(=R,AVSIZE,DISKAV);                                       06110300 T  0487:0
AGAIN:          SUM:=USE:=0;                                                      06110400 T  0488:2
                FOR I:=S-3 STEP -1 UNTIL D DO                                     06110500 T  0489:3
                BEGIN STOPCK;                                                     06110600 T  0494:0
                     IF (UT[I+1]<0)=PASSTWO THEN % NOT CHECKED THIS PASS          06110700 T  0495:3
                     IF ((X1:=UT[I].ASIZE)+(X2:=UT[I+1].ASIZE)) GEQ SUM           06110800 T  0497:3
                     THEN IF (X3:=(((X4:=UT[I+1].DEND)-1)-UT[I+1].ASIZE)"         06110900 T  0502:0
                     X5:=(UT[I].DEND-1)) LEQ FACTOR THEN IF MINSIZE LEQ X2        06111000 T  0507:1
                     THEN IF MINSIZE LEQ X1 THEN                                  06111100 T  0511:1
                     BEGIN                                                        06111200 T  0513:0
SQIT:                     USE:=X3; AV:=I;                                         06111300 T  0513:2
                          SUM:=X1+X2; % SUM OF CURRENT AVAILABLE AREAS            06111400 T  0515:0
                          HI:=X4; LO:=X5;                                         06111500 T  0516:1
                     END ELSE IF I≠0 THEN % LOOK AHEAD TO NEXT AREA               06111600 T  0517:3
                     IF ((MINSIZE LEQ UT[I-1].ASIZE) AND (((X5-X1)"               06111700 T  0520:3
                     UT[I-1].DEND-1) LEQ FACTOR)) THEN GO SQIT;                   06111800 T  0524:0
                END;                                                              06111900 T  0527:3
                IF USE≠0 THEN % FOUND A POSSIBLE SQUASH SITUATION                 06112000 T  0530:0
                BEGIN                                                             06112100 T  0530:3
                     IF INUSEOK THEN MOVEANDFIX;                                  06112200 T  0531:1
                     GO AGAIN;                                                    06112300 T  0534:0
                END ELSE % TIME TO WRAP IT UP FOR THIS EU UNLESS....              06112400 T  0534:2
                IF CONFLICT THEN IF NOT PASSTWO THEN % ..CONFLICTS EXIST          06112500 T  0534:2
                BEGIN                                                             06112600 T  0536:1
                     PASSTWO:=TRUE;                                               06112700 T  0536:3
                     GO AGAIN;                                                    06112800 T  0537:2
                END ELSE                                                          06112900 T  0538:0
                BEGIN % CLEAN-UP PASS AFTER CONFLICTS RESOLVED.                   06113000 T  0538:0
                     PASSTWO:=CONFLICT:=0;                                        06113100 T  0538:2
                     GO AGAIN;                                                    06113200 T  0539:3
                END;                                                              06113300 T  0540:1
STORSQ:         FOR I:=D STEP 1 UNTIL S DO UT[I]:=ABS(P(DUP,LOD)&O[2:2:1]);       06113400 T  0540:1
                IF NOT EUNOTSQUASHED THEN                                         06113500 T  0547:0
        $ SET OMIT = NOT SHAREDISK                                                06113600 T  0547:2
                DISKWAIT( R,AVSIZE,DISKAV);                                       06114300 T  0547:2
                FORGETSPACE(R);                                                   06114400 T  0549:1
                P(1); SQUASHMESS;                                                 06114500 T  0550:0
STOPIT:         IF STOP THEN GO OUT; % STOPCK GOT US HERE                         06114600 T  0551:0
           END EU LOOP;                                                           06114700 T  0552:3
        OUT:                                                                      06114800 T  0553:1
        $ SET OMIT = NOT SHAREDISK                                                06114900 T  0553:1
           FORGETSPACE(A1); FORGETSPACE(A2);                                      06115300 T  0553:1
           FORGETSPACE(A3); FORGETSPACE(A5);                                      06115400 T  0554:3
        SDXIT:                                                                    06115500 T  0556:1
           FORGETSPACE(A4);                                                       06115600 T  0556:1
           CELL:=PRTVALUE;                                                        06115700 T  0557:0
           STREAM(A:=BUFF.[15:15]-1); DS:=13 LIT" END SQUASH.←";                  06115800 T  0558:2
           SPOUT(BUFF.[15:15]-1);                                                 06115900 T  0562:2
        $ SET OMIT = SHAREDISK                                                    06115990 T  0564:1
           UNLOCKDIRECTORY;                                                       06116000 T  0564:1
        $ POP OMIT                                                                06116010 T  0567:3
           UNLOCKTOG(USERDISKMASK);                                               06116100 T  0567:3
           NOPROCESSTOG:=NOPROCESSTOG-1;                                          06116200 T  0571:1
           KILL([MSCW]);                                                          06116300 T  0572:2
        END SQUASHING;                                                            06116400 T  0573:1
                                                                                        SIZE= 0575 WORDS
        PROCEDURE CHANGEABORT(X); VALUE X; REAL X; FORWARD;%                      06179000 T  0000:0
```

START OF REL SEGMENT; DISK ADDRESS = 00136

```
REAL LOOKQ;                                                                    06179200 T  0000:0
 PROCEDURE SIGNOFF(VECTOR,FILEBLOCK,PKT);                                      06180000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00136
          VALUE VECTOR,FILEBLOCK,PKT;                                          06181000 T  0000:0
         ARRAY VECTOR[*],FILEBLOCK[*];%                                        06182000 T  0000:0
          REAL PKT;                                                            06182100 T  0000:0
BEGIN ARRAY NAME LOG;                                                          06183000 T  0000:0
            INTEGER N,L,I,J,TIMEX;%                                            06184000 T  0000:0
            INTEGER MIX;                                                       06184100 T  0000:0
 $ SET OMIT = NOT STATISTICS                                                   06184199 T  0000:0
            REAL TIMEAX,T,A,Q,ESED;                                            06185000 T  0000:0
 $ SET OMIT = NOT(PACKETS)                                                     06185099 T  0000:0
 $ SET OMIT = NOT(WORKSET AND WORKSETMONITOR)                                  06185111 T  0000:0
            SUBROUTINE TIMEIT;%                                                06186000 T  0000:0
                BEGIN CHANGEABORT(0);%                                         06187000 T  0001:0
                      WHILE (NT2:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO           06188000 T  0001:3
                        MIDNIGHT;                                              06188100 T  0004:0
                      LOG[TIMEAX+2] ← NT2;%                                    06189000 T  0009:1
 $ SET OMIT = NOT(STATISTICS)                                                  06189099 T  0011:1
                      STOPLOG(P1MIX,0);                                        06190000 T  0011:1
                      MIX←P1MIX; P1MIX←0;                                      06190100 T  0013:3
                      IDLETIME;%                                               06191000 T  0015:1
                      OLDIDLETIME ← (LOG[TIMEX] ← VECTOR[3]+%                  06192000 T  0015:3
                          PROCTIME[MIX])+OLDIDLETIME;                          06193000 T  0017:0
                      LOG[TIMEX+1]←VECTOR[4]+IOTIME[MIX];                      06194000 T  0019:1
                      LOG[TIMEX+2] ← VECTOR[7];%                               06195000 T  0022:1
 $ SET OMIT = NOT(WORKSET AND WORKSETMONITOR)                                  06195090 T  0024:2
                      STREAM(A←VECTOR[5].[1:23]:B←0);%                         06196000 T  0024:2
                      BEGIN SI ← LOC A; DI ← LOC A; DS ← 8 DEC END;%           06197000 T  0026:2
                      LOG[TIMEAX] ← P(XCH);%                                   06198000 T  0027:2
                      LOG[TIMEAX+1] ← VECTOR[5].[24:24];%                      06199000 T  0029:0
 $ SET OMIT = NOT(STATISTICS)                                                  06199099 T  0031:3
                      NT4 ← VECTOR[2].[8:10];%                                 06200000 T  0031:3
                      LOG[TIMEAX+3] ← IF VECTOR[1] < 0 THEN (NT4= 99)          06201000 T  0033:1
                          +2 ELSE NT4 = 3;%                                    06202000 T  0036:2
                      LOG[TIMEAX+3].[1:30]← DATE.[18:30];                      06202100 T  0039:0
                      LOG[TIMEAX+4]:=USERCODE[MIX];                            06203000 T  0042:3
 $ SET OMIT = NOT(DCLOG AND DATACOM)                                           06203099 T  0045:0
                      IF TABCNT[MIX]≠0 THEN                                    06203600 T  0045:0
                      BEGIN T:=CLOCK+900;                                      06203650 T  0046:3
                          COMPLEXSLEEP(TABCNT[MIX]=0 OR CLOCK>T);              06203700 T  0048:2
04568366    ACCIDENTAL ENTRY AT T
                      END;                                                     06203750 T  0055:3
 $ SET OMIT = NOT (DATACOM AND NOT DCLOG)                                      06203790 T  0055:3
                      IF TERMIX.[CF]=MIX THEN TERMIX:=@1777;                   06204000 T  0055:3
                      IF STOPJOB=MIX THEN STOPJOB:=@1777;                      06205000 T  0058:1
 $ SET OMIT = NOT(PACKETS)                                                     06205009 T  0060:1
                      USERCODE[MIX] := 0;                                      06205100 T  0060:1
                      STREAM(S←[NFO[(MIX-1)×NDX]]);%                           06205200 T  0061:2
                      BEGIN DS←8 LIT "0"; SI←S; DS←2 WDS; END;%                06205300 T  0063:2
 $ SET OMIT = NOT(PACKETS)                                                     06205509 T  0065:2
 $ SET OMIT = NOT STATISTICS                                                   06205540 T  0065:2
                      JARROW[MIX]:=PRTROW[MIX]:=0;                             06206000 T  0065:2
                  END TIMEIT;                                                  06206100 T  0067:3
 $ SET OMIT = NOT(PACKETS)                                                     06206109 T  0068:0
            A ← VECTOR[6].[33:15];%                                            06207000 T  0068:0
            ESED:=VECTOR[2].[2:1];                                             06207100 T  0072:2
            T:=Q:=((L:=VECTOR[6].[18:15])+(IF ESED THEN N←0 ELSE               06208000 T  0074:0
                N:=FILEBLOCK.[8:10])+60) DIV 25×27;                            06209000 T  0077:3
        LOG←[M[GETSPACE(T,0,0)+2]];                                            06210000 T  0082:0
```

```
                    M[LOG INX NOT 1].[9:6] ← 0;%                                  06211000 T  0084:3
$ SET OMIT = NOT(PACKETS)                                                         06211099 T  0088:1
                    J ← A;%                                                       06212000 T  0088:1
                    DO BEGIN I ← I+27;%                                           06213000 T  0089:0
                         DISKIO( T ,-( LOG INX I),26,J);%                         06214000 T  0090:1
                         SLEEP([T],IOMASK);%                                      06215000 T  0092:2
                         J ← LOG[I+1];%                                           06216000 T  0094:0
                    END UNTIL J=0 OR I+53>Q;%                                     06217000 T  0096:0
                    IF VECTOR[2].[8:10]=0 THEN L ← LOG[29];                       06217100 T  0098:3
                    IF(I:=(L-5) MOD 25+I+7) LSS Q-3 THEN                          06218000 T  0102:1
                    IF I MOD 27 = 0 THEN%                                         06219000 T  0106:0
                         BEGIN LOG[I] ← LOG[I+1] ← 0;%                            06220000 T  0107:3
                              I ← I+2 END;%                                       06221000 T  0111:2
$ SET OMIT = NOT(STATISTICS)                                                      06221099 T  0112:3
                    LOG[I]:= IF VECTOR[0] LSS 0                                   06222000 T  0112:3
                         THEN IF VECTOR[0]=(-"COBOL  ") THEN 2                    06222100 T  0114:0
                         ELSE IF VECTOR[0]=(-"FORTRAN") THEN 6                    06222200 T  0116:1
                       ELSE IF VECTOR[0]=(-"BASIC  ") THEN 7                      06222300 T  0118:3
                       ELSE IF VECTOR[0]=(-"XALGOL ") THEN 9                      06222400 T  0121:1
                       ELSE IF VECTOR[0]=(-"TSPOL  ") THEN 10                     06222500 T  0123:3
                       ELSE IF VECTOR[0]=(-"COBOL68") THEN 11                     06222550 T  0126:1
                       ELSE 1 ELSE 0;                                             06222600 T  0128:3
                    LOG[I+1] ← N DIV 5;%                                          06223000 T  0131:2
                    IF(I:=(TIMEX:=I+2)+3) LSS Q-1 THEN                            06224000 T  0134:0
                    IF I MOD 27 = 0 THEN%                                         06225000 T  0137:1
                         BEGIN LOG[I] ← LOG[I+1] ← 0;%                            06226000 T  0139:0
                              I ← I+2;%                                           06227000 T  0142:3
                         END;%                                                    06228000 T  0144:0
                         I ← (TIMEAX ← I)+5;%                                     06229000 T  0144:0
                    IF NOT ESED THEN%IF JOB ES-ED THEN NO FPB ENTRIES             06229100 T  0145:3
                    FOR J ← 5 STEP 5 UNTIL N DO%                                  06230000 T  0146:1
                    IF FILEBLOCK[J-1]=0 THEN LOG[TIMEX -1]←*P(DUP)-1 ELSE         06230100 T  0154:0
                         BEGIN IF I MOD 27 = 0 THEN%                              06231000 T  0158:3
                                   BEGIN LOG[I] ← LOG[I+1] ← 0;%                  06232000 T  0160:2
                                        I ← I+2 END;%                             06233000 T  0164:1
                                   IF I+4 LEQ Q THEN                              06233100 T  0165:2
                              STREAM(A←[FILEBLOCK[J-5]],B←[LOG[I]]);%             06234000 T  0166:3
                                   BEGIN SI ← A; DS ← 5 WDS END;%                 06235000 T  0169:2
                         IF I+4 LEQ Q THEN                                        06235100 T  0170:1
                              IF LOG[I+4] < 0 THEN%                               06236000 T  0171:2
                                   BEGIN LOG[I+4] ← *P(DUP)+CLOCK+P(RTR);%        06237000 T  0174:0
                                        LOG[I+3].[24:12]←P(DUP,DUP).[24:12]+TINU  06238000 T  0177:3
                                         [NT1←P(XCH).[36:6]-1].[18:12];%          06239000 T  0180:2
                                        TINU[NT1].[18:12] ← 0;%                   06240000 T  0184:2
                                   END;%                                          06241000 T  0187:0
                              IF LOG[I+2].[18:30]=0 THEN                          06241100 T  0187:0
                              LOG[I+2].[18:30]:=DATE.[18:30];%ENTER CURR DATE     06241200 T  0189:2
                              I ← I+5%                                            06242000 T  0193:3
                         END;%                                                    06243000 T  0194:1
                    N ← LOG[TIMEX -1]×5;                                          06243100 T  0197:1
                    FORGETSPACE(FILEBLOCK);%                                      06244000 T  0199:3
                    J ← 0;%                                                       06245000 T  0200:3
                    IF VECTOR[2].[8:10] = 1 THEN%                                 06246000 T  0201:2
                         BEGIN DO J ← J+27 UNTIL LOG[J+1] = 0;%                   06247000 T  0203:0
                           WHILE J+27 LSS I AND I LSS Q DO%                       06248000 T  0207:1
                                   BEGIN LOG[J+1] ← GETESPDISK;%                  06249000 T  0210:0
                                        J ← J+27;%                                06250000 T  0212:1
                                   END;%                                          06251000 T  0213:2
                              I ← 27;%                                            06252000 T  0214:0
                              TIMEIT;%                                            06253000 T  0214:3
```

```
                    LOG[29]←5×LOG[40]+20;                                   06253500 T  0216:0
                    DO BEGIN DISKIO(T,LOG INX I,26,A);%                     06254000 T  0219:1
                              A ← LOG[I+1];%                                06255000 T  0221:1
                              I ← I+27;%                                    06256000 T  0223:1
                              SLEEP([T],IOMASK);%                           06257000 T  0224:2
                    END UNTIL A = 0;%                                       06258000 T  0226:0
          $ SET OMIT = NOT(PACKETS)                                         06258099 T  0227:1
                 END%                                                       06259000 T  0227:1
              ELSE BEGIN                                                    06260000 T  0227:1
                     DO BEGIN J←J+27;                                       06260100 T  0227:3
                              FORGETESPDISK(A);%                            06261000 T  0229:0
                              A ← LOG[J+1];%                                06262000 T  0229:3
                    END UNTIL A = 0;%                                       06263000 T  0231:3
        IF LOGFREE=0 THEN TIMEIT ELSE                                       06263100 T  0233:0
        BEGIN     A←J+29;                                                   06263200 T  0235:0
                    LOG[29]←3;                                              06265000 T  0236:3
                    I ← I+6;%                                               06266000 T  0238:1
                    WHILE (J ← J+27) < I DO%                                06267000 T  0239:2
                         BEGIN A ← A+25;%                                   06268000 T  0241:3
                              STREAM(X←[LOG[J]],Y←[LOG[A]]);%               06269000 T  0243:0
                                   BEGIN SI ← X; DS ← 25 WDS END;%          06270000 T  0245:0
                              IF TIMEX ≥ A THEN TIMEX ← TIMEX-2;            06271000 T  0245:3
                              IF TIMEAX ≥ A THEN TIMEAX ← TIMEAX-2;         06272000 T  0248:1
                         END;%                                              06273000 T  0250:3
                    N ← (N+L) DIV 5+3;%                                     06278000 T  0251:1
                    L ← 28;%                                                06279000 T  0253:2
                IF TIMEX+2 LSS Q AND TIMEAX+4 LSS Q THEN                    06279100 T  0254:1
                    TIMEIT; LOGSPACE(L+1 INX LOG,(N-1)×5);                  06280000 T  0257:0
          $ SET OMIT = NOT(PACKETS)                                         06326199 T  0262:0
                    END;%                                                   06327000 T  0262:0
                 END;%                                                      06328000 T  0262:0
          $ SET OMIT = NOT(PACKETS)                                         06328099 T  0262:0
                 FORGETSPACE(LOG);%                                         06329000 T  0262:0
              END SIGNOFF;%                                                 06330000 T  0262:3
                                                                                      SIZE= 0263 WORDS
        PROCEDURE USERDISKSPECIALCASE(Q,R,UT,J) ;                           06350000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00145
        VALUE Q,J;  REAL R,J;  INTEGER Q;  ARRAY UT[*] ;                    06350300 T  0000:0
          BEGIN                                                             06350600 T  0000:0
          REAL BUFF=Q,N=J,Z=UT,E=R ;                                        06351000 T  0000:0
        $ SET OMIT = NOT(SHAREDISK )                                        06351050 T  0000:0
        $ SET OMIT = SHAREDISK                                              06351100 T  0000:0
          REAL NEU,NT;  ARRAY UA[*] ;                                       06351104 T  0000:0
          DEFINE U=AVTABLE #,  AVS=B #,  NEU1=J-1 #,  NEU2=NT-1 #;          06351105 T  0000:0
        $ POP OMIT                                                          06351106 T  0000:0
          INTEGER NT1,NT3,NT4,B ;                                           06351250 T  0000:0
          LABEL L1,L2,L3,UP,PU,BD,WHY,M1,T10 ;                              06351500 T  0000:0
          SWITCH SW←L1,L2,L3 ;                                              06351800 T  0000:0
          IF Q≠0 THEN GO SW[Q-1] ;                                          06352000 T  0000:0
        $ SET OMIT = NOT(SHAREDISK )                                        06352490 T  0006:0
        L1: BUFF:=R; Z:=0; UNLOCKTOG(USERDISKMASK);                         06353500 T  0006:0
              IF N LEQ RESERVEDISKSIZE THEN% CALL OUT RESERVES              06353510 T  0011:0
              IF (Z:=DIRECTORYSEARCH("RESERVE","DISK   ",6)) NEQ 0 THEN     06353530 T  0011:3
              BEGIN FORGETSPACE(Z);                                         06353540 T  0014:2
                         IF N>0 THEN                                        06353541 T  0015:3
        $ SET OMIT = PACKETS                                                06353542 T  0016:2
                         IF NOT LIBMSG THEN                                 06353543 T  0016:2
        $ POP OMIT                                                          06353544 T  0018:0
                         BEGIN STREAM(Z:=Z:=SPACE(3));                      06353545 T  0018:0
                              DS←23 LIT "**RESERVE/DISK REMOVED←";          06353550 T  0021:1
```

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                    SPOUTER(Z,0,(NOT LIBMSG) AND 1);                    06353551 T  0024:3
                 END;                                                   06353552 T  0025:2
            END OF RESERVE CALL UP;                                     06353570 T  0025:2
            IF AUTOUNLD THEN                                            06353580 T  0025:2
            BEGIN P(P1MIX); AUTOUNLD:=P1MIX:=0;                         06353590 T  0026:1
                STREAM(A:=DATE,Z:=Z:=SPACE(10)+2);                      06353600 T  0029:1
                BEGIN DS:=23 LIT"CC UNLOAD EXPIRED TO XP";              06353610 T  0032:3
                    SI:=LOC A; SI:=SI+3; DS:=5 CHR;                     06353620 T  0036:0
                    DS:=9 LIT " #/=;END.";                              06353630 T  0036:3
                END;                                                    06353640 T  0038:1
                INDEPENDENTRUNNER(P(.CONTROLCARD),Z&31[3:43:5],192);    06353650 T  0038:2
                P1MIX:=P;                                               06353660 T  0040:3
                IF N GEQ 0 THEN                                         06353670 T  0041:1
                BEGIN STREAM(Z:=Z:=SPACE(10));                          06353680 T  0042:0
                    DS:=18 LIT"18 AUTOUNLD RESET←";                     06353690 T  0045:1
                    SPOUT(Z);                                           06353700 T  0048:0
            END   END AUTOMATIC UNLOADING;                              06353710 T  0048:3
            IF NOT N.[2:1] THEN                                         06353720 T  0048:3
            BEGIN IF P1MIX≠0 THEN                                       06354000 T  0049:3
                BEGIN                                                   06354100 T  0051:0
WHY:            STREAM(J:=JARROW[P1MIX],P1MIX,N,BUFF);                  06355000 T  0051:2
                BEGIN DS←14 LIT "#NO USER DISK:";                       06356000 T  0053:1
                    SI←J;  SI←SI+1;  DS←7 CHR;                          06357000 T  0055:1
                    DS←LIT "/";  SI←SI+1;  DS←7 CHR;                    06358000 T  0056:0
                    SI←LOC P1MIX;  DS←LIT "=";  DS←2 DEC;               06359000 T  0057:0
                    J:=DI; DI:=DI-2; DS:=FILL; DI:=J; DS:=LIT"-";       06359500 T  0058:0
                    SI:=LOC N; DS:=8 DEC; DS:=7 LIT" SEGS.←";           06360000 T  0059:2
                    DI:=DI-15; DS:=7 FILL;                              06360500 T  0061:1
                    END;                                                06360505 T  0061:3
                SPOUT(BUFF);                                            06360510 T  0062:0
                REPLY[P1MIX]:=-VWY&VOK[36:42:6];                        06360520 T  0062:3
                COMPLEXSLEEP((REPLY[P1MIX] GTR 0) OR                    06360530 T  0065:1
                                (TERMIX.[CF]=P1MIX));                   06360540 T  0065:1
06203700    ACCIDENTAL ENTRY AT B1MIX
                IF TERMIX.[CF]=P1MIX THEN                               06360550 T  0072:2
                BEGIN PRTROW[P1MIX].[7:1]←1;                            06360560 T  0073:3
                    GO TO INITIATE;                                     06360570 T  0076:3
                END;                                                    06360580 T  0077:1
                IF NOT WHYSLEEP(VWY&VOK[36:42:6]) THEN                  06360590 T  0077:1
                BEGIN BUFF←SPACE(10);                                   06360600 T  0079:1
                    GO TO WHY;                                          06360610 T  0082:0
                END;                                                    06360620 T  0086:0
                END ELSE                                                06361000 T  0086:0
                BEGIN                                                   06361010 T  0086:0
                STREAM(N,BUFF);                                         06361100 T  0086:2
                BEGIN DS:=20 LIT"#NO USER DISK:MCP = ";                 06361200 T  0087:2
                    SI:=LOC N; DS:=8 DEC;                               06361300 T  0090:1
                    DS:=6 LIT" SEGS←";                                  06361400 T  0090:3
                    DI:=DI-14; DS:=7 FILL;                              06361500 T  0091:3
                END;                                                    06361600 T  0092:1
                SPOUT(BUFF);                                            06361610 T  0092:2
               NT1:=0; DO SLEEP([CLOCK], NOT CLOCK)                     06361700 T  0093:1
                                UNTIL (NT1←NT1+1)=30;                   06361705 T  0094:0
                END                                                     06361710 T  0098:0
            END ELSE FORGETSPACE(BUFF);                                 06365110 T  0098:0
        P(XIT) ;                                                        06380070 T  0099:1
    L2: U[J]:=E; E:=NEU:=(NT:=NEUP.NEUF)+2+(NT+1)DIV 2; P(NT); J:=1;    06380100 T  0099:2
     $ SET OMIT = SHAREDISK                                             06380120 T  0106:0
        NT1:=NT+NT+NT; FORGETSPACE(UT); FIXARRAY(UA,NT2,NT1); E:=0;     06380140 T  0106:0
     $ POP OMIT                                                         06380141 T  0113:3
```

```
UP: IF (NT4:=E MOD 30) LSS (NT3:=(NT1:=U[J].STARTWRD) MOD 30)                 06380150 T  0113:3
    THEN NT4:=NT3 ;                                                           06380200 T  0116:3
    IF (NT2:=(Q:=U[J] AND NUMENTM)+NT4) GTR 1023                              06380250 T  0119:0
    OR ((Q+E+1) DIV 30+1-E DIV 30) GTR 34 THEN                                06380300 T  0121:2
BD: BYBY("ODISK IS TOO CHECKERED...PLEASE COMPACT IT+",43) ;                  06380350 T  0126:0
    DISKWAIT(-((UA[NEU1]:=(UA[NEU2+J]:=SPACE(NT2))+NT4)-NT3),Q+NT3,           06380400 T  0136:0
            USERDISKBOTTOM+NT1 DIV 30) ;                                      06380450 T  0143:2
 $ SET OMIT = NOT(SHAREDISK )                                                 06380490 T  0145:0
 $ SET OMIT = SHAREDISK                                                       06380520 T  0145:0
    IF J=1 THEN B:=UA.[CF]+NT+NT-1 ;                                          06380525 T  0145:0
 $ POP OMIT                                                                   06380526 T  0149:1
    M[B+J]:=U[J]&E[TOSTARTWRD] ;                                              06380550 T  0149:1
    IF (NT1:=Q DIV 4) LSS AVDIFFMIN THEN NT1:=AVDIFFMIN ;                     06380600 T  0152:2
    IF (E:=E+Q+NT1) GTR AVTMAX THEN GO TO BD;                                 06380650 T  0155:2
    IF P(DUP) GEQ J:=J+1 THEN GO UP;  E:=E-NT1;  J:=1 ;                       06380700 T  0158:1
PU: NT2:=(NT3:=P(M[B+J],DUP).STARTWRD)+NT5:=P(XCH) AND NUMENTM ;              06380750 T  0162:2
    IF P(DUP)≠J THEN IF (NT2-1)DIV 30=(NT4+M[B+J+1].STARTWRD)DIV 30 THEN      06380800 T  0167:1
    MOVE(NT1+NT2 MOD 30,UA[NEU1]+NT5-NT1,NT1+UA[NEU1+1]-NT4 MOD 30);          06380850 T  0173:0
    DISKWAIT(UA[NEU1]-NT1+NT3 MOD 30,NT1+NT5,USERDISKBOTTOM+NT3 DIV 30);      06380900 T  0181:0
 $ SET OMIT = NOT(SHAREDISK)                                                  06380924 T  0185:3
    FORGETSPACE(UA[NEU2+J]);                                                  06380950 T  0185:3
    IF P(DUP) GEQ J:=J+1 THEN GO PU ;                                         06381000 T  0188:0
 $ SET OMIT = SHAREDISK                                                       06381020 T  0190:1
    MOVE(NT,[UA[NT+NT]],[AVTABLE[1]]) ;                                       06381070 T  0190:1
 $ POP OMIT                                                                   06381071 T  0192:3
 $ SET OMIT = NOT(SHAREDISK )                                                 06381075 T  0192:3
    FORGETSPACE(UA) ;                                                         06381085 T  0192:3
 $ SET OMIT = NOT(SHAREDISK )                                                 06381095 T  0193:3
    P(DEL,Q&AVS[TOSIZE] OR M,RTN) ;                                           06381250 T  0193:3
L3: P(U[NEUP.NEUF+2+(Q:=J DIV P(M1)) DIV 2],IF Q THEN P.[8:20] ELSE           06381300 T  0196:0
      P.[28:20]) ;                                                            06381310 T  0201:1
    IF U[Q+1].SPEED = 2 THEN                                                  06381320 T  0201:3
        BEGIN % 40-MILL MASK CONSTRUCTION.                                    06381330 T  0203:3
        Q:=P ;                                                                06381335 T  0204:1
        STREAM(S:=0:Q);                                                       06381340 T  0204:3
            BEGIN                                                             06381345 T  0206:0
            SI:=LOC Q; SKIP 28SB; DI:=LOC S; SKIP 8DB ;                       06381350 T  0206:0
            5(4(IF SB THEN DS:=SET ELSE SKIP DB;SKIP SB); SKIP 4 DB);         06381355 T  0207:0
            SI:=LOC Q; SKIP 28 SB; DI:=LOC S; DI:=DI+2;                       06381360 T  0209:3
            5(4(IF SB THEN DS:=SET ELSE SKIP DB;SKIP SB); SKIP 4 DB);         06381365 T  0210:3
            END STREAM ;                                                      06381380 T  0213:2
        END ;                                                                 06381390 T  0213:3
    STREAM(MSK:=0:V:=47-(J:=((Q:=J MOD P(M1))+ABS(R)-1) DIV P(T10)),          06381395 T  0213:3
        W:=1+J-Q DIV P(T10));                                                 06381400 T  0218:2
    BEGIN DI:=LOC MSK; SKIP V DB; DS:=W SET; END;                             06381405 T  0220:2
    P(LND,LNG,0,LNG,=,RTN);                                                   06381410 T  0222:0
M1:::    @3641100; % DECIMAL 1000000.                                         06381450 T  0223:2
T10:::   @23420;   % DECIMAL 10000.                                           06381500 T  0225:0
    END OF USERDISKSPECIALCASE ;                                              06381550 T  0226:0
                                                                                        SIZE= 0228 WORDS
 PROCEDURE GETMOREDLAYDISK(MIX);%                                             06400000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00153
 VALUE   MIX;%                                                                06401000 T  0000:0
 INTEGER MIX;%                                                                06402000 T  0000:0
    BEGIN INTEGER   I=+1,%                                                    06403000 T  0000:0
                    J=+2,%                                                    06404000 T  0000:0
                    T=+3;%                                                    06405000 T  0000:0
          ARRAY     A=+4[*];%                                                 06406000 T  0000:0
          REAL MSCW=-2;                                                       06406500 T  0000:0
          REAL      RCW=+0;%                                                  06407000 T  0000:0
```

```
            LABEL EXIT;%                                                    06408000 T  0000:0
        DEFINE DALOCMAXSZ =                                                 06408100 T  0000:0
$ SET OMIT = NOT(AUXMEM)                                                    06408199 T  0000:0
$ SET OMIT = AUXMEM                                                         06408299 T  0000:0
                        127#; %DALOC SIZE MUST = 9 INITIALLY.               06408300 T  0000:0
$ POP OMIT                                                                  06408301 T  0000:0
            P(0, 0, 0, 0);  TOGLE ← TOGLE OR STACKMASK;%                    06410000 T  0000:0
            IF (T←DALOC[MIX,0].[CF]+1)=DALOCMAXSZ THEN BEGIN                06411000 T  0002:1
                TERMINATE(MIX & 37[CTF]);                                   06411010 T  0005:3
                GO TO EXIT; END;                                            06411030 T  0007:0
            IF T=DALOCROW[MIX].[8:10] THEN%                                 06412000 T  0007:2
            BEGIN IF (J←T+P(DUP) - 1)=129 THEN J←DALOCMAXSZ;                06413000 T  0009:0
                 WHILE (I := GETSPACE(J, 0, 3)+2)=2 DO                      06414000 T  0013:0
                   SLEEP([CLOCK], NOT CLOCK);                               06415000 T  0016:1
                 MOVE(T, DALOCROW[MIX], I);                                 06416000 T  0018:2
                 FORGETSPACE(DALOCROW[MIX]);                                06417000 T  0020:1
                 DALOCROW[MIX] := (*P(DUP)) & I[CTC] & J[8:38:10];          06417500 T  0021:1
                 M[I-2].[9:6] := MIX;                                       06418000 T  0024:1
            END AIT TYPE ACTION;%                                           06419000 T  0027:2
            IF (I ← GETUSERDISK(500 OR MEMORY))=0 THEN GO TO EXIT;%         06420000 T  0027:2
            DALOC[MIX,0] ← (*P(DUP))&(T+1)[CTC];%                           06421000 T  0030:2
            DALOC[MIX,T] ← I;%                                              06422000 T  0033:2
            DALOC[MIX,T+1] ← 0;%                                            06423000 T  0035:1
        EXIT: OLAYMASK ← TWO(MIX) OR OLAYMASK;%                             06424000 T  0037:2
            KILL([MSCW]);                                                   06425000 T  0039:1
        END GET MORE OVERLAY DISK FOR A MIX INDEX;%                         06426000 T  0040:0
                                                                                   SIZE= 0041 WORDS
    REAL PROCEDURE SECURITYCHECK(MID,FID,USERID,HEADER);                    06460000 T  0000:0
                                                                       START OF REL SEGMENT; DISK ADDRESS = 00155
    VALUE MID,FID,USERID;                                                   06460100 T  0000:0
    REAL MID,FID,USERID,HEADER;                                             06460200 T  0000:0
    %   MID        MULTI FILE ID OF FILE TO BE CHECKED                      06460300 T  0000:0
    %   FID        FILE ID OF FILE TO BE CHECKED                            06460400 T  0000:0
    %   USERID     USER IDENTIFICATION                                      06460500 T  0000:0
    %   HEADER                                                              06460600 T  0000:0
    %        >512       CORE ADDRESS OF HEADER IN 33:15. JUST CHECK IT.     06460700 T  0000:0
    %        >0, <512   VALUE FOR DIRECTORYSEARCH. FIND THE FILE AND PASS   06460800 T  0000:0
    %                   BACK THE HEADER IN ADDITION TO SECURITY INFO.       06460900 T  0000:0
    %        <0         DISK ADDRESS OF HEADER. READ IT IN AND CHECK IT, BUT 06460950 T  0000:0
    %                   DONT PASS IT BACK.                                  06460960 T  0000:0
    %                                                                       06461100 T  0000:0
    %   RESULT FROM SECURITYCHECK                                           06461200 T  0000:0
    %        =0    NO LEGITIMATE USER FOUND                                 06461300 T  0000:0
    %        =2    TERTIARY USER  ( INPUT ONLY)                             06461400 T  0000:0
    %        =3    SECONDARY USER (INPUT/OUTPUT)                            06461500 T  0000:0
    %        =7    PRIMARY USER (INPUT/OUTPUT/LIB MAINT.)                   06461600 T  0000:0
    BEGIN                                                                   06462000 T  0000:0
        REAL T2,DKSGROW,CODES,ROWS,ROW,DKADR,ROWSZ,C,USER,TYPE,SH;          06462100 T  0000:0
        REAL I=DKSGROW, FPBSIZE=CODES;                                      06462105 T  0000:0
        ARRAY FH[*],FPB=ROW[*];                                             06462110 T  0000:0
        LABEL FOUND;                                                        06462120 T  0000:0
        LABEL EXYT,NOTFOUND,LOOK,WHY,FORGET;                                06462200 T  0000:0
    REAL SUBROUTINE DIRSRH;                                                 06463000 T  0000:0
        BEGIN                                                               06463100 T  0001:0
    LOOK:   IF (T2:=DIRECTORYSEARCH(MID,FID,HEADER)) LSS 64 THEN            06463200 T  0001:0
    WHY:    BEGIN                                                           06463210 T  0003:1
                IF T2=0 THEN FILEMESS("#NO FIL","ON DISK",MID,FID,0,0,0)    06463220 T  0003:3
                  ELSE IF T2=1 THEN BEGIN P(DEL); TYPE:="1; GO EXYT; END    06463225 T  0007:0
                  ELSE IF T2=2 THEN FILEMESS("#SYSFIL","ERROR  ",           06463230 T  0013:0
                                        MID,FID,0,0,0);                     06463240 T  0015:2
```

```
                    REPLY[P1MIX]:=-(SH:=VWY&VOK[36:42:6]&VIL[30:42:6]);                 06463280 T  0017:0
                    COMPLEXSLEEP((REPLY[P1MIX]>0) OR TERMIX.[CF]=P1MIX);                06463300 T  0021:0
06360540    ACCIDENTAL ENTRY AT P1MIX
                    IF TERMIX.[CF] = P1MIX THEN GO TO INITIATE;                         06463340 T  0028:2
                    IF NOT WHYSLEEP(SH) THEN GO TO WHY;                                 06463360 T  0030:3
                    IF (SH:=T2:=REPLY[P1MIX].[FF]) GTR 32 THEN      % IL                06463380 T  0032:0
                    BEGIN STREAM(T2:);                                                  06463400 T  0034:3
                         BEGIN SI:=T2;                                                  06463420 T  0036:1
                         LL:  SI:=SI+1; IF SC≠"L" THEN GO TO LL;                        06463440 T  0036:2
                              SI:=SI+1; T2:=SI;                                         06463460 T  0037:2
                         END;                                                           06463480 T  0038:0
                         T2:=P;                                                         06463500 T  0038:1
                         FPBSIZE:=(FPB:=PRT[P1MIX,3]).[8:10];                           06463520 T  0038:3
                         FOR I:=0 STEP ETRLNG UNTIL FPBSIZE DO                          06463540 T  0041:1
                            IF (FPB[I] EQV MID)=NOT 0 THEN                              06463560 T  0044:0
                            IF (FPB[I+1] EQV ABS(FID))=NOT 0 THEN GO FOUND;             06463580 T  0045:3
FOUND:                   NAMEID(C,T2);  MID:=C;  NAMEID(C,T2);                          06463600 T  0051:2
                         NAMEID(C,T2);  FID:=C&FID[1:1:1];                              06463620 T  0054:1
                         IF I LSS 1020 THEN                                             06463640 T  0057:0
                         BEGIN FPB[I]:=MID;                                             06463660 T  0057:3
                              FPB[I+1]:=C;                                              06463680 T  0059:2
                         END;                                                           06463700 T  0061:1
                         FORGETSPACE(SH-1);                                             06463720 T  0061:1
                    END;                                                                06463740 T  0062:2
                    REPLY[P1MIX]:=0;                                                    06463760 T  0062:2
                    GO TO LOOK;                                                         06463780 T  0063:3
                END;                                                                    06463800 T  0064:1
                DIRSRH := T2;                                                           06463810 T  0064:1
            END DIRSRH;                                                                 06463820 T  0064:3
                IF HEADER GEQ 0 THEN                                                    06463840 T  0065:0
                     SH:=IF HEADER GTR 511 THEN HEADER ELSE DIRSRH                      06463860 T  0069:0
                ELSE DISKWAIT(-(SH:=SPACE(30)),30,HEADER.[CF]);                         06463880 T  0072:1
                FH:=IOQUE&SH[CTC];                                                      06463900 T  0078:0
                IF(FH[2] EQV 0)=NOT 0 OR (ABS(USERID) EQV ABS(FH[2]))=NOT 0             06463910 T  0079:2
                     OR (USERID EQV MCP)=NOT 0 THEN TYPE←7 ELSE%                        06463920 T  0082:3
                          IF HEADER<0 THEN GO EXYT ELSE                                 06463925 T  0087:2
                IF (FH[5] EQV @14)=NOT 0 THEN%                                          06463930 T  0088:3
                     IF (FH[6] EQV @14)=NOT 0 THEN TYPE←2 ELSE TYPE←3;%                 06463940 T  0091:0
                IF TYPE ≠ 0 THEN GO TO EXYT;                                            06463950 T  0095:3
                IF FH[5].[1:1] THEN                                                     06463960 T  0097:0
                BEGIN IF (SH:=DIRECTORYSEARCH(ABS(FH[5]),FH[6],19))=0                   06463970 T  0098:0
                     THEN BEGIN TYPE:=0; GO TO EXYT END;                                06463980 T  0101:0
                 M[SH+4].[11:1]:=1;                                                     06463982 T  0103:1
                 STREAM(DATE,J:=5); BEGIN SI:=LOC DATE; DS:=8OCT; END;                  06463984 T  0106:2
                 M[SH+3].[12:18]:=JUNK;                                                 06463986 T  0108:1
                 DISKWAIT(SH.[CF],-30,SH.[FF]);                                         06463988 T  0111:2
            $ SET OMIT = SHAREDISK                                                      06463990 T  0114:0
                 UNLOCKDIRECTORY;                                                       06463992 T  0114:0
            $ POP OMIT                                                                  06463994 T  0117:2
                 DKSGROW:=M[SH INX 8];                                                  06463996 T  0117:2
                CODES:=GETSPACE(30,0,0)+2;ROWS:=(M[SH INX 9]AND 31)-1;                  06464000 T  0119:2
                 FOR ROW:=0 STEP 1 UNTIL ROWS DO                                        06464100 T  0124:3
                 BEGIN IF (DKADR:=M[SH INX 10+ROW])=0 THEN                              06464200 T  0127:0
NOTFOUND:            BEGIN TYPE := 0;                                                   06464300 T  0130:0
FORGET:                   FORGETSPACE(CODES); FORGETSPACE(SH);GO TO EXYT;               06464400 T  0131:1
                     END;                                                               06464500 T  0133:1
                     ROWSZ := DKADR + DKSGROW;                                          06464600 T  0133:1
                     WHILE DKADR < ROWSZ DO                                             06464700 T  0134:2
                     BEGIN DISKIO(C,1-CODES,30,DKADR);                                  06464800 T  0135:3
                          SLEEP([C],IOMASK);                                            06464900 T  0137:3
```

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                    FOR C:=0 STEP 1 UNTIL 29 DO                                  06465000 T  0139:1
                   BEGIN IF((USER:=NFLAG(M[CODES INX C]))EQV @114)=              06465100 T  0140:0
                         NOT 0 THEN GO TO NOTFOUND;                              06465200 T  0142:3
                         IF (USER EQV @14)≠ NOT 0 THEN                           06465210 T  0144:0
                               IF USER.[3:3]=0 THEN                              06465220 T  0145:2
                               BEGIN                                             06465230 T  0147:1
                         IF (USERID EQV ABS(USER))=NOT 0 THEN                    06465300 T  0147:3
                         BEGIN TYPE :=                                           06465400 T  0149:2
                              IF USER < 0 THEN 2 ELSE 3;                         06465500 T  0150:0
                              GO TO FORGET;                                      06465600 T  0152:3
                        END;                                                     06465700 T  0153:1
                               END ELSE                                          06465800 T  0153:1
                               BEGIN                                             06465805 T  0153:1
                               IF P1MIX ≠ 0 THEN                                 06465810 T  0153:3
                               IF(ABS(JAR[P1MIX,0])EQV                           06465820 T  0154:2
                                 USER.[6:42])= NOT 0 THEN                        06465830 T  0156:1
IF((IF JAR[P1MIX,0]<0 THEN "DISK  "ELSE JAR[P1MIX,1])EQV                         06465840 T  0158:2
                                 M[CODES INX C+1].[6:42])= NOT 0                 06465850 T  0162:3
                               THEN                                              06465860 T  0166:1
                               BEGIN                                             06465870 T  0167:0
                                 TYPE := USER.[3:3];                             06465880 T  0167:2
                                 GO TO FORGET;                                   06465900 T  0168:3
                               END; C:=C+1;                                      06465910 T  0171:0
                               END;                                              06465920 T  0172:1
                    END; % 30 USERS                                              06466000 T  0172:1
                    DKADR := DKADR + 1;                                          06466100 T  0174:2
                END; % ROW                                                       06466200 T  0175:3
            END; % ROWS                                                          06466300 T  0176:1
            GO TO NOTFOUND;                                                      06466310 T  0178:2
        END; % NO SECURITY BLOCK FILE                                            06466400 T  0179:0
        TYPE :=0;                                                                06466500 T  0179:0
    EXYT:                                                                        06466600 T  0179:3
        IF HEADER LSS 512 THEN                                                   06466610 T  0179:3
        IF HEADER GEQ 0 THEN HEADER:=FH ELSE FORGETSPACE(FH);                    06466620 T  0180:2
        SECURITYCHECK :=TYPE;                                                    06466700 T  0185:0
    END SECURITYCHECK;                                                           06466800 T  0185:3
                                                                                        SIZE= 0187 WORDS
     $ SET OMIT = NOT(DATACOM )                                                  06499999 T  0000:0
    % * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *%JS  06845900 T  0000:0
     $ SET OMIT = NOT(DCLOG AND DATACOM )                                        06845999 T  0000:0
    DEFINE KLUMP=@174#;% @173 IS RESERVED FOR THE DISK ADDRESS                   07000000 T  0000:0
    COMMENT LASTCDNUM, FIRSTDECK, AND LASTDECK ARE STORED IN THE                 07000010 T  0000:0
            FIRST THREE WORDS OF THE DISK SEGMENT LOCATED AT DIRECTORYTOP        07000015 T  0000:0
            +3. IN A NON SHARED DISK SYSTEM, THEY ARE WRITTEN OUT EACH           07000020 T  0000:0
            TIME ONE OF THEM IS CHANGED SO THAT THEY WILL BE PRESERVED           07000025 T  0000:0
            IF A HALT/LOAD OCCURS. IN A SHARED DISK SYSTEM, THEY ARE             07000030 T  0000:0
            READ INTO THE PRT WITH A READ-LOCK COMMAND EACH TIME THEY ARE        07000035 T  0000:0
            USED. THIS PROVIDES CONTROL DECK INTERLOCKING BETWEEN SYSTEMS        07000040 T  0000:0
            IN ADDITION TO PASSING THE INFORMATION BETWEEN SYSTEMS.              07000045 T  0000:0
    END COMMENT;                                                                 07000050 T  0000:0
    INTEGER LASTCDNUM=@174;                                                      07000100 T  0000:0
    REAL FIRSTDECK=@175;                                                         07000200 T  0000:0
    REAL LASTDECK=@176;                                                          07000300 T  0000:0
    DEFINE LOCKCONTROLDECKS=BEGIN SLEEP([TOGLE],CDMASK); LOCKTOG(CDMASK);        07001000 T  0000:0
     $ SET OMIT = NOT(SHAREDISK)                                                 07001099 T  0000:0
        END#,                                                                    07001200 T  0000:0
        UNLOCKCONTROLDECKS=BEGIN                                                 07001300 T  0000:0
     $ SET OMIT = NOT(SHAREDISK)                                                 07001399 T  0000:0
            UNLOCKTOG(CDMASK) END#;                                              07001500 T  0000:0
    REAL PROCEDURE NEXTCDNUM(UPDATE); VALUE UPDATE; BOOLEAN UPDATE;              07001600 T  0000:0
```

```
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00162
BEGIN                                                               07001620 T  0000:0
    LOCKCONTROLDECKS;                                               07001640 T  0000:0
    LASTCDNUM := (LASTCDNUM MOD 9999) +1;                           07001660 T  0005:1
    STREAM(CDNUM:=0: LNUM:=LASTCDNUM);                              07001680 T  0007:0
    BEGIN                                                           07001700 T  0008:1
        SI:=LOC LNUM; DI:=LOC CDNUM; DS:=8 DEC;                     07001720 T  0008:1
    END;                                                            07001740 T  0009:0
    NEXTCDNUM := P;                                                 07001760 T  0009:1
    IF UPDATE THEN                                                  07001780 T  0009:3
    BEGIN                                                           07001800 T  0010:0
        DISKWAIT(KLUMP,-3,DIRECTORYTOP+3);                          07001820 T  0010:2
        UNLOCKTOG(CDMASK);                                          07001840 T  0012:2
    END;                                                            07001860 T  0016:0
END;                                                                07001880 T  0016:0
                                                                                SIZE= 0019 WORDS
PROCEDURE STARTABECK(N); VALUE N; REAL N; FORWARD;                  07002000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00163
PROCEDURE ENTERCONTROLDECK(H); VALUE H; ARRAY H[*]; FORWARD;        07002100 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00163
 REAL RUNUMBER;%                                                    07003000 T  0000:0
 PROCEDURE COM23;%                                                  07004000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00163
   BEGIN%                                                           07005000 T  0000:0
   REAL INBUFF,%  ADDRESS OF THE INPUT BUFFER.                      07006000 T  0000:0
      OUTBUFF,%     "    "   "  OUTPUT BUFFER.                      07006010 T  0000:0
    FIRSTCARD,%     "    "   "  CARD IMAGE OF THE FIRST CARD        07006020 T  0000:0
   OUTBUFFOLD,%     "    "   "  LAST OUTPUT BUFFER.                 07006030 T  0000:0
      RESERVE,%     "    "  30 WDS OF CORE USED TO BUILD THE        07006040 T  0000:0
      T,T1,T2,%  TEMPORARY VARIABLES.                                07006050 T  0000:0
        R,L,N,%     "         "     USED TO COUNT CARD IMAG         07006060 T  0000:0
            Q,%  USUALLY INDICATES COL 1 HAS A QUESTION MARK         07006070 T  0000:0
           IU,%  UNIT NUMBER OF THE INPUT UNIT.                      07006080 T  0000:0
           OU,%   "    "    "   "  OUTPUT UNIT.                     07006090 T  0000:0
        FIRST,%  TRUE IF THE FIRST CARD OF A DECK.                   07006100 T  0000:0
            S,%  USED AS A TEMPRUARY VARIABLE IN SUBROUTINE          07006140 T  0000:0
              %  AND TO HAND THE UNIT NUMBER TO SUBROUTINE S         07006150 T  0000:0
            D;%  USED AS A MASK TO SLEEP UNTIL DISK OPERATIO         07006160 T  0000:0
              %  ARE COMPLETED.                                      07006161 T  0000:0
 $ SET OMIT = NOT(PACKETS)                                           07006169 T  0000:0
BOOLEAN CDONLY;                                                      07007100 T  0000:0
    INTEGER A,I;%                                                    07008000 T  0000:0
 $ SET OMIT = NOT(PACKETS)                                           07008199 T  0000:0
    LABEL AGAIN,INL,ERROR,SUPER,BOMB,SKIPIT,EXIT;                    07009000 T  0000:0
LABEL INPUTL;                                                        07009100 T  0000:0
    ARRAY FPB[*],H[*];%                                              07010000 T  0000:0
    SUBROUTINE STOP;%                                                07011000 T  0000:0
        BEGIN IF S ≠ 18 THEN%                                        07012000 T  0001:0
                BEGIN READY ← NOT(Q ← TWO(S)) AND READY;%            07013000 T  0001:3
                      RRRMECH ← NOT Q AND RRRMECH OR Q AND SAVEWORD;% 07014000 T  0004:3
                      LABELTABLE[S] ← @114;%                         07015000 T  0007:1
                      RDCTABLE[S] ← MULTITABLE[S] ← 0%               07016000 T  0008:2
                END;%                                                07017000 T  0009:3
            FPB[T+1]← *P(DUP)+CLOCK+P(RTR);%                         07018000 T  0010:3
            FPB[T].[24:12] ← TINU[S].[18:12];%                       07019000 T  0013:3
            TINU[S].[18:12]:=0;                                      07020000 T  0017:0
        END;%                                                        07021000 T  0019:2
 $ SET OMIT = PACKETS                                                07021999 T  0019:3
    SUBROUTINE FORGETIT;%                                            07022000 T  0019:3
 $ POP OMIT                                                          07022001 T  0020:0
```

```
$ SET OMIT = NOT(PACKETS)                                          07022099 T  0020!0
      BEGIN T1 ← H[9]+9;%                                          07023000 T  0020!0
            FOR T2 ← 10 STEP 1 UNTIL T1 DO%                        07024000 T  0021!2
                FORGETUSERDISK(H[T2],"H[8]);                       07025000 T  0023!0
      END;%                                                        07026000 T  0027!0
$ SET OMIT = NOT(PACKETS)                                          07026099 T  0027!1
   SUBROUTINE BOMBTIME;%                                           07027000 T  0027!1
      BEGIN IF STOPJOB=P1MIX THEN STOPM(FALSE);            %ST    07028000 T  0028!0
            IF TERMIX.[CF]=P1MIX THEN GO BOMB; END;        %ST    07028100 T  0030!0
$ SET OMIT = NOT(PACKETS)                                          07028999 T  0032!0
$ SET OMIT = PACKETS                                               07041099 T  0032!0
   BOOLEAN SUBROUTINE ENDCARD;                                     07041100 T  0032!0
   BEGIN IF Q THEN                                                 07041110 T  0032!0
         BEGIN M[INBUFF+9]:=0&"."[1:43:5];                         07041120 T  0032!1
               STREAM(X:="END":INBUFF);                            07041130 T  0035!3
               BEGIN SI:=INBUFF;                                   07041140 T  0037!0
               L: SI:=SI+1; IF SC=" " THEN GO TO L;                07041150 T  0037!1
               DI:=LOC X; DI:=DI+5;                                07041160 T  0038!1
               IF 3 SC=DC THEN TALLY:=1;                           07041170 T  0038!3
               X:=TALLY;                                           07041180 T  0039!2
               END;                                                07041190 T  0039!3
         END ELSE P(0);                                            07041200 T  0040!0
   ENDCARD:=P;                                                     07041210 T  0042!1
   END;                                                            07041220 T  0042!2
$ POP OMIT                                                         07041221 T  0042!3
   REAL SUBROUTINE ADR;%                                           07042000 T  0042!3
      BEGIN IF (T2 ← H[(T1 ← R DIV 200)+10]) = 0 THEN%             07043000 T  0043!0
            BEGIN H[9] ← T1+1;%                                    07044000 T  0046!0
                  H[T1+10] ← T2 ← GETUSERDISK(200);%               07045000 T  0048!1
            END;%                                                  07046000 T  0051!1
         ADR ← R MOD 200+T2%                                       07047000 T  0051!1
      END;%                                                        07048000 T  0052!0
   SUBROUTINE INPUT;%                                              07049000 T  0053!0
      BEGIN%                                                       07050000 T  0053!0
         IF IU < 16 THEN%                                          07051000 T  0053!0
$ SET OMIT = NOT(PACKETS)                                          07051099 T  0053!3
$ SET OMIT = PACKETS                                               07051999 T  0053!3
            BEGIN IF FIRST THEN%                                   07052000 T  0053!3
                  T ← WAITIO(@140000000  +  INBUFF,%               07053000 T  0054!2
                        @40,IU);%                                  07054000 T  0056!0
            T ← WAITIO(@120540000000  +  INBUFF,%                  07055000 T  0057!1
                  @2000000,IU);%                                   07056000 T  0058!1
$ POP OMIT                                                         07056001 T  0059!2
            Q ← M[INBUFF-1]=9;%                                    07057000 T  0059!2
            END%                                                   07058000 T  0062!0
         ELSE BEGIN WHILE(Q←WAITIO(@40000000+INBUFF,FIRSTx4+       07059000 T  0062!0
                  @4000000,IU)).[45:1] DO                          07059100 T  0067!3
             IF FIRST AND CDONLY THEN GO EXIT ELSE                 07059110 T  0070!1
            BEGIN SLEEP([TOGLE],STATUSMASK);                       07059200 T  0071!0
                  RRRMECH←RRRMECH AND NOT Q←TWO(IU);               07059300 T  0073!1
                  READY←READY AND NOT Q;                           07059400 T  0075!3
                  SLEEP([READY],Q);                                07059500 T  0077!1
            END;                                                   07060000 T  0078!3
            IF Q ← Q ≠ 0 THEN                                      07061000 T  0082!0
                  BEGIN S:=(T:=UNIT[IU]).[FF];                     07062000 T  0083!1
                        RETURNIOSPACE(S);                          07063000 T  0086!0
                        UNIT[IU] ← T&@77777[5:20:28];              07065000 T  0089!1
                  END;%                                            07066000 T  0091!2
            T ← 0;%                                                07067000 T  0091!2
         END;%                                                     07068000 T  0092!1
```

```
            END;%                                                                   07069000 T  0092:1
      %  SET UP INPUT VARIABLES%                                                    07071000 T  0094:0
      $ SET OMIT = NOT(PACKETS)                                                     07071899 T  0094:0
                   IF CDONLY:=(PRT[P1MIX,@25]>22) THEN                              07072000 T  0094:0
                   BEGIN IU:=PRT[P1MIX,@25];                                        07072100 T  0101:2
                        PRT[P1MIX,@25]:=0;          % DISK                        07072200 T  0103:2
                   END ELSE                                                         07072300 T  0105:1
                   BEGIN IF (IU:=FINDINPUT("CONTROL","DECK    ",0,0,0,0,0,0,      07072400 T  0105:1
                             0,0)) LSS 0 THEN GO INITIATE; % BEEN DS=ED             07072500 T  0108:0
                        IF IU GEQ 32 THEN P(XIT);           % EOJ IF PSEUDODCK     07072600 T  0110:3
                   END;                                                             07072700 T  0112:1
      $ SET OMIT = NOT(PACKETS)                                                     07072899 T  0112:1
                   STARTIMING(0,IU);                                                07073000 T  0112:1
                   FPB:=PRT[P1MIX,3];                                               07073500 T  0113:1
      $ SET OMIT = PACKETS                                                          07073999 T  0114:3
                   IF OPNMESS THEN                                                  07074000 T  0114:3
      $ POP OMIT                                                                    07074001 T  0115:2
                   IF NOT(JAR[P1MIX,9].[2:1]) THEN % DONT SUPPRESS MESSAGE          07074090 T  0115:2
                   FILEMESSAGE(" IN "&TINU[IU][6:30:18],0,                          07074100 T  0117:3
                        "CONTROL","DECK    ",0,0,0,OPNMESS);                        07074200 T  0117:3
                   RDCTABLE[IU].[8:6] ← P1MIX;%                                     07075000 T  0121:3
                   IF IU LSS 16 THEN BEGIN%                                         07076000 T  0124:1
                        FPB[3].[23:1]:=1; %SET INPUT FLAG FOR LOG                   07076010 T  0125:2
                        T ← WAITIO(@540000005,0,IU)%                                07077000 T  0128:0
                        END%                                                        07077010 T  0129:0
                   ELSE IF IU=23 AND READERA NEQ 0 THEN                             07078000 T  0129:3
                        BEGIN FORGETSPACE(READERA-2);%                              07079000 T  0136:3
                             READERA ← 0;%                                          07080000 T  0138:2
                        END%                                                        07081000 T  0139:1
                   ELSE IF IU=24 AND READERB NEQ 0 THEN                             07082000 T  0139:1
                        BEGIN FORGETSPACE(READERB-2);%                              07083000 T  0141:2
                             READERB ← 0;%                                          07084000 T  0143:1
                        END;%                                                       07085000 T  0144:0
                   INBUFF ← GETSPACE(11,0,1) + 2;                                   07086000 T  0144:0
                   FIRSTCARD ← GETSPACE(10,0,1)+2;%                                 07087000 T  0146:1
      %  SET UP OUTPUT VARIABLES%                                                   07088000 T  0148:2
                   IF PRT[P1MIX,@25] THEN%                                          07089000 T  0148:2
                        BEGIN OU ← LABELASCRATCH(T ←%                               07090000 T  0149:2
                                  TAPELABEL("CONTROL","DECK    ",1,1,100));%       07091000 T  0150:1
                             IF OU<0 THEN GO INITIATE;   %BEEN DS=ED                07091100 T  0153:1
                             FORGETSPACE(T);%                                       07093000 T  0155:0
                             FPB[3].[23:1]:=0; %SET OUTPUT FLAG FOR LOG             07093010 T  0155:3
                        END%                                                        07094000 T  0158:1
                   ELSE BEGIN OUTBUFFOLD ← OUTBUFF ← GETSPACE(60,0,1)+2;%           07095000 T  0158:1
                             RESERVE ← GETSPACE(30,0,1)+2;%                         07096000 T  0163:3
                             H ← [M[GETSPACE(30,0,1)+2]]&30[8:38:10];%              07097000 T  0166:0
                             OU ← 18;%                                              07098000 T  0169:3
                        END;%                                                       07103000 T  0170:2
                   STARTIMING(5,OU);                                                07104000 T  0170:2
                   FPB:=PRT[P1MIX,3];          % STARTIMING MAY HAVE MOVED IT.     07104500 T  0171:2
      $ SET OMIT = NOT(PACKETS)                                                     07105499 T  0173:0
      %  BEGIN ONE DECK%                                                            07106000 T  0173:0
         AGAIN:    OUTBUFF ← OUTBUFFOLD;%                                           07107000 T  0173:0
                   L ← N ← 0;%                                                      07108000 T  0173:3
      $ SET OMIT = NOT(PACKETS)                                                     07108099 T  0175:0
      $ SET OMIT = PACKETS                                                          07108999 T  0175:0
                   FIRST ← D ← 1;                                                   07109000 T  0175:0
      $ POP OMIT                                                                    07109001 T  0176:1
                   IF OU = 18 THEN%                                                 07110000 T  0176:1
                        BEGIN H[ 9] ← 0;%                                           07111000 T  0177:0
```

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                    MOVE(20,[H[9]],[H[10]]);                                07112000 T  0178!3
                    H[8]←200;                                               07112100 T  0180!3
                END;%                                                       07113000 T  0182!0
%  BEGIN ONE CARD%                                                          07114000 T  0182!0
  INL:                                                                      07115000 T  0182!0
$ SET OMIT = NOT(PACKETS)                                                   07115099 T  0182!0
              INPUT;                                                        07115200 T  0182!0
$ SET OMIT = NOT(PACKETS)                                                   07115499 T  0183!0
              IF FIRST THEN%                                                07116000 T  0183!0
                  BEGIN                                                     07117000 T  0183!1
$ SET OMIT = NOT(PACKETS)                                                   07117099 T  0183!3
$ SET OMIT = PACKETS                                                        07117199 T  0183!3
                      FIRST:=FALSE;                                         07117200 T  0183!3
$ POP OMIT                                                                  07117201 T  0184!2
                    MOVE(10,INBUFF,FIRSTCARD);%                             07118000 T  0184!2
$ SET OMIT = NOT(PACKETS)                                                   07118099 T  0186!0
$ SET OMIT = PACKETS                                                        07119009 T  0186!0
                  END;                                                      07119010 T  0186!0
$ POP OMIT                                                                  07119011 T  0186!0
$ SET OMIT = NOT(PACKETS)                                                   07119099 T  0186!0
                      IF T NEQ Q THEN                                       07120000 T  0186!0
$ SET OMIT = NOT(PACKETS)                                                   07120009 T  0186!3
                  GO TO ERROR;                                              07120020 T  0186!3
              BOMBTIME;%                                                    07121000 T  0187!1
              IF OU < 16 THEN%                                              07122000 T  0188!0
                  BEGIN                                                     07122010 T  0188!3
$ SET OMIT = NOT(PACKETS)                                                   07122999 T  0189!1
                          T←WAITIO(INBUFF&@5000[18!33!15]                  07125000 T  0189!1
                                  &(10=Q)[8!38!10],0,OU);                   07125500 T  0190!0
$ SET OMIT = PACKETS                                                        07125599 T  0193!0
                    IF NOT ENDCARD THEN GO TO INL;                          07125600 T  0193!0
$ POP OMIT                                                                  07125601 T  0194!2
$ SET OMIT = NOT(PACKETS)                                                   07125999 T  0194!2
                    M[INBUFF-1] ← @1737000000000000;                        07127500 T  0194!2
                    T ← WAITIO(INBUFF-1,0,OU);                              07128000 T  0196!2
  SUPER::                                                                   07129000 T  0198!3
$ SET OMIT = NOT(PACKETS)                                                   07129099 T  0198!3
$ SET OMIT = PACKETS                                                        07129999 T  0198!3
                    STREAM(X:="CONTROL":INBUFF);                            07130000 T  0198!3
                        BEGIN SI:=INBUFF;                                   07130100 T  0200!1
                        E: IF SC NEQ "E" THEN                               07130200 T  0200!2
                              BEGIN SI ← SI+1; GO TO E END;%                07131000 T  0201!0
                          SI ← SI+3;%                                       07132000 T  0201!2
                      L:    IF SC = " " THEN%                               07133000 T  0201!3
                              BEGIN SI ← SI+1; GO TO L END;%                07134000 T  0202!1
                          DI ← LOC X; DI ← DI+1;%                           07135000 T  0202!3
                          IF 7 SC = DC THEN X ← TALLY;%                     07136000 T  0203!1
                      END;%                                                 07137000 T  0204!0
                    IF P ≠ 0 THEN GO TO AGAIN ELSE GO TO EXIT;%             07138000 T  0204!1
$ POP OMIT                                                                  07138001 T  0205!3
                  END;%                                                     07139000 T  0205!3
              IF D = 0 THEN SLEEP([D],NOT 0);                               07139500 T  0205!3
$ SET OMIT = NOT(PACKETS)                                                   07139509 T  0208!3
              MOVE(10,INBUFF,OUTBUFF);%                                     07140000 T  0208!3
$ SET OMIT = NOT(PACKETS)                                                   07140099 T  0210!1
              IF Q THEN%                                                    07141000 T  0210!1
                  BEGIN IF L DIV 6 ≠ N DIV 6 THEN%                          07142000 T  0210!2
                      BEGIN R ← L DIV 3;%                                   07143000 T  0212!3
                          A ← ADR;%                                         07144000 T  0214!2
                          DISKIO(T,1-RESERVE,30,A);%                        07145000 T  0216!2
```

```
                                        SLEEP([T],IOMASK);%                                  07146000 T  0218!2
                                        M[I+L MOD 3×10+9+RESERVE] ← N;%                      07147000 T  0220!0
                                        DISKIO(T,RESERVE-1,30,A);%                           07148000 T  0224!0
                                        SLEEP([T],IOMASK);%                                  07149000 T  0226!0
                                   END%                                                      07150000 T  0227!2
                              ELSE M[I +(L-N)×10+9+OUTBUFF] ← N;%                            07151000 T  0227!2
                              L ← M[OUTBUFF+9] ← N;%                                         07152000 T  0235!0
                         END;%                                                               07153000 T  0237!2
                    IF N = 12000 THEN%                                                       07154000 T  0237!2
                         BEGIN T ← GETSPACE(14,0,0)+2;%                                      07155000 T  0238!1
                              STREAM(FIRSTCARD,T);                                           07156000 T  0241!0
                                   BEGIN DS ← 32 LIT%                                        07157000 T  0242!0
          $ SET OMIT = NOT(PACKETS)                                                          07157099 T  0242!1
          $ SET OMIT = PACKETS                                                               07157999 T  0242!1
                                        "#MORE THAN 12000 CARDS IN        ";                07158000 T  0242!1
          $ POP OMIT                                                                         07158001 T  0246!1
                                        SI←FIRSTCARD;DS←9WDS;DS←LIT "←";                     07159000 T  0246!1
                                   END;%                                                     07160000 T  0247!1
                              GO TO SKIPIT;                                                  07161000 T  0247!2
                         END;%                                                               07162000 T  0249!0
                    IF (N ← N+1) MOD 6 = 0 THEN%                                             07163000 T  0249!0
                         BEGIN R ← N DIV 3-2;%                                               07164000 T  0251!1
                              A ← ADR;%                                                      07165000 T  0253!2
                              OUTBUFF ← OUTBUFFOLD;%                                         07166000 T  0255!2
                              DISKIO(D,OUTBUFF-1,60,A);                                      07167000 T  0256!1
                         END ELSE OUTBUFF ← OUTBUFF+10;%                                     07169000 T  0258!1
          $ SET OMIT = NOT(PACKETS)                                                          07169099 T  0260!0
          $ SET OMIT = NOT(PACKETS)                                                          07169499 T  0260!0
          $ SET OMIT = PACKETS                                                               07169999 T  0260!0
                    IF NOT ENDCARD THEN GO TO INL;%                                          07170000 T  0260!0
          $ POP OMIT                                                                         07170001 T  0261!2
                    IF D = 0 THEN SLEEP([D],NOT 0);                                          07171000 T  0261!2
                    OUTBUFF ← OUTBUFFOLD;%                                                   07173000 T  0264!2
                    R ← N DIV 6×2;%                                                          07174000 T  0265!1
                    A ← ADR;%                                                                07175000 T  0267!0
                    IF N MOD 6 ≠ 0 THEN                                                      07175100 T  0268!2
                    BEGIN                                                                    07175200 T  0269!3
                    DISKIO(T,OUTBUFF-1,60,A);%                                               07176000 T  0270!1
                    SLEEP([T],IOMASK);%                                                      07177000 T  0272!1
                    END;%                                                                    07178000 T  0273!3
                    IF R+2 < 200 THEN                                                        07178100 T  0273!3
                         BEGIN H[8] ← R+2;                                                   07178200 T  0275!0
                              FORGETUSERDISK(A+2,R-198);                                     07178300 T  0277!1
                         END;                                                                07178400 T  0279!1
                    H[7]←N-1;                                                                07179000 T  0279!1
                    H[4]←H[6]←0;                                                             07179050 T  0281!0
                    H[5]:= -0;                                                               07179100 T  0283!1
          $ SET OMIT = NOT(PACKETS)                                                          07179199 T  0284!3
                    ENTERCONTROLDECK(H);                                                     07180000 T  0284!3
          $ SET OMIT = NOT(PACKETS)                                                          07180009 T  0285!3
                    GO TO SUPER;                                                             07181000 T  0285!3
               ERROR:  T ← GETSPACE(12,0,0)+2;%                                              07214000 T  0286!1
          $ SET OMIT = NOT(PACKETS)                                                          07214099 T  0288!2
          $ SET OMIT = PACKETS                                                               07214999 T  0288!2
                    STREAM(FIRSTCARD,T);%                                                    07215000 T  0288!2
                         BEGIN DS ← 16 LIT "#READ ERROR FOR ";%                              07216000 T  0289!2
          $ POP OMIT                                                                         07216201 T  0291!3
                              SI ← FIRSTCARD; DS ← 9 WDS; DS ← LIT "←";%                     07817000 T  0291!3
                         END;%                                                               07218000 T  0292!3
               SKIPIT:  SPOUT(T);                                                            07219000 T  0293!0
```

```
                    DO BEGIN INPUT;%                                          07220000 T  0293:3
                              BOMBTIME;%                                      07221000 T  0295:0
$ SET OMIT = PACKETS                                                          07221999 T  0296:0
                    END UNTIL ENDCARD;%                                       07222000 T  0296:0
$ #OP OMIT                                                                    07222001 T  0297:2
$ SET OMIT = NOT(PACKETS)                                                     07222099 T  0297:2
                    IF OU < 16 THEN%                                          07223000 T  0297:2
                         BEGIN DO BEGIN T ← WAITIO(@340000005,@60,OU);%       07224000 T  0298:1
                                   BOMBTIME;%                                 07225000 T  0300:2
                              END UNTIL T.[42:1];%                            07226000 T  0302:0
                              T ← WAITIO(@140000005,@60,OU);%                 07227000 T  0303:1
                         END%                                                 07228000 T  0305:0
                    ELSE FORGETIT;%                                           07229000 T  0305:0
                    GO TO SUPER;%                                             07230000 T  0309:0
          BOMB:     FORGETIT;%                                                07231000 T  0309:2
          EXIT:     SLEEP([TOGLE],STATUSMASK);                                07232000 T  0311:0
                    IF IU GEQ 23 THEN UNITCODE[IU-23]:=-0;                    07232500 T  0312:2
                    S ← IU; T ← 3; STOP;%                                     07233000 T  0315:3
                    S ← OU; T ← 8; STOP;%                                     07234000 T  0318:0
                    FORGETSPACE(INBUFF);%                                     07235000 T  0321:0
                    FORGETSPACE(FIRSTCARD);%                                  07236000 T  0321:3
                    IF OU > 16 THEN%                                          07237000 T  0322:2
                         BEGIN FORGETSPACE(H);%                               07238000 T  0323:1
                              FORGETSPACE(OUTBUFFOLD);%                       07239000 T  0324:3
                              FORGETSPACE(RESERVE);%                          07240000 T  0325:2
                         END;%                                                07241000 T  0326:1
          END COM23;%                                                         07242000 T  0326:1
                                                                                   SIZE= 0327 WORDS
PROCEDURE STARTLOADN(KTR); VALUE KTR; REAL KTR;%                              07243000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00174
          BEGIN REAL HDR,SEGO,I,F,T,C; ARRAY SHEAT[*];                        07244000 T  0000:0
                    LABEL TRYAGAIN,LDCNTRL,DISK;                              07244100 T  0000:0
                    STREAM(K+0:KTR);%                                         07245000 T  0000:0
                         BEGIN SI ← KTR;%                                     07246000 T  0003:0
                         L:    IF SC = " " THEN%                              07247000 T  0003:1
                                   BEGIN SI ← SI+1; GO TO L END;%             07248000 T  0003:3
                              D1 ← LOC K; DI ← DI+6; DS ← 2 CHR;%             07249000 T  0004:1
                         END;%                                                07250000 T  0005:0
                    C ← P;%                                                   07251000 T  0005:1
                    T ← KTR.[15:15]-1;%                                       07252000 T  0005:3
                    IF (C NEQ "MT" AND C NEQ "DK") OR                         07253000 T  0007:2
                       (C  =  "DK" AND CDONLY     ) THEN                      07253100 T  0009:1
                         SPOUT(T INX M[T-1])                                  07254000 T  0011:1
                    ELSE BEGIN C ← C = "MT";%                                 07255000 T  0013:0
TRYAGAIN:                                                                     07255100 T  0018:1
               IF (HDR:=DIRECTORYSEARCH(P(LDCNTRL),P(DISK),3)) ≠ 0 THEN       07256000 T  0018:1
                    BEGIN                                                     07256200 T  0020:2
                    SHEAT := [M[F:=GETSPACE(31,0,0)+2]] & 30[8:38:10];        07256400 T  0021:0
                    STREAM(S:=F-1, D:=F); % ZERO OUT THE SHEAT ENTRY          07256600 T  0025:1
                       BEGIN                                                  07256800 T  0026:3
                       SI:=S; DS:=30 WDS;                                     07257000 T  0026:3
                       END;                                                   07257200 T  0027:1
                    SEGO := GETSPACE(30,0,0)+2;                               07257400 T  0027:2
                    DISKWAIT(-SEGO, 30, M[HDR INX 10]);                       07257600 T  0029:3
                    F.[FF] := HDR; % CORE ADDRESS OF HEADER IN [FF] OF PARAM. 07257800 T  0032:2
                    SHEAT[7] := SEGO;  % CORE ADRS.OF SEGMENT ZERO IN SHEAT[7] 07258000 T  0033:3
                    SHEAT[0] := P(LDCNTRL);                                   07258200 T  0035:0
                    SHEAT[1] := P(DISK);                                      07258400 T  0036:1
                    SHEAT[2] := 0 & 2[8:38:10];                               07258600 T  0037:2
                    % [4:1] IN SHEET[2] MEANS SUPRESS BOJ/EOJ MESSAGES        07258800 T  0039:3
```

```
                    SHEAT[16] := SHEAT[17] := @377777777777; % TIME LIMITS          07259000 T  0039:3
                    SHEAT[19] := C;                % COMMON VALUE                    07259200 T  0042:0
                    SHEAT[20] := 4;                % CORE ESTIMATE                   07259400 T  0043:1
                    SHEAT[21] := 150;              % STACK SIZE                      07259600 T  0044:2
                                                                                      07259800 T  0045:3
                    STREAM(A:=0 : S := P(.SCHEDULEIDS));                              07260000 T  0045:3
                        BEGIN                                                         07260200 T  0047:0
                        SI:=S;                                                        07260400 T  0047:0
                        47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                          07260600 T  0047:1
                           IF SB THEN ELSE JUMP OUT);                                 07260800 T  0048:1
                        DS:=SET; A:=TALLY;                                            07261000 T  0049:3
                        END STREAM STATEMENT;                                         07261200 T  0050:1
                                                                                      07261400 T  0050:2
                    I := P;                                                           07261600 T  0050:2
                    SHEAT[3].[8:10] := I;          % SCHEDULE NUMBER                 07261800 T  0051:0
                    SHEAT[23] := (CLOCK + P(RTR)) DIV 60;                             07262000 T  0053:2
                    SHEAT[25] := HDR.[FF]; % DISK ADDRESS OF FILE HEADER              07262200 T  0055:3
                    STREAM(C, T);                                                     07262400 T  0057:2
                       BEGIN                                                          07262600 T  0058:2
                       DI:=DI+16;                                                     07262800 T  0058:2
                       DS:=31LIT"CC EXECUTE LDCNTRL/DISK;COMMON=";                    07263000 T  0058:3
                       SI:=LOC C; DS:=8DEC;                                           07263200 T  0063:0
                       DS:=6LIT";END.+";                                              07263400 T  0063:2
                       END STREAM STATEMENT;                                          07263600 T  0064:2
                    M[T] := 0; M[T+1] := 10;                                          07263700 T  0064:3
                    SHEAT[6] := GETESPDISK & 10[18:33:15];                            07263800 T  0068:1
                    DISKWAIT(T, 11, SHEAT[6].[CF]);                                   07264000 T  0070:1
                    FORGETSPACE(T);                                                   07264200 T  0072:1
                    INDEPENDENTRUNNER(P(.SELECTRUN).F.160);                           07264400 T  0073:0
                    END ELSE % IF IN DIRECTORY                                        07265000 T  0074:1
                    BEGIN                                                             07265100 T  0074:1
                    ENTERSYSFILE(2);                                                  07265200 T  0077:0
                    GO TRYAGAIN;                                                      07265300 T  0077:3
            LDCNTRL:::  "LDCNTRL";                                                    07265400 T  0078:1
               DISK:::  "DISK    ";                                                   07265500 T  0080:0
                    END;                                                              07265600 T  0081:0
                        END;%                                                         07266000 T  0081:0
                 END;%                                                                07267000 T  0081:0
                                                                                                SIZE= 0082 WORDS
            PROCEDURE TABLEOFCONTENTS(B,COUNT);%                                      07268000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00177
                 VALUE B,COUNT; REAL B,COUNT;%                                        07268100 T  0000:0
                     BEGIN REAL I,T,N,A,TUSTA,TL,BU;                                  07269000 T  0000:0
             $ SET OMIT = NOT(PACKETS)                                                07269099 T  0000:0
                     LABEL L,EXIT,G;%                                                 07270000 T  0000:0
             $ SET OMIT = NOT(SHAREDISK)                                              07270099 T  0000:0
                     A:=B.[15:15]-1;                                                  07271900 T  0000:0
                     TUSTA:=M[A-1];                                                   07272000 T  0003:2
                     LOCKCONTROLDECKS;                                                07272500 T  0005:2
                     A:=FIRSTDECK;                                                    07273000 T  0010:2
             $ SET OMIT = NOT(PACKETS)                                                07273099 T  0011:1
                  L:   I:=(GETSPACE(14,0,0)+2) INX TUSTA;                             07274000 T  0011:1
                  G:   IF A = 0 THEN GO TO EXIT;%                                     07275000 T  0014:0
                     DISKWAIT(-I,12,A);                                               07276000 T  0015:1
                     A:=M[I+6].[CF];                                                  07278000 T  0016:3
             $ SET OMIT = NOT(DATACOM AND RJE )                                       07278499 T  0019:1
             $ SET OMIT = NOT(SHAREDISK)                                              07279000 T  0019:1
                     N = M[I+2];%                                                     07281000 T  0019:1
             $ SET OMIT = NOT(PACKETS)                                                07281099 T  0021:1
                         DISKWAIT(-I-4,9,M[I+10]);                                    07282000 T  0021:1
```

```
                    STREAM(N,T,TU,BU,I);                                    07284000 T  0024!2
                        BEGIN SI ← LOC N; SI ← SI+1;%                       07285000 T  0026!1
$ SET OMIT = NOT(PACKETS)                                                   07285099 T  0026!3
$ SET OMIT = PACKETS                                                        07285999 T  0026!3
                        DS ← 6 LIT " DECK "; DS ← 5 CHR;%                   07286000 T  0026!3
$ POP OMIT                                                                  07286001 T  0028!0
$ SET OMIT = NOT(SHAREDISK)                                                 07286100 T  0028!0
$ SET OMIT = SHAREDISK                                                      07286400 T  0028!0
                        DS:=8 LIT" ";                                       07286500 T  0028!0
$ POP OMIT                                                                  07286501 T  0029!1
$ SET OMIT = NOT(PACKETS)                                                   07286509 T  0029!1
$ SET OMIT = NOT(RJE AND DATACOM )                                          07286599 T  0029!1
                    DS:=8 LIT " ";                                          07286800 T  0029!1
            NEX:                                                            07286900 T  0030!2
$ SET OMIT = PACKETS                                                        07286999 T  0030!2
                        DS ← 5 LIT " IS: ";%                                07287000 T  0030!2
                        DI ← DI+40; DI ← DI+32; DS ← LIT "←";%              07288000 T  0031!2
$ POP OMIT                                                                  07288001 T  0032!2
$ SET OMIT = NOT(PACKETS)                                                   07288099 T  0032!2
                        END;%                                               07289000 T  0032!2
                    SPOUT(I);%                                              07290000 T  0032!3
$ SET OMIT = NOT(PACKETS)                                                   07290099 T  0033!2
                    GO TO L;%                                               07291000 T  0033!2
            EXIT:IF N=0 THEN                                                07292000 T  0035!0
                        BEGIN STREAM(I);                                    07293000 T  0035!3
$ SET OMIT = NOT(PACKETS)                                                   07293099 T  0037!0
$ SET OMIT = PACKETS                                                        07293199 T  0037!0
                        DS:=18 LIT " NO DECKS ON DISK←";                    07293200 T  0037!0
$ POP OMIT                                                                  07293201 T  0039!3
                        SPOUT(I);%                                          07294000 T  0039!3
$ SET OMIT = PACKETS                                                        07294899 T  0040!2
                        END ELSE FORGETSPACE(I);                            07294900 T  0040!2
$ POP OMIT                                                                  07294901 T  0041!3
$ SET OMIT = NOT(PACKETS)                                                   07294999 T  0041!3
                    UNLOCKCONTROLDECKS;                                     07296000 T  0041!3
            END;%                                                           07297000 T  0045!1
                                                                                    SIZE= 0047 WORDS
PROCEDURE REMOVEDECK(N,TUSTA);VALUE N,TUSTA;REAL N,TUSTA;                   07298000 T  0000!0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00179
            BEGIN REAL I,T,A,L1,J=I,L2,V;%                                  07299000 T  0000!0
$ SET OMIT = NOT(PACKETS)                                                   07299499 T  0000!0
                    LABEL L,EXIT,REMOVE;%                                   07300000 T  0000!0
                    LOCKCONTROLDECKS;                                       07301000 T  0000!0
                    IF (I ← DIRECTORYSEARCH("DECK   ",N,5)) = 0 THEN%       07303000 T  0006!2
$ SET OMIT = NOT(PACKETS)                                                   07303499 T  0008!3
                        BEGIN I ← GETSPACE(5,0,0)+2;%                       07304000 T  0008!3
                            STREAM(N,I);%                                   07305000 T  0011!2
$ SET OMIT = NOT(PACKETS)                                                   07305099 T  0012!2
$ SET OMIT = PACKETS                                                        07305999 T  0012!2
                            BEGIN DS ← 6 LIT " DECK ";%                     07306000 T  0012!2
$ POP OMIT                                                                  07306001 T  0013!2
                                SI ← LOC N; SI ← SI+1; DS ← 5 CHR;%         07307000 T  0013!2
                                DS ← 13 LIT " NOT ON DISK←";%               07308000 T  0014!1
                            END;%                                           07309000 T  0016!1
                        GO TO EXIT;%                                        07310000 T  0016!2
                    END;%                                                   07311000 T  0019!0
$ SET OMIT = NOT(SHAREDISK)                                                 07311199 T  0019!0
$ SET OMIT = NOT(PACKETS)                                                   07311499 T  0019!0
                    L2:=M[I+6].[CF];                                        07312000 T  0019!0
                    IF (A:=FIRSTDECK)=(L1:=I.[FF]) THEN                     07313000 T  0021!2
```

```
                    BEGIN                                                   07314000 T  0023:3
$ SET OMIT = PACKETS                                                        07314099 T  0024:1
                         IF (FIRSTDECK:=L2)=0 THEN LASTDECK:=0;             07314100 T  0024:1
$ POP OMIT                                                                  07314101 T  0026:3
$ SET OMIT = NOT(PACKETS)                                                   07314109 T  0026:3
                         DISKWAIT(KLUMP,3,DIRECTORYTOP+3);                  07314200 T  0026:3
$ SET OMIT = NOT(PACKETS)                                                   07314289 T  0028:2
                         GO TO REMOVE;                                      07314300 T  0028:2
                    END;                                                    07314400 T  0029:0
                    J ← I.[33:15];%                                         07315000 T  0029:0
               L:                                                           07316000 T  0030:1
                    DISKWAIT(-J,30,A);                                      07317000 T  0030:1
                    IF (V:=M[J+6].[CF])=0 THEN                              07318000 T  0031:3
$ SET OMIT = NOT(PACKETS)                                                   07318009 T  0034:3
$ SET OMIT = PACKETS                                                        07318019 T  0034:3
                         GO TO REMOVE;                                      07318020 T  0034:3
$ POP OMIT                                                                  07318021 T  0035:1
                    IF V ≠ L1 THEN%                                         07319000 T  0035:1
                         BEGIN A ← V; GO TO L END;%                         07320000 T  0036:0
$ SET OMIT = PACKETS                                                        07320999 T  0037:3
                    M[J+6].[CF]:=L2;                                        07321000 T  0037:3
$ POP OMIT                                                                  07321001 T  0040:2
$ SET OMIT = NOT(PACKETS)                                                   07321099 T  0040:2
                    DISKWAIT(J,30,A);                                       07322000 T  0040:2
                    IF L2 = 0 THEN%                                         07324000 T  0041:3
                    BEGIN                                                   07325000 T  0042:2
$ SET OMIT = PACKETS                                                        07325999 T  0043:0
                         LASTDECK:=A;                                       07326000 T  0043:0
$ POP OMIT                                                                  07326001 T  0043:3
$ SET OMIT = NOT(PACKETS)                                                   07326099 T  0043:3
                         DISKWAIT(KLUMP,3,DIRECTORYTOP+3);                  07327000 T  0043:3
$ SET OMIT = PACKETS                                                        07327999 T  0045:2
                    END;                                                    07328000 T  0045:2
$ POP OMIT                                                                  07328001 T  0045:2
$ SET OMIT = NOT(PACKETS)                                                   07329999 T  0045:2
               REMOVE:                                                      07331000 T  0045:2
                    FORGETSPACE(I);                                         07332000 T  0045:2
                    I:=DIRECTORYSEARCH("DECK    ",N,8).[CF];                07333000 T  0046:1
                    T ← M[I+9];%                                            07343000 T  0048:2
                    FOR V ← 1 STEP 1 UNTIL T DO%                            07344000 T  0050:2
                         IF M[I+V+9]≠0 THEN FORGETUSERDISK(M[I+V+9],M[I+8]); 07345000 T  0053:0
                    STREAM(N,I);%                                           07346000 T  0062:1
$ SET OMIT = NOT(PACKETS)                                                   07346099 T  0063:1
$ SET OMIT = PACKETS                                                        07346999 T  0063:1
                         BEGIN DS ← 6 LIT " DECK ";%                        07347000 T  0063:1
$ POP OMIT                                                                  07347001 T  0064:1
                              SI ← LOC N; SI ← SI+1; DS ← 5 CHR;%           07348000 T  0064:1
                              DS ← 9 LIT " REMOVED←";%                      07349000 T  0065:0
                         END;%                                              07350000 T  0066:2
$ SET OMIT = PACKETS                                                        07350099 T  0066:3
          IF LIBMSG THEN                                                    07350100 T  0066:3
$ POP OMIT                                                                  07350101 T  0067:2
EXIT:          SPOUTER(I&TUSTA[9:9:9],TUSTA,LIBMSG)                         07351000 T  0067:2
$ SET OMIT = PACKETS                                                        07351099 T  0068:0
          ELSE FORGETSPACE(I);                                              07351100 T  0068:0
$ POP OMIT                                                                  07351101 T  0071:0
                    ;UNLOCKCONTROLDECKS;                                    07352000 T  0071:0
               END;%                                                        07353000 T  0074:2
                                                                                  SIZE= 0076 WORDS
PROCEDURE DECKREMOVER(B); VALUE B; REAL B;%                                 07354000 T  0000:0
```

```
                                                                START OF REL SEGMENT; DISK ADDRESS = 00182
          BEGIN REAL K,N,F;%                                    07355000 T  0000:0
               INTEGER U; LABEL ON,ERR;                         07355100 T  0000:0
               REAL D;                                          07355200 T  0000:0
               LABEL L,TRYIT,GIVEUP;                            07356000 T  0000:0
               K ← B.[15:15]-1;%                                07357000 T  0000:0
          L:   STREAM(X←12,B:A←0);%                             07358000 T  0003:0
                    BEGIN SI ← B;%                              07359000 T  0004:2
                    U:   IF SC = " " THEN BEGIN SI←SI+1; GO TO U END;%  07360000 T  0004:3
                         IF SC="=" THEN BEGIN DI←LOC X; DI←DI+6; DS←CHR;  07360100 T  0005:3
                                        SI←SI-1; B←SI; GO TO E END;  07360200 T  0007:0
                         IF SC = "#" THEN SI:=SI+1;                 07361000 T  0007:3
                    BL:  IF SC=" "  THEN BEGIN SI:=SI+1;GO TO BL; END;  07361500 T  0008:2
                         DI:=LOC X; DI:=DI+1; DS:=5 LIT "#0000";    07362000 T  0009:2
                         4(IF SC < "0" THEN JUMP OUT TO EN;         07363000 T  0011:0
                           IF SC > "9" THEN JUMP OUT TO EN;         07364000 T  0012:1
                           SI:=SI+1; TALLY:=TALLY+1);               07365000 T  0013:1
                    EN:  A:=TALLY; SI:=SI-A; DI:=DI-A; DS:=A CHR;   07365500 T  0014:0
                    N:   IF SC = " " THEN BEGIN SI←SI+1; GO TO N END;%  07366000 T  0015:3
                         DS ← CHR; B ← SI;%                         07367000 T  0016:3
                    E: END;%                                        07368000 T  0017:1
               P(.B,←,.N,←);%                                       07369000 T  0017:2
               F←N.[36:6]; N.[36:6]←"←";                            07370000 T  0018:2
               IF F="←" OR F="," OR F="=" THEN                      07371000 T  0021:2
                    BEGIN IF F="=" THEN                             07371100 T  0024:1
                          BEGIN IF D=0 THEN D←GETSPACE(30,0,0)+2;   07371200 T  0025:2
                                LOCKCONTROLDECKS;                   07371300 T  0029:2
                                IF (N:=FIRSTDECK)=0 THEN            07371400 T  0034:2
GIVEUP:                                                             07371450 T  0035:3
                                BEGIN F:="←";                       07371500 T  0036:1
                                      UNLOCKCONTROLDECKS;           07371600 T  0037:0
                                      GO ON;                        07371700 T  0040:2
                                END;                                07371750 T  0042:0
TRYIT:                          DISKWAIT(-D,30,N);                  07371800 T  0042:0
 $ SET OMIT = NOT(SHAREDISK)                                        07371809 T  0043:2
                                N:=M[D+2];                          07371900 T  0043:2
                                UNLOCKCONTROLDECKS;                 07371950 T  0045:2
                          END;                                      07372000 T  0049:0
                          FOR U ← 0 STEP 1 UNTIL PSEUDOMAX DO       07372090 T  0049:0
                          IF CIDROW[U]≠0 THEN                       07372100 T  0051:0
                          IF(CIDTABLE[U,2] EQV N)=NOT 0 THEN        07372200 T  0052:0
                          IF LABELTABLE[U+32]≥0                     07372300 T  0054:3
 $ SET OMIT = NOT(PACKETS)                                          07372309 T  0056:1
                          THEN                                      07372330 T  0056:1
                          BEGIN                                     07372400 T  0056:3
                                ENDOFDECK(U,M[K-1]);                07372500 T  0057:1
                                GO ON;                              07372600 T  0059:2
                          END ELSE GO TO ERR;                       07372700 T  0060:0
                               REMOVEDECK(N,M[K-1]);                07372800 T  0062:1
                    ON:   IF F≠"←" THEN GO TO L;                    07372900 T  0064:2
                         FORGETSPACE(K);%                           07373000 T  0065:3
                     END ELSE                                       07374000 T  0066:2
          ERR:       SPOUT(K INX M[K-1]);                           07374100 T  0066:2
               IF D≠0 THEN FORGETSPACE(D);                          07374200 T  0069:2
          END;%                                                     07375000 T  0071:2
                                                                                SIZE= 0072 WORDS
     BOOLEAN PROCEDURE READEMFROMDISK(H,IB);%                       07376000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00185
          VALUE H,IB; ARRAY H[*],IB[*];%                            07377000 T  0000:0
          BEGIN%                                                    07378000 T  0000:0
```

```
%    H[0] = ADDRESS OF BU+1 (B)%                                          07379000 T  0000!0
%    H[1] = ADDRESS OF B2+1%                                              07380000 T  0000!0
%    H[2] = DECK NAME%                                                    07381000 T  0000!0
%    H[3] = RECORDCOUNT (N)%                                              07382000 T  0000!0
%    H[4] = NEXT CONTROL CARD (L)%                                        07383000 T  0000!0
%    H[5] = RECORDS USED IN THIS BLOCK × 10 (R)%                          07384000 T  0000!0
%    H[7] = H[30] ARE FILE HEADER%                                        07385000 T  0000!0
                REAL A,B;%                                                07386000 T  0000!0
                DEFINE N=H[3]#,L=H[4]#,R=H[5]#;%                          07387000 T  0000!0
                INTEGER I=A; DEFINE MOM=CIDROW[M[B]]#;                    07388000 T  0000!0
 $ SET OMIT = NOT(BREAKOUT)                                               07388010 T  0000!0
                B ← H[0];%                                                07389000 T  0000!0
                IF R = 0 THEN%                                            07390000 T  0001!3
                IF (M[B-2] AND IOMASK) = 0 THEN%                          07391000 T  0002!3
                     SLEEP([M[B-2]],IOMASK);%                             07392000 T  0005!3
                STREAM(B←B+R,IB);%                                        07393000 T  0008!3
                     BEGIN SI ← B; DS ← 10 WDS END;%                      07394000 T  0010!3
                M[IB INX NOT 0] ← 10;                                     07394500 T  0011!2
                IF (READEMFROMDISK ← N=L) THEN%                           07395000 T  0014!0
                     L ← IB[9];%                                          07396000 T  0015!3
                IF (A ← N ← *P(DUP)+1) > H[7] THEN%                       07397000 T  0017!3
                     BEGIN READEMFROMDISK:=1;                             07398000 T  0021!0
                          STREAM(IB);                                     07398100 T  0022!1
 $ SET OMIT = NOT(PACKETS)                                                07398109 T  0023!1
                          DS:=7 LIT "CC END.";                            07398200 T  0023!1
 $ SET OMIT = NOT(PACKETS)                                                07398209 T  0024!3
                     END                                                  07398300 T  0024!3
                ELSE BEGIN IF (R ← *P(DUP)+10) = 30 THEN%                 07399000 T  0024!3
                          BEGIN IB ← [M[B-2]];%                           07400000 T  0027!3
                               R ← 0;                                     07400400 T  0030!0
                               A ← A DIV 3+1;                             07400500 T  0031!1
                               I←H[A DIV H[8]+10]+A MOD H[8];             07401000 T  0033!0
                               DISKIO(IB,1-B,30,I);%                      07402000 T  0036!2
                               H[0] ← H[1];%                              07403000 T  0038!3
                               H[1] ← B;%                                 07404000 T  0040!1
          END;      END;      END;%                                       07405000 T  0041!2
                                                                                   SIZE= 0042 WORDS
BOOLEAN PROCEDURE PRINTORPUNCHWAIT(Q,PNCH);VALUE Q,PNCH;REAL Q,PNCH;      07405100 T  0000!0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00187
 FORWARD;                                                                 07405110 T  0000!0
 PROCEDURE ENDOFDECK(R,TUSTA);VALUE R,TUSTA; REAL R,TUSTA;                07406000 T  0000!0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00187
          BEGIN ARRAY H[*];%                                              07407000 T  0000!0
                REAL B,I;%                                                07408000 T  0000!0
 $ SET OMIT = NOT(PACKETS)                                                07408099 T  0000!0
                LABEL EXIT;                                               07408500 T  0000!0
                IF (H:=CIDROW[R])=0 THEN GO TO EXIT;                      07409000 T  0000!0
                LABELTABLE[R+32] ← @114;                                  07409100 T  0002!3
                MULTITABLE[R+32] ← RDCTABLE[R+32] ← 0;                    07409200 T  0004!2
                UNITCODE[R+9]:=-0;                                        07409300 T  0007!3
                IF NOT TUSTA.[1:1] THEN REMOVEDECK(H[2],ABS(TUSTA)) ELSE  07410000 T  0009!3
                          P(DIRECTORYSEARCH(-"DECK    ",H[2],14),DEL);    07410100 T  0012!3
                FOR I ← 0 STEP 1 UNTIL 1 DO%                              07411000 T  0015!1
                     BEGIN B ← H[I];%                                     07412000 T  0017!0
                          IF (M[B-2] AND IOMASK) = 0 THEN                 07413000 T  0018!0
                          SLEEP([M[B-2]],IOMASK);%                        07414000 T  0020!2
                     END;%                                                07415000 T  0023!2
                IF CIDROW[R]=0 THEN GO TO EXIT; % FIXES TIMING PROB.      07415100 T  0025!3
                IF H.[18:15] ≠ 0 THEN                                     07416000 T  0027!1
                     FORGETSPACE(H.[18:15]-2);                            07417000 T  0028!3
```

```
$ SET OMIT = NOT(PACKETS)                                                07417099 T  0031:1
            CIDROW[R] := 0;                                              07419800 T  0031:1
            IF(RUNUMBER←RUNUMBER+1)>0 THEN                               07420000 T  0032:2
                STARTADECK(IF TUSTA.[1:1] THEN =H[2] ELSE 0);            07420010 T  0034:1
            FORGETSPACE(H);                                              07420050 T  0038:0
        EXIT:                                                            07420100 T  0039:0
        END;%                                                            07421000 T  0039:0
                                                                                     SIZE= 0040 WORDS
    INTEGER PSEUDOCOPY;% USED BY STARTADECK TO CONTROL THE NO OF "COPIES"  07421500 T  0000:0
    %                   OF CONTROLCARD SERVICING PSEUDO-READERS          07421505 T  0000:0
   PROCEDURE STARTADECK(N); VALUE N; REAL N;                             07422000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00189
        BEGIN LABEL EXIT,L,POSSIBLE,NEXT;%                               07423000 T  0000:0
            REAL I,R,T,A,S;                                              07424000 T  0000:0
            REAL SDED;                                                   07424100 T  0000:0
            ARRAY H[*];%                                                 07425000 T  0000:0
            LABEL AGAIN,START;                                           07425500 T  0000:0
        START:                                                           07425600 T  0000:0
            IF N.[1:1] THEN BEGIN SDED←ABS(N); N←0 END;                  07425700 T  0001:3
            LOCKCONTROLDECKS;                                            07426000 T  0004:3
            IF RUNUMBER LEQ 0 AND N=0 THEN GO TO EXIT;                   07426100 T  0009:3
        AGAIN:                                                           07427500 T  0012:1
            IF PSEUDOCOPY > 2 THEN% TOO MANY COPIES CONTROLCARD          07427600 T  0012:1
        IF STARTOG AND N=0 THEN GO TO EXIT %                             07427610 T  0013:0
                ELSE BEGIN STARTOG ← TRUE;                               07427620 T  0015:1
                        UNLOCKCONTROLDECKS;                              07427625 T  0017:3
                        COMPLEXSLEEP(PSEUDOCOPY ≤ 2);%                   07427630 T  0021:1
06463300    ACCIDENTAL ENTRY AT 2
                        STARTOG ← FALSE;%                                07427640 T  0026:3
                        GO TO START;%                                    07427645 T  0028:2
                    END;%                                                07427650 T  0030:0
            FOR R ← 0 STEP 1 UNTIL PSEUDOMAX DO                          07428000 T  0030:0
                IF CIDROW[R] = 0 THEN GO TO POSSIBLE;%                   07429000 T  0031:0
            STREAM(S←S←SPACE(4));                                        07429100 T  0034:3
            DS:=27 LIT" ALL PSEUDO-READERS IN USE←";                     07429200 T  0037:2
            SPOUT(S);                                                    07429300 T  0041:2
            GO TO EXIT;%                                                 07430000 T  0042:1
        POSSIBLE:%                                                       07431000 T  0042:3
            IF (A:=FIRSTDECK)=0 THEN GO TO EXIT;                         07432000 T  0042:3
            LABELTABLE[R+32]:=@114;                                      07432100 T  0044:2
            H←CIDROW[R]←[M[S←GETSPACE(94,20,1)+2]]&94[8:38:10];          07433000 T  0046:1
            M[S-2].[9:6] ← 0; H[2] ← 0;%                                 07434000 T  0051:2
        L:  DISKWAIT(-S,30,A);                                           07435000 T  0056:0
            IF N≠0 THEN                                                  07436000 T  0057:2
            BEGIN                                                        07436100 T  0058:1
                IF H[2].[12:24]≠N THEN GO TO NEXT;                       07436200 T  0058:3
                IF H[4].[2:1] THEN                                       07436300 T  0060:3
                BEGIN                                                    07436400 T  0061:3
                    STREAM(A:=[H[2]],                                    07436500 T  0062:1
$ SET OMIT = NOT(SHAREDISK)                                              07436509 T  0063:0
                                        S);                              07436520 T  0063:0
$ SET OMIT = PACKETS                                                     07436599 T  0063:2
                    BEGIN SI:=A;SI:=SI+1;DS:=6 LIT" DECK ";              07436600 T  0063:2
$ POP OMIT                                                               07436601 T  0065:0
$ SET OMIT = NOT(PACKETS)                                                07436609 T  0065:0
                    DS:=5 CHR;DS:=7LIT" IN USE";                         07436700 T  0065:0
$ SET OMIT = NOT(SHAREDISK)                                              07436799 T  0066:2
                    DS:=LIT"←";                                          07437000 T  0066:2
                END;                                                     07437100 T  0067:0
                SPOUT(S);                                                07437200 T  0067:1
```

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                    CIDROW[R]:=0;                                          07437300 T  0068:0
                    GO TO EXIT;                                            07437400 T  0069:1
                 END;                                                      07437500 T  0069:3
              END ELSE                                                     07437600 T  0069:3
              IF H[4].[2:1] OR (SDED≠0 AND H[2]=SDED)                      07437800 T  0069:3
$ SET OMIT = NOT(SHAREDISK)                                                07437899 T  0072:2
                 THEN GO TO NEXT;                                          07438000 T  0072:2
              H[4]:=(*P(DUP))&2[2:46:2]&SYSNO[4:46:2];                     07438100 T  0074:1
              DISKWAIT(S,30,A);                                            07438200 T  0077:3
$ SET OMIT = NOT (DATACOM AND RJE)                                         07438250 T  0079:0
              H[0] ← S+32;%                                                07441000 T  0079:0
              H[1] ← S+64;%                                                07442000 T  0080:3
              T ← [H[30]]; DISKIO(T,1-H[0],30,H[10]);%                     07444000 T  0082:2
              IF H[7] LSS 3 THEN H[62]:=IOMASK ELSE                        07445000 T  0086:0
              BEGIN T:=[H[62]]; IF H[8]=1 THEN                             07445100 T  0088:3
              DISKIO(T,1-H[1],30,H[11]) ELSE                               07445200 T  0091:1
              DISKIO(T,1-H[1],30,H[10]+1);                                 07445300 T  0094:1
              END;                                                         07445400 T  0097:3
              T:=GETSPACE(13,20,0)+4;                                      07446000 T  0097:3
$ SET OMIT = NOT(BREAKOUT)                                                 07446010 T  0100:0
              M[T INX 10] := H[5];                                         07446100 T  0100:0
$ SET OMIT = NOT(PACKETS)                                                  07446149 T  0102:1
              H[3] := H[4] := H[5] := H[6] := 0;                           07446200 T  0102:1
              M[T-4].[9:6] ← 0;%                                           07447000 T  0106:2
              LABELTABLE[R+32]←-@14;   %LET IT BE MOVED                    07448000 T  0109:3
              I←READEMFROMDISK(H,[M[T]]&10[8:38:10]);                      07448500 T  0111:3
              INDEPENDENTRUNNER(P(.CONTROLCARD),T&                         07449000 T  0115:0
$ SET OMIT = NOT(DATACOM AND RJE )                                         07449099 T  0115:3
                                        (R+32)[2:42:6],192);               07449200 T  0115:3
              PSEUDOCOPY ← PSEUDOCOPY + 1;%                                07449500 T  0117:3
              IF (RUNUMBER←RUNUMBER-1) LEQ 0 OR N≠0 THEN GO TO EXIT;       07450000 T  0119:0
              GO TO AGAIN;                                                 07450200 T  0122:2
           NEXT:IF (A:=H[6].[CF])≠0 THEN GO TO L;                          07451000 T  0123:0
              IF N≠0 THEN                                                  07452000 T  0125:2
              BEGIN                                                        07452100 T  0126:1
                 STREAM(N,S);                                              07452200 T  0126:3
$ SET OMIT = PACKETS                                                       07452299 T  0127:3
                 BEGIN SI:=LOC N;SI:=SI+4;DS:=7 LIT" DECK #";              07452300 T  0127:3
$ POP OMIT                                                                 07452301 T  0129:2
$ SET OMIT = NOT(PACKETS)                                                  07452309 T  0129:2
                    DS:=4 CHR;DS:=13 LIT" NOT ON DISK←";                   07452400 T  0129:2
                 END;                                                      07452500 T  0131:3
                 SPOUT(S);                                                 07452600 T  0132:0
              END ELSE FORGETSPACE(S);                                     07452700 T  0132:3
              CIDROW[R] ← 0;%                                              07453000 T  0134:0
           EXIT: UNLOCKCONTROLDECKS;                                       07455000 T  0135:1
           END;%                                                           07456000 T  0138:3
                                                                                   SIZE= 0140 WORDS
PROCEDURE RUNTHEDECK(B);VALUE B; REAL B;%                                  07457000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00194
           BEGIN REAL I,J;%                                                07458000 T  0000:0
              STREAM(S:=0:B,A:=[I]);                                       07461000 T  0000:0
              BEGIN SI ← B;%          TO REAL IN I                         07461100 T  0002:0
              L:    IF SC = " " THEN%                                      07461200 T  0002:1
                    BEGIN SI ← SI + 1; GO TO L; END;%                      07461300 T  0002:3
                 IF SC="#" THEN                                            07461310 T  0003:1
                 BEGIN L1:SI:=SI+1;IF SC=" " THEN GO TO L1;                07461320 T  0003:3
                    DS:=4 LIT"0000";DS:=4 CHR;TALLY:=1;GO TO EX;           07461330 T  0004:3
                 END;                                                      07461340 T  0006:1
                 SI ← SI + 1;%                                             07461400 T  0006:1
```

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                    IF SC ≤ "9" THEN IF SC ≥ "0" THEN GO TO TWO;                    07461500 T  0006:2
                    SI ← SI - 1; DS ← OCT;%                                         07461510 T  0007:3
                    GO TO EX;%                                                      07461520 T  0008:1
                TWO: SI ← SI - 1; DS ← 2 OCT;                                       07461530 T  0008:2
                EX:S:=TALLY;                                                        07461540 T  0009:0
                END;                                                                07461550 T  0009:1
                J:=P;                                                               07461560 T  0009:2
                B:=B.[15:15]-1;                                                     07461570 T  0010:0
                IF J THEN                                                           07461600 T  0011:3
                BEGIN                                                               07461700 T  0012:0
                    FORGETSPACE(B);                                                 07461800 T  0012:2
                    STARTADECK(I);                                                  07461900 T  0013:1
                END ELSE                                                            07462000 T  0014:0
                BEGIN                                                               07462100 T  0014:0
                    IF I GTR PSEUDOMAX1 THEN  I:=NABS(RUNUMBER)  ELSE               07462200 T  0014:2
                    BEGIN                                                           07462250 T  0016:3
                    RUNUMBER:=I;                                                    07462300 T  0017:1
                    FOR J:=0 STEP 1 UNTIL PSEUDOMAX DO                              07462400 T  0018:0
                        RUNUMBER:=RUNUMBER-(CIDROW[J]≠0);                           07462500 T  0019:0
                    END;                                                            07462600 T  0023:1
                    STREAM(X1:=1-1.[1:1],X2:=RUNUMBER.[1:1],I:=ABS(I),B);           07463000 T  0023:1
                    BEGIN CI:=CI+X1; GO L1; DS:=10LIT" WILL USE ";GO L2;            07464000 T  0026:1
                        L1: CI:=CI+X2; GO L2; DS:=LIT"-"; L2:                       07464100 T  0029:0
                        SI:=LOC I;DS:=2 DEC;                                        07465000 T  0030:1
                        DS ← 13 LIT " PSEUDO-RDRS←";                                07466000 T  0030:3
                    END;%                                                           07467000 T  0032:3
                    SPOUT(B INX M[B-1]);                                            07468100 T  0033:0
                IF RUNUMBER GTR 0 THEN STARTADECK(0);                               07469000 T  0035:2
                END;                                                                07472500 T  0037:2
            END;%                                                                   07473000 T  0037:2
                                                                                                SIZE= 0038 WORDS
        PROCEDURE EXTERNALEND(B); VALUE B; REAL B;                                  07473100 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00196
            BEGIN REAL U;  LABEL EXIT;                                              07474000 T  0000:0
                U ← UNITIN(TINU,B);                                                 07475000 T  0000:0
                B ← B.[15:15]-1;                                                    07476000 T  0002:0
                IF 32 ≤ U AND U ≤ PSEUDOMAXT  THEN                                  07477000 T  0003:3
                IF LABELTABLE[U] ≥ 0 THEN                                           07478000 T  0005:2
        $ SET OMIT = NOT(PACKETS)                                                   07478099 T  0007:0
                IF CIDROW[U-32] ≠ 0 THEN                                            07478500 T  0007:0
                    BEGIN                                                           07479000 T  0009:0
                        ENDOFDECK(U-32,M[B-1]);                                     07479100 T  0009:2
                        FORGETSPACE(B);                                             07480000 T  0012:1
                        GO TO EXIT;                                                 07481000 T  0013:0
                    END;                                                            07482000 T  0013:2
                SPOUT(B INX M[B-1]);                                                07483000 T  0013:2
            EXIT:END;                                                               07484000 T  0016:0
                                                                                                SIZE= 0017 WORDS
        PROCEDURE CHANGEPRIORITY(BUFF,MIX); VALUE BUFF,MIX; REAL BUFF,MIX;          07485000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00197
        BEGIN INTEGER PRIORITY; REAL B;                                             07486000 T  0000:0
        $ SET OMIT = NOT(PACKETS)                                                   07486499 T  0000:0
            BUFF ← ((B+BUFF).[15:15]-1)&M[P(DUP)-1][9:9:9];                         07487000 T  0000:0
            STREAM(PRIORITY:B);                                                     07488000 T  0005:0
            BEGIN SI←B;                                                             07489000 T  0006:1
            N:      IF SC="←" THEN GO TO X;                                         07490000 T  0006:2
                    IF SC<"0" THEN BEGIN SI←SI+1; GO TO N; END; B←SI;               07491000 T  0007:1
            K:      IF SC≥"0" THEN IF SC≤"9" THEN                                   07492000 T  0008:2
                        BEGIN TALLY←TALLY+1; SI←SI+1; GO TO K END;                  07493000 T  0009:2
                    SI←B; DI←LOC PRIORITY; B←TALLY; DS←B OCT; GO TO Z;              07494000 T  0010:1
```

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          X:     DI←LOC PRIORITY; SKIP DB; DS←11 SET;                                  07495000 T  0011:3
          Z:                                                                           07496000 T  0012:2
          END STREAM;                                                                  07497000 T  0012:2
           IF (PRIORITY←P) ≥ 0 THEN                                                    07498000 T  0012:3
          IF PRYOR[MIX]≥0 THEN%                                                        07501000 T  0013:3
          IF JAR[MIX,*]≠0 THEN                                                         07502000 T  0015:1
        BEGIN JAR[MIX,2]←[CF]← P(PRIORITY←                                             07503000 T  0016:3
            IF PRIORITY≥32766 THEN 32766 ELSE PRIORITY, DUP) & P[CTF];                 07503500 T  0019:1
              STREAM(J←JAR[MIX,*],MIX,PRIORITY,BUFF);                                  07504000 T  0023:3
              BEGIN DS←10 LIT " PRIORITY=";                                            07505000 T  0025:2
                    SI←LOC PRIORITY; BUFF←DI; DS←6 DEC; DI←DI-6;                       07506000 T  0027:0
                    DS←5 FILL; DI←BUFF; DI←DI+6; DS←LIT":";                            07507000 T  0028:0
                    SI←J; SI←SI+1; DS←7 CHR; SI←SI+1; DS←LIT"/"; DS←7 CHR;             07508000 T  0029:1
                    DS←LIT"="; SI←LOC MIX; DS←2DEC; DS←LIT"←";                         07509000 T  0031:0
                    DI←DI-3; DS←FILL;                                                  07509500 T  0032:2
          END   END;                                                                   07510000 T  0033:0
          SPOUTER(BUFF,UNITNO,1);                                                      07511000 T  0033:1
      END CHANGEPRIORITY;                                                              07512000 T  0034:0
                                                                                                 SIZE= 0036 WORDS
      PROCEDURE ENTERCONTROLDECK(H); VALUE H; ARRAY H[*];                              07541000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00199
      BEGIN REAL R,S,T,T1,T2;                                                          07542000 T  0000:0
          INTEGER I;                                                                   07543000 T  0000:0
       $ SET OMIT = NOT(PACKETS)                                                       07543099 T  0000:0
         T←"DECK    "&H[4][1:47:1]; % FOR SCRATCHDIR DELETE                            07545000 T  0000:0
         S:=NEXTCONUM(0);                                                              07547000 T  0003:2
         DISKWAIT(KLUMP,3,DIRECTORYTOP+3);          % CHANGE LASTCDNUM ON DISK         07547100 T  0004:3
       $ SET OMIT = NOT(PACKETS)                                                       07547499 T  0006:2
         H[0]:=@0012000360003 01;                                                      07548000 T  0006:2
       $ SET OMIT = NOT(PACKETS)                                                       07548099 T  0007:3
          STREAM(DATE,B←[H[3]]);                                                       07549000 T  0007:3
             BEGIN SI←LOC DATE;DS←8 UCT;DI←DI-8;DS←2 LIT"+7";END;                      07549100 T  0009:0
             H[4] := 0&                                                                07550000 T  0010:2
       $ SET OMIT = NOT SHAREDISK                                                      07550003 T  0011:1
                 15[12:44:4];                                                          07550010 T  0011:1
             H[1]←(XCLOCK+P(RTR))&H[3][6:30:18];                                       07550100 T  0012:3
             H[2]:=S:=@14&@12[6:42:6]&S[12:24:24]&@37[36:42:6];                        07557000 T  0015:3
          T1:=EUF(T,S,H.[CF]-1);                                                       07559000 T  0020:2
       $ SET OMIT = NOT(PACKETS)                                                       07559099 T  0023:2
         H[2]←LASTCDNUM;                                                               07559500 T  0023:2
         IF FIRSTDECK=0 THEN FIRSTDECK:=T1 ELSE                                        07560000 T  0024:3
          BEGIN                                                                        07561000 T  0026:3
       $ SET OMIT = SHAREDISK                                                          07561990 T  0030:0
              LOCKDIRECTORY;                                                           07562000 T  0030:0
       $ POP OMIT                                                                      07562010 T  0036:2
              DISKWAIT(-(I:=SPACE(30)),-30,LASTDECK);                                  07564000 T  0036:2
              M[I+6].[CF]:=T1;                                                         07565000 T  0040:1
              DISKWAIT(I,-30,LASTDECK);                                                07566000 T  0043:0
              FORGETSPACE(I);                                                          07567000 T  0044:2
       $ SET OMIT = SHAREDISK                                                          07567990 T  0045:1
              UNLOCKDIRECTORY;                                                         07568000 T  0045:1
       $ POP OMIT                                                                      07568010 T  0048:3
          END;                                                                         07569000 T  0048:3
         LASTDECK:=T1;                                                                 07570000 T  0048:3
         DISKWAIT(KLUMP,-3,DIRECTORYTOP+3);                                            07571000 T  0049:2
         UNLOCKTOG(CDMASK);                                                            07572000 T  0051:2
                 IF RUNUMBER GTR 0 THEN STARTADECK(0);                                 07573000 T  0055:0
      END ENTERCONTROLDECK;                                                            07575000 T  0057:0
                                                                                                 SIZE= 0060 WORDS
      BOOLEAN PROCEDURE MTXIN(I,U,BUFF);%                                              08000000 T  0000:0
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                                                                    START OF REL SEGMENT; DISK ADDRESS = 00201
REAL U,BUFF; INTEGER I;%                                            08001000 T  0000:0
BEGIN LABEL EXIT,X;%                                                08002000 T  0000:0
     U ← UNITIN(TINU,BUFF);                                         08003000 T  0000:0
     BUFF ← BUFF.[15:15]-1;                                         08004000 T  0002:1
     IF U > 15 THEN%                                                08005000 T  0004:1
          BEGIN;STREAM(BUFF); DS ← 8 LIT "INV KBD ";%               08006000 T  0005:0
               GO TO EXIT;%                                         08007000 T  0007:3
          END ELSE I ← TWO(U);                                      08008000 T  0008:1
     STREAM(A←TINU[U]:BUFF);%                                       08009000 T  0010:1
          BEGIN SI←LOC A; SI←SI+5; DS←LIT" "; DS←3 CHR;%            08010000 T  0011:3
               DS ← LIT " "; A ← DI;%                               08011000 T  0013:0
          END;%                                                     08012000 T  0013:3
     P([BUFF],←);%                                                  08013000 T  0014:0
     IF LABELTABLE[U] = @114 OR LABELTABLE[U] = @214 THEN%          08014000 T  0014:2
          BEGIN                                                     08015000 T  0016:3
          STREAM(SAV:=((I AND SAVEWORD) NEQ 0), BUFF);              08015100 T  0017:1
             BEGIN                                                  08015200 T  0019:1
             DS:=10LIT"NOT READY←";                                 08015300 T  0019:1
             SAV(DI:=DI-1; DS:=8LIT"(SAVED)←");                     08015400 T  0020:3
             END;                                                   08015500 T  0023:0
          GO TO EXIT;                                               08016000 T  0023:1
          END;%                                                     08017000 T  0023:3
     IF LABELTABLE[U] < 0 THEN%                                     08018000 T  0023:3
          BEGIN;STREAM(BUFF); DS ← 7 LIT "IN USE←";%                08019000 T  0024:3
          END%                                                      08020000 T  0027:2
     ELSE GO TO X;%                                                 08021000 T  0027:2
EXIT:MTXIN ← TRUE;%                                                 08022000 T  0027:2
X:END;%                                                             08023000 T  0028:1
                                                                                SIZE= 0029 WORDS
PROCEDURE TAPEPURGE(BUFF); VALUE BUFF; REAL BUFF;%                  08024000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00202
BEGIN LABEL EXIT;%                                                  08025000 T  0000:0
     REAL I,U;%                                                     08026000 T  0000:0
     REAL R,T;                                                      08027000 T  0000:0
     BOOLEAN TEST;                                                  08027100 T  0000:0
     REAL WHAT = BUFF;%                                             08028000 T  0000:0
     IF MTXIN(I,U,WHAT) THEN GO TO EXIT;%                           08029000 T  0000:0
     STREAM(B:=BUFF,T←[T]);                                         08029015 T  0003:1
     BEGIN SI:=B; SI:=SI+6;                                         08029020 T  0004:1
     IF SC="-" THEN                                                 08029025 T  0004:3
        BEGIN SI:=SI+1;                                             08029030 T  0005:1
        5(IF SC="←" THEN JUMP OUT;                                  08029035 T  0005:2
          TALLY:=TALLY+1;SI:=SI+1);                                 08029040 T  0006:3
        B:=TALLY; SI:=SI-B; DS:=B OCT;                              08029045 T  0007:2
        END;                                                        08029050 T  0008:3
     END;                                                           08029055 T  0008:3
     LABELTABLE[U] ← -@14;                                          08029100 T  0009:0
     IF (R←WAITIO(@500000000,@177,U))≠0 THEN                        08030000 T  0010:2
      IF R≠@120 THEN %ERROR OTHER THAN WRITE LOCK                   08030100 T  0012:3
      BEGIN;STREAM(U←TINU[U],BUFF);                                 08030200 T  0014:0
            BEGIN DS←14 LIT "#CANNOT PURGE ";                       08030300 T  0015:3
                  SI←LOC U; SI←SI+5; DS←3CHR;                       08030310 T  0017:3
                  DS←LIT"←";                                        08030320 T  0018:2
            END;                                                    08030330 T  0019:0
      LABELTABLE[U]←@214;                                           08030400 T  0019:1
      GO TO EXIT;                                                   08030500 T  0020:2
      END ELSE %NO WRITE RING                                       08030600 T  0022:0
          BEGIN; STREAM(BUFF); DS ← 11 LIT "WRITE LOCK←";%          08031000 T  0022:0
                LABELTABLE[U] ← @114;                               08031100 T  0025:1
```

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                    GO TO EXIT;%                                        08032000 T  0026:2
                END;%                                                   08033000 T  0027:0
            IF T=0 THEN                                                 08033980 T  0027:0
            BEGIN T:=PRNTABLE[U].[30:18]; TEST:= TRUE END;              08033990 T  0027:3
            STREAM(A:=T,BUFF);                                          08034000 T  0030:2
                BEGIN DI ← DI + 3; DS ← 8 LIT " LABEL  ";               08035000 T  0031:2
                    8(DS←2 LIT "0X");                                   08035100 T  0033:0
                    24(DS←2 LIT "0"); DS←2 LIT "2←";                    08036000 T  0034:0
                    DI ← DI-21; SI ← LOC A; DS ← 5 DEC;%                08037000 T  0035:2
                END;%                                                   08038000 T  0036:1
            RRRMECH ← I OR RRRMECH;%                                    08039000 T  0036:2
            MULTITABLE[U] ← 0;%                                         08041000 T  0037:3
            P(WAITIO(@4200000000,0,U),DEL);%                            08042000 T  0039:0
            R ← WAITIO(BUFF INX @12050000001,@2000000,U) OR%            08043000 T  0040:2
                WAITIO(BUFF INX 10,@2000000,U);%                        08044000 T  0042:1
            IF MOD3IOS THEN                                   %AI       08044500 T  0044:3
                DO UNTIL P(WAITIO(BUFF INX @340000012,@50,U))=@10 %AI   08044600 T  0045:2
            ELSE                                              %AI       08044700 T  0048:0
            P(WAITIO(@4200000000,C,U),DEL);%                            08045000 T  0048:3
            SLEEP([TOGLE],STATUSMASK);                                  08046000 T  0055:2
            RRRMECH ← RRRMECH AND NOT I;%                               08047000 T  0057:0
            READY ← READY AND NOT I;%                                   08048000 T  0058:2
            IF R = 0 THEN BEGIN%                                        08049000 T  0060:0
            LABELTABLE[U] ← @114;%                                      08050000 T  0061:1
        IF  TEST THEN BEGIN STREAM(BUFF);DS:=6LIT"PG-ED←";END           08051000 T  0062:2
        ELSE BEGIN STREAM(A:=T,B:=PRNTABLE[U].[30:18],BUFF);            08051010 T  0065:1
                BEGIN DS:=10LIT"PG-ED(PRN=";                            08051020 T  0069:0
                SI:=LOC A; DS:=5 DEC;                                   08051030 T  0070:2
                DS:=5LIT",WAS ";                                        08051040 T  0071:0
                SI:=LOC B; DS:=5 DEC;DS:=2LIT")←";                      08051050 T  0072:0
                END;                                                    08051060 T  0073:0
                PRNTABLE[U].[30:18] ← T;                                08051065 T  0073:1
            END;                                                        08051070 T  0075:3
        EXIT: SPOUT(NABS(BUFF INX M[BUFF-1]));%                         08052000 T  0075:3
            END ELSE BEGIN%                                             08053000 T  0078:2
                LABELTABLE[U] ← @214;%                                  08054000 T  0079:0
                FORGETSPACE(BUFF);%                                     08055000 T  0080:1
            END;%                                                       08056000 T  0081:0
        END;%                                                           08057000 T  0081:0
                                                                                SIZE= 0082 WORDS
PROCEDURE GIMEDATE(B,DT); VALUE B,DT; REAL B,DT; FORWARD;         %RH    08070000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00205
PROCEDURE REWINDANDLOCK(WHAT); VALUE WHAT; REAL WHAT;%                  08079000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00205
        BEGIN REAL BUFF=WHAT,U;%                                        08080000 T  0000:0
            INTEGER I;%                                                 08081000 T  0000:0
            LABEL EXIT;%                                                08082000 T  0000:0
            IF MTXIN(I,U,BUFF) THEN GO TO EXIT;%                        08083000 T  0000:0
            RRRMECH ← RRRMECH OR I;%                                    08084000 T  0002:2
            LABELTABLE[U] ← -@14;%                                      08085000 T  0003:3
            MULTITABLE[U] ← 0;%                                         08086000 T  0005:1
            P(WAITIO(@4200000000,0,U),DEL);%                            08087000 T  0006:2
            SLEEP([TOGLE],STATUSMASK);                                  08088000 T  0008:0
            RRRMECH ← RRRMECH AND NOT I;%                               08089000 T  0009:2
            READY ← READY AND NOT I;%                                   08090000 T  0011:0
            LABELTABLE[U] ← @214;%                                      08091000 T  0012:2
            STREAM(BUFF); DS ← 5 LIT "RW/L←";%                          08092000 T  0013:3
        EXIT:     SPOUT(BUFF INX M[BUFF-1]);                            08093000 T  0015:3
        END;%                                                           08094000 T  0018:1
                                                                                SIZE= 0020 WORDS
```

```
PROCEDURE PRINTDIRECTORY(BUFF,CODE);                                    08095000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00206
                    VALUE BUFF,CODE ; REAL BUFF,CODE;                   08095100 T  0000:0
BEGIN ARRAY HDR[*],NB[*];                                               08096000 T  0000:0
     REAL STA,A,B,C,T,CR,N;                                             08097000 T  0000:0
 REAL INFOTYPE,INFO,INFOTEMP;                                   %RH    08097100 T  0000:0
 LABEL GETADATE,INFOUT;                                         %RH    08097200 T  0000:0
     INTEGER I,J;                                                       08098000 T  0000:0
     LABEL GETHDR,IN,OUT,AROUND,XOUT;                                   08098100 T  0000:0
     ARRAY D=NB[*];                                                     08098200 T  0000:0
REAL USERID,PG;                                                         08098300 T  0000:0
 NAME ADDR;                                                             08098400 T  0000:0
 INTEGER J1,J2,J3,K1,K2;                                                08098500 T  0000:0
REAL PBDTOG,LABELREC;                                                   08098550 T  0000:0
 SUBROUTINE FINDWHATINFO;                                       %RH    08099000 T  0000:0
     BEGIN                                                      %RH    08099100 T  0001:0
          IF INFOTYPE="DATE   " THEN                            %RH    08099200 T  0001:0
          BEGIN                                                 %RH    08099210 T  0001:3
               INFOTEMP:=HDR[3].[30:18]&1[1:43:5];              %RH    08099220 T  0002:1
               GO GETADATE;                                     %RH    08099230 T  0004:3
          END ELSE                                              %RH    08099240 T  0007:0
          IF INFOTYPE="LAST   " THEN                            %RH    08099300 T  0007:0
          BEGIN                                                 %RH    08099310 T  0008:1
               INFOTEMP:=HDR[3].[12:18]&2[1:43:5];              %RH    08099320 T  0008:3
               GO GETADATE;                                     %RH    08099330 T  0011:1
          END ELSE                                              %RH    08099340 T  0013:0
          IF INFOTYPE="RECS   " THEN                            %RH    08099400 T  0013:0
          BEGIN                                                 %RH    08099410 T  0014:1
          IF (A EQV "PBD    ") = NOT 0 OR                               08099412 T  0014:3
             (A EQV "PUD    ") = NOT 0 THEN                             08099414 T  0016:1
               INFO := (HDR[7]×5)&3[1:43:5] ELSE                        08099416 T  0018:0
               INFO:=(HDR[7]+1)&3[1:43:5];                      %RH    08099420 T  0021:0
               GO TO INFOUT;                                    %RH    08099430 T  0027:2
          END ELSE                                              %RH    08099440 T  0028:0
          IF INFOTYPE="SIZE   " THEN                            %RH    08099500 T  0028:0
          BEGIN PG:=HDR[9] AND @37;                             %RH    08099510 T  0029:1
               INFO:=0; WHILE (INFO:=INFO+1) LEQ PG DO IF       %RH    08099520 T  0031:1
               HDR[INFO+9]≠0 THEN INFOTEMP:=INFOTEMP+1;         %RH    08099530 T  0034:1
               INFO:=(INFOTEMP×HDR[8])&4[1:43:5]; INFOTEMP:=0;  %RH    08099540 T  0039:0
               GO TO INFOUT;                                    %RH    08099550 T  0042:1
          END;                                                  %RH    08099560 T  0042:3
          GO TO INFOUT;                                         %RH    08099570 T  0042:3
     GETADATE:                                                  %RH    08099700 T  0043:1
          STREAM(A:=INFOTEMP.[30:18],I:=[INFO]);                %RH    08099710 T  0043:1
          BEGIN SI:=LOC A;DS:=8 DEC END;                        %RH    08099720 T  0044:3
          GIMEDATE([INFO].[CF],-INFO);                          %RH    08099730 T  0045:2
          INFO.[1:5]:=INFOTEMP.[1:5];                           %RH    08099740 T  0047:1
     INFOUT:                                                    %RH    08099750 T  0049:2
          P(DEL);                                               %RH    08099760 T  0049:2
          GO TO IN;                                             %RH    08099770 T  0049:3
     END;                                                       %RH    08099800 T  0050:1
NB:=[M[SPACE(60)]]&60[8:38:10];                                         08099900 T  0050:2
STA:=M[(BUFF:=(C:=BUFF).[15:15]-1)-1];                                  08101000 T  0060:3
$ SET OMIT = NOT(DATACOM)                                               08101039 T  0064:3
     NAMEID(A,C);                                                       08102000 T  0064:3
     NAMEID(B,C); IF B="/      " THEN NAMEID(B,C);                      08102100 T  0065:3
     NAMEID(INFOTYPE,C);                                        %RH    08102200 T  0069:0
     C:=0;                                                              08103000 T  0070:0
IF ((A EQV B)=NOT 0) AND ((A EQV "←      ")=NOT 0) THEN GO XOUT;        08103100 T  0070:3
IF (A EQV "←←     ")=NOT 0 THEN A←"←      ";                            08103200 T  0074:3
```

```
                IF (B EQV "←←      ")= NOT 0 THEN B←"←       ";                08103300 T  0077:2
                J1:=J3:=0; K1:=K2:=MODULUS-1;                                 08103400 T  0080:1
                IF CODE≠3 THEN                                                08103450 T  0083:1
               BEGIN                                                          08103460 T  0084:0
                IF A.[6:6] NEQ 31 THEN J1:=K1:=(A.[6:18]+A.[24:24]) MOD MODULUS;  08103500 T  0084:2
                IF B.[6:6] NEQ 31 THEN J3:=K2:=(B.[6:18]+B.[24:24]) MOD MODULUS;  08103600 T  0089:2
               END;                                                           08103650 T  0094:2
                IF ((INFOTYPE EQV "←       ")≠ NOT 0 AND CODE=0) THEN CODE:=5;  %RH  08103700 T  0094:2
                IF CODE≠0 OR (CODE=0 AND STA.[9:9]≠0) THEN                    %RH  08103800 T  0098:1
                HDR:=[M[SPACE(30)]]&30[8:38:10];                              %RH  08103900 T  0101:2
                FOR J1:=J1 STEP 1 UNTIL K1 DO                                 08104000 T  0105:3
                FOR J2:=J3 STEP 1 UNTIL K2 DO                                 08104100 T  0110:0
                BEGIN J:=SCRAMBLE(J1,J2);                                     08104200 T  0111:0
                DO BEGIN                                                      08104300 T  0118:0
                    BEGIN DISKWAIT(-NB.[CF],60,J);                            08105000 T  0118:0
                        FOR I:=0 STEP 3 UNTIL 57 DO                           08107000 T  0120:1
                        IF (T:=NB[I]) NEQ #14 THEN                            08109000 T  0121:0
                        IF CODE=3 THEN COMMENT UD; GO GETHDR ELSE             08110000 T  0122:2
                        IF (T EQV A)= NOT 0 OR (A EQV "←       ")= NOT 0 THEN  08111000 T  0123:3
                        IF(NB[I+1]EQV B)=NOT 0 OR(B EQV"←       ")=NOT 0 THEN  08112000 T  0127:2
                    IF CODE=0 AND USERID=0 THEN GO TO IN ELSE                 08113000 T  0132:0
GETHDR:             BEGIN T:=HDR.[CF]&NB[I+2][CTF];                           08114000 T  0134:1
                            DISKWAIT(-T.[CF],30,T.[FF]);                      08115000 T  0137:3
                        IF CODE=5 THEN IF USERID=0 THEN FINDWHATINFO ELSE     08115060 T  0140:1
                        IF SECURITYCHECK(NB[I],NB[I+1],USERID,T)≠0 THEN       08115070 T  0144:0
                        FINDWHATINFO ELSE GO AROUND;                          08115080 T  0149:0
                    IF CODE=0 THEN IF SECURITYCHECK(NB[I],NB[I+1],USERID,T  )  08115100 T  0151:0
                    ≠0 THEN GO TO IN ELSE GO TO AROUND;                       08115200 T  0154:1
                        IF CODE=1 THEN COMMENT EX;                            08116000 T  0156:1
                        BEGIN;                                                08116700 T  0157:0
                            STREAM(A←CALCULATEPURGE(-HDR[3].[2:10]),B←[PG]);  08116800 T  0157:2
                            BEGIN SI←LOC A;DS←8 OCT END;                      08116900 T  0159:3
                            IF PG>HDR[3].[12:18]                              08117000 T  0160:3
                                THEN GO IN ELSE GO AROUND;                    08117100 T  0161:1
                        END;                                                  08117105 T  0163:1
                        IF ((NB[I]EQV "DECK    ")=NOT 0) AND                  08117110 T  0163:1
                            (((NB[I+1]AND #77000000007777) EQV                08117120 T  0165:0
                            #120000000003714)=NOT 0) OR                       08117130 T  0166:2
                    FALSE THEN GO AROUND; %                                   08117140 T  0168:0
                        IF CODE=4 THEN COMMENT SB;                            08117200 T  0169:1
                        IF HDR[5]=12 THEN GO AROUND; N←HDR[6];%               08117300 T  0170:0
                        IF CODE≥2 THEN COMMENT UD,CR,SB;                      08117400 T  0173:0
                            IF(NOT(CR:=HDR[IF CODE=4 THEN 5 ELSE 2].[6:42]))  08117500 T  0173:3
                            = NOT 0 THEN IF CODE≠2 THEN GO AROUND;            08117600 T  0178:2
                            IF CODE=2 THEN IF (PBDTOG←(P(NB[I],DUP) EQV       08117610 T  0181:1
                            "PBD     ")=NOT 0 OR (P(XCH) EQV "PUD     ")      08117620 T  0183:1
                            = NOT 0) THEN                                     08117630 T  0185:0
$ SET OMIT = PACKETS                                                          08117631 T  0186:3
                            IF NB[I+1].[30:18] NEQ "001" THEN GO AROUND ELSE  08117632 T  0186:3
$ POP OMIT                                                                    08117633 T  0189:1
$ SET OMIT = NOT(PACKETS)                                                     08117634 T  0189:1
                            BEGIN                                             08117640 T  0189:1
                                IF LABELREC=0 THEN LABELREC←SPACE(30);        08117650 T  0189:3
                                DISKWAIT(-LABELREC,30,HDR[10]+2);             08117660 T  0193:1
                                INFO.[1:5]←0; GO IN;                          08117670 T  0195:2
                            END ELSE IF NOT CR=NOT 0 THEN GO AROUND;          08117680 T  0203:0
                        IF CODE=3 THEN COMMENT UD;                            08117700 T  0205:1
                            IF(CR EQV A)≠NOT 0 AND(A EQV "←       ")≠NOT 0   08117800 T  0206:0
                                THEN      GO TO AROUND;                       08117900 T  0208:3
IN:                     BEGIN C←SPACE(12);                                    08118000 T  0210:2
```

```
                    STREAM(F:=[D[I]],CR,N,X:=(CODE≥2 AND CODE<5),                08119000 T  0212:3
                        Y:=CODE=4,INF:=CODE=5,INFO,INFNO:=    %RH                08119100 T  0215:3
                        INFO.[1:5],PBDTOG,LR←LABELREC INX 12,                    08119200 T  0217:2
                        RJE←IF PBDTOG THEN (HDR[6].[39:9]≠0)                     08119300 T  0219:1
                            ELSE 0,                                              08119400 T  0221:1
                        TU ←IF PBDTOG THEN HDR[6].[39:4] ELSE 0,                 08119500 T  0222:1
                        BU ←IF PBDTOG THEN HDR[6].[44:4] ELSE 0,                 08119600 T  0224:3
                        C);                                                      08119700 T  0227:1
                    BEGIN SI:=F; DS:=LIT" "; SI:=SI+1; DS:=7 CHR;                08120000 T  0227:3
                        SI:=SI+1; DS:=LIT"/"; DS←7 CHR;                          08121000 T  0229:0
                        Y(DS:=8 LIT" SECURED"));                                 08122000 T  0230:0
                        X(DS:=4 LIT" BY "; SI:=LOC CR; SI←SI+1;                  08123000 T  0232:0
                          DS:=7 CHR);                                            08124000 T  0233:3
                        Y(DS:=LIT"/"; SI:=SI+1; DS:=7 CHR);                      08125000 T  0234:1
                        PBDTOG(DS:=4 LIT" IS"; SI:=LR;                           08125010 T  0236:0
                        2(SI:=SI+1; DS:=7 CHR; DS:=LIT"/"));                     08125020 T  0237:2
                        DI:=DI-1; DS:=4 LIT " OF ";                              08125030 T  0239:0
                        2(SI:=SI+1; DS:=7 CHR; DS:=LIT"/");                      08125040 T  0240:0
                        DI:=DI-1;                                                08125050 T  0241:2
                        RJE(DS:=2 LIT" ("; SI:=LOC TU; DS:=2 DEC;                08125060 T  0241:3
                        DS:=LIT"/"; DS:=2 DEC; DS:=LIT")"));                     08125070 T  0243:1
                        INF(CI:=CI+INFNO;GO ERR;GO INF1;GO INF2;                 08125100 T  0245:0
                            GO INF3;GO INF4;                        %RH          08125110 T  0246:3
                            INF1:                                   %RH          08125120 T  0247:1
                            DS:=10LIT" CREATED: ";                  %RH          08125130 T  0247:1
                            DATE: SI:=LOC INFO;                     %RH          08125140 T  0248:3
                            SI:=SI+2;DS:=2 CHR;2(DS:=LIT"/";        %RH          08125150 T  0249:0
                            DS:=2 CHR);GO INFEND;                   %RH          08125160 T  0250:1
                            INF2:                                   %RH          08125200 T  0251:0
                            DS:=11LIT" ACCESSED: ";GO DATE;         %RH          08125210 T  0251:0
                            INF3:                                   %RH          08125300 T  0253:0
                            DS:=10LIT" RECORDS: ";                  %RH          08125310 T  0253:0
                            DECM:                                   %RH          08125320 T  0254:2
                            SI:=LOC INFO;DS:=6 DEC;X:=DI;           %RH          08125330 T  0254:2
                            DI:=DI-6;DS:=5 FILL;DI:=X;              %RH          08125340 T  0255:1
                            GO INFEND;                              %RH          08125350 T  0256:0
                            INF4:                                   %RH          08125400 T  0256:1
                            DS:=11LIT" SEGMENTS: ";GO DECM;         %RH          08125410 T  0256:1
                            ERR: INFEND:));                         %RH          08125420 T  0258:1
                        DS:=LIT"←";                                              08126000 T  0258:2
                    END;                                                         08127000 T  0259:0
                    SPOLT(C INX STA);                                            08128000 T  0259:1
                AROUND: END; END; END;                                           08129000 T  0260:2
                    END UNTIL (J:=NB[2].[FF])=0;                                 08129100 T  0262:3
                    END;                                                         08129200 T  0265:2
                OUT:    IF CODE≠0 OR (CODE=0 AND STA.[9:9]≠0) THEN FORGETSPACE(HDR);  08130000 T  0270:0
               XOUT:    FORGETSPACE(NB);                                         08130100 T  0274:3
                        IF LABELREC≠0 THEN FORGETSPACE(LABELREC);                08130200 T  0275:3
                        IF C = 0 THEN                                            08131000 T  0277:3
                        BEGIN M[BUFF]:=FLAG(NABS("NULL    "));                   08132000 T  0278:2
                            SPOUT(BUFF INX STA)                                  08133000 T  0281:0
                        END ELSE FORGETSPACE(BUFF);                              08134000 T  0281:2
                    END PRINTDIRECTORY;                                          08135000 T  0285:3
                                                                                 SIZE= 0286 WORDS
                $ SET OMIT = NOT(DCSPO AND DATACOM )                             08135999 T  0000:0
                PROCEDURE PBIO(A,P); VALUE A; REAL A,P; FORWARD;        %P       08170100 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00216
                PROCEDURE CONTINUITYBIT;%                                        08171000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00216
                    BEGIN REAL T,IOD,LINK,U;%                                    08172000 T  0000:0
```

```
                    ARRAY A[*];                                                    08172500 T  0000:0
                    REAL RCW=+0;%                                                  08173000 T  0000:0
                              ARRAY R=-4[*];  DEFINE FIB=A#;            %P       08173100 T  0000:0
                    CHECKSTACKSPACE;%                                   %WF      08173200 T  0000:0
                    U ←(LINK ← NFLAG(M[(IOD ← NFLAG(M[T+PRT[P1MIX,9]]) INX%      08174000 T  0005:2
                        P(0,LNG,XCH)) INX NOT 0])),[12:6];%                        08175000 T  0008:0
                    IF U ≥ 32 THEN                                                 08175100 T  0012:3
                        BEGIN A ← M[T];                                            08175200 T  0013:2
                            IF READEMFROMDISK(CIDROW[U-32],A) THEN                 08175300 T  0015:2
                                M[T] ← A&1[27:47:1]&0[2:47:1] ELSE                 08175400 T  0017:2
                                M[T] ← R; GO TO RETURN;                            08175500 T  0021:3
                        END;                                                       08175600 T  0024:2
                    M[IOD INX NOT 1]←FLAG(LINK); FIB←M[T-3];            %P       08176000 T  0024:2
                    M[FIB[14]INX 17]←LM[FIB[5],[FF]]]&IOD[3:3:30]&0[20:20:1];    08177000 T  0029:0
                   ;FIB[5]←P(DUP,LOD,0,1,CFX,ADD);                      %P       08177100 T  0034:3
                    IF FIB[14].[FF]≤FIB[14].[CF] THEN  %% BUFFER FULL   %P       08177200 T  0037:1
                            PBIO(T,FIB[14])                             %P       08178000 T  0039:3
                     ELSE                                               %P       08179000 T  0042:2
                    BEGIN; STREAM(A←FIB[14].[CF], B←FIB[14].[FF]);      %P       08179600 T  0042:3
                        BEGIN SI←A, DS←18 WDS END;                      %P       08179700 T  0046:0
                        FIB[14].[FF]←FIB[14].[FF]-18;                   %P       08179800 T  0046:3
                    END;                                                %P       08179900 T  0050:1
                    GO RETURN                                           %P       08180000 T  0050:1
                END CONTINUITYBIT;                                      %P       08181000 T  0050:3
                                                                                 SIZE= 0051 WORDS
            BOOLEAN PROCEDURE PRINTORPUNCHWAIT(Q,PNCH);VALUE Q,PNCH;REAL Q,PNCH;  08255000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00218
            %                                                                    08255050 T  0000:0
            %   THIS PROCEDURE IS RESPONSIBLE FOR STARTING PRNPBT/DISK. IT CHECKS 08255055 T  0000:0
            %   FOR I/O UNITS AS REQUIRED AND, IF AVAILABLE, GRABS THEM. THE     08255060 T  0000:0
            %   PARAMETERS ARE:                                                  08255065 T  0000:0
            %   Q     ≤-16      LOGICAL UNIT NUMBER FOR OUTPUT. TAPES AND DISK ARE 08255070 T  0000:0
            %                   SEARCHED TO FIND A FILE TO PRINT. THIS IS USED ONLY 08255075 T  0000:0
            %                   WHEN AUTOPRINT IS SET OR FOR RJE.                08255080 T  0000:0
            %         >-16, ≤0  LOGICAL UNIT NUMBER OF A BACK-UP TAPE. CHECK FOR AN 08255085 T  0000:0
            %                   AVAILABLE OUTPUT UNIT.                           08255090 T  0000:0
            %         >0        FID OF A DISK FILE. CHECK FOR OUTPUT UNIT.       08255095 T  0000:0
            %   PNCH.[47:1]     ON FOR PUNCH BACK-UP.                            08255100 T  0000:0
            %         [39:8]    NUMBER OF COPIES FROM PB MESSAGE.                08255105 T  0000:0
            %         [31:8]    IF TAPE, NUMBER OF FILE TO PRINT (FROM PB).      08255110 T  0000:0
            %                   IF DISK, =0 IF ENTIRE PACKET SHOULD BE PRINTED, =1 IF 08255115 T  0000:0
            %                   NOT.                                             08255120 T  0000:0
            %         [30:1]    ON IF =0 WAS USED IN PB MSG.                     08255122 T  0000:0
            %         [9:9]     RJE TU/BUFF.                                     08255125 T  0000:0
            %         [2:1]     ON IF CALLED FROM PRINTBACKUP, I.E, A PB MESSAGE. 08255130 T  0000:0
            %         [1:1]     ON IF CALLED FROM PRNPBT/DISK.                   08255135 T  0000:0
            %                                                                    08255140 T  0000:0
                BEGIN INTEGER U,V,I,J,J1,J2,S;                                   08255200 T  0000:0
                      REAL A,HDR,SEGO=S,F=J;                                     08255400 T  0000:0
                      REAL PBT,PBD,PUD;                                          08255500 T  0000:0
                      ARRAY D[*],SHEAT=D[*];                                     08255600 T  0000:0
                      LABEL TRYAGAIN,PRNPBT,DISK;                                08255700 T  0000:0
                      LABEL PBTAPE,FOUND,FIREITUP,QUIT;                          08255800 T  0000:0
                      DEFINE MFID = (IF V=22 THEN PUD ELSE PBD)#;                08255900 T  0000:0
                      DEFINE STACURR = STATION[STA.[44:4],STA.[39:4]]#;          08256000 T  0000:0
            $ SET OMIT = SHAREDISK                                               08256190 T  0000:0
                      DEFINE SIXTY   = 60#;                                      08256200 T  0000:0
            $ SET OMIT = NOT SHAREDISK                                           08256210 T  0000:0
            $ SET OMIT = NOT RJE                                                 08256390 T  0000:0
                      PBT := "PBT    "; PUD := "PUD    "; PBD := "PBD    ";      08256500 T  0000:0
```

```
$ SET OMIT = NOT(DATACOM AND RJE )                                      08256699 T  0005:3
        IF Q≥(-15) THEN  %%% PB GIVEN: LOOK FOR LP.                     08257000 T  0005:3
        BEGIN                                                           08257100 T  0006:3
$ SET OMIT = NOT(DATACOM AND RJE )                                      08257199 T  0007:1
            IF PNCH THEN IF LABELTABLE[V:=22]≠0 THEN V:=0 ELSE ELSE     08257500 T  0007:1
            IF LABELTABLE[V+20]≠0 THEN                                  08257600 T  0015:0
            IF LABELTABLE[V+21]≠0 THEN V←0;                             08258000 T  0017:0
            IF V≠0 THEN                  % WE HAVE AN OUTPUT UNIT       08258200 T  0020:1
              IF Q>0 THEN                %    BACK-UP DISK              08258400 T  0021:0
              BEGIN U:=18;                                              08258600 T  0022:1
                  IF AUTOPRINT           % CHECK IF A PRNPBT WAS STARTED; 08258800 T  0023:2
$ SET OMIT = NOT RJE                     % IF SO, START THIS ONLY FOR PB. 08258990 T  0023:2
                  THEN                                                  08259200 T  0023:2
                    IF (A:=DIRECTORYSEARCH(MFID,Q,19))=0                08259225 T  0024:1
                      THEN IF PNCH.[2:1] THEN ELSE GO QUIT              08259250 T  0028:2
                      ELSE BEGIN IF M[A+4],[6:1]                        08259275 T  0030:3
                                 THEN                                   08259300 T  0032:0
$ SET OMIT = NOT SHAREDISK                                              08259325 T  0033:1
                                 ELSE BEGIN                             08259400 T  0033:1
                                      M[A+4],[6:1]:=1;                  08259425 T  0034:1
                                      DISKWAIT(A,[CF],-30,A,[FF]);      08259450 T  0037:2
                                      END;                              08259500 T  0040:0
                                 FORGETSPACE(A);                        08259525 T  0040:0
$ SET OMIT = SHAREDISK                                                  08259550 T  0040:3
                                 UNLOCKDIRECTORY;                       08259575 T  0040:3
$ POP OMIT                                                              08259600 T  0044:1
                            END;                                        08259625 T  0044:1
                  END                                                   08259800 T  0044:1
              ELSE GO TO PBTAPE;                                        08260000 T  0044:1
        END ELSE                                                        08260250 T  0044:1
        BEGIN V:=ABS(Q);     % LP (OR PUNCH) GIVEN, LOOK FOR FILE.      08260500 T  0044:1
$ SET OMIT = NOT(DATACOM AND RJE )                                      08260899 T  0047:0
            BEGIN IF V=22 THEN              % CHECK FOR TAPE             08261000 T  0047:0
                BEGIN A:="PUTMCP ";                                     08261250 T  0047:3
                    PNCH:=PNCH OR 1;                                    08261500 T  0049:0
                END ELSE                                                08261750 T  0050:1
                    A:="PBTMCP ";                                       08262000 T  0050:1
                FOR Q:=0 STEP 1 UNTIL 15 DO                             08262250 T  0052:3
                IF (MULTITABLE[Q] EQV A)=NOT 0 THEN                     08262500 T  0055:0
                IF (LABELTABLE[Q] EQV @122212342546447)=NOT 0 THEN      08262750 T  0056:3
                IF RDCTABLE[Q],[14:10]=1 THEN                           08263000 T  0059:0
                BEGIN RRRMECH:=TWO(Q) OR RRRMECH;                       08263250 T  0061:0
PBTAPE:             LABELTABLE[U:=ABS(Q)] :=                            08263500 T  0063:1
                                PBT&TINU[V][6:30:18]&@21[1:43:5];       08263750 T  0064:2
                    MULTITABLE[V] := PBT;                               08264000 T  0067:2
                    LABELTABLE[V] :=                                    08264500 T  0068:3
                                PBT&TINU[U][6:30:18]&@21[1:43:5];       08265000 T  0069:1
                    GO FIREITUP;                                        08265500 T  0072:1
                END;                                                    08266000 T  0074:0
            END SEARCHING FOR TAPE;                                     08266500 T  0076:1
            IF PBCOUNT≠0 THEN               % TRY FOR DISK              08267000 T  0076:1
            BEGIN D:=[M[GETSPACE(90,0,0)+2]]&90[8:38:10];               08267500 T  0077:0
$ SET OMIT = SHAREDISK                                                  08267990 T  0081:1
                LOCKDIRECTORY;                                          08268000 T  0081:1
$ POP OMIT                                                              08268010 T  0087:3
                A:=MFID;                                                08268500 T  0087:3
                J1:=(A.[6:18] + A.[24:24]) MOD MODULUS;                 08268600 T  0090:2
                FOR J2:=0 STEP 1 UNTIL (MODULUS-1) DO                   08268700 T  0093:1
                BEGIN                                                   08268750 T  0097:2
$ SET OMIT = NOT SHAREDISK                                              08268790 T  0097:2
```

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                    J:=SCRAMBLE(J1,J2);                                   08268900 T  0097:2
                    DO BEGIN DISKWAIT(-(D INX 30),SIXTY,J);               08268950 T  0104:2
                         FOR I:=30 STEP 3 UNTIL 87 DO                     08269000 T  0106:3
                         IF (D[I] EQV A) = NOT 0 THEN                     08269100 T  0109:0
                         IF D[I+1].[CF]=1 THEN                            08269200 T  0110:3
                         BEGIN DISKWAIT(-D.[CF],-30,D[I+2].[CF]);         08269300 T  0113:1
                              IF D[4].[1:3] ≠ 0 OR D[4].[6:1]             08269400 T  0117:2
$ SET OMIT = NOT(RJE AND DATACOM )                                        08269499 T  0119:1
$ SET OMIT = NOT(PACKETS)                                                 08269509 T  0119:1
                              OR (D[4].[16:20] OR D[9].[1:28])≠0          08269600 T  0119:1
                              THEN                                        08269650 T  0122:2
$ SET OMIT = NOT SHAREDISK                                                08269690 T  0123:1
                              ELSE                                        08269750 T  0123:1
                              BEGIN D[4].[6:1]:=1;                        08269800 T  0123:3
                                   PBCOUNT:=PBCOUNT-1;                    08269900 T  0126:3
                                   DISKWAIT(D.[CF],-30,D[I+2].[CF]);      08270000 T  0128:0
$ SET OMIT = NOT SHAREDISK                                                08270040 T  0131:1
                                   U:=18;                                 08270100 T  0131:1
                                   Q:=D[I+1];                             08270200 T  0132:1
                                   GO FOUND;                              08270300 T  0133:3
                         END  END;                                        08270350 T  0134:1
$ SET OMIT = NOT SHAREDISK                                                08270390 T  0136:2
                    END UNTIL (J:=D[32].[FF])=0;                          08270450 T  0136:2
$ SET OMIT = NOT SHAREDISK                                                08270490 T  0139:1
                    END;                                                  08270550 T  0139:1
  FOUND:            FORGETSPACE(D);                                       08270600 T  0139:3
$ SET OMIT = SHAREDISK                                                    08270640 T  0140:3
                    UNLOCKDIRECTORY;                                      08270650 T  0140:3
$ POP OMIT                                                                08270660 T  0144:1
               END SEARCHING FOR DISK;                                    08270700 T  0144:1
          END;                                                            08270725 T  0144:1
%                   IF WE HAVE BOTH AN INPUT FILE AND AN OUTPUT UNIT,     08270740 T  0144:1
%                   FIRE UP PRNPBT/DISK.                                  08270745 T  0144:1
          IF U≠0 AND V≠0 THEN                                             08270750 T  0144:1
          BEGIN                                                           08270800 T  0146:0
$ SET OMIT = NOT(DATACOM AND RJE )                                        08270819 T  0146:2
               BEGIN LABELTABLE[V]:=Q&@21[1:43:5];                        08271000 T  0146:2
                     MULTITABLE[V]:=PBD;                                  08271250 T  0148:3
               END;                                                       08271500 T  0150:0
  FIREITUP:                                                               08271750 T  0150:0
               A:=V&U[38:43:5]&PNCH[21:30:17];                            08272000 T  0150:0
$ SET OMIT = NOT RJE                                                      08272240 T  0152:3
               IF PNCH.[1:1] THEN P(A) ELSE                               08273250 T  0152:3
               BEGIN                                                      08273500 T  0154:1
TRYAGAIN:                                                                 08273600 T  0156:0
               IF (HDR:=DIRECTORYSEARCH(P(PRNPBT),P(DISK),3)) ≠ 0 THEN    08273750 T  0156:0
                    BEGIN                                                 08274000 T  0158:1
                    SHEAT := [M[F:=GETSPACE(31,0,0)+2]] & 30[8:38:10];    08274250 T  0158:3
                    M[F-2].[9:6] := 0; M[HDR INX NOT 1].[9:6]:=0;         08274260 T  0163:0
                    MOVE(30,F-1,F);                                       08274500 T  0169:3
                    SEGO := GETSPACE(30,0,0)+2; M[SEGO-2].[9:6]:=0;       08275500 T  0171:3
                    DISKWAIT(-SEGO, 30, M[HDR INX 10]);                   08275750 T  0177:1
                    F.[FF] := HDR; % CORE ADDRESS OF HEADER               08276000 T  0180:0
                    SHEAT[7] := SEGO;  % CORE ADDRESS OF SEGMENT ZERO     08276050 T  0181:1
                    SHEAT[0] := P(PRNPBT);                                08276100 T  0182:2
                    SHEAT[1] := P(DISK);                                  08276150 T  0183:3
                    SHEAT[2] := 0 & 2[8:38:10] & % PRIORITY=0,EXECUTE CODE 08276200 T  0185:0
                              (PNCH.[2:1]=0)[4:47:1]; % SET IF NOT "PB"    08276205 T  0186:3
                    SHEAT[16] := SHEAT[17] := @377777777777; % TIME LIMITS 08276210 T  0189:1
                    SHEAT[19] := A;                % COMMON VALUE         08276220 T  0191:2
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                    SHEAT[20] := 4;                 % CORE ESTIMATE                    08276230 T  0192:3
                    SHEAT[21] := 150;               % STACK SIZE                       08276240 T  0194:0
                                                                                       08276250 T  0195:1
                    STREAM(A:=0: S:=P(.SCHEDULEIDS));                                  08276260 T  0195:1
                        BEGIN                                                          08276270 T  0196:2
                        S1:=S;                                                         08276280 T  0196:2
                        47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                           08276290 T  0196:3
                           IF SB THEN ELSE JUMP OUT);                                  08276300 T  0197:3
                        DS:=SET; A:=TALLY;                                             08276310 T  0199:1
                        END STREAM STATEMENT;                                          08276320 T  0199:3
                                                                                       08276330 T  0200:0
                    I := P;                                                            08276340 T  0200:0
                    SHEAT[3].[8:10] := I;           % SCHEDULE NUMBER                 08276350 T  0200:2
                    SHEAT[23] := (CLOCK + P(RTR)) DIV 60;                              08276360 T  0203:0
          $ SET OMIT = NOT(DATACOM AND RJE)                                            08276370 T  0205:1
                    SHEAT[25] := HDR.[FF]; % DISK ADDRESS OF FILE HEADER               08276400 T  0205:1
                    STREAM(A, I:=I:=GETSPACE(11,0,0)+2);                               08276410 T  0207:0
                       BEGIN                                                           08276420 T  0210:0
                       DI:=DI+16;                                                      08276430 T  0210:0
                       DS:=30LIT"CC EXECUTE PRNPBT/DISK;COMMON=";                      08276440 T  0210:1
                       S1:=LOC A; DS:=8DEC;                                            08276450 T  0214:1
                       DS:=6LIT";END.←";                                               08276460 T  0214:3
                       END STREAM STATEMENT;                                           08276470 T  0215:3
                    M[I] := 0; M[I+1]:=10;                                             08276480 T  0216:0
                    SHEAT[6] := GETESPDISK & 10[18:33:15];                             08276490 T  0219:2
                    DISKWAIT(I, 11, SHEAT[6].[CF]);                                    08276500 T  0221:2
                    FORGETSPACE(I);                                                    08276510 T  0223:2
                    INDEPENDENTRUNNER(P(.SELECTRUN),F,160);                            08276520 T  0224:1
                    P(1);                                                              08276530 T  0225:2
                    END ELSE % IF IN DIRECTORY                                         08276540 T  0225:3
                    BEGIN                                                              08276550 T  0225:3
                    ENTERSYSFILE(3);                                                   08276560 T  0228:0
                    GO TRYAGAIN;                                                       08276570 T  0228:3
          PRNPBT:::  "PRNPBT ";                                                        08276580 T  0229:1
            DISK:::  "DISK   ";                                                        08276590 T  0231:0
                    END;                                                               08276600 T  0232:0
                 END;                                                                  08277000 T  0232:0
                 PRINTORPUNCHWAIT:=P;                                                  08277500 T  0232:0
              END ELSE                                                                 08278000 T  0232:2
                                                                                       08279000 T  0232:2
          QUIT:    IF V NEQ 0 THEN                                                     08280000 T  0232:2
           $ SET OMIT = NOT(RJE AND DATACOM )                                          08280009 T  0233:3
              LABELTABLE[V]:=0;                                                        08280030 T  0233:3
              END PRINTWAIT;%                                                          08281000 T  0235:2
                                                                                                 SIZE= 0236 WORDS
        PROCEDURE PRINTBACKUP(BUFF); VALUE BUFF; REAL BUFF;                   %P       08282000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00226
          %                                                                            08282100 T  0000:0
          %   THIS PROCEDURE HANDLES THE PB MESSAGE, MAKING THE NECESSARY CHECKS       08282110 T  0000:0
          %   AND THEN CALLING PRINTORPUNCHWAIT, THE SYNTAX OF THE MESSAGE IS:         08282120 T  0000:0
          %   <PB MSG> ::= PB<INPUT FILE><PB SPECS>                                    08282140 T  0000:0
          %     <INPUT FILE> ::= <TAPE UNIT> / <DISK FILE NUMBER>                      08282150 T  0000:0
          %     <PB SPECS> ::= <PB ELEMENT> / <PB ELEMENT><PB SPECS> / <EMPTY>         08282160 T  0000:0
          %     <PB ELEMENT> ::= P / =<NUMBER OF COPIES> / #<STARTING FILE NUMBER>     08282170 T  0000:0
          %                                                                            08282180 T  0000:0
        BEGIN REAL U,I,COPY,MS,STA,B=BUFF;                                             08283000 T  0000:0
         $ SET OMIT = NOT (DATACOM AND DCSPO)                                          08283400 T  0000:0
              LABEL OK,BAD,SPIT;                                                       08284000 T  0000:0
         $ SET OMIT = NOT (DATACOM AND DCSPO)                                          08284450 T  0000:0
              STREAM(PCPY:=1, NUMB:=1, N:=1, CPY:=-0: B:=BUFF);                        08285000 T  0000:0
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BEGIN SI←B; DI←LOC N;                                                  %P   08286000 T  0003:2
L:  IF SC=" " THEN BEGIN SI←SI+1; GO TO L END;                         %P   08287000 T  0004:0
    IF SC<"0" THEN BEGIN DS←5 LIT"+0000"; DS←3 CHR END ELSE%P               08288000 T  0005:0
    BEGIN B:=SI;                                                            08289000 T  0007:0
        4(IF SC<"0" THEN JUMP OUT; TALLY←TALLY+1; SI←SI+1);                 08289500 T  0007:1
        SI:=B; B:=TALLY; DI:=DI+5; DI:=DI-B;                                08290000 T  0009:1
        DS←B CHR;                                                      %P   08290500 T  0010:2
    END;                                                                    08291000 T  0011:0
LL:  IF SC=" " THEN BEGIN SI:=SI+1; GO TO LL END;                           08291025 T  0011:0
     IF SC="=" THEN BEGIN DI:=LOC CPY; GO TO CNT END;                       08291050 T  0012:0
     IF SC="#" THEN                                                         08291075 T  0013:0
     BEGIN DI:=LOC NUMB;                                                    08291100 T  0013:2
CNT:      SI:=SI+1; B:=SI; TALLY:=0;                                        08291125 T  0013:3
          3(IF SC < "0" THEN JUMP OUT;                                      08291150 T  0014:2
            IF SC > "9" THEN JUMP OUT;                                      08291175 T  0015:3
            TALLY:=TALLY+1; SI:=SI+1);                                      08291200 T  0016:3
          SI:=B; B:=TALLY; DS:=B OCT;                                       08291225 T  0017:2
          GO TO LL;                                                         08291250 T  0018:2
     END;                                                                   08291275 T  0018:3
     IF SC="P" THEN                                                         08291300 T  0018:3
     BEGIN TALLY:=0; PCPY:=TALLY; SI:=SI+1;                                 08291325 T  0019:1
          5(IF SC=ALPHA THEN IF SC<"0" THEN SI:=SI+1 ELSE                   08291350 T  0020:0
            JUMP OUT ELSE JUMP OUT);                                        08291375 T  0021:3
          GO TO LL;                                                         08291400 T  0023:1
     END;                                                                   08291425 T  0023:2
END;                                                                        08291450 T  0023:2
COPY:=(COPY:=P)&(NOT COPY = NOT 0)[31:47:1];                                08291460 T  0023:3
%                                                                           08291470 T  0026:3
%   BACK UP TAPE. CHECK THE LABEL THEN CALL PRINTORPUNCHWAIT.               08291475 T  0026:3
%                                                                           08291480 T  0026:3
IF (U:=P) < 0 THEN                                                          08291500 T  0026:3
BEGIN COPY:=COPY&(P(XCH)-1)[32:40:8];                                       08291750 T  0027:3
     IF NOT MTXIN(I,U,B) THEN                                               08292000 T  0030:2
     IF (STA:=MULTITABLE[U]≠"PBTMCP " OR STA) AND                           08292500 T  0032:0
       MULTITABLE[U]≠"PUTMCP " THEN                                         08293000 T  0034:2
       BEGIN STREAM(BUFF); DS:=19 LIT" NOT A BACKUP TAPE←";                 08293500 T  0035:3
            GO TO SPIT;                                                     08294000 T  0040:0
       END                                                                  08294500 T  0043:0
     ELSE                                                                   08295000 T  0043:0
     IF PRINTORPUNCHWAIT(-U, I&COPY[30:31:17] OR M) THEN                    08295200 T  0043:0
       GO TO OK ELSE BEGIN MS:=-1; GO TO BAD END                            08295600 T  0046:1
     ELSE GO TO SPIT;                                                       08295800 T  0048:2
END;                                                                        08296000 T  0048:2
%                                                                           08296160 T  0048:2
%   BACK UP DISK. SET FIRST REEL NUMBER. IF COPIES OR REEL NUMBER           08296170 T  0048:2
%       GIVEN, DIAL IN "P" BIT, ELSE LEAVE IT OFF TO PRINT ENTIRE           08296180 T  0048:2
%       THING. CHECK FOR THE FILE, THEN CALL PRINTORPUNCHWAIT.              08296190 T  0048:2
%                                                                           08296200 T  0048:2
STREAM(I:=P: L:=[U]);                                                       08296225 T  0048:2
BEGIN SI:=LOC I; DI:=DI+5;                                                  08296250 T  0049:2
     DS:=3 DEC;                                                             08296275 T  0050:0
END;                                                                        08296300 T  0050:1
I:=P-1;                                                                     08296325 T  0050:2
IF (COPY OR I).[CF]=0 THEN P(DEL) ELSE                                      08296350 T  0051:2
  COPY:=COPY&P(XCH)[39:47:1];                                               08296375 T  0054:0
BUFF:=BUFF.[15:15]-1;                                                       08296400 T  0056:1
IF (I:=DIRECTORYSEARCH("PBD     ",U,5))=0 THEN                              08296600 T  0058:0
IF (I:=DIRECTORYSEARCH("PUD     ",U,5))=0 THEN GO TO BAD                    08296800 T  0060:1
     ELSE STA:=STA OR 1;                                                    08297000 T  0063:0
P(M[I+4]);                                                                  08297200 T  0064:3
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                    FORGETSPACE(I);                                                  08297300 T  0066:1
                    IF P.[2:1] THEN BEGIN MS:=2; GO TO BAD END;                      08297400 T  0067:0
                    IF PBCOUNT LSS 1 THEN PBCOUNT:=1;                                08297600 T  0072:0
                    IF PRINTORPUNCHWAIT(U, MS&COPY[30:31:17] OR M) THEN              08298000 T  0074:0
OK:                   FORGETSPACE(BUFF)                                              08298200 T  0076:2
                    ELSE                                                             08298400 T  0077:1
                    BEGIN MS:=1;                                                     08298600 T  0077:3
BAD:                STREAM(MS, X:=MS<0, U:=IF P(DUP) THEN TINU[U] ELSE U,            08298800 T  0079:0
                          BUFF:=BUFF.[CF]);                                          08299000 T  0082:1
                    BEGIN DS:=8 LIT" NULL PB";                                       08299200 T  0083:1
                          SI:=LOC U; CI:=CI+X; GO TO DK;                             08299400 T  0084:2
                          SI:=SI+5; DS:=3 CHR; GO TO LL;                             08299600 T  0085:2
                    DK:   SI:=SI+1; DS:=4 CHR;                                       08299800 T  0086:1
                          BUFF:=DI; DI:=DI-4; DS:=3 FILL; DI:=BUFF;                  08300000 T  0086:3
                    LL:   DS:=2 LIT"-(";                                             08300200 T  0087:3
                          CI:=CI+MS; GO TO LO; GO TO L1;                             08300400 T  0088:1
                          DS:= 6 LIT"IN USE"; GO TO L;                               08300600 T  0089:1
                    L1:   DS:=14 LIT"NO OUTPUT UNIT"; GO TO L;                       08300800 T  0090:2
                    LO:   DS:=11 LIT"NOT ON DISK";                                   08301000 T  0092:3
                    L :   DS:= 2 LIT")←";                                            08301200 T  0094:2
                    END;                                                             08301400 T  0095:0
SPIT:               SPOUT(BUFF                                                       08301600 T  0095:1
 $ SET OMIT = NOT (DATACOM AND DCSPO)                                                08301650 T  0095:2
                          );                                                         08301800 T  0095:2
                    END;                                                             08302000 T  0096:0
      END OF PB KEYBOARD MESSAGE HANDLER;                                            08302500 T  0096:0
                                                                                                SIZE= 0097 WORDS
  SAVE PROCEDURE INITIALIZE;   FORWARD;                                              08303000 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00601
  REAL ACTDATE=INITIALIZE;                                                           08303100 T  0000:0
  SAVE REAL PROCEDURE COREND;   FORWARD;                                             08303200 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00601
  REAL WEEKDAY=COREND;                                                               08303300 T  0000:0
  PROCEDURE TIMEOUT (B); VALUE B; REAL B;%                                           08305000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00230
        BEGIN INTEGER M,H,C;%                                                        08306000 T  0000:0
              C ←XCLOCK/3600;%                                                       08307000 T  0000:0
              M ← C MOD 60;%                                                         08308000 T  0002:0
              H ← C DIV 60;%                                                         08309000 T  0003:1
              STREAM(H,M,B);%                                                        08310000 T  0004:2
                 BEGIN DS ← 9 LIT " TIME IS ";%                                      08311000 T  0005:3
                       SI ← LOC H; DS ← 2 DEC; DS ← 2 DEC;%                          08312000 T  0007:1
                       DS ← LIT "←"%                                                 08313000 T  0008:0
                 END;%                                                               08314000 T  0008:2
              SPOUT(B INX MEMORY[B-1]);                                              08315000 T  0008:3
        END;%                                                                        08316000 T  0011:1
                                                                                                SIZE= 0013 WORDS
PROCEDURE GIMEDATE(B,DT); VALUE B,DT; REAL B,DT;                                     08317000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00231
   %% PARAMETER USE IS:                                                             08317100 T  0000:0
      %% B=OUTPUT AREA FOR MESSAGE OR DATE                                          08317200 T  0000:0
      %%DT=0 RECONVERT ACTDATE,WEEKDAY THEN SPOUT TIME MSG                           08317300 T  0000:0
      %% DT>0 SPOUT TIME MSG ONLY                                                   08317400 T  0000:0
      %% DT<0 CONVERT MMDDYY USING DT (ACTDATE,WEEKDAY NOT CHANGED)                 08317500 T  0000:0
        BEGIN  REAL M,D,Y,NCV,NMG;                                                   08318000 T  0000:0
              REAL SUBROUTINE DAY;                                                   08318100 T  0000:0
              BEGIN STREAM(M:X←0,Y←0,Z←0);                                           08318200 T  0001:0
                    BEGIN DI←LOC X; DS←24 LIT"000←0%1.1Y2G2V3D3T4A4 5>";             08318300 T  0002:3
                          SI←LOC X; SI←SI+M; SI←SI+M;                                08318400 T  0006:1
                          DI←LOC M; DI←DI+6; DS←2 CHR;                               08318500 T  0007:2
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                END;                                                    08318600 T  0008:1
                DAY←P;                                                  08318700 T  0008:2
            END DAY;                                                    08318800 T  0008:3
            LABEL DAYS;                                                 08318900 T  0009:0
            LABEL ON;;%                                                 08319000 T  0009:0
            IF NOT (NCV←(DT>0))  THEN   % NOT PRINT ONLY                08319700 T  0010:1
            BEGIN                                                       08319900 T  0011:3
            STREAM(DATE←IF (NMG←DT,[1:1]) THEN DT ELSE DATE,R←[Y]);     08320000 T  0012:1
                BEGIN SI ← LOC DATE; SI ← SI+3;%                        08321000 T  0015:3
                    DS←2 OCT; DI←DI-16; DS←3 OCT;                       08322000 T  0016:1
                END;%                                                   08323000 T  0017:0
            IF Y MOD 4 = 0 AND Y ≠ 0 THEN%                              08324000 T  0017:1
                BEGIN IF D = 60 THEN%                                   08325000 T  0019:2
                            BEGIN M←2; GO ON END;                       08326000 T  0020:3
                    IF D > 60 THEN D ←D-1;%                             08327000 T  0022:2
                END;%                                                   08328000 T  0025:0
            FOR M←1 STEP 1 UNTIL 11 DO                                  08329000 T  0025:0
                IF DAY≥D THEN GO ON;                                    08330000 T  0026:0
        ON:  M←M-1;                                                     08331000 T  0030:1
            D←D-DAY;                                                    08332000 T  0031:2
            IF M<2 THEN P(Y-1,M+11) ELSE P(Y,M-1);                      08332100 T  0033:3
            P(26,×,2,-,10,IDV,D,+,XCH,P(DUP),[36:10],+,+,7,RDV,5,ISN);  08332200 T  0038:0
            :: P(.DAYS,+,LOD);                                          08332300 T  0042:2
            M←M+1;                                                      08332400 T  0043:3
            END ELSE P(WEEKDAY);                                        08332500 T  0045:0
            STREAM(M←[M],NMG,NCV,MDY←[ACTDATE],B,DW←[WEEKDAY]);         08333000 T  0045:3
                BEGIN  NMG(JUMP OUT TO NOMSG);                          08334000 T  0047:3
                    SI←LOC M; SI←SI-16;                                 08334100 T  0049:0
                    NCV(SI←SI+2; JUMP OUT TO NOCNV);                    08334300 T  0049:2
                    DS←WDS; SI←SI-6;                                    08334500 T  0051:0
        NOCNV:      DI←B; DS←9 LIT" DATE IS "; DS←6 CHR;                08334700 T  0051:2
                    DS←5 LIT"DAY, "; B←DI; NCV(JUMP OUT TO NULCV);      08334900 T  0053:2
        NOMSG:      SI←M; NMG(DI←B; JUMP OUT TO NULMS);                 08335000 T  0056:0
                    DI←MDY;                                             08335200 T  0057:3
        NULMS:      DS←4 DEC; DS←2 DEC; DS←2 DEC;                       08335400 T  0058:0
                    NMG(JUMP OUT TO OXIT);  DI←B;                       08335600 T  0058:3
        NULCV:      SI←MDY; SI←SI+2;                                    08335800 T  0060:1
                    DS←2 CHR; 2(DS←LIT "/"; DS←2 CHR);                  08336000 T  0060:3
                    DS ← LIT "←"; SI ←B;%                               08337000 T  0062:1
                    3(DI ← B; DS ← FILL; SI ← SI+3; B ←SI);%            08338000 T  0063:0
        OXIT:           END;                                            08339000 T  0064:2
            IF DT≥0 THEN                                                08339500 T  0064:3
            IF NOT NMG THEN SPOUT(B INX MEMORY[B-1]);                   08340000 T  0065:2
            P(XIT);                                                     08340100 T  0069:2
        DAYS:::  "   MON","  TUES","WEDNES"," THURS","   FRI"," SATUR",  08340200 T  0069:3
                 "   SUN";                                              08340300 T  0076:0
        END;%                                                           08341000 T  0077:0
                                                                                SIZE= 0078 WORDS
DEFINE DATEOUT(DATEOUT1)=GIMEDATE(DATEOUT1,0)#; %CHANGE DATE & SPOUT IT 08342000 T  0000:0
 PROCEDURE SETDATE(BUFF); VALUE BUFF; REAL BUFF;%                       08343000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00234
    BEGIN REAL DY,MN,YR; INTEGER D=DY; REAL B,T=MN;                     08344000 T  0000:0
          REAL SUBROUTINE C;                                            08344100 T  0000:0
        BEGIN;STREAM(C←0:B←[B]);                                        08344200 T  0001:0
            BEGIN%                                                      08345000 T  0002:1
                SI ← B; SI ← SI+5; SI ← SC;%                            08346000 T  0002:1
            L:  IF SC < "0" THEN%                                       08347000 T  0003:0
                    BEGIN IF SC = "←" THEN GO TO X;%                    08348000 T  0003:2
                        SI ← SI+1; GO TO L;%                            08349000 T  0004:1
                END;%                                                   08350000 T  0004:3
```

```
                K:    IF SC ≥ "0" THEN%                                    08351000 T  0004:3
                          BEGIN TALLY ← TALLY+1;%                          08352000 T  0005:1
                              SI ← SI+1; GO TO K END;%                     08353000 T  0005:2
                      DI ← B; B ← SI; SI ← LOC B; DS ← WDS;%                08354000 T  0006:0
                      SI ← B; B ← TALLY; DI ← LOC C;%                       08355000 T  0007:0
                      SI ← SI-B; LS ← B OCT;%                               08356000 T  0007:3
                X:END;%                                                     08357000 T  0008:3
                 C←P;                                                       08358000 T  0009:0
            END C;                                                          08358100 T  0009:1
            B ← BUFF;%                                                      08359000 T  0009:2
            MN←C; DY←C; YR←C;                                               08360000 T  0011:3
            BUFF ← BUFF.[15:15]-1;%                                         08361000 T  0017:2
            IF MN > 0 AND MN ≤ 12 AND%                                      08362000 T  0019:1
                LY > 0 AND DY ≤ 31 AND%                                     08363000 T  0021:0
                YR > 0 THEN%                                                08364000 T  0023:0
            BEGIN;STREAM(M←MN-1:X←0,Y←0,Z←0);                               08365000 T  0024:0
                 BEGIN DI←LOC X; DS←24 LIT"000←0%1.1Y2G2V3D3T4A4 5>";       08365100 T  0026:3
                      SI←LOC X; SI←SI+M; SI←SI+M;                           08365200 T  0030:1
                      DI←LOC M; DI←DI+6; DS←2 CHR;                          08365300 T  0031:2
                 END;                                                       08365400 T  0032:1
            DY←P+DY;                                                        08366000 T  0032:2
            IF YR MOD 4 = 0 AND MN > 2 AND(YR MOD 100 ≠ 0 OR%               08367000 T  0033:2
                      YR MOD 400 = 0) THEN%                                 08368000 T  0037:0
                DY ← DY+1;%                                                 08369000 T  0038:3
            D ← YR MOD 100 × 1000+DY;%                                      08370000 T  0040:2
            STREAM(D,A←[DATE]);%                                            08371000 T  0042:3
                BEGIN SI ← LOC D; DS ← 8 DEC END;%                          08372000 T  0043:3
            CHANGEDATE(BUFF);%                                              08373000 T  0044:2
            END ELSE SPOUT(BUFF INX MEMORY[BUFF -1]);                       08374000 T  0045:1
        END;%                                                               08375000 T  0048:1
                                                                                   SIZE= 0049 WORDS
    PROCEDURE CHANGEDATE(BUFF); VALUE BUFF; REAL BUFF;%                     08376000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00236
        BEGIN REAL B,C,D,T;%                                                08377000 T  0000:0
            SLEEP([TOGLE],HOLDMASK);                                        08378000 T  0000:0
            LOCKTOG(HOLDMASK);                                              08379000 T  0002:2
            B ← GETSPACE(30,0,0)+2;%                                        08380000 T  0006:0
            DISKWAIT(-B,-30,DIRECTORYTOP);                                  08381000 T  0008:1
            D:= M[B+1];%                                                    08381100 T  0010:0
            M[B+1] ← DATE;%                                                 08383000 T  0012:0
            M[B+18]:=xCLOCK;                                                08383100 T  0014:0
            DISKIO(T,B-1,-30,DIRECTORYTOP);                                 08384000 T  0016:0
            IF BUFF≠0 THEN                                                  08384100 T  0018:1
            BEGIN%                                                          08384200 T  0019:0
            DATEOUT (BUFF);%                                                08385000 T  0019:2
            C:= GETSPACE(5,9,0)+2;%                                         08385100 T  0020:2
            M[C  ]:= M[C+2]:= 0;%                                           08385200 T  0022:3
            M[C+3]:= D;%                                                    08385300 T  0026:0
            STREAM(DATE,A:=C+1); BEGIN SI:=LOC DATE; DS:=8 OCT; END;%       08385400 T  0028:0
            LINKUP(17,C);%                                                  08385500 T  0030:1
            END;%                                                           08385600 T  0031:1
            SLEEP([T],IOMASK);%                                             08386000 T  0031:1
            FORGETSPACE(B);%                                                08387000 T  0032:3
            UNLOCKTOG(HOLDMASK);                                            08388000 T  0033:2
        END;%                                                               08389000 T  0037:0
                                                                                   SIZE= 0038 WORDS
    PROCEDURE SETIME(BUFF); VALUE BUFF; REAL BUFF;%                         08390000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00238
        BEGIN REAL B=BUFF,T;%                                               08391000 T  0000:0
            REAL I,R;%                                                      08392000 T  0000:0
```

```
                    LABEL EXIT;%                                                    08393000 T  0000:0
                    REAL CLOCK=XCLOCK;%                                             08394000 T  0000:0
                    INTEGER CLCK=CLOCK;;%                                           08395000 T  0000:0
                    T ← -1;%                                                        08396000 T  0000:3
                    STREAM(B,T←[T]);%                                               08397000 T  0001:3
                         BEGIN SI ← B;%                                             08398000 T  0002:3
                         L:   IF SC = " " THEN%                                     08399000 T  0003:0
                                   BEGIN SI ← SI+1; GO TO L END;%                   08400000 T  0003:2
                              IF SC < "0" THEN GO TO X;%                            08401000 T  0004:0
                         K:     IF SC ≥ "0" THEN%                                   08402000 T  0004:3
                                   BEGIN SI ← SI+1; TALLY ← TALLY+1;%               08403000 T  0005:1
                                             GO TO K END;%                          08404000 T  0005:3
                              B ← TALLY; SI ← SI-B; DS ← 8 OCT;%                    08405000 T  0006:0
                         X:%                                                        08406000 T  0007:1
                         END;%                                                      08407000 T  0007:1
                    BUFF ← BUFF.[15:15]-1;%                                         08408000 T  0007:2
                    IF T ≥ 0 AND T DIV 100 < 24 AND T MOD 100 < 60 THEN%            08409000 T  0009:1
                         BEGIN R:= GETSPACE(5,9,0)+2;%                              08410000 T  0013:0
                              M[R+2]:= XCLOCK;%                                     08410100 T  0015:3
                              CLCK:= (T DIV 100 × 60 + T MOD 100)×3600;%            08410200 T  0017:3
                              CLOCK ← (CLOCK OR @77)+1;%                            08411000 T  0021:0
                              TIMEOUT (BUFF);%                                      08412000 T  0022:3
                              M[R]:= M[R+3]:= 0;%                                   08412100 T  0023:2
                              STREAM(DATE,A:=R+1);%                                 08412200 T  0026:3
                              BEGIN SI:=LOC DATE; DS:=8 OCT; END;%                  08412300 T  0028:1
                              LINKUP(17,R);%                                        08412400 T  0029:0
                              GO TO EXIT;%                                          08413000 T  0030:0
                         END;%                                                      08414000 T  0032:0
                    SPOUT(BUFF INX MEMORY[BUFF-1]);                                 08415000 T  0032:0
               EXIT:%                                                               08416000 T  0034:2
               END;%                                                                08417000 T  0034:2
                                                                                         SIZE= 0035 WORDS
          REAL PROCEDURE FORMESS(BUFF,H1); VALUE BUFF,H1; REAL BUFF,H1;             08418000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00240
     BEGIN REAL B,H,U,M1;                                                           08418500 T  0000:0
               INTEGER I;                                                           08418700 T  0000:0
               LABEL AGAIN,EXIT,AWAY;                                               08419000 T  0000:0
               M1:=M[BUFF.[15:15]-2];                                               08419100 T  0000:0
               STREAM(BUFF:);                                                       08419200 T  0004:0
               BEGIN SI:=BUFF;                                                      08419300 T  0005:0
                 L: IF SC=" " THEN BEGIN SI:=SI+1; GO TO L END;                     08419400 T  0005:1
                    BUFF:=SI;                                                       08419500 T  0006:1
               END;                                                                 08419600 T  0006:2
               BUFF:=P;                                                             08419700 T  0006:3
          AGAIN: U:=FORMESS:=UNITIN(TINU,BUFF);                                     08420000 T  0007:1
               IF U≤31 THEN BEGIN SLEEP([TOGLE],STATUSMASK);                        08421000 T  0009:2
                    IF LABELTABLE[U] < 0 THEN%                                      08422000 T  0012:1
                    BEGIN STREAM(A:=TINU[U],B:=B:=SPACE(5));                        08424000 T  0013:1
                              BEGIN SI ← LOC A; SI ← SI + 5; DS ← 3 CHR;%           08425000 T  0017:0
                              DS:=24LIT" IN USE(TO BE READIED)←";                   08426000 T  0017:3
                         END;%                                                      08427000 T  0021:0
                         SAVEWORD := SAVEWORD AND NOT TWO(U);                       08427100 T  0021:1
                         SPOUT(B);                                                  08428000 T  0023:1
                         IF H1 THEN GO AWAY ELSE GO TO EXIT;                        08429000 T  0024:0
                    END;                                                            08429500 T  0025:1
                         LABELTABLE[U]:=@114&H1[1:47:1];                            08430000 T  0025:1
                         MULTITABLE[U] ← 0;%                                        08431000 T  0027:2
                         I ← TWO(U);%                                               08432000 T  0028:3
                         IF H1 THEN B:=NOT 0 ELSE                                   08433000 T  0030:0
                         BEGIN B:=NOT I; H:=I:=0;                                   08434000 T  0031:3
```

```
                    IF U=23 THEN H:=P(.READERA);                                08434100 T  0034:2
                    IF U=24 THEN H:=P(.READERB);                                08434200 T  0036:2
                    IF H≠0 THEN                                                 08434300 T  0038:2
                    BEGIN UNITCODE[U-23]:=-0;                                   08434400 T  0039:1
                         IF (*H).[CF]≠0 THEN                                    08434500 T  0041:3
                         BEGIN FORGETSPACE(*H-2);                               08434600 T  0043:1
                              M[H]:=0;                                          08434700 T  0045:1
                         END;                                                   08434800 T  0046:3
                    END;                                                        08434900 T  0046:3
               END;                                                             08434950 T  0046:3
               READY ← READY AND B OR I;%                                       08435000 T  0046:3
               RRRMECH ← RRRMECH AND B OR I;%                                   08436000 T  0048:2
          SAVEWORD ← SAVEWORD AND B OR I;%                                      08437000 T  0050:1
          END;                                                                  08437050 T  0052:0
EXIT:     IF NOT H1 THEN                                                        08437100 T  0052:0
          BEGIN IF U GTR 31 THEN                                                08437150 T  0052:2
               BEGIN STREAM(BUFF,B:=B:=SPACE(5));                               08437200 T  0053:3
               BEGIN DS:=10 LIT"INV KBD RY";                                    08437250 T  0057:1
                    SI:=BUFF; DS:=3 CHR;                                        08437300 T  0058:3
                    DS:=LIT"←";                                                 08437350 T  0059:1
               END;                                                             08437400 T  0059:3
               SPOUT(B INX M1);                                                 08437450 T  0060:0
          END;                                                                  08437500 T  0061:1
          STREAM(OK:=0,BUFF:);                                                  08437550 T  0061:1
          BEGIN SI:=BUFF;                                                       08437600 T  0062:2
               3(IF SC=" " THEN JUMP OUT;                                       08437650 T  0062:3
                 IF SC="," THEN JUMP OUT;                                       08437700 T  0064:0
                 IF SC="←" THEN JUMP OUT TO L3;                                 08437750 T  0065:0
                 SI:=SI+1);                                                     08437800 T  0066:0
          L1:  IF SC=" " THEN                                                   08437850 T  0066:2
          L2:  BEGIN SI:=SI+1; GO TO L1 END;                                    08437900 T  0067:0
               IF SC="," THEN GO TO L2;                                         08437950 T  0067:2
               BUFF:=SI;                                                        08438000 T  0068:1
               IF SC≠"←" THEN TALLY:=1;                                         08438050 T  0068:2
          L3:  OK:=TALLY;                                                       08438100 T  0069:1
          END;                                                                  08438150 T  0069:2
          BUFF:=P;                                                              08438200 T  0069:3
          IF P THEN GO AGAIN;                                                   08438250 T  0070:1
AWAY:     FORMESS:=-1;                                                          08438300 T  0071:0
     END;                                                                       08438350 T  0072:0
END;                                                                            08438500 T  0072:0
                                                                                          SIZE= 0073 WORDS
PROCEDURE SUSTATUS(A,DDD,B); VALUE A,DDD,B; REAL A,B; ARRAY DDD[*];             08438900 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00243
                         FORWARD;                                               08438910 T  0000:0
PROCEDURE OUTPUTLABEL(B); VALUE B; REAL B;%                                     08439000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00243
BEGIN REAL BU=B,U,T,A;%                                                         08440000 T  0000:0
     REAL G,Q;%                                                                 08441000 T  0000:0
          REAL TUSTA,TEMP;                                                      08441050 T  0000:0
     BOOLEAN SCRTOG;                                                            08441100 T  0000:0
     LABEL EXIT;%                                                               08442000 T  0000:0
     SUBROUTINE DOIT;%                                                          08443000 T  0000:0
          BEGIN; STREAM(A←TINU[U]:B);%                                          08444000 T  0001:0
               BEGIN SI ← LOC A; SI ← SI+5; DS ← LIT" ";%                       08445000 T  0002:2
                    DS ← 3 CHR; DS ← LIT " "; A ← DI END;%                      08446000 T  0003:2
                A ← P; T ← LABELTABLE[U];%                                      08447000 T  0004:3
                 IF U LSS 16 THEN TEMP:=PRNTABLE[U].[30:18];                    08447100 T  0006:1
                 IF T=0 THEN                                                    08448000 T  0009:0
                 STREAM(B:=TEMP,V:=(U LSS 16),A);                               08448050 T  0009:3
```

```
                    BEGIN SI:=LOC V;SI:=SI+7;                                   08448100 T  0012:0
                    IF SC NEQ "C" THEN BEGIN SI:=LOC B;DS:=5DEC END;            08448110 T  0012:2
                                        DS:=9LIT" SCRATCH←" END                 08448150 T  0013:2
                ELSE IF T = @114 OR T = @214 THEN%                              08449000 T  0015:0
                      BEGIN                                                     08450000 T  0017:2
                      STREAM(SAV:=((TWO(U) AND SAVEWORD) NEQ 0),A);             08450100 T  0018:0
                         BEGIN                                                  08450200 T  0020:2
                         DS:=10LIT"NOT READY←";                                 08450300 T  0020:2
                         SAV(DI:=DI-1; DS:=8LIT"(SAVED)←");                     08450400 T  0022:0
                         END                                                    08450500 T  0024:1
                      END                                                       08450600 T  0024:1
                    ELSE IF ABS(T)=@314 THEN                                    08451000 T  0024:2
                    STREAM(B:=TEMP,V:=(U LSS 16),A);                            08451100 T  0026:0
                    BEGIN SI:=LOC V; SI:=SI+7;                                  08451200 T  0028:1
                    IF SC NEQ "0" THEN BEGIN SI:=LOC B;DS:=5DEC END;            08451210 T  0028:3
                         DS:=11 LIT " UNLABELED←";                              08452000 T  0029:3
                    END                                                         08452100 T  0031:2
                ELSE BEGIN;%                                                    08453000 T  0031:2
                     STREAM(K:=T<0: TEMP, V:=U<16, A);                          08454000 T  0032:1
                     BEGIN V(SI:=LOC TEMP; DS:=5 DEC; DS:=LIT" ");              08454500 T  0035:0
                         CI:=CI+K; GO TO LAB;                                   08455000 T  0036:3
                         DS:=6 LIT"IN USE"; GO TO L;                            08455500 T  0037:2
                     LAB: DS:=7 LIT"LABELED";                                   08456000 T  0038:3
                     L:   DS:=LIT" "; K:=DI;                                    08457000 T  0040:0
                     END;                                                       08458000 T  0040:3
                A ← P;%                                                         08459000 T  0041:0
                IF (NT1 ← RDCTABLE[U].[8:6]) ≠ 0 THEN%                          08460000 T  0041:2
                IF JARROW[NT1] ≠ 0 THEN%                                        08461000 T  0043:2
                     BEGIN;STREAM(J←JARROW[NT1]:NT1,A);%                        08462000 T  0045:0
                         BEGIN DS ← 3 LIT "BY "; SI ← J;%                       08463000 T  0047:1
                               SI ← SI+1; DS ← 7 CHR;%                          08464000 T  0048:1
                               DS ← LIT "/"; SI ← SI+1;%                        08465000 T  0048:3
                               DS ← 7 CHR; DS ← LIT "=";%                       08466000 T  0049:2
                               SI←LOC NT1; DS←2DEC;                             08467000 T  0050:1
                               DS ← LIT ":"; J ← DI;%                           08468000 T  0050:3
                               DI←DI-3; DS←FILL;                                08468500 T  0051:2
                         END;%                                                  08469000 T  0052:0
                         A ← P;%                                                08470000 T  0052:1
                     END ELSE ELSE                                              08471000 T  0052:3
                IF T<0 AND (U=23 OR U=24) THEN                                  08471010 T  0053:1
                   BEGIN                                                        08471020 T  0056:2
                   STREAM(S:=0 : A);                                            08471030 T  0057:0
                      BEGIN                                                     08471040 T  0058:1
                      DS:=22LIT"BY AUTO LOAD CONTROL: ";                        08471050 T  0058:1
                   S:=DI;                                                       08471060 T  0061:1
                      END;                                                      08471070 T  0061:2
                   A:=P;                                                        08471080 T  0061:3
                   END ELSE                                                     08471090 T  0062:1
                IF U GEQ 20 AND U LEQ 22 THEN                                   08471100 T  0062:1
                IF LABELTABLE[U].[1:5]=@21 THEN                                 08471105 T  0064:2
                     BEGIN STREAM(S:=0:A);                                      08471110 T  0066:2
                           BEGIN                                                08471120 T  0068:1
                                 DS:=13 LIT "BY SCHEDULED ";                    08471130 T  0068:1
                                 DS:=13 LIT "PRNPBT/DISK: ";                    08471140 T  0070:1
                                 S:=DI;                                         08471150 T  0072:1
                           END;                                                 08471160 T  0072:2
                           A:=P;                                                08471170 T  0072:3
                     END;                                                       08471180 T  0073:1
                STREAM(S←0:K←MULTITABLE[U],T,R←RDCTABLE[U],                     08472000 T  0073:1
                     [14:10],D←RDCTABLE[U].[24:17],C←RDCTABLE[U].%              08473000 T  0075:0
```

```
                    [41:7],A); BEGIN SI ← LOC K;%                                   08474000 T  0077:0
                    2(SI ← SI+1; DS ← 7 CHR; DS ← LIT " ");%                        08475000 T  0078:2
                    DS ← 3 DEC; DS ← LIT " ";%                                      08476000 T  0080:0
                    DS ← 5 DEC; DS ← LIT " ";%                                      08477000 T  0080:3
                    DS ← 2 DEC; DS ← LIT "←";%                                      08478000 T  0081:2
                    S←DI;                                                           08478500 T  0082:1
                    END;                                                            08478600 T  0082:2
                A←P;                                                                08478700 T  0082:3
                IF U≥32 THEN IF CIDROW[U   -32]≠0 THEN                              08478800 T  0083:1
                    STREAM(DK←CIDTABLE[U   -32,2],A);                               08478900 T  0086:0
                        BEGIN                                                       08479000 T  0088:3
                        DI←DI-1;                                                    08479100 T  0088:3
$ SET OMIT = NOT(PACKETS)                                                           08479109 T  0089:0
$ SET OMIT = PACKETS                                                                08479199 T  0089:0
                        DS←6 LIT ",DECK ";                                          08479200 T  0089:0
$ POP OMIT                                                                          08479201 T  0090:0
                        SI←LOC DK; SI←SI+1;                                         08479300 T  0090:0
                        DS←7 CHR;                                                   08479400 T  0090:2
                        END;                                                        08479500 T  0090:3
                    END;                                                            08479600 T  0091:0
                SPOUT(B INX TUSTA);                                                 08480000 T  0091:0
                B ← 0;%                                                             08481000 T  0092:1
            END;%                                                                   08482000 T  0093:0
        TUSTA←M[B.[15:15]-2];                                                       08482050 T  0093:1
        IF (U ← UNITIN(TINU,B))≤ PSEUDOMAXT  THEN                                   08483000 T  0098:2
            BEGIN B ← B.[15:15]-1;%                                                 08484000 T  0100:3
                IF (U OR 1)=19 THEN SUSTATUS(B INX TUSTA,0,U) ELSE                  08484500 T  0103:0
                DOIT;%                                                              08485000 T  0106:2
                GO TO EXIT;%                                                        08486000 T  0108:0
            END;%                                                                   08487000 T  0108:2
$ SET OMIT = SHAREDISK                                                              08487099 T  0108:2
        SCRTOG ← U = PSEUDOMAXT + 1;                                                08487100 T  0108:2
$ POP OMIT                                                                          08487101 T  0110:1
$ SET OMIT = NOT(SHAREDISK)                                                         08487199 T  0110:1
        STREAM(A←0:B);%                                                             08488000 T  0110:1
            BEGIN SI ← B;%                                                          08489000 T  0111:2
            L:    IF SC = " " THEN%                                                 08490000 T  0111:3
                    BEGIN SI ← SI+1; GO TO L END;%                                  08491000 T  0112:1
                DI ← LOC A; DI ← DI+6; DS ← 2 CHR;%                                 08492000 T  0112:3
            END;%                                                                   08493000 T  0113:2
        Q ← P; B ← B.[15:15]-1;%                                                    08494000 T  0113:3
        FOR U ← 0 STEP 1 UNTIL PSEUDOMAXT DO                                        08495000 T  0116:0
            IF TINU[U].[30:12] = Q THEN%                                            08496000 T  0117:0
            IF (G ← LABELTABLE[U])≠0 AND G≠@114 AND G≠@214                          08497000 T  0118:2
                AND NOT SCRTOG OR G=0 AND SCRTOG THEN                               08497100 T  0122:0
                BEGIN IF B = 0 THEN B ← GETSPACE(10,0,0)+2;%                        08498000 T  0124:3
                    DOIT;%                                                          08499000 T  0128:3
                END;%                                                               08500000 T  0130:0
        IF B ≠ 0 THEN%                                                              08501000 T  0132:1
            BEGIN;STREAM(Q,B);%                                                     08502000 T  0133:0
                    BEGIN DS ← 6 LIT " NULL ";%                                     08503000 T  0134:2
                        SI ← LOC Q; SI ← SI+6; DS ← 2 CHR;%                         08504000 T  0135:2
                        DS ← 7 LIT " TABLE←";%                                      08505000 T  0136:1
                    END;%                                                           08506000 T  0137:2
                SPOUT(B INX TUSTA);                                                 08507000 T  0137:3
            END;%                                                                   08508000 T  0139:0
    EXIT: END;%                                                                     08509000 T  0139:0
                                                                                    SIZE= 0140 WORDS
PROCEDURE    TIMEUSED(B, X);                                                        08525000 T  0000:0
```

START OF REL SEGMENT; DISK ADDRESS = 00248

```
        VALUE      B, X;                                                    08526000 T  0000:0
        REAL       B, X;                                                    08527000 T  0000:0
        BEGIN INTEGER  I, H, M, S, CPT, IOT, ET;                            08528000 T  0000:0
  $ SET OMIT = NOT(PACKETS)                                                 08528499 T  0000:0
          REAL SUBROUTINE CONVERTIME;                                       08529000 T  0000:0
          BEGIN S ← T-60×(T ← T DIV 60);                                    08530000 T  0001:0
                M ← T-60×(H ← T DIV 60);                                    08531000 T  0003:3
                STREAM(R←0: A←[H]);                                         08532000 T  0006:2
                BEGIN DI←LOC R; DI←DI+2; SI←A; 3(DS←2 DEC) END;             08533000 T  0007:3
                CONVERTIME ← POLISH                                         08533100 T  0009:2
          END;                                                              08533200 T  0009:2
          T ← JAR[X,3]+PROCTIME[X];                                         08533400 T  0010:0
  $ SET OMIT = NEWLOGGING                                                   08533499 T  0014:0
          IF X=P2MIX OR X=P1MIX THEN                                        08533500 T  0014:0
  $ POP OMIT                                                                08533501 T  0015:3
  $ SET OMIT = NOT(NEWLOGGING)                                              08533599 T  0015:3
          T ← T+CLOCK+P(RTR);                                               08533700 T  0015:3
          T ← T/60;  CPT ← CONVERTIME;                                      08534000 T  0018:0
          T ← JAR[X,4]+IOTIME[X];                                           08535000 T  0020:2
          WHILE T<0 DO T ← T+CLOCK+P(RTR);                                  08536000 T  0022:3
          T ← T/60;  IOT ← CONVERTIME;                                      08537000 T  0026:1
          T ← ((CLOCK+P(RTR))/60)-NFO[(X-1)×NDX+2],[1:17];                  08538000 T  0029:2
          ET ← CONVERTIME;                                                  08538500 T  0034:0
          STREAM(J←JARROW[X],X,T←[CPT],B);                                  08540000 T  0035:2
          BEGIN DS←10 LIT " TIME FOR "; SI←J; SI←SI+1; DS←7 CHR;            08540100 T  0037:1
                SI←SI+1; DS←LIT "/"; DS←7 CHR; DS←LIT"=";                   08540200 T  0039:2
                SI←LOC X; DS←2 DEC; X←DI; DI←DI-2; DS←FILL;                 08540300 T  0041:0
                DI←X; DS←8 LIT " IS: CP="; SI←T; SI←SI+2;                   08541000 T  0042:1
                3(DS←LIT ":"; DS←2 CHR);                                    08542000 T  0044:1
                X←DI; DI←DI-9; DS←8 FILL; DI←X;                             08543000 T  0045:2
                DS←5 LIT ", IO=", SI←SI+2;                                  08544000 T  0046:2
                3(DS←LIT ":"; DS←2 CHR);                                    08544100 T  0047:3
                X←DI; DI←DI-9; DS←8 FILL; DI←X;                             08544200 T  0049:0
                DS←3 LIT " IN"; SI←SI+2;                                    08544300 T  0050:0
                3(DS←LIT ":"; DS←2 CHR); DS←LIT "←";                        08544400 T  0051:0
                DI←DI-10; DS←8 FILL                                         08544500 T  0052:3
          END;                                                              08544600 T  0053:1
          SPOUTER(B INX MEMORY[B-1],UNITNO,1);                              08544700 T  0053:2
                COMMENT MESSAGE PRESENTLY 72 CHARACTERS LONG;               08544800 T  0056:0
    END;                                                                    08545000 T  0056:0
                                                                                   SIZE= 0057 WORDS
REAL PROCEDURE ANVIL(IL,Z); VALUE IL,Z; REAL IL,Z;%                         08546000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00250
          BEGIN REAL B=Z,U=+1;%                                             08547000 T  0000:0
          REAL ZZ;                                                          08547050 T  0000:0
          LABEL EXIT;                                                       08547100 T  0000:0
          ZZ:=Z;                                                            08547200 T  0000:0
          NAMEID(U,ZZ);                                                     08547300 T  0001:1
          NAMEID(U,ZZ);                                                     08547400 T  0002:1
          IF U="/      " THEN                                               08547500 T  0003:1
          BEGIN U:=Z,[15:15]; GO EXIT END ELSE                              08547600 T  0004:0
                IF (U ← UNITIN(TINU,B)) ≤ PSEUDOMAXT THEN                   08548000 T  0008:0
                BEGIN%                                                      08549000 T  0010:3
                IF LABELTABLE[U] = @114 OR LABELTABLE[U] = @214 THEN%       08550000 T  0011:1
                      BEGIN                                                 08551000 T  0013:2
                      STREAM(A:=TINU[U],SAV:=((TWO(U) AND SAVEWORD) ≠ 0 ),  08551100 T  0014:0
                            X:=Z,[15:15]=1);                                08551200 T  0016:2
                         BEGIN                                              08551300 T  0018:0
                         SI:=LOC A; SI:=SI+5; DS:=3CHR;                     08552000 T  0018:0
                         DS:=11LIT" NOT READY←";                            08553000 T  0018:3
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                    SAV(DI:=DI-1; DS:=8LIT"(SAVED)←");                                  08554000 T  0020:2
                    END;                                                                08554100 T  0022:3
                      U ← PSEUDOMAXT + 1;                                               08555000 T  0023:0
                 END ELSE                                                               08556000 T  0024:1
            IF LABELTABLE[U] ≤ 0 THEN%                                                  08557000 T  0024:1
                 BEGIN;STREAM(A←TINU[U],X←Z,[15:15]-1);%                                08558000 T  0025:3
                        BEGIN SI ← LOC A; SI ← SI+5;%                                   08559000 T  0028:2
                             DS ← 3 CHR; DS ← 8 LIT " IN USE←";%                        08560000 T  0029:0
                        END;%                                                           08561000 T  0030:2
                      U ← PSEUDOMAXT + 1;                                               08562000 T  0030:3
                 END;%                                                                  08563000 T  0032:0
            IF U ≤ PSEUDOMAXT THEN                                                      08564000 T  0032:0
                 LABELTABLE[U] ← -(IF IL THEN *P(DUP) ELSE @314);%                      08565000 T  0032:3
            EXIT: END; END;                                                             08566000 T  0036:2
                                                                                                   SIZE= 0037 WORDS
PROCEDURE LOGOUT(A); VALUE A; REAL A;                                                   08568000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00252
BEGIN REAL RCW=+0;                                                                      08568100 T  0000:0
    REAL MSCW=-2;                                                                       08568125 T  0000:0
    INTEGER I=RCW+1;                                                                    08568150 T  0000:0
    REAL J=I+1, L=J+1;                    % L MUST BE LAST DECLARATION.                  08568200 T  0000:0
    LABEL EXIT;                                                                         08568300 T  0000:0
    P(0,0,GETSPACE(335,0,0)+2);           % INITIALIZES L                               08568600 T  0000:0
    IF (J:=DIRECTORYSEARCH("SYSTEM ","LOG    ",4))=0 THEN                               08568700 T  0002:1
    BEGIN;                                                                              08568800 T  0004:2
        STREAM(L);                                                                      08568900 T  0005:0
        BEGIN DS:=10 LIT "-NULL LOG←" END;                                              08569000 T  0005:3
        GO TO EXIT;                                                                     08569100 T  0007:2
    END;                                                                                08569200 T  0010:0
    IF LOGFREE GTR 0 THEN SLEEP([LOGFREE],-0);                                          08569300 T  0010:0
    LOGFREE:=ABS(LOGFREE);                                                              08569400 T  0013:0
 $ SET OMIT = NOT(SHAREDISK)                                                            08569499 T  0014:0
    MOVE(30,J INX 0,L);                                                                 08569600 T  0014:0
    M[L+10] ← GETUSERDISK(-(M[L+8]←M[L+8]+10)); % GET XTRA TEN                          08569700 T  0016:0
    DO BEGIN                                    % TO MAKE COPY                           08569800 T  0022:2
        DISKWAIT (-L-31,300,M[J+10]+I);         % SIMPLER                                 08569900 T  0022:2
        DISKWAIT ( L+31,300,M[L+10]+I);                                                 08569910 T  0026:1
    END UNTIL (I←I+10)≥M[J+8];                                                          08569920 T  0029:3
    LOGFREE ← M[J+10];                                                                  08570000 T  0033:1
    J:=J INX 0;                                                                         08570300 T  0035:1
    M[J]:=M[J+2]:=M[J+3]:=0;                                                            08570400 T  0036:2
    M[J+1]:=M[J+8]×6;                                                                   08570500 T  0041:2
    M[J+4]:="DISKLOG";                                                                  08570600 T  0045:1
    M[J+5]:=4;                                                                          08570700 T  0047:1
    DISKWAIT(J,30,LOGFREE);                                                             08570800 T  0049:1
 $ SET OMIT = NOT(SHAREDISK)                                                            08570849 T  0050:2
    LOGFREE←NABS(LOGFREE);                                                              08570870 T  0050:2
    P(DIRECTORYSEARCH(-"SYSTEM ","LOG    ",14),DEL);                                    08570880 T  0051:2
    IF HOLDFREE=0 THEN SLEEP([TOGLE],HOLDMASK);                                         08571000 T  0053:1
    LOCKTOG(HOLDMASK);                                                                  08571100 T  0056:2
    DISKWAIT(-J,-30,DIRECTORYTOP);                                                      08571200 T  0060:0
    I:=(M[J+20].[8:10]+1) MOD 1000;                                                     08571300 T  0061:3
    M[J+20]:=(*P(DUP))&I[8:38:10];                                                      08571400 T  0065:1
    DISKWAIT(J,-30,DIRECTORYTOP);                                                       08571500 T  0068:2
    UNLOCKTOG(HOLDMASK);                                                                08571600 T  0070:0
    STREAM(J←[ACTDATE],D←[I]);                                                          08571800 T  0073:2
    BEGIN SI:=D;DS:=8 DEC;DI:=DI-7;SI:=J;                                               08571900 T  0074:2
        SI←SI+2; DS←4 CHR;                                                              08572000 T  0075:2
    END;                                                                                08572300 T  0076:0
    FORGETSPACE(J);                                                                     08572400 T  0076:1
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        M[L+4]:=(*P(DUP))&0[1:43:5]&1[11:47:1]&0[12:44:4];                08572500 T  0077:0
        M[L+1]←XCLOCK+P(RTR);                                             08572510 T  0082:1
        STREAM(DATE,B←0,B←L+1);                                           08572520 T  0084:3
        BEGIN SI← LOC DATE;DI←LOC A;DS←8 OCT;SI←LOC A;                    08572530 T  0086:2
              SI←SI+5;DI←B;DI←DI+1;DS←3 CHR; END;                         08572540 T  0087:2
        ENTERUSERFILE(-I,"SYSLOG ",L-1);                                  08572600 T  0088:3
        STREAM(I,L);                                                      08572700 T  0091:0
        BEGIN DS:=21 LIT"**** NEW LOG FILE IS ";SI:=LOC I;SI:=SI+1;       08572800 T  0092:0
            DS:=7 CHR;DS:=8 LIT"/SYSLOG←" ;                               08572900 T  0095:2
        END;                                                              08573000 T  0097:0
    EXIT:                                                                 08573100 T  0097:1
        SPOUT(L);                                                         08573200 T  0097:1
        IF A THEN KILL([MSCW]);                                           08573300 T  0098:0
    END;                                                                  08573400 T  0099:2
                                                                                  SIZE= 0104 WORDS
  PROCEDURE SAVETHEUNIT(B); VALUE B; REAL B;%                             08575000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00256
          BEGIN REAL A=B,T,U,I,M1;                                        08576000 T  0000:0
                LABEL AGAIN,EXIT;                                         08576100 T  0000:0
                M1:=M[B,[15:15]-2];                                       08577000 T  0000:0
                STREAM(B:);                                               08577100 T  0003:2
                BEGIN SI:=B;                                              08577200 T  0004:2
                  L: IF SC=" " THEN BEGIN SI:=SI+1; GO TO L END;          08577300 T  0004:3
                     B:=SI;                                               08577400 T  0005:3
                END;                                                      08577500 T  0006:0
                B:=P;                                                     08577600 T  0006:1
    AGAIN:      T:=SPACE(10);                                             08577700 T  0006:3
                IF (U:=UNITIN(TINU,A)) GTR 31 THEN                        08578000 T  0009:0
                STREAM(A,T);                                              08578100 T  0011:1
                BEGIN DS:=10 LIT"INV KBD SV";                             08578200 T  0012:3
                     SI:=A; DS:=3 CHR;                                    08578300 T  0014:1
                     DS:=LIT"←";                                          08578400 T  0014:3
                END ELSE                                                  08578500 T  0015:1
                     BEGIN I ← TWO(U);%                                   08579000 T  0015:2
                          SLEEP([TOGLE],STATUSMASK);                      08580000 T  0017:1
                          IF LABELTABLE[U] ≥ 0 THEN%                      08581000 T  0018:3
                               BEGIN LABELTABLE[U] ← @114;%               08582000 T  0019:3
                                     MULTITABLE[U]←RDCTABLE[U]←0;         08582100 T  0021:2
                                     RRRMECH ← RRRMECH OR I;%             08583000 T  0023:3
                                     READY ← READY OR I;%                 08584000 T  0025:0
                                     SAVEWORD := SAVEWORD OR I;           08584100 T  0026:1
                                     I ← "      ";%                       08585000 T  0027:2
                               END%                                       08586000 T  0028:1
                          ELSE BEGIN SAVEWORD ← SAVEWORD OR I;%           08587000 T  0028:1
                                     I ← " TO BE";%                       08588000 T  0031:1
                               END;%                                      08589000 T  0032:0
                          STREAM(A←TINU[U],I,T);%                         08590000 T  0032:0
                               BEGIN DS ← LIT " ";%                       08591000 T  0033:2
                                     SI ← LOC A; SI ← SI+5; DS ← 3 CHR;%  08592000 T  0034:0
                                     SI ← SI+2; DS ← 6 CHR;%              08593000 T  0034:3
                                     DS ← 7 LIT " SAVED←";%               08594000 T  0035:1
                               END;%                                      08595000 T  0036:2
                     END;%                                                08596000 T  0036:3
                SPOUT(T INX M1);                                          08597000 T  0036:3
                STREAM(OK:=0,A:);                                         08597050 T  0038:0
                BEGIN SI:=A;                                              08597100 T  0039:1
                  3(IF SC=" " THEN JUMP OUT;                              08597150 T  0039:2
                   IF SC="," THEN JUMP OUT;                               08597200 T  0040:3
                   IF SC="←" THEN JUMP OUT TO L3;                         08597250 T  0041:3
                   SI:=SI+1);                                             08597300 T  0042:3
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                L1:  IF SC=" " THEN                                          08597350 T  0043:1
                L2:  BEGIN SI:=SI+1; GO TO L1 END;                           08597400 T  0043:3
                     IF SC="," THEN GO TO L2;                                08597450 T  0044:1
                     A:=SI;                                                  08597500 T  0045:0
                     IF SC≠"+" THEN TALLY:=1;                                08597550 T  0045:1
                L3:  OK:=TALLY;                                              08597600 T  0046:0
                     END;                                                    08597650 T  0046:1
                     A:=P;                                                   08597700 T  0046:2
                     IF P THEN GO AGAIN;                                     08597750 T  0047:0
            END;%                                                            08598000 T  0047:3
                                                                                     SIZE= 0049 WORDS
BOOLEAN PROCEDURE WHYSLEEP(MASK); VALUE MASK; REAL MASK;                     08599000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00258
  BEGIN                                                                      08600000 T  0000:0
  REAL A, B;                                                                 08601000 T  0000:0
  IF REPLY[P1MIX]=VWY THEN                                                   08602000 T  0000:0
    BEGIN                                                                    08603000 T  0001:3
    B:=SPACE(KEYMSGSZ);                                                      08604000 T  0002:1
    DISKWAIT(-B,KEYMSGSZ,MESSAGETABLE[2],[22:26]);                           08604100 T  0005:1
    STREAM(B,MASK,T:=0,O:=0,D:=0,A:=A:=SPACE(4));                            08605000 T  0008:1
      BEGIN                                                                  08606000 T  0012:1
      SI:=LOC MASK;                                                          08607000 T  0012:1
      8(IF SC="0" THEN GO TO NEXT;                                           08608000 T  0012:2
        IF SC=VWY THEN                                                       08609000 T  0013:2
          BEGIN                                                              08610000 T  0014:0
          DI:=A; DS:=3LIT" DS"; A:=DI; GO TO NEXT;                           08611000 T  0014:0
          END;                                                               08612000 T  0015:2
        T:=SI; DI:=LOC O; DI:=DI+7; DS:=CHR;                                 08613000 T  0015:2
        SI:=LOC O; DI:=LOC D; DI:=DI+6; DS:=2DEC;                            08614000 T  0016:2
        SI:=B;                                                               08615000 T  0017:2
      R: SI:=SI+6; DI:=DI-2;                                                 08616000 T  0017:3
        IF SC="*" THEN % END OF FIRST PART OF TABLE                          08617000 T  0018:1
          BEGIN                                                              08617500 T  0018:3
          SI:=T; GO TO NEXT;                                                 08618000 T  0018:3
          END;                                                               08618500 T  0019:1
        IF 2SC NEQ DC THEN GO TO R;                                          08619000 T  0019:1
        SI:=SI-6; DI:=A; DS:=LIT" "; DS:=2CHR; A:=DI; SI:=T;                 08619500 T  0020:0
    NEXT: SI:=SI+1);                                                         08620000 T  0021:3
      DI:=A; DS:=LIT"←";                                                     08620500 T  0022:1
      END STREAM STATEMENT;                                                  08621000 T  0023:0
    SPOUT(A);                                                                08621500 T  0023:1
    FORGETSPACE(B);                                                          08621600 T  0024:0
    END % IF "WY"                                                            08622000 T  0024:3
  ELSE WHYSLEEP:=TRUE;                                                       08622500 T  0024:3
  END PROCEDURE WHYSLEEP;                                                    08623000 T  0026:0
                                                                                     SIZE= 0027 WORDS
PROCEDURE CHANGEOPTION(BUFF,RS);%                                            08624000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00259
      VALUE BUFF,RS;REAL BUFF,RS;%                                           08625000 T  0000:0
BEGIN REAL B,T,OP,BUS,MASK,OPTER;                                            08626000 T  0000:0
      SLEEP([TOGLE],HOLDMASK);                                               08627000 T  0000:0
      LOCKTOG(HOLDMASK);                                                     08628000 T  0003:0
          BUS ← BUFF,[15:15]-1; B ← GETSPACE(30,0,0)+2;%                     08629000 T  0006:2
      DISKIO(T,1-B,-30,DIRECTORYTOP-SYSNO);                                  08630000 T  0010:2
      OPTER ← SPACE(OPTIONSZ);                                               08631000 T  0013:1
      DISKWAIT(-OPTER,OPTIONSZ,MESSAGETABLE[0],[22:26]);                     08631100 T  0016:1
  STREAM(BUFF,T←0,OPTER,R←[OP]);%                                            08632000 T  0019:1
      BEGIN%                                                                 08633000 T  0020:3
          SI ← BUFF; 63(IF SC=" " THEN SI ← SI+1  ELSE JUMP OUT%             08634000 T  0020:3
                TO L); L: IF SC GEQ "0" THEN GO L4;                          08635000 T  0022:1
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                63(IF SC≠" " THEN SI←SI+1);  16(IF SC=" " THEN SI←SI+1);%        08636000 T  0023:3
                DI←LOC T;%                                                       08637000 T  0026:1
                8(IF SC=" " THEN JUMP OUT TO L1 ELSE%                            08638000 T  0026:2
                  IF SC="←" THEN JUMP OUT TO L1 ELSE%                            08639000 T  0028:0
                  IF SC≥"0" THEN JUMP OUT TO L1 ELSE%                            08640000 T  0029:1
                  DS←1 CHR);L1:%                                                 08641000 T  0030:2
                TALLY←0;BUFF←SI;SI←OPTER;%                                       08642000 T  0031:0
                63(DI←LOC T; IF 8 SC≠DC THEN                                     08643000 T  0031:3
                     BEGIN IF SC="←" THEN%                                       08644000 T  0032:3
                                   BEGIN TALLY←48;JUMP OUT TO L3 END%            08645000 T  0033:1
                                   ELSE TALLY←TALLY+1%                           08646000 T  0034:0
                     END ELSE JUMP OUT TO L2);TALLY←48;GO TO L3;L2:%             08647000 T  0034:2
                IF SC="←" THEN%                                                  08648000 T  0036:0
                     BEGIN%                                                      08649000 T  0036:2
                          SI←BUFF;63(IF SC<"0" THEN SI←SI+1 ELSE JUMP OUT        08650000 T  0036:2
                                   TO L4);L4:DI←LOC T;SI←SI+1;%                  08651000 T  0038:0
                          IF SC<"0" THEN BEGIN SI←SI-1; DS←1 OCT END ELSE        08652000 T  0039:1
                                   BEGIN SI←SI-1;DS←2 OCT END;%                  08653000 T  0040:2
                          TALLY←47;T(TALLY←TALLY+63);%                           08654000 T  0041:0
                END;%                                                            08655000 T  0042:1
                L3:T←TALLY;SI←LOC T;DI←R;DS←WDS;%                                08656000 T  0042:1
            END;%                                                                08657000 T  0043:1
                IF OP<47 THEN                                                    08658000 T  0043:2
                     BEGIN;STREAM(A ← IF RS THEN " RESET" ELSE "   SET",%        08659000 T  0044:1
                          O←OPTER INX OP,OP ← 47-OP,BUS);%                       08660000 T  0046:3
                          BEGIN DS ← LIT " "; SI ← LOC OP; DS ← 2 DEC;%          08661000 T  0048:3
                               DS ← LIT " "; SI ← O;%                            08662000 T  0049:3
                               8(IF SC=0 THEN JUMP OUT TO L; DS←CHR);%           08663000 T  0050:2
                     L:        SI ← LOC A; SI ← SI+2; DS ← 6 CHR;%               08664000 T  0052:1
                               DS ← LIT"←";%                                     08665000 T  0053:0
                          END;%                                                  08666000 T  0053:2
                          MASK←TWO(OP);%                                         08667000 T  0053:3
                          M[BUS-1].[9:9]:=0;                                     08667100 T  0055:0
                     END;%                                                       08668000 T  0058:1
                SPOUT(BUS INX M[BUS-1]);                                         08669000 T  0058:1
            SLEEP([T],IOMASK);                                                   08670000 T  0060:3
            M[B]←OPTION←IF RS THEN OPTION AND NOT MASK ELSE OPTION OR MASK;      08671000 T  0062:1
            DISKWAIT(B,-30,DIRECTORYTOP-SYSNO);                                  08673000 T  0065:2
            FORGETSPACE(OPTER);%                                                 08674000 T  0069:0
            FORGETSPACE(B);%                                                     08676000 T  0069:3
            UNLOCKTOG(HOLDMASK);                                                 08677000 T  0070:2
        END;%                                                                    08678000 T  0074:0
                                                                                       SIZE= 0077 WORDS
        PROCEDURE TYPOP(KTR,PO); VALUE KTR,PO; REAL KTR,PO;                      08679000 T  0000:0
                                                                       START OF REL SEGMENT; DISK ADDRESS = 00262
        BEGIN REAL VASE,TUSTA,N,X,OPTER;                                         08680000 T  0000:0
            LABEL INCR;                                                          08680500 T  0000:0
        REAL SUBROUTINE SETT;                                                    08681000 T  0000:0
        BEGIN                                                                    08681100 T  0001:0
         STREAM(OPT:=[OPTION]:OPTER,N,NBS:=47-N,VASE);                           08681200 T  0001:0
            BEGIN                                                                08681300 T  0003:2
                DI:=DI+4;                                                        08682000 T  0003:2
                SI←OPTER;N(SI←SI+8);IF SC="←" THEN GO TO EXIT;%                  08683000 T  0003:3
                8(IF SC<"0" THEN DS←CHR ELSE DS←1 LIT" ");DS←2 LIT" ";%          08684000 T  0005:3
                SI:=OPT; SKIP NBS SB;                                            08684500 T  0008:1
                IF SB THEN TALLY:=1 ELSE                                         08685000 T  0009:0
                BEGIN DS:=3 LIT"NOT"; TALLY:=2; END;                             08685500 T  0010:0
                DS←5 LIT" SET←";%                                                08686000 T  0011:0
                DI:=VASE; SI:=LOC NBS; DS:=LIT" "; DS:=2 DEC; DS:=LIT" ";        08686500 T  0012:0
        EXIT:   OPT:=TALLY;                                                      08687000 T  0013:3
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                END;                                                    08688000 T  0014:0
                 SETT←P;                                                08689000 T  0014:1
            END SETT;                                                   08689100 T  0014:2
                SLEEP([TOGLE],HOLDMASK);                                08689200 T  0014:3
                LOCKTOG(HOLDMASK);                                      08689300 T  0017:3
                TUSTA:=M[(VASE:=KTR.[15:15]-1)-1];                      08689900 T  0021:1
                OPTER ← SPACE(OPTIONSZ)&OPTIONSZ[8:38:10];              08690000 T  0024:3
                DISKWAIT(-OPTER,OPTIONSZ,MESSAGETABLE[0].[22:26]);      08690020 T  0029:2
                IF PO THEN                                              08690080 T  0032:2
              BEGIN                                                     08690090 T  0032:3
                STREAM(BUFF:=KTR, T:=0, OPTER, D:=[N]);                 08690100 T  0033:1
                BEGIN SI←BUFF;63(IF SC=" " THEN SI←SI+1 ELSE JUMP OUT TO L);L:  08690110 T  0034:3
                IF SC GEQ "0" THEN GO TO L4;                            08690120 T  0037:0
                DI←LOC T;                                               08690130 T  0037:3
                8(IF SC=" " THEN JUMP OUT TO L1 ELSE                    08690140 T  0038:0
                  IF SC="←" THEN JUMP OUT TO L1 ELSE                    08690150 T  0039:2
                  IF SC≥"0" THEN JUMP OUT TO L1 ELSE                    08690160 T  0040:3
                   DS←1 CHR); L1:                                       08690170 T  0042:0
                TALLY←0; BUFF←SI; SI←OPTER;                             08690180 T  0042:2
                63(DI←LOC T;IF 8 SC≠DC THEN                             08690190 T  0043:1
                          BEGIN IF SC="←" THEN                          08690200 T  0044:1
                                BEGIN TALLY←48; JUMP OUT TO L3 END      08690210 T  0044:3
                                ELSE TALLY←TALLY+1                      08690220 T  0045:2
                          END ELSE JUMP OUT TO L2); TALLY←48;GO TO L3;L2:  08690230 T  0045:3
                  IF SC="←" THEN BEGIN SI←BUFF;63(IF SC<"0" THEN SI←SI+1  08690240 T  0047:2
                   ELSE JUMP OUT TO L4); L4: DI←LOC T; SI←SI+1;         08690250 T  0049:0
                    IF SC<"0" THEN BEGIN SI←SI-1; DS←1 OCT END ELSE     08690260 T  0050:3
                                   BEGIN SI←SI-1; DS←2 OCT END;         08690270 T  0052:0
                    TALLY←47; T(TALLY←TALLY+63);                        08690280 T  0052:2
                                END;                                    08690290 T  0053:3
                L3: T←TALLY; SI←LOC T; DI←D; DS← WDS;                   08690300 T  0053:3
                END;                                                    08690310 T  0054:3
                IF N LSS OPTER.[8:10] THEN P(SETT,DEL);                 08690400 T  0055:0
                SPOUT(VASE INX TUSTA);                                  08690600 T  0058:1
            END ELSE                                                    08690800 T  0059:2
            BEGIN                                                       08691000 T  0059:2
                STREAM(KTR:);                                           08691200 T  0060:0
                     BEGIN SI:=KTR;                                     08691400 T  0061:0
                           IF SC="S" THEN TALLY:=1 ELSE                 08691600 T  0061:1
                           IF SC="R" THEN TALLY:=2 ELSE TALLY:=3;       08691800 T  0062:1
                           KTR:=TALLY;                                  08692000 T  0063:2
                     END;                                               08692200 T  0063:3
                X:=P; N:=-1;                                            08692400 T  0064:0
      INCR:     N:=N+1;                                                 08692600 T  0065:2
                IF ((KTR:=SETT) AND X) ≠ 0 THEN                         08692800 T  0066:3
                BEGIN SPOUT(VASE INX TUSTA);                            08693000 T  0069:2
                     VASE:=SPACE(3);                                    08693200 T  0071:1
                     GO TO INCR;                                        08693400 T  0073:2
                END;                                                    08693600 T  0074:0
                IF KTR=0 THEN                                           08693800 T  0074:0
                IF X≠3 THEN                                             08694000 T  0074:3
                BEGIN STREAM(X:=X-1, VASE);                             08694200 T  0076:0
                           BEGIN DS:=12 LIT" ALL OTHERS ";              08694400 T  0078:0
                                 X(DS:=4 LIT"NOT ");                    08694600 T  0079:3
                                 DS:=4 LIT"SET←";                       08694800 T  0081:1
                           END;                                         08695000 T  0082:0
                     SPOUT(VASE INX TUSTA);                             08695200 T  0082:1
                END ELSE FORGETSPACE(VASE)                              08695400 T  0083:2
                ELSE GO TO INCR;                                        08695600 T  0084:1
            END;                                                        08695800 T  0084:3
```

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            FORGETSPACE(OPTER);%                                                08696000 T  0084:3
            UNLOCKTUG(HOLDMASK);                                                08696100 T  0085:2
                END;%                                                           08697000 T  0089:0
                                                                                      SIZE= 0090 WORDS
 $ SET OMIT = NOT(DISKLOG)                                                      08697099 T  0000:0
% THE FOLLOWING THREE DEFINES MUST EACH BE CHANGED IF THE                       08699000 T  0000:0
% DISK ROW SIZE OF PBD AND PUD FILES IS TO BE CHANGED.                          08699050 T  0000:0
  DEFINE PBDROWSZ    =                                                          08699100 T  0000:0
                    900#                                                        08699150 T  0000:0
%         PBDROWSZ IS THE DISK ROW SIZE, IN SEGMENTS, OF PBD AND                08699200 T  0000:0
%         PUD FILES. PBDROWSZ MUST BE A MULTIPLE OF THREE.                      08699250 T  0000:0
         ,PBDRECS     =                                                         08699300 T  0000:0
                    300#                                                        08699350 T  0000:0
%         PBDRECS=PBDROWSZ/3 : NO. OF LOGICAL RECORDS PER ROW.                  08699400 T  0000:0
         ,PBDTOTRECS =                                                          08699450 T  0000:0
                    6000#                                                       08699500 T  0000:0
};%       PBDTOTRECS=PBDRECSx20 : NO. OF TOTAL RECORDS PER BACK-UP FILE.        08699550 T  0000:0
 PROCEDURE PBIO(ALPHA,POINTER); VALUE ALPHA; REAL ALPHA,POINTER;      %P       08700000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00265
%                                                                               08700900 T  0000:0
%   THIS PROCEDURE HANDLES IO FOR THE CREATION OF BACK-UP FILES. FOR            08700910 T  0000:0
%   DISK, IT OBTAINS NEW ROWS AND NEW FILES AS NECESSARY. IF IT RUNS            08700920 T  0000:0
%   OUT OF FILES, HEADER[5].[4:1] IS SET AND THE JOB TERMINATED, LEAVING        08700930 T  0000:0
%   ONE BLOCK FOR THE LABEL AND DS MESSAGE.                                     08700940 T  0000:0
%                                                                               08700950 T  0000:0
% ALPHA IS ADDRESS OF TOP I/O DESCRIPTOR. <0 MEANS READ              %P        08701000 T  0000:0
% POINTER IS FIB[14]                                                 %P        08702000 T  0000:0
    BEGIN NAME HEADER;                                               %P        08703000 T  0000:0
    REAL T=-2,IOD,H,S;                                                          08704000 T  0000:0
    INTEGER I=IOD;                                                              08704100 T  0000:0
    LABEL OK;                                                                   08704500 T  0000:0
        POINTER.[FF]←POINTER INX  72;                                  %P       08705000 T  0000:0
        IF (HEADER←POINTER.[3:15])≠0 THEN     %%%%PB ON DISK   %%%%%   %P       08706000 T  0003:1
        BEGIN                                                                   08707000 T  0005:0
            HEADER := [M[(*HEADER)]];                                           08707500 T  0005:2
            IF HEADER[7] GEQ PBDTOTRECS-2 THEN % CHECK FOR NEW FILE             08708000 T  0007:0
            BEGIN                                                               08708200 T  0009:0
 $ SET OMIT = PACKETS                                                           08708400 T  0009:2
              IF HEADER[6].[30:18]="999" THEN                                   08708600 T  0009:2
 $ SET OMIT = NOT PACKETS                                                       08708800 T  0011:2
                IF HEADER[7] GEQ PBDTOTRECS THEN P(XIT) ELSE                    08709400 T  0011:2
                IF HEADER[5].[4:1] THEN GO TO OK ELSE                           08709500 T  0014:1
                BEGIN STREAM(F:=PRT[P1MIX,3] INX M[M[ALPHA-3] INX 4],           08709600 T  0018:2
                        [13:11], H:=H:=NABS(SPACE(12)));                        08709800 T  0022:2
                    BEGIN SI:=F; SI:=SI+1;                                      08710000 T  0026:3
                        DS:=24 LIT"TOO MANY BACKUP RECS ON ";                   08710200 T  0027:1
                        DS:=7 CHR; DS:=LIT"/"; SI:=SI+1; DS:=7 CHR;             08710400 T  0030:2
                        DS:=2 LIT":←";                                          08710600 T  0031:3
                    END;                                                        08710800 T  0032:1
                    HEADER[5].[4:1]:=1;                                         08711000 T  0032:2
                    GO TO OK;                                                   08711200 T  0035:1
                END;                                                            08711400 T  0035:3
              IF HEADER[7] GEQ PBDTOTRECS THEN    % GET A NEW FILE              08711600 T  0035:3
              BEGIN                                                             08711800 T  0037:1
                IF I:=HEADER[5].[3:1] THEN HEADER[5].[3:1]:=0;                  08712000 T  0037:3
                H←SPACE(30); S←M[HEADER INX NOT 0];                             08712100 T  0043:0
                DISKWAIT(-H,30,S);                                              08712110 T  0047:2
                M[H+7]←HEADER[7];                                               08712120 T  0049:0
                M[H+5].[2:1]←0;                                                 08712130 T  0051:3
                DISKWAIT(H,30,S);                                               08712140 T  0055:0
```

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                    M[H+7]←M[H+9]←0;                                        08712150 T  0056:1
                    MOVE(20,H+9,H+10);                                      08712160 T  0060:0
                    M[H+5]←(*P(DUP)) OR M;                                  08712170 T  0062:2
                    HEADER[5].[3:1]:=I; %SET CP BK UP TOG                   08712200 T  0065:1
                    HEADER[7] := 0;                                         08712500 T  0068:0
                    HEADER[3] := XCLOCK + P(RTR);                           08713000 T  0069:2
                    STREAM(ONE:=1, H:=[HEADER[6]]);                         08713250 T  0071:2
                    BEGIN SI:=LOC ONE; DS:=8 ADD;                           08713500 T  0073:0
                         DI:=DI+24; 20(DS:=8 LIT"0");                       08713750 T  0073:2
                    END;                                                    08714000 T  0075:2
                    M[H+7]←PBDROWSZ DIV 3;                                  08714110 T  0075:3
                    HEADER[9]←M[H+9]←1;                                     08714120 T  0078:1
                    HEADER[10]←M[H+10]←GETUSERDISK(-(PBDROWSZ+1));          08714130 T  0081:2
                    M[HEADER INX NOT 0] := EUF(-(IF I THEN "PUD     "       08714140 T  0086:1
                      ELSE "PBD     "),HEADER[6],H-1);                      08714150 T  0089:0
                    FORGETSPACE(H);                                         08714170 T  0092:2
          $ SET OMIT = PACKETS                                              08714199 T  0093:1
                    IF PBDREL OR OPNMESS THEN                               08714200 T  0093:1
          $ POP OMIT                                                        08714201 T  0095:0
                    FILEMESSAGE((IF I THEN "PUD     " ELSE                  08714300 T  0095:0
                                 "PBD     ")&HEADER[6][24:6:24],             08714310 T  0095:0
                                 "OUT     " &HEADER[6][30:30:18],            08714320 T  0095:0
                                 0,"        ",0,0,0,                         08714330 T  0095:0
                                 (PBDREL OR OPNMESS));                      08714340 T  0095:0
                  END;                                                      08714400 T  0102:3
                END ELSE                                                    08714500 T  0102:3
                    IF HEADER[7] MOD PBDRECS=0 THEN %GET NEW ROW            08715000 T  0102:3
                    BEGIN H:=SPACE(30); S:=M[HEADER INX NOT 0];             08715100 T  0111:0
                    DISKWAIT(-H,30,S);                                      08715200 T  0116:0
                    HEADER[9+HEADER[9]]←*P(DUP)+1]←                         08716000 T  0117:2
                                          GETUSERDISK(-(PBDROWSZ+1));       08716010 T  0120:3
                    M[H+9+HEADER[9]]←HEADER[9+HEADER[9]];                   08716100 T  0123:0
                    M[H+9]←HEADER[9];                                       08716110 T  0128:1
                    M[H+7]←HEADER[7] + PBDROWSZ DIV 3;                      08716200 T  0131:0
                    DISKWAIT(H,30,S);                                       08716300 T  0134:3
                    FORGETSPACE(H);                                         08716500 T  0136:0
                    END;                                                    08716600 T  0136:3
          OK:                                                               08716800 T  0136:3
                    STREAM(A←I←HEADER[HEADER[9]+9]+(HEADER[7] MOD           08717000 T  0136:3
                          PBDRECS)×3,D←POINTER.[CF]-1);                     08718000 T  0140:1
                       BEGIN SI←LOC A; DS←8 DEC END;                  %P    08720000 T  0143:2
                       HEADER[7]←(*P(DUP))+1;                         %P    08721000 T  0144:1
              IOD←@1413301004777777;                                        08722000 T  0146:2
                    END ELSE  %% ON TAPE %%                         %P      08723000 T  0147:1
              IOD←@2132050000000000&M[POINTER INX NOT 1][3:14:4];   %P      08724000 T  0147:1
              IOREQUEST(M[ALPHA],POINTER INX IOD&ALPHA[24:1:1],     %P      08726000 T  0152:1
                          M[POINTER INX NOT 1]);                    %P      08727000 T  0155:1
              M[T]←IOD INX M[T]&0[26:26:7]&0[19:19:1] AND NOT M;    %P      08728000 T  0157:1
              IF H LSS 0 THEN                                               08728500 T  0162:3
              BEGIN TERMINATE(P1MIX);                                       08728600 T  0163:2
                  TERMINALMESSAGE(H);                                       08728700 T  0164:3
              END;                                                          08728800 T  0165:2
          END PBIO;                                                 %P      08729000 T  0165:2
                                                                                    SIZE= 0167 WORDS
      PROCEDURE TIMERELAXER(KTR,TYPE,MIX);%                                 08730000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00271
      VALUE                 KTR,TYPE,MIX;%                                08731000 T  0000:0
      REAL                  KTR,TYPE,MIX;%                                08732000 T  0000:0
        BEGIN INTEGER BUFF,PRT,IOT,T,P1,I1;%                                08733000 T  0000:0
              LABEL SPIT;%                                                  08734000 T  0000:0
```

```
DEFINE VCT = 29#, % CHANGE TIME LIMITS                                  08734010 T  0000:0
       VXT = 30#, % EXTEND TIME LIMITS                                  08734020 T  0000:0
       VTL = 31#; % PRINT TIME LIMITS                                   08734030 T  0000:0
      COMMENT: THIS ROUTINE SHOULD BE BLAMED ON WWF4;%                  08734100 T  0000:0
$ SET OMIT = NOT(PACKETS)                                               08734499 T  0000:0
      BUFF ← KTR.[15:15]-1;%                                            08735000 T  0000:0
      IF TYPE NEQ VTL THEN BEGIN:                                       08736000 T  0003:1
          STREAM(IOT←0,PRT←0,CODE←0: KTR);%                             08737000 T  0004:2
          BEGIN SI←KTR;  IF SC=" " THEN BEGIN L1:  SI←SI+1;%            08738000 T  0006:1
                IF SC=" " THEN GO L1 END;  IF SC="*" THEN GO L5;%       08739000 T  0007:1
                IF SC="," THEN GO L2;  IF SC<"0" THEN GO EXIT;%         08740000 T  0008:3
               KTR←SI;  L3:  TALLY←TALLY+1;  SI←SI+1;                   08741000 T  0010:1
                IF SC≥"0" THEN GO L3;  SI←KTR;  CODE←TALLY;             08742000 T  0011:0
                DI←LOC PRT;  DS←CODE OCT;  TALLY←0;%                    08743000 T  0012:1
          L5:   IF SC=" " THEN BEGIN L4:  SI←SI+1;%                     08744000 T  0013:1
                IF SC=" " THEN GO L4 END;  IF SC="," THEN GO L2;%       08745000 T  0014:0
                IF SC="←" THEN TALLY←1;  GO EXIT;%                      08746000 T  0015:2
          L2:   SI←SI+1;  IF SC=" " THEN BEGIN L6:  SI←SI+1;%           08747000 T  0016:2
                IF SC=" " THEN GO L6 END ; KTR←SI;%                     08748000 T  0017:2
                IF SC="*" THEN BEGIN TALLY←1;  GO EXIT END;%            08749000 T  0018:2
                IF SC<"0" THEN GO EXIT;  L7:  TALLY←TALLY+1;%           08750000 T  0019:2
                SI←SI+1;  IF SC≥"0" THEN GO L7;  DI← LOC IOT;%          08751000 T  0020:2
                SI←KTR;  CODE←TALLY;  DS←CODE OCT;  TALLY←1;%           08752000 T  0021:3
          EXIT:  CODE←TALLY;%                                           08753000 T  0023:0
          END STREAM;%                                                  08754000 T  0023:1
          IF NOT P THEN GO SPIT;%                                       08755000 T  0023:2
          PRT ← P×3600;  IOT ← P×3600;%                                 08756000 T  0024:0
          IF TYPE=VXT THEN BEGIN                                        08757000 T  0026:0
                IF PRT≠0 THEN BEGIN%                                    08758000 T  0027:1
                     PROCTIME[MIX] ← *P(DUP)-PRT;%                      08759000 T  0028:2
                     JAR[MIX,3] ← *P(DUP)+PRT;%                         08760000 T  0030:2
                END;%                                                   08761000 T  0033:0
                IF IOT≠0 THEN BEGIN%                                    08762000 T  0033:0
                     IOTIME[MIX] ← *P(DUP)-IOT;%                        08763000 T  0034:1
                     JAR[MIX,4] ← *P(DUP)+IOT;%                         08764000 T  0036:1
          END END ELSE BEGIN%                                           08765000 T  0038:3
                IF PRT≠0 THEN BEGIN%                                    08766000 T  0041:0
                     PROCTIME[MIX] ← *P(DUP)+JAR[MIX,3]-PRT;%           08767000 T  0042:1
                     JAR[MIX,3] ← PRT;%                                 08768000 T  0045:2
                END;%                                                   08769000 T  0047:1
                IF IOT≠0 THEN BEGIN%                                    08770000 T  0047:1
                     IOTIME[MIX] ← *P(DUP)+JAR[MIX,4]-IOT;              08771000 T  0048:2
                     JAR[MIX,4] ← IOT;%                                 08772000 T  0051:3
          END END;                                                      08773000 T  0053:2
          STREAM(TEST←0: X←JARROW[MIX],MIX,Z←PRT≠0,I←IOT≠0,%            08774000 T  0053:2
                     K:=TYPE=VXT,T:=T:=GETSPACE(10,0,0)+2);             08775000 T  0056:2
          BEGIN DS←LIT " ";  Z(DS←4 LIT "PRT ";  TALLY←1;%              08776000 T  0059:3
                I(DS←4 LIT"AND "));  I(DS←4 LIT "IOT ";  TALLY←1);%     08777000 T  0061:3
                DS←8 LIT "ESTIMATE"; Z(I(DS←LIT "S"));%                 08778000 T  0065:1
                DS←8LIT" CHANGED";  K(DI←DI-7; DS←8LIT"EXTENDED");%     08779000 T  0068:2
                DS←5LIT" FOR";  SI←X;  SI←SI+1;  DS←7CHR;  SI←SI+1;%    08780000 T  0072:0
                DS←LIT"/";  DS←7CHR;  DS←LIT"=";  SI←LOC Z;%            08781000 T  0074:0
                SI←SI-8; DS←2DEC; DS←LIT"←"; TEST←TALLY;                08782000 T  0075:2
                DI←DI-3; DS←FILL;                                       08782500 T  0076:3
          END STREAM;%                                                  08783000 T  0077:1
          IF P THEN SPOUTER(T INX M[BUFF-1],UNITNO,1) ELSE              08784000 T  0077:2
          FORGETSPACE(T);                                               08784100 T  0080:2
     END;                                                               08785000 T  0081:3
     IOT ← PRT ← -0;%                                                   08786000 T  0081:3
     IF P(JAR[MIX,3],DUP)=@377777777777 THEN P(DEL)ELSE%                08787000 T  0083:1
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                P1 ← (PRT ← P DIV 3600)*60×(PRT ← PRT DIV 60);%                08788000 T  0085:3
                IF P(JAR[MIX,4],DUP)=@377777777777 THEN P(DEL) ELSE%           08789000 T  0091:2
                I1 ← (IOT ← P DIV 3600)*60×(IOT ← IOT DIV 60);%                08790000 T  0094:0
                STREAM(X←JARROW[MIX], MIX,PRT,P1,IOT,I1,BUFF);                 08791000 T  0100:2
                BEGIN DS←17LIT" TIME LIMITS FOR"; SI←X; SI←SI+1; DS←7CHR;%     08792000 T  0103:0
                     DS←LIT"/"; SI←SI+1; DS←7CHR; DS←LIT"="; SI←LOC MIX;       08793000 T  0106:1
                     DS←2DEC; MIX←DI; DI←DI-2; DS←FILL; DI←MIX;                08793500 T  0108:0
                     DS←10LIT" ARE: PRT="; IF SC="+" THEN                      08794000 T  0109:1
                     BEGIN SI←SI+16; DS←8LIT"NO LIMIT" END ELSE BEGIN%         08795000 T  0111:1
                     DS←8DEC; DS←LIT":"; DS←2DEC; BUFF←DI; DI←DI-11;%          08795500 T  0113:0
                     DS←7FILL; DI←BUFF END; DS←6LIT"; IOT="; IF SC="+" THEN    08796000 T  0114:2
                     DS←10LIT"NO LIMIT.←" ELSE BEGIN DS←8DEC; DS←LIT":";%      08796500 T  0116:2
                     DS←2DEC; DS←2LIT".←"; DI←DI-13; DS←7FILL END;             08797000 T  0119:0
                END STREAM;%                                                   08797500 T  0120:1
            SPIT:%                                                             08798000 T  0120:2
                SPOUTER(BUFF INX M[BUFF-1],UNITNO,1);                          08798500 T  0120:2
            END TIMERELAXER;                                                   08799000 T  0123:0
                                                                                       SIZE= 0125 WORDS
        PROCEDURE CHANGEFACTOR(BUFF,TF); VALUE BUFF,TF; REAL BUFF; BOOLEAN TF;  08800000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00276
        BEGIN REAL FACTOR,B,T; INTEGER TEMP=T;                                 08801000 T  0000:0
            LABEL TYPEOUT,EXIT;                                                08802000 T  0000:0
            BUFF ← ((B←BUFF).[15:15]-1)&M[P(DUP)-1][9:9:9];                    08802500 T  0000:0
            IF TF THEN GO TYPEOUT,                                             08803000 T  0005:1
            STREAM(ANS←0:B);                                                   08804000 T  0006:1
              BEGIN SI←B; DI←LOC B; DS←8LIT"00000000"; DI←DI-2;                08805000 T  0007:2
            L:    IF SC = " " THEN BEGIN SI←SI+1; GO TO L END;                 08806000 T  0009:2
                  IF SC < "0" THEN GO TO L1;                                   08807000 T  0010:2
                  IF SC > "9" THEN GO TO L1;                                   08808000 T  0011:1
                  SI←SI+1;                                                     08809000 T  0012:0
                  IF SC < "0" THEN GO TO ONECHR;                               08810000 T  0012:1
                  IF SC ≤ "9"                                                  08810500 T  0013:0
                    THEN        BEGIN SI←SI-1; DI←DI-2; DS←2 CHR; END          08811000 T  0013:1
                    ELSE ONECHR: BEGIN SI←SI-1; DI←DI-1; DS←1 CHR; END;        08812000 T  0014:1
                  IF SC = "." THEN GO TO L2 ELSE GO TO L3;                     08813000 T  0015:1
            L1:   IF SC ≠ "." THEN GO TO ERROR;                                08814000 T  0016:2
            L2:   SI←SI+1;                                                     08815000 T  0017:1
                  IF SC < "0" THEN GO TO ERROR;                                08816000 T  0017:2
                  IF SC > "9" THEN GO TO ERROR;                                08817000 T  0018:1
                  DS←CHR;                                                      08818000 T  0019:0
                  IF SC ≥ "0" THEN IF SC ≤ "9" THEN DS←CHR;                    08819000 T  0019:1
            L3:   IF SC = " " THEN GO CONVERT;                                 08820000 T  0020:2
                  IF SC = "←" THEN GO CONVERT;                                 08821000 T  0021:1
            ERROR:DI←LOC ANS; SKIP 1 DB; DS← 10 SET; GO TO EXITS;              08822000 T  0022:0
            CONVERT: SI←LOC B; SI←SI+4; DI←LOC ANS; DS←4 OCT;                  08823000 T  0023:0
            EXITS:                                                             08824000 T  0024:0
            END STREAM;                                                        08825000 T  0024:0
          P(,FACTOR,←);                                                        08826000 T  0024:1
          IF FACTOR < 0 THEN GO TO EXIT;                                       08828000 T  0024:3
          CORE.[4:14] ← FACTOR;                                                08829000 T  0026:0
          SLEEP([TOGLE],HOLDMASK); LOCKTOG(HOLDMASK);                          08830000 T  0027:3
          B ← GETSPACE(30,0,0)+2;                                              08831000 T  0032:3
          DISKWAIT(-B,-30,DIRECTORYTOP-SYSNO);                                 08832000 T  0035:0
          M[B+9] ← CORE;                                  % CHANGE FACTOR     08833000 T  0037:1
          DISKWAIT(B,-30,DIRECTORYTOP-SYSNO);                                  08834000 T  0039:1
          FORGETSPACE(B);                                                      08835000 T  0041:1
          UNLOCKTOG(HOLDMASK);                                                 08836000 T  0042:0
          SELECTION;                                                           08836500 T  0045:2
      TYPEOUT:                                                                 08837000 T  0046:3
          STREAM(I←(FACTOR←CORE.[4:14]) DIV 100, FR←(TEMP←FACTOR MOD 100),     08838000 T  0046:3
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                MX←(TEMP←CORE.[CF]×64×FACTOR/100), US←CORE.[FF]×64, BUFF);          08839000 T  0050:0
            BEGIN DS←9 LIT"FACTOR = ";                                              08840000 T  0054:2
                SI←LOC I; DS←2 DEC; I←DI; DI←DI-2; DS←FILL; DI←I;                   08841000 T  0056:0
                    DS←LIT"."; DS←2 DEC;                                            08842000 T  0057:2
                DS←13 LIT", MAX CORE = "; DS←7 DEC;                                 08843000 T  0058:1
                    I←DI; DI←DI-7; DS←6 FILL; DI←I;                                 08844000 T  0060:2
                DS← 8 LIT", USING "; DS←7 DEC; DS←LIT"←";                           08845000 T  0061:2
                    DI←DI-8; DS←6 FILL;                                             08846000 T  0063:2
            END STREAM;                                                             08847000 T  0064:0
        EXIT: SPOUT(BUFF);                                                          08848000 T  0064:1
        END CHANGEFACTOR;                                                           08849000 T  0065:0
                                                                                        SIZE= 0066 WORDS
        PROCEDURE SHEETDIDDLER(BUFF,TYPE,SID); VALUE BUFF,TYPE,SID;                 08850000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00279
                                                REAL  BUFF,TYPE,SID;                08850100 T  0000:0
        COMMENT TYPE = 6: PS -- CHANGE PRIORITY OF JOB IN SCHEDULE                  08850200 T  0000:0
                     = 8: XS -- EXECUTE JOB IN SCHEDULE (FORCE SELECTION)           08850300 T  0000:0
                     = 7: ES -- ELIMINATE JOB FROM SCHEDULE (FORCE SELECTION,       08850400 T  0000:0
                                                                THEN "DS")          08850500 T  0000:0
                     = 5: TS -- TYPE OUT SCHEDULE;                                  08850600 T  0000:0
        BEGIN REAL IOD,T,PRIORITY;                                                  08851000 T  0000:0
              INTEGER LEVEL,NEXTLINK,THISLINK,LASTLINK;                             08852000 T  0000:0
              INTEGER ES,EM,EH; DEFINE ET = EH#;                                    08852500 T  0000:0
         $ SET OMIT = NOT(DATACOM )                                                 08852599 T  0000:0
              BOOLEAN LASTPASSED,ATLEASTONE;                                        08853000 T  0000:0
              ARRAY S[*],DLNK[*];                                                   08854000 T  0000:0
         $ SET OMIT = NOT(PACKETS)                                                  08854499 T  0000:0
              LABEL CONTINUE,C1,READIN,GNX,TS,TS1,TS2,                              08855000 T  0000:0
                    XSES,ESLL,PS,PS1,PS2,SPIT,EXIT;                                 08856000 T  0000:0
              SUBROUTINE GETNEXT; % READS IN NEXT JOB SHEET ENTRY                   08858000 T  0000:0
              BEGIN                                                                 08859000 T  0001:0
              CONTINUE: LASTLINK ← THISLINK;                                        08860000 T  0001:0
                        IF (THISLINK←NEXTLINK) ≠ 0 THEN GO TO READIN;               08860500 T  0001:3
              C1:       IF (LEVEL←LEVEL+1) > MIXMAX THEN                            08861000 T  0003:2
                          BEGIN LASTPASSED ← TRUE; GO TO GNX END;                   08862000 T  0005:1
                        LASTLINK ← NEXTLINK ← 0;                                    08863000 T  0007:0
                        IF (THISLINK←SHEET[LEVEL].[CF]) = 0 THEN GO TO C1;          08864000 T  0008:1
              READIN:   DISKIO(IOD,-(S INX 0-1),30,THISLINK);                       08865000 T  0010:3
                        SLEEP([IOD],IOMASK);                                        08866000 T  0013:3
                        NEXTLINK ← S[29];                                           08867000 T  0015:1
                        IF S[0].[36:6]=@14 THEN GO CONTINUE;%PASS LM ENTRY          08868000 T  0016:1
              GNX:                                                                  08869000 T  0018:1
              END GETNEXT;                                                          08870000 T  0018:1
              SLEEP([TOGLE],SHEETMASK); LOCKTOG(SHEETMASK);                         08880000 T  0018:2
              S ← [M[GETSPACE(31,2,0)+2]]&30[8:38:10];                              08881000 T  0027:2
              LEVEL ← -1; LASTPASSED ← FALSE;                                       08882000 T  0031:1
                 IF BUFF≠0 THEN                                                     08882050 T  0033:0
              BUFF ← ((T←BUFF).[15:15]-1)&M[P(DUP)-1][9:9:9];                       08882500 T  0033:3
         $ SET OMIT = NOT(DATACOM )                                                 08882599 T  0038:3
              IF TYPE=5 THEN GO TS; IF TYPE GTR 6 THEN GO XSES; GO PS;              08883000 T  0038:3
        TS:   ATLEASTONE ← FALSE;                                                   08884000 T  0041:3
        TS1:  GETNEXT; IF LASTPASSED THEN GO TO TS2;                                08885000 T  0042:2
            IF SID NEQ 63 THEN BEGIN IF S[3].[8:10] NEQ SID THEN GO TS1 END ELSE    08885500 T  0045:0
            IF ATLEASTONE THEN BUFF.[CF]←GETSPACE(12,0,0)+2;                        08886000 T  0048:1
              ET←((CLOCK+P(RTR))/60)-S[23].[24:24];                                 08886300 T  0052:1
              ES ← ET MOD 60; ET ← ET DIV 60; EM ← ET MOD 60; EH ← ET DIV 60;       08886600 T  0055:1
            STREAM(TU←S[23].[9:4],BUF←S[23].[14:4],                                 08887000 T  0060:1
            RT:=S[23].[9:4] NEQ 0,C:=LEVEL,J1:=(S[0] LSS 0) OR(((S[0] EQV           08887001 T  0062:2
            "LIBMAIN")=NOT 0)AND((S[1] EQV "DISK   ")=NOT 0)),J2←S[27],             08887010 T  0065:3
            J←S[*],ID←S[3].[8:10],EH,EM,ES,A←S[20]×64,BUFF); %                      08887100 T  0069:3
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                BEGIN SI←LOC C; DS←6 DEC; DI←DI-6; DS←5 FILL; DI←BUFF; DI←DI+6;          08888000 T  0073:2
                      DS←LIT":"; SI←J; SI←SI+1; DS←7 CHR; DS←LIT"/"; SI←SI+1;            08889000 T  0075:0
                      DS:=7CHR;J1(DS:=LIT" ";SI:=LOC J2;SI:=SI+1;DS:=7CHR);              08890000 T  0077:0
                      DS:=LIT"=";SI:=LOC ID;DS:=2 DEC;                                   08890010 T  0079:1
            RT(DS←6 LIT " FROM "; SI←LOC TU; DS←2 DEC; %                                 08890100 T  0080:1
            DS←1 LIT "/"; SI←LOC BUF; DS←2 DEC;); %                                      08890200 T  0082:1
                      DS←7 LIT" IN FOR"; SI←LOC EH;                                      08891000 T  0083:2
                      3(DS ← LIT":"; DS←2 DEC); ES←DI; DI←DI-9; DS←8 FILL;               08892000 T  0085:0
                      DI←ES; DS←8 LIT", NEEDS ";                                         08893000 T  0087:0
                      SI←LOC A; DS←5 DEC; DS←LIT"←"; DI←DI-6; DS←4 FILL;                 08899000 T  0088:2
                END STREAM;                                                              08900000 T  0090:0
          SPOUTER(BUFF,IF SID≠63 THEN UNITNO ELSE 0,1);                                  08901000 T  0090:1
          IF SID NEQ 63 THEN BEGIN TYPE:=5;GO EXIT END;                                  08901500 T  0091:0
          ATLEASTONE←TRUE;                                                               08902000 T  0096:0
          GO TO TS1;                                                                     08903000 T  0096:3
TS2:      IF ATLEASTONE THEN GO TO EXIT;                                                 08904000 T  0097:1
          IF SID NEQ 63 THEN TYPE:=5 ELSE%                                               08904050 T  0098:1
          STREAM(BUFF);  DS ← 15 LIT " NULL SCHEDULE←";%                    %WF          08905000 T  0100:1
          SPOUT(BUFF); GO TO EXIT;                                                       08906000 T  0104:0
XSES:     GETNEXT;                                                                       08910000 T  0105:1
            IF LASTPASSED THEN BEGIN IF BUFF≠0 THEN SPOUT(BUFF);                         08911000 T  0106:0
                                     GO TO EXIT; END;                                    08911050 T  0108:3
          IF S[3].[8:10]≠SID THEN GO TO XSES;                                            08912000 T  0109:1
 $ SET OMIT = NOT(DATACOM )                                                              08912099 T  0111:1
          S[2].[1:2]:=(IF TYPE=8 THEN 2 ELSE 3); % 7=ES,8=XS                             08913000 T  0111:1
          DISKIO(IOD,S INX 0-1,30,THISLINK); SLEEP([IOD],IOMASK);                        08915000 T  0115:3
          GO TO SPIT;                                                                    08915100 T  0120:0
PS:       STREAM(PRIORITY:T);                                                            08916000 T  0120:2
          BEGIN SI←T;                                                                    08917000 T  0121:3
          N:      IF SC="←" THEN GO TO X;                                                08918000 T  0122:0
                  IF SC<"0" THEN BEGIN SI←SI+1; GO TO N; END; T←SI;                      08919000 T  0122:3
          K:      IF SC≥"0" THEN IF SC≤"9" THEN                                          08920000 T  0124:0
                        BEGIN TALLY←TALLY+1; SI←SI+1; GO TO K END;                       08921000 T  0125:0
                  SI←T; DI←LOC PRIORITY; T←TALLY; DS←T OCT; GO TO Z;                     08922000 T  0125:3
          X:      DI←LOC PRIORITY; SKIP DB; DS←11 SET;                                   08923000 T  0127:1
          Z:                                                                             08924000 T  0128:0
          END STREAM;                                                                    08925000 T  0128:0
          IF (PRIORITY←P)<0 THEN BEGIN SPOUT(BUFF); GO TO EXIT END;                      08926000 T  0128:1
PS1:      GETNEXT; IF LASTPASSED THEN BEGIN SPOUT(BUFF); GO TO EXIT END;                 08927000 T  0131:0
          IF S[3].[8:10]≠SID THEN GO TO PS1;                                             08928000 T  0134:0
% DELINK AND RELINK THIS SHEET ENTRY                                                     08929000 T  0136:0
          DLNK ← [M[GETSPACE(31,2,0)+2]]&30[8:38:10];                                    08930000 T  0136:0
          IF NEXTLINK = 0 THEN SHEET[LEVEL].[FF] ← LASTLINK;                             08931000 T  0139:3
          IF LASTLINK = 0 THEN BEGIN SHEET[LEVEL].[CF]← NEXTLINK;GO PS2 END;             08932000 T  0143:0
          DISKIO(IOD,-(DLNK INX 0-1),30,LASTLINK); SLEEP([IOD],IOMASK);                  08933000 T  0146:3
          DLNK[29] ← NEXTLINK;                                                           08934000 T  0151:1
          DISKIO(IOD,+(DLNK INX 0-1),30,LASTLINK); SLEEP([IOD],IOMASK);                  08935000 T  0152:2
PS2:      S[2].[CF] ← IF (S[18]←PRIORITY) > 32767 THEN 32767 ELSE PRIORITY;              08936000 T  0156:3
          LEVEL ← IF PRIORITY > MIXMAX THEN MIXMAX ELSE PRIORITY;                        08937000 T  0161:3
          IF SHEET[LEVEL].[CF] ≠ 0 THEN                                                  08938000 T  0164:2
          BEGIN DISKIO(IOD,-(DLNK INX 0-1),30,SHEET[LEVEL].[FF]);                        08939000 T  0166:0
                SLEEP([IOD],IOMASK);                                                     08940000 T  0170:2
                DLNK[29] ← THISLINK;                                                     08941000 T  0172:0
                DISKIO(IOD,+(DLNK INX 0-1),30,SHEET[LEVEL].[FF]);                        08942000 T  0173:1
                SLEEP([IOD],IOMASK);                                                     08943000 T  0177:0
          END ELSE SHEET[LEVEL] ← THISLINK;                                              08944000 T  0178:2
          SHEET[LEVEL].[FF] ← THISLINK;                                                  08944500 T  0181:1
          S[29] ← 0; S[3] ← ABS(S[3]); % TO GET SELECTION TO PRINT MESSAGE;              08945000 T  0183:1
          DISKIO(IOD,+(S INX 0-1),30,THISLINK); SLEEP([IOD],IOMASK);                     08946000 T  0186:1
          FORGETSPACE(DLNK);                                                             08947000 T  0190:2
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SPIT: IF BUFF≠0 THEN                                                    08947100 T  0191:2
 $ SET OMIT = NOT(PACKETS)                                              08947199 T  0192:1
      FORGETSPACE(BUFF);                                                08947600 T  0192:1
EXIT: UNLOCKTOG(SHEETMASK);                                             08997000 T  0193:2
      FORGETSPACE(S);                                                   08998000 T  0197:0
      IF TYPE≠5 THEN BEGIN KEYBOARDCOUNTER ← KEYBOARDCOUNTER-1;         08998200 T  0198:0
                           SELECTION;                                   08998400 T  0200:2
                           KEYBOARDCOUNTER ← KEYBOARDCOUNTER+1;         08998600 T  0201:3
                     END;                                               08998800 T  0203:0
END SHEETDIODLER;                                                       08999000 T  0203:0
                                                                                 SIZE= 0204 WORDS
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                   08999999 T  0000:0
 $ SET OMIT = NOT(DISKLOG)                                              09299999 T  0000:0
PROCEDURE WHATINTRNSIC(BUFF);  VALUE BUFF;  REAL BUFF; FORWARD;         09400000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00286
 $ SET OMIT = NOT(AUXMEM)                                               09400099 T  0000:0
PROCEDURE INTRINSICTABLEBUILDER(FH); VALUE FH; REAL FH;                 09500000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00286
   BEGIN                                                                09500500 T  0000:0
   % WHEN CALLED WITH FH= (-1), TRANSFER TO AUXMEM ONLY                 09500510 T  0000:0
   REAL DISKADDR=+1,T=+2,INTLOC=+3,T17SIZE=+4,MAXINT=+5;                09501000 T  0000:0
 $ SET OMIT = NOT(AUXMEM)                                               09501500 T  0000:0
P(0, 0, 0, 0, 0);                                                       09504570 T  0000:0
   IF (T:=FH.[FF])=0 THEN T:=SPACE(30);                                 09505000 T  0001:1
 $ SET OMIT = NOT(AUXMEM)                                               09505100 T  0005:3
   DISKWAIT(-T, 30, DISKADDR:=M[FH INX 10]);                            09505500 T  0005:3
   MAXINT  := M[T] + 1; % NUMBER OF INTRINSICS + 1                      09505600 T  0009:0
   T17SIZE := M[T INX 17].[8:10]+1; % INTR.#17 SIZE+1WD.FOR DISK.ADDR.   09505700 T  0011:0
   FORGETSPACE(T);                                                      09505750 T  0014:0
   INTRNSC:=[M[INTLOC:=GETSPACE(MAXINT+T17SIZE,0,1)+2]]&                09506000 T  0014:3
     (MAXINT+T17SIZE)[8:38:10]; % SPACE FOR INTRINSIC TABLE + INT.#17   09506100 T  0018:0
   DISKWAIT(-(INTRNSC INX 0),MAXINT,DISKADDR);                          09506500 T  0020:0
   M[INTRNSC INX NOT 0] := 0; MAXINT := MAXINT -1;                      09507000 T  0022:1
   FOR T := 1 STEP 1 UNTIL MAXINT DO                                    09507500 T  0026:0
      INTRNSC[T]:=NABS((P(*P(DUP),DUP).[8:10]+INTSIZE) &                09508000 T  0027:0
         (P(XCH) INX 0 + DISKADDR)[6:21:27]);                           09508500 T  0029:1
   DISKWAIT(-(INTLOC:=INTLOC+MAXINT+2),(T17SIZE-1),INTRNSC[17].[6:27]); 09508600 T  0034:1
   INTRNSC[17] := (*P(DUP))&INTLOC[CTC]; % MARK PRESENT                 09508700 T  0038:2
   M[INTLOC-1]:=0&(T17SIZE-1)[CTF]; % DUMMY MARKER FOR DUMP/ANALYZE     09508800 T  0040:2
   DISKADDR:=0&1[4:47:1];                                               09509000 T  0043:2
   INTRNSC[2]:=*P(DUP) OR DISKADDR;                                     09509500 T  0045:1
   FOR T:=18 STEP 1 UNTIL 20 DO INTRNSC[T]:=*P(DUP) OR DISKADDR;        09510000 T  0047:1
 $ SET OMIT = NOT(AUXMEM)                                               09510500 T  0052:1
   INTSIZE:=(INTRNSC[0] + 3 ) DIV 4;                                    09534500 T  0052:1
 $ SET OMIT = NOT(PACKETS)                                              09534999 T  0054:1
   END INTRINSIC TABLE BUILDER;                                         09537000 T  0054:1
                                                                                 SIZE= 0055 WORDS
PROCEDURE CHANGEINTRINSICFILE(BUFF);  VALUE BUFF;  REAL BUFF;%          09600000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00288
BEGIN REAL A,B,IOD,I,J,K,L;                                             09601000 T  0000:0
REAL FH,T,IT; LABEL EXIT,WITHOUT;                                       09602000 T  0000:0
    REAL SIZE=I,DISKADDR=T,LOC=IT,WI=J;                                 09602100 T  0000:0
    BOOLEAN SUBROUTINE NULLMIX;%                                        09603000 T  0000:0
    BEGIN POLISH(1);%                                                   09604000 T  0001:0
        IF INTSIZE≠0 THEN BEGIN INTSIZE ← 0;%                           09605000 T  0001:1
            FOR I←1 STEP 1 UNTIL MIXMAX DO%                             09606000 T  0003:1
            IF JARROW[I]≠0 THEN%                                        09607000 T  0004:0
            IF NOT(JAR[I,9].[1:1]) THEN % NOT "SYSTEM" JOB              09608000 T  0005:0
            BEGIN P(DEL, 0); I ← MIXMAX;  END;%                         09611000 T  0007:1
            IF NOT P(DUP) THEN INTSIZE ← (INTRNSC[0]+3) DIV 4;%         09612000 T  0011:1
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                END;%                                                   09613000 T  0014:1
                NULLMIX ← POLISH;%                                      09614000 T  0014:1
            END NULLMIX;%                                               09615000 T  0014:2
            SUBROUTINE FORGETEM;%                                       09616000 T  0014:3
            BEGIN SLEEP([TOGLE],STOREMASK); LOCKTOG(STOREMASK);         09617000 T  0015:0
                WHILE (K ← M[L]).[CF]≠0 DO%                             09618000 T  0020:0
                BEGIN IF K>0 THEN%                                      09619000 T  0023:0
                    IF K.[3:12]=@700 THEN%                              09620000 T  0023:3
                      FORGETSPACE(L+2);%                                09621000 T  0025:2
                    L ← K.[CF];%                                        09622000 T  0027:1
                END;%                                                   09623000 T  0028:2
                UNLOCKTOG(STOREMASK);                                   09624000 T  0029:0
          $ SET OMIT = NOT(AUXMEM)                                      09624010 T  0032:2
                    FORGETSPACE(INTRNSC INX 0); INTRNSC←0               09624100 T  0032:2
            END FORGETEM;%                                              09625000 T  0034:0
            DEFINE ERROR = GO TO EXIT#;%                                09626000 T  0035:0
                SLEEP([TOGLE], FREEMASK);  INTFREE ← FALSE;%            09630000 T  0035:0
                T ← BUFF;%                                              09631000 T  0040:3
                NAMEID(A,T);  NAMEID(B,T);  NAMEID(B,T);%               09632000 T  0041:2
                IF (FH:=DIRECTORYSEARCH(A,B,17))=0 THEN ERROR;          09633000 T  0044:2
                IF (J←M[FH+4].[36:6])≠0 THEN                            09633100 T  0047:1
                    IF J≠DCINTYPE AND J≠TSSINTYPE THEN                  09633200 T  0050:1
                BEGIN     % DONT ALLOW CI ON KNOWN NON-INTRINSICS FILE  09633300 T  0052:2
                    STREAM(A,B,NT1:=BUFF.[15:15]-1);                    09633400 T  0053:0
                    BEGIN DS:=2LIT"# "; SI:=LOC A;                      09633500 T  0055:1
                        SI:=SI+1; DS:=7CHR; DS:=LIT"/";                 09633600 T  0056:0
                        SI:=SI+1; DS:=7 CHR;                            09633700 T  0057:0
                        DS:=24 LIT" NOT AN INTRINSICS FILE←";           09633800 T  0057:2
                    END;                                                09633900 T  0060:3
                    FORGETSPACE(FH);                                    09634000 T  0061:0
                    FORGETSPACE(DIRECTORYSEARCH(A,B,16));               09634100 T  0061:3
                    ERROR;                                              09634200 T  0063:2
                END;                                                    09634300 T  0065:0
                IF NOT NULLMIX THEN COMPLEXSLEEP(NULLMIX);              09635000 T  0065:0
07427630    ACCIDENTAL ENTRY AT NULLMIX
                IF INTRNSC≠0 THEN FORGETEM;                             09636000 T  0072:0
          $ SET OMIT = SHAREDISK                                        09636999 T  0075:0
                IF MCPFREE=0 THEN SLEEP([TOGLE],MCPMASK);               09637000 T  0075:0
                LOCKTOG(MCPMASK);                                       09638000 T  0078:1
          $ POP OMIT                                                    09638001 T  0081:3
                T:=GETSPACE(30,0,0)+2;                                  09639000 T  0081:3
                DISKWAIT(-T,-30,0);                                     09640000 T  0084:0
                I:=T+13+5×S¥SNO;                                        09641000 T  0085:3
                IF (IT:=DIRECTORYSEARCH(M[I],M[I+1],16))≠0 THEN         09642000 T  0088:0
                FORGETSPACE(IT);                                        09643000 T  0092:1
                M[I]:=A;                                                09644000 T  0093:2
                M[I+1]:=B;                                              09645000 T  0095:0
                DISKWAIT(T,-30,0);                                      09646000 T  0097:0
          $ SET OMIT = SHAREDISK                                        09646999 T  0098:2
                UNLOCKTOG(MCPMASK);                                     09647000 T  0098:2
          $ POP OMIT                                                    09647001 T  0102:0
          $ SET OMIT = NOT(AUXMEM)                                      09647999 T  0102:0
                FORGETSPACE(T);                                         09648800 T  0102:0
                INTRINSICTABLEBUILDER(FH.[CF]);                         09657000 T  0102:3
                FORGETSPACE(FH);                                        09658000 T  0104:0
                WHATINTRNSIC(BUFF.[15:15]);                             09659000 T  0104:3
                STREAM(B:=BUFF.[15:15]-1); DS:=8 LIT" NEW     ";        09670000 T  0106:0
            EXIT:  SPOUT(BUFF.[15:15]-1);%                              09676000 T  0109:1
                INTFREE ← TRUE;%                                        09677000 T  0111:0
            END CHANGING INTRINSIC FILES ON USER DISK WITH MANY PRECAUTIONS;%   09679000 T  0112:3
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                                                                                SIZE= 0114 WORDS
PROCEDURE CHANGEMCP(BUFF); VALUE BUFF; REAL BUFF;                     09679100 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00292
BEGIN                                                                 09679200 T  0000:0
    REAL A,B,T,Z,BASE;                                                09679300 T  0000:0
    LABEL EXIT;                                                       09679400 T  0000:0
    T:=BUFF;                                                          09679800 T  0000:0
    NAMEID(A,T); NAMEID(B,T); NAMEID(B,T);                            09679900 T  0002:0
 $ SET OMIT = SHAREDISK                                               09679999 T  0005:0
    IF MCPFREE=0 THEN SLEEP([TOGLE],MCPMASK);                         09680000 T  0005:0
    LOCKTOG(MCPMASK);                                                 09680100 T  0008:1
 $ POP OMIT                                                           09680101 T  0011:3
    Z:=GETSPACE(30,0,0)+2;                                            09680200 T  0011:3
    DISKWAIT(-Z,-30,0);                                               09680300 T  0014:0
    BASE:=Z+10+5*SYSNO;                                               09680400 T  0015:3
    IF (A EQV M[BASE])≠NOT 0 OR                                       09680500 T  0018:0
       (B EQV M[BASE+1])≠NOT 0 THEN                                   09680600 T  0020:1
    BEGIN                                                             09680700 T  0023:1
        IF (T:=DIRECTORYSEARCH(A,B,17))=0 THEN                        09680800 T  0023:3
        BEGIN;                                                        09680900 T  0026:0
            STREAM(A:=[A],T:=BUFF.[15:15]=1);                         09681000 T  0026:2
            BEGIN DS:=13 LIT"#NO MCP FILE ";SI:=A;SI:=SI+1;           09681100 T  0028:2
                DS:=7 CHR;DS:=LIT"/";SI:=SI+1;DS:=7 CHR;              09681200 T  0031:0
            DS←LIT"←";                                                09681250 T  0032:1
            END;                                                      09681300 T  0032:3
            GO TO EXIT;                                               09681400 T  0033:0
        END;                                                          09681500 T  0035:0
        IF (NT1←M[T+4].[36:6])≠0 THEN IF NT1≠MCPTYPE THEN             09681505 T  0035:0
        BEGIN     % DONT ALLOW CM ON KNOWN NON-MCP FILE               09681510 T  0039:1
            STREAM(A:=[A],T:=BUFF.[15:15]=1);                         09681515 T  0039:3
            BEGIN DS:=2LIT"# "; SI:=A; SI:=SI+1;                      09681520 T  0041:3
                DS:=7CHR; DS:=LIT"/"; SI:=SI+1;                       09681525 T  0042:3
                DS:=7CHR; DS:=12LIT" NOT AN MCP←";                    09681530 T  0043:3
            END;                                                      09681535 T  0045:3
            FORGETSPACE(T);                                           09681540 T  0046:0
            FORGETSPACE(DIRECTORYSEARCH(A,B,16));                     09681545 T  0046:3
            GO TO EXIT;                                               09681550 T  0048:2
        END;                                                          09681555 T  0049:0
        IF M[BASE+2]=2≠MCPBASE THEN                                   09681600 T  0049:0
        FORGETSPACE(DIRECTORYSEARCH(M[BASE],M[BASE+1],16));           09681650 T  0051:2
        M[BASE]:=A;                                                   09681700 T  0055:3
        M[BASE+1]:=B;                                                 09681800 T  0057:1
        M[BASE+2]:=M[T+10];                                           09681900 T  0059:1
 $ SET OMIT = NOT(AUXMEM)                                             09681909 T  0062:2
        FORGETSPACE(T);                                               09682000 T  0062:2
    END;                                                              09682100 T  0063:1
    STREAM(A:=[A],T:=BUFF.[15:15]=1);                                 09682200 T  0063:1
    BEGIN DS:=18 LIT " NEXT MCP WILL BE ";SI:=A;SI:=SI+1;             09682300 T  0065:1
        DS:=7 CHR;DS:=LIT"/";SI:=SI+1;DS:=7 CHR;                      09682400 T  0068:1
        DS←LIT"←";                                                    09682450 T  0069:2
    END;                                                              09682500 T  0070:0
    M[3]←NABS(*P(DUP)); % SET FLAG FOR WM                             09682550 T  0070:1
EXIT:                                                                 09682600 T  0072:1
    DISKWAIT(Z,-30,0);                                                09682610 T  0072:1
 $ SET OMIT = NOT(NOT SHAREDISK)                                      09682619 T  0073:3
    UNLOCKTOG(MCPMASK);                                               09682620 T  0073:3
 $ POP OMIT                                                           09682621 T  0077:1
    FORGETSPACE(Z);                                                   09682700 T  0077:1
    SPOUT(BUFF.[15:15]=1);                                            09682800 T  0078:0
END CHANGING OF THE MCP;                                              09683100 T  0079:3
```

```
                                                                                                  SIZE= 0081 WORDS
BOOLEAN PROCEDURE SYSTEMFILE(A,B);  VALUE A,B;  REAL A,B;%                                 09700000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00295
BEGIN LABEL DISK,LOG,TRUTH,DIR,SYS,REM,DECK,MASK,TEST;                                     09701000 T  0000:0
      LABEL DMP;                                                                           09701500 T  0000:0
      LABEL MAINT;                                                                         09701550 T  0000:0
$ SET OMIT = NOT(STATISTICS)                                                               09701599 T  0000:0
      DEFINE T=P(TRUTH)#;%                                                                 09702000 T  0000:0
      IF (B EQV P(DISK))=T THEN%                                                           09703000 T  0000:0
           P(((A EQV P(DIR))=T) OR                                                         09704000 T  0001:2
           ((A EQV P(LOG))=T) OR                                                           09704100 T  0003:1
           ((A EQV P(DMP))=T))                                                             09704500 T  0004:3
      ELSE IF (B EQV P(LOG))=T THEN%                                                       09705000 T  0006:0
                P(((A EQV P(SYS))=T) %                                                     09706000 T  0008:0
$ SET OMIT = SHAREDISK                                                                     09706049 T  0009:3
                OR ((A EQV P(MAINT))=T)%                                                   09706050 T  0009:3
                OR ((A EQV P(REM))=T)%                                                     09706100 T  0011:0
$ POP OMIT                                                                                 09706101 T  0012:2
                                                                                           09706150 T  0012:2
$ SET OMIT = NOT(SHAREDISK)                                                                09706199 T  0012:3
      ELSE IF (A EQV P(DECK))=T THEN%                                                      09707000 T  0012:3
           P(((B AND P(MASK)) EQV P(TEST))=T)%                                             09708000 T  0014:2
$ SET OMIT = NOT(STATISTICS)                                                               09708099 T  0016:3
      ELSE P(0);%                                                                          09709000 T  0016:3
      P(RTN);%                                                                             09710000 T  0017:2
   DISK :::  "DISK    ";%                                                                  09711000 T  0017:3
   LOG  :::  "LOG     ";%                                                                  09712000 T  0019:0
   TRUTH:::  @377777777777777777;%                                                         09713000 T  0020:0
   DIR  :::  "DIRCTRY";%                                                                   09715000 T  0021:0
   SYS  :::  "SYSTEM ";%                                                                   09716000 T  0022:0
   REM  :::  "REMOTE ";%                                                                   09717000 T  0023:0
   DECK :::  "DECK    ";%                                                                  09718000 T  0024:0
   MASK :::  @770000000007777;%                                                            09719000 T  0025:0
   TEST :::  @120000000003714;%                                                            09720000 T  0026:0
   DMP  :::  "DMPAREA";%                                                                   09720500 T  0027:0
   MAINT:::  "MAINT   ";%                                                                  09720650 T  0028:0
 $ SET OMIT = NOT(STATISTICS)                                                              09720699 T  0029:0
   END;%                                                                                   09721000 T  0029:0
                                                                                                  SIZE= 0030 WORDS
 $ SET OMIT = NOT(DEBUGGING)                                                               09999999 T  0000:0
 $ SET OMIT = NOT(WORKSET);                                                                12200000 T  0000:0
REAL PROCEDURE PRNPBTSPECASE1(Z);                                                          12500000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00296
%                                                                                          12500100 T  0000:0
%   THIS PROCEDURE HANDLES THE FOLLOWING FUNCTIONS FOR COM19, DEPENDING                    12500110 T  0000:0
%   ON THE VALUE OF Z:                                                                     12500120 T  0000:0
%   0     FINDS THE NEXT REEL OF TAPE.                                                     12500130 T  0000:0
%   1     FINDS THE NEXT REEL OF A BACK-UP DISK FILE.                                      12500140 T  0000:0
%   2     HANDLES THE QT + OR - MESSAGE.                                                   12500150 T  0000:0
%   3     INITAILIZES A NEW FILE (OR PACKET).                                              12500160 T  0000:0
%   4     HANDLES TERMINATION OF A FILE.                                                   12500170 T  0000:0
%                                                                                          12500180 T  0000:0
VALUE Z;  REAL Z;                                                                          12500500 T  0000:0
BEGIN                                                                                      12501000 T  0000:0
    REAL     RCW=+0, MSCW=-2, COMMON=-4;                                                   12501500 T  0000:0
    ARRAY    INREC=+1[*];                                                                  12502000 T  0000:0
    ARRAY    FPB=INREC+1[*], LOGINFO=FPB+1[*], HEADER=LOGINFO+1[*];                        12502500 T  0000:0
    REAL     UNIT=HEADER+1, V=UNIT+1, COPY=V+1, MFID=COPY+1, FID=MFID+1,                   12503000 T  0000:0
             IOD=FID+1, T=IOD+1, B=T+1;                                                    12503500 T  0000:0
    REAL     SEARCHVAL=B+1, CURROW=SEARCHVAL+1, FIRSTFID=CURROW+1,                         12504000 T  0000:0
```

```
                SEGNR=FIRSTFID+1;                                                12504500 T  0000!0
        REAL    X=SEARCHVAL, NUM=CURROW, RECOUNT=SEGNR;                          12505000 T  0000!0
        BOOLEAN SIGNEDON=SEGNR+1, FORMTOG=SIGNEDON+1, ABORTED=FORMTOG+1;         12505500 T  0000!0
        BOOLEAN TERMFLAG=LOGINFO, NOCONT=FIRSTFID;                               12506000 T  0000!0
      $ SET OMIT = NOT PACKETS                                                   12506500 T  0000!0
      $ SET OMIT = PACKETS                                                       12509500 T  0000!0
        REAL    PFIRSTFID=FIRSTFID, PCOPY=COPY;                                  12510000 T  0000!0
      $ SET OMIT = NOT RJE OR PACKETS                                            12510500 T  0000!0
        LABEL   RD, RED, SPACEND, NOMORE, NOFILE, AUT, BOMBER, NEXTFILE,         12512000 T  0000!0
                PNCHLK, PRINTITAGAIN, EOF, PRNTDS, PNCHDS, TAPEND, CONTINUE,     12512500 T  0000!0
                RETURNFALSE, REMOVEM, TEST, TAPECL, STOPTIME, RETURNTRUE,        12513000 T  0000!0
                RETURNTOCOM19;                                                   12513500 T  0000!0
        LABEL   LOOK4TAPE, NOMOREELS, QTSPEC, INITIALIZE, STARTANEWFILE;         12513750 T  0000!0
        SWITCH  SW :=                                                            12514000 T  0000!0
                LOOK4TAPE, NOMOREELS, QTSPEC, INITIALIZE, STARTANEWFILE;         12514500 T  0000!0
        DEFINE  DSED        = (TERMIX.[CF]=P1MIX)#,                              12515000 T  0000!0
                QTED        = (PRT[P1MIX,@25]≠0)#,                               12515500 T  0000!0
                VF          = 43!5#,                                             12516000 T  0000!0
                UNITF       = 38!5#,                                             12516100 T  0000!0
                COPYF       = 30!8#,                                             12516150 T  0000!0
                NUMF        = 22!8#,                                             12516200 T  0000!0
                NOTP        = 29!1#,                                             12516250 T  0000!0
                COPYO       = 21!1#,                                             12516300 T  0000!0
      $ SET OMIT = PACKETS                                                       12516350 T  0000!0
                REELNO      = 30!18#,                                            12516500 T  0000!0
      $ SET OMIT = NOT PACKETS                                                   12517000 T  0000!0
      $ SET OMIT = RJE                                                           12517500 T  0000!0
                STA         = 0#,                                                12518600 T  0000!0
      $ POP OMIT                                                                 12518700 T  0000!0
                SEPARATION  = 46#;     % FOR 6 LPI. SET IT TO 70 FOR 8 LPI.       12518800 T  0000!0
%*****************************************************************************   12519000 T  0000!0
                                                                                 12519500 T  0000!0
        SUBROUTINE RDYTAPE;                                                      12520000 T  0000!0
        BEGIN                                                                    12520500 T  0000!0
            B.[18!9]:=@54;                                                       12521000 T  0001!0
            P(WAITIO(@4200000000,0,UNIT),DEL);                                   12521500 T  0001!0
            P(WAITIO(B,0,UNIT),WAITIO(B,@40,UNIT),DEL,DEL);                      12522000 T  0002!3
            RECOUNT!=@77777;                                                     12522500 T  0004!1
        END;                                                                     12523000 T  0007!1
                                                                                 12523500 T  0008!0
%*****************************************************************************   12524000 T  0011!0
                                                                                 12524500 T  0011!0
        SUBROUTINE REWIND;                                                       12525000 T  0011!0
        BEGIN                                                                    12525500 T  0011!0
            STOPTIMING(0,1023);                                                  12526000 T  0011!0
            P(WAITIO(@4200000000,0,UNIT),DEL);                                   12526500 T  0011!0
            IF (SAVEWORD AND TWO(UNIT))=0 AND PRNTABLE[UNIT].[1!1]               12527000 T  0012!0
              AND NOT (SVPBT OR QTED OR NOCONT) THEN                             12527500 T  0013!2
                INDEPENDENTRUNNER(P(.PURGEIT),UNIT,64)                           12528000 T  0015!2
            ELSE                                                                 12528500 T  0020!0
            BEGIN LABELTABLE[UNIT]←@114;                                         12529000 T  0021!2
                MULTITABLE[UNIT]←RDCTABLE[UNIT]←0;                               12529500 T  0021!3
                SLEEP([TOGLE],STATUSMASK);                                       12530000 T  0025!1
                READY←READY AND NOT NT1←TWO(UNIT);                               12530500 T  0027!2
                RRRMECH←NOT NT1 AND RRRMECH OR NT1 AND SAVEWORD;                 12531000 T  0029!0
            END;                                                                 12531500 T  0031!2
        END;                                                                     12532000 T  0034!0
                                                                                 12532500 T  0034!0
%*****************************************************************************   12533000 T  0034!1
                                                                                 12533500 T  0034!1
```

```
                                                                                12534000 T  0034:1
    BOOLEAN SUBROUTINE LOOKFORTAPE;                                             12534500 T  0034:1
    BEGIN                                                                       12535000 T  0035:0
        T:=RDCTABLE[UNIT];                                                      12535500 T  0035:0
        REWIND;                                                                 12536000 T  0036:0
        IF SIGNEDON THEN FPB[4]:=FPB[4]-LOGINFO[24]-CLOCK-P(RTR);               12536500 T  0037:0
        IF P((T:=FINDINPUT(MFID,@122212342546447,T.[14:10]+1,T.[24:17],         12537000 T  0041:0
            -0,0,T:=0,0,0,0)) GEQ 0, DUP) THEN                                  12537500 T  0043:0
        BEGIN                                                                   12538000 T  0047:2
            RDCTABLE[UNIT:=T].[8:6]:=P1MIX;                                     12538500 T  0048:0
            LABELTABLE[UNIT]:=FID;                                              12539000 T  0051:0
            FPB:=PRT[P1MIX,3];          % FINDINPUT CALLS STARTIMING            12539500 T  0052:1
            IF SIGNEDON THEN FPB[4]:=FPB[4]+LOGINFO[24]+CLOCK+P(RTR);           12540000 T  0053:3
            RDYTAPE;                                                            12540500 T  0057:3
        END;                                                                    12541000 T  0059:0
        LOOKFORTAPE:=P;                                                         12541500 T  0059:0
    END;                                                                        12542000 T  0059:1
                                                                                12542500 T  0061:0
%*****************************************************************************  12543000 T  0061:0
                                                                                12543500 T  0061:0
    REAL SUBROUTINE READTAPE;                                                   12544000 T  0061:0
    BEGIN                                                                       12544500 T  0061:0
RD:     IF DSED OR PRT[P1MIX,@25]=5 THEN BEGIN P(5); GO TO RED END;             12545000 T  0061:0
        IF WAITIO(B,@2000040,UNIT).[42:1] THEN                                  12545500 T  0065:1
        BEGIN                                                                   12546000 T  0067:0
            P(WAITIO(B,@2000040,UNIT),DEL);                                     12546500 T  0067:2
            IF M[B INX 3] THEN                                                  12547000 T  0069:0
              IF LOOKFORTAPE THEN GO TO RD;                                     12547500 T  0070:2
            P(3);                                                               12548000 T  0072:3
            GO TO RED;                                                          12548500 T  0073:0
        END;                                                                    12549000 T  0075:0
        FOR T:=17 STEP 18 UNTIL 89 DO                                           12549500 T  0075:0
          IF M[B INX T].[20:1] THEN T:=256;                                     12550000 T  0076:0
        P(T>200);                                                               12550500 T  0081:2
RED:    READTAPE:=P;                                                            12551000 T  0082:1
    END;                                                                        12551500 T  0082:2
                                                                                12552000 T  0082:3
%*****************************************************************************  12552500 T  0082:3
                                                                                12553000 T  0082:3
    BOOLEAN SUBROUTINE SPACETOFILE;                                             12553500 T  0082:3
    BEGIN                                                                       12554000 T  0083:0
        X:=NUM;                                                                 12554500 T  0083:0
        WHILE (X:=X-1) GEQ 0 DO                                                 12555000 T  0083:3
        BEGIN                                                                   12555500 T  0086:0
            DO UNTIL (T:=READTAPE);                                             12556000 T  0086:0
            IF T GEQ 3 THEN BEGIN P(1); GO TO SPACEND END;                      12556500 T  0088:0
        END;                                                                    12557000 T  0090:0
        P(0);                                                                   12557500 T  0090:2
SPACEND:                                                                        12558000 T  0090:3
        SPACETOFILE:=P;                                                         12558500 T  0090:3
    END;                                                                        12559000 T  0091:0
                                                                                12559500 T  0091:1
%*****************************************************************************  12560000 T  0091:1
                                                                                12560500 T  0091:1
    BOOLEAN SUBROUTINE FINDFILE;                                                12561000 T  0091:1
    BEGIN                                                                       12561500 T  0092:0
        IF (HEADER:=DIRECTORYSEARCH(MFID,-FID,SEARCHVAL)) LSS 64 THEN           12562000 T  0092:0
          GO TO NOMORE;                                                         12562500 T  0094:2
        HEADER:=[M[HEADER]]&30[8:38:10];                                        12563000 T  0095:0
        SEGNR:=0;                                                               12563500 T  0097:2
```

```
                CURROW:=10;                                                  12564000 T  0098:1
                IF ABORTED:=HEADER[5].[2:1] THEN                             12564500 T  0099:0
                  IF HEADER[7]=0 THEN                                        12565000 T  0100:2
                  BEGIN                                                      12565500 T  0102:0
NOMORE:                P(1);                                                12566000 T  0102:2
                       GO TO NOFILE;                                         12566500 T  0102:3
                  END;                                                       12567000 T  0103:1
                LABELTABLE[V]:=NABS(FID);                                    12567500 T  0103:1
                P(0);                                                        12568000 T  0104:3
NOFILE:         FINDFILE:=P;                                                 12568500 T  0105:0
            END;                                                             12569000 T  0105:1
                                                                             12569500 T  0105:2
%*****************************************************************************  12570000 T  0105:2
                                                                             12570500 T  0105:2
            BOOLEAN SUBROUTINE NOMOREREELS;                                  12571000 T  0105:2
            BEGIN                                                            12571500 T  0106:0
                IF HEADER.[CF] GEQ 64 THEN FORGETSPACE(HEADER);              12572000 T  0106:0
                IF FID.[REELNO]=0 THEN                                       12572500 T  0109:0
                BEGIN HEADER:=0;                                             12573000 T  0110:1
                    P(1);                                                    12573500 T  0111:2
                END ELSE                                                     12574000 T  0111:3
                BEGIN                                                        12574500 T  0111:3
                    STREAM(ONE:=1, F:=[FID]);                                12575000 T  0112:1
                    BEGIN SI:=LOC ONE; DS:=8 ADD END;                        12575500 T  0113:1
                    P(FINDFILE);                                             12576000 T  0114:0
                END;                                                         12576500 T  0115:0
                NOMOREREELS:=P;                                              12577000 T  0115:0
            END;                                                             12577500 T  0115:1
         $ SET OMIT = NOT PACKETS                                            12578000 T  0115:2
                                                                             12587500 T  0115:2
%*****************************************************************************  12588000 T  0115:2
                                                                             12588500 T  0115:2
            SUBROUTINE REMOVEIT;                                             12589000 T  0115:2
            BEGIN                                                            12589500 T  0116:0
                T:=DIRECTORYSEARCH(=MFID,=(FID:=PFIRSTFID),SEARCHVAL);       12590000 T  0116:0
                IF T GEQ 64 THEN                                             12590500 T  0118:3
         $ SET OMIT = NOT PACKETS                                            12591000 T  0119:2
                  DO IF FID=IOD THEN GO AUT UNTIL NOMOREREELS;               12592500 T  0119:2
         $ SET OMIT = NOT PACKETS                                            12593000 T  0122:2
AUT:                                                                         12594500 T  0122:2
            END;                                                             12595000 T  0122:2
                                                                             12595500 T  0122:3
%*****************************************************************************  12596000 T  0122:3
                                                                             12596500 T  0122:3
            SUBROUTINE PAGEJECT;                                             12597000 T  0122:3
            BEGIN                                                            12597500 T  0123:0
         $ SET OMIT = NOT RJE                                                12598000 T  0123:0
                P(WAITIO(@4000100000,0,V), DEL);                             12600500 T  0123:0
            END;                                                             12601000 T  0124:2
                                                                             12601500 T  0126:0
%*****************************************************************************  12602000 T  0126:0
                                                                             12602500 T  0126:0
            SUBROUTINE WRITEB;                                               12603000 T  0126:0
            BEGIN                                                            12603500 T  0126:0
         $ SET OMIT = NOT RJE                                                12604000 T  0126:0
                P(WAITIO(B INX @21010400000,0,V), DEL);                      12607000 T  0126:0
            END;                                                             12607500 T  0128:0
                                                                             12608000 T  0130:0
%*****************************************************************************  12608500 T  0130:0
                                                                             12609000 T  0130:0
```

```
SUBROUTINE IDLETIMER;                                                   12609500 T  0130:0
BEGIN                                                                   12610000 T  0130:0
     STOPLOG(P1MIX,1);                                                  12610100 T  0130:0
     P(@1MIX); P1MIX:=0;                                                12610500 T  0132:2
     IDLETIME;                                                          12611000 T  0133:2
     P1MIX:=P;                                                          12611500 T  0134:0
$ SET OMIT = NOT(NEWLOGGING)                                            12611899 T  0134:2
     STARTLOG(P1MIX,0);                                                 12612000 T  0134:2
END IDLETIMER;                                                          12612500 T  0137:0
                                                                        12613000 T  0137:1
%*************************************************************************12613500 T  0137:1
                                                                        12614000 T  0137:1
SUBROUTINE SETUPINREC;                                                  12614500 T  0137:1
BEGIN                                                                   12615000 T  0138:0
     INREC:=[M[8 INX (UNIT=18)]]&18[8:38:10];                           12615500 T  0138:0
     INREC[17]:=0;                                                      12616000 T  0141:1
END;                                                                    12616500 T  0142:2
                                                                        12617000 T  0142:3
%*************************************************************************12617500 T  0142:3
                                                                        12618000 T  0142:3
SUBROUTINE INVALIDNUM;                                                  12618500 T  0142:3
BEGIN                                                                   12618750 T  0143:0
     FILEMESS("INVALID","FILE   ",0,"NUMB  #",NUM+1,0,0);               12619000 T  0143:0
END;                                                                    12619250 T  0145:3
                                                                        12619500 T  0149:0
%*************************************************************************12620000 T  0149:0
                                                                        12620500 T  0149:0
P(DEL,Z,MSCW,STF);                                                      12621000 T  0149:0
GO TO SW[P];                                                            12621500 T  0150:2
%                                                                       12621900 T  0153:3
%   LOOKFORTAPE FINDS THE NEXT REEL. THE FIRST RECORD IS A LABEL SO     12621910 T  0153:3
%   INREC IS MOVED DOWN TO SKIP IT.                                     12621920 T  0153:3
                                                                        12621930 T  0153:3
LOOK4TAPE:                                                              12622000 T  0153:3
                                                                        12622100 T  0153:3
P(LOOKFORTAPE);                                                         12622500 T  0153:3
INREC:=(NOT 17) INX INREC;                                              12623000 T  0155:0
RECOUNT:=0;                                                             12623500 T  0156:3
GO RETURNTOCOM19;                                                       12624000 T  0157:2
                                                                        12624400 T  0158:0
NOMOREELS:                                                              12624500 T  0158:0
                                                                        12624600 T  0158:0
P(NOMOREREELS);                                                         12625000 T  0158:0
GO RETURNTOCOM19;                                                       12625500 T  0159:0
                                                                        12625900 T  0159:2
QTSPEC:                                                                 12626000 T  0159:2
                                                                        12626100 T  0159:2
PRT[P1MIX,@25]:=0;                                                      12626250 T  0159:2
P(T);                          % BE CAREFUL OF THIS.                   12626500 T  0161:1
IF UNIT=18 THEN                % DISK PORTION                          12626750 T  0161:2
BEGIN NT2:=(T.[9:24] DIV 5)&T[1:2:1];                                   12627000 T  0162:1
     IOD:=(HEADER[8] DIV 3)×3;          % CALCULATE TRUE ROW SIZE      12627500 T  0165:2
     IF (T:=3×NT2+SEGNR) LSS 0 THEN     % SPACE BACKWARD               12628000 T  0167:2
     DO IF (CURROW:=CURROW-1) LSS 10 THEN    % TO A PREVIOUS FILE.      12628500 T  0169:3
     BEGIN                                                              12629000 T  0172:0
          IF FID=FIRSTFID THEN GO TO BOMBER;                            12629500 T  0172:2
          IF SEARCHVAL=3 THEN P(DIRECTORYSEARCH(-MFID,FID,13),DEL);     12630000 T  0173:3
          FORGETSPACE(HEADER);                                          12630500 T  0176:3
          STREAM(ONE:=1, F:=[FID]);                                     12631000 T  0177:3
          BEGIN SI:=LOC ONE; DS:=8 SUB END;                             12631500 T  0178:3
```

```
                    IF (HEADER:=DIRECTORYSEARCH(MFID,FID,5)) LSS 64                12632000 T  0179:2
                      THEN GO BOMBER;                                              12632002 T  0181:1
                    HEADER:=[M[HEADER]]&30[8:38:10];                               12632500 T  0182:1
                    CURROW:=HEADER[9].[43:5]+9;                                    12633000 T  0184:3
                    WHILE HEADER[CURROW]=0 DO CURROW:=CURROW-1;                    12633500 T  0186:3
                    IF CURROW<10 THEN                                              12634000 T  0190:0
                    BEGIN                                                          12634500 T  0190:3
BOMBER:                 NT1:="RANGE +";                                            12635000 T  0191:1
                        IF (NT2:=PRT[P1MIX,@25]).[2:1] THEN                        12635500 T  0192:0
                        NT1:=NT1&"-"[42:42:6];                                     12636000 T  0194:0
                        FILEMESS("INVALID","QT     ",0,                            12636500 T  0196:1
                              NT1,NT2.[9:24],0,0);                                 12637000 T  0197:1
                        PRT[P1MIX,@25]:=5;                  % FORCE A QT            12637500 T  0199:0
                        P(DEL);                             % LEFT AT 12626500     12638000 T  0200:3
                        GO RETURNFALSE;                                            12638500 T  0201:0
                    END;                                                           12639000 T  0205:0
                  END UNTIL (T:=IOD+T) GEQ 0                                       12639500 T  0205:0
                  ELSE                                % SPACE DISK FORWARD         12640000 T  0206:1
                  BEGIN                                                            12640500 T  0207:1
                    IF T GEQ IOD THEN                 % TO ANOTHER ROW,            12641000 T  0207:3
                    DO                                % CHECKING FOR NEW FILE      12641500 T  0208:2
                      IF (CURROW:=CURROW+1) GEQ (HEADER[9].[43:5]+10) THEN         12642000 T  0209:0
NEXTFILE:               IF NOMOREREELS THEN GO TO BOMBER                           12642500 T  0212:0
                    UNTIL (T:=T-IOD) LSS IOD;                                      12643000 T  0214:0
                    IF (CURROW-10)×IOD+T GTR HEADER[7]×3 THEN                      12643500 T  0217:0
                      GO TO NEXTFILE;                                              12644000 T  0220:0
                  END;                                                             12644500 T  0220:2
                  SEGNR:=T;                                                        12645000 T  0220:2
                  P(19);                                                           12645500 T  0221:1
                END ELSE                              % TAPE PORTION               12646000 T  0221:2
                BEGIN                                                              12646500 T  0221:2
                  IF T.[2:1] THEN                     % SPACE BACKWARD              12647000 T  0222:0
                    IF (T:=T.[9:24]) LSS INREC[17].[CF] THEN                       12647500 T  0222:3
                    BEGIN IOD:=(T+4) DIV 5;                                        12648000 T  0225:3
                        DO P(WAITIO((89 INX B)&7[22:45:3],0,UNIT),DEL)             12648500 T  0228:0
                          UNTIL (IOD:=IOD-1) LEQ 0 OR DSED OR QTED;                12649000 T  0231:0
                        RECOUNT:=5;                                                12649500 T  0236:2
                    END ELSE GO TO BOMBER             % REEL SWITCH NOT ALLOWED    12650000 T  0237:1
                  ELSE                                                             12650250 T  0237:1
                  BEGIN IOD:=(T.[9:24]) DIV 5;        % SPACE FORWARD              12650500 T  0237:1
                      DO UNTIL (X:=READTAPE) OR (IOD:=IOD-1)=0;                    12651000 T  0239:2
                    IF IOD≠0 THEN                                                  12651500 T  0244:0
                      IF X≠5 THEN GO TO BOMBER;       % 5=DS-ED. LET IT FALL THRU. 12652000 T  0244:3
                    RECOUNT:=0;                                                    12652500 T  0246:2
                  END;                                                             12653000 T  0247:1
                  RECOUNT:=(M[B INX 17] INX NOT RECOUNT).[CF];                     12653500 T  0247:1
                  P(18);                                                           12654000 T  0250:2
                END;                                                               12654500 T  0250:3
%                                                                                  12654900 T  0250:3
%               FIX UP INREC, BUILD IO DESC AND QT MESSAGE AS NEXT TO BE WRITTTEN. 12654910 T  0250:3
%                                                                                  12654920 T  0250:3
                P(T:=B INX P(XCH));                                                12655000 T  0250:3
                INREC:=INREC&P(XCH)[CTC];                                          12655500 T  0252:0
                M[T-1]:=(RECOUNT+1)&74[11:41:7]&(V≠22)[29:44:4];                   12656000 T  0253:2
                NT1:=P;                               % LEFT AT 12626500           12656500 T  0258:2
                STREAM(A:=NT1.[FF], C:=NT1.[2:1], PNCH:=V=22, B:=T-18);            12657000 T  0259:0
                BEGIN DS:=16 LIT"<<<<<<<<<<<<<<<< ";                               12657500 T  0262:2
                    CI:=CI+PNCH; GO TO PRNT; DS:=7 LIT"  PUNCH"; GO TO L1;         12658000 T  0264:3
                PRNT:DS:=7 LIT"PRINTER";                                           12658500 T  0267:0
                L1:  DS:=21 LIT" BACK UP FILE SPACED ";                            12659000 T  0268:1
```

```
            CI:=CI+C; GO TO FER; DS:=4 LIT"BACK"; GO TO L2;                12659500 T  0271:1
        FER: DS:=4 LIT" FOR";                                              12660000 T  0273:0
        L2:  DS:=4 LIT"WARD";                                              12660500 T  0273:3
            SI:=LOC A; DS:=6 DEC; B:=DI; DI:=DI-6;                         12661000 T  0274:2
            DS:=5 FILL; DI:=B;                                             12661500 T  0275:2
            CI:=CI+PNCH; GO TO LIN; DS:=5 LIT" CARD"; GO TO L3;            12662000 T  0276:0
        LIN: DS:=5 LIT" LINE";                                             12662500 T  0278:0
        L3:  DS:=17 LIT"S, >>>>>>>>>>>>>>>";                               12663000 T  0279:0
            B:=DI; SI:=B; SI:=SI-8; DS:=7 WDS;                             12663500 T  0281:2
        END;                                                               12664000 T  0282:2
        GO RETURNTRUE;                                                     12664500 T  0282:3
                                                                           12664900 T  0283:1
    INITIALIZE:                                                            12665000 T  0283:1
                                                                           12665100 T  0283:1
    %   HANDLES MISCELLANEOUS SETUP TASKS, INCLUDING STARTING THE TIMING FOR   12665110 T  0283:1
    %   LOGGING, CHECKING AND READYING THE INPUT FILE AND SPREADING COMMON.    12665120 T  0283:1
    %                                                                      12665130 T  0283:1
        RCW,[CF]:=P(.COM19,LOD) INX 1;                                     12665500 T  0283:1
     $ SET OMIT = NOT RJE                                                  12665750 T  0285:1
        V:=COMMON,[VF];                                                    12667750 T  0285:1
        IF P(.INREC,LOD)=0 THEN                                            12668000 T  0286:2
        BEGIN                                                              12668250 T  0287:2
     $ SET OMIT = NOT RJE                                                  12668500 T  0288:0
            BEGIN                                                          12669250 T  0288:0
                IF LABELTABLE[V],[1:5]≠@21 THEN     % PRINTER CL-ED         12669500 T  0288:0
                BEGIN                                                      12669750 T  0289:2
                    IF (UNIT:=COMMON,[UNITF])<16 THEN                      12670000 T  0290:0
                    IF LABELTABLE[UNIT]=@2100000060606060&                 12670250 T  0291:3
                      TINU[V][6:30:18] THEN SETNOTINUSE(UNIT,0);           12670500 T  0293:0
                    GO TO INITIATE;                                        12670750 T  0296:0
                END;                                                       12671000 T  0296:2
                LABELTABLE[V],[5:1]:=0;                                    12671250 T  0296:2
            END;                                                           12671500 T  0299:0
            PRT[P1MIX,@25]:=0;                                             12672000 T  0299:0
            B:=(GETSPACE(91,0,1)+2)&90[8:38:10];                           12672500 T  0300:3
        END;                                                               12673000 T  0304:0
     $ SET OMIT = NOT RJE                                                  12673500 T  0304:0
        RDCTABLE[V],[8:6]:=P1MIX;                                          12675000 T  0304:0
        STARTIMING(5,V);                                                   12675250 T  0306:2
        STARTIMING(0,UNIT:=COMMON,[UNITF]);                                12675500 T  0307:2
        FPB:=PRT[P1MIX,3];                                                 12675750 T  0309:2
        COPY:=COMMON,[COPYF];                                              12676000 T  0311:0
        IF UNIT=18 THEN                                                    12676500 T  0312:1
        BEGIN                                                              12677000 T  0313:0
            MFID:=IF V=22 THEN "PUD    " ELSE "PBD    ";                   12677500 T  0313:2
     $ SET OMIT = NOT RJE                                                  12678000 T  0316:1
            FIRSTFID:=LABELTABLE[V],[6:42];                                12679500 T  0316:1
     $ SET OMIT = NOT PACKETS                                              12680000 T  0318:2
            FID:=FIRSTFID;                                                 12681500 T  0318:2
            SEARCHVAL:=3;                                                  12682000 T  0319:1
            IF FINDFILE THEN GO RETURNFALSE;                               12682500 T  0320:0
        END ELSE                                                           12684000 T  0321:3
        BEGIN                                                              12684500 T  0321:3
            ABORTED:=0;                                                    12686000 T  0326:0
            NOCONT:=((NUM:=COMMON,[NUMF]) OR COPY)≠0;                      12686500 T  0326:3
            MFID:=MULTITABLE[UNIT];                                        12687000 T  0329:2
            IF LABELTABLE[UNIT],[1:5]≠@21 THEN      % UNIT WAS CL-ED WHILE  12687300 T  0330:2
            BEGIN ABORTED:=2;                       % WE WERE SCHEDULED.   12687400 T  0332:0
                GO RETURNFALSE;                                            12687500 T  0333:1
            END;                                                           12687600 T  0333:3
```

```
            FID:=LABELTABLE[UNIT]:=(*P(DUP))&0[5:47:1];                12687700 T  0333:3
            RDCTABLE[UNIT].[8:6]:=P1MIX;                               12688000 T  0336:3
            RRRMECH:=RRRMECH OR TWO(UNIT);                             12688500 T  0339:1
            RDYTAPE;                                                   12689000 T  0341:0
            IF SPACETOFILE THEN                                        12690500 T  0342:0
            BEGIN                                                      12691000 T  0343:0
                IF T=3 THEN INVALIDNUM;        % SET BY READTAPE IF EUT.  12691500 T  0343:2
                GO RETURNFALSE;                                        12692000 T  0346:0
            END;                                                       12692500 T  0346:2
        END;                                                           12693000 T  0346:2
        SETUPINREC;                                                    12693500 T  0346:2
        GO RETURNTRUE;                                                 12694000 T  0348:0
                                                                       12694400 T  0348:2
    STARTANEWFILE:                                                     12694500 T  0348:2
                                                                       12694600 T  0348:2
    %   HANDLES THE END OF A FILE AND FIGURES OUT WHAT TO DO NEXT. BUT  12694610 T  0348:2
    %   FIRST, THE LOG MUST BE TAKEN CARE OF. (DONT USE T BETWEEN HERE AND  12694620 T  0348:2
    %   THE TEST AT 12705750.)                                         12694630 T  0348:2
    %                                                                  12694640 T  0348:2
        IF ABORTED=2 THEN GO TO TAPECL;                                12694800 T  0348:2
        IF SIGNEDON THEN                                               12695000 T  0349:3
        BEGIN                                                          12695500 T  0350:0
            LOGINFO[12]:=*P(DUP)+PROCTIME[P1MIX]+CLOCK+P(RTR);         12696000 T  0350:2
            LOGINFO[13]:=IOTIME[P1MIX]-(IOTIME[P1MIX]:=LOGINFO[13]);   12696500 T  0353:3
            OLDIDLETIME:=OLDIDLETIME+LOGINFO[12];                      12697000 T  0357:0
            PROCTIME[P1MIX]:=*P(DUP)-LOGINFO[12];                      12697500 T  0358:2
            IDLETIMER;                                                 12698000 T  0360:3
            LOGINFO[14]:=JAR[P1MIX,7]-(JAR[P1MIX,7]:=LOGINFO[14]);     12698500 T  0362:0
            LOGINFO[17]:=XCLOCK+P(RTR);                                12699000 T  0366:1
            LOGINFO[18]:=(DSED×2)&DATE[1:18:30];                       12699500 T  0368:0
            LOGINFO[23]:=FPB[3]&TINU[UNIT][24:18:12];                  12700000 T  0371:3
            LOGINFO[28]:=FPB[8]&TINU[V][24:18:12];                     12700500 T  0374:2
            TINU[UNIT].[18:12]:=0; TINU[V].[18:12]:=0;                 12701000 T  0377:1
            SIGNEDON:=LOGINFO[24]+CLOCK+P(RTR);                        12701500 T  0382:1
            LOGINFO[24]:=LOGINFO[29]:=SIGNEDON;                        12702000 T  0384:1
            FPB[4]:=(*P(DUP))-SIGNEDON;                                12702500 T  0386:2
            FPB[9]:=(*P(DUP))-SIGNEDON;                                12703000 T  0388:2
            LOGSPACE([LOGINFO[0]],30);                                 12703500 T  0390:2
            FORGETSPACE(LOGINFO);                                      12704000 T  0391:3
            SIGNEDON:=0;                                               12704500 T  0392:3
        END;                                                           12705000 T  0393:2
    %                                                                  12705100 T  0393:2
    %   IF DSED OR QTED, SKIP THE CHECKS FOR COPIES.                   12705110 T  0393:2
    %                                                                  12705120 T  0393:2
        IF (TERMFLAG:=DSED OR QTED×3) THEN                             12705250 T  0393:2
          IF V=22 THEN GO TO PNCHDS ELSE GO TO PRNTDS;                 12705500 T  0397:2
    %                                                                  12705600 T  0399:3
    %   T IS SET IF THE FIRST GET FAILS. THIS SHOULD ONLY HAPPEN AT THE END  12705610 T  0399:3
    %   OF A BACK-UP TAPE. NOTE THAT IF A FILE NUMBER IS SPECIFIED, INITIAL-  12705620 T  0399:3
    %   IZE ONLY SPACES TO ITS START, SO WE MAY CATCH AN INVALID NUMBER  12705630 T  0399:3
    %   HERE. SINCE ONLY ONE FILE IS PRINTED WHEN A NUMBER IS GIVEN, IF WE  12705640 T  0399:3
    %   ARRIVE HERE, IT MUST HAVE BEEN A BAD NUMBER. IF IT IS DESIRED TO  12705650 T  0399:3
    %   CONTINUE DOWN THE TAPE AFTER THE SPECIFIED FILE, THIS TEST WILL NEED  12705660 T  0399:3
    %   TO BE CHANGED.                                                 12705670 T  0399:3
    %                                                                  12705680 T  0399:3
        IF T THEN                          % FIRST GET FAILED           12705750 T  0399:3
          IF UNIT≠18 THEN                                              12706000 T  0400:0
          BEGIN                                                        12706250 T  0401:1
              IF COMMON.[NUMF]≠0 THEN INVALIDNUM;                      12706500 T  0401:3
              GO TO TAPEND;                                            12706750 T  0405:0
```

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                    END ELSE GO REMOVEM;                                                12707000 T  0405:2
                %                                                                       12707100 T  0405:2
                    IF (COPY:=COPY-1) GTR 0 THEN        % MORE COPIES OF FILE RQD.       12707250 T  0405:2
                    BEGIN                                                               12707500 T  0407:1
                        IF V=22 AND PUNCHLCK THEN                                       12707750 T  0407:3
                        BEGIN                                                           12708000 T  0409:2
            PNCHLK:         STREAM(P1MIX, T:=T:=SPACE(10));                             12708250 T  0410:0
                            BEGIN DS:=25 LIT"#PNCH LOCKED:PRNPBT/DISK=";                12708500 T  0413:0
                                SI:=LOC P1MIX; DS:=2 DEC; DS:=LIT"+";                   12708750 T  0416:2
                                DI:=DI-3; DS:=FILL;                                     12709000 T  0417:2
                            END;                                                        12709250 T  0418:0
                            SPOUT(T);                                                   12709500 T  0418:1
                            REPLY[P1MIX]:=NABS(T:=VOK&VWY[36:42:6]&VQT[30:42:6]);       12709750 T  0419:0
                            COMPLEXSLEEP(REPLY[P1MIX]>0 OR DSED);                       12710000 T  0423:0
  09635000    ACCIDENTAL ENTRY AT P1MIX
                            IF NOT WHYSLEEP(T) THEN GO TO PNCHLK;                       12710250 T  0430:2
                            IF DSED OR QTED THEN GO STARTANEWFILE;                      12710500 T  0431:3
                        END;                                                            12710750 T  0435:2
                        IF UNIT=18 THEN                     % DISK                       12711000 T  0435:2
                        BEGIN                                                           12711250 T  0436:1
                $ SET OMIT = NOT PACKETS                                                12711500 T  0436:3
            PRINTITAGAIN:                                                               12713000 T  0436:3
                            FID:=FIRSTFID;                                              12713500 T  0436:3
                            SEARCHVAL:=5;                                               12714000 T  0437:2
                            IF FINDFILE THEN GO TO EOF ELSE GO TO CONTINUE;             12714500 T  0438:1
                        END;                                                            12715000 T  0440:0
                %                                       % TAPE                          12715400 T  0440:0
                        IF RDCTABLE[UNIT].[14:10]≠1 THEN        % THIS ISNT FIRST REEL   12715500 T  0440:0
                        BEGIN                                                           12716000 T  0441:2
                            RDCTABLE[UNIT].[14:10]:=0;                                  12716500 T  0442:0
                            IF NOT LOOKFORTAPE THEN GO TO EOF;                          12717000 T  0444:2
                        END ELSE                                                        12717500 T  0446:2
                            RDYTAPE;                                                    12718000 T  0446:2
                        IF SPACETOFILE THEN GO TO EOF ELSE GO TO CONTINUE;              12718500 T  0448:0
                    END;                                                                12719000 T  0450:0
                $ SET OMIT = NOT PACKETS                                                12719500 T  0450:0
                                                                                        12725900 T  0450:0
            EOF:                                                                        12726000 T  0450:0
                                                                                        12726100 T  0450:0
                %   AT THIS POINT, WE ARE THROUGH WITH THIS FILE OR PACKET. CLEAN UP    12726110 T  0450:0
                %   THE OUTPUT BEFORE COING ON.                                         12726120 T  0450:0
                %                                                                       12726130 T  0450:0
                    IF V≠22 THEN                        % PAGE EJECT AND SEPARATE        12726500 T  0450:0
                    BEGIN                                                               12727000 T  0450:3
                        PAGEJECT;                                                       12727500 T  0451:1
            PRNTDS:                                                                     12728000 T  0452:0
                        IF SEPARATE THEN                                                12728500 T  0452:0
                        BEGIN                                                           12729000 T  0452:3
                            STREAM(U:=UNIT=18, X:=P(DUP)-17, F:=FID, A:=TINU[V],        12729500 T  0453:1
                                B);                                                     12730000 T  0455:3
                            BEGIN                                                       12730500 T  0456:1
                                U(SI:=LOC F; SI:=SI+1; DS:=4 CHR; DS:=LIT" ");          12731000 T  0456:1
                                SI:=LOC A; SI:=SI+5; DS:=3 CHR;                         12731500 T  0458:1
                                DS:=3 LIT" --"; X(DS:=7 LIT"B5700--"); DS:=LIT" ";      12732000 T  0459:0
                                SI:=SI-3; DS:=3 CHR;                                    12732500 T  0462:1
                                U(DS:=LIT" "; SI:=LOC F; SI:=SI+1; DS:=4 CHR);          12733000 T  0462:3
                            END;                                                        12733500 T  0464:3
                            FOR T:=1 STEP 1 UNTIL 5 DO WRITEB;                          12734000 T  0465:0
                            FOR T:=2 STEP 2 UNTIL SEPARATION DO                         12734500 T  0469:1
                $ SET OMIT = NOT RJE                                                    12735000 T  0470:0
```

```
                    P(WAITIO(@4002000000,0,V), DEL);                                  12737500 T  0470:0
                FOR T:=1 STEP 1 UNTIL 5 DO WRITEB;                                    12738000 T  0473:3
                PAGEJECT;                                                             12738500 T  0479:1
            END;                                                                      12739000 T  0480:0
        END;                                                                          12739500 T  0480:0
    PNCHDS:                                                                           12740000 T  0480:0
        IF UNIT≠18 THEN                          % TAPE                                12740500 T  0480:0
        BEGIN                                                                         12741000 T  0480:3
            IF TERMFLAG OR NOCONT OR ABORTED THEN                                     12741500 T  0481:1
            BEGIN                                                                     12742000 T  0482:2
    TAPEND:                                                                           12742500 T  0483:0
                REWIND;                                                               12743000 T  0483:0
                GO TO TEST;                                                           12743500 T  0484:0
            END ELSE                                                                  12744000 T  0484:2
            BEGIN                                % TRY THE NEXT FILE                   12744500 T  0484:2
                NUM:=NUM+1;                                                           12745000 T  0485:0
                RECOUNT:=@77777;                                                      12745500 T  0486:1
    CONTINUE:   SETUPINREC;                                                           12746000 T  0487:0
    RETURNFALSE:                                                                      12746500 T  0488:0
                P(0);                                                                 12747000 T  0488:0
                GO RETURNTOCOM19;                                                     12747500 T  0488:1
            END;                                                                      12748000 T  0490:0
        END;                                                                          12748500 T  0490:0
                                                                                      12748900 T  0490:0
    REMOVEM:                                                                          12749000 T  0490:0
                                                                                      12749100 T  0490:0
    %   DISK - CLOSE THE OPENED FILES AND, IF NOT QTED, REMOVE THEM.                  12749110 T  0490:0
    %                                                                                 12749120 T  0490:0
        IOD:=IF SEARCHVAL=3 THEN FID ELSE NOT 0;                                      12749500 T  0490:0
        SEARCHVAL:=13; REMOVEIT;                                                      12750000 T  0493:0
        FPB[4]:=(*P(DUP))+CLOCK+P(RTR);                                               12750250 T  0495:0
        IF TERMFLAG≠3 THEN                       % NOT QT-ED                           12750500 T  0497:2
        BEGIN                                                                         12751000 T  0498:1
            IOD:=NOT 0;                                                               12751500 T  0498:3
            SEARCHVAL:=7; REMOVEIT;                                                   12752000 T  0499:3
    TEST:                                % FOR CONTINUATION FOR AUTOPRINT OR RJE.      12752500 T  0502:0
            IF AUTOPRINT AND NOT (FORMTOG OR TERMFLAG) AND                            12753000 T  0502:0
               (TWO(V) AND SAVEWORD)=0                                                12753500 T  0504:0
     $ SET OMIT = NOT RJE                                                             12753750 T  0505:1
            THEN                                                                      12755000 T  0505:1
              IF (COMMON:=PRINTORPUNCHWAIT(-V,-STA))≠0 THEN GO TO STOPTIME;           12755500 T  0506:0
        END;                                                                          12756000 T  0509:0
    TAPECL:                                                                           12756400 T  0509:2
        COMMON:=0;                                                                    12756500 T  0509:2
        FORGETSPACE(B);                                                               12757000 T  0510:1
     $ SET OMIT = NOT RJE                                                             12757350 T  0511:0
        SETNOTINUSE(V,FORMTOG);                                                       12757500 T  0511:0
    STOPTIME:                                                                         12757750 T  0512:0
        STOPTIMING(5,1023);                                                           12758000 T  0512:0
    RETURNTRUE:                                                                       12758250 T  0513:0
        P(1);                                                                         12758500 T  0513:0
    RETURNTOCOM19:                                                                    12759000 T  0513:1
        P(0,RDS,1,SUB,0,XCH,CFX,STF);                                                 12759500 T  0513:1
    END OF FIRST PRINTER BACKUP SPECIAL CASES PROCEDURE;                              12760000 T  0516:2
                                                                                                SIZE= 0517 WORDS
    PROCEDURE PRNPBTSPECASE2(Z);                                                      12800000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00314
    %                                                                                 12800100 T  0000:0
    %   THIS PROCEDURE HANDLES ADDITIONAL THINGS FOR COM19. VALUES OF Z ARE:          12800110 T  0000:0
    %   0     INITAILIZE LOGGING.                                                     12800120 T  0000:0
```

```
%   1     WRITE ABORT OR DSED MESSAGE AND CONSTRUCT ENDING LABEL.                12800130 T  0000:0
%   2     HANDLE PARITY ON INPUT FILE.                                           12800140 T  0000:0
%                                                                                12800150 T  0000:0
VALUE Z;  REAL Z;                                                                12800500 T  0000:0
BEGIN                                                                            12801000 T  0000:0
    REAL      RCW=+0, MSCW=-2, COMMON=-4;                                        12801500 T  0000:0
    ARRAY     INREC=+1[*];                                                       12802000 T  0000:0
    ARRAY     FPB=INREC+1[*], LOGINFO=FPB+1[*], HEADER=LOGINFO+1[*];             12802500 T  0000:0
    REAL      UNIT=HEADER+1, V=UNIT+1, COPY=V+1, MFID=COPY+1, FID=MFID+1,        12803000 T  0000:0
              IOD=FID+1, T=IOD+1, B=T+1;                                         12803500 T  0000:0
    REAL      SEARCHVAL=B+1, CURROW=SEARCHVAL+1, FIRSTFID=CURROW+1,              12804000 T  0000:0
              SEGNR=FIRSTFID+1;                                                  12804500 T  0000:0
    REAL      X=SEARCHVAL, NUM=CURROW, RECOUNT=SEGNR;                            12805000 T  0000:0
    BOOLEAN   SIGNEDON=SEGNR+1, FORMTOG=SIGNEDON+1, ABORTED=FORMTOG+1;           12805500 T  0000:0
    BOOLEAN   NOCONT=FIRSTFID;                                                   12806000 T  0000:0
  $ SET OMIT  = NOT PACKETS                                                      12806500 T  0000:0
  $ SET OMIT  = PACKETS                                                          12809500 T  0000:0
    REAL      PFIRSTFID=FIRSTFID, PCOPY=COPY;                                    12810000 T  0000:0
  $ SET OMIT  = NOT RJE OR PACKETS                                               12810500 T  0000:0
                                                                                 12812000 T  0000:0
    LABEL     SLEAP, WHY, EXITTOCOM19;                                           12812500 T  0000:0
    LABEL     SIGNIN, ABORTMSG, PARERR;                                          12813000 T  0000:0
    SWITCH    SW :=                                                              12813500 T  0000:0
              SIGNIN, ABORTMSG, PARERR;                                          12814000 T  0000:0
    DEFINE    DSED        = (TERMIX,[CF]=P1MIX)#,                                12814500 T  0000:0
              QTED        = (PRT[P1MIX,@25]≠0)#,                                 12815000 T  0000:0
              VF          = 43:5#,                                               12815100 T  0000:0
              UNITF       = 38:5#,                                               12815200 T  0000:0
              COPYF       = 30:8#,                                               12815300 T  0000:0
              NUMF        = 22:8#,                                               12815400 T  0000:0
              NOTP        = 29:1#,                                               12815500 T  0000:0
              COPYO       = 21:1#;                                               12815600 T  0000:0
                                                                                 12815900 T  0000:0
%*****************************************************************************  12816000 T  0000:0
                                                                                 12816500 T  0000:0
    SUBROUTINE IDLETIMER;                                                        12817000 T  0000:0
    BEGIN                                                                        12817500 T  0001:0
        STOPLOG(P1MIX,1);                                                        12817600 T  0001:0
        P(P1MIX); P1MIX:=0;                                                      12818000 T  0003:2
        IDLETIME;                                                                12818500 T  0004:2
        P1MIX:=P;                                                                12819000 T  0005:0
  $ SET OMIT = NOT(NEWLOGGING)                                                   12819399 T  0005:2
        STARTLOG(P1MIX,0);                                                       12819500 T  0005:2
    END IDLETIMER;                                                               12820000 T  0008:0
                                                                                 12820500 T  0008:1
%*****************************************************************************  12821000 T  0008:1
                                                                                 12821500 T  0008:1
    SUBROUTINE        FM;    %% BUILD AND SPOUT FORMS MESSAGE        %%         12822000 T  0008:1
    BEGIN                                                                        12822500 T  0009:0
        STREAM(U:=TINU[V], P1MIX, INREC, D:=T:=SPACE(10));                       12823000 T  0009:0
        BEGIN DS:=LIT"#";                                                        12823500 T  0013:0
            SI:=LOC U; SI:=SI+5; DS:=3 CHR;                                      12824000 T  0013:2
            DS:=20 LIT" FM RQD:PRNPBT/DISK="; DS:=2 DEC;                         12824500 T  0014:1
            U:=DI; DI:=DI-2; DS:=FILL; DI:=U;                                    12825000 T  0017:1
            SI:=INREC; DS:=5 LIT" FOR ";                                         12825500 T  0018:1
            SI:=SI+1; DS:=7 CHR; DS:=LIT"/";                                     12826000 T  0019:2
            SI:=SI+1; DS:=7 CHR; DS:=4 LIT" OF ";                                12826500 T  0020:2
            SI:=SI+1; DS:=7 CHR; DS:=LIT"/";                                     12827000 T  0021:3
            SI:=SI+1; DS:=7 CHR;                                                 12827500 T  0022:3
            DS:=LIT"+";                                                          12828000 T  0023:1
```

```
            END;                                                                12828500 T  0023:3
            SPOUT(T);                                                           12829000 T  0024:0
            REPLY[P1MIX] :=                                                     12829500 T  0024:3
                NABS(T:=VOK&VWY[36:42:6]&VQT[30:42:6]&VFM[24:42:6]);            12830000 T  0025:1
        END  FM SUBROUTIN;                                                      12830500 T  0029:3
                                                                                12831000 T  0030:0
    %*******************************************************************       12831500 T  0030:0
        SUBROUTINE        BADFM;        %BUILD AND SPOUT BAD FM MESSAGE   %     12832000 T  0030:0
        BEGIN                                                                   12832500 T  0030:0
            STREAM(A:=TINU[T],MX:=P1MIX,T:=T:=SPACE(10));                       12833000 T  0030:0
            BEGIN DS:=19 LIT"INVALID INPUT UNIT ";                              12833500 T  0033:2
                SI:=LOC MX; DS:=2 DEC;DS:=2 LIT"FM";                            12834000 T  0036:1
                SI:=LOC A; SI:=SI+5; DS:=3 CHR;                                 12834500 T  0037:1
                DS:=LIT "←"; DI:=DI-8; DS:=FILL;                                12835000 T  0038:0
            END;                                                                12835500 T  0039:0
            SPOUT(T);                                                           12836000 T  0039:1
        END BADFM SUBROUTIN;                                                    12836500 T  0040:0
                                                                                12837000 T  0040:1
    %*******************************************************************       12837500 T  0040:1
                                                                                12838000 T  0040:1
        SUBROUTINE WRITEBANDEJECT;                                              12838500 T  0040:1
        BEGIN                                                                   12839000 T  0041:0
     $ SET OMIT = NOT RJE                                                       12839500 T  0041:0
            BEGIN                                                               12842500 T  0041:0
                P(WAITIO(B INX @210104000000,0,V),DEL);                         12843000 T  0041:0
                IF V≠22 THEN P(WAITIO(@4000100000,0,V),DEL);                    12843500 T  0043:0
            END;                                                                12844000 T  0045:3
        END;                                                                    12844500 T  0045:3
                                                                                12845000 T  0048:0
    %*******************************************************************       12845500 T  0048:0
                                                                                12846000 T  0048:0
    %                                                                           12846500 T  0048:0
        P(Z,MSCW,STF);                                                          12847000 T  0048:0
        GO TO SW[P];                                                            12847500 T  0049:0
                                                                                12847600 T  0051:1
    SIGNIN:                                                                     12848000 T  0051:1
                                                                                12848100 T  0051:1
    %   HANDLES FIRST RECORD OF FILE, PICKING UP LOGGING INFO AS WELL AS        12848110 T  0051:1
    %   COPIES OR FORM SPECIFICATIONS. NOTE THAT LABEL INFO IS SAVED IN         12848120 T  0051:1
    %   LOGARRAY FOR USE AT ABORTMSG. TIMING IS STARTED AT INITAILIZE AND       12848130 T  0051:1
    %   STOPPED IN REWIND, AT REMOVEM OR AT STOPTIME FOR TAPE, DISK AND THE     12848140 T  0051:1
    %   OUTPUT UNIT RESPECTIVELY. LOGARRAY IS USED TO REMOVE THE TIME           12848150 T  0051:1
    %   ASSOCIATED WITH A GIVEN BACK UP FILE FROM THE TIMING IN THE FPB AND     12848160 T  0051:1
    %   LOG IT TO THE USER. THAT IS DONE IN SIGNOUT. THUS, THE TIME LOGGED      12848170 T  0051:1
    %   AT PRNPBT/DISK EOJ IS OVERHEAD TIME OCURRING DURING SWITCHING FROM      12848180 T  0051:1
    %   FILE TO FILE.                                                           12848190 T  0051:1
    %                                                                           12848200 T  0051:1
        LOGINFO:=[M[GETSPACE(31,0,1)+2]]&31[8:38:10];                           12848500 T  0051:1
        IF FORMTOG:=INREC[13] THEN FM;                                          12849000 T  0055:0
        IF COPY LEQ 0 AND NOT COMMON.[COPYO] THEN                               12849500 T  0058:0
          COPY:=IF (INREC[14] AND NOT @377)=0 THEN INREC[14]+1 ELSE 0;          12850000 T  0060:0
        LOGINFO[0]:=3;                                                          12850500 T  0065:0
        STREAM(S:=[INREC[4]],D:=[LOGINFO[1]]);                                  12851000 T  0066:1
        BEGIN SI:=S; DS:=9 WDS; END;                                            12851500 T  0067:3
        LOGINFO[10]:=5;                                                         12852000 T  0068:2
        LOGINFO[11]:=2;                                                         12852500 T  0069:3
        LOGINFO[12]:=-(PROCTIME[P1MIX]+CLOCK+P(RTR));                           12853000 T  0071:0
        LOGINFO[13]:= IOTIME[P1MIX];                                            12853500 T  0073:3
        IDLETIMER; LOGINFO[14]:=JAR[P1MIX,7];                                   12854000 T  0075:1
        LOGINFO[15]:=DATE;                                                      12854500 T  0078:0
```

```
                    LOGINFO[16]:=XCLOCK+P(RTR);                                          12855000 T  0079:1
                    LOGINFO[19]:=USERCODE[P1MIX];                                        12855500 T  0081:0
                    LOGINFO[20]:="PRINTER";                                              12856000 T  0082:2
                    LOGINFO[21]:="BACK-UP";                                              12856500 T  0083:3
                    LOGINFO[22]:=LOGINFO[27]:=0;                                         12857000 T  0085:0
                    LOGINFO[24]:=-CLOCK-P(RTR);                                          12857500 T  0087:1
                    LOGINFO[25]:=INREC[0];              % SAVE LABEL INFO FOR ABORT      12858000 T  0089:1
                    LOGINFO[26]:=INREC[1];                                               12858500 T  0090:3
                    LOGINFO[28]:=M[INREC INX NOT 14];                                    12859000 T  0092:1
                    LOGINFO[29]←INREC[2];                                                12859500 T  0095:1
                    LOGINFO[30]←INREC[3];                                                12860000 T  0096:3
                    IF FORMTOG THEN                                                      12860500 T  0098:1
                SLEAP:                                                                   12861000 T  0098:2
                    BEGIN COMPLEXSLEEP(REPLY[P1MIX] GEQ 0 OR DSED OR QTED);              12861500 T  0099:0
12710000    ACCIDENTAL ENTR# AT 0
                        IF NOT WHYSLEEP(T) THEN                                          12862000 T  0108:1
                        BEGIN FM; GO TO SLEAP END;                                       12862500 T  0109:1
                        IF REPLY[P1MIX].[CF]=VFM THEN                                    12863000 T  0114:0
                          IF (T:=REPLY[P1MIX].[FF]) NEQ 20 AND T NEQ 21 THEN             12863500 T  0115:2
                          BEGIN                         % ILLEGAL UNIT.                  12864000 T  0119:1
                              LABELTABLE[T]:=@114;                                       12864500 T  0119:3
                              BADFM;                                                     12865000 T  0121:0
                              READY:=READY AND (T:=NOT TWO(T));                          12865500 T  0122:0
                              RRRMECH:=RRRMECH AND T;                                    12866000 T  0124:2
                              SAVEWORD:=SAVEWORD AND T; FM; GO SLEAP                     12866500 T  0125:3
                    $ SET OMIT = NOT(RJE AND DATACOM )                                   12867000 T  0128:2
                          END ELSE                                                       12873000 T  0128:2
                          IF T≠V THEN                                                    12873500 T  0128:2
                          BEGIN                         % SWITCH UNITS.                  12874000 T  0129:3
                              LABELTABLE[T] := LABELTABLE[V];                            12874500 T  0130:1
                              RDCTABLE[T]   := RDCTABLE[V];                              12875000 T  0131:3
                              MULTITABLE[T] := MULTITABLE[V];                            12875500 T  0133:1
                              LABELTABLE[V] := MULTITABLE[V] := RDCTABLE[V] := 0;        12876000 T  0134:3
                              FPB[8].[36:6]:=(V:=T)+1;                                   12876500 T  0138:0
                          END;                                                           12877000 T  0141:2
                    END;                                                                 12877500 T  0141:2
                    FORMTOG:=(FORMTOG OR PUNCHLCK AND V=22) AND NOT (DSED OR QTED);      12878000 T  0141:2
                    SIGNEDON:=TRUE;                                                      12878500 T  0147:3
                    GO EXITTOCOM19;                                                      12879000 T  0148:2
                                                                                         12879100 T  0149:0
                ABORTMSG:                                                                12879500 T  0149:0
                                                                                         12879600 T  0149:0
                %   ABORTED=3 IMPLIES ABORT HAS OCCURRED. CURRENTLY, NOTHING ATTEMPTS TO 12879610 T  0149:0
                %   DISTINGUISH BETWEEN 1 AND 3, BUT ABORTED MUST BE SET HERE FOR TAPE   12879620 T  0149:0
                %   SO WHY NOT MAKE IT DIFFERENT.                                        12879630 T  0149:0
                %                                                                        12879640 T  0149:0
                    ABORTED:=3;                                                          12880000 T  0149:0
                    STREAM(T:=DSED OR QTED, B);                                          12880500 T  0149:3
                    BEGIN                                                                12881000 T  0153:2
                        DS:=8 LIT"#"; SI:=B; DS:=16 WDS; DI:=B;                          12881500 T  0153:2
                        CI:=CI+T; GO TO AB;                                              12882000 T  0155:2
                        DI:=DI+24;                                                       12882500 T  0156:1
                        DS:=34 LIT"  BACK-UP TERMINATED BY OPERATOR  ";                  12883000 T  0156:2
                        GO TO LEND;                                                      12883500 T  0161:0
                    AB: DI:=DI+34; DS:=11 LIT"  ABORTED  ";                              12884000 T  0161:1
                    LEND:                                                                12884500 T  0163:1
                    END;                                                                 12885000 T  0163:1
                    WRITEBANDEJECT;                                                      12885500 T  0163:2
                    IF V≠22 AND SIGNEDON THEN                                            12886000 T  0165:0
                    BEGIN                                                                12886500 T  0166:1
```

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                    STREAM(S←[LOGINFO[1]],T←0,B);                                   12887000 T  0166:3
                    BEGIN DS← 8LIT" LABEL  "; SI←S; 24(SI←SI+8); DS←16CHR;          12887500 T  0168:1
                          SI←SI+8; DS←8CHR; T←SI; SI←S; DS←9WDS; SI←T;              12888000 T  0170:3
                          SI←SI+1; DS←LIT" "; DS←7CHR; DS←LIT"/"; SI←SI+1; DS+7CHR; 12888500 T  0172:1
                          DS← 12 LIT " ";                                           12889000 T  0174:1
                    END;                                                            12889500 T  0176:0
                    WRITEBANDEJECT;                                                 12890000 T  0176:1
                END;                                                                12890500 T  0177:0
                GO TO EXITTOCOM19;                                                  12891000 T  0177:0
                                                                                    12891100 T  0177:2
            PARERR:                                                                 12891500 T  0177:2
                                                                                    12891600 T  0177:2
            %   BUILDS ERROR MESSAGE FOR OUTPUT AND ALLOWS OPERATOR TO OK OR DS.    12891610 T  0177:2
            %   T IS USED TO PASS BACK WHETHER OR NOT TO TERMINATE.                 12891620 T  0177:2
            %                                                                       12891630 T  0177:2
                IF V=22 THEN GO TO WHY;                                             12892000 T  0177:2
                STREAM(A:=UNIT, T:=T:=SPACE(15));                                   12892500 T  0178:3
                BEGIN 22(DS:=2 LIT ">>");SI:=LOC A;SI:=SI+7;                        12893000 T  0181:3
                    IF SC="B" THEN DS:=6 LIT " DISK " ELSE                          12893500 T  0183:1
                    DS:=6 LIT " TAPE ";                                             12894000 T  0185:0
                    DS:=26 LIT "PARITY ON PRINTER BACK UP ";                        12894500 T  0186:0
                    22(DS:=2 LIT ">>");                                             12895000 T  0189:2
                END STREAM;                                                         12895500 T  0190:2
             $ SET OMIT = NOT(RJE AND DATACOM )                                     12896000 T  0190:3
                P(WAITIO(T&16[CTF],0,V),DEL);                                       12897500 T  0190:3
                FORGETSPACE(T);                                                     12898000 T  0192:3
            WHY:                                                                    12898500 T  0193:2
                FILEMESS("#PARITY",0,0,"ERROR  ",0,0,0);                            12899000 T  0193:2
                REPLY[P1MIX]:=-VQT&VWY[36:42:6]&VOK[30:42:6];                       12899500 T  0195:3
                COMPLEXSNOOZE(MIXMAX,REPLY[P1MIX] GEQ 0 OR DSED OR QTED);           12900000 T  0199:1
12861500    ACCIDENTAL ENTRY AT 0
                IF NOT WHYSLEEP(VQT&VWY[36:42:6]&VOK[30:42:6]) THEN GO TO WHY;      12900500 T  0208:1
                T:=QSED OR QTED;                                                    12901000 T  0211:2
            EXITTOCOM19:                                                            12901500 T  0215:0
                P(0,RDS,0,XCH,CFX,STF);                                             12902000 T  0215:0
            END OF SECOND GROUP OF PRINTER BACKUP SPECIAL CASES;                    12902500 T  0217:0
                                                                                          SIZE= 0220 WORDS
            PROCEDURE COM19;                                                        13000000 T  0000:0
                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00322
            %                                                                       13000100 T  0000:0
            %   COM19, TOGETHER WITH PRNPBTSPECASE1 AND PRNPBTSPECASE2 WHICH SHARE  13000110 T  0000:0
            %   ITS STACK, ARE THE WORKING PART OF PRINTER BACK-UP. INFORMATION IS  13000120 T  0000:0
            %   PASSED TO COM19 IN COMMON AND LABELTABLE, AS FOLLOWS:               13000130 T  0000:0
            %   COMMON.[43:5]  LOGICAL UNIT NUMBER OF OUTPUT UNIT.                  13000140 T  0000:0
            %          [38:5]  INPUT UNIT NUMBER. IF DISK, THE LABELTABLE ENTRY FOR 13000160 T  0000:0
            %                  THE OUTPUT UNIT CONTAINS THE FILE ID.                13000170 T  0000:0
            %          [30:8]  NUMBER OF COPIES SPECIFIED IN PB MESSAGE.            13000180 T  0000:0
            %          [22:8]  IF TAPE, STARTING FILE NUMBER GIVEN IN PB MESSAGE.   13000190 T  0000:0
            %                  IF DISK, =0 IF ENTIRE PACKET IS TO BE PRINTED, =1 IF 13000200 T  0000:0
            %                  NOT.                                                 13000210 T  0000:0
            %          [21:1]  ON IF "=0" APPEARED IN PB MESSAGE.                   13000215 T  0000:0
            %   FOR RJE, COMMON IS THE ADDRESS OF A TWO WORD ARRAY, THE FIRST WORD  13000220 T  0000:0
            %   CONTAINS THE INFORMATION DESCRIBED ABOVE AND THE SECOND CONTAINS THE 13000230 T  0000:0
            %   FILE ID FOR DISK (WHICH IS IN LABELTABLE FOR NON-RJE FILES).        13000240 T  0000:0
            %                                                                       13000250 T  0000:0
            BEGIN                                                                   13001000 T  0000:0
                REAL    RCW=+0, COMMON=-4;                                          13002000 T  0000:0
                ARRAY   INREC[*], FPB[*], LOGINFO[*], HEADER[*];                    13003000 T  0000:0
                REAL    UNIT, V, COPY, MFID, FID, IOD, T, B;                        13004000 T  0000:0
                REAL    SEARCHVAL, CURROW, FIRSTFID, SEGNR;                         13005000 T  0000:0
```

```
      REAL     X=SEARCHVAL, NUM=CURROW, RECOUNT=SEGNR;                    13006000 T  0000!0
      BOOLEAN SIGNEDON, FORMTOG, ABORTED;                                 13007000 T  0000!0
      BOOLEAN NOCONT=FIRSTFID;                                            13008000 T  0000!0
    $ SET OMIT = NOT PACKETS                                              13009000 T  0000!0
      REAL     PFIRSTFID=FIRSTFID, PCOPY=COPY;                            13013000 T  0000!0
    $ POP OMIT OMIT                                                       13014000 T  0000!0
    $ SET OMIT = NOT RJE                                                  13015000 T  0000!0
  %                                                                       13017100 T  0000!0
  %   THE LOCAL VARIABLES ARE USED AS FOLLOWS:                            13017110 T  0000!0
  %   ARRAYS                                                              13017120 T  0000!0
  %     INREC      ARRAY DESCRIPTOR FOR THE CURRENT RECORD.               13017130 T  0000!0
  %     FPB        FPB ARRAY. INPUT IS THE FIRST FILE; OUTPUT THE 2ND.    13017140 T  0000!0
  %     LOGINFO    ARRAY IN WHICH THE LOG ENTRY IS BUILT. THE FIRST TEN   13017150 T  0000!0
  %                WORDS ARE THE CONTROL CARD ENTRY; THE NEXT 10, THE     13017160 T  0000!0
  %                PRINTER BACK-UP ENTRY AND THE LAST 10, THE FILE ENTRIES. 13017170 T  0000!0
  %     HEADER     DISK FILE HEADER.                                      13017180 T  0000!0
  %   REALS                                                               13017190 T  0000!0
  %     UNIT       LOGICAL UNIT NUMBER FOR INPUT.                         13017200 T  0000!0
  %     V          LOGICAL UNIT NUMBER FOR OUTPUT.                        13017210 T  0000!0
  %     COPY       NUMBER OF COPIES OF THIS FILE TO BE PRINTED. IF IT IS  13017220 T  0000!0
  %                NOT SPECIFIED, IT EQUALS 0.                            13017230 T  0000!0
  %     MFID       MULTI-FILE ID OF INPUT FILE.                           13017240 T  0000!0
  %     FID        FILE ID OF INPUT FILE.                                 13017250 T  0000!0
  %     IOD, T     TEMPORARY STORAGE.                                     13017260 T  0000!0
  %     B          ADDRESS OF 90 WORD BUFFER FOR INPUT.                   13017270 T  0000!0
  %   BOOLEANS                                                            13017280 T  0000!0
  %     SIGNEDON   ON IF LOGGING IS INITIALIZED. THIS SHOULD BE OFF ONLY  13017290 T  0000!0
  %                FOR FILES WHICH DO NOT START AT THE BEGINING, E.G.,    13017300 T  0000!0
  %                WHEN A STARTING REEL IS SPECIFIED ON DISK.             13017310 T  0000!0
  %     FORMTOG    ON IF FORM IS SPECIFIED OR PNCHLOCK IS SET.            13017320 T  0000!0
  %     ABORTED    =1, DISK ABORTED BY H/L. CHECK IN GET TO FIND OUT WHERE. 13017330 T  0000!0
  %                =2, TERMINATION DUE TO CL OF INPUT TAPE WHILE SCHEDULED. 13017335 T  0000!0
  %                =3, TAPE ABORTED BY H/L. FOUND BY RECOUNT MISMATCH.    13017340 T  0000!0
  %                                                                       13017350 T  0000!0
  %   THE FOLLOWING APPLY ONLY TO DISK FILES:                             13017360 T  0000!0
  %     SEARCHVAL  THIRD PARAMETER FOR DIRECTORYSEARCH. IT IS 3 OR 5 DURING 13017370 T  0000!0
  %                PRINTING, DEPENDING ON WHETHER IT IS THE FIRST COPY OR 13017380 T  0000!0
  %                NOT, AND 13 OR 7 DURING FILE TERMINATION.              13017390 T  0000!0
  %     CURROW     INDEX OF THE ROW CURRENTLY BEING PRINTED.              13017400 T  0000!0
  %     FIRSTFID   FILE ID OF FIRST REEL, USED FOR MULTIPLE COPIES OF     13017410 T  0000!0
  %                MULTI-REEL FILES.                                      13017420 T  0000!0
  %     SEGNR      NUMBER OF NEXT SEGMENT TO READ FROM THE CURRENT ROW.   13017430 T  0000!0
  %                                                                       13017440 T  0000!0
  %   THE FOLLOWING APPLY ONLY TO TAPES:                                  13017450 T  0000!0
  %     X          TEMPORARY STORAGE.                                     13017460 T  0000!0
  %     NUM        NUMBER OF CURRENT FILE ON TAPE, USED FOR COPIES.       13017470 T  0000!0
  %     RECOUNT    NUMBER OF RECORDS PRINTED IN THIS FILE. THIS IS CHECKED 13017480 T  0000!0
  %                AGAINST THE C-FIELD OF THE IO DESCRIPTORS IN THE FILE TO 13017490 T  0000!0
  %                SPOT ABORTS.                                           13017500 T  0000!0
  %     NOCONT     TRUE IF CONTINUATION FROM FILE TO FILE IS NOT ALLOWED. 13017510 T  0000!0
  %                                                                       13017520 T  0000!0
  %   THE FOLLOWING APPLY ONLY TO PACKETS:                                13017530 T  0000!0
  %     PCOPY      NUMBER OF COPIES FROM PB MESSAGE, WHICH MAY APPLY TO THE 13017540 T  0000!0
  %                ENTIRE PACKET. "COPY" IS SET ONLY FROM LABEL EQUATION. 13017550 T  0000!0
  %     PFIRSTFID  FILE ID OF FIRST FILE IN THE PACKET, USED FOR COPIES OF 13017560 T  0000!0
  %                THE PACKET. FIRSTFID APPLIES TO INDIVIDUAL FILES WITHIN 13017570 T  0000!0
  %                THE PACKET AND IS USED FOR COPIES SPECIFIED VIA LABEL  13017580 T  0000!0
  %                EQUATION.                                              13017590 T  0000!0
  %     STOG       SET DURING THE FIRST PRINTING OF THE PACKET IF ONE OF  13017600 T  0000!0
  %                THE FILES SPECIFIES MULTIPLE COPIES. IT IS USED TO     13017610 T  0000!0
```

```
%                RESTORE THE VALUE OF 3 TO SEARCHVAL WHEN THE FILE IS          13017620 T  0000:0
%                COMPLETED.                                                    13017630 T  0000:0
%                                                                              13017640 T  0000:0
%   THE FOLLOWING APPLIES ONLY TO RJE:                                         13017650 T  0000:0
%     STA        TERMINAL UNIT AND BUFFER NUMBER OF THE RJE TERMINAL.          13017660 T  0000:0
%                                                                              13017670 T  0000:0
    LABEL   TRYNEXT, TAPERDR, TAPERD, TAPECHK, ABORT, NOGET, GOTTEN,           13018000 T  0000:0
            START, RESTART, MAINLOOP, QUIT, TESTEND;                           13019000 T  0000:0
    DEFINE  DSED = (TERMIX.[CF]=P1MIX)#,                                       13020000 T  0000:0
            QTED = (PRT[P1MIX,@25]≠0)#;                                        13021000 T  0000:0
    DEFINE  LOOKFORTAPE     = PRNPBTSPECASE1(0)#,                              13022000 T  0000:0
            NOMOREREELS     = PRNPBTSPECASE1(1)#,                              13023000 T  0000:0
            QTSPEC          = P(PRNPBTSPECASE1(2),DEL)#,                       13024000 T  0000:0
            INITIALIZE      = PRNPBTSPECASE1(3)#,                              13025000 T  0000:0
            STARTANEWFILE   = PRNPBTSPECASE1(4)#,                              13026000 T  0000:0
            SIGNIN          = PRNPBTSPECASE2(0)#,                              13027000 T  0000:0
            ABORTMSG        = PRNPBTSPECASE2(1)#,                              13028000 T  0000:0
            PARERR          = PRNPBTSPECASE2(2)#;                              13029000 T  0000:0
                                                                               13030000 T  0000:0
%*********************************************************************        13031000 T  0000:0
                                                                               13032000 T  0000:0
    BOOLEAN SUBROUTINE GET;                                                    13033000 T  0000:0
    BEGIN                                                                      13034000 T  0001:0
        IF INREC[17].[20:1] THEN GO TO NOGET;                                  13035000 T  0001:0
        IF (INREC:=(NOT 17) INX INREC).[CF] GEQ B.[CF] THEN                    13036000 T  0002:3
          IF UNIT≠18 THEN GO TO TAPECHK ELSE                                   13037000 T  0006:0
        ELSE                              % READ NEXT BLOCK                    13038000 T  0007:1
        IF UNIT=18 THEN                                                        13039000 T  0007:3
        BEGIN                                                                  13040000 T  0009:0
            IF SEGNR > HEADER[7]×3 THEN GO TRYNEXT; % END OF FILE              13041000 T  0009:2
            IF (SEGNR GEQ HEADER[8]-1) THEN                                    13042000 T  0011:2
            BEGIN                                 % END OF ROW                 13043000 T  0013:0
                IF (CURROW:=CURROW+1) GEQ HEADER[9].[43:5]+10 THEN             13044000 T  0013:2
TRYNEXT:          IF NOMOREREELS THEN GO TO NOGET;                             13045000 T  0016:2
                SEGNR:=0;                                                      13046000 T  0018:2
            END;                                                               13047000 T  0019:1
            INREC:=90 INX INREC;                                               13048000 T  0019:1
            DISKIO(IOD,-B,90,HEADER[CURROW]+SEGNR);                            13049000 T  0020:3
            SEGNR:=SEGNR+3;                                                    13050000 T  0023:1
            SLEEP([IOD],IOMASK);                                               13051000 T  0024:2
            IF IOD.[28:1] THEN                                                 13052000 T  0026:0
            BEGIN PARERR;                                                      13053000 T  0026:3
                IF T THEN GO TO NOGET;    % DSED OR QTED                       13054000 T  0028:0
            END;                                                               13055000 T  0029:0
            IF ABORTED THEN                   % TEST FOR BAD IO DESC.           13056000 T  0029:0
              IF (M[B INX 18].[6:42] EQV "        ")=NOT 0 THEN                13057000 T  0029:1
              GO ABORT;                                                        13058000 T  0033:3
        END ELSE                                                               13059000 T  0034:1
        BEGIN                                 % TAPE                           13060000 T  0034:1
TAPERDR:    X:=0;                                                              13061000 T  0036:0
TAPERD:     IF (IOD:=WAITIO(B,@2000040,UNIT)).[43:1] THEN                      13062000 T  0036:3
            BEGIN PARERR;                                                      13063000 T  0039:0
                IF T THEN GO TO NOGET;    % DSED OR QTED                       13064000 T  0040:1
            END;                                                               13065000 T  0041:1
            IF IOD.[42:1] OR X THEN                                            13066000 T  0041:1
            BEGIN                                                              13067000 T  0042:2
                IF (X:=NOT X) THEN GO TO TAPERD;                               13068000 T  0043:0
                IF M[B INX 3] THEN                                             13069000 T  0044:3
                  IF LOOKFORTAPE THEN GO TO TAPERDR ELSE GO NOGET;             13070000 T  0046:1
            END;                                                               13071000 T  0048:2
```

```
                    IF (X:=M[B INX NOT 0])≠90 THEN                          13072000 T  0048:2
                      IF (X AND @7775)=16 THEN    % OLD FORMAT TAPE         13073000 T  0051:1
                      BEGIN                                                 13074000 T  0053:0
                          INREC.[CF]:=B INX 1;                              13075000 T  0053:2
                          INREC[17]:=M[B]&0[20:20:7];                       13076000 T  0055:2
                      END ELSE GO TO NOGET                                  13077000 T  0058:2
                    ELSE                                                    13078000 T  0058:2
                    BEGIN                                                   13079000 T  0058:2
                        INREC:=90 INX INREC;                                13080000 T  0061:0
TAPECHK:                IF (RECOUNT:=RECOUNT INX 1) ≠ INREC[17].[CF] THEN   13081000 T  0062:2
                        BEGIN                                               13082000 T  0065:0
ABORT:                      ABORTMSG;                                       13083000 T  0065:2
NOGET:                      P(0);                                           13084000 T  0066:1
                            GO TO GOTTEN;                                   13085000 T  0066:2
                        END;                                                13086000 T  0067:0
                    END;                                                    13087000 T  0067:0
                END;                                                        13088000 T  0067:0
                P(1);                                                       13089000 T  0067:0
GOTTEN:         GET:=P;                                                     13090000 T  0067:1
            END;                                                            13091000 T  0067:2
            %                                                               13092000 T  0067:3
            %   START IS USED FOR A NEW FILE (OR NEW PACKET). RESTART IS USED FOR   13092010 T  0067:3
            %   A COPY (OR A NEW FILE WITHIN A PACKET).                     13092020 T  0067:3
                                                                            13092030 T  0067:3
START:                                                                      13093000 T  0067:3
            IF COMMON=0 THEN GO TO INITIATE;                                13094000 T  0072:3
            IF INITIALIZE THEN                                              13095000 T  0074:2
            BEGIN                                                           13096000 T  0075:1
RESTART:    IF GET THEN                                                     13097000 T  0075:3
                BEGIN                                                       13098000 T  0077:0
                    IF INREC[17].[1:11]=0 THEN SIGNIN;                      13099000 T  0077:2
                    IF UNIT≠18 THEN RECOUNT:=INREC[17].[CF];                13101000 T  0080:1
                END ELSE                    % BAD FIRST BLOCK, USUALLY EOT. 13102000 T  0083:0
                BEGIN P(1);                                                 13103000 T  0083:0
                    GO TO TESTEND;                                          13104000 T  0083:3
                END;                                                        13105000 T  0084:1
MAINLOOP:                                                                   13106000 T  0084:1
                IF STOPJOB=P1MIX THEN STOPM(0);                             13107000 T  0084:1
                IF (T:=PRT[P1MIX,@25])≠0 OR DSED THEN                       13108000 T  0086:1
                BEGIN                                                       13109000 T  0089:3
                    IF T<0 THEN                     % + OR - SPECIFIED.      13110000 T  0090:1
                    BEGIN                                                   13111000 T  0091:0
                        GTSPEC;                                             13112000 T  0091:2
                        GO TO MAINLOOP;                                     13113000 T  0092:2
                    END;                                                    13114000 T  0093:0
                    ABORTMSG;                       % DSED OR QTED           13115000 T  0093:0
                    GO TO QUIT;                                             13116000 T  0093:3
                END;                                                        13117000 T  0094:1
                IF GET THEN                 % VALID REC. WRITE IT & CONTINUE 13118000 T  0094:1
                BEGIN                                                       13119000 T  0095:0
 $ SET OMIT = NOT RJE                                                       13120000 T  0095:2
                    P(WAITIO(INREC[17]&(INREC)[CTC]&8[21:42:6],0,V),DEL);   13128000 T  0095:2
                    GO TO MAINLOOP;                                         13129000 T  0099:0
                END;                                                        13130000 T  0099:2
            END;                                                            13131000 T  0099:2
QUIT:                                                                       13132000 T  0099:2
            P(0);                                                           13133000 T  0099:2
TESTEND:                                                                    13134000 T  0099:3
            T:=P;                           % T=1 IF FIRST GET FAILS, ELSE 0. 13135000 T  0099:3
            IF STARTANEWFILE THEN GO TO START ELSE GO TO RESTART;           13136000 T  0100:1
```

```
END OF PRINTING BACKUP TAPE AND DISK FILES;                                13137000 T  0102:0
                                                                                   SIZE= 0103 WORDS
 $ SET OMIT = NOT(DATACOM )                                                13198999 T  0000:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                        13299999 T  0000:0
REAL PROCEDURE ANALYSIS;%                                                  14000000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00326
        BEGIN%                                                             14001000 T  0000:0
        REAL ICW,IRCW,INCW,CL,T1,C,T2=SYLLABLE ;%                          14002000 T  0000:0
 $ SET OMIT = NOT(NEWLOGGING)                                              14002099 T  0000:0
        LABEL GETOUT;%                                                     14003000 T  0000:0
COMMENT  ANALYSIS  EXAMINS THE SYLLABLE WHICH CAUSED THE INTURRUPT AND%    14004000 T  0000:0
             FROM  THE RELATIVE ADDRESS OF THE SYLLABLE (INCLUDING%        14005000 T  0000:0
             VARIENT OPERATOR CONSIDERATIONS) COMPUTES THE LOCATION,C,     14006000 T  0000:0
             OF A COPY OF THE DESCRIPTOR ON THE TOP OF THE STACK.%         14007000 T  0000:0
             THE PREVIOUS TWO SYLLABLES ARE FETCHED BY THE STREAM%         14008000 T  0000:0
             STATEMENT GETSYLLABLES WHICH ALSO ADJUSTS THE C-L REGIST-     14009000 T  0000:0
             ERS PROPERLY.%                                                14010000 T  0000:0
             FINALLY THE STACK IS ADJUSTED AS FOLLOWS:%                    14011000 T  0000:0
                 DECREASE  S BY 1,IF OPDC OR DESC%                         14012000 T  0000:0
                 XCH A AND B REGISTERS,IF COC OR CDC%                      14013000 T  0000:0
                 OTHERWISE LEAVE THE SAME.                        ;        14014000 T  0000:0
        CHECKSTACKSPACE;%                                        %WF       14014100 T  0000:0
 $ SET OMIT = NOT(NEWLOGGING)                                              14014199 T  0006:0
        INCW ← PRT[P1MIX,8];%                                              14015000 T  0006:0
        POLISH(.INCW,IOR);%                                                14016000 T  0007:2
        IRCW ← * INCW ;%                                                   14017000 T  0008:0
        ICW ← *( (NOT 0) INX INCW);%                                       14018000 T  0009:0
        CL ← (IRCW INX 0) & IRCW[30:10:2];%                                14019000 T  0010:3
        STREAM            (T1←0,T2←0,CL:X←0);%                             14020000 T  0013:0
             BEGIN%                                                        14021000 T  0014:3
             SI←CL; SI←SI-2 ;  CL ← SI; DI ← LOC T2; DI←DI+6;%             14022000 T  0014:3
             DS ← 2 CHR;  SI ← SI-3;%                                      14023000 T  0016:0
             IF SC = "/" THEN%                                             14024000 T  0016:2
                 BEGIN%                                                    14025000 T  0017:0
                 SI←SI-1; IF SC ="0" THEN%                                 14026000 T  0017:0
                 BEGIN TALLY←1; T1←TALLY ;CL ← SI  END;%                   14027000 T  0017:3
                 END;%                                                     14028000 T  0018:2
             END  GETSYLLABLE ;%                                           14029000 T  0018:2
        POLISH(.CL,←,.T2,←,.T1,←);%                                        14030000 T  0018:3
        IF INCW.[32:1] THEN%                                               14031000 T  0020:1
             BEGIN COMMENT  P-BIT IN CHARACTER MODE ;%                     14032000 T  0021:0
             IF T2 = @4441 THEN%                                           14033000 T  0021:2
             BEGIN COMMENT ENTER CHARACTER MODE;%                          14034000 T  0022:1
                     P(M[(IRCW ← *(NOT 0 INX INCW ← PRT[P1MIX,8] ←%        14035000 T  0022:3
                         (NOT 1 INX INCW)&0[32:1:1])).[18:15]]&%           14036000 T  0024:1
                         1[16:47:1]&0[18:18:15],(NOT 0)INX INCW,←);        14037000 T  0029:3
                     C ← INCW INX 0 -2;%                                   14038000 T  0032:2
                 END ELSE BEGIN%                                           14039000 T  0034:1
             IF MEMORY[ C ← IRCW.[18:15]-T2.[36:6]].[1:3] = 4%             14040000 T  0036:0
             THEN%                                                         14041000 T  0039:3
             BEGIN%                                                        14042000 T  0040:0
             IF T2.[42:6]= @53 THEN BEGIN%                                 14043000 T  0040:2
COMMENT  CONTROL WORD MEANS CHARACTER MODE RELEASE;%                       14044000 T  0042:1
             T1←PRT[P1MIX,9]←M[(*((NOT 1)INX INCW)).[18:15]].[33:15];%     14045000 T  0042:1
             POLISH(M[T1],0,0);%                                           14046000 T  0047:2
        IF M[T1].[20:1] THEN CONTINUITYBIT;%                               14047000 T  0049:0
             PROGRAMRELEASE;%                                              14048000 T  0051:2
             END%                                                          14049000 T  0052:0
             END;%                                                         14050000 T  0052:0
             IF T2 = 0 THEN GO TO GETOUT;%                                 14051000 T  0052:0
```

```
                    END%                                                    14052000 T  0053:1
                END%                                                        14053000 T  0053:1
                ELSE%                                                       14054000 T  0053:1
            BEGIN%                                                          14055000 T  0053:1
            IF T2.[46:1] THEN%                                              14056000 T  0053:3
                BEGIN%                                                      14057000 T  0054:2
                C ← ICW.[33:15];%                                           14058000 T  0055:0
                POLISH(ICW, (NOT 1)INX INCW, ←,IRCW,%                       14059000 T  0056:1
                PRT[P1MIX,8]←INCW ← (NOT 0)INX INCW ,←);%                   14060000 T  0058:0
                END    OPDC  DESC  PART%                                    14061000 T  0061:1
            ELSE%                                                           14062000 T  0061:1
                BEGIN%                                                      14063000 T  0061:1
                C ← INCW INX 0 -2;%                                         14064000 T  0061:3
                IF (NT1 ← T2 AND @77) = @41 THEN%                           14065000 T  0063:2
                BEGIN   C ←C-1 ;%                                           14066000 T  0065:1
                POLISH(MEMORY[C],MEMORY[C+1],[MEMORY[C]], ← ,[MEMORY[C+1]   14067000 T  0067:0
                    ],←);%                                                  14068000 T  0071:1
                END CDC CDC PART%                                           14069000 T  0072:0
                ELSE IF NT1 = @31 THEN%                                     14070000 T  0072:0
                    BEGIN COMMENT THIS IS A BRANCH;%                        14071000 T  0073:1
            GETOUT:         CL ← P([PRT[P1MIX,1]],DUP,T2,XCH,←) INX @600000;  14072000 T  0073:3
                    END BRANCH PART%                                        14073000 T  0076:0
                ELSE IF NT1 = @35 THEN GO TO GETOUT; COMMENT RETURN;%       14074000 T  0076:3
                END  ALL SYLLABLES BUT OPDC DESC ;%                         14075000 T  0080:1
            END  WORD MODE INTURRUPT ;%                                     14076000 T  0080:1
            POLISH(IRCW & CL[33:33:15]&CL[10:30:2],INCW,←) ;%               14077000 T  0080:1
            ANALYSIS ← C ;%                                                 14078000 T  0082:2
        $ SET OMIT = NOT(NEWLOGGING)                                        14078099 T  0083:1
            END   ANALYSIS OF P BIT ;%                                      14079000 T  0083:1
                                                                                    SIZE= 0084 WORDS
        SAVE INTEGER PROCEDURE ACTUALOVERLAYADDRESS(TYPE, MIX, LOC);        14105000 T  0000:0
                                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00601
            VALUE     TYPE, MIX, LOC;                                       14106000 T  0000:0
            INTEGER   TYPE, MIX, LOC;                                       14107000 T  0000:0
            BEGIN INTEGER  T = +1;                                          14108000 T  0000:0
        $ SET OMIT = NOT(AUXMEM)                                            14108999 T  0000:0
                IF TYPE THEN % CODE...                                      14110000 T  0000:0
                BEGIN                                                       14110100 T  0000:2
        $ SET OMIT = NOT(AUXMEM)                                            14110999 T  0001:0
                    LOC := LOC INX 0;                                       14112000 T  0001:0
                    T := JAR[MIX,LOC DIV (T:=JAR[MIX,8])+10]+LOC MOD T;     14113000 T  0002:1
                END ELSE % BETTER BE DATA....                               14114000 T  0007:0
        $ SET OMIT = NOT(AUXMEM)                                            14114999 T  0007:0
                    T←DALOC[MIX,LOC.[33:6]+P(DUP)-1]+LOC.[39:9]             14117000 T  0007:0
        $ SET OMIT = NOT(AUXMEM)                                            14117999 T  0010:0
            END;                                                            14119000 T  0010:0
                                                                                    SIZE= 0012 WORDS
        $ SET OMIT = NOT(AUXMEM)                                            14119999 T  0000:0
        COMMENT             THE SEGMENT DICTIONARY IS CONSTRUCTED BY THE%   14125000 T  0000:0
                                COMPILERS AND EACH ENTRY HAS THE FORMAT:%   14126000 T  0000:0
                        [ 1: 1]  = 1 FOR TYPE 2 SEGMENTS, =0 OTHERWISE.%    14127000 T  0000:0
                        [ 2: 1]  = 1 FOR INTRINSICS , = 0 OTHERWISE.%       14128000 T  0000:0
                        [ 3: 1]  = 1 IF BEING MADE PRESENT, = 0 OTHERWISE   14128100 T  0000:0
                                     (INTERLOCK FOR RE-ENTRANT CODE)        14128200 T  0000:0
                        [ 4: 2]  = 0 FOR NORMAL SEGMENTS                    14128300 T  0000:0
                                 = 3 FOR SEGMENTS OVERLAID TO AUX. MEM.     14128400 T  0000:0
                                 = 2 FOR SEGMENTS TO BE OVERLAID TO         14128500 T  0000:0
                                     AUXILIARY MEMORY WHICH HAVEN"T BEEN    14128600 T  0000:0
                        [ 6: 1]  = 1 FOR COBOL68 FILE TANK.                 14128700 T  0000:0
                        [ 7: 1]  = 1 FOR COBOL68 READ ONLY ARRAY.           14128800 T  0000:0
```

```
                    [ 8:10]  = LINK TO PRT FOR 1ST DESCRIPTOR FOR%                14129000 T  0000:0
                             THIS SEGMENT.%                                      14130000 T  0000:0
                    [16:15]  = SEGMENT SIZE (<1024) FOR ABSENT                   14131000 T  0000:0
                             SEGMENTS .%                                         14132000 T  0000:0
                             = CORE ADDRESS OF PRESENT SEGMENTS.%                14133000 T  0000:0
                             =  1  FOR NEVER-PRESENT INTRINSICS.%                14134000 T  0000:0
                    [33:15]  = DISK ADDRESS  OF SEGMENT.%                        14135000 T  0000:0
                             = INTRINSIC-NUMBER FOR INTRINSICS.%                 14136000 T  0000:0
                    THE  PRT FOR PROGRAM SEGMENTS IS CONSTRUCTED BY THE%         14137000 T  0000:0
                         COMPILERS IN THE FORMAT :%                              14138000 T  0000:0
                    [ 0:5]   = PROGRAM DESCRIPTOR BITS.%                         14139000 T  0000:0
                    [ 6:1]   = STOPPER BIT WHICH DEFINES THE [ 7:11]%            14140000 T  0000:0
                             FIELD.%                                             14141000 T  0000:0
                    [ 7:11]  = LINK TO NEXT DESCRIPTOR THAT BELONGS TO%          14142000 T  0000:0
                             THIS SEGMENT, IF STOPPER FALSE.%                    14143000 T  0000:0
                             = SEGMENT NUMBER, IF STOPPER TRUE.%                 14144000 T  0000:0
                    [18:15]  = F-REGISTER FIELD USED AT RUN TIME IN%             14145000 T  0000:0
                             LABEL AND ACCIDENTIAL DESCRIPTORS.%                 14146000 T  0000:0
                             = SEGMENT NUMBER FOR WORD MODE AND%                 14147000 T  0000:0
                             CHARACTER MODE DESCRIPTORS.%                        14148000 T  0000:0
                    [33:15]  = CORE ADDRESS FOR PRESENT SEGMENTS.%               14149000 T  0000:0
                             = RELATIVE ADDRESS FOR ABSENT SEGMENTS,%            14150000 T  0000:0
                             I.E. RELATIVE TO BEGINNING OF SEGMENT.%             14151000 T  0000:0
                    EACH PRT  (R+4) CONTAINS A DESCRIPTOR WHICH POINTS%          14152000 T  0000:0
                         TO THE SEGMENT DICTIONARY.%                             14153000 T  0000:0
                ;%                                                               14154000 T  0000:0
            PROCEDURE MAKEPRESENT(C); VALUE C; REAL C;%                          14155000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00329
                BEGIN%                                                           14156000 T  0000:0
                REAL SAVEBIT, MINE;%                                             14157000 T  0000:0
                REAL   D,MOTHER,MOM,LOC,SIZE;%                                   14158000 T  0000:0
                INTEGER DISKADDR = SAVEBIT;%                                     14159000 T  0000:0
                DEFINE LINK= [ 7:11]#,STOPPER=[ 6: 1]#,PROGRAMDESC=[5:1]#;%      14160000 T  0000:0
                DEFINE NOTOPEN =[25:1] #;%                                       14161000 T  0000:0
                ARRAY NAME  DD ;%                                                14162000 T  0000:0
                ARRAY AIT[*];                                                    14162500 T  0000:0
                ARRAY PRTR[*]  ;%                                                14163000 T  0000:0
                REAL SEGNO=MOTHER, X=MOM,IOD ;%                                  14164000 T  0000:0
                REAL SPACE;%   SPACE FOR SEGMENT NUMBERS  (INTRINSICS) BY MIX    14164100 T  0000:0
                REAL MES,SAGE,GM;            % SPACE FOR NO MEM MESSAGE.          14164200 T  0000:0
            $ SET OMIT = NOT(NEWLOGGING)                                         14164399 T  0000:0
                LABEL EXIT; % ALL AVENUES MUST LEAD TO HERE                      14164500 T  0000:0
                LABEL WRAP,AROUND,TESTREADY;%                                    14165000 T  0000:0
                LABEL OPEN,CLOSE;%                                               14166000 T  0000:0
                LABEL CODEIN,INT;                                                14166100 T  0000:0
                LABEL DLOOP, NG;                                                 14166200 T  0000:0
                DEFINE  REVERSE =[22:1]#,READY  =[19:1]#,PRESENT  =[2:1]#;%      14167000 T  0000:0
            COMMENT MAKEPRESENT HAS THE FOLLOWING ACTIONS,DEPENDING ON THE TYPE% 14168000 T  0000:0
                    OF DESCRIPTOR CAUSING PRESENCE BIT :%                        14169000 T  0000:0
                    DATA DESCRIPTOR :%                                           14170000 T  0000:0
                        IF MOTHER ABSENT THEN GET CORE SPACE AND SET%            14171000 T  0000:0
                            MOTHER PRESENT WITH PROPER CORE ADDRESS%             14172000 T  0000:0
                            THEN IF INITIAL ACCESS,ZERO THE SPACE ELSE%          14173000 T  0000:0
                            READ IN FROM DISK AND RETURN DISK SPACE%             14174000 T  0000:0
                            THEN SET 1ST MEMORY LINK TO SAVE OR NOT SAVE%        14175000 T  0000:0
                            AND SET 2ND LINK TO ADDRESS OF MOTHER%               14176000 T  0000:0
                        IN ANY EVENT, SET COPY PRESENT WITH CORRECT CORE%        14177000 T  0000:0
                            ADDRESS.%                                            14178000 T  0000:0
                    IO  DESCRIPTOR:%                                             14179000 T  0000:0
                    PROGRAM DESCRIPTOR:%                                         14180000 T  0000:0
```

MAKEPRESENT

```
                    ;%                                                          14181000 T  0000:0
          SUBROUTINE RUNAROUND;%                                                14182000 T  0000:0
          BEGIN WHILE NOT (PRTR[X] ← ((LOC+2) INX PRTR[X])%                     14183000 T  0001:0
               OR MEMORY).STOPPER DO X ← PRTR[X].LINK;%                         14184000 T  0003:0
          END RUNAROUND;%                                                       14185000 T  0007:1
     %                                                                          14185100 T  0007:2
      $ SET OMIT = NOT(NEWLOGGING)                                              14185199 T  0007:2
          IF (D ← M[C]).[1:1] THEN%                                             14186000 T  0007:2
          IF D.[6:2]=1 THEN % TYPE 13 INTRINSIC                                 14186010 T  0013:3
          BEGIN X:=[INTRNSC[SEGNO←MINE←NFLAG(D) INX 0]];                        14186020 T  0015:2
               SEGNO:=SEGNO-1;                                                  14186030 T  0018:3
               STREAM(T:=SEGNO AND 3, I:=[INTABLE[P1MIX,SEGNO DIV 4]]);         14186100 T  0020:0
               BEGIN DI:=DI+T;DI:=DI+T;SKIP 1 DB;DS:=SET;END;%MARK TYPE 13 BIT  14186110 T  0022:3
                IF X>0 THEN SLEEP([X],-0);                                      14186120 T  0024:2
      $ SET OMIT = MONITOR OR NOT(AUXMEM)                                       14186121 T  0027:2
                IF (X INX 0)≤1023 THEN                                          14186130 T  0027:2
                BEGIN P(ABS(X),[X],←); SIZE←X INX 0;                            14186140 T  0028:3
      $ SET OMIT = NOT(AUXMEM)                                                  14186143 T  0031:2
                     DISKADDR := X.[6:27];                                      14186148 T  0031:2
                     MINE←MINE&SIZE[8:38:10]&3[1:46:2];                         14186150 T  0032:3
                     IOD:=13; GO TO CODEIN;                                     14186152 T  0035:2
                END ELSE BEGIN M[C].[CF]←INTRNSC[MINE].[CF];                    14186160 T  0036:3
                          M[C].[2:1]:=1;                                        14186170 T  0040:1
                          GO EXIT;                                              14186180 T  0043:0
                          END                                                   14186190 T  0043:2
          END ELSE                                                              14186200 T  0043:2
          BEGIN PRTR ← PRT[P1MIX,*];  LOC ← NFLAG(D)&0[5:5:1];                  14187000 T  0043:2
               DO IF LOC.PROGRAMDESC THEN SEGNO ← LOC.[18:15]%                  14188000 T  0047:0
                    ELSE IF LOC.STOPPER THEN SEGNO ← LOC.LINK%                  14189000 T  0048:1
                    ELSE LOC ← NFLAG(PRTR[LOC.LINK])%                           14190000 T  0051:1
               UNTIL SEGNO≠0;%                                                  14191000 T  0054:0
               DO ← SEGNO INX PRTR[4];%                                         14192000 T  0056:0
                IF DD[0].[3:1] AND TERMIX.[CF] NEQ P1MIX THEN                   14193000 T  0057:2
                     COMPLEXSLEEP((TERMIX.[CF]=P1MIX OR NOT DD[0].[3:1]));      14193100 T  0059:3
12900000     ACCIDENTAL ENTRY AT 1
                IF TERMIX.[CF]=P1MIX THEN GO TO INITIATE;                       14193200 T  0067:2
               IF (SIZE ← (MINE ← DD[0]).[18:15])≤1023 THEN%                    14194000 T  0069:3
               BEGIN DD[0].[3:1] ← 1;%                                          14195000 T  0072:1
                    IF MINE<0 THEN%                                             14196000 T  0074:2
                      IF PRTR[X ← MINE.[8:10]].[2:1] THEN GO AROUND;%           14197000 T  0075:1
                    IF MINE.[2:1] THEN%                                         14198000 T  0078:2
                    BEGIN X ← [INTRNSC[MINE INX 0]];%                           14198100 T  0079:1
                         IF X>0 THEN SLEEP([X],-0);%                            14198200 T  0081:1
                         IF (X INX 0)≤1023 THEN BEGIN P(ABS(X),[X],←);%         14198300 T  0084:1
                              SIZE ← X INX 0;                                   14198400 T  0087:0
      $ SET OMIT = MONITOR OR NOT(AUXMEM)                                       14198410 T  0088:1
      $ SET OMIT = NOT(AUXMEM)                                                  14198499 T  0088:1
                              DISKADDR ← X.[6:27];                              14198700 T  0088:1
                         END ELSE BEGIN LOC ← (SIZE ← X INX 0)-2;               14198800 T  0089:2
                              DD[0].[FF] ← SIZE;  GO AROUND;%                   14199000 T  0092:1
                         END;%                                                  14200000 T  0094:0
                    END ELSE IF JAR[P1MIX,10]=0 THEN%                           14201000 T  0094:0
                      DISKADDR := DATADDRESS(P1MIX, MINE)                       14202000 T  0096:0
                    ELSE DISKADDR := CODEADDRESS(P1MIX, MINE);                  14203000 T  0096:2
                    IOD:=6×MINE.[2:1]+(MINE LSS 0)+1;                           14203010 T  0100:2
      CODEIN::      WHILE(LOC←GETSPACE(SIZE,IOD,((MINE<0) AND MINE.[6:1])+2))   14203020 T  0103:3
                         = 0 DO                                                 14203021 T  0107:0
                    BEGIN IF TERMIX.[CF]=P1MIX THEN                             14203100 T  0108:3
                         BEGIN IF MINE.[2:1] THEN                               14203200 T  0110:0
                              INTRNSC[MINE]:=NABS(*P(DUP));                     14203300 T  0111:1
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                    IF D.[6:2]=1 THEN                                   14203400 T  0113:2
                        INTRNSC[D]:=NABS(*P(DUP));                      14203500 T  0114:3
                    DD[0].[3:1]:=0; GO TO INITIATE;                     14203600 T  0117:0
                 END;                                                   14203700 T  0119:1
                IF(SPACE:=SPACE+1)=5 THEN                               14204000 T  0119:1
                BEGIN STREAM(P1MIX,SIZE,T:=[MES]);                      14204100 T  0121:0
                      BEGIN SI:=LOC P1MIX; DS:=2 DEC;                   14204200 T  0122:3
                          DS:=8LIT" NO MEM ";DS:=5 DEC;                 14204300 T  0123:1
                          DS:=5 LIT " WDS←";                            14204400 T  0124:3
                      END;                                              14204500 T  0125:3
                     P(WAITIO([MES],@177,25),DEL);                      14204600 T  0126:0
                END;                                                    14204700 T  0127:2
                SLEEP([CLOCK],NOT CLOCK);                               14205000 T  0127:2
             END;                                                       14205100 T  0129:1
             IF MES NEQ 0 THEN                                          14205200 T  0129:3
             BEGIN STREAM(T:=[MES]);                                    14205300 T  0130:2
                 BEGIN DI:=DI+3;DS:=7LIT"OK MEM←" END;                  14205400 T  0131:3
                 P(WAITIO([MES],@177,25),DEL);                          14205500 T  0133:2
             END;                                                       14205600 T  0135:0
             DISKIO(IOD, -LOC-1, SIZE, DISKADDR);  X ← MINE.[8:10];%    14206000 T  0135:0
          SLEEP([IOD],IOMASK);                                          14206100 T  0138:2
          IF IOD.[26:7] NEQ 0 THEN                                      14206110 T  0140:0
             BEGIN                                                      14206120 T  0141:1
             IF MINE.[2:1] THEN INTRNSC[MINE]:=NABS(*P(DUP));           14206135 T  0141:3
             DD[0].[3:1] := 0;                                          14206140 T  0144:3
             GO TO NG;                                                  14206145 T  0146:2
             END;                                                       14206160 T  0147:0
       $ SET OMIT = NOT(STATISTICS)                                     14206299 T  0147:0
             IF D.[6:2]=1 THEN                                          14206310 T  0147:0
             BEGIN M[C].[CF]←LOC+2;                                     14206320 T  0148:1
                   M[C].[2:1]←1;                                        14206330 T  0151:2
             GO TO INT;                                                 14206340 T  0154:1
             END;                                                       14206350 T  0154:3
             IF MINE>0 THEN BEGIN RUNAROUND;%                           14207000 T  0154:3
                M[C] ← ((LOC+2) INX D) OR MEMORY;%                      14208000 T  0157:0
       INT:                                                             14208010 T  0160:0
                IF MINE.[2:1] THEN%                                     14209100 T  0160:0
                BEGIN M[LOC] ← (*P(DUP))&0[9:9:6];%                     14209200 T  0160:3
                    INTRNSC[MINE INX 0] ← ¬(*P(DUP))&(LOC+2)[CTC];%     14209300 T  0164:0
                END ELSE%                                               14209500 T  0167:1
                IF (X ← PRTR[4].[18:6])≠0 THEN%                         14210000 T  0167:1
                  M[LOC] ← (*P(DUP))&X[9:42:6];%                        14211000 T  0169:3
                IF DISKADDR>0 THEN M[LOC+1] := 0 & SIZE[CTF];           14212000 T  0173:0
                M[LOC+1] := (*P(DUP)) & SEGNO[CTC];                     14212010 T  0176:3
             IF MINE.[2:1] THEN M[LOC+1] ← (*P(DUP))&MINE[8:38:10];%    14212100 T  0179:2
             IF D.[6:2]=1 THEN                                          14212200 T  0184:0
             BEGIN M[LOC].[2:1]←0; GO EXIT;                             14212300 T  0185:1
             END;                                                       14212400 T  0189:0
                DD[0].[18:15] ← LOC+2;%                                 14213000 T  0189:0
             END PROGRAM CODE SEGMENTS%                                 14214000 T  0190:3
          ELSE BEGIN                                                    14215000 T  0190:3
                M[C] ← PRTR[X] ← M OR ((LOC+2)%                         14216000 T  0191:1
                    &(M[LOC+1] ← [PRTR[X]] INX 0)[18:33:15]%            14217000 T  0193:2
                    & (MINE.[7:1]×24) [3:43:5] % COBOL68 READ ONLY      14217500 T  0196:1
                    &SIZE[8:38:10]);%                                   14218000 T  0197:3
                IF MINE.[6:1] THEN    % COBOL68 FILE TANK                14218010 T  0200:3
                  IF NOT P(M[LOC+4],TOP,XCH,DEL) THEN% BUILD FIB PTR    14218025 T  0201:2
                  BEGIN                                                 14218027 T  0204:2
                    P([M[LOC+4]],DUP,DUP,LOD,XCH,INX,M[C],FFX,          14218030 T  0205:0
                    @100026,DIA 32,DIB 2,TRB 16,XCH,←);                 14218035 T  0208:3
```

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                    WHILE (AIT←PRTR[AITNDX]).PBIT=0                          14218040 T  0210:1
                      DO MAKEPRESENT([PRTR[AITNDX]] INX 0);                  14218045 T  0211:3
                    IF AIT.[8:10] < AIT[0]+2 THEN                            14218050 T  0216:0
                      BEGIN  P(AIT,0,0); INTERRUPT(1);% PHONEY INVALID       14218055 T  0218:1
                             P(DEL,DEL,DEL);          % INDEX ON AIT         14218060 T  0220:2
                             AIT ← PRTR[AITNDX];                             14218065 T  0221:1
                      END;                                                   14218070 T  0222:1
                    AIT[AIT[0]:=*P(DUP)+1]:=-(1&PRT[P1MIX,16]                14218075 T  0222:1
                                              [8:38:10]&M[C][FTF]);          14218080 T  0225:2
                    END;                                                     14218090 T  0228:2
$ SET OMIT = NOT(STATISTICS)                                                 14218099 T  0228:2
              END TYPE TWO DATA SEGMENTS;%                                   14219000 T  0228:2
              IF NOT MINE.[6:1] THEN M[LOC].[2:1] ← 0;                       14220000 T  0228:2
          END ABSENT SEGMENTS%                                               14221000 T  0232:3
          ELSE BEGIN LOC ← SIZE-2;%                                          14222000 T  0232:3
AROUND:     IF DD[0]>0 THEN%                                                 14223000 T  0234:2
              IF NOT PRTR[X ← DD[0].[8:10]].[2:1] THEN RUNAROUND;%           14224000 T  0235:1
            M[C] ← IF DD[0]>0 THEN ((SIZE INX D) OR M)%                      14225000 T  0240:0
                 ELSE PRTR[DD[0].[8:10]];%                                   14226000 T  0243:1
          END;%                                                              14227000 T  0245:1
          IF DD[0].[2:1] THEN%                                               14227100 T  0245:1
          BEGIN % INTRINSIC                                                  14227200 T  0246:0
          IF (SIZE:=(DD[0] INX 0)-1) NEQ 16 THEN %NOT INTRINSIC 17           14227210 T  0246:2
            BEGIN                                                            14227220 T  0248:3
              STREAM(SEGNO, T ← SIZE AND 3,%                                 14227300 T  0249:1
                     I ← [INTABLE[P1MIX,SIZE DIV 4]]);%                      14227400 T  0250:2
              BEGIN                                                          14227500 T  0252:1
                SI:=I; SI:=SI+T; SI:=SI+T; SKIP 1 SB;                        14227520 T  0252:1
                IF SB THEN; % REMEMBER TYPE 13 REFERENCE                     14227540 T  0253:3
                DI:=DI+T; DI:=DI+T; T:=DI; S1:=LOC T;                        14227560 T  0254:1
                SI:=SI-2; DS:=2 CHR;                                         14227580 T  0255:3
                IF TOGGLE THEN BEGIN DI:=T; SKIP 1 DB; DS:=SET; END;         14227600 T  0256:1
              END;                                                           14227620 T  0257:1
            END;                                                             14227630 T  0257:2
          END;%                                                              14227700 T  0257:2
          DD[0].[3:1] ← 0; GO EXIT;                                          14228000 T  0257:2
      END;%                                                                  14229000 T  0259:3
          IF (MOM:=D.[3:5])≠0 AND (MOM AND @33)≠@30 THEN                     14230000 T  0259:3
              BEGIN%                                                         14231000 T  0263:0
COMMENT I/O DESCRIPTOR;%                                                     14232000 T  0263:2
              IF JAR[P1MIX,2] < 0 THEN                                       14233000 T  0263:2
                BEGIN TERMINATE(P1MIX);                                      14233100 T  0265:0
                      TERMINALMESSAGE(25);                                   14233200 T  0266:1
                END;                                                         14233300 T  0267:0
              MOM← MEMORY[D  INX  (IF D.REVERSE THEN 2 ELSE NOT 1)]%         14234000 T  0267:0
                     INX  0;%                                                14235000 T  0270:0
TESTREADY:    IF NOT MEMORY[MOM].READY THEN%                                 14236000 T  0271:3
                     SLEEP([MEMORY[MOM]],IOMASK);%                           14237000 T  0273:2
              IF MEMORY[MOM].PRESENT THEN%                                   14238000 T  0276:0
                     MEMORY[C]←MEMORY[MOM]%                                  14239000 T  0277:2
              ELSE%                                                          14240000 T  0279:0
              BEGIN%                                                         14241000 T  0280:1
              IF MEMORY[MOM].NOTOPEN THEN%                                   14242000 T  0280:3
OPEN:         BEGIN SAVEOPEN(MOM); IF TERMIX.[CF]=P1MIX THEN GO EXIT;        14243000 T  0282:1
                     GO TESTREADY END                                        14244000 T  0285:1
              ELSE BEGIN%                                                    14245000 T  0285:3
COMMENT READY AND NOT PRESENT INDICATES REEL-SWITCH OR TERMINATE;%           14246000 T  0286:1
                PRTR←M[MOM-3];%                                              14247000 T  0286:1
                LOC←PRTR[15].[25:5];%                                        14248000 T  0288:1
                SIZE←PRTR[4].[8:4];%                                         14249000 T  0289:3
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                    IF M[MOM].[27:1] THEN%                                  14250000 T  0291:1
                    IF M[MOM].[24:1] THEN%                                  14251000 T  0292:3
                    BEGIN IF SIZE=2 AND NOT PRTR[4].[2:1]%                  14252000 T  0294:3
                          AND NOT M[MOM].[22:1] THEN%                       14253000 T  0296:1
                        BEGIN BLASTQ(LOC);%                                 14254000 T  0299:2
                              P(WAITIO(M[MOM-2],0,LOC),DEL);%               14255000 T  0300:3
                              P(WAITIO(@1000000340000005,0,LOC),DEL);%      14256000 T  0303:2
                              IF M[M[MOM-2] INX 4].[42:6]=1 THEN%           14257000 T  0305:0
                    CLOSE:    BEGIN LOC←PRTR[13].[28:10];%                  14258000 T  0308:3
                                    FILECLOSE(MOM&@12[18:33:15]);%          14259000 T  0310:3
                                    PRTR[13].[28:10]←LOC+1;%                14260000 T  0312:0
                                    GO TO OPEN;%                            14261000 T  0315:0
                              END;%                                         14262000 T  0317:0
                        END;%                                               14263000 T  0317:0
                    END ELSE%                                               14264000 T  0317:0
                    BEGIN IF SIZE=2 OR SIZE=7 OR SIZE=8 THEN%               14265000 T  0317:0
                        BEGIN IF NOT PRTR[4].[2:1] THEN%                    14266000 T  0320:1
                                M[M[MOM-2] INX 4].[42:6]←1;%                14267000 T  0322:0
                              GO TO CLOSE;%                                 14268000 T  0327:0
                        END;%                                               14269000 T  0327:2
                    END;%                                                   14270000 T  0327:2
                    P(MOM,M[MOM].[27:1]+1,0,0);%                            14271000 T  0327:2
                    COM11;%                                                 14272000 T  0330:1
                    END;%                                                   14273000 T  0330:3
                END;%                                                       14274000 T  0330:3
                END%                                                        14275000 T  0330:3
            ELSE%                                                           14276000 T  0330:3
                BEGIN%                                                      14277000 T  0330:3
        COMMENT  DATA DESCRIPTOR;%                                          14278000 T  0331:1
        DLOOP:                                                              14278100 T  0331:1
            IF   (MOTHER←MEMORY[MOM ← D.[18:15]]).[2:1] THEN GO WRAP;%      14279000 T  0331:1
          IF (MOTHER INX 0) = 6 THEN % I/O ERROR FROM OLAY                  14279150 T  0335:0
              BEGIN                                                         14279200 T  0336:1
              TERMINATE(P1MIX & 20[CTF]);                                   14279250 T  0336:3
              GO TO INITIATE;                                               14279350 T  0338:0
              END;                                                          14279400 T  0338:2
            IF (MOTHER INX 0) = 5 THEN % INTERLOCK FROM OLAY                14279450 T  0338:2
              BEGIN                                                         14279500 T  0339:3
              COMPLEXSLEEP(((M[MOM] INX 0) NEQ 5));                         14279550 T  0340:1
14193100    ACCIDENTAL ENTRY AT 5
              GO TO DLOOP;                                                  14279600 T  0347:0
              END;                                                          14279650 T  0347:2
            SAVEBIT ← MOTHER.[CF]=1;                                        14280000 T  0347:2
            MEMORY[MOM] ← MOTHER&((LOC ←GETSPACE(SIZE←MOTHER.[8:10],2,%     14281000 T  0349:1
                    SAVEBIT      ))+2)[33:33:15]&1[2:47:1];%                14282000 T  0352:0
        $ SET OMIT = NOT(AUXMEM)                                            14282099 T  0355:1
            IF MOTHER.[CF]≤3 THEN                                           14283000 T  0355:1
              STREAM(L←LOC+2, S←SIZE-1, T←0, W←(MOTHER.[CF]=2));            14284000 T  0356:2
                BEGIN  SI ← LOC S;SI←SI+6;DI←LOC T;DI←DI+7;DS←CHR;%          14285000 T  0360:2
                DI←L;  SI←LOC W;  DS←WDS;                                   14286000 T  0361:3
                SI←L; T(DS←32 WDS; DS←32 WDS); DS←S WDS;%                   14287000 T  0362:2
                END  ZERO SPACE%                                            14288000 T  0364:2
            ELSE%                                                           14289000 T  0364:2
                BEGIN%                                                      14290000 T  0364:3
        COMMENT READ ARRAY FROM DISK AND RETURN DISK SPACE;%                14291000 T  0365:1
        $ SET OMIT = NOT(STATISTICS)                                        14291099 T  0365:1
              DISKIO(IOD,-LOC-1,MOTHER.[8:10],%                             14292000 T  0365:1
                          DATADDRESS(P1MIX, MOTHER));                       14292100 T  0367:2
            SLEEP([IOD],IOMASK);                                            14292110 T  0369:0
            IF IOD.[26:7] NEQ 0 THEN                                        14292120 T  0370:2
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                    BEGIN                                                   14292130 T  0371:3
NG:                 FORGETSPACE(LOC+2);                                     14292140 T  0372:1
                    COMPLEXSLEEP((TERMIX.[CF]=P1MIX));                      14292150 T  0373:2
14279550   ACCIDENTAL ENTRY AT P1MIX
                    GO TO INITIATE;                                         14292160 T  0379:1
                    END;                                                    14292170 T  0379:3
            $ SET OMIT = NOT(STATISTICS)                                    14292199 T  0379:3
                      MOM←MOM&MOTHER[CTF];                                  14293000 T  0379:3
                     END ;%                                                 14295000 T  0381:0
                MEMORY[LOC].[2:1] ←   SAVEBIT;%                             14296000 T  0381:0
                MEMORY[LOC+1] ← MOM ;%                                      14297000 T  0383:3
            $ SET OMIT = NOT(STATISTICS)                                    14297099 T  0385:3
           WRAP:%                                                           14298000 T  0385:3
                MEMORY[C] ← IF D.[8:10] = 0 THEN P(M[MOM],0,CDC,D,XCH,INX)% 14299000 T  0385:3
                          ELSE  MEMORY[MOM];%                               14300000 T  0390:2
                     END;%                                                  14301000 T  0392:2
           EXIT:                                                            14301100 T  0392:2
            $ SET OMIT = NOT(NEWLOGGING)                                    14301199 T  0392:2
                END  MAKEPRESENT ;%                                         14302000 T  0392:2
                                                                                   SIZE= 0394 WORDS
            REAL ADDRS=NT1;%                                                14342000 T  0000:0
           PROCEDURE ZIPPER(A,B,C);VALUE A,B,C; REAL A,B,C; FORWARD;        14342100 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00343
            PROCEDURE COM5;%                                                14343000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00343
              BEGIN%                                                        14344000 T  0000:0
                REAL RCW=+0,%                                               14345000 T  0000:0
                     ERTOG=+2,%                                             14346000 T  0000:0
                     I    =+3,%                                             14347000 T  0000:0
                     T    =+4;%                                             14348000 T  0000:0
                INTEGER J=I;%                                               14349000 T  0000:0
                ARRAY VECTOR=+5[*],S=+6[*];%                                14350000 T  0000:0
                INTEGER Q=S;                                                14350100 T  0000:0
                ARRAY FILEBLOCK=+7[*];%                                     14351000 T  0000:0
                ARRAY TSKA=+13[*];                                          14351050 T  0000:0
                INTEGER LINK; LABEL RETURNEM;                               14351100 T  0000:0
                INTEGER MOTHER=+8, NEXTMOM=+9, MOMMIX=+10, CATCH=+11;%      14351200 T  0000:0
                REAL ENDAIT=MOMMIX,A=MOMMIX,K=NEXTMOM;                      14351205 T  0000:0
                REAL CHAIN=+12,ABSEVT=CHAIN;                                14351210 T  0000:0
                REAL MSCW = -1;                                             14351220 T  0000:0
                REAL JAR9 = CHAIN+1;                                        14351230 T  0000:0
          $ SET OMIT = NOT(WORKSET)                                         14351240 T  0000:0
          SUBROUTINE DELINKIT;                                              14351300 T  0000:0
          BEGIN T:=M[I] INX 0;                                              14351310 T  0001:0
                IF NOT M[T].[4:1] THEN SLEEP([M[T]],@200000000000000);      14351320 T  0003:0
                M[T].[4:1]:=0;                                              14351330 T  0007:1
                IF M[I].[2:1] THEN%IN CONTROL                               14351340 T  0010:0
                BEGIN M[T].[CF]:=M[I].[FF];                                 14351350 T  0011:2
                      IF (M[T] INX 0) NEQ 0 THEN M[M[T] INX 0].[2:1]:=1     14351360 T  0015:3
                       ELSE M[T]:=ABS(M[T]);%UNLOCK IT                      14351370 T  0020:3
                END ELSE% IN WAIT QUEUE                                     14351380 T  0026:2
                BEGIN T:=M[T] INX 0;                                        14351390 T  0026:2
                      WHILE M[T].[FF] NEQ (I INX 0) DO                      14351400 T  0029:0
                       T:=M[T].[FF];                                        14351410 T  0032:1
                      M[T].[FF]:=M[I].[FF];                                 14351420 T  0035:0
                END;                                                        14351430 T  0038:3
          M[T].[4:1]:=1;                                                    14351440 T  0038:3
          END;                                                              14351450 T  0041:2
                     PRYOR[P1MIX] ← -1;                                     14351500 T  0041:3
                P((ADDRS:=GETSPACE(196,12,0))+1,STS,.COM5,RCW,0,RDS,0,XCH,CFX,  14353000 T  0043:3
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                STF);                                                   14353002 T  0048:2
            P(P&[MSCW][CTF],0,0,0,0,0,0);                               14354000 T  0049:0
            P(0, 0, 0, 0, 0, 0);%                                       14355000 T  0051:0
            P(0,0);                                                     14355010 T  0052:2
$ SET OMIT = NOT(WORKSET)                                               14355020 T  0053:0
            M[(FILEBLOCK+PRT[P1MIX,3]) INX 0-2],[9:6] ← 0;%             14356000 T  0053:0
            M[ADDRS]←(*P(DUP))&0[9:9:6];                                14357000 T  0058:0
            M[(VECTOR←JARROW[P1MIX]) INX 0-2]←(*P(DUP))&0[9:9:6];       14358000 T  0060:3
                IF VECTOR[0]<0 THEN%                                    14358100 T  0065:1
                    BEGIN CATCH←PRT[P1MIX,@26];                         14358150 T  0066:1
                     ERTOG ← (VECTOR[1]<0) OR (PRT[P1MIX,@25]≠0);%      14358200 T  0068:1
                    END;                                                14358300 T  0071:2
        IF VECTOR[2].[6:1] THEN   % IPC                                 14358310 T  0071:2
        BEGIN IF VECTOR[1]<0 THEN % DS-ED TASK                          14358315 T  0072:2
        BEGIN       WHILE (S←PRT[P1MIX,AITNDX]).PBIT=0 DO   % SEARCH AIT FOR  14358320 T  0074:0
                     MAKEPRESENT([PRT[P1MIX,AITNDX]] INX 0);% TASK ARRAYS  14358325 T  0077:2
                MEMORY[S INX NOT 1].[2:1] ← 1;              % MARK SAVE   14358330 T  0080:0
                ENDAIT ← S[0];                                          14358335 T  0083:3
                FOR K←1 STEP 1 UNTIL ENDAIT DO                          14358340 T  0084:3
            BEGIN       TSKA ← MEMORY[(NT1←S[K]).MUM];                  14358345 T  0086:0
                    IF NT1.[1:2]=3 THEN IF              % DEPENDENT TASK 14358355 T  0089:0
                    ((NT2←TSKA[3])=1 OR (NT2=2 AND TSKA[4]≠P1MIX)) THEN 14358360 T  0090:3
                        % TASK ARRAY OF A SCHEDULED OR RUNNING OFFSPRING 14358365 T  0094:2
                        BEGIN IF NT2=1 THEN                             14358370 T  0094:2
                            BEGIN TERMIX ← @1777;                       14358373 T  0095:3
                                SHEETDIDDLER(0,20,TSKA[4]);     % ES    14358375 T  0097:0
                            END;                                        14358377 T  0098:2
                              IF TSKA[3]=2 THEN             % RUNNING  14358380 T  0098:2
                            BEGIN TERMIX ← @1777;                       14358382 T  0099:2
                                TERMINATE(TSKA[4]&86[CTF]); HALT; % DS  14358383 T  0100:3
                                NOPROCESSTOG ← NOPROCESSTOG-1;          14358384 T  0102:3
                            END;                                        14358385 T  0104:0
                            COMPLEXSLEEP(TSKA[3]<0 AND TERMIX=@1777);   14358386 T  0104:0
14292150    ACCIDENTAL ENTRY AT @1777
                            TERMIX ← P1MIX;                             14358387 T  0111:0
                        END;                                            14358389 T  0111:3
            END;                                                        14358390 T  0111:3
        END; IF VECTOR[2].[5:1] THEN SOFTI ← SOFTI-1;                   14358391 T  0114:0
            IF (TSKA←PRT[P1MIX,TSX]).PBIT THEN                          14358392 T  0116:3
        BEGIN       TSKA[3] ← -1; IF TSKA[6]=1 THEN TSKA[7] ← 1;        14358393 T  0118:3
            IF(I:=TSKA[5]) NEQ 0 THEN BEGIN I:=[PRT[P1MIX,I]] INX 0;    14358394 T  0123:2
            DELINKIT;WHILE(I:=M[I].[8:10]) NEQ 0 DO                     14358395 T  0127:2
                    BEGIN I:=[PRT[P1MIX,I]]INX 0;DELINKIT END END;      14358397 T  0132:0
            IF (I←TSKA[8].[CF])≠0 THEN    % SOFTWARE INTERRUPTS DECLARED 14358398 T  0135:2
            BEGIN       IF NOT TSKA[8].[4:1] THEN                       14358400 T  0137:2
                            SLEEP([TSKA[8]],@200000000000000);          14358450 T  0139:1
                    TSKA[8].[4:1] ← 0;                                  14358460 T  0141:2
                    DO                          % DETACH SOFTWARE INTERRUPTS 14358550 T  0144:0
                BEGIN       IF (ABSEVT←PRT[P1MIX,I].[FF])≠0 THEN        14358580 T  0144:0
                                BEGIN  WHILE NOT M[ABSEVT].[5:1] DO     14358582 T  0146:3
                                        ABSEVT ← M[ABSEVT].[FF];        14358584 T  0149:2
                                       IF M[ABSEVT]≥0 THEN              14358586 T  0154:0
                                      SLEEP([M[ABSEVT]],@200000000000000);  14358588 T  0155:2
                                      M[ABSEVT] ← P(LOD,DUP,SSP);       14358590 T  0157:3
                                      T ← (K←PRT[P1MIX,I]).[FF];        14358595 T  0160:0
                                      A ← [PRT[P1MIX,I]] INX 0;         14358597 T  0162:3
                                      WHILE M[T].[FF]≠A DO T ← M[T].[FF];  14358598 T  0164:3
                                      M[T].[FF] ← K.[FF];               14358600 T  0172:0
                                      M[ABSEVT] ← P(DUP,LOD,SSN);       14358605 T  0174:3
                                END;                                    14358610 T  0176:3
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                    I ← PRT[P1MIX,I].[CF];                                  14358615 T  0176:3
                END UNTIL I=0;                                              14358620 T  0178:3
                    TSKA[8].[4:1] ← 1;                                      14358625 T  0180:0
            END;                                                            14358630 T  0182:2
        END;                                                                14358650 T  0182:2
        END;                                                                14358700 T  0182:2
            JAR9 := VECTOR[9];                                              14358710 T  0182:2
            CHAIN ← 0&VECTOR[9][FTC]&VECTOR[1][1:1:1]; VECTOR[9].[FF] ← 0;  14358800 T  0183:2
$ SET OMIT = NOT(BREAKOUT)                                                  14358999 T  0188:1
                IF VECTOR[2]<0 THEN  %  COBOL                               14360100 T  0188:1
                IF VECTOR[1]>0 THEN  % NOT DS-ED                            14360200 T  0189:1
                WHILE PRT[P1MIX,16]>0 DO ASR;%CLEAN OUT AIT                 14360300 T  0190:3
                IF VECTOR[1]>0 THEN % NOT DS-ED                             14360310 T  0194:1
                FOR MOMMIX:=6 STEP 5 UNTIL 11 DO                            14360320 T  0195:1
                BEGIN Q:=NFLAG(PRT[P1MIX,MOMMIX]); % AIT OR OAT ENTRY       14360330 T  0197:0
                    IF Q.[2:1] THEN % PRESENT, GRAB ADDRESS FROM LINK       14360340 T  0198:3
                      Q := Q & M[Q INX NOT 0][FTC];                         14360350 T  0199:2
                    IF Q.[33:3]=7 THEN % AUXILIARY MEMORY IN THE ACT        14360360 T  0202:3
                      DISKRTN(Q.[CF], Q.[8:10]);                            14360370 T  0204:0
                    IF VECTOR[2]<0 THEN MOMMIX:=11; % COBOL HAS NO OAT      14360380 T  0206:2
                END;                                                        14360390 T  0208:3
                SLEEP([OLAYMASK],MOMMIX←TWO(P1MIX));                        14360400 T  0211:0
                OLAYMASK ← NOT MOMMIX AND OLAYMASK;                         14360500 T  0213:2
                MOTHER ← DALOC[P1MIX,0].[CF];                               14360600 T  0215:0
                NEXTMOM := -1;  S := DALOCROW[P1MIX];                       14360700 T  0217:0
                WHILE (NEXTMOM := NEXTMOM+2)<MOTHER DO                      14360800 T  0219:0
                  FORGETUSERDISK(S[NEXTMOM],-500);                          14360900 T  0221:1
                SLEEP([TOGLE],STOREMASK);                                   14361000 T  0223:1
                MOTHER ← (MOMMIX ← (NEXTMOM ←%                              14361100 T  0224:3
                    PRT[P1MIX,4].[18:12]).[36:6])=P1MIX;%                   14361200 T  0224:3
                NEXTMOM ← NEXTMOM AND @77;%                                 14361300 T  0228:3
$ SET OMIT = NOT(AUXMEM)                                                    14361309 T  0230:0
$ SET OMIT = NOT(DEBUGGING AND AUXMEM)                                      14361512 T  0230:0
                WHILE(T←M[I]).[CF] ≠ 0 DO%                                  14362000 T  0230:0
                    BEGIN%                                                  14363000 T  0233:0
                    IF T>0 THEN%                                            14364000 T  0233:0
                        IF T.[9:6]=P1MIX THEN%                              14365000 T  0233:3
                        IF MOTHER AND (T.[3:6]=1) THEN%                     14365100 T  0235:2
                          M[I].[9:6] ← NEXTMOM%                             14365200 T  0237:3
                        ELSE FORGETSPACE(I INX 2);%                         14365300 T  0239:2
                        I← T.[CF]%                                          14366000 T  0242:3
                    END;%                                                   14367000 T  0242:3
                INTABLEROW[P1MIX] ← 0;%                                     14367100 T  0244:2
$ SET OMIT = NOT(BREAKOUT)                                                  14367199 T  0245:3
$ SET OMIT = NOT(BREAKOUT)                                                  14367999 T  0245:3
                IF NEXTMOM≠0 THEN BEGIN%                                    14370010 T  0245:3
                    IF MOTHER THEN%                                         14370020 T  0247:0
                      IF PRT[NEXTMOM,4].[24:6]=@77 THEN%                    14370030 T  0247:1
                      NFO[(NEXTMOM-1)×NDX+1] ←%                             14370035 T  0249:3
                      PRT[NEXTMOM,4] ← (*P(DUP))&0[18:18:15]%               14370040 T  0252:1
                      ELSE BEGIN MOTHER ← NEXTMOM;%                         14370050 T  0254:0
                          DO UNTIL (MOTHER ← (PRT[MOTHER,4] ←%              14370060 T  0256:2
                          NFO[(MOTHER-1)×NDX+1] ←%                          14370065 T  0257:2
                            (*P(DUP))&NEXTMOM[18:42:6]).[24:6])=@77;%       14370070 T  0259:2
                      END%                                                  14370080 T  0264:0
                    ELSE BEGIN%                                             14370090 T  0264:0
                        IF (PRT[MOMMIX,4].[24:6]=P1MIX) AND%                14370100 T  0264:2
                          NEXTMOM=@77 THEN NFO[(MOMMIX-1)×NDX+1] ←%         14370110 T  0266:2
                          PRT[MOMMIX,4] ← (*P(DUP))&0[18:18:15]%            14370115 T  0270:0
                        ELSE BEGIN%                                         14370120 T  0271:3
```

```
                                        DO BEGIN MOTHER ← MOMMIX;                                14370130 T  0273:2
                                            MOMMIX ← PRT[MOMMIX,4].[24:6];%                      14370140 T  0274:1
                                        END UNTIL MOMMIX=P1MIX;%                                 14370150 T  0276:1
                                        NFO[(MOTHER-1)×NDX+1] ←%                                 14370155 T  0277:2
                                        PRT[MOTHER,4] ←%                                         14370160 T  0279:2
                                          (*P(DUP))&NEXTMOM[24:42:6];%                           14370165 T  0280:2
                                  END  END;%                                                     14370170 T  0283:0
                                  NFO[(P1MIX-1)×NDX+1] ←%                                        14370180 T  0283:0
                                  PRT[P1MIX,4] ← (*P(DUP))&0[18:18:15];%                         14370190 T  0285:0
                              END;%                                                              14370200 T  0288:0
                    $ SET OMIT = NOT(AUXMEM)                                                     14370299 T  0288:0
                          IF  VECTOR[2].[8:10]≠ 0 THEN%                                          14371000 T  0288:0
                    $ SET OMIT = STATISTICS                                                      14371999 T  0289:2
                              FORGETSPACE(DIRECTORYSEARCH(ABS(VECTOR[0]),IF  VECTOR[0]<0         14372000 T  0289:2
                                  THEN "DISK   " ELSE ABS(VECTOR[1]),13));                       14373000 T  0291:3
                    $ POP OMIT                                                                   14373001 T  0295:0
                    $ SET OMIT = NOT(STATISTICS)                                                 14373099 T  0295:0
                              IF VECTOR[2].[8:10] = 1 THEN % COMPILER ON COMPILE AND GO          14374000 T  0295:0
                                  BEGIN%                                                         14375000 T  0296:2
                                      IF ERTOG=0 THEN%                                           14376000 T  0297:0
                                        BEGIN%                                                   14377000 T  0297:3
                                            COMPLEXSLEEP((SCHEDULEIDS≠NOT 0) AND                 14378000 T  0298:1
                                                          SHEETFREE);                            14378100 T  0298:1
14358386    ACCIDENTAL ENTRY AT 1
                                            LOCKTOG(SHEETMASK);                                  14379000 T  0305:0
                                            S←[M[GETSPACE(31,2,0)+2]]&30[8:38:10];               14380000 T  0308:2
                                            DISKIO(T,-(S INX 0-1),30,                            14381000 T  0311:0
                                                                VECTOR[2].[FF]);                 14382000 T  0314:3
                                            SLEEP([T],IOMASK);                                   14383000 T  0316:1
                                            STREAM(A←0:B←P(.SCHEDULEIDS));                       14383100 T  0317:3
                                            BEGIN SI←B;                                          14383200 T  0319:0
                                               47(SKIP SB; SKIP DB; TALLY←TALLY+1;               14383300 T  0319:1
                    IF SB THEN BEGIN END                                                         14383400 T  0320:1
                                                    ELSE JUMP OUT);                              14383450 T  0320:3
                                          DS←SET; A←TALLY;                                       14383500 T  0321:3
                                            END STREAM;                                          14383600 T  0322:1
                                            T ← P; S[3] ← 0&T[8:38:10];                          14383700 T  0322:2
                                            S[25] ← CATCH;                                       14383740 T  0325:1
                                            S[23].[24:24]←(CLOCK+P(RTR))DIV 60;                  14383750 T  0326:2
                                            DISKIO(T,+(S INX 0-1),30,                            14383800 T  0330:0
                                                                VECTOR[2].[FF]);                 14383900 T  0332:1
                                            SLEEP([T],IOMASK);                                   14384000 T  0333:3
                                            I ← IF S[18] > MIXMAX THEN MIXMAX                    14385000 T  0335:1
                                                                  ELSE S[18];                    14386000 T  0337:0
                                            IF SHEET[I].[CF] ≠ 0 THEN                            14387000 T  0338:2
                                            BEGIN DISKIO(T,-(S INX 0-1),30,                      14388000 T  0340:0
                                                                  SHEET[I].[FF]);                14389000 T  0343:0
                                          SLEEP([T],IOMASK);                                     14390000 T  0344:2
                                          S[29] ← VECTOR[2].[FF];                                14391000 T  0346:0
                                          DISKIO(T,+(S INX 0-1),30,                              14392000 T  0348:1
                                                                  SHEET[I].[FF]);                14392500 T  0350:2
                                          SLEEP([T],IOMASK);                                     14393000 T  0352:0
                                            END ELSE SHEET[I] ← VECTOR[2].[FF];                  14394000 T  0353:2
                                            SHEET[I].[FF] ← VECTOR[2].[FF];                      14395000 T  0357:1
                                            UNLOCKTOG(SHEETMASK);                                14396000 T  0360:1
                                        END%                                                     14397000 T  0363:3
                              ELSE BEGIN%                                                        14398000 T  0363:3
                                      RETURNEM:                                                  14398500 T  0364:1
                                        S←[M[GETSPACE(31,2,0)+2]]&30[8:38:10];                   14398600 T  0364:1
                                        DISKIO(T,-(S INX 0-1),30,VECTOR[2].[FF]);                14398700 T  0368:0
```

```
                    SLEEP([T],IOMASK);                                  14398800 T  0372:0
                    FORGETESPDISK(VECTOR[2].[18:15]);%                  14399000 T  0373:2
                    LINK ← S[13];                                       14399100 T  0375:1
                    WHILE LINK≠0 DO                                     14399200 T  0376:1
                      BEGIN DISKIO(T,-(S INX 0-1),30,LINK);             14399300 T  0377:2
                            SLEEP([T],IOMASK);                          14399400 T  0380:2
                            FORGETESPDISK(LINK); LINK ← S[29];          14399500 T  0382:0
                      END;                                              14399600 T  0383:3
                    FORGETSPACE(S);                                     14399700 T  0384:1
                 END                                                    14400000 T  0385:1
            END  ELSE%                                                  14401000 T  0385:1
                 IF VECTOR[2].[8:10] = 0 THEN%                          14402000 T  0385:1
                    BEGIN%                                              14403000 T  0387:1
          VECTOR[9]:=VECTOR[9].[CF];                                    14403900 T  0387:3
          FOR I←1 STEP 1 UNTIL VECTOR[9] DO%                            14404000 T  0389:3
          IF VECTOR[9+I] ≠ 0 THEN%                                      14405000 T  0393:3
          FORGETUSERDISK(VECTOR[9+I],-VECTOR[8]);                       14406000 T  0395:1
          IF VECTOR[2].[7:1] THEN VECTOR[2].[8:10]←2;%FOR TASK LOG      14406100 T  0398:2
                    END ELSE                                            14407000 T  0402:2
                 IF VECTOR[2].[8:10]=4%                                 14407100 T  0402:2
                    THEN GO TO RETURNEM;                                14407200 T  0404:1
          IF VECTOR[0]<0 THEN                                           14408000 T  0405:0
          IF ERTOG ≠ 0 THEN%                                            14409000 T  0406:0
              VECTOR[2].[8:10] ← 3;%                                    14410000 T  0407:1
          I ← P1MIX;%                                                   14411000 T  0410:1
          COMMENT SUBTRACT CORE REQUIREMENTS FROM CORE WORD;            14411100 T  0411:0
          CORE.[18:15]←CORE.[18:15] - NFO[(P1MIX-1)×NDX+2].[18:15];     14411200 T  0411:0
$ SET OMIT = NOT(AUXMEM)                                                14411309 T  0415:3
$ SET OMIT = NOT(DATACOM )                                              14411499 T  0415:3
          IF CHAIN GTR 0 THEN                                           14411620 T  0415:3
          BEGIN S:=[M[GETSPACE(5,0,0)+2]]&5[8:38:10];                   14411640 T  0416:2
              DISKWAIT(-(S INX 0),5,CHAIN);                             14411660 T  0420:3
              ZIPPER(S[1],S[2],S[3]);                                   14411680 T  0423:0
              FORGETSPACE(S);                                           14411700 T  0425:0
          END;                                                          14411720 T  0426:0
          IF CHAIN ≠ 0 THEN FORGETESPDISK(ABS(CHAIN));                  14411740 T  0426:0
          IF VECTOR[2].[3:1] THEN                                       14411800 T  0428:1
          BEGIN                                                         14411810 T  0429:1
            NT1:=GETSPACE(5,73,0)+2;                                    14411820 T  0429:3
            M[NT1-2].[9:6] := 0;                                        14411830 T  0432:0
            M[NT1  ]:= 0 & P1MIX[20:43:5];                              14411840 T  0435:1
            M[NT1+1]:= VECTOR[5].[1:23];                                14411850 T  0437:3
            M[NT1+2]:= XCLOCK & VECTOR[2][1:1:17] &                     14411860 T  0440:2
                              (VECTOR[1]<0)[18:42:6];                   14411870 T  0443:1
            M[NT1+3]:= VECTOR[0];                                       14411880 T  0445:2
            M[NT1+4]:= VECTOR[1];                                       14411890 T  0447:3
            LINKUP(14,NT1);                                             14411900 T  0450:0
          END;                                                          14411910 T  0451:0
$ SET OMIT = PACKETS                                                    14411999 T  0451:0
          SIGNOFF(VECTOR,FILEBLOCK,0);                                  14412000 T  0451:0
          IF EOJMESS AND NOT(JAR9.[2:1]) THEN                           14413000 T  0452:3
$ POP OMIT                                                              14413001 T  0454:3
              BEGIN; STREAM(B←IF VECTOR[1] < 0 THEN 2 ELSE%             14414000 T  0454:3
                  VECTOR[2].[8:10]≠3, I,Q←Q←((NT1←(XCLOCK DIV 3600)     14415000 T  0457:3
                  ) MOD 60 + (NT1 DIV 60)×100), V:=VECTOR               14415100 T  0460:0
$ SET OMIT = NOT PACKETS                                                14415150 T  0463:1
                  );                                                    14415300 T  0463:1
              BEGIN%                                                    14416000 T  0464:0
$ SET OMIT = PACKETS                                                    14416099 T  0464:0
                  DS ← LIT " "; DI ← DI+7;%                             14417000 T  0464:0
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                    DS ← LIT "/"; DI ← DI+7;%                                14418000 T  0464:3
$ POP OMIT                                                                   14418001 T  0465:2
$ SET OMIT = NOT(PACKETS)                                                    14418099 T  0465:2
                DS←LIT"="; SI←LOC I; DS←2DEC;                                14419000 T  0465:2
                I←DI; DI←DI-2; DS←FILL; DI←I;                                14419500 T  0466:2
                    CI ← CI+8;%                                              14420000 T  0467:2
                    GO TO E;%                                                14421000 T  0468:0
                    GO TO OK;%                                               14422000 T  0468:1
                    DS←7 LIT " DS=ED ";                                      14423000 T  0468:2
                    GO TO X;%                                                14424000 T  0469:3
            OK:%                                                             14425000 T  0470:0
                    DS←5 LIT " EOJ ";                                        14426000 T  0470:0
                    GO TO X;%                                                14427000 T  0471:0
            E:      DS←11 LIT " SYNTX ERR ";                                 14428000 T  0471:1
            X:      DS← 4 DEC; DS←LIT "←";                                   14429000 T  0473:0
                END;                                                         14429100 T  0473:3
$ SET OMIT = PACKETS                                                         14429150 T  0474:0
$ SET OMIT = NOT RJE OR OMIT                                                 14429199 T  0474:0
            SPOUT(VECTOR);%                                                  14430000 T  0474:0
        END ELSE FORGETSPACE(VECTOR);                                        14430100 T  0475:0
$ SET OMIT = NOT PACKETS                                                     14430150 T  0478:0
$ SET OMIT = NOT(AUXMEM)                                                     14431299 T  0478:0
$ SET OMIT = NOT(WORKSET)                                                    14431400 T  0478:0
$ SET OMIT = NOT(WORKSET)                                                    14431970 T  0478:0
                SELECTION;%                                                  14432000 T  0478:0
            KILL([MSCW]);                                                    14434000 T  0479:1
    END L5COM;%                                                              14435000 T  0480:0
                                                                                     SIZE= 0481 WORDS
PROCEDURE ZIPPER(W1,W2,USERSTA);VALUE W1,W2,USERSTA;                         14531000 T  0000:0
                                                                     START OF REL SEGMENT; DISK ADDRESS = 00360
REAL W1,W2,USERSTA;                                                          14531100 T  0000:0
        BEGIN REAL T,I;                                                      14532000 T  0000:0
        T ← GETSPACE(12,0,0)+4;%                                             14533000 T  0000:0
        M[T-4].[9:6]←0;%                                                     14534000 T  0002:3
        IF (I←USERCODE[P1MIX])=ABS(NOT 0) THEN I← 0;                         14534500 T  0006:0
        STREAM(K←@14,A←[W1],C←I,B←T);                                        14535000 T  0009:1
        BEGIN                                                                14536000 T  0010:3
        SI←LOC K; SI←SI+7; DS← CHR;                                          14537000 T  0010:3
        DS:= 5 LIT "USER="; SI:=LOC C; SI:=SI+1; DS:= 7 CHR;                 14537100 T  0011:2
        DS← 9 LIT ";EXECUTE "; SI←A; SI←SI+1;                                14537200 T  0013:1
        DS← 7 CHR; DS← LIT "/"; SI←SI+1; DS← 7 CHR;                          14538000 T  0015:1
        DS← 6 LIT ";END.←"; 37(DS← LIT " ");                                 14539000 T  0016:2
        END;                                                                 14540000 T  0018:2
        IF USERSTA≠0 THEN                                                    14540100 T  0018:3
          BEGIN                                                              14540200 T  0019:2
            I:=30;                                                           14540300 T  0020:0
            IF USERSTA.[19:1] THEN ELSE T:=T&USERSTA[9:15:9];                14540350 T  0020:3
          END                                                                14540400 T  0024:1
            ELSE                                                             14540500 T  0024:1
        I←IF P1MIX=0 OR USERCODE[P1MIX]=MCP THEN 31 ELSE 26;                 14541000 T  0024:1
$ SET OMIT = PACKETS                                                         14541049 T  0029:2
        INDEPENDENTRUNNER(P(.CONTROLCARD),T&I[2:42:6],192);                  14541050 T  0029:2
$ POP OMIT                                                                   14541051 T  0031:3
$ SET OMIT = NOT(PACKETS)                                                    14541089 T  0031:3
        END ZIPPER;%                                                         14542000 T  0031:3
                                                                                     SIZE= 0032 WORDS
REAL PROCEDURE EUF(A,B,L); VALUE A,B,L; REAL A,B,L;                          14543000 T  0000:0
                                                                     START OF REL SEGMENT; DISK ADDRESS = 00362
        BEGIN%                                                               14544000 T  0000:0
        REAL  I,J,R,T,Z;%                                                    14545000 T  0000:0
```

ZIPPER

```
            REAL H;                                                          14545100 T  0000:0
            ARRAY  X[*];%                                                    14546000 T  0000:0
            INTEGER S;                                                       14546100 T  0000:0
  $ SET OMIT = SHAREDISK                                                     14546199 T  0000:0
            DEFINE R1=R#, X1=X#;                                             14546200 T  0000:0
  $ POP OMIT                                                                 14546201 T  0000:0
  $ SET OMIT = NOT SHAREDISK                                                 14546299 T  0000:0
            LABEL LL,FOUND,WHY,BYE;                                          14547000 T  0000:0
            LABEL CHECK,DOWN,BOMBOUT,DSD;                                    14548000 T  0000:0
%                                                                            14548900 T  0000:0
      REAL SUBROUTINE THERE;%                                                14549000 T  0000:0
%                                                                            14549100 T  0001:0
%           ON EXIT, X IS THE LAST BYPASS BLOCK READ AND J IS ITS ADDRESS.   14549110 T  0001:0
%           IF THERE IS TRUE, I IS THE INDEX OF THE ENTRY FOR THE FILE AND,  14549120 T  0001:0
%           FOR SECURITYCHECK, H IS THE NEGATIVE OF ITS HEADER ADDRESS.      14549125 T  0001:0
%           IF THERE IS FALSE, T IS THE ADDRESS OF THE FIRST BLOCK WHICH     14549130 T  0001:0
%           HAS A VACANT SLOT.                                               14549140 T  0001:0
%                                                                            14549150 T  0001:0
            BEGIN%                                                           14550000 T  0001:0
                T:=0;                                                        14550500 T  0001:0
LL:             FOR I:=0 STEP 3 UNTIL 57 DO                                  14551000 T  0001:3
                BEGIN IF (X[I] EQV A) = NOT 0 THEN                           14551500 T  0003:0
                    IF (X[I+1] EQV B) = NOT 0 THEN                           14552000 T  0004:3
                    BEGIN P(1);                                              14552500 T  0007:2
                        H:=NABS(X[I+2]);                                     14552750 T  0008:1
                        GO DOWN;                                             14553000 T  0010:0
                    END;                                                     14553500 T  0010:2
                    IF (X[I] EQV @14) = NOT 0 THEN                           14554000 T  0010:2
                    IF T=0 THEN T:=J;                                        14554500 T  0012:1
                END;                                                         14555000 T  0014:3
                IF (Z:=X[2].[FF])≠0 THEN                                     14555500 T  0017:0
                BEGIN DISKWAIT(-R,60,J:=Z);                                  14556000 T  0019:1
                    GO TO LL;                                                14556500 T  0021:3
                END;                                                         14557000 T  0022:1
                IF T=0 THEN T:=J;                                            14557500 T  0022:1
                P(0);                                                        14558000 T  0024:1
DOWN:           THERE:=P;                                                    14558500 T  0024:2
            END;%                                                            14559000 T  0024:3
  $ SET OMIT = NOT(SHAREDISK)                                                14559099 T  0025:0
            A:=ABS(A);                                                       14559200 T  0025:0
            X:=[M[R:=GETSPACE(60,0,0)+2]]&60[8:38:10];                       14559250 T  0028:1
            IF (A OR B).[1:5]≠0 OR A=@14 OR A=@114 THEN                      14559300 T  0032:2
            BEGIN                                                            14559400 T  0036:1
                TERMINATE(P1MIX&75[18:33:15]); GO DSD;                       14559500 T  0036:3
            END;                                                             14559600 T  0038:2
  $ SET OMIT = SHAREDISK                                                     14559990 T  0038:2
            LOCKDIRECTORY;                                                   14560000 T  0038:2
  $ POP OMIT                                                                 14560010 T  0045:0
            S:=SCRAMBLE(A,B);                                                14562000 T  0045:0
CHECK:      DISKWAIT(-R,-60,(J:=S));                                         14563000 T  0052:0
            IF P1MIX ≠0 THEN%                                                14564000 T  0054:1
            IF THERE THEN%                                                   14567000 T  0055:0
            BEGIN                                                            14568000 T  0057:0
  $ SET OMIT = NOT SHAREDISK                                                 14568890 T  0057:2
              UNLOCKDIRECTORY;                                               14569000 T  0057:2
  $ POP OMIT OMIT                                                            14569010 T  0061:0
              H←SECURITYCHECK(A,B,USERCODE[P1MIX],H)≠7;                      14569200 T  0061:0
              Z:=VWY&VOK[36:42:6]&(IF H THEN 0 ELSE VRM)[30:42:6];           14569500 T  0063:3
WHY:          STREAM(A:=[A], B:=JAR[P1MIX,*], C:=P1MIX, UC:=H,               14570000 T  0068:0
                    D:=J:=SPACE(10));                                        14570100 T  0069:2
```

```
                    BEGIN%                                                  14571000 T  0072:0
                    DS←13LIT"#DUP LIBRARY ";%                               14572000 T  0072:0
                    UC(DS←15LIT"(ILLEGAL USER) ");                          14572100 T  0074:0
                    SI←A      ;SI←SI+1;DS←7CHR;%                            14573000 T  0077:0
                    DS←LIT"/" ;SI←SI+1;DS←7CHR;%                            14574000 T  0077:3
                    DS←LIT":";%                                             14575000 T  0078:3
                    SI←B      ;SI←SI+1;DS←7CHR;%                            14576000 T  0079:1
                    DS←LIT" " ;SI←SI+1;DS←7CHR;%                            14577000 T  0080:0
                    DS:=LIT"=";  SI:=LOC C; DS:=2 DEC; DS:=LIT"←";          14578000 T  0081:0
                    DI←DI-3; DS←FILL;                                       14578500 T  0082:2
                    END;%                                                   14579000 T  0083:0
                SPOUT(J);                                                   14580000 T  0083:1
                REPLY[P1MIX]:=-Z;                                           14581000 T  0084:0
                COMPLEXSLEEP((TERMIX.[33:15]=P1MIX)OR(REPLY[P1MIX]>0));%    14582000 T  0085:2
14378100    ACCIDENTAL ENTRY AT 0
                IF TERMIX.[CF]=P1MIX THEN                                   14583000 T  0092:2
            DSD:  BEGIN FOR I:=M[L+10]+10 STEP -1 UNTIL 11 DO               14583100 T  0093:3
                      IF M[L+I]≠0 THEN FORGETUSERDISK(M[L+I],-M[L+9]);      14583200 T  0099:3
                      GO TO BOMBOUT;                                        14583300 T  0108:0
                END;                                                        14583400 T  0108:2
                IF NOT WHYSLEEP(Z) THEN GO TO WHY;                          14584000 T  0108:2
                IF REPLY[P1MIX].[18:30]=VRM THEN                            14585000 T  0109:3
            $ SET OMIT = NOT(DATACOM )                                      14585050 T  0111:1
                    BEGIN                                                   14585200 T  0111:1
                        IF P(DIRECTORYSEARCH("A,B,7),DUP)=2                 14585300 T  0111:3
                          THEN BEGIN P(DEL); LBMESS(A,B,-7,25,0,0,1); END   14585350 T  0113:2
                          ELSE IF P=3 THEN GO DSD;                          14585400 T  0117:1
            $ SET OMIT = NOT DATACOM                                        14585490 T  0118:3
                    END;                                                    14587200 T  0118:3
                REPLY[P1MIX]:=0;                                            14588000 T  0118:3
            $ SET OMIT = SHAREDISK                                          14588090 T  0120:0
                LOCKDIRECTORY;                                              14588100 T  0120:0
            $ POP OMIT                                                      14588110 T  0126:2
                GO TO CHECK;%                                               14589000 T  0126:2
                END ELSE ELSE T:=S;            % SETS UP FOR P1MIX=0         14590000 T  0128:0
            %                                                               14590900 T  0129:3
            %       THE FILE IS NOT THERE. WE SEARCH FOR A VACANCY. IF ONE IS FOUND  14590910 T  0129:3
            %       Z AND T ARE ITS ADDRESS. IF THERE ISNT ONE, Z IS THE ADDRESS OF  14590920 T  0129:3
            %       THE LAST BLOCK AND T IS SET TO THE ADDRESS OF THE NEW BLOCK.     14590930 T  0129:3
            %                                                               14590940 T  0129:3
            $ SET OMIT = NOT SHAREDISK                                      14590990 T  0129:3
                DO BEGIN                                                    14591500 T  0129:3
                    IF (Z:=T)≠J THEN DISKWAIT(-R,60,Z);                     14592000 T  0129:3
                    FOR I←0 STEP 3 UNTIL 57 DO                              14593000 T  0133:0
                    IF (X[I] EQV @14)= NOT 0 THEN GO TO FOUND;              14594000 T  0134:0
                END UNTIL (T:=X[2].[FF])=0;                                 14595000 T  0138:2
                X[2].[FF]← BYPASS + BYPASS-2;                               14596000 T  0141:1
                IF BYPASS.[CF] LEQ BYPASS.[FF] THEN GO TO BYE;              14598000 T  0144:1
            $ SET OMIT = SHAREDISK                                          14598090 T  0146:2
                DISKWAIT(R,60,Z);              % WRITE OUT POINTER TO NEW BLOCK  14598100 T  0146:2
            $ POP OMIT                                                      14598110 T  0147:3
                T:=BYPASS.[CF];                                             14598200 T  0147:3
                X1[0]:=@14; MOVE(59,X1,X1 INX 1);                           14598300 T  0149:0
            $ SET OMIT = NOT SHAREDISK                                      14598390 T  0152:3
                I:=0;                                                       14598500 T  0152:3
            FOUND:%                                                         14599000 T  0153:2
                    PBCOUNT←PBCOUNT+((((A EQV"PBD     ")=NOT 0) OR          14599900 T  0153:2
                          ((A EQV"PUD     ")=NOT 0)) AND (B.[CF]=1));       14599910 T  0155:1
                X[I]←A; X[I+1]←B; X[I+2].[CF]←NEXTSLOT;                     14600000 T  0159:1
            $ SET OMIT = NOT SHAREDISK                                      14600290 T  0164:3
```

```
            DISKWAIT(R1,60,T);                                                  14600500 T  0164:3
%                                                                               14600900 T  0166:0
%           UPDATE THE NAME SEGMENT, BUT DONT WRITE IT OUT UNTIL THE NEW        14600910 T  0166:0
%           HEADER IS WRITTEN.                                                  14600920 T  0166:0
%                                                                               14600930 T  0166:0
            J←(NEXTSLOT-DIRECTORYTOP-3)&0[44:44:4]+DIRECTORYTOP+19;             14601000 T  0166:0
            I:=((T:=NEXTSLOT)-J)×2+30;                                          14601500 T  0169:3
            DISKWAIT(-R1,-30,J);                                                14602000 T  0172:2
            NEXTSLOT:=X1[I+1];                                                  14602500 T  0174:1
            X1[I]:=A; X1[I+1]:=B;                                               14603000 T  0175:3
            IF NEXTSLOT=0 THEN          % GOING TO USE EOF RECORD                14603100 T  0178:3
            IF I=0 THEN                 % WRITE NEW EOF RECORD BEFORE            14603110 T  0179:2
            BEGIN P(X1[28],X1[29]);     % DESTROYING CURRENT ONE                  14603200 T  0180:3
                X1[28]:=@114;           % SAVE NAME, REPLACE WITH "END" FLAG.     14603300 T  0182:1
                X1[29]:=0;                                                      14603310 T  0183:2
                NEXTSLOT:=T+30;                                                 14603320 T  0184:3
                BYPASS.[FF] ← J+16;                                             14603330 T  0186:0
                DISKWAIT(R1,30,J+16);                                           14603400 T  0187:3
                P([X1[29]],←,[X1[28]],←);       % RESTORE CLOBBERED NAME        14603600 T  0189:2
                    IF J+16 GEQ BYPASS.[CF] THEN                                14603700 T  0191:0
        BYE:          BYBY("DIRECTORY FULL←",15);                               14603750 T  0192:3
            END ELSE                                                            14603800 T  0199:1
            BEGIN X1[I-2]:=@114; X1[I-1]:=0; NEXTSLOT:=T-1 END;                 14604000 T  0199:1
%                                                                               14604900 T  0206:3
%           NOW WE CAN WRITE EVERYTHING OUT. NOTE THAT IN ORDER TO MINIMIZE     14604910 T  0206:3
%           THE DAMAGE CAUSED BY AN UNTIMELY HANG, THE MAIN AND (FOR            14604920 T  0206:3
%           SHAREDISK) THE BYPASS DIRECTORIES ARE CORRECT AT ALL TIMES.         14604930 T  0206:3
%                                                                               14604940 T  0206:3
 $ SET OMIT = NOT SHAREDISK                                                     14605490 T  0206:3
            DISKWAIT(L+1,-30,T);                        % FILE HEADER             14607000 T  0206:3
 $ SET OMIT = NOT SHAREDISK                                                     14608490 T  0208:3
            DISKWAIT(R1,-30,J);                         % NAME SEGMENT            14609000 T  0208:3
 $ SET OMIT = NOT SHAREDISK                                                     14609990 T  0210:1
 $ SET OMIT = SHAREDISK                                                         14617990 T  0210:1
            UNLOCKDIRECTORY;                                                    14618000 T  0210:1
 $ POP OMIT                                                                     14618010 T  0213:3
            EUF:=T;                                                             14619000 T  0213:3
        BOMBOUT:%                                                               14620000 T  0214:2
            FORGETSPACE(R);                                                     14621000 T  0214:2
            END  ENTERUSERFILE ;%                                               14622000 T  0215:1
                                                                                        SIZE= 0217 WORDS
        PROCEDURE COM11; COMMENT ALGOL I/O COMMUNICATE;%                        14623000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00370
        BEGIN REAL CODE=-4,TANK=-5,ROW=-6;%                                     14624000 T  0000:0
            REAL MID=-8,FID=-7;                                                 14624050 T  0000:0
             REAL STA=-6, RESULT=-7, B, T, F, S, TIMEOUT=-7;                    14624100 T  0000:0
             NAME PHYL=-5, A;                                                   14624200 T  0000:0
 $ SET OMIT = NOT(DATACOM )                                                     14624299 T  0000:0
        ARRAY HEADER=-5[*];%                                                    14625000 T  0000:0
        ARRAY FINAL=-6[*];%                                                     14626000 T  0000:0
        LABEL OPEN,PARITY,EOF,EOT,DISKSPACE,DISKLOCK;%                          14627000 T  0000:0
            LABEL GRABIT,SEEKDC,READC,GIN,SLEAP,READSOUGHT,DCBUFRLS;            14627100 T  0000:0
            LABEL DCWRITER,FINDBUF;                                             14627200 T  0000:0
        LABEL COBOLDCWR,ECH,WHILOOP;                                            14627300 T  0000:0
         LABEL ARGH, PURGELOCK;                                                 14627400 T  0000:0
         LABEL CLOSE,RDATA,SELERR,SPACE,REFILL;%                                14628000 T  0000:0
        LABEL READSOUGHT2;                                                      14628100 T  0000:0
         LABEL READLABEL,ABN,NG,DONTWAIT;                                       14629000 T  0000:0
         LABEL IOREQ,ROTATE;%                                                   14630000 T  0000:0
            SWITCH FUNCTION←OPEN,PARITY,EOF,EOT,DISKSPACE,SEEKDC,CLOSE,         14631000 T  0000:0
```

```
                    RDATA,SELERR,SPACE,REFILL,READLABEL,IOREQ,ROTATE,READC,          14632000 T  0000:0
                      READSOUGHT,DCBUFRLS, DCWRITER, FINDBUF,COBOLDCWR,               14632100 T  0000:0
                  PURGELOCK                                                           14632200 T  0000:0
                      ;                                                               14632900 T  0000:0
              REAL INFO,LOC,USASI;                                                    14633000 T  0000:0
              REAL I;%                                                                14634000 T  0000:0
               LABEL MESSAGE, BACK;                                                   14635000 T  0000:0
              ARRAY FPB[*],FIB[*];%                                                   14636000 T  0000:0
              REAL  TANG=TANK;                                                        14636100 T  0000:0
              GO TO FUNCTION[CODE];%                                                  14637000 T  0000:0
        PARITY:     INFO←" PAR"; GO TO MESSAGE;%                                      14639000 T  0014:1
        EOF:        INFO←" EOF"; GO TO MESSAGE;%                                      14640000 T  0017:0
        EOT:        INFO←" EOT";%                                                     14641000 T  0020:0
        MESSAGE:    FPB←PRT[P1MIX,3]; FIB←M[P(.TANK,LOD),[33:15]-3];%                 14642000 T  0020:3
                    IF FIB[5].[1:1] THEN INFO:= -" INV" OR M;                         14642100 T  0025:0
                    STREAM(X←INFO,Z←0,F← IF TANG=0 THEN 0 ELSE                        14643000 T  0028:0
                          [FPB[FIB[4].[13:11]]],                                      14643100 T  0030:3
                          Q←TANG≠0,                                                   14643200 T  0032:0
                          J←JARROW[P1MIX],%                                           14644000 T  0032:3
                          D←(CODE←GETSPACE(10,2,0)+2));%                              14645000 T  0033:1
                          BEGIN DS ← LIT "="; SI←LOC X; SI←SI+5; DS←3 CHR;%           14646000 T  0035:3
                               SI←LOC X; IF SC=0 THEN DS←10 LIT " NO LABEL "%         14647000 T  0037:0
                                                ELSE IF SC="8" THEN DS←11 LIT         14647100 T  0039:1
                                                "WRITE TO 0 "                         14647200 T  0040:1
                                            ELSE IF SC=@30 THEN DS:=10 LIT            14647300 T  0041:3
                                                "ALID USER "                          14647400 T  0042:3
                                            ELSE IF SC = @20 THEN DS:=10 LIT          14647500 T  0044:0
                                                " WRT/SEEK "                          14647600 T  0045:0
                                                ELSE DS←10 LIT "ECT ERROR ";%         14648000 T  0046:1
                               Q(X←DI; SI←F; DI←LOC Z;                                14649000 T  0048:0
                               IF 8 SC≠DC THEN BEGIN SI←F; SI←SI+1; DI←X;%            14650000 T  0049:1
                                                DS←7 CHR; DS←LIT" "; X←DI;            14651000 T  0050:2
                                                END;%                                 14652000 T  0051:2
                               DI←X; SI←SI+1; DS← 7 CHR );                            14653000 T  0051:2
                               DS←2 LIT ":←";%                                        14654000 T  0052:2
                          END;%                                                       14655000 T  0053:0
                    TERMINATE(P1MIX); TERMINALMESSAGE((-CODE));%                      14658000 T  0053:1
        DISKSPACE:OPEN:CLOSE: GO TO INITIATE;%                                        14659000 T  0055:0
         $ SET OMIT = DATACOM                                                         14660499 T  0055:2
         SEEKDC:READC:READSOUGHT:DCBUFRLS:DCWRITER:FINDBUF:COBOLDCWR:                 14660500 T  0055:2
                    GO INITIATE;                                                      14660525 T  0055:2
         $ POP OMIT                                                                   14660526 T  0056:0
         $ SET OMIT = NOT(DATACOM)                                                    14660999 T  0056:0
                    GO INITIATE;      ::                                              14670600 T  0056:0
        PURGELOCK: SAVEWORD:=SAVEWORD OR TWO(ROW);      ::                            14671000 T  0056:2
        RDATA::       INFO←" RER"; GO TO MESSAGE;                                     14673000 T  0058:3
        SELERR:     INFO := @3700000060622543; GO TO MESSAGE;                         14674000 T  0064:0
        SPACE:      FIB←M[P(.TANK,LOD).[33:15]-3]; LOC←FIB[15].[25:5];%               14675000 T  0067:0
                    BLASTQ(LOC);%                                                     14676000 T  0071:1
                    FPB←[MEMORY[5]]&3[23:46:2]&ROW[22:1:1];%                          14677000 T  0072:0
                    ROW←ABS(ROW);%                                                    14678000 T  0075:1
                    WHILE (ROW←ROW-1)≥0 DO INFO←WAITIO(FPB,@40,LOC);%                 14679000 T  0076:1
                          GO TO INITIATE;     ::                                      14680000 T  0081:0
        REFILL:     FIB←M[(TANK←P(.TANK,LOD).[33:15])-3];%                            14681000 T  0081:2
                    CODE←FIB[13].[10:9]-1;%                                           14682000 T  0085:1
                    LOC←FIB[19].[33:15]-FIB[16].[33:15];%                             14683000 T  0087:1
                    FPB←MEMORY[FIB[16] INX 0←ROW];%                                   14684000 T  0090:0
                    INFO←FPB.[18:15];%                                                14685000 T  0092:3
                    FOR I←1 STEP 1 UNTIL CODE DO%                                     14686000 T  0094:1
                    BEGIN IOREQUEST(FLAG(FIB[19]&(INFO+LOC)[33:33:15]),%              14687000 T  0095:0
```

```
                    FIB[16]&INFO[33:33:15],FPB);%                          14688000 T  0097:0
              MEMORY[TANK]←MEMORY[TANK]&0[2:2:1]&0[19:19:1]%               14689000 T  0098:3
                          &0[26:26:7]&INFO[33:33:15];%                     14690000 T  0101:3
              STREAM(CODE,T←MEMORY[TANK],TANK);%                           14691000 T  0104:2
              BEGIN SI←TANK; SI←SI+8; DS←CODE WDS;%                        14692000 T  0106:2
                  SI←LOC T; DS←WDS;%                                       14693000 T  0107:2
              END;%                                                        14694000 T  0108:0
              INFO←MEMORY[INFO+ROW].[18:15];%                              14695000 T  0108:1
          END;%                                                            14696000 T  0111:0
            GO TO INITIATE;      ::                                        14697000 T  0113:1
READLABEL:  FIB←M[(TANK←P(.TANK,LOD).[33:15])-3];%                         14698000 T  0113:3
          LOC←FIB[15].[25:5];%                                             14699000 T  0117:1
          BLASTQ(LOC);%                                                    14700000 T  0118:3
          P(WAITIO((FIB[5].[44:1]×(M[TANK-2].[8:10]-1) INX M[TANK-2])      14701000 T  0119:2
                &M[TANK][21:21:4],@37700000,LOC),DEL);                     14702000 T  0124:1
          STREAM(Y:=0;X:=0,X1:=0,X2:=0,Z:=M[TANK-2]);                      14702025 T  0128:0
            BEGIN  DI:=LOC X; DS:=24 LIT "VOL1HDR1HDR2EOF1EOF2EOV1";       14702050 T  0131:1
                   DI:=LOC X;                                              14702100 T  0134:3
                   6(TALLY:=TALLY+1;                                       14702150 T  0135:0
                   SI:=Z;                                                  14702200 T  0135:2
                   IF 4 SC=DC THEN                                         14702250 T  0135:3
                   JUMP OUT TO A);                                         14702300 T  0136:1
                   TALLY:=0;                                               14702350 T  0137:0
            A:                                                             14702400 T  0137:1
                   Y:=TALLY;                                               14702450 T  0137:1
            END;                                                           14702500 T  0137:2
          IF (USASI:=P)>0 THEN                                             14702550 T  0137:3
          USASITAPE(M[TANK-2].[CF],USASI,3,LOC,FIB[5].[44:1]);             14702600 T  0138:3
          P(WAITIO([M[5]]&3[23:46:2]&(NOT FIB[5])[22:44:1],                14703000 T  0143:2
                @37700000,LOC),DEL);                                       14703100 T  0147:0
                GO TO INITIATE;      ::                                    14704000 T  0148:0
IOREQ:        FPB←MEMORY[(IF (INFO←NFLAG(MEMORY[P(TANK,DUP,[M],INX,PRL)]))  14705000 T  0148:2
                    .[22:1] THEN 2 ELSE NOT 1) INX INFO];%                 14706000 T  0151:1
        IOREQUEST(FINAL,INFO,FPB);%                                        14707000 T  0156:0
        MEMORY[TANK]←MEMORY[TANK]&0[26:26:7]&0[19:47:1];%                  14708000 T  0157:3
        GO TO INITIATE;%                                                   14709000 T  0162:0
 $ SET OMIT = NOT(DATACOM )                                                14709099 T  0162:2
::                                                                         14709300 T  0162:2
ROTATE:       TANK←P(.TANK,LOD).[33:15];%                                  14710000 T  0162:2
        STREAM(T←M[TANK],N←ROW-1,D←TANK);%                                 14711000 T  0164:2
        BEGIN SI←D; SI←SI+8; DS←N WDS; SI←LOC T; DS←WDS END;%              14712000 T  0167:0
IF M[TANK].[3:5]=16 THEN                                                   14712100 T  0168:3
IF M[TANK].[24:1] THEN                                                     14712200 T  0170:3
IF (I←P(M[TANK-3],14,COC))≠0 THEN                                          14712300 T  0172:3
    BEGIN                                                                  14712350 T  0176:1
    PHYL ← TANK INX M;                                                     14712400 T  0176:3
    FOR LOC ← ROW-1 STEP -1 UNTIL 0 DO                                     14712450 T  0178:0
        BEGIN                                                              14712500 T  0182:1
        INFO ← NFLAG(PHYL[LOC]);     %[19:2]=0  THEN I/O IN-PROCESS        14712510 T  0182:1
        IF (B←M[INFO INX NOT(2+(INFO.[19:2]=0))])≠0 THEN                   14712550 T  0184:0
            BEGIN                                                          14712600 T  0188:1
 $ SET OMIT = NOT(DATACOM )                                                14712649 T  0188:3
            IF (I←I-1) ≤ 0 THEN                                            14712750 T  0188:3
                LOC ← -1;                                                  14712800 T  0190:2
            END;                                                           14712850 T  0192:0
        END;                                                               14712900 T  0192:0
    END;                                                                   14712950 T  0194:0
      GO TO INITIATE;%                                                     14713000 T  0194:0
DISKLOCK:                                                                  14713100 T  0194:2
END COM11;%                                                                14714000 T  0194:2
```

```
                                                                                                  SIZE= 0195 WORDS
$ SET UMIT = NOT(DATACOM )                                                                14715000 T  0000:0
PROCEDURE DISPLAY(X); VALUE X; REAL X;%                                                   15019000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00377
    BEGIN REAL T;                                                                         15020000 T  0000:0
        STREAM(X:J←JARROW[P1MIX],P1MIX,%                                                  15021000 T  0000:0
            Y ←T←GETSPACE(25,0,0)+2);%                                                    15022000 T  0001:3
            BEGIN DS ← LIT "#";%                                                          15023000 T  0004:1
                2(SI ← J; SI ← SI+1; DS ← 7 CHR; J ← SI;%                                 15024000 T  0004:3
            L:      SI ← SI-1;%                                                           15025000 T  0006:0
                    IF SC = " " THEN%                                                     15026000 T  0006:1
                        BEGIN DI ← DI-1; GO TO L END;%                                    15027000 T  0006:3
                    DS ← LIT "/";);%                                                      15028000 T  0007:1
                DI ← DI-1; DS ← LIT "=";%                                                 15029000 T  0008:0
            SI←LOC P1MIX; DS←2DEC; P1MIX←DI; DI←DI-2;                                     15030000 T  0008:3
            DS←FILL; DI←P1MIX; DS←2LIT":  ";                                              15030500 T  0009:3
                SI ← X;%                                                                  15031000 T  0010:3
            H:  4(40(IF SC="←" THEN JUMP OUT 2 TO HH;                                     15032000 T  0011:0
                DS←CHR)); HH:                                                             15033000 T  0012:3
                J ← DI; DI ← DI+8; SI ← J;%                                               15034000 T  0013:2
            S:  SI ← SI-1; IF SC = " " THEN GO TO S;%                                     15035000 T  0014:1
                SI ← SI+1; J ← SI; DI ← J; DS ← LIT "←";%                                 15036000 T  0015:1
                X← DI;                                                                    15037000 T  0016:2
            END;%                                                                         15038000 T  0016:3
        X← (((X←P) INX 0) -T)×8+X.[30:3]-1;                                               15039000 T  0017:0
        SPOUT(P(X,T));                                                                    15040000 T  0021:0
    END;%                                                                                 15041000 T  0022:0
                                                                                                  SIZE= 0023 WORDS
PROCEDURE  COM13 ;%                                                                       15060000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00378
    BEGIN%                                                                                15061000 T  0000:0
%   COBOL  IO  INTERFACE COMMUNICATE%                                                     15062000 T  0000:0
    REAL  CODE = -4, REEL = -6 ;%                                                         15063000 T  0000:0
    NAME  FLOC = -5 ;%                                                                    15064000 T  0000:0
    ARRAY FIB [*];%                                                                       15065000 T  0000:0
    REAL T, COB68;                                                                        15066000 T  0000:0
    LABEL L0,L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,%                         15067000 T  0000:0
            L16,L17;%                                                                     15068000 T  0000:0
    SWITCH  TYPE ← L0,L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,%                                15069000 T  0000:0
                L12,L13,L14,L15,L16,L17;%                                                 15070000 T  0000:0
    DEFINE INOUT=FIB[13].[27:1]#,DIREC=FIB[13].[25:1]#,%                                  15071000 T  0000:0
        SORTFILE=FIB[4].[7:1]#,LABELSOMITTED=FIB[4].[2:1]#;%                              15072000 T  0000:0
    COB68 ← (FIB ← *(FLOC)).[8:10] = 22;                                                  15073000 T  0000:0
    GO TO TYPE[CODE];%                                                                    15074000 T  0003:1
L0:%                                                                                      15075000 T  0013:1
    DO UNTIL FALSE;%                                                                      15076000 T  0013:1
L1:%                                                                                      15077000 T  0014:0
L2:%                                                                                      15078000 T  0014:0
L3:%                                                                                      15079000 T  0014:0
    INOUT←CODE≠3;  DIREC← CODE=2;%                                                        15080000 T  0014:0
    IF NOT COB68 THEN                                                                     15080900 T  0020:0
    IF FIB[5].[46:2]=3 THEN BEGIN%                                                        15081000 T  0020:2
    FIB[18].[18:15]←FIB[18].[3:15];%                                                      15082000 T  0023:0
    IF CODE=3 THEN                                                                        15082100 T  0025:3
    FIB[18].[3:15]←FIB[18].[33:15]+FIB[18].[3:15]; END;%                                  15083000 T  0026:2
    NT1:=FLOC INX 3;                                                                      15084000 T  0031:2
    P(0,STF,PRT[P1MIX,8],STS);                                                            15085000 T  0032:3
    FILEOPEN(1,NT1);                                                                      15086000 T  0035:0
L16:%                                                                                     15088000 T  0036:0
L17:%                                                                                     15089000 T  0036:0
```

```
                DO UNTIL FALSE;%                                                15090000 T  0036:0
        L5:     L6:L7:L8:L9:L10:L11:L12:L13:L14:L15:%                           15091000 T  0036:3
                DO UNTIL FALSE;%                                                15092000 T  0036:3
        L4:%                                                                    15093000 T  0037:2
                CODE ← IF (CODE←ABS(REEL))=0 THEN 6 ELSE%                       15094000 T  0037:2
                        (IF CODE=1 THEN 7 ELSE%                                 15095000 T  0040:1
                    (IF CODE=2 THEN 10 ELSE%                                    15096000 T  0042:1
                    (IF CODE=4 THEN @22 ELSE                        %KRUNCH     15097000 T  0044:1
                    (IF CODE=64 THEN @52 ELSE 0))));                %KRUNCH     15097500 T  0046:1
                IF (T←FIB[4].[8:4])≠2 AND T≠4 AND T≠8 THEN CODE←0;%             15098000 T  0049:0
                IF T=4 AND  CODE=0 THEN CODE←10  ;%                             15099000 T  0054:1
                FILECLOSE(( FLOC INX 3 )& CODE[18:33:15]);%                     15100000 T  0057:1
                IF CODE=0 OR CODE=10 OR CODE=@22 THEN FIB[5].[42:1]←1           15101000 T  0059:0
                    ELSE FIB[5].[40:2]←(CODE=7)×2+1;%                           15102000 T  0063:1
                IF NOT COB68 THEN                                               15102900 T  0069:1
                IF FIB[5].[46:2]=3 THEN BEGIN%                                  15103000 T  0069:3
                FIB[18].[3:15]←FIB[18].[18:15];FIB[18].[18:15]←0 END;%          15104000 T  0072:1
                GO TO INITIATE;%                                                15105000 T  0077:3
                END  COM13;%                                                    15106000 T  0078:1
                                                                                        SIZE= 0079 WORDS
        BOOLEAN PROCEDURE CONQUER(C,N,L,S,G);                                   15168000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00381
        VALUE C,N,L,S,G;                                                        15168100 T  0000:0
                REAL C,N,L; ARRAY S[*];%                                        15169000 T  0000:0
        INTEGER G;                                                              15169100 T  0000:0
                BEGIN ARRAY B=C[*];%                                            15170000 T  0000:0
                    REAL T,I=T;%                                                15171000 T  0000:0
                    LABEL X;%                                                   15172000 T  0000:0
                        IF G THEN                                               15172500 T  0000:0
                    IF N×L > 512 THEN GO TO X;%                                 15173000 T  0000:3
                    IF (T ← GETSPACE(N×L,2,3)) = 0 THEN%                        15174000 T  0003:0
                        BEGIN IF NOT G THEN P(0,RTN);                           15175000 T  0005:3
                    X:   IF NOT N THEN                                          15175900 T  0007:3
                                BEGIN G←CONQUER(C,N←N DIV 2,L,N INX S,1);       15176000 T  0008:1
                                      G←CONQUER(S INX N,N,L,S,1);               15177000 T  0012:3
                                      P(1,RTN);                                 15177800 T  0016:0
                                     P(XIT);%                                   15178000 T  0016:2
                                 END;%                                          15179000 T  0016:3
                            T ← GETSPACE(L,2,1);%                               15180000 T  0016:3
                        END;%                                                   15181000 T  0018:2
                    B ← [M[T+2]]&L[8:38:10]&C[18:33:15];%                       15182000 T  0018:2
                    N ← N-1;%                                                   15183000 T  0021:3
                    FOR I ← 0 STEP 1 UNTIL N DO%                                15184000 T  0023:0
                        BEGIN S[I] ← B;%                                        15185000 T  0024:0
                            B ← L INX B;%                                       15186000 T  0025:2
                        END;%                                                   15187000 T  0027:0
                    CONQUER←1;                                                  15187500 T  0029:1
                END;%                                                           15188000 T  0030:0
                                                                                        SIZE= 0031 WORDS
        BOOLEAN PROCEDURE PRTGAMES(BUFF,MIX); VALUE BUFF,MIX; REAL BUFF,MIX;    15400000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00383
          COMMENT PRTGAMES IS THE BUSINESS END OF "IN" OR "OT" MESSAGES;        15401000 T  0000:0
          BEGIN REAL NX,INDEX,DATA;                                             15402000 T  0000:0
        $ SET OMIT = NOT(PACKETS)                                               15402499 T  0000:0
                LABEL ECH, X;;;                                                 15403000 T  0000:0
                STREAM(BUFF,F←BUFF<0,D←[DATA],I←[INDEX]);                       15404000 T  0001:0
                BEGIN SI←BUFF;                                                  15405000 T  0003:0
                L:   IF SC=" " THEN BEGIN SI←SI+1; GO L END;                    15406000 T  0003:1
                     4(IF SC≠" " THEN IF SC≠"←" THEN IF SC≠"=" THEN             15407000 T  0004:1
                       BEGIN TALLY←TALLY+1; SI←SI+1 END);                       15408000 T  0006:0
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          I←TALLY; DI←DI+8; DI←DI-I; SI←SI-I; DS←I CHR;                    15409000 T  0006:3
          F(                                                               15410000 T  0008:3
M:          IF SC=" " THEN BEGIN SI←SI+1; GO M END;                        15411000 T  0009:1
            IF SC≠"=" THEN BEGIN E:DI←DI-1;DS←LIT"";JUMP OUT END;          15412000 T  0010:1
            SI←SI+1;                                                       15413000 T  0012:0
N:          IF SC=" " THEN BEGIN SI←SI+1; GO N END; TALLY←0;               15414000 T  0012:1
            8(IF SC≥"0" THEN BEGIN TALLY←TALLY+1; SI←SI+1 END              15415000 T  0013:2
              ELSE JUMP OUT); IF SC≠" " THEN IF SC≠"←" THEN GO E;          15416000 T  0014:3
            I←TALLY; DI←D; SI←SI-I; DS←I OCT);                             15417000 T  0017:0
END; IF (INDEX AND NOT @1070707)≠0 THEN GO ECH;                            15418000 T  0018:3
IF JARROW[MIX]=0 THEN GO ECH;                                              15419000 T  0021:0
IF (NX←INDEX.[45:3]&INDEX[42:39:3]&INDEX[39:33:3]&INDEX[38:29:1            15420000 T  0022:2
                                   ])≤20 THEN GO ECH;                      15421000 T  0025:2
IF (PRT@OW[MIX] INX NX)>M[PRT[MIX,10].MOM-3].[CF] THEN GO ECH;             15422000 T  0027:3
IF BUFF<0 THEN                                                             15423000 T  0033:0
     IF P(PRT[MIX,NX],TOP,XCH,DEL) THEN PRT[MIX,NX]←DATA ELSE              15424000 T  0033:3
       GO ECH ELSE                                                         15425000 T  0038:1
     BEGIN; STREAM(J←JARROW[MIX],MIX,INDEX,R←[PRT[MIX,NX]],                15426000 T  0038:1
              D← DATA← BUFF.[15:15]-1);                                    15427000 T  0042:1
         BEGIN SI←J;  SI←SI+1;  DS←LIT" ";%                        %WF    15428000 T  0044:1
              DS←7 CHR;  DS←LIT"/";  SI←SI+1;%                     %WF    15428100 T  0045:1
              DS←7CHR; DS←LIT"=";  SI←LOC MIX; DS←2DEC;                    15429000 T  0046:1
              MIX←DI; DI←DI-2; DS←FILL; DI←MIX;                            15429500 T  0047:2
              DS←3LIT":R+"; SI←SI+4; DS←4 CHR; D←DI; DI←DI-4;              15430000 T  0048:2
              DS←3 FILL; DI←D; DS←LIT"="; SI←R;                            15431000 T  0050:1
              IF SB THEN % DESCRIPTOR:TYPE OCTAL                           15432000 T  0051:2
                16(DS←3 RESET; 3(IF SB THEN DS←SET ELSE DS←                15433000 T  0052:0
                                  RESET; SKIP SB)) ELSE                    15434000 T  0053:3
                DS←8 DEC;                                                  15435000 T  0055:0
                DS←LIT"←"; DI←D; DI←DI+1; DS←7 FILL;                       15436000 T  0055:1
              END;                                                         15437000 T  0056:2
              SPOUTER(DATA INX M[BUFF.[15:15]-2],UNITNO,1);                15437100 T  0056:3
         END; GO X;                                                        15438000 T  0059:3
ECH: PRTGAMES←1;                                                           15439000 T  0060:1
X:   END;                                                                  15440000 T  0061:0
                                                                                   SIZE= 0062 WORDS
$ SET OMIT = NOT(DCLOG AND DATACOM )                                       15440999 T  0000:0
PROCEDURE WMATMCP(BUFF); VALUE BUFF; REAL BUFF; %FORMATS WM MESSAGE        15500000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00386
BEGIN REAL X;                                                              15501000 T  0000:0
DISKWAIT(=(X←SPACE(30)),30,MCPNAMESEG);                                    15501100 T  0000:0
STREAM(ML:=MARKLEVEL,PL:=PATCHLEVEL,LL:=LOCALEVEL                          15501500 T  0004:1
       ,N:=X+20+2×SYSNO,A:=BUFF);                                          15501600 T  0005:1
BEGIN DS←LIT" "; SI←N; SI←SI+1; DS←7 CHR; DS←LIT"/";                       15502000 T  0007:2
     SI←SI+1; DS←7 CHR; DS←6 LIT" MARK ";                                  15502100 T  0009:1
     SI:=LOC ML; IF SC GEQ " " THEN;                                       15502200 T  0010:3
     8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                 15502300 T  0011:2
       ELSE DS:=CHR); DS:=LIT".";                                          15502400 T  0013:1
     SI:=LOC PL; IF SC GEQ " " THEN;                                       15502500 T  0014:2
     6(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                 15502600 T  0015:1
       ELSE DS:=CHR); DS:=2CHR;                                            15502700 T  0017:0
     SI:=LOC LL; IF SC GEQ " " THEN;                                       15502800 T  0018:0
     8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                 15502900 T  0018:3
       ELSE DS:=CHR);                                                      15503000 T  0020:2
     DS ← 10 LIT " INCLUDES ";%                                            15504000 T  0021:1
$ SET OMIT = NOT(DATACOM )                                                 15505000 T  0022:3
$ SET OMIT = NOT(DCSPO AND DATACOM )                                       15506099 T  0022:3
$ SET OMIT = NOT(DCLOG AND DATACOM )                                       15506199 T  0022:3
$ SET OMIT = NOT(DFX)                                                      15509000 T  0022:3
$ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                   15510999 T  0022:3
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$ SET OMIT = NOT(DISKLOG)                                          15511999 T  0022:3
$ SET OMIT = NOT(DUMP AND NOT DEBUGGING)                           15513000 T  0022:3
$ SET OMIT = NOT(DEBUGGING)                                        15515000 T  0022:3
$ SET OMIT = NOT(BREAKOUT)                                         15517000 T  0022:3
$ SET OMIT = NOT(SHAREDISK)                                        15518999 T  0022:3
$ SET OMIT = NOT(SAVERESULTS)                                      15519999 T  0022:3
$ SET OMIT = NOT(STATISTICS)                                       15520099 T  0022:3
$ SET OMIT = NOT(AUXMEM)                                           15520199 T  0022:3
$ SET OMIT = NOT(B6500LOAD)                                        15520299 T  0022:3
$ SET OMIT = NOT(MONITOR)                                          15520310 T  0022:3
$ SET OMIT = NOT(RJE AND DATACOM )                                 15520399 T  0022:3
$ SET OMIT = NOT(PACKETS)                                          15520409 T  0022:3
$ SET OMIT = NOT(DKBNODFX)                                         15520419 T  0022:3
$ SET OMIT = NOT SEPTICTANK                                        15520460 T  0022:3
$ SET OMIT = NOT AUTODUMP                                          15520490 T  0022:3
        DI ← DI-1;                                                 15523000 T  0022:3
        A← DI;                                                     15524000 T  0023:0
        SI← A;    DI← A;                                           15525000 T  0023:1
        IF SC≠"," THEN                                             15526000 T  0023:3
            DI← DI- 9;                                             15527000 T  0024:1
        DS← LIT "←"                                                15528000 T  0024:2
        END;                                                       15530000 T  0025:0
    IF M[3].[1:1] THEN % CM HAS BEEN DONE                          15531000 T  0025:1
    BEGIN DISKWAIT(-X,30,0);                                       15531100 T  0026:3
        STREAM(N←X+10+5×SYSNO,BUFF);                               15531200 T  0028:3
        BEGIN SI←BUFF; SI←SI+16;                                   15531300 T  0031:1
        L:    IF SC NEQ "←" THEN BEGIN SI←SI+1; GO L; END;         15531400 T  0031:3
              BUFF←SI; DI←BUFF;                                    15531500 T  0032:3
              DS←18 LIT"-NEXT MCP WILL BE ";                       15531600 T  0033:1
              SI←N; SI←SI+1; DS←7 CHR; DS←LIT"/";                  15531700 T  0035:3
              SI←SI+1; DS←7 CHR; DS←LIT"←";                        15531800 T  0037:0
    END; END;                                                      15531900 T  0038:0
    FORGETSPACE(X);                                                15532100 T  0038:1
    END WHATMCP;                                                   15533000 T  0039:0
                                                                                SIZE= 0041 WORDS
PROCEDURE WHATINTRNSIC(BUFF); VALUE BUFF; REAL BUFF;               15534000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00388
    BEGIN                                                          15535000 T  0000:0
    REAL SIZE,LOC,INTWORD,WI,I;                                    15536000 T  0000:0
    LABEL EXIT;                                                    15537000 T  0000:0
    IF INTSIZE=0 THEN                                              15539000 T  0000:0
        BEGIN     ;                                                15540000 T  0002:0
        STREAM(BUFF);  DS←14 LIT "NO INTRINSICS←";                 15541000 T  0002:2
        GO EXIT;                                                   15542000 T  0005:2
        END;                                                       15543000 T  0006:0
    COMMENT MAKE WI INTRINSIC PRESENT;                             15544000 T  0006:0
    SIZE := (INTWORD:=INTRNSC[INTRNSC[0]]) INX 0;                  15545000 T  0006:0
    LOC := SPACE(SIZE);                                            15546000 T  0008:1
  $ SET OMIT = NOT(AUXMEM)                                         15547000 T  0010:2
    DISKWAIT(-LOC,SIZE,INTWORD.[6:27]);                            15548000 T  0010:2
    DISKWAIT(-(I:=SPACE(30)),30,0);                                15549000 T  0012:2
    STREAM(X:=I+13+5×SYSNO,LOK:=LOC,BUFF);                         15550000 T  0016:0
      BEGIN                                                        15551000 T  0018:3
      SI:=LOK; SI:=SI+8;                                           15552000 T  0018:3
      10(SI:=SI+1;                                                 15552100 T  0019:1
      7(IF SC="←" THEN JUMP OUT 2 TO L1;                           15552200 T  0019:3
        IF SC="@" THEN SI:=SI+1 ELSE DS:=CHR));                    15552300 T  0021:1
L1:   SI:=X;DS:=3LIT" (";                                          15552400 T  0023:0
      SI:=SI+1; DS:=7 CHR;DS:=LIT"/";                              15552500 T  0024:0
      SI:=SI+1; DS:=7 CHR;DS:=2LIT")←";                            15552600 T  0025:0
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            END STREAM;                                                          15552700 T  0026:0
        FORGETSPACE(LOC); FORGETSPACE(I);                                        15552800 T  0026:1
    EXIT:                                                                        15554000 T  0027:3
        END WHATINTRNSIC;                                                        15555000 T  0027:3
                                                                                          SIZE= 0028 WORDS
    PROCEDURE COREPRINT(Q); VALUE Q; REAL Q;                                     15600000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00389
        COMMENT : THIS PROCEDURE COMPUTES AND TYPES THE AMOUNTS OF SAVE          15600050 T  0000:0
                  AND OVERLAYABLE CORE IN USE FOR A GIVEN MIX OR ALL MIXES;      15600100 T  0000:0
        COMMENT : Q.[1:1] = 1 IF ALL MIXES DESIRED                               15600120 T  0000:0
                  Q.[CF] = MIX, Q.[9:9] = REMOTE TU/BU;                          15600140 T  0000:0
        BEGIN REAL LINK,SIZE,D;%                                                 15600300 T  0000:0
            ARRAY C[*];                                                          15600400 T  0000:0
            INTEGER A,N;                                                         15600500 T  0000:0
            LABEL NXT;                                                           15600600 T  0000:0
            C ← [M[GETSPACE(MIXMAX+1,0,0) + 2]] & (MIXMAX+1) [8:38:10];          15600800 T  0000:0
            FOR A ← 0 STEP 1 UNTIL MIXMAX DO C[A] ← 0;%                          15600950 T  0006:1
            C[0].[FF] ← A ← MSTART;%                                             15601000 T  0010:2
            WHILE A ≠ MEND DO% STEP THRU MEM LINKS                               15601150 T  0013:0
            BEGIN IF (LINK ← M[A]).[1:1] THEN GO TO NXT;                         15601200 T  0014:1
                SIZE ← LINK.[CF] - A;                                            15601400 T  0017:0
                IF LINK.[2:1] THEN SIZE ← 0 & SIZE [CTF];% SAVE                  15601500 T  0018:3
                C[LINK.[9:6]] ← (*P(DUP)) + SIZE;%                               15601600 T  0021:1
            NXT: A ← LINK.[CF];%                                                 15602200 T  0023:3
            END;%                                                                15602300 T  0025:0
            A ← -1; WHILE (A←A+1) ≤ MIXMAX DO%                                   15602400 T  0025:2
            BEGIN IF Q.[1:1] OR Q.[CF] = A THEN IF C[A] ≠ 0 THEN                 15602500 T  0028:3
                BEGIN; STREAM(N←N←C[A].[FF],D←[SIZE]);%                          15602600 T  0032:2
                    BEGIN SI ← LOC N; DS ← 8 DEC; END;%                          15602620 T  0035:2
                    STREAM(N←N←C[A].[CF],D←[LINK]);%                             15602640 T  0036:1
                    BEGIN SI ← LOC N; DS ← 8 DEC; END;%                          15602660 T  0038:2
                    JOBMESS(A,Q,":SAVE=",SIZE," OLAY=",LINK);%                   15602680 T  0039:1
                END;%                                                            15602690 T  0041:1
            END;%                                                                15602700 T  0041:1
            IF Q.[1:1] THEN% DO TOTAL                                            15603900 T  0044:0
            BEGIN P(C[0]);                                                       15604000 T  0044:3
                FOR A←1 STEP 1 UNTIL MIXMAX DO P(C[A],ADD);%                     15604100 T  0045:3
                N ← P, N ← N.[FF] + N.[CF];%                                     15604200 T  0050:0
                STREAM(N,D←D←(GETSPACE(4,0,0) + 2));%                            15604250 T  0052:3
                BEGIN SI ← LOC N; DS ← 18 LIT "TOTAL MEM IN USE= ";              15604275 T  0055:3
                    DS ← 5 DEC; DS ← LIT "←";                                    15604300 T  0058:2
                    DI ← DI - 6; DS ← 4 FILL;%                                   15604400 T  0059:1
                END STREAM;                                                      15604500 T  0059:3
                SPOUT(D & Q[9:9:9]);%                                            15604600 T  0060:0
            END;                                                                 15604700 T  0061:3
            FORGETSPACE(C INX 0);                                                15604800 T  0061:3
        END COREPRINT;                                                           15604900 T  0063:1
                                                                                          SIZE= 0064 WORDS
    $ SET OMIT = NOT(AUXMEM)                                                     15604999 T  0000:0
    PROCEDURE LOGCOMMENT (Q); VALUE Q; REAL Q;                                   15610000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00392
        BEGIN                                                                    15611000 T  0000:0
    REAL    I,J,K,L;                                                             15612000 T  0000:0
    ARRAY   LOG[*];                                                              15613000 T  0000:0
            L ← GETSPACE(72,0,0)+2;                                              15614000 T  0000:0
            STREAM (Q:D←L+5);                                                    15615000 T  0003:2
            BEGIN  SI ← Q;                                                       15616000 T  0005:1
            L:     IF SC≠"←" THEN BEGIN DS ← CHR; GO TO L; END;                  15617000 T  0005:2
                   S(DS ← 8 LIT " "); DI ← DI-32; Q ← DI;                        15618000 T  0006:2
            END;                                                                 15619000 T  0008:3
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            I ← P.[33:15]; LOG ← [M[L]] & (I-L+4)[8:38:10];                15620000 T  0009:0
            LOG[3] ← I ← I-L-5; % NUMBER OF WORDS IN COMMENT               15621000 T  0013:1
            WHILE (J:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;         15622000 T  0016:0
            LOG[2] ← DATE.[18:30];                                         15623000 T  0023:2
            LOG[1] ← J;                                                    15624000 T  0025:1
            LOG[0] ← 99;                                                   15625000 T  0026:2
            LOGSPACE([LOG[0]],I+9);                                        15626000 T  0027:3
            FORGETSPACE(LOG);                                              15627000 T  0029:2
        END;                                                               15628000 T  0030:2
                                                                                   SIZE= 0031 WORDS
    REAL PROCEDURE KEYINSCAN(KTR,MIX); REAL KTR,MIX;                       16034900 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00394
        BEGIN                                                              16035000 T  0000:0
        REAL TYPE=+1, TBLADDR;                                             16035100 T  0000:0
        % SCANS INPUT BUFFER FROM SPO                                      16035200 T  0000:0
        % RETURNS ERROR FLAG IN MIX.[1:3] ...                              16035300 T  0000:0
        %   MIX.[1:1]=FLAG FOR EMPTY BUFFER (GROUP MARK ONLY)              16035400 T  0000:0
        %   MIX.[2:1]=FLAG FOR NO INFO AFTER MIX INDEX                     16035500 T  0000:0
        %   MIX.[3:1]=FLAG FOR QMARK (CC) INPUT AS FIRST CHARACTER         16035600 T  0000:0
        %   KTR IS INITIALLY THE ADDRESS OF SPO INPUT BUFFER               16035700 T  0000:0
        %   KTR IS ASSIGNED NEXT CHARACTER LOCATION AFTER SCAN             16035800 T  0000:0
        % TYPE.[CF] IS ASSIGNED TABLE LOCATION (MIXMSG OR INFOMSG)         16035900 T  0000:0
        % TYPE.[1:5] IS ASSIGNED PROCEDURE NUMBER                          16036000 T  0000:0
        % TYPE.[6:6] IS ASSIGNED MIXCODE                                   16036100 T  0000:0
        STREAM(MIX:=63, BUFF:=KTR :); % SCAN INPUT BUFFER                 16036200 T  0000:0
          BEGIN                                                            16036300 T  0001:3
          SI:=BUFF;                                                        16036400 T  0001:3
          DI:=BUFF; DI:=DI-1; DS:=LIT"<"; % BACKSPACE CHARACTER            16036500 T  0002:0
          8(60(IF SC="←" THEN % END OF INPUT STRING                        16036600 T  0003:0
            BEGIN                                                          16036700 T  0004:0
            DS:=CHR; JUMP OUT 2 TO L;                                      16036800 T  0004:0
            END;                                                           16036900 T  0005:0
          IF SC="<" THEN % BACK SPACE CHARACTER                            16037000 T  0005:0
            BEGIN                                                          16037100 T  0005:2
            DI:=DI-1; IF SC NEQ DC THEN DI:=DI-1;                          16037200 T  0005:2
            END                                                            16037300 T  0006:2
          ELSE DS:=CHR)); % END OF BACKSPACE CHECK                         16037400 T  0006:2
       L: SI:=BUFF; DI:=LOC MIX; % CHECK FOR MIX INDEX                     16037500 T  0007:2
      L1: IF SC=" " THEN                                                   16037600 T  0008:0
            BEGIN                                                          16037700 T  0008:2
            SI:=SI+1; GO TO L1;                                            16037800 T  0008:2
            END;                                                           16037900 T  0009:0
          IF SC="←"  THEN % EMPTY BUFFER                                   16038000 T  0009:0
            BEGIN                                                          16038100 T  0009:2
            SKIP DB; DS:=SET; GO TO XXIT; % MIX.[1:1]=EMPTY BUFFER FLAG    16038200 T  0009:2
            END;                                                           16038300 T  0010:1
          IF SC LSS "0" THEN GO TO XXIT; % NO MIX INDEX, SET "MIX"=63      16038400 T  0010:1
          IF SC GTR "9" THEN % QUESTION MARK, SET MIX.[3:1]                16038500 T  0011:0
            BEGIN                                                          16038600 T  0011:2
            SI:=SI+1; SKIP 3DB; DS:=SET; GO TO XXIT; % MIX.[3:1]=QMARK FLAG 16038700 T  0011:2
            END;                                                           16038800 T  0012:2
          SI:=SI+1; IF SC LSS "0" THEN GO TO ONE;                          16038900 T  0012:2
          IF SC LEQ "9" THEN                                               16039000 T  0013:2
            BEGIN                                                          16039100 T  0014:0
            SI:=SI-1; DS:=2OCT;                                            16039200 T  0014:0
            END                                                            16039300 T  0014:2
          ELSE                                                             16039400 T  0014:2
            BEGIN                                                          16039500 T  0014:3
    ONE:    SI:=SI-1; DS:=OCT;                                             16039600 T  0014:3
            END;                                                           16039700 T  0015:1
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L2: IF SC=" " THEN % SCAN TO NEXT VISIBLE CHARACTER                    16039800 T  0015:1
      BEGIN                                                            16039900 T  0015:3
      SI:=SI+1; GO TO L2;                                              16040000 T  0015:3
      END;                                                             16040100 T  0016:1
    IF SC="←" THEN % NO INFORMATION AFTER MIX INDEX                    16040200 T  0016:1
      BEGIN                                                            16040300 T  0016:3
      DI:=LOC MIX; SKIP 2DB; DS:=SET; % MIX.[2:1]=ERROR FLAG           16040400 T  0016:3
      END;                                                             16040500 T  0017:2
XXIT: DI:=BUFF; DI:=DI-8; DS:=8LIT"INV KBD ";                          16040600 T  0017:2
    BUFF:=SI; % SAVE LOCATION OF NEXT CHARACTER IN BUFFER               16040700 T  0019:1
    END STREAM;                                                        16040800 T  0019:2
  IF P([KTR],STD,[MIX],SND).[1:3]=0 THEN % NOT QMARK,EMPTY OR ERROR    16040900 T  0019:3
    BEGIN                                                              16041000 T  0021:3
    TBLADDR:=TYPE:=SPACE(KEYMSGSZ);                                    16041100 T  0022:1
    DISKWAIT(-TYPE,KEYMSGSZ,MESSAGETABLE[2].[22:26]);                  16041110 T  0025:3
    STREAM(TBBL:=TYPE, BUFF:=KTR : TOG:=(MIX NEQ 63));                 16041200 T  0028:3
      BEGIN                                                            16041300 T  0030:3
      SI:=TBBL; SI:=SI+1; DI:=BUFF; DI:=DI+2;                          16041400 T  0030:3
  NEXT: CI:=CI+TOG; GO TO NOMIX;                                       16041500 T  0031:3
   MIX: IF SC GEQ 1 THEN GO TO OK ELSE          % MIX SPECIFIED        16041550 T  0032:2
        BEGIN                                   %    BUT THIS IS NOT   16041600 T  0033:2
        SI:=SI+8; GO TO MIX;                    %    A MIX MESSAGE.    16041650 T  0033:2
        END;                                                           16041700 T  0034:0
 NOMIX: IF SC GTR 1 THEN                        % MIX NOT SPECIFIED    16041750 T  0034:0
        BEGIN                                   %    BUT THIS IS A     16041800 T  0034:2
        SI:=SI+8; GO TO NOMIX;                  %    MIX MESSAGE.      16041850 T  0034:2
        END;                                                           16041900 T  0035:0
    OK: SI:=SI+1; DI:=DI-2;                                            16042000 T  0035:0
      IF SC="←" THEN % END OF TABLE                                    16042100 T  0035:2
        BEGIN                                                          16042200 T  0036:0
        TBBL:=TALLY; GO TO XT;                                         16042300 T  0036:0
        END;                                                           16042400 T  0036:2
      IF 2 SC≠DC THEN                           % NOT MATCHING ENTRY  16042450 T  0036:2
        BEGIN                                                          16042500 T  0037:0
        SI:=SI+5; GO TO NEXT;                                          16042550 T  0037:0
        END;                                                           16042600 T  0037:2
      TOG:=DI; DI:=LOC TBBL; SI:=SI+2; DS:=2 OCT;  % SWITCH VALUE      16042650 T  0037:2
      SI:=SI-4; DI:=LOC TBBL; DS:=2CHR; % PROCED  & MIXCODE            16042700 T  0038:2
      SI:=TOG;                                                         16042800 T  0039:1
    L: IF SC=" " THEN                                                  16042900 T  0039:2
        BEGIN                                                          16043000 T  0040:0
        SI:=SI+1; GO TO L;                                             16043100 T  0040:0
        END;                                                           16043200 T  0040:2
      BUFF:=SI;                                                        16043300 T  0040:2
   XT: END STREAM STATEMENT;                                           16043400 T  0040:3
    P( [KTR],STD, .TYPE,STD);                                          16043500 T  0041:0
    FORGETSPACE(TBLADDR);                                              16043550 T  0042:0
    END % IF NOT QMARK, EMPTY OR ERROR                                 16043600 T  0042:3
  ELSE  % QMARK, EMPTY OR ERROR                                        16043620 T  0042:3
  IF MIX.[3:1] THEN  % QMARK                                           16043640 T  0042:3
  BEGIN MIX:=63;                                                       16043660 T  0044:0
    TYPE:=VCC&#104[1:37:11];                                           16043680 T  0045:2
  END                                                                  16043700 T  0047:1
  ELSE TYPE:=0;                                                        16043750 T  0047:1
  END PROCEDURE KEYINSCAN;                                             16043800 T  0048:2
                                                                                   SIZE= 0049 WORDS
PROCEDURE KEYINO(B,KTRX); VALUE B,KTRX; REAL B,KTRX;                   16044000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00396
                                                                       16045000 T  0000:0
BEGIN                                                                  16046000 T  0000:0
```

```
INTEGER ZZSTA;                                                          16047000 T 0000!0
REAL BUFF, KTR, TYPE, MIX, A, I, J, K;                                  16048000 T 0000!0
ARRAY BUFA = BUFF[*];                                                   16049000 T 0000!0
                                                                        16050000 T 0000!0
                                                                        16051000 T 0000!0
                                                                        16052000 T 0000!0
LABEL DSM, CUTY, FORGET, ERROR, EXIT                                    16053000 T 0000!0
      ,AX   ,IL   ,QT   ,OU   ,WY   ,RY   ,DS   ,TF   ,RM   ,DP          16054000 T 0000!0
      ,DD   ,ST   ,CM   ,SV   ,CL   ,BK   ,TI   ,PR   ,RO   ,IT          16055000 T 0000!0
      ,WI   ,RXIT                                                       16056000 T 0000!0
                                                                        16057000 T 0000!0
                                                                        16058000 T 0000!0
                                                                        16059000 T 0000!0
      ;                                                                 16060000 T 0000!0
SWITCH S:= ERROR                                                        16061000 T 0000!0
           ,AX   ,IL   ,IL   ,QT   ,OU   ,WY   ,RY   ,DS   ,DS   ,TF    16062000 T 0000!0
           ,TF   ,RM   ,DP   ,DD   ,DD   ,DD   ,ST   ,CM   ,SV   ,CL    16063000 T 0000!0
           ,BK   ,RXIT ,RY   ,RXIT ,RXIT ,TI   ,PR   ,RO   ,RO   ,IT    16064000 T 0000!0
           ,WI   ,RXIT                                                  16065000 T 0000!0
                                                                        16066000 T 0000!0
                                                                        16067000 T 0000!0
                                                                        16068000 T 0000!0
           ;                                                            16069000 T 0000!0
SUBROUTINE SPOIT; M[BUFF-2]:=B AND @7570000000000;                      16070000 T 0000!0
                                                                        16071000 T 0005!0
BUFF  :=KTRX.[15:15];                                                   16072000 T 0005!0
MIX   :=KTRX.[ 9:6 ];                                                   16073000 T 0008!2
TYPE  :=KTRX.[ 2:7 ];                                                   16074000 T 0009!3
KTR   :=KTRX.[15:33];                                                   16075000 T 0011!0
ZZSTA :=0 & (M[BUFF-2])[9:9:9];                                         16076000 T 0012!1
GO TO S[TYPE];                                                          16077000 T 0015!1
AX:                                                                     16078000 T 0032!3
I := BUFF;                                                              16079000 T 0032!3
GO TO RXIT;                                                             16080000 T 0033!2
IL:                                                                     16081000 T 0034!0
IF (I:=ANVIL(TYPE=2,KTR)) GTR PSEUDOMAXT THEN % IL=2, UL=3              16082000 T 0034!0
   IF I LSS 70 THEN GO TO ERROR;                                        16083000 T 0036!2
TYPE := 2; % IL                                                         16084000 T 0038!1
IF I GTR PSEUDOMAXT THEN BUFF:=I;                                       16085000 T 0039!0
GO TO RXIT;                                                             16086000 T 0041!0
OU:                                                                     16087000 T 0041!2
STREAM(A:="LP" : B:="MT", C:="DK", D:="CP", KTR);                       16088000 T 0041!2
   BEGIN                                                                16089000 T 0043!2
   SI := KTR;                                                           16090000 T 0043!2
   DI := LOC A; DI := DI+6;                                             16091000 T 0043!3
   TALLY:=1; IF SC="-" THEN GO TO XT;                                   16092000 T 0044!1
   TALLY:=2; IF 2 SC=DC THEN GO TO XT;                                  16093000 T 0045!1
   TALLY:=3; SI:=SI-2; DI:=DI+14; IF 2 SC=DC THEN GO TO XT;             16094000 T 0046!1
   TALLY:=4; SI:=SI-2; DI:=DI+6;  IF 2 SC=DC THEN GO TO XT;             16095000 T 0047!3
   TALLY:=5; SI:=SI-2; DI:=DI+6;  IF 2 SC=DC THEN GO TO XT;             16096000 T 0049!1
   TALLY:=0;                                                            16097000 T 0050!3
XT: A := TALLY;                                                         16098000 T 0051!0
   END;                                                                 16099000 T 0051!1
IF(I:=P) = 0 THEN GO TO ERROR;                                          16100000 T 0051!2
GO TO RXIT;                                                             16101000 T 0053!0
WY:                                                                     16102000 T 0058!0
IF MIX LSS 63 THEN GO TO RXIT; % <MIX> WY                               16103000 T 0058!0
SPOIT;                                                                  16104000 T 0059!1
A:=0;                                                                   16105000 T 0060!0
FOR I:=1 STEP 1 UNTIL MIXMAX DO                                         16106000 T 0060!3
```

operator begins

AX

IL

OU

XT

WY

```
            IF *[JARROW[I]] NEQ 0 THEN                                          16107000 T  0062:0
               IF REPLY[I] LSS 0 THEN REPLY[A:=I]:=VWY;                         16108000 T  0063:1
         M[BUFF-1]:=IF A NEQ 0 THEN NOT 0 ELSE FLAG("NULL    ");                16109000 T  0069:1
         GO TO ERROR;                                                           16110000 T  0073:3
      DS:                                                                       16111000 T  0076:0
         IF MIX=63 THEN % "DS A/B"                                              16112000 T  0076:0
            BEGIN                                                               16113000 T  0076:3
            NAMEID(J,KTR); NAMEID(K,KTR); NAMEID(K,KTR);                        16114000 T  0077:1
            FOR MIX:=1 STEP 1 UNTIL MIXMAX DO                                   16115000 T  0080:1
               IF *[JARROW[MIX]] NEQ 0 THEN                                     16116000 T  0081:0
                  IF (J EQV ABS(JAR[MIX,0]))=(NOT 0) THEN                       16117000 T  0082:1
                     IF (K EQV ABS(JAR[MIX,1]))=NOT 0 THEN                      16118000 T  0085:1
                        BEGIN                                                   16118100 T  0088:1
                        TABCNT[MIX]:=TABCNT[MIX]+1;                             16118200 T  0088:3
                        GO TO DSM;                                              16118300 T  0092:1
                        END;                                                    16118400 T  0092:3
            GO TO ERROR; % NOT FOUND                                            16119000 T  0095:0
            END; % IF MIX NOT GIVEN                                             16120000 T  0095:2
         IF JARROW[MIX] NEQ 0 THEN                                              16121000 T  0095:2
            BEGIN                                                               16122000 T  0096:2
      DSM:  JAR[MIX,6].[1:1]:=((TYPE=9) OR (TYPE=20)); % DS=8,SD=9,CL=20         16123000 T  0097:0
            TERMINATE(MIX&(IF B.[9:9] GTR 0 THEN 61 ELSE 3)[CTF]);              16124000 T  0101:2
            HALT;                                                               16125000 T  0105:1
            NOPROCESSTOG:= NOPROCESSTOG-1;                                      16126000 T  0105:3
            GO TO FORGET;                                                       16127000 T  0107:0
            END;                                                                16128000 T  0107:2
         GO TO ERROR;                                                           16129000 T  0107:2
      TF:                                                                       16130000 T  0108:0
         IF TYPE=11 THEN SPOIT; % SF=11                                         16131000 T  0108:0
         CHANGEFACTOR(KTR,TYPE=10); % TF=10,SF=11                               16132000 T  0110:0
         GO TO EXIT;                                                            16133000 T  0111:2
      RM:                                                                       16134000 T  0112:0
         TYPE:=TYPE&B[9:9:9];                                                   16135000 T  0112:0
         GO TO RXIT;                                                            16136000 T  0113:3
      DP:                                                                       16137000 T  0114:1
         $ SET OMIT = NOT(DEBUGGING OR DUMP)                                    16138000 T  0114:1
         GO TO EXIT;                                                            16155000 T  0114:1
      DD:                                                                       16156000 T  0114:3
         $ SET OMIT = NOT(DEBUGGING)                                            16157000 T  0114:3
         GO TO FORGET;                                                          16161000 T  0114:3
      ST:                                                                       16162000 T  0115:1
         IF -REPLY[MIX] = (VWY&VOK[36:42:6]) OR JARROW[MIX]=0 THEN GO ERROR;    16163000 T  0115:1
         $ SET OMIT = NOT(WORKSET)                                              16163100 T  0119:2
         COMPLEXSLEEP(STOPJOB=@1777 OR STOPJOB=MIX OR TERMIX=MIX);              16164000 T  0119:2
14582000 ACCIDENTAL ENTRY AT MIX
         IF STOPJOB=@1777 THEN STOPJOB:=MIX;                                    16165000 T  0126:3
         GO TO FORGET;                                                          16166000 T  0128:3
      CM:                                                                       16167000 T  0129:1
         CHANGEMCP(KTR);                                                        16168000 T  0129:1
         GO TO EXIT;                                                            16169000 T  0130:0
      SV:                                                                       16170000 T  0130:2
         SAVETHEUNIT(KTR);                                                      16171000 T  0130:2
         GO FORGET;                                                             16172000 T  0131:1
      QT:                                                                       16173000 T  0131:3
            IF MIX LSS 63 THEN % MIX INDEX SPECIFIED                            16176000 T  0131:3
         CUTY: IF ((JAR[MIX,0] EQV "PRNPBT ") = NOT 0) AND                      16178000 T  0132:2
               ((JAR[MIX,1] EQV "DISK   ") = NOT 0) THEN                        16179000 T  0135:1
               BEGIN                                                            16180000 T  0137:3
               REPLY[MIX]:=TYPE;                                                16181000 T  0138:1
               STREAM(A:=0, B:=0 : KTR);                                        16187000 T  0139:2
```

DS

TF

RM

DP

DD

ST

CM

SV

QT

```
                BEGIN                                                   16188000 T  0141:0
                SI:=KTR;                                                16189000 T  0141:0
                IF SC="+" THEN TALLY:=2 ELSE                            16190000 T  0141:1
                IF SC="-" THEN TALLY:=3 ELSE GO XT;                     16191000 T  0142:1
          B2:   SI:=SI+1; IF SC=" " THEN GO TO B2;                      16192000 T  0143:2
                B:=TALLY; TALLY:=0;                                     16193000 T  0144:2
                6(IF SC LSS "0" THEN JUMP OUT; SI:=SI+1; TALLY:=TALLY+1);  16194000 T  0145:0
                KTR:=TALLY; DI:=LOC A; SI:=SI-KTR; DS:=KTR OCT;         16195000 T  0147:0
          XT:   END STREAM STATEMENT;                                   16196000 T  0148:2
             NT2:=P;                                                    16197000 T  0148:3
             NT1:=P;                                                    16198000 T  0149:1
             PRT[MIX,@25]:=5&NT1[9:24:24]&NT2[1:46:2];                  16199000 T  0149:3
             GO TO FORGET;                                              16200000 T  0153:2
             END                                                        16201000 T  0156:0
          ELSE GO TO ERROR;                  % NOT PRNPBT               16202000 T  0156:0
CL:                                          % MUST FOLLOW QT           16203000 T  0156:0
   IF (I:=UNITIN(TINU, KTR)) LSS 64 THEN % UNIT ] MTX                   16204000 T  0156:0
      IF (MIX:=RDCTABLE[I].[8:6]) NEQ 0 THEN                            16205000 T  0158:1
         BEGIN                                                          16206000 T  0160:3
         TABCNT[MIX]:=TABCNT[MIX]+1;                                    16206100 T  0161:1
         IF TYPE=4 THEN GO TO QT ELSE GO TO DSM;                        16206200 T  0164:3
         END;                                                           16206300 T  0166:2
 $ SET OMIT = NOT(SHAREDISK)                                            16207000 T  0166:2
   IF TYPE=4 OR (I GTR 29) THEN GO TO ERROR; % QT OR PSEUDO UNIT        16215000 T  0166:2
   LABELTABLE[I] := P(DUP,LOD,SSP);     % MARK IT NOT IN USE            16216000 T  0169:0
   MIX:=63;                                                             16217000 T  0170:3
   GO TO RY;                                                            16218000 T  0171:2
BK:                                                                     16219000 T  0172:0
 $ SET OMIT = NOT(DATACOM AND DCSPO)                                    16220000 T  0172:0
      BEGIN                                                             16223000 T  0172:0
      IF (I:= MESSAGEHOLDER.[CF]) NEQ 0 THEN                            16224000 T  0172:0
      IF (J:= M[I].[FF]) NEQ 0 THEN                                     16225000 T  0173:3
         BEGIN                                                          16226000 T  0177:0
            DO BEGIN                                                    16227000 T  0177:2
            A:=M[J];                                                    16228000 T  0177:2
            IF (A.[4:5]=0 AND MIX=63) OR (A.[4:5]=MIX AND MIX NEQ 63)   16229000 T  0179:0
 $ SET OMIT = NOT(DATACOM AND DCSPO)                                    16230000 T  0183:0
            THEN                                                        16232000 T  0183:0
               BEGIN                                                    16233000 T  0183:3
               M[I]:= P(DUP,LOD)&A[18:18:15];                           16234000 T  0184:1
               NUMESS:= NUMESS-1;                                       16235000 T  0186:2
               FORGETSPACE(J+1);                                        16236000 T  0187:3
               END ELSE I:=J;                                           16237000 T  0189:0
            END UNTIL (J:= A.[FF])=0;                                   16238000 T  0190:1
         MESSAGEHOLDER.[FF]:= I;                                        16239000 T  0192:2
         END;                                                           16240000 T  0193:3
      END;                                                              16241000 T  0193:3
   MIX:=63;                                                             16241500 T  0193:3
   GO TO FORGET;                                                        16242000 T  0194:2
RY:                                                                     16243000 T  0195:0
   IF (I:=FORMESS(KTR,TYPE=VFM)) LSS 0 THEN GO TO FORGET;               16244000 T  0195:0
   IF I GTR 31 THEN GO TO ERROR ELSE GO TO RXIT;                        16245000 T  0198:0
TI:                                                                     16246000 T  0199:3
   TIMEUSED(BUFF-1,MIX);                                                16247000 T  0199:3
   GO TO EXIT;                                                          16248000 T  0201:1
PR:                                                                     16249000 T  0201:3
   SPOIT;                                                               16250000 T  0201:3
   CHANGEPRIORITY(MTR,MIX);                                             16251000 T  0203:0
   GO TO EXIT;                                                          16252000 T  0204:0
RO:                                                                     16253000 T  0204:2
```

CL

BK

RY

TI

PR

RO

IT

W1

RX

```
                CHANGEOPTION(KTR,TYPE=28); % RO=28,SO=29                    16254000 T  0204:2
                GO TO EXIT;                                                 16255000 T  0206:0
            IT:                                                             16256000 T  0206:2
                IF NOT JAR[MIX,2].[4:1] THEN GO ERROR;                      16257000 T  0206:2
                JAR[MIX,2]:= (*P(DUP)) & 1[5:47:1];                         16258000 T  0208:2
                GO FORGET;                                                  16259000 T  0211:2
            WI:                                                             16260000 T  0212:0
                WHATINTRNSIC(BUFF-1);                                       16261000 T  0212:0
                GO TO ERROR;                                                16262000 T  0213:1
            RXIT:                                                           16343000 T  0213:3
                REPLY[MIX] := TYPE&I[18:33:15];                             16343100 T  0213:3
                IF I NEQ BUFF THEN                                          16343200 T  0215:2
                  BEGIN                                                     16343300 T  0216:1
            FORGET:                                                         16343400 T  0216:3
                  STREAM(T:=BUFF-1);  DS:= LIT "←";                         16343500 T  0216:3
            ERROR:                                                          16343600 T  0218:3
                  SPOUT((BUFF-1) INX (0&ZZSTA[9:9:9]));                     16343700 T  0218:3
                  END;                                                      16343800 T  0221:2
            EXIT:                                                           16343900 T  0221:2
                IF (MIX≠0) AND (MIX<63) THEN TABCNT[MIX]:=TABCNT[MIX]-1;    16343950 T  0221:2
                END PROCEDURE KEYIN0;                                       16344000 T  0227:1
                                                                                  SIZE= 0228 WORDS
            PROCEDURE KEYIN1(B,KTRX); VALUE B,KTRX; REAL B,KTRX;            16345000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00404
                                                                            16346000 T  0000:0
                BEGIN                                                       16347000 T  0000:0
                INTEGER ZZSTA;                                              16348000 T  0000:0
                REAL BUFF, KTR, TYPE, MIX, A, I, J, K;                      16349000 T  0000:0
                ARRAY BUFA = BUFF[*];                                       16350000 T  0000:0
                                                                            16351000 T  0000:0
                                                                            16352000 T  0000:0
                                                                            16353000 T  0000:0
                LABEL FORGET, ERROR, EXIT                                   16354000 T  0000:0
                      ,BO  ,LI  ,SS  ,BS  ,SC  ,VQ  ,RR  ,CA  ,DT  ,WD      16355000 T  0000:0
                      ,TR  ,WT  ,WM  ,CC  ,OL  ,PB  ,RN  ,LD  ,RD  ,ED      16356000 T  0000:0
                      ,SI  ,LR  ,OT  ,IN  ,FE  ,OC  ,SQ  ,CS  ,HS  ,WK      16357000 T  0000:0
                                                                            16358000 T  0000:0
                                                                            16359000 T  0000:0
                                                                            16360000 T  0000:0
                      ;                                                     16361000 T  0000:0
                SWITCH S:= ERROR                                            16362000 T  0000:0
                      ,BO  ,LI  ,LI  ,LI  ,SS  ,SS  ,SS  ,SS  ,BS  ,BS      16363000 T  0000:0
                      ,SC  ,VQ  ,RR  ,CA  ,CA  ,DT  ,WD  ,TR  ,WT  ,WM      16364000 T  0000:0
                      ,CC  ,OL  ,PB  ,RN  ,LD  ,RD  ,RD  ,ED  ,SI  ,LR      16365000 T  0000:0
                      ,OT  ,IN  ,FE  ,OC  ,SQ  ,CS  ,HS  ,WK                16366000 T  0000:0
                                                                            16367000 T  0000:0
                                                                            16368000 T  0000:0
                                                                            16369000 T  0000:0
                      ;                                                     16370000 T  0000:0
                SUBROUTINE SPOIT; M[BUFF-2]:=B AND @7570000000000;          16371000 T  0000:0
                                                                            16372000 T  0005:0
                BUFF  :=KTRX.[15:15];                                       16373000 T  0005:0
                MIX   :=KTRX.[ 9:6 ];                                       16374000 T  0008:2
                TYPE  :=KTRX.[ 2:7 ];                                       16375000 T  0009:3
                KTR   :=KTRX.[15:33];                                       16376000 T  0011:0
                ZZSTA :=0 & (M[BUFF-2])[9:9:9];                             16377000 T  0012:1
                GO TO S[TYPE];                                              16378000 T  0015:1
            BO:                                                             16379000 T  0035:3
             $ SET OMIT = NOT(DCSPO AND DATACOM)                            16380000 T  0035:3
            LI:                                                             16386000 T  0035:3
```

BO

L1

```
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16387000 T  0035:3
   GO TO EXIT;                                                        16390000 T  0035:3
SS:                                                                   16391000 T  0036:1
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16392000 T  0036:1
   GO TO EXIT;                                                        16394000 T  0036:1
BS:                                                                   16395000 T  0036:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16396000 T  0036:3
   GO EXIT;                                                           16406000 T  0036:3
SC:                                                                   16407000 T  0037:1
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16408000 T  0037:1
   GO TO EXIT;                                                        16410000 T  0037:1
RR:                                                                   16411000 T  0037:3
 $ SET OMIT = NOT(DATACOM)                                            16412000 T  0037:3
VQ:                                                                   16456000 T  0037:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16457000 T  0037:3
   GO TO EXIT;                                                        16485000 T  0037:3
CA:                                                                   16486000 T  0038:1
 $ SET OMIT = NOT(AUXMEM)                                             16487000 T  0038:1
   GO TO ERROR; % SPOUT AUX MESSAGE OR ERROR MESSAGE                  16489000 T  0038:1
DT:                                                                   16490000 T  0038:3
   SETDATE(KTR);                                                      16491000 T  0038:3
   GO TO EXIT;                                                        16492000 T  0039:2
WD:                                                                   16493000 T  0040:0
   GIMEDATE(BUFF-1,1);                                                16494000 T  0040:0
   GO TO EXIT;                                                        16495000 T  0041:2
TR:                                                                   16496000 T  0042:0
   SETIME(KTR);                                                       16497000 T  0042:0
   GO TO EXIT;                                                        16498000 T  0042:3
WT:                                                                   16499000 T  0043:1
   TIMEOUT (BUFF-1);                                                  16500000 T  0043:1
   GO TO EXIT;                                                        16501000 T  0044:2
WM:                                                                   16502000 T  0045:0
   WHATMCP(BUFF-1);                                                   16503000 T  0045:0
   GO TO ERROR; % SPOUT MESSAGE                                       16504000 T  0046:1
CC:                                                                   16505000 T  0046:3
   A:=M[BUFF-3],[CF]-BUFF; % WDS IN MESSAGE                           16505100 T  0046:3
   STREAM(BUFF, BL:=A>8, KTR:=(KTR:=SPACE(A+2)+2));                   16506000 T  0049:3
      BEGIN                                                           16507000 T  0054:2
      SI:=BUFF;                                                       16508000 T  0054:2
      BL(36(DS:=2LIT" ")); DI:=KTR);                                  16508100 T  0054:3
      IF SC NEQ "←" THEN                                              16509000 T  0056:3
         BEGIN                                                        16510000 T  0057:1
         DS:=CHR;                                                     16511000 T  0057:1
   L:    IF SC NEQ "←" THEN                                           16512000 T  0057:2
            BEGIN                                                     16513000 T  0058:0
            IF SC NEQ @14 THEN DS:=CHR ELSE SI:=SI+1;                 16514000 T  0058:0
            GO TO L;                                                  16515000 T  0059:1
            END;                                                      16516000 T  0059:2
         END;                                                         16517000 T  0059:2
      DS:=CHR;                                                        16518000 T  0059:2
      END;                                                            16519000 T  0059:3
   M[KTR-4],[9:6]:=0;                                                 16520000 T  0060:0
   IF ABS(B) GTR 1 THEN                                               16521000 T  0063:1
      INDEPENDENTRUNNER(P(.CONTROLCARD),KTR&30[2:42:6]&ZZSTA[9:9:9],  16522000 T  0064:1
                        192)                                          16522100 T  0067:2
   ELSE INDEPENDENTRUNNER(P(.CONTROLCARD),KTR&25[2:42:6],192);        16523000 T  0067:3
   GO TO FORGET;                                                      16524000 T  0070:3
OL:                                                                   16525000 T  0071:1
   OUTPUTLABEL(KTR);                                                  16526000 T  0071:1
   GO TO EXIT;                                                        16527000 T  0072:0
```

SS
BS
SC
RR
VQ
CA
DT
WD
TR
WT
WM
CC
OL

```
PB:
   PRINTBACKUP(KTR&B[6:9:9]);                                   16528000 T  0072:2
   GO TO EXIT;                                                  16529000 T  0072:2
RN:                                                             16530000 T  0074:1
   SPOIT;                                                       16531000 T  0074:3
   RUNTHEDECK(KTR);                                             16532000 T  0074:3
   GO TO EXIT;                                                  16533000 T  0076:0
LD:                                                             16534000 T  0076:3
   STARTLOADN(KTR);                                             16535000 T  0077:1
   GO TO EXIT;                                                  16536000 T  0077:1
RD:                                                             16537000 T  0078:0
   DECKREMOVER(KTR);                                            16538000 T  0078:2
   GO TO EXIT;                                                  16539000 T  0078:2
ED:                                                             16540000 T  0079:1
   EXTERNALEND(KTR);                                            16541000 T  0079:3
   GO TO EXIT;                                                  16542000 T  0079:3
SI:                                                             16543000 T  0080:2
 $ SET OMIT = NOT(STATISTICS)                                   16544000 T  0081:0
   GO TO ERROR; % SPOUT MESSAGE                                 16545000 T  0081:0
LR:                                                             16576000 T  0081:0
 $ SET OMIT = NOT(DCLOG AND DATACOM)                            16577000 T  0081:2
   GO TO FORGET;                                                16578000 T  0081:2
IN:                                                             16580000 T  0081:2
   KTR:=-KTR;                                                   16580600 T  0082:0
OT:                                                             16580800 T  0082:0
 $ SET OMIT = NOT(BREAKOUT)                                     16581000 T  0083:0
   IF PRTGAMES(KTR,MIX) THEN GO ERROR ELSE                      16582000 T  0083:0
      IF KTR LSS 0 THEN GO FORGET ELSE GO EXIT;                 16588000 T  0083:0
FE:                                                             16589000 T  0084:0
   J:= GETSPACE(35,9,0)+2;                                      16590000 T  0086:2
   STREAM(KTR:D:=J+2);                                          16591000 T  0086:2
      BEGIN                                                     16592000 T  0088:3
      SI:=KTR;                                                  16593000 T  0090:2
      4(63(IF SC NEQ "←" THEN DS:=CHR ELSE JUMP OUT 2 TO LL));  16594000 T  0090:2
LL: DS:=LIT"←"; DI:=DI-1; KTR:=DI;                              16595000 T  0090:3
      END;                                                      16596000 T  0093:2
   I:= P INX 0;                                                 16597000 T  0094:2
   M[J]:= (I-J) DIV 5;                                          16598000 T  0094:3
   STREAM(DATE, A:=J+1);                                        16599000 T  0095:3
      BEGIN                                                     16600000 T  0098:1
      SI:=LOC DATE; DS:=8 OCT;                                  16601000 T  0099:3
      END;                                                      16602000 T  0099:3
   LINKUP(19,J);                                                16603000 T  0100:1
   GO TO FORGET;                                                16604000 T  0100:2
OC:                                                             16605000 T  0101:2
   LOGCOMMENT(KTR);                                             16606000 T  0102:0
   GO TO FORGET;                                                16607000 T  0102:0
SQ:                                                             16608000 T  0102:3
   STREAM(TYPE:=0:INFO1:="STOPOKN",INFO2:=@2567630000000000,    16609000 T  0103:1
         KTR);                                                  16609100 T  0103:1
   BEGIN                                                        16609200 T  0104:2
      SI:=KTR; DI:=LOC INFO1; DI:=DI+1; TALLY:=1;               16609300 T  0105:0
      IF 4 SC=DC THEN GO TO EXT;                                16609400 T  0105:0
      SI:=SI-4; TALLY:=TALLY+1;                                 16609500 T  0106:0
      IF 2 SC=DC THEN GO TO EXT;                                16609600 T  0106:3
      SI:=SI-2; TALLY:=TALLY+2;                                 16609700 T  0107:1
      IF 4 SC=DC THEN GO TO EXT;                                16609800 T  0108:0
      TALLY:=TALLY+4;                                           16609900 T  0108:2
EXT: TYPE:=TALLY;                                               16610000 T  0109:1
   END;                                                         16610100 T  0109:2
                                                                16610200 T  0109:3
```

PB
RN
LD
RD
ED
SI
LR
IN
OT
FE
OC
SQ

```
      IF P(M[P(.DISKSQUASH)],TOP) THEN IF P(P.[FF] AND P,DUP)≠0 THEN      16610300 T  0110:0
      P(.DISKSQUASH,STD) ELSE GO TO ERROR ELSE IF P(XCH)=8 THEN           16610400 T  0113:2
      BEGIN                                                               16610500 T  0117:3
           INDEPENDENTRUNNER(P(.DISKSQUASH),KTR,128);                     16610600 T  0118:1
           GO TO EXIT;                                                    16610700 T  0119:2
      END ELSE GO TO ERROR;                                               16610800 T  0120:0
      GO TO FORGET;                                                       16610900 T  0120:0
HS:                                                                       16611000 T  0120:2
 $ SET OMIT = NOT SEPTICTANK                                              16611990 T  0120:2
CS:                                                                       16613000 T  0120:2
 $ SET OMIT = NOT SEPTICTANK                                              16613990 T  0120:2
  GO TO EXIT;                                                             16615000 T  0120:2
WK: % WORKSET REQUESTS                                                    16615100 T  0121:0
 $ SET OMIT = NOT(WORKSET)                                                16615110 T  0121:0
FORGET:                                                                   16689000 T  0121:0
   STREAM(T:=BUFF-1);  DS:= LIT "*";                                      16689100 T  0121:0
ERROR:                                                                    16689200 T  0123:0
   SPOUT((BUFF-1) INX (0&ZZSTA[9:9:9]));                                  16689300 T  0123:0
EXIT:                                                                     16689400 T  0125:3
   IF (MIX≠0) AND (MIX<63) THEN TABCNT[MIX]:=TABCNT[MIX]-1;               16689450 T  0125:3
   END PROCEDURE KEYIN1;                                                  16689500 T  0131:2
                                                                                  SIZE= 0132 WORDS
PROCEDURE KEYIN2(KTRX); VALUE KTRX; REAL KTRX;                            16690000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00409
                                                                          16690500 T  0000:0
   BEGIN                                                                  16691000 T  0000:0
   REAL     RCW    =        + 0;                                         16691500 T  0000:0
            REAL MSCW=-2;                                                 16691550 T  0000:0
   INTEGER ZZSTA = RCW    + 1;                                            16692000 T  0000:0
   REAL     BUFF   = ZZSTA + 1,                                           16692500 T  0000:0
            KTR    = BUFF  + 1,                                           16693000 T  0000:0
            TYPE   = KTR   + 1,                                           16693500 T  0000:0
            MIX    = TYPE  + 1,                                           16694000 T  0000:0
            A      = MIX   + 1,                                           16694500 T  0000:0
            I      = A     + 1,                                           16695000 T  0000:0
            J      = I     + 1,                                           16695500 T  0000:0
            K      = J     + 1,                                           16696000 T  0000:0
            B      = K     + 1,                                           16696100 T  0000:0
            R      = B     + 1,                                           16696200 T  0000:0
            R1     = R     + 1,                                           16696300 T  0000:0
            R2     = R1    + 1,                                           16696400 T  0000:0
            R3     = R2    + 1,                                           16696500 T  0000:0
            R4     = R3    + 1;                                           16696600 T  0000:0
   REAL     UNITNO= R4     + 1;                                           16696650 T  0000:0
   INTEGER INT1   = NT1       ,                                           16696700 T  0000:0
            INT2   = A        ,                                           16696800 T  0000:0
            INT3   = J        ,                                           16696900 T  0000:0
            INT4   = R4       ;                                           16697000 T  0000:0
   ARRAY    BUFA   = BUFF[*]  ,                                           16697100 T  0000:0
            UT     = R3[*]                                                16697200 T  0000:0
 $ SET OMIT = NOT SHAREDISK                                               16697300 T  0000:0
            ;                                                             16697600 T  0000:0
 $ SET OMIT = SHAREDISK                                                   16697700 T  0000:0
   DEFINE   U      = AVTABLE# ;                                           16697800 T  0000:0
 $ POP OMIT                                                               16697900 T  0000:0
   REAL     HN1    = MIX      ,                                           16698000 T  0000:0
            HN2    = TYPE     ;                                           16698100 T  0000:0
REAL        SEG    = I,                                                   16698200 T  0000:0
            ADR    = J,                                                   16698210 T  0000:0
            LOCN   = K,                                                   16698220 T  0000:0
```

HS
CS
WK

```
                HALTED= R1;
NAME            SEGDICT = R3;

    LABEL RR, PGA, FERGIT, FORGET, ERROR, EXIT
          ,WU  ,WP  ,WR  ,MX  ,TS  ,LF  ,LC  ,LS  ,EX  ,PD
          ,SM  ,PO  ,PG  ,AU  ,MS  ,LN  ,CD  ,CU  ,SY  ,SL
          ,RW,  CI  ,CT  ,XD  ,MC  ,RS  ,HD  ,RA

          ;
    SWITCH S := ERROR
                ,WU  ,WP  ,WR  ,MX  ,TS  ,TS  ,TS  ,TS  ,LF  ,LC
                ,LS  ,EX  ,PD  ,SM  ,PO  ,PO  ,PG  ,AU  ,MS  ,LN
                ,CD  ,CD  ,CD  ,CU  ,SY  ,SL  ,RW  ,CI  ,CT  ,CT
                ,CT  ,XD  ,XD  ,MC  ,RS  ,HD  ,RA

                ;
    SUBROUTINE SPOIT; M[BUFF-2]:=B AND @7570000000000;

    P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0);
    P(0, 0, 0, 0, 0, 0);
    BUFF  :=KTRX.[15:15];
    MIX   :=KTRX.[ 9:6 ];
    TYPE  :=KTRX.[ 2:7 ];
    KTR   :=KTRX.[15:33];
    ZZSTA :=0 & (M[BUFF-2])[9:9:9];
    B     := M[BUFF-1];
  $ SET OMIT = NOT(PACKETS)
    STREAM(B:=BUFF-1); DS:=8LIT"INV KBD ";
    GO TO S[TYPE];
WU:
  $ SET OMIT = NOT(DCSPO AND DATACOM)
WP:
  $ SET OMIT = NOT(DCSPO AND DATACOM)
RR:
  $ SET OMIT = NOT(DCSPO AND DATACOM)
    GO TO EXIT;
WR:
  $ SET OMIT = NOT(DCSPO AND DCLOG AND DATACOM)
MX:
    MIXPRINT(ZZSTA);
    GO TO FORGET;
TS:
    SHEETDIDDLER(KTR,TYPE,MIX); % TS=5, PS=6, ES=7, XS=8
    MIX:=63;
    GO TO EXIT;
LF:
    I:=3; GO TO PD;
LC:
    I:=2; GO TO PD;
LS:
    I:=4; GO TO PD;
EX:
    KTR:= -KTR; I:=1;
PD:
    PRINTDIRECTORY(KTR,I);
```

WU
WP
RR
WR
MX
TS
LF
LC
LS
EX
PD

```
16698230 T  0000:0
16698240 T  0000:0
16698500 T  0000:0
16699000 T  0000:0
16699500 T  0000:0
16700000 T  0000:0
16700500 T  0000:0
16701000 T  0000:0
16701500 T  0000:0
16702000 T  0000:0
16702500 T  0000:0
16703000 T  0000:0
16703500 T  0000:0
16704000 T  0000:0
16704500 T  0000:0
16705000 T  0000:0
16705500 T  0000:0
16706000 T  0000:0
16706500 T  0000:0
16707000 T  0000:0
16707500 T  0000:0
16708000 T  0000:0
16708500 T  0005:0
16710000 T  0005:0
16710100 T  0007:2
16710500 T  0009:0
16711000 T  0010:1
16711500 T  0011:2
16712000 T  0012:3
16712500 T  0014:0
16713000 T  0017:0
16713499 T  0019:0
16714000 T  0019:0
16714500 T  0021:3
16715000 T  0041:3
16715500 T  0041:3
16719500 T  0041:3
16720000 T  0041:3
16721500 T  0041:3
16722000 T  0041:3
16737000 T  0041:3
16737500 T  0042:1
16738000 T  0042:1
16739000 T  0042:1
16739500 T  0042:1
16740000 T  0043:0
16740500 T  0043:2
16741000 T  0043:2
16741250 T  0044:3
16741500 T  0045:2
16742000 T  0046:0
16742500 T  0046:0
16743000 T  0047:1
16743500 T  0047:1
16744000 T  0048:2
16744500 T  0048:2
16745000 T  0049:3
16745500 T  0049:3
16746000 T  0051:2
16746500 T  0051:2
```

```
      GO TO EXIT;                                                    16747000 T  0052:2
   SM:                                                               16747500 T  0053:0
    $ SET OMIT = NOT(DCSPO AND DATACOM)                              16748000 T  0053:0
      GO TO EXIT;                                                    16749000 T  0053:0
   PO:                                                               16749500 T  0053:2
      TYPOP(KTR,TYPE=16); % TO=15, PO=16                             16750000 T  0053:2
      GO TO EXIT;                                                    16750500 T  0055:0
   PG:                                                               16751000 T  0055:2
      STREAM(Y:=KTR);                                                16751500 T  0055:2
         BEGIN                                                       16752000 T  0056:1
         SI:=Y;                                                      16752500 T  0056:1
     LA: IF SC NEQ "←" THEN                                          16753000 T  0056:2
            BEGIN                                                    16753500 T  0057:0
            SI:=SI+1; DI:=DI+1; GO TO LA;                            16754000 T  0057:0
            END                                                      16754500 T  0057:3
         ELSE DS:=4LIT"←←←←";                                        16755000 T  0057:3
         END;                                                        16755500 T  0058:3
   PGA: STREAM(Y:=0, KTR: A:=A:=SPACE(12)+1);                        16756000 T  0059:0
         BEGIN                                                       16756500 T  0063:0
         SI:=KTR;                                                    16757000 T  0063:0
      L: IF SC=" " THEN                                              16757500 T  0063:1
            BEGIN                                                    16758000 T  0063:3
            SI:=SI+1; GO TO L;                                       16758500 T  0063:3
            END;                                                     16759000 T  0064:1
         IF SC="←" THEN TALLY := 1 ELSE                              16759500 T  0064:1
         IF SC="0" THEN TALLY := 1 ELSE                              16760000 T  0065:1
            BEGIN                                                    16760500 T  0066:1
            DS:=3CHR;                                                16761000 T  0066:1
            IF SC="-" THEN                                           16761500 T  0066:2
               BEGIN                                                 16762000 T  0067:0
               DS:=CHR;                                              16762500 T  0067:0
   LL:         IF SC=" " THEN                                        16763000 T  0067:1
                  BEGIN                                              16763500 T  0067:3
                  SI:=SI+1; GO TO LL;                                16764000 T  0067:3
                  END;                                               16764500 T  0068:1
               5(IF SC GEQ 0 THEN DS:=CHR ELSE JUMP OUT);            16765000 T  0068:1
               END;                                                  16765500 T  0070:1
            DS:=LIT"←"; KTR:=SI;                                     16766000 T  0070:1
            END;                                                     16766500 T  0071:0
         Y:= TALLY;                                                  16767000 T  0071:0
         END STREAM STATEMENT;                                       16767500 T  0071:1
      IF P([KTR],STD) THEN                                           16768000 T  0071:2
         BEGIN                                                       16768500 T  0072:0
         FORGETSPACE(A-1); GO TO FORGET;                             16769000 T  0072:2
         END;                                                        16769500 T  0074:1
      A:=A&A[15:33:15];                                              16770000 T  0074:1
      TAPEPURGE(A);                                                  16770500 T  0076:0
      GO TO PGA;                                                     16771000 T  0076:3
   AU:                                                               16771500 T  0077:1
    $ SET OMIT = NOT(AUXMEM)                                         16772000 T  0077:1
      GO TO FORGET;                                                  16773000 T  0077:1
   MS:                                                               16773500 T  0077:3
    $ SET OMIT = NOT(AUXMEM OR MONITOR)                              16774000 T  0077:3
      GO TO FORGET;                                                  16779500 T  0077:3
   LN:                                                               16780000 T  0078:1
      STREAM(A:=0:KTR);                                              16780500 T  0078:1
         BEGIN SI:=MTR; DI:=LOC A; DI:=DI+6;                         16781000 T  0079:2
         DS:=2 CHR;                                                  16781500 T  0080:1
         END;                                                        16782000 T  0080:2
      IF (I:=P).[36:6]=@37 THEN                                      16782500 T  0080:3
```

SM

PO

PG

LA

AU

MS

LN

```
      LOGOUT(0) ELSE                                                    16783000 T  0082:1
    $ SET OMIT = NOT(DISKLOG)                                           16783500 T  0083:2
      IF I="ML" THEN INDEPENDENTRUNNER(P(.LOGOUTMAINT),0,128) ELSE      16784500 T  0083:2
      GO TO ERROR;                                                      16785000 T  0086:2
      GO TO FORGET;                                                     16785500 T  0086:2
CD:                                                                     16786000 T  0088:0
      TABLEOFCONTENTS(KTR, TYPE=23); % CD=21, PP=22, PC=23              16786500 T  0088:0
      GO TO FORGET;                                                     16787000 T  0089:2
CU:                                                                     16787500 T  0090:0
      COREPRINT((IF MIX=63 THEN -0 ELSE MIX)&ZZSTA[9:9:9]);             16788000 T  0090:0
      GO TO FORGET;                                                     16788500 T  0094:0
SY:                                                                     16789000 T  0094:2
    $ SET OMIT = NOT(STATISTICS)                                        16789500 T  0094:2
      GO TO FORGET;                                                     16792000 T  0094:2
SL:                                                                     16792500 T  0095:0
    $ SET OMIT = NOT(STATISTICS)                                        16793000 T  0095:0
      GO TO FORGET;                                                     16795500 T  0095:0
RW:                                                                     16796000 T  0095:2
      SPCIT;                                                            16796500 T  0095:2
      REWINDANDLOCK(KTR);                                               16797000 T  0097:0
      GO TO EXIT;                                                       16797500 T  0097:3
CI:                                                                     16798000 T  0098:1
    $ SET OMIT = NOT(BREAKOUT)                                          16798500 T  0098:1
      CHANGEINTRINSICFILE(KTR);                                         16801500 T  0098:1
      GO TO EXIT;                                                       16802000 T  0099:0
CT:                                                                     16802500 T  0099:2
      TIMERELAXER(KTR,TYPE,MIX); % CT=29, XT=30, TL=31                  16803000 T  0099:2
      GO TO EXIT;                                                       16803500 T  0100:3
XD:                                                                     16804000 T  0101:1
      IF TYPE=33 THEN KTR.[CF]:=0; % XD=32, MR=33                       16804500 T  0101:1
      DKBUSINESS(P(1,KTR));                                             16805000 T  0103:3
      GO TO EXIT;                                                       16805500 T  0104:3
MC:                                                                     16806000 T  0105:1
      NAMEID(I,KTR); NAMEID(J,KTR); NAMEID(J,KTR);                      16806500 T  0105:1
      IF J.[6:6]="←" THEN GO TO ERROR;                                  16807000 T  0108:1
      IF (A:=DIRECTORYSEARCH(I,-J,4)) GEQ 64 THEN                       16807500 T  0110:0
         BEGIN                                                          16808000 T  0112:2
         IF J NEQ "DISK    " THEN                                       16808500 T  0113:0
         IF(K:=DIRECTORYSEARCH(I,"DISK    ",5)) NEQ 0 THEN              16809000 T  0113:3
            BEGIN                                                       16809500 T  0116:2
            P(DIRECTORYSEARCH(-I,J,14),DEL);                            16810000 T  0117:0
            FORGETSPACE(A);                                             16810500 T  0118:3
            FORGETSPACE(K);                                             16811000 T  0119:2
            LBMESS(I,J,-9,29,0,0,1);                                    16811500 T  0120:1
            GO FERGIT;                                                  16812000 T  0122:3
            END                                                         16812500 T  0125:0
         ELSE                                                           16813000 T  0125:0
            BEGIN                                                       16813500 T  0125:0
            M[A INX 4]:=(*P(DUP))&2[1:46:2]&1[8:47:1];                  16814000 T  0125:2
            A:=A&EUF(-I,"DISK    ",A INX 0-1)[18:33:15];                16815000 T  0129:3
            FORGETSPACE(DIRECTORYSEARCH(I,J,8));                        16815500 T  0133:1
            END ELSE M[A INX 4]:=(*P(DUP))&2[1:46:2]&1[8:47:1];         16816000 T  0135:0
         HEADERUNLOCK(I,"DISK    ",A);                                  16816500 T  0141:1
         LBMESS(I,J,54,I,"DISK    ",0,1);                              16817000 T  0143:0
         END                                                            16817500 T  0145:1
      ELSE LBMESS(I,J,-9,IF A=1 THEN 45 ELSE 15,0,0,1);                 16818000 T  0145:1
FERGIT:                                                                 16819300 T  0151:2
      FORGETSPACE(BUFF-1);                                              16819400 T  0151:2
      GO TO EXIT;                                                       16819500 T  0152:3
RS:                                                                     16820000 T  0153:1
```

CD
CU
SY
SL
RW
CI
CT
XD
MC
RS

```
$ SET OMIT = NOT(BREAKOUT)                                          16820500 T  0153:1
  GO TO EXIT;                                                       16822000 T  0153:1
HD:                                                                 16823000 T  0153:3
  STREAM(EU:=-1,ERRTOG:=0:EULIT:=@2564000000000000,CX:=0,           16823100 T  0153:3
        K:=KTR);                                                    16823200 T  0155:2
  BEGIN                                                             16823300 T  0156:0
      SI:=K; GO TO L1;                                              16823400 T  0156:0
  LO:  IF SC=" " THEN BEGIN SI:=SI+1; GO TO LO END; CI:=CX;         16823500 T  0156:2
  L1:  CX:=CI; GO TO LO;                                            16823600 T  0157:3
       IF SC="+" THEN GO EXT;                                       16823700 T  0158:1
       DI:=LOC EULIT; TALLY:=1;                                     16823800 T  0159:0
       IF 2 SC=DC THEN % AN EU SPECIFIED                            16823900 T  0159:2
       BEGIN                                                        16824000 T  0160:0
           CX:=CI; GO TO LO;                                        16824100 T  0160:0
           IF SC GEQ 0 THEN IF SC<12 THEN                           16824200 T  0160:2
           BEGIN                                                    16824300 T  0161:2
               SI:=SI+1; DI:=LOC EU;                                16824400 T  0161:2
               IF SC GEQ 0 THEN IF SC<12 THEN                       16824500 T  0162:0
               TALLY:=2 ELSE GO TO ERR;                             16824600 T  0163:0
               SI:=SI-1; CX:=TALLY;                                 16824700 T  0163:3
               DS:=CX OCT; GO EXT;                                  16824800 T  0164:1
           END ;                                                    16824900 T  0165:0
       END;                                                         16825000 T  0165:0
  ERR:  ERRTOG:=TALLY;                                              16825100 T  0165:0
  EXT:                                                              16825200 T  0165:1
  END;                                                              16825300 T  0165:1
  IF P THEN GO TO  ERROR;                                           16825400 T  0165:2
  IF (HN1:=P+1)>0 THEN IF HN1 LEQ NEUP.[FF] THEN                    16825500 T  0166:1
  HN2:=HN1 ELSE GO TO ERROR ELSE                                    16825600 T  0169:2
  BEGIN                                                             16825700 T  0170:3
      HN1:=1;                                                       16825800 T  0173:0
      HN2:=NEUP.[FF];                                               16825900 T  0173:3
  END;                                                              16826000 T  0175:0
$ SET OMIT = NOT SHAREDISK                                          16826100 T  0175:0
  FOR I:=HN1 STEP 1  UNTIL HN2 DO                                   16826500 T  0175:0
  IF NOT (NT2:=U[I]).EUNP THEN  % NOT A DUMMY EU                    16826600 T  0176:0
  BEGIN                                                             16826700 T  0177:3
      INT4:=(INT1:=NT2.STARTWRD) MOD 30;                            16826800 T  0178:1
      INT2:=30-(K:=(NT2 AND NUMENTM)+R4) MOD 30+K;                  16826900 T  0180:2
      J:=NT1 DIV 30+USERDISKBOTTOM;                                 16827000 T  0184:1
      FIXARRAY(UT,R,A);                                             16827100 T  0186:0
$ SET OMIT = NOT SHAREDISK                                          16827200 T  0190:1
      DISKWAIT(-R,A,J); J:=0;                                       16827900 T  0190:1
      FOR NT1:=K-2 STEP -1 UNTIL R4 DO INT3:=J+UT[NT1].[3:19];      16828000 T  0192:2
      STREAM(A:=I-1,B:=IF U[I].SPEED=1 THEN "F" ELSE "S",           16828100 T  0199:1
            C:=U[I].[38:10]-1,D:=J,E:=U[I].[1:20],                  16828200 T  0203:1
            F:=A:=SPACE(10));                                       16828300 T  0206:0
      BEGIN                                                         16828400 T  0208:2
          SI:=LOC A; DS:=4 LIT" EU "; DS:=2 DEC;                    16828500 T  0208:2
          A:=DI; DI:=DI-2; DS:=FILL; DI:=A;                         16828600 T  0209:3
          DS:=LIT"("; SI:=SI+7; DS:=CHR;                            16828700 T  0210:3
          DS:=10 LIT"), NO. AV="; DS:=3 DEC;                        16828800 T  0211:3
          A:=DI; DI:=DI-3; DS:=2 FILL; DI:=A;                       16828900 T  0213:2
          DS:=11 LIT", TOTAL AV="; DS:=6 DEC;                       16829000 T  0214:2
          A:=DI; DI:=DI-6; DS:=5 FILL; DI:=A;                       16829100 T  0216:2
          DS:=14 LIT" SEGS, MAX AV="; DS:=6 DEC;                    16829200 T  0217:2
          A:=DI; DI:=DI-6; DS:=5 FILL; DI:=A;                       16829300 T  0219:3
          DS:=6 LIT" SEGS+";                                        16829400 T  0220:3
      END;                                                          16829500 T  0221:3
       FORGETSPACE(R);                                              16829550 T  0222:0
```

HD

```
            SPOUT(A&ZZSTA[9:9:9]);                                          16829600 T  0222:3
         END; % ELSE IF HN1=HN2 THEN GO TO ERROR;                           16829700 T  0224:2
      $ SET OMIT = NOT SHAREDISK                                            16829800 T  0226:3
         HN1:=KTRX.[9:6]; % SET "MIX" BACK TO ORIGINAL VALUE                16830100 T  0226:3
         GO TO FORGET;                                                      16830200 T  0228:0
      RA:                                                                   16850300 T  0228:2
         IF MIX=P2MIX THEN                                                  16850700 T  0228:2
            BEGIN                                                           16850800 T  0229:1
            HALT; HALTED := TRUE;                                           16850900 T  0229:3
            END;                                                            16851000 T  0231:0
         SEGDICT := PRT[MIX,4];                                             16851100 T  0231:0
         IF P( M[LOCN:=PRT[MIX,8].[CF]], TOP, XCH, DEL ) THEN SEG:=ADR:=0   16851200 T  0232:2
         ELSE                                                               16851300 T  0236:2
            DO BEGIN                                                        16851400 T  0237:3
            IF P(M[LOCN], TOP, XCH, 0, INX, ,ADR, STD) THEN % OVERLAID RCW  16851500 T  0238:1
               BEGIN                                                        16851600 T  0240:3
               IF NOT M[LOCN].[33:1] THEN % NOT TYPE 13 INTRINSIC           16851700 T  0241:1
                  BEGIN                                                     16851800 T  0243:0
                  SEG:=ADR; % SEGNO IN RCW                                  16851900 T  0243:2
                  R:=0; % ADJUST FOR SUBSTRACTION BELOW                      16852000 T  0244:1
                  ADR:=M[M[LOCN].MOM].[CF];  % REL.ADR.IN MSCW              16852100 T  0245:0
                  END                                                       16852200 T  0248:2
               ELSE SEG := (-1);                                            16852300 T  0248:2
               END                                                          16852400 T  0250:0
            ELSE                                                            16852500 T  0250:0
               BEGIN % PRESENT RCW, CHECK THE LINKS                         16852600 T  0250:0
               R:=0;                                                        16852700 T  0250:2
               WHILE (SEG:=M[R].[CF]) LSS ADR DO                            16852800 T  0251:1
               IF SEG GTR R THEN R:=SEG ELSE PUNT([PUNTER[25]]);            16852900 T  0254:1
               SEG:=IF M[R].[3:6]=1 THEN M[R+1].[CF] ELSE 0;                16853000 T  0258:1
               IF P(PRTROW[MIX],0,INX,DUP) GTR R AND P(XCH) LSS M[R].[CF] THEN 16853100 T  0264:0
               R4 := "PRT     ";                                            16853200 T  0266:1
               R:=R+2;                                                      16853300 T  0269:1
               END;                                                         16853400 T  0270:2
            IF PRT[MIX,8].[CF] NEQ LOCN OR M[LOCN-1].MSFF THEN % MARKED     16853500 T  0270:2
            DO LOCN:=M[LOCN].MOM UNTIL NOT M[LOCN].MSFF; % GET LAST MSCW    16853600 T  0274:3
            LOCN:=M[LOCN].MOM; % POINT LOCN TO NEXT RCW, JUST IN CASE.      16853700 T  0279:3
            END                                                             16853800 T  0282:0
         UNTIL                                                              16853900 T  0282:0
         (IF SEG NEQ 0 THEN IF SEG = (-1) THEN 0                            16854000 T  0282:0
         ELSE (SEGDICT[0] LSS SEG OR NOT SEGDICT[SEG].PBIT)                 16854100 T  0284:1
         ELSE P(M[R-2].[3:12], DUP) NEQ @700 AND P(XCH) NEQ @1500)          16854200 T  0286:2
         OR LOCN=0;                                                         16854300 T  0292:0
         ADR := ADR-R;                                                      16854400 T  0294:0
         STREAM(MIX, NAM:=[JAR[MIX,0]], T:=0, SEG, ADR,                     16854600 T  0295:1
               SYL:=M[PRT[MIX,8]].[10:2], TOG1:=(R4 NEQ 0), R4,             16854700 T  0297:2
               TOG2:=(SEG LEQ 0), D:=BUFF-1);                               16854800 T  0300:3
            BEGIN                                                           16854900 T  0302:2
            DS:=LIT" ";                                                     16855000 T  0302:2
            SI:=NAM; 2(SI:=SI+1; DS:=7CHR; DS:=LIT"/"); DI:=DI-1;           16855100 T  0303:0
            DS:=2LIT" =";SI:=LOC MIX; DS:=2DEC;                             16855200 T  0305:0
            TOG1(SI:=LOC R4; SI:=SI+1; DS:=LIT" "; DS:=7CHR;JUMP OUT TO XXIT); 16855300 T  0306:0
            TOG2(DS:=14LIT" NOT AVAILABLE"; JUMP OUT TO XXIT);              16855400 T  0308:2
            DS:=5LIT" SEG="; SI:=LOC SEG; DS:=4DEC;                         16855500 T  0311:3
            T:=DI; DI:=DI-4; DS:=3FILL; DI:=T;                              16855600 T  0313:1
            DS:=5LIT" ADR="; DS:=4DEC;                                      16855700 T  0314:1
            T:=DI; DI:=DI-4; DS:=3FILL; DI:=T;                              16855800 T  0315:2
            DS:=LIT":"; SI:=SI+7; DS:=CHR;                                  16855900 T  0316:2
      XXIT: DS:=LIT"+";                                                     16856000 T  0317:2
            END STREAM STATEMENT;                                           16856100 T  0318:0
```

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      IF HALTED THEN NOPROCESSTOG := NOPROCESSTOG -1;                    16856200 T  0318:1
      GO TO ERROR;                                                       16856300 T  0320:1
   FORGET:                                                               16902500 T  0322:0
      STREAM(T:=BUFF-1);  DS:= LIT "+";                                  16902600 T  0322:0
    $ SET OMIT = NOT(PACKETS)                                            16902649 T  0324:0
   ERROR:                                                                16902700 T  0324:0
      SPOUTER((BUFF-1) INX ZZSTA,UNITNO,1);                              16902800 T  0324:0
   EXIT:                                                                 16902900 T  0325:3
      IF (MIX≠0) AND (MIX<63) THEN TABCNT[MIX]:=TABCNT[MIX]-1;           16902950 T  0325:3
      KILL([MSCW]);                                                      16903000 T  0331:3
      END PROCEDURE KEYIN2;                                              16903100 T  0332:2
                                                                                   SIZE= 0333 WORDS
   REAL PROCEDURE KEYIN(B); VALUE B; REAL B;                             16904000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00421
   % THIS PROCEDURE FUNCTIONS AS A DRIVER FOR AUXILIARY PROCEDURES       16904500 T  0000:0
   % "KEYIN0","KEYIN1" AND "KEYIN2". PROCEDURES "KEYIN0" AND "KEYIN1"    16905000 T  0000:0
   % ARE CALLED DIRECTLY, AND PROCEDURE "KEYIN2" IS CALLED AS AN         16905500 T  0000:0
   % INDEPENDENT RUNNER.                                                 16906000 T  0000:0
      BEGIN                                                              16906500 T  0000:0
      REAL     RCW    =        + 0;                                      16907000 T  0000:0
      REAL MSCW=-2;                                                      16907250 T  0000:0
      INTEGER ZZSTA = RCW    + 2;                                        16907500 T  0000:0
      REAL     BUFF   = ZZSTA + 1,                                       16908000 T  0000:0
               KTR    = BUFF  + 1,                                       16908500 T  0000:0
               TYPE   = KTR   + 1,                                       16909000 T  0000:0
               MIX    = TYPE  + 1,                                       16909500 T  0000:0
               A      = MIX   + 1, MIXCODE = A, KTRX = A,                16910000 T  0000:0
               I      = A     + 1,                                       16910500 T  0000:0
               J      = I     + 1, RJEOK   = J,                          16911000 T  0000:0
               K      = J     + 1, PROCED  = K;                          16911500 T  0000:0
      NAME     ADDR   = K     + 1; ARRAY BUFA = BUFF[*];                 16912000 T  0000:0
                                                                         16912500 T  0000:0
    $ SET OMIT = NOT(PACKETS)                                            16912999 T  0000:0
                                                                         16913500 T  0000:0
      LABEL START, CHECK, SWITCHIT, FORGET, ERROR, TBLERR, EXIT;         16914000 T  0000:0
                                                                         16914500 T  0000:0
      P(B, 0, 0, 0, 0, 0, 0, 0, 0, 0); % NOTE P(B)=ZZSTA                 16917500 T  0000:0
   START::                                                               16918000 T  0002:3
       IF ABS(B) GTR 1 THEN BUFF:=B.[FF] ELSE                            16918500 T  0002:3
         BEGIN                                                           16919000 T  0005:3
         BUFF := GETSPACE(60,0,0)+3;                                     16919500 T  0006:1
    $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16920000 T  0008:2
         M[BUFF INX NOT 2].[9:6] := 0;                                   16921000 T  0008:2
         P(WAITIO(BUFF&1[24:47:1],0,25), DEL);                           16921500 T  0012:0
         END;                                                            16922000 T  0014:2
    $ SET OMIT = NOT(DCSPO AND DATACOM)                                  16922499 T  0014:2
      M[BUFF-2]:=0&ZZSTA[9:9:9];                                         16925500 T  0014:2
      KTR      := BUFF;                                                  16926000 T  0017:2
      IF (PROCED:=(TYPE:=KEYINSCAN(KTR,MIX)).[1:5])=7 THEN GO TO TBLERR; 16926500 T  0018:1
      KTR      := KTR & BUFF[15:33:15];                                  16927000 T  0021:3
      RJEOK    := (MIXCODE:=TYPE.[6:6]) GEQ 4;                           16927500 T  0023:2
      MIXCODE  := (MIXCODE ×(MIX NEQ 63)) AND 3; % ACTUAL MIX CODE       16928000 T  0025:3
      TYPE     := TYPE.[CF];                                             16928500 T  0028:0
      IF TYPE=0 OR MIX.[1:2]≠0 THEN  % EMPTY OR ERROR                    16929000 T  0029:1
         BEGIN                                                           16929500 T  0031:2
         IF MIX.[1:1] THEN % EMPTY BUFFER                                16930000 T  0032:0
            BEGIN                                                        16930500 T  0032:3
            KEYIN:=TRUE; GO TO FORGET;                                   16931000 T  0033:1
            END                                                          16933500 T  0034:2
         ELSE GO TO ERROR; % TYPE=0 OR MIX.[2:1]                         16934000 T  0034:2
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            END;                                                                    16934500 T  0034:2
        $ SET OMIT = NOT(DCSPO AND DATACOM)                                         16935000 T  0034:2
        CHECK:                                                                      16946600 T  0034:2
          IF MIXCODE=1 OR MIXCODE=2 THEN % MIX INDEX REQUIRED                       16947000 T  0034:2
            BEGIN                                                                   16947500 T  0036:1
            IF MIX GTR MIXMAX THEN GO TO ERROR;                                     16948000 T  0036:3
            IF JAR[MIX,*]=0 THEN GO TO ERROR; % JOB MUST BE RUNNING                 16948500 T  0038:0
            IF MIXCODE=1 THEN % JOB SHOULD BE WAITING FOR THIS INPUT                16949000 T  0039:2
              BEGIN                                                                 16949500 T  0040:1
              J:=REPLY[MIX];                                                        16950000 T  0040:3
              WHILE J LSS 0 DO                                                      16950500 T  0041:3
                BEGIN                                                               16951000 T  0043:0
                IF J.[42:6]=TYPE THEN GO TO SWITCHIT;                               16951500 T  0043:0
                J:=-J.[6:36]; % SHIFT RIGHT                                         16952000 T  0044:3
                END;                                                                16952500 T  0046:1
              IF TYPE=VWY THEN % "WY", NOT WAITING FOR IT                           16953000 T  0046:3
                BEGIN                                                               16953500 T  0047:2
                M[BUFF-1]:=FLAG(="WY NOT"&MIX[6:42:6]);                             16954000 T  0048:0
                M[BUFF]  :=0&(@1437)[1:37:11];                                      16954500 T  0051:2
                END;                                                                16955000 T  0054:0
              GO TO ERROR;                                                          16955500 T  0054:0
            END; % IF MIXCODE = 1 OR 2                                              16955600 T  0056:0
        SWITCHIT:                                                                   16955800 T  0056:0
            TABCNT[MIX]:=TABCNT[MIX]+1;                                             16956000 T  0056:0
        $ SET OMIT = NOT(PACKETS)                                                   16956019 T  0059:2
            END; % IF MIX INDEX REQUIRED                                            16956500 T  0059:2
          KTRX := KTR & MIX[9:42:6] & TYPE[2:41:7];                                 16957500 T  0059:2
          IF PROCED=2 THEN                                                          16958000 T  0062:1
            BEGIN                                                                   16958500 T  0063:0
            M[BUFF-1] := B; % PASS VALUE TO PROCEDURE                               16959000 T  0063:2
            INDEPENDENTRUNNER(NT1:=P(..KEYIN2),KTRX,140);                           16959500 T  0065:2
            END                                                                     16960000 T  0067:1
          ELSE IF PROCED=1 THEN KEYIN1(B,KTRX) ELSE KEYIN0(B,KTRX);                 16960500 T  0067:1
          GO TO EXIT;                                                               16961000 T  0071:2
        TBLERR:                                                                     16961500 T  0072:0
          STREAM(KTR,B:=BUFF-1);                                                    16962000 T  0072:0
            BEGIN                                                                   16962500 T  0073:2
            SI:=KTR; SI:=SI-2; DS:=LIT"*"; DS:=2CHR;                                16963000 T  0073:2
            DS:=21LIT" NOT COMPILED IN MCP+";                                       16963500 T  0074:3
            END;                                                                    16964000 T  0077:3
        ERROR:                                                                      16964500 T  0078:0
          SPOUT( (BUFF-1) INX (0&ZZSTA[9:9:9]));                                    16965000 T  0078:0
          KEYIN := TRUE;                                                            16965500 T  0080:3
          GO TO EXIT;                                                               16966000 T  0081:2
        FORGET:                                                                     16966500 T  0082:0
          STREAM(T:=BUFF:=BUFF-1); DS:=LIT"+";                                      16967000 T  0082:0
          SPOUT(BUFF INX (0&ZZSTA[9:9:9]));                                         16967500 T  0084:2
        EXIT:                                                                       16968000 T  0086:3
          IF ABS(B) LEQ 1 THEN                                                      16968500 T  0086:3
            BEGIN                                                                   16969000 T  0087:3
            IF (KEYBOARDCOUNTER:=KEYBOARDCOUNTER-1) GTR 0 THEN GO TO START;         16969500 T  0088:1
            KEYBOARDCOUNTER:=0;                                                     16970000 T  0090:2
            END;                                                                    16970500 T  0091:1
          IF B THEN KILL([MSCW]);                                                   16971000 T  0091:1
          END PROCEDURE KEYIN;                                                      16971500 T  0092:3
                                                                                          SIZE= 0094 WORDS
        PROCEDURE LBMESS(FN,SN,I1,I2,E,UNITNO,X);                                   17000000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00425
          VALUE FN,SN,I1,I2,E,UNITNO,X;                                             17000200 T  0000:0
          REAL  FN,SN,I1,I2,E,UNITNO,X;                                             17000400 T  0000:0
```

```
%*****************************************************************************  17000405 T  0000:0
%          PARAMETERS                                                          17000410 T  0000:0
%       I1      I2      E                 FORM OF MESSAGE                       17000420 T  0000:0
%     ------ ------ ------               ---------------                       17000430 T  0000:0
%     LSS 0    0                         . FN/SN I1                            17000440 T  0000:0
%     LSS 0  GTR 0     0                 . FN/SN NOT I1(I2)                    17000450 T  0000:0
%     LSS 0  GTR 0  NEQ 0                . FN/SN NOT I1(I2), E                 17000460 T  0000:0
%     GTR 0    0       0                   FN/SN I1                            17000470 T  0000:0
%     GTR 0    0     NEQ 0                 FN/SN I1, E                         17000480 T  0000:0
%     GTR 0  GTR 0                         FN/SN I1 I2                         17000490 T  0000:0
%    52 OR 54                              FN/SN I1 I2/E                       17000500 T  0000:0
%NOTE: IF I1 IS NEITHER 52 NOR 54 THEN I1 AND I2 ARE INDICES INTO TABL         17000510 T  0000:0
%                                 ELSE I2 AND E ARE MFID AND FID.              17000520 T  0000:0
%*****************************************************************************  17000530 T  0000:0
  BEGIN                                                                         17000600 T  0000:0
     REAL T,A; ARRAY TABL[*];                                                   17000800 T  0000:0
     TABL:=[M[SPACE(A:=MESSAGETABLE[4],[8:10])]] &                              17002600 T  0000:0
                    MESSAGETABLE[4][8:8:10];                                    17002800 T  0004:1
     DISKWAIT(-(TABL.[CF]),A,MESSAGETABLE[4],[22:26]);                          17003000 T  0006:0
     STREAM(A:=[FN],I:=I1 LSS 0,TBL1:=[TABL[ABS(I1)]],E,                        17003200 T  0009:0
            L:=I1 LSS 0 AND I2 NEQ 0,J:=I1=52 OR I1=54,                         17003300 T  0011:1
            B:=IF P(DUP) THEN [I2] ELSE [TABL[I2]],T:=T:=SPACE(10));            17003450 T  0014:3
     BEGIN I(DS:=LIT",");  DS:=LIT" "; SI:=A;                                   17003500 T  0019:1
     IF SC="+" THEN BEGIN DS:=LIT"="; SI:=SI+8; END                             17003550 T  0021:1
               ELSE BEGIN SI:=SI+1; DS:=7CHR; END; DS:=LIT"/";                  17003600 T  0022:2
     IF SC="+" THEN BEGIN DS:=LIT"="; SI:=SI+8; END                             17003700 T  0023:3
               ELSE BEGIN SI:=SI+1; DS:=7CHR; END;                              17003750 T  0025:0
     DS:=LIT" "; L(DS:=4LIT"NOT ")); SI:=TBL1;                                  17003800 T  0025:3
     63(SI:=SI+1; 7(IF SC="+" THEN JUMP OUT 2 TO L1 ELSE DS:=CHR));             17003850 T  0028:0
L1:  SI:=B;                                                                     17003900 T  0031:0
     J(IF SC="+" THEN BEGIN DS:=LIT"="; SI:=SI+8; END                           17003950 T  0031:1
                  ELSE BEGIN SI:=SI+1; DS:=7CHR END; DS:=LIT"/";                17004000 T  0033:0
       IF SC="+" THEN BEGIN DS:=LIT"="; SI:=SI+8; END                           17004050 T  0034:1
                  ELSE BEGIN SI:=SI+1; DS:=7CHR END; JUMP OUT TO L3));          17004100 T  0035:2
     L(DS:=LIT"(");                                                             17004150 T  0037:0
     63(SI:=SI+1; 7(IF SC="+" THEN JUMP OUT 2 TO L2 ELSE DS:=CHR));             17004200 T  0038:1
L2:  L(DS:=LIT")"); SI:=LOC E; SI:=SI+5;                                        17004250 T  0041:1
     IF SC NEQ "0" THEN BEGIN DS:=2LIT", "; DS:=3CHR; END;                      17004300 T  0043:0
L3:  DS:=LIT"+";                                                                17004600 T  0044:1
     END; %STREAM                                                               17005200 T  0044:3
     SPOUTER(T&UNITNO[9:9:9],UNITNO,X);                                         17005400 T  0045:0
     FORGETSPACE(TABL.[CF]);                                                    17005600 T  0046:3
  END; %LIBMSG                                                                  17007000 T  0048:1
                                                                                          SIZE= 0049 WORDS

                                                                                17900000 T  0000:0
PROCEDURE STOPM(NCS); VALUE NCS; REAL NCS;                                      17900500 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00427
  BEGIN                                                                         17901000 T  0000:0
  INTEGER PROTY;                                                                17901500 T  0000:0
  REAL B;                                                                       17902000 T  0000:0
  LABEL AROUND;                                                                 17902500 T  0000:0
$ SET OMIT = NOT(WORKSET)                                                       17903000 T  0000:0
  PROTY := PRYOR[P1MIX]; % SAVE THE PRIORITY LEVEL                              17905500 T  0000:0
  PRYOR[P1MIX] := STOPJOB := @1777;                                             17906000 T  0001:2
AROUND:                                                                         17906500 T  0003:1
  STREAM(J:=JARROW[P1MIX], P1MIX,                                               17907000 T  0003:1
$ SET OMIT = NOT(WORKSET)                                                       17907500 T  0004:1
        B := B := GETSPACE(10,0,0)+2);                                          17909000 T  0004:1
    BEGIN                                                                       17909500 T  0006:3
$ SET OMIT = NOT(WORKSET)                                                       17910000 T  0006:3
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                DS:=13LIT"#OPRTR ST=ED ";                                   17911500 T  0006:3
          L1:   SI:=J; 2(SI:=SI+1; DS:=7CHR; DS:=LIT"/");                   17912000 T  0008:3
                DI:=DI-1; DS:=LIT"="; SI:=LOC P1MIX; DS:=2DEC;              17912500 T  0010:2
                DS:=LIT"+"; DI:=DI-3; DS:=FILL;                             17913000 T  0011:3
                END STREAM STATEMENT;                                       17913500 T  0012:3
            SPOUT(B);                                                       17914000 T  0013:0
            REPLY[P1MIX]:= -VWY & VOK[36:42:6];                             17914500 T  0013:3
            COMPLEXSLEEP((TERMIX.[CF]=P1MIX OR REPLY[P1MIX] GEQ 0));        17915000 T  0016:1
16164000  ACCIDENTAL ENTRY AT 0
            IF TERMIX.[CF] NEQ P1MIX THEN % NOT TERMINATED                  17915500 T  0023:2
                BEGIN                                                       17916000 T  0024:3
          $ SET OMIT = NOT(WORKSET)                                         17916500 T  0025:1
                IF NOT WHYSLEEP(VWY&VOK[36:42:6]) THEN GO AROUND;           17918500 T  0025:1
                REPLY[P1MIX]:=0;                                            17919000 T  0027:2
                PRYOR[P1MIX]:=PROTY;                                        17919500 T  0028:3
          $ SET OMIT = WORKSET                                              17920000 T  0030:0
                END;                                                        17920500 T  0030:0
          $ POP OMIT % WORKSET                                              17921000 T  0030:0
          $ SET OMIT = NOT(WORKSET)                                         17921500 T  0030:0
            IF NCS THEN GO TO INITIATE;                                     17927500 T  0030:0
            END PROCEDURE STOPM;                                            17928000 T  0031:1
                                                                                     SIZE= 0032 WORDS
        PROCEDURE TISKTASK; FORWARD;                                        17928500 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00429
        PROCEDURE FILEHOLD(A,B,TOG,LOC,HOLD);                               18000000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00429
            VALUE LOC,HOLD;                                                 18001000 T  0000:0
            REAL A,B,TOG,LOC,HOLD;                                          18002000 T  0000:0
        BEGIN                                                               18003000 T  0000:0
            REAL SZ,Y,T;                                                    18004000 T  0000:0
          $ SET OMIT = NOT SHAREDISK                                        18004490 T  0000:0
            ARRAY HOLDLIST[*];                                              18005000 T  0000:0
            LABEL SLEPE;                                                    18006000 T  0000:0
            DEFINE DSED=(TERMIX.[CF]=P1MIX)#;                               18007000 T  0000:0
            IF HOLD THEN                                                    18008000 T  0000:0
            BEGIN                                                           18009000 T  0001:1
                IF TOG THEN TOG←TOG+1 ELSE                                  18010000 T  0001:3
                BEGIN % MAKE AN ENTRY IN THE HOLDLIST                       18011000 T  0004:0
          $ SET OMIT = NOT SHAREDISK                                        18011490 T  0004:2
                    IF (SZ:=(Y:=HOLDER.[FF])+1) GTR HOLDMAX THEN            18012000 T  0004:2
                    BYBY("HOLD LIST OVERFLOW←",19);                         18013000 T  0007:1
                    HOLDLIST:=[M[SPACE(SZ)]]&SZ[8:38:10];                   18014000 T  0014:1
                    IF Y≠0 THEN                                             18014100 T  0018:0
                    DISKWAIT(-(HOLDLIST INX 0),Y,HOLDER.[CF]);              18015000 T  0018:3
                    HOLDER.[FF]:=SZ;                                        18016000 T  0022:0
                    HOLDLIST[Y]:=LOC.[FF]&[TOG][CTF]&SYSNO[2:46:2];         18017000 T  0023:1
                    DISKWAIT(HOLDLIST INX 0,SZ,HOLDER.[CF]);                18018000 T  0026:2
          $ SET OMIT = NOT SHAREDISK                                        18018490 T  0029:0
                    FORGETSPACE(HOLDLIST);                                  18019000 T  0029:0
                END;                                                        18019500 T  0030:0
                IF M[LOC+4].[3:1] THEN                                      18020000 T  0030:0
          $ SET OMIT = NOT SHAREDISK                                        18020490 T  0032:0
                ELSE                                                        18021000 T  0032:0
                BEGIN M[LOC+4].[3:1]:=1;                                    18021500 T  0032:2
                    DISKWAIT(LOC.[CF],-30,LOC.[FF]);                        18022000 T  0036:1
                END;                                                        18022500 T  0038:3
          $ SET OMIT = SHAREDISK                                            18022990 T  0038:3
                UNLOCKDIRECTORY;                                            18023000 T  0038:3
          $ POP OMIT                                                        18023010 T  0042:1
                IF P1MIX≠0 THEN                                             18024000 T  0042:1
```

```
                    BEGIN T:=VWY&(VIF×A.[3:1])[36:42:6];                                  18025000 T  0043:0
                          IF TOG=0 THEN                                                   18026000 T  0046:1
SLEPE:                    FILEMESS("#       ",A,B," IN USE",0,0,0);                       18027000 T  0047:0
                          REPLY[P1MIX]:=-T;                                               18028000 T  0049:3
                          COMPLEXSLEEP(REPLY[P1MIX]≥0 OR DSED OR TOG);                    18029000 T  0051:1
17915000    ACCIDENTAL ENTRY AT TOG
                          IF NOT WHYSLEEP(T) THEN GO TO SLEPE;                            18030000 T  0059:0
                    END ELSE                                                              18031000 T  0060:1
                    BEGIN LBMESS(ABS(A),B,45,0,"MCP",0,1);                                18031500 T  0060:1
                          SLEEP([TOG],1);                                                 18032000 T  0066:2
                    END;                                                                  18032500 T  0068:0
              $ SET OMIT = SHAREDISK                                                      18032990 T  0068:0
                    LOCKDIRECTORY;                                                        18033000 T  0068:0
              $ POP OMIT                                                                  18033010 T  0074:2
                    TOG:=TRUE;                                                            18033500 T  0074:2
                    IF P((P1MIX NEQ 0 AND DSED),DUP)                                      18034000 T  0075:2
                      THEN FILEHOLD(A,B,TOG,LOC,2);                                       18035000 T  0078:0
                    P(RTN); % 1 ON TOP OF STACK IF DSED                                   18037000 T  0081:0
                 END;                                                                     18045000 T  0081:1
              $ SET OMIT = NOT SHAREDISK                                                  18045490 T  0081:1
                 IF (SZ:=HOLDER.[FF])=0 THEN                                              18046000 T  0081:1
              $ SET OMIT = NOT SHAREDISK                                                  18046490 T  0083:0
                 ELSE                                                                     18047000 T  0083:0
                 BEGIN IF HOLD=2 THEN DISKWAIT(-LOC.[CF],-30,LOC.[FF]);                   18047500 T  0083:2
                    HOLDLIST:=[M[SPACE(SZ)]]&SZ[8:38:10];                                 18048000 T  0090:0
                    DISKWAIT(-(HOLDLIST INX 0),SZ,HOLDER.[CF]);                           18049000 T  0093:3
                    IF TOG THEN FOR T:=0 STEP 1 UNTIL SZ-1 DO                             18050000 T  0096:2
              $ SET OMIT = NOT(SHAREDISK)                                                 18051000 T  0101:2
                    IF HOLDLIST[T].[FF]=[TOG].[CF] THEN                                   18053000 T  0101:2
                    IF (SZ:=SZ-1) ≠ T THEN                                                18054000 T  0103:3
                    BEGIN                                                                 18055000 T  0106:0
                          MOVE(SZ-T,[HOLDLIST[T+1]],[HOLDLIST[T]]);                       18056000 T  0106:2
                          T:=SZ;                                                          18057000 T  0109:2
                    END;                                                                  18058000 T  0110:1
                    HOLDER.[FF]:=Y:=SZ;                                                   18059000 T  0110:3
                    IF SZ≠0 THEN                                                          18060000 T  0112:2
                    BEGIN                                                                 18061000 T  0113:1
                          FOR Y←0 STEP 1 UNTIL SZ-1 DO                                    18062000 T  0113:3
                          IF HOLDLIST[Y].[CF]=LOC.[FF] THEN                               18063000 T  0118:0
                          BEGIN                                                           18064000 T  0120:0
              $ SET OMIT = NOT(SHAREDISK)                                                 18065000 T  0120:2
                                M[HOLDLIST[Y].[FF]]←1;                                    18068000 T  0120:2
                                Y:=SZ;                                                    18069000 T  0123:0
                          END;                                                            18070000 T  0123:3
                          DISKWAIT(HOLDLIST INX 0,SZ,HOLDER.[CF]);                        18071000 T  0124:1
                    END;                                                                  18072000 T  0126:3
              $ SET OMIT = NOT SHAREDISK                                                  18072490 T  0126:3
                    IF SZ=Y THEN                                                          18073000 T  0126:3
                    BEGIN                                                                 18074000 T  0127:2
                          M[LOC+4].[3:1]:=0;                                              18075000 T  0128:0
                          IF HOLD=2 THEN DISKWAIT(LOC.[CF],-30,LOC.[FF]);                 18075500 T  0131:1
              $ SET OMIT = NOT SHAREDISK                                                  18075990 T  0135:0
                    END;                                                                  18077500 T  0135:0
                    FORGETSPACE(HOLDLIST);                                                18078000 T  0135:0
                 END;                                                                     18079000 T  0136:0
           END; % OF FILEHOLDER                                                           18080000 T  0136:0
                                                                                                   SIZE= 0137 WORDS
           %COMMENT THE DISK FILE HEADER CONTAINS THE FOLLOWING INFORMATION:              18081000 T  0000:0
           %H[0].[0:15]        RECORD LENGTH                                              18083000 T  0000:0
           %     .[15:15]      BLOCK LENGTH                                               18084000 T  0000:0
```

```
%      .[30:12]     RECORD/BLOCK                                          18085000 T  0000:0
%      .[42:6]      SEGMENTS/BLOCK                                        18086000 T  0000:0
%H[1].[6:18]        CREATION DATE FOR LOGGING (WHEN ON DISK)              18087000 T  0000:0
%      .[25:23]     CREATION TIME FOR LOGGING (WHEN ON DISK)              18088000 T  0000:0
%      .[1:47]      NUMBER OF LOGICAL RECORDS PER ROW (WHEN IN CORE)      18089000 T  0000:0
%H[2].[0:48]        =0  FREE FILE                                         18090000 T  0000:0
%      .[1:1]       =0  SOLE USER, PUBLIC OR PRIVATE FILE                 18091000 T  0000:0
%      .[1:1]       =1  SECURITY FILE                                     18092000 T  0000:0
%      .[6:42]      PRIMARY USER"S CODE                                   18093000 T  0000:0
%H[3].[1:1]         =1  NEW FILE HEADER FORMAT                            18094000 T  0000:0
%      .[2:10]      SAVE FACTOR (BINARY)                                  18095000 T  0000:0
%      .[12:18]     DATE OF LAST ACCESS (BINARY)                          18096000 T  0000:0
%      .[30:18]     CREATION DATE (BINARY)                                18097000 T  0000:0
%H[4].[1:1]         =1   FILE IS BEING LOADED OR NAME IS BEING CHANGED    18098000 T  0000:0
%      .[2:1]       =1   FILE IS OPENED BY AN EXCLUSIVE USER              18099000 T  0000:0
%      .[3:1]       =1   A PROGRAM IS WAITING TO USE THE FILE             18100000 T  0000:0
%      .[4:2]       SYSTEM NUMBER OF EXCLUSIVE USER                       18101000 T  0000:0
%      .[6:1]       USED BY AUTOPRINT TO MARK A PBD FILE                  18102000 T  0000:0
%      .[7:1]       USED TO MARK PSEUDO DECKS THAT WERE CREATED ON        18103000 T  0000:0
%      .[8:1]       USED TO MARK SPECIAL COMPILERS                        18104000 T  0000:0
%      .[9:2]       =2  FILE IS DATA                                      18105000 T  0000:0
%                   =3  FILE IS PROGRAM                                   18106000 T  0000:0
%                   =0  DON"T KNOW IF DATA OR PROGRAM                     18107000 T  0000:0
%      .[11:1]      FILE ACCESSED BIT                                     18108000 T  0000:0
%      .[12:4]      SYSTEM FILE TOGGLES                                   18109000 T  0000:0
%      .[16:5]      OPEN COUNT 2 FOR SYSTEM 0 (A)                         18110000 T  0000:0
%      .[21:5]      OPEN COUNT 2 FOR SYSTEM 1 (B)                         18111000 T  0000:0
%      .[26:5]      OPEN COUNT 2 FOR SYSTEM 2 (C)                         18112000 T  0000:0
%      .[31:5]      OPEN COUNT 2 FOR SYSTEM 3 (D)                         18113000 T  0000:0
%      .[36:6]      =0 TYPE IS UNKNOWN                                    18114000 T  0000:0
%                   =1  BASIC                                             18115000 T  0000:0
%                   =2  ALGOL                                             18116000 T  0000:0
%                   =3  COBOL                                             18117000 T  0000:0
%                   =4  FORTRAN                                           18118000 T  0000:0
%                   =5  TSPOL                                             18119000 T  0000:0
%                   =6  XALGOL                                            18120000 T  0000:0
%                   =7  SEQ                                               18121000 T  0000:0
%                   =8  DATA                                              18122000 T  0000:0
%                   =9  LOCK                                              18123000 T  0000:0
%      .[42:1]      USED TO MARK FILES WHICH CANT BE MOVED                18123100 T  0000:0
%      .[43:2]      SENSITIVE DATA - ZEROING BITS                         18124000 T  0000:0
%      .[45:1]      COLD START FILE                                       18124100 T  0000:0
%      .[46:2]      NOT USED                                              18124200 T  0000:0
%H[5].[0:48]        =0  SOLE USER FILE                                    18125000 T  0000:0
%      .[1:1]       =1 PRIVATE FILE                                       18126000 T  0000:0
%                   =12 IF H[6]=12 THEN INFO FILE ELSE PUBLIC FILE        18127000 T  0000:0
%H[7]               NUMBER OF LOGICAL RECORDS (EOF POINTER)               18128000 T  0000:0
%H[8]               NUMBER OF SEGMENTS PER ROW                            18129000 T  0000:0
%H[9].[1:1]         TOGGLE 1 FOR SYSTEM 0 (A)                             18130000 T  0000:0
%      .[2:1]       TOGGLE 1 FOR SYSTEM 1 (B)                             18131000 T  0000:0
%      .[3:1]       TOGGLE 1 FOR SYSTEM 2 (C)                             18132000 T  0000:0
%      .[4:1]       TOGGLE 1 FOR SYSTEM 3 (D)                             18133000 T  0000:0
%      .[5:1]       TOGGLE 2 FOR SYSTEM 0 (A)                             18134000 T  0000:0
%      .[6:1]       TOGGLE 2 FOR SYSTEM 1 (B)                             18135000 T  0000:0
%      .[7:1]       TOGGLE 2 FOR SYSTEM 2 (C)                             18136000 T  0000:0
%      .[8:1]       TOGGLE 2 FOR SYSTEM 3 (D)                             18137000 T  0000:0
%      .[9:5]       OPEN COUNT 1 FOR SYSTEM 0 (A)                         18138000 T  0000:0
%      .[14:5]      OPEN COUNT 1 FOR SYSTEM 1 (B)                         18139000 T  0000:0
%      .[19:5]      OPEN COUNT 1 FOR SYSTEM 2 (C)                         18140000 T  0000:0
%      .[24:5]      OPEN COUNT 1 FOR SYSTEM 3 (D)                         18141000 T  0000:0
```

```
%     .[29:14]      NOT USED                                                    18142000 T  0000:0
%     .[43:5]       MAXIMUM NUMBER OF ROWS                                      18143000 T  0000:0
%H[10]-H[29]        DISK ADDRESSES OF ROWS (0 IF NOT ASSIGNED)                  18144000 T  0000:0
%                                                                               18145000 T  0000:0
%                                                                               18146000 T  0000:0
%THE OPEN COUNTS AND TOGGLES ARE USED IN THE FOLLOWING MANNER:                  18147000 T  0000:0
%                                                                               18148000 T  0000:0
%     TOGGLE 1      TOGGLE 2      OPEN COUNT 1      OPEN COUNT 2                18149000 T  0000:0
%       0             0           INPUT ONLY          INPUT                     18150000 T  0000:0
%       0             1 (OUTPUT)  NOT USED            INPUT                     18151000 T  0000:0
%       1             0           SHARED              INPUT                     18152000 T  0000:0
%       1             1           PROTECT             INPUT                     18152100 T  0000:0
%                                                                               18153000 T  0000:0
%END COMMENT;                                                                   18154000 T  0000:0
     REAL  PROCEDURE  DIRECTORYSEARCH(A,B,OPTN);%                               18155000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00434
          VALUE  A,B,OPTN;  REAL  A,B,OPTN;%                                    18156000 T  0000:0
%    OPTN= 0    OPENS FOR SHARED USE                                            18157000 T  0000:0
%    OPTN= 1    OPENS FOR INPUT                                                 18158000 T  0000:0
%    OPTN= 2    OPENS FOR OUTPUT                                                18159000 T  0000:0
%    OPTN= 3    OPENS FOR WRITELOCK                                             18160000 T  0000:0
%    OPTN= 4    OPENS FOR EXCLUSIVE USE                                         18161000 T  0000:0
%    OPTN= 5    RETURNS FILE HEADER (UNCHANGED)                                 18162000 T  0000:0
%    OPTN= 6    REMOVES FILE FROM DISK UNCONDITIONALLY                          18163000 T  0000:0
%    OPTN= 7    REMOVES FILE FROM DISK AS SOON AS IT IS NOT IN USE              18164000 T  0000:0
%    OPTN= 8    REMOVES FILE HEADER ONLY                                        18165000 T  0000:0
%    OPTN= 9    HEADERUNLOCK--WRITES HEADER POINTED TO BY (F-4).[CF]            18166000 T  0000:0
%               BACK OUT ON (F-4).[FF], TURNS OFF INTERLOCK & DOES              18167000 T  0000:0
%               FORGETSPACE(F-4).                                               18168000 T  0000:0
%    OPTN=10    CLOSE SHARED                                                    18169000 T  0000:0
%    OPTN=11    CLOSE INPUT                                                     18170000 T  0000:0
%    OPTN=12    CLOSE OUTPUT                                                    18171000 T  0000:0
%    OPTN=13    CLOSE WRITELOCK                                                 18172000 T  0000:0
%    OPTN=14    CLOSE EXCLUSIVE                                                 18173000 T  0000:0
%    OPTN=15    LOGS THE FILE AND RESETS ITS CREATION DATE AND TIME             18174000 T  0000:0
%    OPTN=16    MAKES THE FILE NOT A SYSTEM FILE                                18175000 T  0000:0
%    OPTN=17    MAKES THE FILE A SYSTEM FILE                                    18176000 T  0000:0
%    OPTN=18    WILL INTERLOCK SYSTEM FILES                                     18177000 T  0000:0
%    OPTN=19    RETURNS FILE HEADER (UNCHANGED AND LOCKED...IT IS UP TO         18178000 T  0000:0
%                                   THE CALLING ROUTINE TO CLEAN UP)            18178100 T  0000:0
%    OPTN=20    UNUSED                                                          18179000 T  0000:0
%    OPTN=21    OPENS PROTECT                                                   18179100 T  0000:0
%    OPTN=22    CLOSE PROTECT                                                   18179200 T  0000:0
%    OPTN>512   FILECLOSE--ADDRESS OF HEADER IN OPTN.[CF]                       18180000 T  0000:0
%                         CLOSE OPTION-10 IS IN OPTN.[FF]                       18181000 T  0000:0
%    OPTN< 0    RETURNS AN AREA OF USER DISK AND UPDATES CORE COPY              18182000 T  0000:0
%               OF FILE HEADER--ADDRESS OF HEADER IS IN OPTN.[CF]--             18183000 T  0000:0
%               NUMBER OF THE ROW TO BE FILLED IS IN OPTN.[FF]                  18184000 T  0000:0
%               IS IN OPTN.[CF]                                                 18185000 T  0000:0
%    A.[1:1]    DIRECTORYSEARCH WILL FORGET THE MEMORY SPACE                    18186000 T  0000:0
%               OCCUPIED BY THE FILE HEADER                                     18187000 T  0000:0
%    A.[2:1]    IS DIALED INTO FH[4].[1:1] WHEN OPTN=4                          18188000 T  0000:0
%    A.[3:1]    IF A CONFLICT OCCURS, AN "IF" WILL BE ENABLED. IF THE           18189000 T  0000:0
%               OPERATOR ENTERS AN "IF", DIRECTORYSEARCH WILL RETURN A          18190000 T  0000:0
%               VALUE OF -0.  CURRENTLY, THIS IS USED ONLY BY LIBMAIN.          18191000 T  0000:0
%    B.[1:1]    DIRECTORYSEARCH WILL RETURN A VALUE OF -0 IF THE                18192000 T  0000:0
%               FILE IS IN USE                                                  18193000 T  0000:0
%    B.[2:1]    WILL NOT UPDATE DATE OF LAST ACCESS                             18194000 T  0000:0
%    B.[3:1]    WILL SET FILE ACCESSED BIT FOR CLOSE                            18195000 T  0000:0
BEGIN                                                                           18196000 T  0000:0
```

```
        REAL OLDONE=-4;                                                 18197000 T  0000:0
        REAL TEMP,I,T,TOG,J,K,N,F,X;                                    18198000 T  0000:0
        INTEGER S,I1,I2,I3;                                             18199000 T  0000:0
        REAL UNITNO;                                                    18199100 T  0000:0
        ARRAY FH[*],NB[*];                                              18200000 T  0000:0
$ SET OMIT = NOT SHAREDISK                                              18200490 T  0000:0
        DEFINE DSED=TERMIX.[CF]=P1MIX#;                                 18201000 T  0000:0
$ SET OMIT = SHAREDISK                                                  18201490 T  0000:0
        DEFINE UNLOCKHDR = EXIT#;                                       18201500 T  0000:0
$ POP OMIT                                                              18201510 T  0000:0
        LABEL LL,EXT,CHECK,LWS;                                         18202000 T  0000:0
        LABEL OPENSHARED,OPENINPUT,OPENOUTPUT,OPENWRITELOCK,            18203000 T  0000:0
             OPENEXCLUSIVE,L6,L7,L8,EXIT,LWRITE,FOUND,                  18204000 T  0000:0
             THU,CLOSE,LW,BOMB,GETAROW,EX,                              18205000 T  0000:0
             CLOSESHARED,CLOSEINPUT,CLOSEOUTPUT,CLOSEWRITELOCK,         18206000 T  0000:0
             CLOSEXCLUSIVE,ZER,UNSYS,SYS,                               18207000 T  0000:0
             SEE,LOCKSYS,DONTWAIT,NOFILE,COMPLETE,LEAVELKD,UNUSED;      18208000 T  0000:0
$ SET OMIT = NOT(DISKLOG)                                               18209000 T  0000:0
        LABEL OPENPROTECT,CLOSEPROTECT;                                 18210300 T  0000:0
        SWITCH Q←OPENSHARED,OPENINPUT,OPENOUTPUT,OPENWRITELOCK,         18211000 T  0000:0
             OPENEXCLUSIVE,EXIT,L6,L7,L8,EXIT,                          18212000 T  0000:0
             CLOSESHARED,CLOSEINPUT,                                    18213000 T  0000:0
             CLOSEOUTPUT,CLOSEWRITELOCK,CLOSEXCLUSIVE                   18214000 T  0000:0
$ SET OMIT = NOT(DISKLOG)                                               18215000 T  0000:0
$ SET OMIT = DISKLOG                                                    18217000 T  0000:0
             ,EXIT                                                      18218000 T  0000:0
$ POP OMIT                                                              18218001 T  0000:0
             ,UNSYS,SYS                                                 18219000 T  0000:0
             ,LOCKSYS,LEAVELKD,UNUSED,OPENPROTECT,CLOSEPROTECT          18220000 T  0000:0
             ;                                                          18221000 T  0000:0
        %*************************************************              18222000 T  0000:0
        REAL SUBROUTINE SEARCH;                                         18223000 T  0000:0
        BEGIN                                                           18224000 T  0001:0
$ SET OMIT = NOT SHAREDISK                                              18224490 T  0001:0
        S:=SCRAMBLE(A,B);                                               18225000 T  0001:0
        DISKWAIT(-N,-60,S);                                             18226000 T  0008:0
        LL:  FOR X:=0 STEP 3 UNTIL 57 DO                                18227000 T  0009:3
             IF (NB[X] EQV A.[6:42]) = NOT 0 THEN                       18227500 T  0011:0
             IF (NB[X+1] EQV B.[6:42]) = NOT 0 THEN GO TO FOUND;        18228000 T  0013:3
        IF (S:=NB[2].[FF])≠0 THEN                                       18228500 T  0020:1
        BEGIN DISKWAIT(-N,60,S);                                        18229000 T  0022:2
             GO TO LL;                                                  18229500 T  0024:2
        END ELSE                                                        18230000 T  0025:0
$ SET OMIT = NOT SHAREDISK                                              18230490 T  0025:0
        GO TO EXT;                                                      18231000 T  0025:0
        FOUND: I←(K←NB[X+2].[CF]-DIRECTORYTOP-4).[44:4]×2;              18232000 T  0025:0
        J ←(K AND NOT 15)+DIRECTORYTOP+19;                              18233000 T  0029:2
        K ← K+DIRECTORYTOP+4;                                           18234000 T  0032:0
        EXT: SEARCH ← S;                                                18235000 T  0033:3
        END;                                                            18236000 T  0034:1
        %*************************************************              18237000 T  0034:2
        SUBROUTINE HEADER;                                              18238000 T  0034:2
        BEGIN                                                           18239000 T  0035:0
        DISKWAIT(-F,30                                                  18240000 T  0035:0
$ SET OMIT = NOT SHAREDISK                                              18240090 T  0035:3
             ,K);                                                       18240200 T  0035:3
$ SET OMIT = NOT SHAREDISK                                              18240490 T  0036:2
        TEMP:=F&K[C]F]&I[8:38:10];                                      18241000 T  0036:2
        END;                                                            18242000 T  0038:3
        %*************************************************              18243000 T  0039:0
```

```
SUBROUTINE REMOVER;       % CANT BE CALLED FROM OTHER SUBROUTINES.          18244000 T  0039:0
BEGIN NB[X]←@14;                                                           18245000 T  0039:0
      DISKWAIT(N,-60,S);                                                   18245500 T  0040:1
$ SET OMIT = NOT SHAREDISK                                                 18245990 T  0041:3
      DISKWAIT(-N,-30,J);                                                  18247500 T  0041:3
      NB[I]←@14; NB[I+1]←NEXTSLOT; NEXTSLOT←K;                             18248000 T  0043:2
      DISKWAIT(N,-30,J);                                                   18248500 T  0047:1
$ SET OMIT = NOT SHAREDISK                                                 18248990 T  0048:3
END;                                                                       18250000 T  0048:3
%*************************************************                         18251000 T  0049:0
SUBROUTINE HOLD;                                                           18252000 T  0049:0
BEGIN                                                                      18253000 T  0049:0
$ SET OMIT = NOT SHAREDISK                                                 18253490 T  0049:0
      IF B.[1:1] THEN GO DONTWAIT;                                         18254000 T  0049:0
$ POP OMIT OMIT                                                            18254010 T  0050:2
      FILEHOLD(A,B,TOG,TEMP,1);                                            18255000 T  0050:2
      IF P THEN % 0 OR 1 IS LEFT ON TOP OF STACK IN FILEHOLD               18255100 T  0052:3
        BEGIN TEMP:=3; A:=-1; GO EXIT; END % DS-ED IN FILEHOLD             18255200 T  0052:3
          ELSE                                                             18255300 T  0055:2
      IF P1MIX≠0 THEN                                                      18256000 T  0055:2
      IF REPLY[P1MIX]=VIF THEN                                             18258000 T  0056:3
      BEGIN                                                                18259000 T  0058:1
          FILEHOLD(A,B,TOG,TEMP,2);                                        18260000 T  0058:3
DONTWAIT:                                                                  18260500 T  0061:0
          TEMP:=1; % IN USE                                                18261000 T  0061:0
          GO TO EXIT;                                                      18262000 T  0061:3
      END;                                                                 18263000 T  0062:1
      IF SEARCH=0 THEN                                                     18264000 T  0062:1
      BEGIN FILEHOLD(A,B,TOG,TEMP,0);                                      18265000 T  0063:2
NOFILE:   TEMP:=0; A:=-1; GO EXIT;                                         18266000 T  0066:1
      END;                                                                 18269000 T  0068:2
      HEADER;                                                              18270000 T  0068:2
END; % OF HOLD                                                             18271000 T  0070:0
%*************************************************                         18272000 T  0070:1
$ SET OMIT = NOT(PACKETS)                                                  18272199 T  0070:1
$ SET OMIT = SHAREDISK                                                     18272990 T  0070:1
      LOCKDIRECTORY;                                                       18273000 T  0070:1
$ POP OMIT                                                                 18273010 T  0081:3
      IF OPTN=9 THEN                                                       18274000 T  0081:3
      BEGIN                                                                18275000 T  0082:2
          DISKWAIT(-(N:=SPACE(30)),-30,(K:=OLDONE.[FF]));                  18276000 T  0083:0
          FH:=[M[F:=OLDONE.[CF]]]&30[8:38:10];                             18276500 T  0087:3
          A:=NABS(A);                                                      18277000 T  0091:0
          FH[4]:=(*P(DUP))&M[N+4][3:3:1];                                  18277500 T  0092:0
          GO TO CLOSEXCLUSIVE;                                             18278000 T  0095:3
      END;                                                                 18279000 T  0098:0
      NB:=[M[N:=SPACE(60)]]&60[8:38:10];                                   18280000 T  0098:0
      IF SEARCH=0 THEN                                                     18281000 T  0102:1
      BEGIN                                                                18282000 T  0103:2
          A:=0;                                                            18283000 T  0104:0
          GO TO EXIT;                                                      18284000 T  0104:3
      END;                                                                 18285000 T  0105:1
$ SET OMIT = NOT SHAREDISK                                                 18285099 T  0105:1
$ SET OMIT = SHAREDISK                                                     18285999 T  0105:1
      FH:=[M[F:=SPACE(30)]]&30[8:38:10];                                   18286000 T  0105:1
$ POP OMIT                                                                 18286001 T  0109:2
      HEADER;                                                              18287000 T  0109:2
      IF OPTN<0 THEN GO GETAROW;                                           18288000 T  0111:0
      IF OPTN≥512 THEN GO TO Q[OPTN,[FF]+10];                              18289000 T  0112:1
$ SET OMIT = SHAREDISK                                                     18289999 T  0127:0
```

```
            IF OPTN LSS 5 OR OPTN=17 OR OPTN=7 THEN                    18290000 T  0127:0
$ POP OMIT                                                             18290001 T  0129:3
$ SET OMIT = NOT SHAREDISK                                             18290099 T  0129:3
  CHECK:                                                               18291000 T  0129:3
        BEGIN                                                          18292000 T  0130:1
              IF FH[4].[44:1] AND OPTN LSS 5 THEN                      18292100 T  0130:1
              BEGIN % TRYING TO OPEN WHILE FILE IS BEING BLANKED       18292200 T  0132:1
$ SET OMIT = NOT SHAREDISK                                             18292300 T  0132:3
              GO NOFILE;                                               18292600 T  0132:3
              END;                                                     18292700 T  0133:1
$ SET OMIT = SHAREDISK                                                 18292999 T  0133:1
              IF NOT OPTN OR OPTN=7 THEN                               18293000 T  0133:1
$ POP OMIT                                                             18293001 T  0134:3
$ SET OMIT = NOT SHAREDISK                                             18293099 T  0134:3
              IF FH[4].[12:4]≠0 THEN                                   18293200 T  0134:3
              BEGIN   %   IT IS A SYSTEM FILE                          18294000 T  0136:3
                    TEMP:=2; % SYSTEM FILE                             18295000 T  0137:1
$ SET OMIT = NOT SHAREDISK                                             18295490 T  0138:0
                    GO TO EXIT;                                        18296000 T  0138:0
              END;                                                     18297000 T  0138:2
  SEE:                                                                 18298000 T  0138:2
        IF (FH[4].[2:2] AND (NOT TOG OR 2))≠0 THEN                     18299000 T  0138:2
              BEGIN                                                    18300000 T  0141:1
                    HOLD;                                              18301000 T  0141:3
                    GO CHECK;                                          18302000 T  0143:0
              END;                                                     18303000 T  0143:2
        END;                                                           18305000 T  0143:2
        GO TO Q[OPTN];                                                 18306000 T  0143:2
  OPENSHARED:                                                          18307000 T  0156:0
        IF FH[9].[5:4]=0 THEN                                          18308000 T  0156:0
        IF FH[9].[1:4]≠0 OR FH[9].[9:20]=0 THEN                        18309000 T  0157:2
        BEGIN                                                          18310000 T  0161:1
$ SET OMIT = NOT(SHAREDISK)                                            18310999 T  0161:3
$ SET OMIT = SHAREDISK                                                 18314099 T  0161:3
              FH[9].[9:5]:=P(DUP).[9:5]+1;                             18314100 T  0161:3
              FH[9].[1:1]:=1;                                          18314200 T  0165:1
$ POP OMIT                                                             18314201 T  0167:3
              GO TO LWRITE;                                            18315000 T  0167:3
        END;                                                           18316000 T  0168:1
        HOLD;                                                          18317000 T  0168:1
        GO TO OPENSHARED;                                              18318000 T  0169:0
  OPENINPUT:                                                           18319000 T  0169:2
$ SET OMIT = NOT(SHAREDISK)                                            18319999 T  0169:2
$ SET OMIT = SHAREDISK                                                 18321099 T  0169:2
        FH[4].[16:5]:=P(DUP).[16:5]+1;                                 18321100 T  0169:2
$ POP OMIT                                                             18321101 T  0173:0
        GO TO LWRITE;                                                  18322000 T  0173:0
  OPENOUTPUT:                                                          18323000 T  0173:2
        IF FH[9].[5:24]=0 THEN                                         18324000 T  0173:2
        BEGIN                                                          18325000 T  0175:0
$ SET OMIT = NOT(SHAREDISK)                                            18325999 T  0175:2
$ SET OMIT = SHAREDISK                                                 18327099 T  0175:2
              FH[9].[5:1]:=1;                                          18327100 T  0175:2
$ POP OMIT                                                             18327101 T  0178:0
              GO TO LWRITE;                                            18328000 T  0178:0
        END;                                                           18329000 T  0178:2
        HOLD;                                                          18330000 T  0178:2
        GO TO OPENOUTPUT;                                              18331000 T  0180:0
  OPENWRITELOCK:                                                       18332000 T  0180:2
        IF FH[9].[1:8]=0 THEN                                          18333000 T  0180:2
```

```
                BEGIN                                                   18334000 T  0182:0
        $ SET OMIT = NOT(SHAREDISK)                                     18334999 T  0182:2
        $ SET OMIT = SHAREDISK                                          18336099 T  0182:2
                    FH[9].[9:5]:=P(DUP).[9:5]+1;                        18336100 T  0182:2
        $ POP OMIT                                                      18336101 T  0186:0
                    GO TO LWRITE;                                       18337000 T  0186:0
                END;                                                    18338000 T  0186:2
                HOLD;                                                   18339000 T  0186:2
                GO TO OPENWRITELOCK;                                    18340000 T  0188:0
            OPENEXCLUSIVE:                                              18341000 T  0188:2
                IF FH[9].[5:24]=0 THEN                                  18342000 T  0188:2
                IF FH[4].[16:20]=0 THEN                                 18343000 T  0190:0
                BEGIN                                                   18344000 T  0192:0
COMPLETE:           FH[4]:=(P(DUP,LOD))&SYSNO[4:46:2]&1[2:47:1]&A[1:2:1];  18345000 T  0192:2
                    GO TO LWRITE;                                       18346000 T  0197:0
                END;                                                    18347000 T  0197:2
                HOLD;                                                   18348000 T  0197:2
                GO TO OPENEXCLUSIVE;                                    18349000 T  0199:0
            OPENPROTECT:                                                18349100 T  0199:2
        $ SET OMIT = NOT SHAREDISK                                      18349149 T  0199:2
        $ SET OMIT = SHAREDISK                                          18349799 T  0199:2
                GO TO OPENEXCLUSIVE;                                    18349800 T  0199:2
        $ POP OMIT                                                      18349801 T  0200:0
            CLOSESHARED:                                                18350000 T  0200:0
        $ SET OMIT = NOT(SHAREDISK)                                     18350999 T  0200:0
        $ SET OMIT = SHAREDISK                                          18357099 T  0200:0
                IF (I:=FH[9].[9:5]-1)=0 THEN                            18357100 T  0200:0
                FH[9].[1:1]:=0;                                         18357200 T  0202:2
                FH[9].[9:5]:=I;                                         18357300 T  0205:2
        $ POP OMIT                                                      18357301 T  0208:0
                GO TO CLOSE;                                            18358000 T  0208:0
            CLOSEINPUT:                                                 18359000 T  0208:2
        $ SET OMIT = NOT(SHAREDISK)                                     18359999 T  0208:2
        $ SET OMIT = SHAREDISK                                          18361099 T  0208:2
                FH[4].[16:5]:=P(DUP).[16:5]-1;                          18361100 T  0208:2
        $ POP OMIT                                                      18361101 T  0212:0
                FH[4].[6:1]:=0;                                         18361200 T  0212:0
                GO TO LW;                                               18362000 T  0214:2
            CLOSEOUTPUT:                                                18363000 T  0215:0
        $ SET OMIT = NOT(SHAREDISK)                                     18363999 T  0215:0
        $ SET OMIT = SHAREDISK                                          18365099 T  0215:0
                FH[9].[5:1]:=0;                                         18365100 T  0215:0
        $ POP OMIT                                                      18365101 T  0217:2
                GO TO CLOSE;                                            18366000 T  0217:2
            CLOSEWRITELOCK:                                             18367000 T  0218:0
        $ SET OMIT = NOT(SHAREDISK)                                     18367999 T  0218:0
        $ SET OMIT = SHAREDISK                                          18369099 T  0218:0
                FH[9].[9:5]:=P(DUP).[9:5]-1;                            18369100 T  0218:0
        $ POP OMIT                                                      18369101 T  0221:2
                GO TO LW;                                               18370000 T  0221:2
            CLOSEXCLUSIVE:                                              18371000 T  0222:0
                FH[4].[1:2]+0;                                          18372000 T  0222:0
            GO TO CLOSE;                                                18373000 T  0224:2
            CLOSEPROTECT:                                               18374000 T  0225:0
        $ SET OMIT = NOT SHAREDISK                                      18374001 T  0225:0
        $ SET OMIT = SHAREDISK                                          18374599 T  0225:0
                GO TO CLOSEXCLUSIVE;                                    18374600 T  0225:0
        $ POP OMIT                                                      18374601 T  0225:2
        $ SET OMIT = NOT SHAREDISK                                      18374999 T  0225:2
            SYS:                                                        18388000 T  0225:2
```

```
            IF FH[9].[1:8]=0 THEN                                   18389000 T  0225:2
            BEGIN                                                   18390000 T  0227:0
$ SET OMIT = NOT(SHAREDISK)                                         18390999 T  0227:2
$ SET OMIT = SHAREDISK                                              18392099 T  0227:2
                FH[4].[12:1]:=1;                                    18392100 T  0227:2
$ POP OMIT                                                          18392101 T  0230:0
                GO TO LWRITE;                                       18393000 T  0230:0
            END;                                                    18394000 T  0230:2
            HOLD;                                                   18395000 T  0230:2
            GO TO SYS;                                              18396000 T  0232:0
        UNSYS:                                                      18397000 T  0232:2
$ SET OMIT = NOT(SHAREDISK)                                         18397999 T  0232:2
$ SET OMIT = SHAREDISK                                              18399099 T  0232:2
                FH[4].[12:1]:=0;                                    18399100 T  0232:2
$ POP OMIT                                                          18399101 T  0235:0
            GO TO LW;                                               18400000 T  0235:0
        LOCKSYS:                                                    18401000 T  0235:2
            OPTN:=4;                                                18402000 T  0235:2
            GO SEE;                                                 18403000 T  0236:1
$ SET OMIT = NOT(SHAREDISK)                                         18403999 T  0236:3
$ SET OMIT = NOT(DISKLOG)                                           18411000 T  0236:3
        GETAROW:                                                    18421000 T  0236:3
            IF FH[I2:=OPTN.[FF]]=0 THEN                             18422000 T  0236:3
            BEGIN                                                   18423000 T  0238:3
$ SET OMIT = NOT(DISKLOG)                                           18424000 T  0239:1
                IF (FH[I2]:=GETUSERDISK(FH[8]&3[1:46:2]))=0 THEN    18425100 T  0239:1
                BEGIN                                               18425150 T  0243:0
$ SET OMIT = SHAREDISK                                              18425175 T  0243:2
                    UNLOCKDIRECTORY;                                18425200 T  0243:2
$ SET OMIT = NOT SHAREDISK                                          18425225 T  0247:0
                    I1:=GETUSERDISK(-FH[8]);                        18425300 T  0247:0
$ SET OMIT = SHAREDISK                                              18425390 T  0249:0
                    LOCKDIRECTORY;                                  18425400 T  0249:0
$ POP OMIT                                                          18425410 T  0255:2
                    IF SEARCH=0 THEN                                18425500 T  0255:2
                    BEGIN FORGETUSERDISK(I1,FH[8]);                 18425600 T  0257:2
                        TEMP:=0; A:=-1;                             18425700 T  0259:1
                        GO TO EXIT;                                 18425800 T  0261:0
                    END;                                            18425900 T  0263:0
                    HEADER;                                         18426000 T  0263:0
                    FH[I2]:=I1;                                     18426100 T  0264:0
                END;                                                18426200 T  0265:1
            END;                                                    18427000 T  0265:1
            FOR I2:=FH[9].[43:5]+9 STEP -1 UNTIL 10 DO              18428000 T  0265:1
                M[OPTN INX I2]:=FH[I2];                             18429000 T  0270:1
            GO TO LW;                                               18430000 T  0273:0
        CLOSE:                                                      18431000 T  0273:2
            IF B.[3:1] THEN FH[4].[11:1] + 1;                       18431050 T  0273:2
            IF OPTN GTR 511 THEN                                    18431100 T  0277:1
            BEGIN                                                   18431200 T  0278:0
                IF (FH[0] EQV M[OPTN])&NOT 0 THEN                   18431300 T  0278:2
                IF (I1:=(((I1:=((((I2:=FH[7]+1) DIV (I3:=FH[0]).[30:12])   18431400 T  0281:0
                    &I3.[42:6])×30)+(I2 MOD I3.[30:12])             18431500 T  0284:2
                    ×(IF (I2:=I3.[1:14])=0 THEN 30 ELSE I2)) DIV 30)   18431600 T  0286:2
                    DIV (I3:=M[OPTN]).[42:6])×I3.[30:12]            18431700 T  0292:0
                    +((((I1 DIV 30) MOD I3.[42:6])×30               18431800 T  0294:2
                    +I1 MOD 30+I3.[1:14]-1) DIV I3.[1:14])-1)       18431900 T  0297:1
                    =M[OPTN+7] THEN GO TO LW;                       18432000 T  0301:3
                FH[0]:=M[OPTN];                                     18432100 T  0304:3
            FH[4]:=(*P(DUP)) OR (M[OPTN+4] AND 16);                 18432150 T  0306:3
```

```
                FH[7]:=M[OPTN+7];                                          18432200 T  0310:2
            END;                                                           18432300 T  0313:0
            GO TO LW;                                                      18432400 T  0313:0
        L7:%                                                               18432500 T  0313:2
            IF (FH[4] AND @1400777777770000)≠0 OR                          18432600 T  0313:2
                FH[9].[1:28]≠0 THEN                                        18433000 T  0315:0
            BEGIN                                                          18434000 T  0316:3
                HOLD;                                                      18435000 T  0317:1
                GO TO L7;                                                  18436000 T  0318:0
            END;                                                           18437000 T  0320:0
        L6:%                                                               18438000 T  0320:0
            IF FH[4].[43:2] NEQ 0 THEN % TEST FILE SENSITIVE               18438100 T  0320:0
              BEGIN                                                        18438110 T  0321:2
                STREAM(A,B,T:=T:=SPACE(10)+2);                             18438120 T  0322:0
                  BEGIN                                                    18438130 T  0325:3
                    DS:=10LIT"CC REMOVE "; SI:=LOC A; SI:=SI+1; DS:=7CHR;  18438140 T  0325:3
                    DS:=LIT"/"; SI:=LOC B; SI:=SI+1; DS:=7CHR;             18438150 T  0328:0
                    DS:=6LIT";END.←";                                      18438155 T  0329:1
                  END;                                                     18438160 T  0330:1
                FH[4].[43:2]:=1;                                           18438170 T  0330:2
                INDEPENDENTRUNNER(P(,,CONTROLCARD),T&(IF UNITNO NEQ 0      18438180 T  0333:0
                              THEN UNITNO ELSE 31)[2:42:6]&1[8:47:1],192); 18438190 T  0334:0
                M[T-4].[9:6]:=0;                                           18438200 T  0338:1
    $ SET OMIT = NOT(SHAREDISK)                                            18438202 T  0341:2
                GO COMPLETE;                                               18438210 T  0341:2
              END;                                                         18438220 T  0342:0
    $ SET OMIT = PACKETS                                                   18439000 T  0342:0
            IF LIBMSG THEN                                                 18439050 T  0342:0
    $ POP OMIT                                                             18439100 T  0342:3
            LBMESS(ABS(A),ABS(B),7,0,0,UNITNO,LIBMSG);                     18439125 T  0342:3
    $ SET OMIT = NOT(DISKLOG)                                              18440000 T  0346:2
            PBCOUNT:=PBCOUNT-((((A.[6:42] EQV "PBD     ")=NOT 0) OR        18442000 T  0346:2
                    ((A.[6:42] EQV "PUD     ")=NOT 0)) AND B.[CF]=1);      18443000 T  0349:1
        L8:     REMOVER;                                                   18444000 T  0354:1
            IF P((OPTN NEQ 8),DUP) THEN                                    18444500 T  0355:0
            FOR I ← 1 STEP 1 UNTIL FH[9] DO%                               18445000 T  0356:0
            IF  FH[9+I]≠0  THEN  FORGETUSERDISK(FH[I+9],FH[8]);%           18446000 T  0360:2
            IF P THEN GO LW ELSE GO EXIT;                                  18447000 T  0367:0
        LWRITE:                                                            18453500 T  0368:0
            IF NOT B.[2:1] THEN                                            18454000 T  0368:0
            STREAM(A←[DATE],B←[FH[3]],C←0);                                18455000 T  0369:0
            BEGIN SI←A;DI←LOC C;DS←8 OCT;SI←LOC C;SI←SI+5;                 18456000 T  0371:0
                DI←B;DI←DI+2;DS←3 CHR;                                     18457000 T  0372:1
            END;                                                           18458000 T  0373:0
        LW:                                                                18459000 T  0373:1
            IF FH[4].[3:1] OR TOG THEN FILEHOLD(A,B,TOG,TEMP,0);           18460000 T  0373:1
    $ SET OMIT = NOT SHAREDISK                                             18460490 T  0377:2
        LWS: DISKWAIT(F,-30,K);                                            18461000 T  0377:2
    EX:     FH[9]:=(*P(DUP)) AND 31;                                       18462000 T  0379:0
        EXIT:%                                                             18463000 T  0381:0
            IF A.[1:1] OR TEMP<64 AND TEMP>0 THEN FORGETSPACE(F);          18465000 T  0381:0
    $ SET OMIT = SHAREDISK                                                 18465990 T  0385:0
            UNLOCKDIRECTORY;                                               18466000 T  0385:0
    $ POP OMIT                                                             18466010 T  0388:2
    LEAVELKD:                                                              18466100 T  0388:2
    UNUSED:                                                                18466101 T  0388:2
            FORGETSPACE(N);                                                18466200 T  0389:0
            DIRECTORYSEARCH←TEMP;                                          18467000 T  0389:3
    END; % OF DIRECTORYSEARCH                                              18468000 T  0390:2
```

SIZE= 0392 WORDS

```
PROCEDURE PICKTHELOCK; FORWARD;                                          18468100 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00448
PROCEDURE EVENTANDINTERRUPT; FORWARD;                                    18468200 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00448
PROCEDURE COMMUNICATE1;                                                  18500000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00448
BEGIN REAL R4=-4,R5=-5,R6=-6,R7=-7,R8=-8;                                18500100 T  0000:0
      INTEGER I4=-4,I5=-5,I6=-6;                                         18500200 T  0000:0
      ARRAY A4=-4[*],A5=-5[*],A6=-6[*];                                  18500300 T  0000:0
      ARRAY A7=-7[*];                                                    18500400 T  0000:0
      NAME N4=-4,N5=-5,N6=-6;                                            18500500 T  0000:0
      LABEL C0,C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,   18500600 T  0000:0
            C17,C18,C19,C20,C21,C22,C23,C24,C25,C26;                     18500700 T  0000:0
      LABEL C27,C28,C29,C30,C31,C32;                                     18500800 T  0000:0
      LABEL C33,C34,C35,C36,C37,C38,C39,C45,C47,C48,C49,                 18500900 T  0000:0
            C30A,C30B,C49A,                                              18501000 T  0000:0
            INIT,AC0,AC1,AC2,AC3,AC4,AC5,CHANGENAME;                     18501100 T  0000:0
 $ SET OMIT = NOT SHAREDISK                                              18501200 T  0000:0
      SWITCH AC:=AC0,AC1,AC2,AC3,AC4,AC5;                                18501700 T  0000:0
      SWITCH C:=C0,INIT,INIT,INIT,C4,INIT,INIT,INIT,INIT,INIT,INIT,      18501800 T  0000:0
              INIT,INIT,INIT,INIT,C15,C16,INIT,INIT,INIT,INIT,           18501900 T  0000:0
              INIT,INIT,INIT,INIT,INIT,INIT,INIT,INIT,INIT,C30,          18502000 T  0000:0
              INIT,C32,C33,INIT,INIT,INIT,INIT,INIT,INIT,INIT,           18502100 T  0000:0
              INIT,INIT,INIT,INIT,C45,INIT,INIT,INIT,C49;                18502200 T  0000:0
      REAL RCW=+0,I,J,T;                                                 18502300 T  0000:0
      ARRAY A[*],FIB=A[*],FPB[*],H[*];                                   18502400 T  0000:0
      GO TO C[PRT[P1MIX,9]];                                             18502600 T  0000:0
INIT: GO TO INITIATE;                                                    18502700 T  0028:1
%     COBOL INVALID EOJ                                                  18510000 T  0028:3
C0:   TERMINATE(P1MIX); TERMINALMESSAGE(28);                             18510100 T  0028:3
%     GENERALIZED ZIP                                                    18520000 T  0030:1
C4:   IF (I←A4.[8:10])≠0 THEN BEGIN                                      18520100 T  0030:1
 $ SET OMIT = PACKETS                                                    18520200 T  0032:3
      M[(T:=GETSPACE(I+4,0,0)+4)"4],[9:6]:=0;                            18520300 T  0032:3
 $ POP OMIT                                                              18520400 T  0038:2
 $ SET OMIT = NOT(PACKETS)                                               18520500 T  0038:2
      IF NOT A4.[2:1] THEN MAKEPRESENT(NFLAG(NOT 3 INX [RCW]));          18520800 T  0038:2
      IF (J←USERCODE[P1MIX])=NOT(-0) THEN J←0;                           18520900 T  0042:0
      STREAM(C←J,A4,I1←I.[36:6],I,Q←0,T);                                18521000 T  0045:1
      BEGIN SI:=A4; SI:=SI-1;                                            18521100 T  0048:0
      L:    SI:=SI+1; IF SC=" " THEN GO TO L; Q:=SI; DI:=Q;              18521200 T  0048:2
            IF SC=@14 THEN DS:=LIT" " ELSE DS:=2LIT"  "; DI:=T;          18521300 T  0050:0
            DS:=8LIT"CC USER="; SI:=LOC C; SI:=SI+1; DS:=7 CHR;          18521400 T  0052:0
            DS:= LIT";" ; SI:=A4;                                        18521500 T  0054:0
            I1(DS:=32WDS; DS:=32WDS);  DS:= I WDS;                       18521600 T  0054:3
 $ SET OMIT = NOT(PACKETS)                                               18521700 T  0056:2
                  TALLY:=12;I:=TALLY;                                    18522000 T  0056:2
                  DI:=Q;SI:=LOC I;SI:=SI+7;DS:=CHR;                      18522100 T  0057:0
      END STREAM;                                                        18522200 T  0058:0
      J←IF USERCODE[P1MIX]=MCP  THEN 31 ELSE 26;                         18522300 T  0058:1
 $ SET OMIT = NOT(PACKETS)                                               18522400 T  0062:0
        INDEPENDENTRUNNER(P(.CONTROLCARD),T&P1MIX[18:42:6]               18522700 T  0062:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                      18522800 T  0063:0
                                          &J[3:43:5],192);               18523100 T  0063:0
 $ SET OMIT = NOT(PACKETS)                                               18523200 T  0065:1
        END ELSE                                                         18523600 T  0065:1
        BEGIN FIB←N4[NOT 2];                                             18523700 T  0065:1
              FPB←PRT[P1MIX,3];                                          18523800 T  0067:2
              I←IF FIB[4].[12:11] THEN FIB[4].[13:11]                    18523900 T  0069:0
                                   ELSE (FIB[4].[13:11]-1)×ETRLNG;       18524000 T  0070:3
```

```
                    T←FPB[I+3].[43:5];                                          18524100 T  0074:2
                    IF T=10 OR T=12 OR T=13 OR T=26 THEN                        18524200 T  0076:2
                    BEGIN                                                       18524300 T  0080:1
                         IF FIB[5].[42:1] THEN GO TO CHANGENAME;                18524400 T  0080:3
                         H←FIB[14];                                             18524500 T  0082:2
$ SET OMIT = DATACOM AND RJE                                                    18524600 T  0083:2
                         H[6]:=0;                                               18524700 T  0083:2
$ POP OMIT                                                                      18524800 T  0084:3
                         H[5]:=USERCODE[P1MIX];                                 18524900 T  0084:3
$ SET OMIT = NOT(DATACOM AND RJE )                                              18525000 T  0086:1
                         IF H[4] THEN                                           18525500 T  0086:1
                         BEGIN FILECLOSE(N4,[33:15]);                           18525600 T  0086:3
   CHANGENAME:                 IF (T←DIRECTORYSEARCH(FPB[I],FPB[I+1],4))       18525700 T  0088:2
                                  LSS 64                                        18525750 T  0090:2
                                  THEN GO TO INITIATE;                          18525800 T  0091:1
                               H←[M[T]]&30[8:38:10];                            18525900 T  0092:3
$ SET OMIT = NOT(SHAREDISK)                                                     18526000 T  0095:0
                               H[5]:=USERCODE[P1MIX];                           18526300 T  0095:0
$ SET OMIT = NOT(PACKETS)                                                       18526400 T  0096:2
                               ENTERCONTROLDECK(H);                             18526700 T  0096:2
                               P(DIRECTORYSEARCH(-FPB[I],FPB[I+1],8),DEL);      18526800 T  0097:2
                               J←H[2]; % SAVED LASTCDNUM                        18527000 T  0100:1
                               FORGETSPACE(H);                                  18527100 T  0101:1
                         END ELSE                                               18527200 T  0102:1
                         BEGIN FILECLOSE((N4,[33:15])&6[18:33:15]);             18527300 T  0102:1
                               ENTERCONTROLDECK(H);                             18527400 T  0104:2
                               J←H[2]; % SAVED LASTCDNUM                        18527500 T  0105:2
                               FOR T←10 STEP 1 UNTIL 29 DO H[T]←0;              18527600 T  0106:2
                               FILECLOSE(N4,[33:15]);                           18527700 T  0111:2
                         END;                                                   18527800 T  0112:3
                         IF RUNUMBER LEQ 0 THEN                                 18527900 T  0112:3
                         BEGIN                                                  18528000 T  0113:2
                         STREAM(A←[JAR[P1MIX,0]], B←H←USERCODE[P1MIX],          18528100 T  0114:0
                                F←H≠MCP AND H≠0, P1MIX, J, T←T←SPACE(10));      18528200 T  0116:1
                         BEGIN SI←A; DS←LIT"#";                                 18528300 T  0122:1
                               2(SI←SI+1; DS←7 CHR; DS←LIT"/"); DI←DI-1;        18528400 T  0123:0
                               F(SI←LOC B; SI←SI+1; DI←DI+1; DS←7 CHR);         18528500 T  0124:3
                               SI←LOC P1MIX; DS←LIT"="; A←DI;                   18528600 T  0126:2
                               DS←2 DEC; DS←14 LIT" ZIPPED DECK #";             18528700 T  0127:2
                               SI←LOC J; DS←4 DEC; DS←LIT".";                   18528800 T  0129:3
                               DI←DI-5; DS←3 FILL; DI←A; DS←FILL;               18528900 T  0130:3
                         END;                                                   18529000 T  0131:3
                         SPOUT(T);                                              18529100 T  0132:0
                         END;                                                   18529200 T  0132:3
                    END;                                                        18529300 T  0132:3
               END;                                                             18529400 T  0132:3
          GO TO INITIATE;                                                       18529500 T  0132:3
%         DISPLAY (COBOL)                                                       18530000 T  0133:1
C15:      DISPLAY(A4 INX 1); GO TO INITIATE;                                    18530100 T  0133:1
%         COBOL ACCEPT                                                          18540000 T  0135:1
C16:      DISPLAY(A4 INX 2); REPLY[P1MIX]:=-VWY&VAX[36:42:6];                   18540100 T  0135:1
          COMPLEXSLEEP((TERMIX.[33:15]=P1MIX OR REPLY[P1MIX]>0));               18540200 T  0139:1
18029000  ACCIDENTAL ENTRY AT 0
          IF TERMIX.[33:15]=P1MIX THEN GO TO INITIATE;                          18540300 T  0146:2
          IF NOT WHYSLEEP(VWY&VAX[36:42:6]) THEN GO TO C16;                     18540400 T  0148:3
          T←REPLY[P1MIX].[18:15]; REPLY[P1MIX]←0;                               18540500 T  0151:0
          STREAM(T,S←A4 INX 2);                                                 18540600 T  0154:0
               BEGIN SI←T;                                                      18540700 T  0155:3
               L:    IF SC≠"X" THEN BEGIN SI←SI+1; GO TO L END;                 18540800 T  0156:0
                     SI←SI+1; 2(DS←40 CHR);                                     18540900 T  0157:0
```

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                END;                                                                  18541000 T  0158:0
            FORGETSPACE(T-1); GO TO INITIATE;                                         18541100 T  0158:1
        %   DIRECTORYSEARCH AND UN-FILL FILE ID FOR NORMAL STATE PROGRAMS             18550000 T  0160:0
        C30::   COMMENT SEARCHES DISK DIRECTORY AND RETURNS DATA IN ARRAY.            18550100 T  0160:0
                [0] IS USER-TYPE OR NOT-PRESENT FLAG                                  18550200 T  0160:0
                [1] IS MULTI-FILE ID                                                  18550300 T  0160:0
                [2] IS FILE ID                                                        18550400 T  0160:0
                IF NOT PRESENT, [3] => [5] ARE -1                                     18550500 T  0160:0
                IF INVALID USER, [3] => [5] ARE 0                                     18550600 T  0160:0
                IF PRIMARY, SECONDARY, OR TERTIARY USER:                              18550700 T  0160:0
                [3] IS RECORD LENGTH                                                  18550800 T  0160:0
                [4] IS BLOCK LENGTH                                                   18550900 T  0160:0
                [5] IS END OF FILE POINTER                                            18551000 T  0160:0
                [6] IS OPEN COUNT                                                     18551100 T  0160:0
                IF ARRAY SIZE IS GREATER THAN 9:                                      18551200 T  0160:0
                   [7] = FILETYPE (FROM HEADER)                                       18551300 T  0160:0
                   [8] = HEADER[3] (CREATION/ACCESS DATE,SAVE FACTOR)                 18551400 T  0160:0
                   [9] = HEADER[1] ( LOGGING DATES)                                   18551500 T  0160:0
                IF ARRAY SIZE IS GREATER THAN 10:                                     18551600 T  0160:0
                   [10]= SYSTEM NUMBER (SHAREDISK)                                    18551700 T  0160:0
                NOT-PRESENT    FLAG IS  -1                                            18551800 T  0160:0
                INVALID   USER FLAG IS   0                                            18551900 T  0160:0
                PRIMARY   USER FLAG IS   7 (LM,INPUT, AND OUTPUT BITS)                18552000 T  0160:0
                SECONDARY USER FLAG IS   3 (INPUT AND OUTPUT BITS)                    18552100 T  0160:0
                TERTIARY  USER FLAG IS   2 (INPUT BIT ONLY)                           18552200 T  0160:0
            ;                                                                         18552300 T  0160:0
            IF A4.[8:10]<7 THEN BEGIN TERMINATE(P1MIX);%                              18552400 T  0160:0
                                TERMINALMESSAGE(7);  END;%                            18552500 T  0162:3
            IF NOT A4.[2:1] THEN MAKEPRESENT(NFLAG(NOT 3 INX [RCW]));%                18552600 T  0163:2
            P([M[A4 INX NOT 1]],DUP,DUP,LOD,XCH,CCX,,J,STD,IOR);%                     18552700 T  0167:0
            FIB ← N5[NOT 2];  FPB ← PRT[P1MIX,3];                                     18552800 T  0170:3
            I ← IF FIB[4].[12:1] THEN FIB[4].[13:11]%                                 18552900 T  0174:0
                ELSE (FIB[4].[13:11]-1)×ETRLNG;                                       18553000 T  0175:3
            A4[1] ← FPB[I];  A4[2] ← FPB[I+1];                                        18553100 T  0179:2
            IF P(FPB[I+3].[43:5],DUP,DUP)=10          %RANDOM                         18553200 T  0183:0
               OR (P(XCH) OR 1)=13 OR P(XCH)=26 THEN %SERIAL,UPDATE,PROTECT           18553300 T  0185:1
            IF (T ← DIRECTORYSEARCH(A4[1],A4[2],5))≠0 THEN                            18553400 T  0188:0
            BEGIN IF (A4[0] ← SECURITYCHECK(A4[1],A4[2],USERCODE[P1MIX],T))≠0         18553500 T  0191:1
                AND M[T+4].[12:4]=0                                                   18553600 T  0195:0
                THEN BEGIN A4[3] ← M[T].[1:14];%                                      18553700 T  0197:2
                      A4[4] ← M[T].[15:15];  A4[5] ← M[T+7];%                         18553800 T  0201:1
        $ SET OMIT = SHAREDISK                                                        18553900 T  0206:1
                      A4[6]:=M[T+4].[16:5]+M[T+9].[9:5];                              18554000 T  0206:1
        $ POP OMIT                                                                    18554100 T  0211:2
        $ SET OMIT = NOT(SHAREDISK)                                                   18554200 T  0211:2
                      IF A4.[8:10] GTR 9 THEN                                         18554600 T  0211:2
                      BEGIN A4[7]:=M[T+4].[36:6];  A4[8]:=M[T+3];                     18554700 T  0213:0
                            A4[9]:=M[T+1];                                            18554800 T  0219:0
                      END;                                                            18554900 T  0221:2
                   IF A4.[8:10] GTR 10 THEN A4[10]:=SYSNO;                            18555000 T  0221:2
                END ELSE A4[3]:=A4[4]:=A4[5]:=A4[6]:=0;                               18555100 T  0224:3
                FORGETSPACE(T);                                                       18555200 T  0229:2
                GO TO C30B                                                            18555300 T  0230:1
            END ELSE GO C30A ELSE                                                     18555400 T  0230:3
            BEGIN                                                                     18555500 T  0230:3
                T:=-1;                                                                18555600 T  0231:1
                IF (T:=FINDINPUT(A4[1],A4[2],FPB[I+2],[1:17],                         18555700 T  0232:1
                      FPB[I+2].[18:30],FPB[I+3],[1:5],[A4[3]] INX 0,                  18555800 T  0235:0
                      T,0,0,0))=NABS(1) THEN GO TO C30A ELSE                          18555900 T  0239:0
                IF T GEQ 0 THEN                                                       18556000 T  0241:2
```

```
                    BEGIN                                                          18556100 T  0242:3
                         A4[0]:=4; A4[3]:=(I:=RDCTABLE[T]).[14:10];                18556200 T  0243:1
                         A4[4]:=I.[24:17]; A4[5]:=I.[41:7];                        18556300 T  0247:0
                         A4[6]:=TINU[T].[30:18]; IF T<16 THEN                      18556400 T  0250:2
                         A4[6]:=(*P(DUP))&PRNTABLE[T][12:30:18]; GO C30B;          18556500 T  0253:1
                    END ELSE                                                       18556600 T  0257:0
                    BEGIN                                                          18556700 T  0257:0
                         A4[0]:=5; A4[3].[1:5]:=ABS(T); GO C30B                    18556800 T  0257:2
                    END;                                                           18556900 T  0262:0
               END;                                                                18557000 T  0262:0
          C30A: A4[0]:=A4[3]:=A4[4]:=A4[5]:=A4[6]:=-1;                             18557100 T  0262:0
          C30B:                                                                    18557200 T  0267:2
               IF NOT J.[2:1] THEN P([M[J]],PRL);%                                 18557300 T  0267:2
               GO TO INITIATE;%                                                    18557400 T  0270:1
          C32::                                                                    18560000 T  0270:3
           $ SET OMIT = NOT(DATACOM )                                              18560100 T  0270:3
              GO TO INITIATE;                                                      18565600 T  0270:3
          C33:: STREAM(R4,A←(R4≠0),J←JARROW[P1MIX],P1MIX,%                         18570000 T  0271:2
                                T←T←GETSPACE(10,0,0)+2);%                          18570100 T  0274:0
               BEGIN DS←10 LIT " PAUSE # 0";%                                      18570200 T  0276:2
                     A(DI←DI-1;  SI←LOC R4;  SI←SI+2;  DS←6 CHR);                  18570300 T  0278:0
                     DS←5 LIT " FOR";  SI←J;  SI←SI+1;  DS←7 CHR;%                 18570400 T  0279:3
                     DS←LIT "/";  SI←SI+1;  DS←7 CHR;  DS←LIT "=";%                18570500 T  0281:2
                     SI←LOC P1MIX;  DS←2 DEC;  DS←LIT "←";  DI←DI-3;  DS←FILL;%    18570600 T  0283:0
               END;%                                                               18570700 T  0284:2
               SPOUT(T);%                                                          18570800 T  0284:3
               COMPLEXSLEEP((TERMIX.[CF]=P1MIX OR%                                 18570900 T  0285:2
                             STOPJOB=P1MIX OR STOPJOB=@1777));%                    18571000 T  0285:2
18540200  ACCIDENTAL ENTRY AT @1777
               IF STOPJOB=@1777 THEN STOPJOB←P1MIX;%                               18571100 T  0293:1
               GO TO INITIATE;% DON"T KEEP COMMUNICATE AROUND NEEDLESSLY           18571200 T  0295:1
          C45::    IF R4 THEN  % COBOL68 EXIT PROGRAM/ EXIT PROGRAM RETURN HERE   18580000 T  0295:3
                     BEGIN     IF A5.PBIT THEN     % IF THERE IS A TASK ARRAY      18580100 T  0296:1
                                   IF A5[6]=1 THEN  % TYPE = CALLED                18580200 T  0297:3
                                        BEGIN     A5[7] ← 1;                       18580300 T  0299:1
                                                  SLEEP([A5[7]],2);                18580400 T  0301:0
                                                  A5 ← 1;                          18580500 T  0302:3
                                        END ELSE A5 ← 0                            18580600 T  0303:2
                                             ELSE A5 ← 0;                          18580700 T  0304:0
                                   GO TO INITIATE;                                 18580800 T  0306:0
                     END;                                                          18580900 T  0306:2
                % DETACH TASK ARRAY: DS OR ES JOB RUNNING OR SCHEDULED              18581000 T  0306:2
                 IF N5[6]=2 THEN GO TO INITIATE;                                   18581100 T  0306:2
                 IF N5[3]=1 THEN SHEETDIDDLER(0,20,N5[4]);                         18581200 T  0309:0
                 IF N5[3]=2 THEN                                                   18581300 T  0313:0
                     BEGIN     TERMINATE(N5[4]&61[CTF]); HALT;                     18581400 T  0314:2
                               NOPROCESSTOG ← NOPROCESSTOG-1;                      18581500 T  0317:2
                     END;                                                          18581600 T  0318:3
                 GO TO INITIATE;                                                   18581700 T  0318:3
          C49::                                                                    18590000 T  0319:1
           $ SET OMIT = NOT SHAREDISK                                              18590100 T  0319:1
              GO INITIATE;                                                         18593300 T  0319:1
          END OF COMMUNICATE1;                                                     18599000 T  0320:2
                                                                                        SIZE= 0321 WORDS
          PROCEDURE COMMUNICATE0;                                                  18700000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00459
          BEGIN REAL R4=-4,R5=-5,R6=-6,R7=-7,R8=-8;                                18700100 T  0000:0
               INTEGER I4=-4,I5=-5,I6=-6;                                          18700200 T  0000:0
               ARRAY A4=-4[*],A5=-5[*],A6=-6[*];                                   18700300 T  0000:0
               ARRAY A7=-7[*];                                                     18700400 T  0000:0
```

```
                NAME N4=-4,N5=-5,N6=-6;                                          18700500 T  0000!0
                LABEL C0,C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,  18700600 T  0000!0
                      C17,C18,C19,C20,C21,C22,C23,C24,C25,C26;                   18700700 T  0000!0
                LABEL C27,C28,C29,C30,C31,C32;                                   18700800 T  0000!0
                LABEL C33,C34,C35,C36,C37,C38,C39,C45,C47,C48,C49,               18700900 T  0000!0
                      C21A,C3A,INIT,US,D,TD,PR,IOT,TMR,IT,AD,WD;                 18701000 T  0000!0
                DEFINE CN=DIFFCOM#;                                              18701100 T  0000!0
                SWITCH S:=IT,US,D,TD,PR,IOT,TMR,AD,WD;                           18701200 T  0000!0
                SWITCH C:=INIT,C1,INIT,C3,INIT,INIT,C6,C7,C8,INIT,INIT,          18701300 T  0000!0
                          INIT,C12,INIT,INIT,INIT,INIT,C17,INIT,INIT,C20,        18701400 T  0000!0
                          C21,C22,INIT,INIT,C25,C26,INIT,INIT,C29,INIT,          18701500 T  0000!0
                          INIT,INIT,INIT,INIT,INIT,INIT,INIT,C38,C39,INIT,       18701600 T  0000!0
                          INIT,INIT,INIT,INIT,INIT,INIT,C47,C48,INIT;            18701700 T  0000!0
                REAL I,J,T;                                                      18701800 T  0000!0
                ARRAY AIT[*]; REAL AITL=AIT; ARRAY A=AIT[*];                     18701900 T  0000!0
                NAME ADDR;                                                       18702000 T  0000!0
                GO TO C[PRT[P1MIX,9]];                                           18702200 T  0000!0
        INIT:   GO TO INITIATE;                                                  18702300 T  0028!0
        %       TIME INTRINSIC                                                   18710000 T  0028!2
        C1:     IF (I4←I4) GEQ (-2) AND I4 LEQ 6 THEN                            18710100 T  0028!2
                BEGIN GO TO S[I4+2];                                             18710200 T  0031!0
                IT:  I4←JAR[P1MIX,2].[5:1];                                      18710300 T  0037!2
                     JAR[P1MIX,2]← (*P(DUP)) & 2[4:46:2];                        18710400 T  0039!2
                     GO INITIATE;                                                18710500 T  0042!2
                US:  R4:=USERCODE[P1MIX]; GO TO INITIATE;                        18710600 T  0043!0
                D:    I4←DATE; GO TO INITIATE;                                   18710700 T  0044!2
                TD:   I4←XCLOCK+P(RTR); GO TO INITIATE;                          18710800 T  0045!3
                PR:   I4←JAR[P1MIX,3]+PROCTIME[P1MIX]+CLOCK+P(RTR);              18710900 T  0047!2
                      GO TO INITIATE;                                            18711000 T  0050!3
                IOT:  I4←IOTIME[P1MIX]+JAR[P1MIX,4];                             18711100 T  0051!1
                      WHILE I4<0 DO I4←I4+CLOCK+P(RTR);                          18711200 T  0053!2
                      GO TO INITIATE;                                            18711300 T  0057!0
                TMR:  I4←P(RTR);  GO TO INITIATE;                                18711400 T  0057!2
                AD:   I4←ACTDATE; GO TO INITIATE;                                18711500 T  0058!3
                WD:   I4←WEEKDAY;                                                18711600 T  0060!0
                END;                                                             18711700 T  0060!3
                GO TO INITIATE;                                                  18711800 T  0060!3
        %       RETURN SPECIFIC ARRAY                                            18720000 T  0061!1
        C3:     ARTN(N4[0],1);            % REMOVE 1 DIM ARRAY                   18720100 T  0061!1
        C3A:    T←[AITL].[CF];            % REMOVE FROM AIT                      18720200 T  0062!1
                IF NOT(AIT←PRT[P1MIX,6]).[2:1] THEN MAKEPRESENT(T);              18720300 T  0064!1
                   J ← AIT[0]; T ← N4.[CF];                                      18720400 T  0067!3
                FOR I←1 STEP 1 UNTIL J-1 DO                                      18720500 T  0070!0
                      IF AIT[I].[18:15]=T THEN                                   18720600 T  0074!1
                            BEGIN MOVE(J-I,[AIT[I+1]],[AIT[I]]); J←0 END;        18720700 T  0076!0
                   IF J=0 OR AIT[J].[FF]=T THEN AIT[0] ← *P(DUP)-1;              18720800 T  0080!3
                N4[0]←0;                                                         18720900 T  0086!0
                GO TO INITIATE;                                                  18721000 T  0086!3
        %       WHEN                                                             18730000 T  0087!1
        C6:     I4←60×I4+P(RTR)+CLOCK;                                           18730100 T  0087!1
                WHILE TERMIX.[33:15]≠P1MIX AND CLOCK+P(RTR)<I4 DO                18730200 T  0089!2
                      SLEEP([CLOCK],NOT CLOCK);                                  18730300 T  0092!3
                GO TO INITIATE;                                                  18730400 T  0095!0
        %       FILL                                                             18740000 T  0095!2
        C7:     IF NOT A5.[2:1] THEN MAKEPRESENT(NFLAG(NOT 0 INX [I4]));         18740100 T  0095!2
                I←M[A5 INX NOT 0]; J←M[A5 INX NOT 1];                            18740200 T  0099!0
                P([M[A5 INX NOT 1]],10R);                                        18740300 T  0104!0
                IF (NT2←NT1+*(I4 INX PRT[P1MIX,4])).[18:15])>NT3←A5.[8:10] THEN  18740400 T  0106!0
                      NT2←NT3;                                                   18740500 T  0111!1
                I4←(IF JAR[P1MIX,10]≠0 THEN JAR[P1MIX,(NT1←NT1.[CF])]            18740600 T  0112!2
```

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        DIV (NT3←JAR[P1MIX,8])+10]+NT1 MOD NT3                          18740700 T  0115:0
        ELSE DALOC[P1MIX,NT1.[33:6]+P(DUP)-1]+NT1.[39:9]);              18740800 T  0119:0
        DISKWAIT(-A5.[CF],NT2,I4);                                      18740900 T  0124:1
        M[A5 INX NOT 0]←*P(.I);                                         18741000 T  0126:2
        IF NOT (*P(.J)).[2:1] THEN P([M[A5 INX NOT 1]],PRL);            18741100 T  0129:1
        GO TO INITIATE;                                                 18741200 T  0133:1
%       PLAIN ZIP                                                       18750000 T  0133:3
C8:     ZIPPER(R5,R4,0);                                                18750100 T  0133:3
        GO TO INITIATE;                                                 18750200 T  0135:0
%       BREAKOUT                                                        18760000 T  0135:2
C12:                                                                    18760100 T  0135:2
 $ SET OMIT = NOT(BREAKOUT)                                             18760200 T  0135:2
        GO TO INITIATE;                                                 18760500 T  0135:2
%       COBOL I/O ERROR                                                 18770000 T  0136:0
C17:    A5←*A5; A←PRT[P1MIX,3]; I←"I/O ERR";                            18770100 T  0136:0
        IF A5[5].[1:1] THEN                                             18770200 T  0139:2
           BEGIN I:= "INVALID";J:="   USER"; R6:=1 END ELSE             18770300 T  0140:2
        STREAM(R4,N←[J]); BEGIN SI←LOC R4; DI←DI+1; DS←7 DEC;           18770400 T  0143:1
                                DI←DI-7; DS←5 FILL;                     18770500 T  0148:3
                            END;                                        18770600 T  0149:1
        FILEMESS(I&R6[1:47:1],J,A[T←A5[4].[13:11]],A[T+1],              18770700 T  0149:2
                IF R4←(R4=16 OR R4=17 OR R4=82) THEN R8 ELSE 0,         18770800 T  0154:0
                 IF R4 THEN R7 ELSE 0,0);                               18770900 T  0158:3
        GO TO INITIATE;                                                 18771000 T  0161:0
%       TAPE SWAP FOR TAPE SORT                                         18780000 T  0161:2
C20:    SLEEP([N4[3]],IOMASK); SLEEP([N4[4]],IOMASK);                   18780100 T  0161:2
        FOR I←3 STEP 1 UNTIL 4 DO                                       18780200 T  0165:2
        BEGIN N5[I].[33:15]←N4[I];                                      18780300 T  0167:0
              M[N4[I] INX NOT 1]←(*P(DUP))&N5[3][14:3:4]&[N5[3]][33:33:15]  18780400 T  0170:0
        END;                                                            18780500 T  0175:1
        A←N4[0]; A[5].[39:4]←2; A[16]←0; A[18]←NABS(*P(DUP));           18780600 T  0178:1
        NT4←A[10].[3:15]; A[10].[3:15]←0;                               18780700 T  0184:2
        A←N5[0]; A[5]←0; A[16]←NFLAG(N5[3]); A[18]←ABS(*P(DUP));        18780800 T  0188:2
        A[10].[3:15]←NT4;                                               18780900 T  0194:2
        GO TO INITIATE;                                                 18781000 T  0197:0
%       SORT STORAGE ASSIGNMENT                                         18790000 T  0197:2
C21:    A←[M[GETSPACE(R6←R5,2,1)+2]]&R5[8:38:10];                       18790100 T  0197:2
        A[0]←(R5 INX A)&R6[8:38:10];                                    18790200 T  0201:3
        N4[0]←A;                                                        18790300 T  0204:3
        IF NOT CONQUER(0,R5-1,R6,1 INX A,J) THEN                        18790400 T  0205:3
        BEGIN FORGETSPACE(A);                                           18790500 T  0209:0
C21A:   STREAM(P1MIX,T←R5×R6,A←I←SPACE(7));                             18790600 T  0210:2
        BEGIN DS←LIT "#"; SI←LOC P1MIX;                                 18790700 T  0214:1
              DS←2 DEC; DS← 13 LIT " NO SORT MEM:";                     18790800 T  0215:0
              DS←5 DEC; DS←9 LIT " WDS RQD←";                           18790900 T  0217:1
        END;                                                            18791000 T  0219:0
        SPOUT(I);                                                       18791100 T  0219:1
        REPLY[P1MIX]:=-VWY&VOK[36:42:6]&VOU[30:42:6];                   18791200 T  0220:0
        COMPLEXSLEEP(REPLY[P1MIX]>0 OR TERMIX.[CF]=P1MIX);              18791300 T  0223:2
18571000    ACCIDENTAL ENTRY AT P1MIX
        IF TERMIX.[CF]=P1MIX THEN GO TO INITIATE;                       18791400 T  0230:2
        IF NOT WHYSLEEP(VWY&VOK[36:42:6]&VOU[30:42:6]) THEN GO TO C21A; 18791500 T  0232:3
        J:=REPLY[P1MIX].[CF]=VOU;                                       18791600 T  0236:0
        GO TO C21;                                                      18791700 T  0238:0
        END;                                                            18791800 T  0238:2
        GO TO INITIATE;                                                 18791900 T  0238:2
%       SORT STORAGE RETURN                                             18800000 T  0239:0
C22:    I←N4[0] INX 1;                                                  18800100 T  0239:0
        DO FORGETSPACE(M[I]) UNTIL (I←M[I].[18:15])=0;                  18800200 T  0240:1
        FORGETSPACE(N4[0]); N4[0]←0;                                    18800300 T  0245:0
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        GO TO INITIATE;                                                  18800400 T  0246:2
%       RETURN OLD COPY OF OWN ARRAY                                     18810000 T  0247:0
C25:: ARTN(A5,R4);                                                       18810100 T  0247:0
      M[A5.[FF]]←A←PRT[P1MIX,17]&P(.A5,LOD)[18:18:15];                   18810200 T  0248:1
      IF A.[2:1] THEN M[A.[CF]-1].[CF]←A5.[FF];                          18810300 T  0252:2
        GO TO INITIATE;                                                  18810400 T  0258:1
%       INVALID ARGUMENTS TO ALGOL INTRINSICS                     %WF    18820000 T  0258:3
C26:: IF (I ← R4)≥0 THEN                                                 18820100 T  0258:3
        STREAM(A ←R4, I←I←GETSPACE(10,0,0)+2);                           18820200 T  0260:1
        BEGIN SI←LOC I;  SI←SI-1;  DS←LIT "-";                   %WF    18820300 T  0263:3
              IF SC≥@3 THEN DS←4 LIT "MAXN" ELSE                 %WF    18820400 T  0264:3
              IF SC<@2 THEN DS←5 LIT "NEGTV" ELSE DS←4 LIT "ZERO";  %WF 18820500 T  0266:1
              DS←8 LIT " ARGMNT ";                               %WF    18820600 T  0268:3
              CI←CI+A;                                           %WF    18820700 T  0270:0
              GO LOG;  GO ROOT;  GO LOG;  GO EXP;  GO SIN;       %WF    18820800 T  0270:2
              DS←3 LIT "COS";    GO EXIT;                        %WF    18820900 T  0271:3
        LOG:  DS←2 LIT "LN";     GO EXIT;                        %WF    18821000 T  0272:3
        ROOT: DS←4 LIT "SQRT";   GO EXIT;                        %WF    18821100 T  0273:2
        EXP:  DS←3 LIT "EXP";    GO EXIT;                        %WF    18821200 T  0274:2
        SIN:  DS←3 LIT "SIN";                                    %WF    18821300 T  0275:2
        EXIT: DS←2 LIT " ←";                                     %WF    18821400 T  0276:1
        END;                                                             18821500 T  0276:3
          IF I = (-7) THEN          % COBOL INVALID INDEX               18821600 T  0277:0
              BEGIN                                                      18821700 T  0278:0
              R4 ← R5;  R5 ← R6;                                         18821800 T  0278:2
              ERRORFIXER(4);        % INVALID INDEX CHECK               18821900 T  0280:0
              END;                                                       18822000 T  0280:3
          TERMINATE(P1MIX);  TERMINALMESSAGE(-I);                  %WF  18822100 T  0280:3
C29:: COMMENT THIS COMMUNICATE PROVIDES FOR DS-ING AN OBJECT PROGRAM     18830000 T  0282:2
              AND/OR SPOUTING A MESSAGE ABOUT A PROGRAM.                 18830100 T  0283:0
              R4 IS USED TO SPECIFY THE  MESSAGE REQUIRED.               18830200 T  0283:0
              R5 SET TO TRUE SPECIFIES P1MIX IS TO BE DS-ED.             18830300 T  0283:0
              T IS THE ADDRESS OF THE MESSAGE(WHICH ENDS WITH A "←").    18830400 T  0283:0
              REMAINING VARIABLES MAY BE USED AS DESIRED;                18830500 T  0283:0
        T ← GETSPACE(12,0,0)+2;                                          18830600 T  0283:0
        IF R4 ≤ 2 THEN                                                   18830700 T  0285:1
            BEGIN;                  % 29-1                               18830800 T  0286:0
            STREAM(J:T);                                                 18830900 T  0286:2
              BEGIN                 % 29-2                               18831000 T  0287:3
              DS ← 9 LIT "-DEC ERR:";                                    18831100 T  0287:3
              J ← DI;                                                    18831200 T  0289:1
              END;                  % 29-2                               18831300 T  0289:2
            J ← P;                                                       18831400 T  0289:3
            IF R4=1 THEN                                                 18831500 T  0290:1
              BEGIN;                % 29-3                               18831600 T  0291:0
              STREAM(T1←(R6<0),R6←ABS(R6),J);                            18831700 T  0291:2
                BEGIN               % 29-4                               18831800 T  0293:2
                DS←17 LIT "ARRAY DIMENSION= ";T1(DS← 1 LIT "-";);        18831900 T  0293:2
                S1 ← LOC R6;                                             18832000 T  0297:1
                DS ← 8 DEC;  J  ←DI;                                     18832100 T  0297:2
                DI ← DI-8;                                               18832200 T  0298:0
                DS ← 7 FILL; DI ← J;                                     18832300 T  0298:1
                DS ← 2 LIT " ←";                                         18832400 T  0298:3
                END;                % 29-4                               18832500 T  0299:1
              END                   % 29-3                               18832600 T  0299:2
            ELSE                                                         18832700 T  0299:2
              BEGIN;                % 29-5                               18832800 T  0299:2
              STREAM(R6,J);                                              18832900 T  0300:0
                BEGIN               % 29-6                               18833000 T  0301:0
                DS ←15 LIT "NO. DISK ROWS= ";                            18833100 T  0301:0
```

```
                    SI ← LOC R6;                                          18833200 T  0303:1
                    DS ← 8 DEC;    J ← DI;                                18833300 T  0303:2
                    DI ← DI-8;                                            18833400 T  0304:0
                    DS ← 7 FILL;  DI ← J;                                 18833500 T  0304:1
                    DS ← 2 LIT " ←";                                      18833600 T  0304:3
                    END;        % 29-6                                   18833700 T  0305:1
                END;            % 29-5                                   18833800 T  0305:2
            END;                % 29-1                                   18833900 T  0305:2
            IF R4=3 THEN                                                 18834000 T  0305:2
                BEGIN                                                    18834100 T  0306:1
                ;STREAM(T);                                              18834200 T  0306:3
                    BEGIN                                                18834300 T  0307:2
                    DS← 18 LIT "-MAXN ARGMNT EXP:←";                     18834400 T  0307:2
                    END;                                                 18834500 T  0310:0
                END;                                                     18834600 T  0310:1
            IF R4 = 4 THEN STREAM(T); BEGIN                              18834700 T  0310:1
                    DS:=37 LIT"ILLEGAL PERFORM - RETURN OR RELEASE:←";   18834800 T  0312:1
            END;;                                                        18834900 T  0317:1
            IF R5 THEN                                                   18835000 T  0317:2
            BEGIN               % 29-7                                   18835100 T  0317:3
                TERMINATE(P1MIX);                                        18835200 T  0318:1
                TERMINALMESSAGE(-T);                                     18835300 T  0319:0
            END                 % 29-7                                   18835400 T  0320:0
        ELSE                                                             18835500 T  0320:0
            SPOUT(T);                                                    18835600 T  0320:0
        GO TO INITIATE;                                                  18835700 T  0321:1
    C38:: % RETURN STORAGE AND AUXILIARY MEMORY FOR CODE OR DATA SEGMENT 18840000 T  0321:3
        IF A4.[1:1] THEN % CODE SEGMENT                                  18840100 T  0322:0
        BEGIN A ← @RT[P1MIX,*];  T ← NFLAG(A4 & (I←0)[5:5:1]);           18840200 T  0323:0
            DO IF T.[5:1] THEN I ← T.[FF]    ELSE                        18840300 T  0327:1
               IF T.[6:1] THEN I ← T.[7:11] ELSE                         18840400 T  0329:3
                                T ← NFLAG(A[T.[7:11]])                   18840500 T  0332:3
            UNTIL I≠0;                                                   18840600 T  0334:0
            ADDR ← I INX A[4];                                           18840700 T  0336:1
                IF ADDR[0].[3:1] THEN                                    18840800 T  0337:3
                        COMPLEXSLEEP((NOT ADDR[0].[3:1]));               18840900 T  0338:2
18791300    ACCIDENTAL ENTRY AT 1
                ADDR[0].[3:2] ← 2;                                       18841000 T  0345:0
                COMMENT TURN OFF AUXILIARY MEMORY FLAG, AND TURN         18841100 T  0346:3
                        ON THE "DO NOT TOUCH" FLAG FOR                   18841200 T  0346:3
                        RE-ENTRANT PRESENCE-BIT PROTECTION;              18841300 T  0346:3
                IF NOT STOREDY THEN SLEEP([TOGLE], STOREMASK);           18841400 T  0346:3
                LOCKTOG(STOREMASK);                                      18841500 T  0349:3
                IF (I ← (T ← ADDR[0]).[FF])>1023 THEN % PRESENT          18841600 T  0353:1
                BEGIN J ← M[I-1];  P(OLAY(I-2), DEL) END                 18841700 T  0355:3
        $ SET OMIT = NOT(AUXMEM)                                         18841800 T  0359:3
        $ SET OMIT = AUXMEM                                              18842200 T  0359:3
            ;                                                            18842300 T  0359:3
        $ POP OMIT                                                       18842400 T  0359:3
        $ SET OMIT = NOT(AUXMEM)                                         18842500 T  0359:3
                ADDR[0].[3:1]←0;                                         18843400 T  0359:3
                COMMENT 3:1 =0, NOT BEING MASSAGED BY PRESENCE BIT       18843500 T  0361:2
                        4:2 =2, ASSIGN AUXILIARY MEMORY NEXT OVERLAY;    18843600 T  0361:2
                UNLOCKTOG(STOREMASK);                                    18843700 T  0361:2
            GO TO INITIATE                                               18843800 T  0365:0
        END; % OF CODE SEGMENTS                                          18843900 T  0365:2
        IF NOT STOREDY THEN SLEEP([TOGLE], STOREMASK);                   18844000 T  0365:2
        LOCKTOG(STOREMASK);                                              18844100 T  0368:2
        IF (T ← NFLAG(M[J ← A4.[FF]])).[2:1] THEN                        18844200 T  0372:0
        BEGIN M[J].[3:3]←7; %MARK AS "READ-ONLY", ALREADY WRITTEN        18844300 T  0375:2
```

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                M[T INX NOT 0] ← (*P(DUP)) & ((I←P(DUP),[FF]) OR 1)[CTF];          18844400 T  0378:3
                AITL ← M[T INX NOT 1],[2:1];                                       18844500 T  0383:2
                P(OLAY(T,[CF]-2));                                                 18844600 T  0386:1
        $ SET OMIT = NOT(DEBUGGING)                                                18844700 T  0388:0
                P(DEL)                                                             18845100 T  0388:0
            END ELSE AITL←((I←T,[CF])=1);                                          18845200 T  0388:1
            IF I>511 THEN DISKRTN(I, T,[8:10]);                                    18845300 T  0391:0
            M[J] ← FLAG(T&0[2:42:6]&AITL[CTC]);                                    18845400 T  0393:3
            UNLOCKTOG(STOREMASK);                                                  18845500 T  0397:0
            GO TO INITIATE;                                                        18845600 T  0400:2
        C39:: % BASIC ARRAY RETURN                                                 18850000 T  0401:0
            ARTN(N4[0],R5);            % RETURN R5 DIM ARRAY                      18850100 T  0401:0
            GO TO C3A;                 % TO REMOVE FROM AIT                       18850200 T  0402:0
        C47::   PRT[P1MIX,8] ← FLAG(R8);%DONE ONLY AT END OF INTERRUPTER INTRIN    18860000 T  0402:2
            P(8 INX PRT[P1MIX,TSX],DUP,LOD,0,FFX,XCH,STD);                         18860100 T  0405:0
            GO TO INITIATE;                                                        18860200 T  0408:0
        % MEMORY DUMP OR TRACE FROM THE INTRINSICS                                18870000 T  0408:2
        C48: %                                                                     18870100 T  0408:2
         $ SET OMIT = NOT(DUMP OR DEBUGGING)                                       18870200 T  0408:2
            GO INITIATE;%                                                          18870900 T  0408:2
        END OF COMMUNICATEO;                                                       18872000 T  0409:2
                                                                                        SIZE= 0410 WORDS
        PROCEDURE SHORTCOMMUNICATE;                                                19500000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00473
        BEGIN REAL R4=-4,R5=-5,R6=-6,R7=-7,R8=-8,R9=-9;                  % (SHM)   19501000 T  0000:0
            INTEGER I4=-4,I5=-5,I6=-6;                                             19502000 T  0000:0
            ARRAY A4=-4[*],A5=-5[*],A6=-6[*];                                      19503000 T  0000:0
            ARRAY A7=-7[*];                                                        19504000 T  0000:0
            NAME N4=-4,N5=-5,N6=-6;                                                19505000 T  0000:0
          LABEL C0,C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,             19506000 T  0000:0
                C16,C17,C18,C19,C20,C21,C22,C23,C24,C25,C26,C27,C28,               19507000 T  0000:0
               C29,C30,C31,C32,C33,C34,C35,C36,C37,C38,C39,C40,C41,C42,C43,C44     19508000 T  0000:0
             ,C46,SL,TW;                                                           19508010 T  0000:0
           SWITCH C1=SL,TW,C2,TW,SL,C5,TW,TW,TW,C9,C10,C11,TW,C13,C14,             19511000 T  0000:0
                   SL,SL,TW,C18,C19,TW,TW,TW,C23,C24,TW,TW,C27,C28,                19512000 T  0000:0
                   TW,SL,C31,SL,SL,C34,C35,C36,C37,TW,TW,C40,C41,                  19513000 T  0000:0
                   C42,C43,C44,SL,C46,TW,TW,SL;                                    19513010 T  0000:0
            DEFINE CN=DIFFCOM#;                                                    19515000 T  0000:0
            LABEL AC0,AC1,AC2,AC3,AC4,AC5;                                         19517000 T  0000:0
           SWITCH AC ← AC0,AC1,AC2,AC3,AC4,AC5;                                    19518000 T  0000:0
            REAL I,J,T,RCW=+0;                                                     19519000 T  0000:0
            ARRAY AIT[*]; REAL AITL=AIT; ARRAY A=AIT[*];                           19520000 T  0000:0
                ARRAY FIB=AIT[*],FPB[*],H[*];LABEL CHANGENAME;                     19521000 T  0000:0
            NAME ADDR;                                                             19522000 T  0000:0
            DEFINE BITS=(IF SB THEN DS←SET ELSE DS←RESET; SKIP SB)#;               19523000 T  0000:0
            CHECKSTACKSPACE;%                                              %WF     19525000 T  0000:0
               IF P(PRT[P1MIX,9],DUP) < 0 THEN                                     19525100 T  0006:0
               BEGIN P(DEL); TERMINATE(P1MIX); TERMINALMESSAGE(81) END;            19525200 T  0007:3
               GO TO C[P];                                                         19526000 T  0010:0
        SL: P(.COMMUNICATE1); GO DIFFCOM;                                          19526100 T  0035:3
        TW: P(.COMMUNICATEO); GO DIFFCOM;                                          19526200 T  0036:2
        %       SLEEP                                                              19541100 T  0037:1
        C2:     SLEEP([M[A5]],R4); GO TO RETURN;                                   19542000 T  0037:1
        %       RETURN SPECIFIC ARRAY                                              19543000 T  0040:0
        %       EOJ                                                                19552000 T  0040:0
        C5:     P(.COM5); GO TO CN;                                                19553000 T  0040:0
        %       FILL WITH INQUIRY                                                  19559000 T  0040:3
        C9:                                                                        19560000 T  0040:3
         $ SET OMIT = NOT(DATACOM)                                                 19561000 T  0040:3
        %       BLOCK EXIT                                                         19565000 T  0040:3
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C10:  P(.ASR); GO TO CN;                                                  19566000 T  0040:3
%     ALGOL I/O FUNCTIONS                                                 19567000 T  0041:2
C11:                                                        % (SHM)       19568000 T  0041:2
        IF R4=0 THEN FILEOPEN(0,A5,[CF]);                   % (SHM)       19569000 T  0041:2
        IF R4=6 THEN                                        % (SHM)       19570000 T  0044:2
           BEGIN FILECLOSE(NFLAG(A5)); GO TO INITIATE END;  % (SHM)       19571000 T  0045:1
        IF R4=4 THEN                                        % (SHM)       19572000 T  0047:2
           BEGIN                                            % (SHM)       19573000 T  0048:1
           IF A5[4] THEN % FILE IS IN DIRECTORY             % (SHM)       19574000 T  0048:3
           FORGETSPACE(DIRECTORYSEARCH(R8,R7,=(A5.[CF])&R6[CTF])) ELSE    19575000 T  0049:1
              BEGIN                                         % (SHM)       19576000 T  0053:0
              IF (T:=R9.[18:5]) GTR 0 THEN % EU SPECIFIED   % (SHM)       19576100 T  0053:2
                 T:=(IF T GTR 20 THEN 0 ELSE -T) ELSE       % (SHM)       19576200 T  0055:1
              IF (T:=R9.[16:2]) GTR 0 THEN % SPEED SPECIFIED % (SHM)      19576300 T  0058:3
                 T:=(IF T GTR 2 THEN 0 ELSE T) ELSE         % (SHM)       19576400 T  0061:0
              T:=0; % NO SPEED OR EU SPECIFIED              % (SHM)       19576500 T  0064:1
              A5[R6]:=PETUSERDISK(A5[8],T);                 % (SHM)       19576600 T  0065:2
              END;                                          % (SHM)       19576700 T  0067:3
           GO TO INITIATE;                                  % (SHM)       19577000 T  0067:3
           END;                                             % (SHM)       19577100 T  0068:1
        P(.COM11); GO TO DIFFCOM;                           % (SHM)       19578000 T  0068:1
%     COBOL I/O FUNCTIONS                                                 19579000 T  0069:0
C13:  P(.COM13); GO TO CN;                                                19580000 T  0069:0
%     INVERT OVERLAYABLE STATUS                                           19581000 T  0069:3
C14:  IF NOT N4[0].[2:1] THEN MAKEPRESENT([N4[0]] INX 0);                 19582000 T  0069:3
      M[N4[0] INX NOT 1]←P(DUP,LUD)&P(DUP,LNG)[2:2:1];                    19583000 T  0072:2
      GO TO INITIATE;                                                     19584000 T  0076:1
%     ERROR - INQUIRY WRITE                                               19584200 T  0076:3
C18:                                                                      19584300 T  0076:3
 $ SET OMIT = NOT(DATACOM)                                                19584400 T  0076:3
      GO TO INITIATE;                                                     19584700 T  0076:3
%     PRINT BACK-UP                                                       19585000 T  0077:1
C19:  P(.COM19); GO TO CN;                                                19586000 T  0077:1
%     LOAD CONTROL                                                        19587000 T  0078:0
C23:: P(.COM23); GO TO CN;                                                19588000 T  0078:0
%     RETURN ONE ROW OF A DISK FILE                                       19589000 T  0078:3
C24:: T:=A4[R5]; A4[R5]:=0;                                               19590000 T  0078:3
 $ SET OMIT = SHAREDISK                                                   19591000 T  0081:1
      FORGETUSERDISK(T,A4[8]);                                            19592000 T  0081:1
 $ POP OMIT                                                               19592001 T  0082:2
 $ SET OMIT = NOT(SHAREDISK)                                              19593000 T  0082:2
      GO TO INITIATE;                                                     19595000 T  0082:2
%     COBOL DATACOM I INTERROGATE                                         19601000 T  0083:0
C27::                                                                     19602000 T  0083:0
 $ SET OMIT = NOT(DATACOM )                                               19603000 T  0083:0
      GO INITIATE;                                                        19637000 T  0083:0
%     ALGOL DATACOM I INTERROGATE                                         19638000 T  0083:2
C28::                                                                     19639000 T  0083:2
 $ SET OMIT = NOT(DATACOM )                                               19640000 T  0083:2
      GO INITIATE;                                                        19668000 T  0083:2
%     ALGOL "DELAY" FUNCTION -- WAIT WITH TIMEOUT                         19669000 T  0084:2
C31:: IF A6.[CF]<512 THEN%   CAUGHT SOMEBODY BEING SNEAKY                 19670000 T  0084:2
      BEGIN TERMINATE(P1MIX);%                                            19671000 T  0086:2
            TERMINALMESSAGE(17);%                                         19672000 T  0087:3
      END;%                                                               19673000 T  0088:2
      IF NOT (M[A6] AND R5)=NOT 0 THEN%                                   19674000 T  0088:2
            IF (I4 + I4×60+CLOCK+P(RTR))>CLOCK+P(RTR) THEN%               19675000 T  0091:1
         COMPLEXSLEEP((CLOCK+P(RTR)>I4) OR          % TIMED OUT           19676000 T  0095:0
                      (TERMIX.[CF]=P1MIX) OR        % DISCONTINUED         19677000 T  0095:0
                      (NOT(M[A6] AND R5)≠NOT 0))%% WAIT SATISFIED         19678000 T  0095:0
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18840900    ACCIDENTAL ENTRY AT 0
                I6 ← NOT(M[A6] AND R5)≠NOT 0;%                                  19679000 T  0105:3
                GO TO INITIATE;%                                                19680000 T  0109:0
          C34:: IF (T←R4) > 0 THEN STREAM(R4,T←T+SPACE(17));                    19680200 T  0109:2
                BEGIN S1←R4; DS←17 WDS END;                                     19680300 T  0114:3
                TERMINATE(P1MIX);%                                              19680400 T  0115:2
                TERMINALMESSAGE(-T);%                                           19680500 T  0116:1
          C35:: IF R4.[FF] LEQ 33 THEN P(.LIBRARYDUMP)                          19681000 T  0117:1
                                  ELSE IF R4.[FF] LEQ 35 THEN P(.LIBRARYLOAD)   19681100 T  0120:0
                                                  ELSE P(.LIBRARYZERO);         19681200 T  0122:2
                  GO TO CN;                                                     19682000 T  0123:1
          C36::     % TYPE 19 DATACOM I/O INTERFACE                             19683000 T  0123:3
           $ SET OMIT = DATACOM                                                 19683499 T  0124:0
                  GO TO INITIATE;                                               19683500 T  0124:0
           $ POP OMIT                                                           19683501 T  0124:2
           $ SET OMIT = NOT(DATACOM )                                           19684000 T  0124:2
          C37::                                                                 19685010 T  0124:2
                  AIT←JARROW[P1MIX];                                            19685015 T  0124:2
                IF AIT[9].[FF]=0 THEN AIT[9].[FF]←GETESPDISK;                   19685020 T  0126:0
                H←[M[GETSPACE(5,0,0)+2]]&5[8:38:10];                            19685025 T  0130:2
                H[1]←R5;H[2]←R4;                                                19685030 T  0134:1
           $ SET OMIT = NOT(DATACOM )                                           19685035 T  0136:3
           $ SET OMIT = DATACOM                                                 19685050 T  0136:3
                H[3]←0;                                                         19685055 T  0136:3
           $ POP OMIT                                                           19685060 T  0138:0
                DISKWAIT(H INX 0.5,AIT[9].[FF]);                                19685065 T  0138:0
                FORGETSPACE(H);                                                 19685070 T  0141:0
                GO TO INITIATE;                                                 19685075 T  0142:0
          C40:: IF R5.[8:10]=1023 THEN                                          19685340 T  0142:2
                BEGIN M[R5.[CF]]:=PRNTABLE[R5.[FF]];GO INITIATE;END ELSE        19685350 T  0144:1
                IF R5.[CF]=0 THEN                                               19685360 T  0148:0
                BEGIN LINKUP(R6,R5:=R5.[FF]);                                   19685370 T  0149:3
                      SLEEP([M[R5]],@1000000000000000); GO RETURN;              19685380 T  0152:1
                END ELSE                                                        19685390 T  0154:3
                IF R5.[15:15]=0 THEN                                            19685400 T  0154:3
                BEGIN                                                           19685410 T  0158:1
           $ SET OMIT = NOT(DATACOM )                                           19685419 T  0158:3
           $ SET OMIT = DATACOM                                                 19685429 T  0158:3
                      M[R5]:=0;                                                 19685430 T  0158:3
           $ POP OMIT                                                           19685431 T  0160:1
                      GO INITIATE;                                              19685440 T  0160:1
                END ELSE                                                        19685450 T  0160:3
                IF R5.[FF]=@77777 THEN                                          19685452 T  0160:3
                BEGIN M[R5]:=MUD310S; GO INITIATE; END ELSE                     19685456 T  0162:2
                BEGIN INDEPENDENTRUNNER(P(.DKBUSINESS),R5,128); SLEEP([M[R5]],1);19685460 T  0165:2
                      GO RETURN;                                                19685470 T  0170:1
                END;                                                            19685480 T  0170:3
          C41:: IOREQUEST(@7,R6,FLAG(R5)); GO INITIATE;                         19685550 T  0170:3
          C42:: P(.,TISKTASK); GO TO CN;                                        19685560 T  0173:0
          C43::     H ← PRT[P1MIX,TSX]; % SET TASK ATTRIBUTES                   19685570 T  0173:3
                  H[1] ← JAR[P1MIX,0]; H[2] ← JAR[P1MIX,1];                     19685580 T  0175:2
                  H[3] ← 2;            H[4] ← P1MIX;          H[6] ← 2;        19685585 T  0179:2
                  GO TO INITIATE;                                               19685590 T  0183:1
          C44:: P(.,PICKTHELOCK); GO TO CN;                                     19685595 T  0183:3
          C46:: P(.,EVENTANDINTERRUPT); GO TO CN;   % ATTACH, DETACH, CAUSE STMTS 19685596 T  0184:3
          END OF SHORT COMMUNICATE;%                                            19686000 T  0185:3
                                                                                          SIZE= 0186 WORDS
          PROCEDURE TISKTASK;                                                   19687000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00480
           % A  COBOL OR ALGOL PROGRAM WHICH EITHER CONTAINS OR IS INVOKED BY A 19687100 T  0000:0
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TASKS

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% PROCESS, CALL, OR RUN/EXECUTE STATEMENT, OR MANIPULATES LOCKS (COBOL)        19687120 T  0000:0
% OR EVENTS (ALGOL), WILL BE FLAGGED IN SEGMENT 0 (WORD 2 [3:1]=1) OF          19687140 T  0000:0
% ITS CODE FILE AS HAVING A TASK ARRAY.                                        19687150 T  0000:0
% THE FORMAT OF THE TASK ARRAY (MYSELF AT PRT[TSX]) IS AS FOLLOWS              19687200 T  0000:0
%       TSKA[0]          = TASKVALUE: PROVIDED FOR USER                       19687300 T  0000:0
%       TSKA[1]          = 7 CHR MFID OF CODE FILE                            19687400 T  0000:0
%       TSKA[2]          = 7 CHR FID OF CODE FILE                             19687500 T  0000:0
%       TSKA[3]          = STATUS: 1=SCHEDULED                                19687600 T  0000:0
%                                  2=ACTIVE                                   19687610 T  0000:0
%                                 -1=TERMINATED (DS-ED OR EOJ)                19687650 T  0000:0
%                                 -2=INITIATION ATTEMPTED BUT FAILED          19687680 T  0000:0
%       TSKA[4]          = STACKNO: MIX INDEX IF RUNNING                      19687700 T  0000:0
%                                   SCHEDULE-ID IF SCHEDULED                  19687750 T  0000:0
%       TSKA[5]          =HEAD OF LIST OF LOCK-ITEMS IN CONTROL OR QUEUED     19687780 T  0000:0
%       TSKA[6]          = TYPE: 0=ASYNCHRONOUS DEPENDENT (PROCESS)           19687800 T  0000:0
%                                1=SYNCHRONOUS DEPENDENT  (CALL)             19687840 T  0000:0
%                                2=INDEPENDENT            (RUN/EXECUTE)      19687850 T  0000:0
%       TSKA[7]          = CALL STATE: 0=INITIAL                              19687860 T  0000:0
%                                      1= EXIT PROGRAM/                       19687870 T  0000:0
%                                         EXIT PROGRAM RETURN HERE            19687872 T  0000:0
%                                      2=CONTINUED OR RE-CALLED               19687874 T  0000:0
%       TSKA[8]          : [1:1]=1 IFF JUST EXECUTED INTERRUPTER INTRINSC     19687876 T  0000:0
%                                  AND SFINTQ IS NON-EMPTY                    19687878 T  0000:0
%                          [2:1]=1 IFF SFINTQ IS NON-EMPTY                    19687880 T  0000:0
%                          [3:1]=1 IFF INTERRUPTER INTRINSIC IS RUNNING       19687882 T  0000:0
%                          [4:1] = SFINTQ INTERLOCK BIT (ON TO START)         19687883 T  0000:0
%                          [FF] = ABSOLUTE ADDRESS OF OLD IRCW                19687884 T  0000:0
%                          [CF] = HEAD OF LIST OF DECLARED INTERRUPTS         19687885 T  0000:0
% SEGMENT 0 FOR IPC PROGRAM FILES:                                             19687886 T  0000:0
%       S[2].[2:1]          =1 IF THERE ARE DECLARED INTERRUPTS               19687887 T  0000:0
%       S[2].[3:1]          =1 FOR AN IPC PROGRAM FILE                        19687888 T  0000:0
%                           (EITHER INVOKING OR INVOKED)                      19687889 T  0000:0
%       S[2].[4:1]          =1 FOR AN INVOKED IPC PROGRAM FILE                19687890 T  0000:0
% NOTE: S[2].[2:3] = JAR[2].[5:3], JAR[2].[6:1]=1 INDICATES TO COMS           19687892 T  0000:0
%        THAT THIS JOB MAY HAVE DEPENDENT TASK DESCENDENTS TO BE DS-ED        19687894 T  0000:0
%        OR ES-ED AND LOCK QUEUES TO BE CLEANED UP WHEN IT TERMINATES.        19687896 T  0000:0
%       S[8]                NUMBER OF TASK PARAMETERS TO BE RECEIVED          19687898 T  0000:0
%                           ( = N BELOW).                                     19687900 T  0000:0
%       S[9]                DISK ADDRESS OF PARAMETER DESCRIPTION SEG         19687910 T  0000:0
%  FORMAT OF ENTRY IN PARAMETER DESCRIPTION SEGMENT:                          19687920 T  0000:0
%       (BEGINNING IN WORD 1)                                                 19687925 T  0000:0
%       [18:15] : TYPE -   0  TASK ARRAY      - NAME                          19687930 T  0000:0
%                          1  EVENT/LOCK      - NAME                          19687935 T  0000:0
%                          2  PRT CELL        - NAME                          19687940 T  0000:0
%                          3  PRT CELL        - VALUE                         19687945 T  0000:0
%                          4  (SAVE) ARRAY    - NAME                          19687950 T  0000:0
%                          5  ARRAY           - VALUE                         19687955 T  0000:0
% (ONLY 1-DIMENSIONAL ARRAYS CAN BE PASSED AS TASK PARAMETERS).                19687957 T  0000:0
%       [8:10]  : SIZE  -  SIZE OF ARRAY FOR TYPES 4 AND 5, ELSE 0            19687960 T  0000:0
%       [33:15] : LOCATION-PRT LOCATION FOR TYPES 0-4, FOR TYPE 5:            19687965 T  0000:0
%                          -RELATIVE DISK ADDRESS OF TYPE-2 SEGMENT           19687970 T  0000:0
% TISTASK MAKES A TEST FOR AGREEMENT BETWEEN THE TASK PARAMETERS               19687975 T  0000:0
% SPECIFIED IN THE PARAMETER DESCRIPTION SEGMENT AND THOSE SPECIFIED BY        19687977 T  0000:0
% THE F- CELLS (SEE BELOW). LACK OF AGREEMENT EITHER DS-ES THE PARENT          19687980 T  0000:0
% OR CAUSES A 1 TO BE RETURNED (IN THE CASE OF A COBOL PROGRAM WHICH           19687982 T  0000:0
% CONTAINS AN "ON EXCEPTION" CLAUSE).                                          19687984 T  0000:0
% TISKTASK COPIES THE CODE FILE, FILLING NAME AND VALUE PARAMETERS INTO        19687990 T  0000:0
% THE NEW PRT AND WRITING OUT VALUE ARRAYS AS TYPE-2 SEGMENTS. THE JOB         19687995 T  0000:0
% IS ENTERED IN THE SCHEDULE AND THE SCHEDULE-ID IS ENTERED IN THE             19687997 T  0000:0
% TASK ARRAY. THE NEW SHEET ENTRY IS FLAGGED A GO JOB (AS FROM A               19687998 T  0000:0
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% COMPILE-AND-GO).                                                          19687999 T  0000:0
BEGIN                                                                       19688000 T  0000:0
    REAL MFID=-4,FID=-5,        % FILE ID OF CODE FILE TO BE INVOKED         19688050 T  0000:0
                                % MFID<0  IF ON EXCEPTION CLAUSE IS PRESENT  19688060 T  0000:0
                                % FID<0   IF CALL OR CONTINUE STATEMENT      19688070 T  0000:0
         N=-6;                  % NUMBER OF F- PARAMS BETWEEN F-7 AND MKSCW  19689000 T  0000:0
                                %    THERE WILL BE A PAIR OF F- CELLS FOR    19689010 T  0000:0
                                %    EACH TASK PARAMETER. F(-I) CONTAINS     19689020 T  0000:0
                                %    THE NAME OR VALUE OF THE PARAMETER.     19689030 T  0000:0
                                %    F(-(I+1)) CONTAINS THE TYPE             19689040 T  0000:0
                                %    (AS IN SEGMENT 0).                      19689050 T  0000:0
                                %    (TSKA IS THE FIRST TASK PARAMETER)      19689060 T  0000:0
                                % N<0 IF CONTINUE STATEMENT                  19689070 T  0000:0
    ARRAY NAME PARM;                                                        19691000 T  0000:0
    ARRAY S[*],R[*],H[*],D[*],W[*],                                         19692000 T  0000:0
         TSKA=-7[*];            % TASK ARRAY DESCRIPTOR FOR PROCESS, CALL   19692100 T  0000:0
                                % INTEGER = TASK ARRAY LENGTH FOR RUN       19692200 T  0000:0
    REAL T,T1,T2,T3,T4,ONEXCEPTION,CALLEDORCONT,                            19693000 T  0000:0
         VARRAY,IOD,IOD1,NR,SR,HADDR,PRTRLOC,PRTSZ,ERR,SZ,S1,CR,PRTS;       19694000 T  0000:0
    LABEL L1,ERROR,NEXTROW,L2,XYT;                                          19695000 T  0000:0
    INTEGER PADDR,ADDR;                                                     19696000 T  0000:0
    DEFINE CONTINUED = VARRAY#, SAVEBIT = IOD1#;                            19696500 T  0000:0
         ONEXCEPTION ← MFID<0; MFID ← ABS(MFID);                            19696600 T  0000:0
         CALLEDORCONT ← FID<0; FID ← ABS(FID);                              19696700 T  0009:1
         CONTINUED ← N<0; N ← ABS(N);                                       19696800 T  0011:2
         PARM ← [N];                                                        19697000 T  0013:3
         IF CALLEDORCONT THEN          % CALL OR CONTINUE STATEMENT          19697200 T  0014:2
    BEGIN     IF CONTINUED THEN IF TSKA[3]≠2 OR TSKA[7]≠1 THEN              19697300 T  0014:3
                   BEGIN     ERR ← 1; TERMINATE(P1MIX&98[CTF]); GO XYT;     19697400 T  0018:1
                   END;                                                     19697500 T  0021:1
              IF TSKA[3]=2 THEN IF TSKA[7]=1 THEN                           19697600 T  0021:1
                   BEGIN     TSKA[7] ← 2; GO XYT;                           19697700 T  0023:3
                   END ELSE ELSE TSKA[7] ← 0;                               19697800 T  0026:0
    END;                                                                    19697900 T  0028:1
         IF (T:=DIRECTORYSEARCH(MFID,FID,3)) GEQ 64 THEN                    19698000 T  0028:1
    BEGIN     IF SECURITYCHECK(MFID,FID,USERCODE[P1MIX],T)=0 THEN           19699000 T  0030:2
L1:      BEGIN     ERR ← 1;                                                19700000 T  0033:1
                   IF T GEQ 64 THEN FORGETSPACE(T);                         19700500 T  0034:2
                   GO ERROR;                                                19701000 T  0036:2
         END;                                                               19702000 T  0037:0
              IF M[T INX 4].[9:2]≠3 THEN GO L1; % NOT EXECUTABLE CODE       19703000 T  0037:0
    END ELSE GO L1;                                                         19704000 T  0040:0
         IF TSKA.PBIT THEN IF TSKA[3]≥1 THEN GO L1;                         19704100 T  0040:0
         S ← [M[GETSPACE(30,2,0)+2]]&30[8:38:10];                           19705000 T  0043:0
% READ SEGMENT ZERO INTO S                                                  19706000 T  0046:3
         DISKWAIT(-S,[CF],30,M[T INX 10]);                                  19707000 T  0046:3
         IF S[8]≠N THEN                                                     19708000 T  0050:1
L2: BEGIN     FORGETSPACE(S);                                               19709000 T  0051:1
              GO L1;                                                        19710000 T  0052:3
    END;                                                                    19711000 T  0053:1
         W ← [M[GETSPACE(T3+N DIV 2+1,2,0)+2]]&T3[8:38:10];                 19711100 T  0053:1
% READ IPC PARAMETER DESCRIPTION SEGMENT INTO W                             19711200 T  0058:2
         DISKWAIT(-W,[CF],T3,ADDR ← M[T INX (10+((T2+S[9])                  19711300 T  0058:2
                   DIV (SR+M[T INX 8])))] + (T2 MOD SR));                   19711400 T  0061:0
         FOR T1 ← 2 STEP 2 UNTIL N DO                                       19713000 T  0067:0
              IF PARM[NOT(T1-1)]≠W[T1 DIV 2].[FF] THEN                      19714000 T  0068:0
                   BEGIN     FORGETSPACE(W);                                19714100 T  0071:3
                             GO L2;                                         19714200 T  0073:1
                   END;                                                     19714300 T  0073:3
% READ PRT INTO R                                                           19718000 T  0076:0
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            R ← [M[GETSPACE(S[3],2,0)+2]]&S[3][8:38:10];                    19719000 T  0076:0
            DISKWAIT(-R,[CF],S[3],PADDR ← M[T INX (10+((PRTS+S[2],[CF])     19720000 T  0080:1
                    DIV SR))] + (PRTS MOD SR));                             19721000 T  0083:0
            FOR T1 ← 2 STEP 2 UNTIL N DO                                    19722000 T  0087:3
                IF PARM[NOT(T1-1)]=5 THEN          % PASS-BY-VALUE ARRAY     19723000 T  0089:0
        BEGIN   PARM[NOT(T1-1)] ← W[T1 DIV 2],[CF];  % RELATIVE DISK LOCA-  19724000 T  0091:1
                VARRAY ← VARRAY+1;                   % TION OF TYPE-2 SEG   19725000 T  0095:1
        END ELSE                                                            19726000 T  0096:2
        BEGIN   R[W[T1 DIV 2],[CF]] ← *[PARM[NOT(T1-2)]];% PLACE NAME        19727000 T  0096:2
                PARM[NOT(T1-1)] ← -@77777;                % OR VALUE IN PRT   19728000 T  0101:0
        END;                                                                19729000 T  0103:2
    % BUILD HEADER FOR NEW CODE FILE IN H                                   19730000 T  0105:3
            H ← [M[GETSPACE(30,2,0)+2]]&30[8:38:10];                        19731000 T  0105:3
            MOVE(30,T INX 0,[H]);                                           19732000 T  0109:2
            H[2] ← H[5] ← H[6] ← 0;                                         19733000 T  0111:3
            T4 ← M[T INX 9],[43:5]-1;                                       19733400 T  0115:0
            WHILE M[T INX (10+NR)]≠0 AND NR≤T4 DO NR ← NR+1; % NR = # ROWS   19733600 T  0118:0
            T4 ← NR+9;                                                      19734000 T  0125:0
            H[4],[16:20] ← 0;                                               19735000 T  0126:1
            H[9] ← NR;                                                      19735050 T  0128:3
            FOR T1 ← 10 STEP 1 UNTIL T4 DO H[T1] ← GETUSERDISK(SR);         19736000 T  0130:0
            HADDR ← GETESPDISK;                                             19737000 T  0135:1
            DISKIO(IOD,H INX 0-1,30,HADDR);                                 19738000 T  0136:1
            CR ← S[7],[FF];              % SAVE CORE REQ.                    19739000 T  0139:0
            PRTRLOC ← PRTS DIV SR;       % ROW PRT IS LOCATED IN             19740000 T  0140:3
            PADDR ←(PRTS MOD SR);        % WHICH SEGMENT IN ROW               19741000 T  0142:0
            PRTSZ ←((S[3]+29) DIV 30); % NUMBER OF SEGMENTS IT OCCUPIES       19742000 T  0143:1
            SLEEP([IOD],IOMASK);                                            19743000 T  0145:1
            S1 ← SR-1;                   % NO. OF SEGS/ROW - 1                19744000 T  0146:3
            FOR T1 ← 10 STEP 1 UNTIL T4 DO % COPY CODE FILE CHANGING PRT &   19745000 T  0148:0
        BEGIN   IF VARRAY>0 THEN             % PASS-BY-VALUE TYPE-2 SEGMENTS 19746000 T  0149:0
            BEGIN   FOR T2 ← 2 STEP 2 UNTIL N DO                            19747000 T  0149:3
                    IF (T1-10)=(PARM[NOT(T2-1)] DIV SR) THEN                19748000 T  0151:0
                        % THERE IS A TYPE-2 SEGMENT IN THIS ROW             19748050 T  0154:1
                    BEGIN   SZ ← (W[T2 DIV 2],[8:10] + 29) DIV 30;          19749000 T  0154:1
                            D ← PARM[NOT(T2-2)];                            19749050 T  0157:3
                            ADDR ← (PARM[NOT(T2-1)] MOD SR);% SEG NO.IN ROW 19750000 T  0160:0
                            VARRAY ← VARRAY-1;                              19751000 T  0162:3
                            T3 ← 0;                                         19751100 T  0164:0
                            WHILE T3≤S1 DO                                  19752000 T  0164:3
                        BEGIN IF (T1-10)=PRTRLOC AND T3=PADDR THEN          19753000 T  0166:0
                            BEGIN   DISKWAIT(R,[CF],PRTSZ×30,H[T1]+PADDR);  19753100 T  0168:1
                                    T3 ← T3+PRTSZ;                          19753200 T  0171:3
                            END ELSE IF T3=ADDR THEN                        19753300 T  0173:1
                            BEGIN   WHILE D.PBIT=0 DO                       19754000 T  0174:2
                                        MAKEPRESENT([D] INX 0);             19754100 T  0177:0
                                    SAVEBIT ← M[D INX NOT 1],[2:1];         19754200 T  0179:0
                                    P(M[D INX NOT 0]);                      19754250 T  0182:0
                                    M[D INX NOT 1],[2:1] ← 1;               19754300 T  0184:0
                                    DISKWAIT(D,[CF],SZ×30,H[T1]+ADDR);      19754400 T  0187:3
                                    M[D INX NOT 0] ← P(XCH);                19754500 T  0191:0
                                    M[D INX NOT 1],[2:1] ← SAVEBIT;         19754600 T  0193:2
                                    T3 ← T3+SZ;                             19758000 T  0197:1
                            END ELSE                                        19759000 T  0198:2
                            BEGIN   DISKWAIT(-S,[CF],30,M[T INX T1]+T3);    19760100 T  0198:2
                                    IF T1=10 THEN IF T3=0 THEN              19760150 T  0203:0
                                        S[2],[3:2] ← 3;                     19760160 T  0205:0
                                    DISKWAIT(S,[CF],30,H[T1]+T3);           19760200 T  0208:0
                                    T3 ← T3+1;                              19760250 T  0210:3
                            END;                                            19760300 T  0212:0
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                    END;                                                    19762000 T  0212:0
                        GO TO NEXTROW;                                      19763000 T  0212:2
                END;                                                        19764000 T  0213:0
            END;                                                            19766000 T  0215:1
                IF (T1=10)=PRTRLOC THEN  % PRT IS IN THIS ROW               19767000 T  0215:1
            BEGIN                                                           19767050 T  0216:2
                    T3 ← 0;                                                 19767100 T  0217:0
                    WHILE T3≤S1 DO                                          19767150 T  0217:3
                BEGIN IF T3≠PADDR THEN                                      19767200 T  0219:0
                    BEGIN     DISKWAIT(-S,[CF],30,M[T INX T1]+T3);          19767250 T  0219:3
                              IF T1=10 THEN IF T3=0 THEN S[2],[3:2] ← 3;    19767260 T  0224:1
                              DISKWAIT(S,[CF],30,H[T1]+T3);                 19767300 T  0229:1
                              T3 ← T3+1;                                    19767305 T  0232:0
                    END ELSE                                                19767310 T  0233:1
                    BEGIN     DISKWAIT(R,[CF],PRTSZ×30,H[T1]+PADDR);        19767320 T  0233:1
                              T3 ← T3+PRTSZ;                                19767340 T  0237:0
                    END;                                                    19767350 T  0238:1
                END;                                                        19767370 T  0238:1
                    GO TO NEXTROW;                                          19767380 T  0238:3
            END;                                                            19767390 T  0239:1
                FOR T3 ← 0 STEP 1 UNTIL S1 DO % WRITE OUT ROW UNCHANGED     19767400 T  0239:1
            BEGIN     DISKWAIT(-S,[CF],30,M[T INX T1]+T3);                  19767450 T  0240:0
                      IF T1=10 THEN IF T3=0 THEN S[2],[3:2] ← 3;            19767460 T  0244:0
                      DISKWAIT(S,[CF],30,H[T1]+T3);                         19767500 T  0249:0
            END;                                                            19767550 T  0251:3
        NEXTROW::                                                           19767600 T  0254:0
        END; FORGETSPACE(R); FORGETSPACE(T); FORGETSPACE(W);                19767650 T  0254:0
        % BUILD SHEET SKELETON IN S                                         19767700 T  0259:0
            STREAM(S);BEGIN  30(DS ← 8 LIT "0"); END;                       19767750 T  0259:0
            S[20] ← CR;                                                     19767760 T  0262:0
            S[25] ← HADDR;                                                  19767800 T  0263:1
            S[0] ← MFID;                                                    19767900 T  0264:2
            S[1] ← FID;                                                     19768000 T  0265:3
            S[2] ← S[18] ← PRYOR[P1MIX];                                    19768050 T  0267:0
        % WRITE OUT DUMMY CONTROL CARD FOR LOGGING ROUTINE                  19768100 T  0269:2
            STREAM(MID←MFID,FID←FID,T←[H[2]]);                              19768200 T  0269:2
            BEGIN  DS ← 11 LIT "CC EXECUTE ";                               19768300 T  0271:0
                   SI ← LOC MID; SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";       19768400 T  0272:3
                   SI ← LOC FID; SI ← SI+1; DS ← 7 CHR; DS ← 6LIT "END  ";  19768450 T  0274:0
                   S(DS ← 8 LIT " ");                                       19768500 T  0275:3
            END STREAM;                                                     19768550 T  0277:2
            H[0] ← 0;                                                       19768600 T  0277:3
            H[1] ← 10;                                                      19768650 T  0279:0
            S[6] ← GETESPDISK & 10 [CTF];                                   19768700 T  0280:1
            DISKWAIT(H,[CF],11,S[6] INX 0);                                 19768750 T  0282:1
            SLEEP([TOGLE],SHEETMASK); LOCKTOG(SHEETMASK);                   19768800 T  0285:0
            STREAM(A←0:B←P(,SCHEDULEIDS));                                  19768900 T  0290:0
            BEGIN SI←B;                                                     19768950 T  0291:1
                47(SKIP SB; SKIP DB; TALLY←TALLY+1;                         19769000 T  0291:2
                   IF SB THEN BEGIN END ELSE JUMP OUT);                     19770000 T  0292:2
                DS←SET; A←TALLY;                                            19771000 T  0294:0
            END STREAM;                                                     19772000 T  0294:2
            T1 ← P; S[3] ← O&T1[8:38:10];                                   19773000 T  0294:3
            S[23],[31:17]← (CLOCK+P(RTR)) DIV 60;                           19774000 T  0297:2
            S[21] ← S[12] ← 512;                                            19775000 T  0301:0
            S[16] ← S[17] ← @377777777777;                                  19776000 T  0303:1
            HADDR ← GETESPDISK;                                             19777000 T  0305:2
            IF SHEET[0],[CF]≠0 THEN                                         19778000 T  0306:2
        BEGIN     DISKWAIT(-H,[CF],30,T2 ← SHEET[0],[FF]);                  19779000 T  0308:0
                  H[29] ← HADDR;                                            19780000 T  0312:1
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                DISKWAIT(H.[CF],30,T2);                                  19781000 T  0313:2
        END ELSE SHEET[0] ← HADDR;                                       19782000 T  0315:2
            SHEET[0].[FF] ← HADDR;                                       19783000 T  0318:1
            S[29] ← 0;                                                   19784000 T  0320:1
            DISKWAIT(S.[CF],30,HADDR);                                   19785000 T  0321:2
            UNLOCKTOG(SHEETMASK); FORGETSPACE(S); FORGETSPACE(H);        19786000 T  0323:2
ERROR::                                                                  19787000 T  0329:0
            IF TSKA.PBIT THEN                                            19788000 T  0329:0
        BEGIN     TSKA[3] ← 1-3×ERR;            % STATUS: SCHEDULED OR ERROR   19791000 T  0330:0
                  IF NOT ERR THEN TSKA[4] ← T1; % SCHEDULE-ID            19792000 T  0332:3
        END;                                                             19793000 T  0335:0
            IF ERR AND NOT ONEXCEPTION THEN TERMINATE(P1MIX&94[CTF]) ELSE 19796000 T  0335:0
            PARM[NOT(N+1)] ← ERR; % PLACE BOOLEAN IN WORD BELOW MKSCW FOR 19797000 T  0337:3
                                  % ON EXCEPTION BRANCH IN COBOL          19798000 T  0340:2
            P(DIRECTORYSEARCH(NABS(MFID),FID,13),DEL);%CLOSE,FORGET HEADER 19799000 T  0340:2
            IF NOT ERR THEN SELECTION;                                   19799050 T  0342:1
XYT::       IF CALLEDORCONT AND NOT ERR THEN SLEEP([TSKA[7]],1);         19799060 T  0344:2
END TISKTASK;                                                            19800000 T  0348:1
                                                                                   SIZE= 0349 WORDS
PROCEDURE PICKTHELOCK;                                                   19900000 T  0000:0
                                                                                   START OF REL SEGMENT; DISK ADDRESS = 00492
BEGIN COMMENT THIS PROCEDURE HANDLES LOCKING/UNLOCKING OF                19900010 T  0000:0
              LOCK-ITEMS FOR TASKING. IT ALSO HANDLES THE MAINTENANCE    19900020 T  0000:0
              OF A WAIT QUEUE AND PASSING CONTROL OF THE LOCK TO THE     19900030 T  0000:0
              FIRST PROCESS IN THE WAIT QUEUE, AFTER IT HAS BEEN         19900040 T  0000:0
              RELEASED BY ANOTHER PROCESS. THE HEAD OF THE QUEUE IS      19900050 T  0000:0
              THE LOCK-ITEM OF THE PROCESS CURRENTLY IN CONTROL AND      19900060 T  0000:0
              ENTRIES ARE MADE AT THE END OF THE QUEUE. LOCK-ITEMS       19900070 T  0000:0
              ARE IN THE PRT AND HAVE THE FOLLOWING FORMAT:              19900080 T  0000:0
               [1:1]=1, MEANS LOCKED(LOCK BIT,ORIGINAL ONLY)             19900090 T  0000:0
               [2:1]=1, IN CONTROL(CONTROL BIT)                          19900100 T  0000:0
               [3:1]=1, ORIGINAL LOCK-ITEM(ORIGINAL BIT)                 19900110 T  0000:0
                    =0, A COPY                                           19900120 T  0000:0
               [4:1]= QUEUE INTERLOCK(ORIGINAL ONLY)                     19900130 T  0000:0
               [8:10]=MIX INDEX OF PROGRAM IN CONTROL(ORIGINAL)          19900140 T  0000:0
                     =RELATIVE PRT ADDRESS USED TO LINK ALL LOCK-ITEMS   19900150 T  0000:0
                      IN CONTROL OR IN WAIT QUEUES(COPY)                 19900160 T  0000:0
               [18:15]=POINTER TO NEXT PROCESS IN WAIT QUEUE, ELSE 0     19900170 T  0000:0
               [33:15]=POINTER TO HEAD OF QUEUE(ORIGINAL)                19900180 T  0000:0
                      =POINTER TO ORIGINAL LOCK-ITEM(COPY)               19900190 T  0000:0
              "LOCKPTR" IS THE PARAMETER PASSED AND HAS THE FORMAT:      19900200 T  0000:0
               [1:1]=0, MEANS LOCK, ELSE UNLOCK                          19900210 T  0000:0
               [2:1]=1,    "   TEST LOCK BIT, LOCK IF UNLOCKED AND       19900220 T  0000:0
                        RETURN A 0, ELSE RETURN 1                        19900230 T  0000:0
               [33:15]=RELATIVE PRT ADDRESS OF LOCK-ITEM;                19900240 T  0000:0
REAL LOCKPTR=-4;%PARAMETER                                               19900250 T  0000:0
REAL Q,R,S,T,U,V;                                                        19900260 T  0000:0
ARRAY A[*];                                                              19900270 T  0000:0
DEFINE DSED=(TERMIX.[CF]=P1MIX)#, IMASK=@200000000000000#;               19900280 T  0000:0
SUBROUTINE LINKIT;                                                       19900290 T  0000:0
BEGIN IF(V:=A[5])=0 THEN A[5]:=LOCKPTR INX 0                             19900300 T  0001:0
      ELSE BEGIN WHILE PRT[P1MIX,V].[8:10] NEQ 0 DO                      19900310 T  0003:3
                 V:=PRT[P1MIX,V].[8:10];                                 19900320 T  0007:3
                 PRT[P1MIX,V].[8:10]:=LOCKPTR INX 0;                     19900330 T  0010:1
           END;                                                          19900340 T  0013:3
END;                                                                     19900360 T  0013:3
   Q:=[PRT[P1MIX,LOCKPTR INX 0]] INX 0;                                  19900370 T  0014:0
   R←NFLAG(M[U←@]);                                                      19900380 T  0018:1
   S←IF R.[3:1] THEN Q ELSE (R INX 0); %ADDR OF ORIGINAL                 19900390 T  0020:2
   A:=PRT[P1MIX,TSX];%TASK ARRAY                                         19900395 T  0023:3
```

```
                    IF NOT M[S].[4:1] THEN SLEEP([M[S]],IMASK);                    19900400 T  0025:1
                    M[S].[4:1]:=0;                                                 19900410 T  0029:2
                    IF LOCKPTR.[2:1] THEN %TEST & LOCK                             19900420 T  0032:1
                    BEGIN IF NOT M[S].[1:1] THEN %UNLOCKED                         19900430 T  0033:0
                          BEGIN M[S]:=NABS(M[S])&U[CTC]&P1MIX[8:38:10];            19900440 T  0035:1
                                M[U]:=(M[U] OR M)&0[CTF];                          19900450 T  0039:3
                                IF U≠S THEN BEGIN M[U].[8:10]←0;                   19900455 T  0043:0
                                                LINKIT;                            19900460 T  0047:0
                                            END;                                   19900465 T  0048:0
                                LOCKPTR:=0;                                        19900470 T  0048:0
                          END ELSE LOCKPTR:=1;                                     19900480 T  0048:3
                    M[S]:=(*P(DUP)) OR IMASK;                                      19900490 T  0051:3
                    P(XIT);                                                        19900500 T  0054:0
                    END;                                                           19900510 T  0054:1
                    IF LOCKPTR GTR 0 THEN%LOCK                                     19900520 T  0054:1
                    IF NOT M[U].[2:1] THEN%NOT IN CONTROL                          19900530 T  0055:0
                    BEGIN IF NOT M[S].[1:1] THEN                                   19900540 T  0057:1
                          BEGIN M[S]:=NABS(M[S])&U[CTC]&P1MIX[8:38:10];            19900550 T  0059:2
                                M[U]:=((*P(DUP)) OR M)&0[CTF];                     19900560 T  0064:0
                                IF U≠S THEN BEGIN M[U].[8:10]←0;                   19900565 T  0066:3
                                                LINKIT;                            19900570 T  0070:3
                                            END;                                   19900575 T  0072:0
                          END ELSE                                                 19900580 T  0072:0
                          BEGIN                                                    19900590 T  0072:0
                          T:=M[S] INX 0;                                           19900600 T  0074:0
                          WHILE M[T].[FF] NEQ 0 DO T:=M[T].[FF];                   19900610 T  0076:0
                          M[T].[FF]:=U;                                            19900620 T  0081:2
                          M[U].[FF]:=0;                                            19900630 T  0083:3
                          IF U≠S THEN BEGIN M[U].[8:10]←0; LINKIT END;             19900650 T  0086:0
                          M[S]:=(*P(DUP)) OR IMASK;                                19900660 T  0091:0
                          COMPLEXSLEEP(DSED OR M[U].[2:1]);                        19900670 T  0093:1
19678000    ACCIDENTAL ENTRY AT 1
                          IF M[U].[2:1] THEN                                       19900675 T  0101:0
                          M[S]←((*P(DUP))&P1MIX[8:38:10]) OR IMASK;                19900680 T  0102:2
                          P(XIT);                                                  19900690 T  0106:1
                          END;                                                     19900700 T  0106:2
                    END ELSE ELSE %UNLOCK                                          19900710 T  0106:2
                    BEGIN IF M[S].[1:1] THEN%LOCKED                                19900720 T  0108:0
                          BEGIN M[T:=M[S] INX 0].[2:1]:=0;%TURN OFF CONTROL        19900730 T  0110:0
                                IF T≠S THEN                                        19900735 T  0115:0
                                BEGIN                                              19900740 T  0115:3
                                A:=PRT[V:=M[S].[8:10],TSX];                        19900745 T  0116:1
                                R:=A[5];                                           19900750 T  0119:2
                                IF T NEQ ([PRT[V,R]] INX 0) THEN                   19900755 T  0120:2
                                BEGIN                                              19900758 T  0122:2
                                WHILE M[S].[CF] NEQ ([PRT[V,R]] INX 0) DO          19900760 T  0123:0
                                BEGIN U:=R;                                        19900770 T  0126:3
                                      R:=PRT[V,R].[8:10];                          19900780 T  0127:2
                                END;                                               19900790 T  0129:2
                                PRT[V,U].[8:10]:=PRT[V,R].[8:10];%DELINK           19900800 T  0130:0
                                END  ELSE A[5]:=M[T].[8:10];                       19900805 T  0134:1
                                END;                                               19900810 T  0137:1
                                M[S].[CF]:=(T:=M[T].[FF]);                         19900815 T  0137:1
                                IF T NEQ 0 THEN                                    19900820 T  0141:2
                                BEGIN M[T]←(*P(DUP)) OR M; P(XIT) END              19900830 T  0142:1
                                ELSE M[S]:=ABS(M[S]);                              19900840 T  0145:1
                          END;                                                     19900850 T  0148:1
                    END;                                                           19900855 T  0148:1
                    M[S]:=(*P(DUP)) OR IMASK;                                      19900860 T  0148:1
              END;                                                                 19900870 T  0150:2
```

```
                                                                                    SIZE= 0152 WORDS
PROCEDURE EVENTANDINTERRUPT;                                                 19900900 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00498
BEGIN                                                                        19901000 T  0000:0
    REAL TYPE=-4,          % TYPE: 1=ATTACH INTERRUPT (AT REL.ADDR RELINT)  19901100 T  0000:0
         RELINT=-5,        %          TO EVENT (AT ABSOLUTE ADDR ABSEVT)   19901200 T  0000:0
         ABSEVT=-6;        %        2=DETACH INTERRUPT (AT REL.ADDR RELINT) 19901300 T  0000:0
                           %        3=CAUSE EVENT (AT ABSOLUTE ADDR ABSEVT) 19901400 T  0000:0
         REAL K,T,A,SIZE,MIX,J,I,ABSOLD=J;                                   19901500 T  0000:0
         LABEL ATTACHL,DETACHL,CAUSEL,ON,L1,L2,L3,L4,DONE;                   19901600 T  0000:0
         SWITCH S ← ATTACHL,DETACHL,CAUSEL;                                  19901700 T  0000:0
         ARRAY SFINTQ[*],TSKA[*];                                            19901800 T  0000:0
         NAME BIGGERQ;                                                       19901840 T  0000:0
    DEFINE IMASK = @2000000000000000#,EMASK = @2000000000000000#;            19901850 T  0000:0
SUBROUTINE DETACHINT;                                                        19901900 T  0000:0
BEGIN  IF (ABSOLD←PRT[P1MIX,RELINT].[FF])≠0 THEN                             19902000 T  0001:0
            BEGIN      WHILE NOT M[ABSOLD].[5:1] DO                          19902100 T  0003:3
                            ABSOLD ← M[ABSOLD].[FF];                         19902120 T  0006:2
                       IF M[ABSOLD]≥0 THEN SLEEP([M[ABSOLD]],EMASK);         19902130 T  0009:1
                       M[ABSOLD] ← P(DUP,LOD,SSP);                           19902140 T  0013:1
                       K ← T ← PRT[P1MIX,RELINT].[FF];                       19902150 T  0015:1
                       A ←[PRT[P1MIX,RELINT]] INX 0;                         19902190 T  0018:0
                       WHILE M[T].[FF]≠A DO T ← M[T].[FF];                   19902200 T  0020:0
                       M[T].[FF] ← IF T=K THEN 0 ELSE K;                     19902300 T  0027:0
                       PRT[P1MIX,RELINT].[FF] ← 0;                           19902350 T  0031:1
                       M[ABSOLD] ← P(DUP,LOD,SSN);                           19902360 T  0033:3
            END;                                                             19902400 T  0035:3
END DETACHINT;                                                               19902500 T  0035:3
                  % FORMAT OF INTERRUPT (IN PRT):                            19902501 T  0036:0
                  %    UPPER WORD (LINK WORD):                               19902502 T  0036:0
                  %         [1:1]=1 IFF INTERRUPT IS DISALLOWED              19902503 T  0036:0
                  %         [FF]: ABSOLUTE ADDRESS OF NEXT INTERRUPT ON      19902504 T  0036:0
                  %               EVENTS ATTACH LIST OR OF THE EVENT IF      19902505 T  0036:0
                  %               THIS INTERRUPT IS THE LAST ON LIST         19902506 T  0036:0
                  %         [CF]: RELATIVE PRT ADDRESS OF NEXT DECLARED      19902507 T  0036:0
                  %               INTERRUPT FOR THIS PROCESS                 19902508 T  0036:0
                  %    LOWER WORD: PROCEDURE DESCRIPTOR FOR INTERRUPT        19902509 T  0036:0
                  % FORMAT OF EVENT (IN PRT):                                19902510 T  0036:0
                  %    "ORIGINAL" EVENT-ITEM (AT ABSOLUTE ADDR ABSEVT):      19902511 T  0036:0
                  %         [1:1]: EVENT INTERLOCK BIT (ON TO START)         19902512 T  0036:0
                  %         [5:1]=1 DISTINGUISHES THE EVENT FROM             19902514 T  0036:0
                  %                 ATTACHED INTERRUPTS                      19902516 T  0036:0
                  %         [FF]: ABSOLUTE ADDRESS OF FIRST INTERRUPT        19902520 T  0036:0
                  %               ON ATTACH LIST                             19902522 T  0036:0
                  %         [47:1]: HAPPEN BIT                               19902524 T  0036:0
                  %    "COPY" EVENT-ITEM (RECEIVED AS A PARAMETER):          19902526 T  0036:0
                  %         [CF]: ABSOLUTE ADDRESS OF ORIGINAL EVENT         19902527 T  0036:0
                  % CONTENTS OF TSKA[8]:                                     19902528 T  0036:0
                  %    [1:1]=1 IFF INTERRUPTER HAS JUST RUN AND              19902529 T  0036:0
                  %            SFINTQ IS NON-EMPTY                           19902530 T  0036:0
                  %    [2:1]=1 IFF SFINTQ IS NON-EMPTY                       19902540 T  0036:0
                  %    [3:1]=1 IFF INTERRUPTER IS RUNNING                    19902550 T  0036:0
                  %    [4:1]: SFINTQ INTERLOCK BIT (ON TO START)             19902560 T  0036:0
                  %    [FF] = ADDRESS OF OLD IRCW                            19902570 T  0036:0
                  %    [CF] = RELATIVE PRT ADDRESS OF FIRST IN LINKED        19902580 T  0036:0
                  %           LIST OF DECLARED INTERRUPTS                    19902593 T  0036:0
% % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % %  19902600 T  0036:0
         GO TO S[TYPE-1];                                                    19902700 T  0036:0
ATTACHL: DETACHINT;      % AN ATTACH DOES AN IMPLICIT DETACH                 19902800 T  0041:2
         IF M[ABSEVT]≥0 THEN SLEEP([M[ABSEVT]],EMASK);                       19902850 T  0043:0
```

```
                M[ABSEVT] ← P(DUP,LOD,SSP);                                  19902860 T  0047:0
                IF (T←M[ABSEVT].[FF])=0 THEN T ← ABSEVT;                     19902900 T  0049:0
                PRT[P1MIX,RELINT] ← PRT[P1MIX,RELINT]&T [CTF]&P1MIX [8:38:10]; 19903100 T  0053:0
                M[ABSEVT] ← P(DUP,LOD,[PRT[P1MIX,RELINT]],CFX,SSN);          19903200 T  0057:0
                P(XIT);                                                      19903300 T  0060:1
DETACHL:        DETACHINT; P(XIT);                                           19903400 T  0060:2
CAUSEL:         M[ABSEVT].[47:1] ← 1;   %SET HAPPEN BIT: AWAKEN ALL YE WHO WAIT 19903500 T  0062:1
                IF M[ABSEVT].[FF]≠0 THEN% IF THERE ARE INTERRUPTS ATTACHED   19903600 T  0065:0
        BEGIN       IF M[ABSEVT]≥0 THEN SLEEP([M[ABSEVT]],EMASK);            19903650 T  0067:1
                    M[ABSEVT] ← P(DUP,LOD,SSP);                              19903660 T  0071:3
                    A ← M[ABSEVT].[FF];                                      19903670 T  0073:3
                    WHILE A≠ABSEVT DO  % INSERT ATTACHED INTERRUPTS IN THE   19903700 T  0076:0
                BEGIN                  % RELEVANT SFINTQS                    19903800 T  0077:1
                        MIX ← (T←M[A]).[8:10];                               19903810 T  0077:1
                        IF TERMIX.[CF]=MIX THEN                              19903820 T  0079:3
                        BEGIN IF T.[FF]≠ABSEVT THEN                          19903825 T  0081:0
                              DO MIX ← (T←M[A←T.[FF]]).[8:10]                19903830 T  0082:3
                              UNTIL TERMIX.[CF]≠MIX OR T.[FF]=ABSEVT;        19903850 T  0086:1
                              IF TERMIX.[CF]=MIX THEN                        19903860 T  0090:0
                                 BEGIN M[ABSEVT]←P(DUP,LOD,SSN); P(XIT);END; 19903865 T  0091:1
                        END;                                                 19903870 T  0094:0
                        TSKA ← PRT[MIX,TSX];                                 19903900 T  0094:0
                        IF NOT TSKA[8].[4:1] THEN SLEEP([TSKA[8]],IMASK);    19903907 T  0095:2
                        TSKA[8].[4:1] ← 0;                                   19903908 T  0099:0
                        SIZE ← (SFINTQ←PRT[MIX,SFINTX]).[8:10]-1;            19903910 T  0101:2
                        J ← K ← 0;                                           19903915 T  0104:2
                IF NOT TSKA[8].[3:1] THEN% IF INTERRUPTER INTRINSIC NOT RUNNING 19903917 T  0105:3
                WHILE J≤SIZE DO        % COMPACT SFINTQ, PUSHING ALL NON-ZERO 19903920 T  0107:0
        BEGIN                          % ENTRIES TOWARD THE FRONT OF THE ARRAY 19903930 T  0108:3
                IF SFINTQ[J]=0 THEN  % AND ZEROING OUT REMAINDER             19903940 T  0108:3
                    BEGIN                                                    19903950 T  0109:3
                        I ← IF K≠0 THEN K+2 ELSE J+1;                        19903960 T  0110:1
                L1:     IF I>SIZE THEN GO DONE;                              19903970 T  0114:0
                        IF SFINTQ[I]=0 THEN BEGIN I ← I+1; GO TO L1; END;    19903980 T  0115:1
                        K ← I; GO TO L3;                                     19903990 T  0120:0
                L2:     IF K>SIZE THEN GO TO L4;                             19904000 T  0121:1
                        IF SFINTQ[K]≠0 THEN                                  19904010 T  0122:2
                L3:         BEGIN    SFINTQ[J] ← SFINTQ[K];                  19904020 T  0123:2
                                     J ← J+1; K ← K+1; GO TO L2;             19904030 T  0125:2
                            END;                                             19904040 T  0128:2
                L4:     K ← K-1;                                             19904050 T  0128:2
                        FOR I ← J STEP 1 UNTIL K DO SFINTQ[I] ← 0;           19904060 T  0129:3
                    END ELSE J ← J+1;                                        19904070 T  0134:2
        END;                                                                 19904100 T  0136:1
                DONE:   IF SFINTQ[SIZE]≠0 THEN   % QUEUE FULL--GET MORE SPACE 19904300 T  0136:3
                        IF SIZE+6>1023 THEN                                  19904340 T  0137:3
                    BEGIN  TERMINATE(MIX&103[CTF]);                          19904350 T  0139:2
                        TSKA[8] ← *P(DUP) OR IMASK; A ← T.[FF];GO ON;        19904360 T  0141:1
                    END ELSE                                                 19904370 T  0146:0
                    BEGIN  PRT[MIX,SFINTX] ← BIGGERQ ←FLAG(1&[PRT[MIX,SFINTX]] 19904400 T  0146:0
                                [CTF]&(SIZE+6) [TOSIZE]);                    19904450 T  0148:2
                           MAKEPRESENT([I] INX 3);%GETS SPACE AND ZEROS IT OUT 19904600 T  0151:3
                           M[BIGGERQ INX NOT 1].[9:6] ← MIX;                 19904650 T  0153:0
                           MOVE(SIZE+1,SFINTQ,BIGGERQ);                      19904700 T  0156:2
                           FORGETSPACE(SFINTQ INX 0);                        19904850 T  0158:3
                           SFINTQ ← BIGGERQ;                                 19904860 T  0160:1
                    END;                                                     19904900 T  0161:0
                        K ← 0; WHILE SFINTQ[K]≠0 DO K ← K+1;                 19905000 T  0161:0
                        SFINTQ[K] ← A-1; % ABSOLUTE ADDRESS OF INTERRUPT PD  19905100 T  0165:0
                        A ← T.[FF];                                          19905200 T  0166:3
```

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                    TSKA[8] ← *P(DUP) OR @1200000000000000;                 19905300 T  0168:0
                    IF MIX=P2MIX THEN                                       19905310 T  0170:0
                         BEGIN  HALT; NOPROCESSTOG ← NOPROCESSTOG-1;        19905320 T  0170:3
                         END;                                               19905330 T  0173:0
               ON:                                                          19905340 T  0173:0
               END;                                                         19905350 T  0173:0
               M[ABSEVT] ← P(DUP,LOD,SSN);                                  19905360 T  0175:0
          END;                                                              19906100 T  0177:0
     END EVENTANDINTERRUPT;                                                 19906300 T  0177:0
                                                                                   SIZE= 0178 WORDS
     %  THE FORMAT OF SEGMENT ZERO OF PROGRAMS%                              20000000 T  0000:0
     %       S[0]          =    LOCATION OF SEGMENT DICTIONARY%             20001000 T  0000:0
     %       S[1]          =    SIZE OF SEGMENT DICTIONARY%                 20002000 T  0000:0
     %       S[2]          =    LOCATION OF PRT%                            20003000 T  0000:0
     %       S[3]          =    SIZE OF PRT%                                20004000 T  0000:0
     %       S[4]          =    LOCATION OF FILE PARAMETER BLOCK%           20005000 T  0000:0
     %       S[5]          =    SIZE OF FILE PARAMETER BLOCK%               20006000 T  0000:0
     %       S[6].[1:1]    =    1 FOR NEW FORMAT SEGMENT 0, ELSE 0          20006500 T  0000:0
     %       S[6]          =    STARTING SEGMENT NUMBER%                    20007000 T  0000:0
     %       S[7].[2:1]    =    FORTRAN FAULT FLAG                          20007100 T  0000:0
     %       S[7].[33:15]  =    NUMBER OF FILES%                            20008000 T  0000:0
     %       S[7].[18:15]  =    CORE REQUIREMENT / 64%                      20009000 T  0000:0
     %       IF S[2] < 0 THEN THE JOB WAS COMPILED BY COBOL%                20010000 T  0000:0
     %       S[15]         =    DISK ADDRESS OF LABEL EQUATION ENTRIES      20010100 T  0000:0
     %                          PRESENTED WHEN PROGRAM WAS COMPILED AND     20010200 T  0000:0
     %                          APPLICABLE TO ALL EXECUTIONS                20010300 T  0000:0
     %       S[16]         =    ESTIMATED PROCESSOR TIME   (FROM COMPILATN) 20010400 T  0000:0
     %       S[17]         =    ESTIMATED I/O TIME         (FROM COMPILATN) 20010500 T  0000:0
     %       S[18]         =    PRIORITY                   (FROM COMPILATN) 20010600 T  0000:0
     %       S[19]         =    COMMON VALUE               (FROM COMPILATN) 20010700 T  0000:0
     %       S[20]         =    ESTIMATED CORE REQUIREMENTS(FROM COMPILATN) 20010800 T  0000:0
     %       S[21]         =    STACK SIZE                 (FROM COMPILATN) 20010900 T  0000:0
                                                                            20011000 T  0000:0
                                                                            20011100 T  0000:0
     PROCEDURE SELECTRUN1;                                                  20011200 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00504
          BEGIN                                                             20011300 T  0000:0
                                                                            20011400 T  0000:0
          REAL     MSCW        =  -2,                                       20011500 T  0000:0
                   F            =  -1,                                      20011600 T  0000:0
                   MYMSCW       =  -1,                                      20011700 T  0000:0
                   RCW          =  +0,                                      20011800 T  0000:0
                   I            =  +1,                                      20011900 T  0000:0
                   T            =  +2,                                      20012000 T  0000:0
                   L            =  +3,                                      20012100 T  0000:0
                   DT           =  +4,                                      20012200 T  0000:0
                   MIX          =  +5,                                      20012300 T  0000:0
                   HDR          =  +6,                                      20012400 T  0000:0
                   LEVEL        =  +7,                                      20012500 T  0000:0
                   MCPJOB       =  +8,                                      20012600 T  0000:0
                   OLAYDISK     =  +9,                                      20012700 T  0000:0
                   THISLINK     =  +10,                                     20012800 T  0000:0
                   NEXTLINK     =  +11,                                     20012900 T  0000:0
                   PREVLINK     =  +12,                                     20013000 T  0000:0
                   TYPE         =  +13,                                     20013100 T  0000:0
                   STACKLOC     =  +14,                                     20013200 T  0000:0
                   SHEETLOCKED  =  +15;                                     20013300 T  0000:0
                                                                            20013400 T  0000:0
          ARRAY    S            =  +16[*],                                  20013500 T  0000:0
                   SEGO         =  +17[*],                                  20013600 T  0000:0
```

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                TRP          =  +18[*],                                  20013700 T  0000!0
                LBL          =  +19[*],                                  20013800 T  0000!0
                SD           =  NT2[*],                                  20013900 T  0000!0
                TSKA         =  NT2[*];                                  20014000 T  0000!0
                                                                         20014100 T  0000!0
        NAME    ADDR         = LBL +1;                                   20014300 T  0000!0
        REAL    PASSLEVEL    = ADDR + 1,                                 20014400 T  0000!0
                SVALUE       = PASSLEVEL,                                20014500 T  0000!0
                RETURNMSCW   = PASSLEVEL + 1,                            20014600 T  0000!0
                RETURNRCW    = RETURNMSCW + 1;                           20014700 T  0000!0
                                                                         20014800 T  0000!0
        DEFINE SHEETMAX = MIXMAX#;                                       20014900 T  0000!0
                                                                         20015000 T  0000!0
                                                                         20016100 T  0000!0
        %%%%                    ***NOTE****                             20016200 T  0000!0
        %%%% THE VARIABLES DECLARED ABOVE MUST CORRESPOND EXACTLY TO      20016300 T  0000!0
        %%%% THOSE DECLARED IN PROCEDURE SELECTRUN.                       20016400 T  0000!0
                                                                         20016500 T  0000!0
        REAL    EUVAL        = RETURNRCW + 1,                            20016600 T  0000!0
                FBADRS       = EUVAL     + 1,                            20016700 T  0000!0
                FPBVERSION   = FBADRS    + 1,                            20016800 T  0000!0
                FT           = FPBVERSION+ 1,                            20016900 T  0000!0
                LINDX        = FT        + 1,                            20017000 T  0000!0
                LINK         = LINDX     + 1,                            20017100 T  0000!0
                SENSEVAL     = LINK      + 1,                            20017200 T  0000!0
                SPDVAL       = SENSEVAL  + 1,                            20017300 T  0000!0
                S2           = SPDVAL    + 1,                            20017400 T  0000!0
                FB           = S2        + 1,                            20017500 T  0000!0
                FPB          = FB        + 1;                            20017600 T  0000!0
                                                                         20017700 T  0000!0
        REAL    FT1          = NT1,                                      20017800 T  0000!0
                TYPEDISK     = NT3;                                      20017900 T  0000!0
                                                                         20018000 T  0000!0
        COMMENT THE VALUE OF "TYPE" DETERMINES WHICH PORTIONS OF         20018100 T  0000!0
        THIS PROCEDURE WILL BE EXECUTED, THIS PROCEDURE CAN ALSO         20018200 T  0000!0
        DETERMINE WHICH PORTIONS OF PROCEDURE "SELECTRUN" WILL BE        20018300 T  0000!0
        EXECUTED BY ASSIGNING A NEGATIVE VALUE TO "TYPE" BEFORE          20018400 T  0000!0
        RETURNING TO THAT PROCEDURE.                                     20018500 T  0000!0
        END OF COMMENT;                                                  20018600 T  0000!0
                                                                         20018700 T  0000!0
        DEFINE STARTING      =  1#,                                      20018800 T  0000!0
               CONTINUEING   =  2#,                                      20018900 T  0000!0
               QUITTING      =  3#,                                      20019000 T  0000!0
               RUNING        =  4#,                                      20019100 T  0000!0
               PASSING       =  5#,                                      20019200 T  0000!0
               EQUATING      =  6#;                                      20019300 T  0000!0
                                                                         20019400 T  0000!0
        DEFINE XCLOCKTIME =                                              20019500 T  0000!0
            (((NT2!=(XCLOCK DIV 3600)) MOD 60 + (NT2 DIV 60)×100 +       20019600 T  0000!0
             0.5 ) DIV 1)#;                                              20019700 T  0000!0
                                                                         20019800 T  0000!0
        DEFINE ACTUALDISKADDRESS(ACTUALDISKADDRESS1) =                   20019900 T  0000!0
            ((JAR[MIX,((NT4!=ACTUALDISKADDRESS1) DIV (NT3!=JAR[MIX,8]))+10]  20020000 T  0000!0
             + (NT4 MOD NT3) + 0.5) DIV 1)#;                             20020100 T  0000!0
                                                                         20020110 T  0000!0
    $ SET OMIT = NOT(PACKETS)                                            20020119 T  0000!0
                                                                         20020200 T  0000!0
        LABEL CONTINUE,  DLX,  EXIT,  LEM,  RMSG,  UNBLK,  STOP;         20020300 T  0000!0
                                                                         20020400 T  0000!0
        SUBROUTINE DELINK;                                               20020500 T  0000!0
```

```
% DELINKS THE SHEET ENTRY AND RETURNS SHEET DISK SPACE                20020600 T 0001:0
    BEGIN                                                            20020700 T 0001:0
    STREAM(A:=S[3].[8:10],B:=P(.SCHEDULEIDS));                       20020800 T 0001:0
        BEGIN % MARK SCHEDULE SLOT "OPEN"                            20020900 T 0002:3
        SKIP A DB; DS:=RESET;                                        20021000 T 0002:3
        END;                                                         20021100 T 0003:2
    IF F = 0 THEN % SHEET ENTRY NOT PASSED AS PARAMETER              20021200 T 0003:3
        BEGIN                                                        20021300 T 0004:2
        IF NEXTLINK=0 THEN SHEET[LEVEL].[FF]:=PREVLINK;              20021400 T 0005:0
        IF PREVLINK=0 THEN                                           20021500 T 0008:1
            BEGIN                                                    20021600 T 0009:0
            SHEET[LEVEL].[CF]:=NEXTLINK; GO DLX;                     20021700 T 0009:2
            END;                                                     20021800 T 0012:0
        IF LBL=0 THEN                                                20021900 T 0012:0
        BEGIN                                                        20021910 T 0013:0
        M[(LBL:=[M[SPACE(30)]]&30[8:38:10]) INX NOT 1].[9:6]:=0;     20021920 T 0013:2
        END;                                                         20021930 T 0020:2
        DISKWAIT(-(LBL INX 0), 30, PREVLINK);                        20022000 T 0020:2
        LBL[29]:=NEXTLINK;                                           20022100 T 0022:3
        DISKWAIT( (LBL INX 0), 30, PREVLINK);                        20022200 T 0024:0
DLX:    FORGETESPDISK(THISLINK);                                     20022300 T 0026:0
        END; % IF SHEET ENTRY NOT A PARAMETER                        20022400 T 0026:3
    END DELINK;                                                      20022500 T 0026:3
                                                                     20022600 T 0027:0
P(MYMSCW, STF);                                                      20022700 T 0027:0
                                                                     20022800 T 0027:3
P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0); % FOR VARIABLES LOCAL TO THIS    20022900 T 0027:3
                                    % PROCEDURE ONLY                 20023000 T 0030:2
                                                                     20023100 T 0030:2
IF TYPE=CONTINUEING THEN GO TO CONTINUE;                             20023200 T 0030:2
IF TYPE=STARTING THEN % SEARCH THE SHEET QUEUE TO FIND A CANDIDATE   20023300 T 0031:3
                      % FOR SELECTION                                20023400 T 0032:2
    BEGIN                                                            20023500 T 0032:2
$ SET OMIT = NOT(BREAKOUT)                                           20023700 T 0033:0
    FOR LEVEL:=0 STEP 1 UNTIL SHEETMAX DO % FOR ALL "SHEET PRIORITIES" 20024600 T 0033:0
        BEGIN                                                        20024700 T 0034:0
        PREVLINK:=NEXTLINK:=0; % RESET FOR EACH "LEVEL"              20024800 T 0034:0
        % IF THERE IS AN ENTRY IN THE SHEET, SEE IF IT WILL FIT      20024900 T 0035:1
        IF(THISLINK:=SHEET[LEVEL].[CF]) NEQ 0 THEN GO TO LEM;        20025000 T 0035:1
                                                                     20025100 T 0037:3
CONTINUE:                                                            20025200 T 0037:3
                                                                     20025300 T 0037:3
        % "NEXTLINK" OBTAINED FROM "SHEET[29]" BELOW                 20025400 T 0037:3
        % IF THERE IS ANOTHER ENTRY AT THIS LEVEL, PROCESS IT NOW    20025500 T 0037:3
        IF(THISLINK:=NEXTLINK) NEQ 0 THEN GO TO LEM;                 20025600 T 0037:3
        END;                                                         20025700 T 0039:2
    TYPE := -QUITTING; % END OF SHEET SEARCH                         20025800 T 0041:3
    GO TO EXIT;                                                      20025900 T 0042:3
                                                                     20026000 T 0043:1
LEM:                                                                 20026100 T 0043:1
                                                                     20026200 T 0043:1
    % AT THIS POINT, THERE IS A CANDIDATE FOR SELECTION              20026300 T 0043:1
    IF S = 0 THEN % NO SHEET SPACE OBTAINED YET                      20026400 T 0043:1
        BEGIN                                                        20026500 T 0044:1
        S := [M[GETSPACE(31,2,0)+2]]&30[8:38:10];                    20026600 T 0044:3
        END;                                                         20026700 T 0048:2
                                                                     20026800 T 0048:2
% . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 20026900 T 0048:2
% READ SHEET ENTRY INTO CORE AT "S"                                 20027000 T 0048:2
% . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 20027100 T 0048:2
```

```
                                                                                20027200 T  0048:2
    DISKWAIT(-(S INX 0), 30, THISLINK);                                         20027300 T  0048:2
    NEXTLINK:=S[29]; % NEXT ENTRY IN SHEET QUEUE AT THIS LEVEL                  20027400 T  0050:3
                                                                                20027500 T  0051:3
%   *****   ***   *     *****     *   *  ****   *****                           20027600 T  0051:3
%   *       *     *     *         *   *  *   *  *   *                           20027700 T  0051:3
%   ***     *     *     *****     *****  *   *  *****                           20027800 T  0051:3
%   *       *     *     *         *   *  *   *  *   *                           20027900 T  0051:3
%   *       ***   *****  *****    *   *  *   *  *   * 0                         20028000 T  0051:3
                                                                                20028100 T  0051:3
    HDR:=GETSPACE(30+(S[0] LSS 0),0,0)+2; % S[0].[1:1]=1 FOR COMPILE JOB         20028300 T  0051:3
    % THE EXTRA WORD IS FOR COMPILATIONS (JAR[30]=FID OF OBJECT FILE)           20028400 T  0055:1
    DISKWAIT(-HDR, 30, S[25]); % READ FILE HEADER INTO CORE AT "HDR"             20028900 T  0055:1
    GO TO EXIT;                                                                 20029000 T  0057:0
    END; % IF TYPE = STARTING OR CONTINUEING                                    20029100 T  0057:2
                                                                                20029200 T  0057:2
IF TYPE=PASSING THEN % PASS THIS ENTRY WITHOUT DELINKING                        20029300 T  0057:2
    BEGIN                                                                       20029400 T  0058:1
                                                                                20029500 T  0058:3
%   *****  *****  *****  *****                                                   20029600 T  0058:3
%   *   *  *   *  *      *                                                      20029700 T  0058:3
%   *****  *****  *****  *****                                                   20029800 T  0058:3
%   *      *   *     *      *                                                   20029900 T  0058:3
%   *      *   *  *****  *****                                                   20030000 T  0058:3
                                                                                20030100 T  0058:3
    IF S[3] GTR 0  % S[3].[1:1]=0 FIRST TIME THROUGH                            20030200 T  0058:3
  $ SET OMIT = PACKETS                                                          20030249 T  0059:2
        AND SCHEDMSG                                                            20030250 T  0059:2
  $ POP OMIT                                                                    20030251 T  0059:3
      THEN BEGIN                                                                20030300 T  0059:3
        S[3]:=NABS(S[3]); % MARK IT SCHEDULED                                   20030400 T  0061:1
        IF F=0 THEN % SHEET ENTRY NOT PASSED AS PARAMETER                       20030500 T  0063:0
        % WRITE THE SHEET ENTRY BACK OUT WITH S[3] "MARKED"                     20030600 T  0063:3
        DISKWAIT((S INX 0), 30, THISLINK);                                      20030700 T  0063:3
        STREAM(C:=LEVEL, A:=S[*], ID:=S[3].[8:10],                              20030800 T  0066:1
  $ SET OMIT = NOT(DCSPO AND DATACOM)                                           20031000 T  0068:1
            Q:=XCLOCKTIME, B:=HDR);                                             20031500 T  0068:1
          BEGIN                                                                 20031600 T  0073:0
          SI:=LOC C; DS:=6DEC; DI:=DI-6; DS:=5FILL;          % PRIORITY         20031700 T  0073:0
          DI:=B; DI:=DI+6; DS:=LIT":";                                          20031800 T  0074:0
          SI:=A; SI:=SI+1; DS:=7CHR;                         % MFID             20031900 T  0075:0
          SI:=SI+1; DS:=LIT"/"; DS:=7CHR;                    % FID              20032000 T  0075:3
          DS:=LIT"="; SI:=LOC ID; DS:=2DEC;                  % SCH.NO.          20032100 T  0076:3
          DS:=11 LIT" SCHEDULED "; SI:=LOC Q; DS:=4DEC;      % TIME             20032200 T  0077:3
  $ SET OMIT = NOT(DCSPO AND DATACOM)                                           20032400 T  0080:0
          DS:=LIT"←";                                                           20032900 T  0080:0
          END STREAM;                                                           20033000 T  0080:2
  $ SET OMIT = NOT( DATACOM )                                                   20033200 T  0080:3
        SPOUTER(HDR,UNITNO,SCHEDMSG);                                           20034000 T  0080:3
        END % IF SCHEDMSG AND FIRST TIME THROUGH                                20034100 T  0081:2
    ELSE FORGETSPACE(HDR);                                                      20034200 T  0081:2
    IF F NEQ 0 THEN % SHEET ENTRY PASSED AS A PARAMETER                         20034300 T  0084:3
        BEGIN                                                                   20034400 T  0085:2
        DISKWAIT(F.[CF],30,T:=GETESPDISK); % WRITE SHEET ENTRY TO DISK          20034500 T  0086:0
        FORGETSPACE(S[7]); % CORE ADDRESS OF SEGMENT ZERO IN S[7]               20034600 T  0088:2
        IF SEG0=S[7] THEN SEG0:=0; % AVOID "DOUBLE "FORGETSPACE"                20034610 T  0089:2
        IF NOT SHEETLOCKED THEN                                                 20034700 T  0092:0
          BEGIN                                                                 20034800 T  0092:2
          SLEEP([TOGLE],SHEETMASK);                                             20034900 T  0093:0
          LOCKTOG(SHEETMASK);                                                   20035000 T  0094:2
```

```
                SHEETLOCKED := 1;                                          20035100 T  0098:0
                END;                                                       20035200 T  0098:3
            IF (L:=S[2].[CF]) GTR SHEETMAX THEN L:=SHEETMAX;               20035300 T  0098:3
            % SHEET[2].[CF] = "SHEET" PRIORITY                             20035400 T  0102:0
            IF SHEET[L].[CF] NEQ 0 THEN % SHEET QUEUE ALREADY EXISTS       20035500 T  0102:0
                BEGIN % LINK IN THIS ENTRY                                 20035600 T  0103:2
                DISKWAIT(-F.[CF],30,I:=SHEET[L].[FF]); %TAIL OF QUEUE      20035700 T  0104:0
                S[29]:=T; % LINK TO THIS ENTRY                             20035800 T  0107:2
                DISKWAIT(F.[CF],30,I); % REPLACE ENTRY                    20035900 T  0108:3
                END                                                        20036000 T  0110:2
            ELSE SHEET[L]:=T; % ESTABLISH NEW SHEET QUEUE                  20036100 T  0110:2
            SHEET[L].[FF]:=T; % LINK IN AT END OF QUEUE                   20036200 T  0112:1
            TYPE := -QUITTING;                                             20036300 T  0114:1
            GO TO EXIT; % DONT PROCESS ANY MORE ENTRIES                    20036400 T  0115:1
            END;                                                           20036500 T  0115:3
        $ SET OMIT = NOT(BREAKOUT)                                         20036700 T  0115:3
         PREVLINK:=THISLINK;                                               20037100 T  0115:3
         IF MIX LEQ MIXMAX THEN                                            20037200 T  0116:2
            BEGIN                                                          20037300 T  0117:1
            TYPE := -CONTINUEING;                                          20037400 T  0117:3
            GO TO CONTINUE;                                                20037500 T  0118:3
            END                                                            20037600 T  0119:1
         ELSE                                                              20037700 T  0119:1
            BEGIN                                                          20037800 T  0119:1
            TYPE := -QUITTING;                                             20037900 T  0119:3
            GO TO EXIT;                                                    20038000 T  0120:3
            END;                                                           20038100 T  0121:1
         END; % IF TYPE = PASSING                                          20038200 T  0121:1
                                                                           20038300 T  0121:1
        IF TYPE=RUNING THEN % SPECIAL HANDLING FOR "RUN" JOBS              20038500 T  0121:1
                                                                           20038600 T  0122:0
%   *****  *   *  *    *          *  *****  ****   *****                  20038700 T  0122:0
%   *   *  *   *  **   *          *  *   *  *   *  *                      20038800 T  0122:0
%   *****  *   *  * *  *       *  *  *   *  ****   *****                  20038900 T  0122:0
%   *  *   *   *  *  * *       *  *  *   *  *   *      *                  20039000 T  0122:0
%   *   *  *****  *   **       ****  *****  ****   *****                  20039100 T  0122:0
                                                                           20039200 T  0122:0
            BEGIN                                                          20039300 T  0122:0
            IF S[2].[2:1] NEQ 1 THEN % S[2].[2:1]=1 WHEN ES-ED             20039400 T  0122:2
            FOR I:=1 STEP 1 UNTIL MIXMAX DO                                20039500 T  0124:0
            IF JAR[I,*] NEQ 0 THEN % JOB RUNNING AT THIS MIX INDEX         20039600 T  0126:0
            IF (S[0] EQV JAR[I,0])=(NOT 0) AND                             20039700 T  0127:0
               (S[1] EQV JAR[I,1])=(NOT 0) AND                             20039800 T  0130:0
                PRYOR[I] GEQ 0 THEN                                        20039900 T  0132:3
                BEGIN % JOB IS ALREADY RUNNING                             20040000 T  0134:0
        $ SET OMIT = NOT(DCSPO AND DATACOM )                               20040100 T  0134:2
                IF BOJMESS THEN                                            20043000 T  0134:2
                    BEGIN                                                  20043100 T  0135:1
        $ SET OMIT = NOT (DCSPO AND DATACOM)                               20043200 T  0135:3
RMSG:                   BEGIN                                              20043600 T  0135:3
                        STREAM(C:=S[18], A:=JARROW[I], I, % S[18]=PRIORITY 20043700 T  0135:3
                              Q := XCLOCKTIME, B := HDR);                  20043800 T  0137:1
                            BEGIN                                          20043900 T  0142:0
                            SI:=LOC C; DS:=6DEC; DI:=DI-6; DS:=5FILL; %PRIOR 20044000 T  0142:0
                            DI:=B; DI:=DI+6; DS:=LIT":";                   20044100 T  0143:0
                            SI:=A; SI:=SI+1; DS:=7CHR; DS:=LIT"/";    % MFID 20044200 T  0144:0
                            SI:=SI+1; DS:=7CHR;                       % FID 20044300 T  0145:1
                            SI:=LOC I; DS:=LIT"="; DS:=2DEC;          % MIX 20044400 T  0145:3
                            DS:=9LIT"RUNNING  ";                           20044500 T  0146:3
                            DS:=4DEC; DS:=LIT"+"; DI:=DI-16; DS:=FILL;% TIME 20044600 T  0148:1
```

```
                    END STREAM;                                                  20044700 T  0149:2
                 SPOUT(HDR&S[23][9:9:9]);                                        20044800 T  0149:3
                 END % IF BOJ MESSAGE SHOULD BE SENT                             20044900 T  0151:3
$ SET OMIT = NOT (DCSPO AND DATACOM)                                             20045000 T  0151:3
            END % IF BOJMESS                                                     20045300 T  0151:3
        ELSE FORGETSPACE(HDR);                                                   20045400 T  0151:3
        % BUMP OPEN COUNT BACK DOWN                                              20045500 T  0155:3
        FORGETSPACE(DIRECTORYSEARCH( ABS(S[0]),                                  20045600 T  0155:3
                 IF S[0] LSS 0 THEN "DISK    " ELSE S[1], 13));                  20045700 T  0157:0
        FORGETESPDISK(S[6] INX 0); % CARD IMAGE FOR LOG                          20045800 T  0160:2
        T:=S[13]; % SAVE LINK TO LABEL EQUATION CARDS                            20045900 T  0162:0
        WHILE T NEQ 0 DO % FORGET LABEL EQUATION SEGMENTS                        20046000 T  0163:0
            BEGIN                                                                20046100 T  0164:1
            DISKWAIT(-(S INX 0), 30, T);                                         20046200 T  0164:1
            FORGETESPDISK(T);                                                    20046300 T  0166:2
            T:=S[29];                                                            20046400 T  0167:1
            END;                                                                 20046500 T  0168:1
        DELINK; % DELINK THE ENTRY FROM THE SHEET QUEUE                          20046600 T  0170:0
        IF F=0 THEN % SHEET ENTRY NOT PASSED AS A PARAMETER                      20046700 T  0171:0
            BEGIN                                                                20046800 T  0171:3
            TYPE := -CONTINUEING;                                                20046900 T  0172:1
            GO TO CONTINUE;                                                      20047000 T  0173:1
            END                                                                  20047100 T  0173:3
        ELSE                                                                     20047200 T  0173:3
            BEGIN % SHEET ENTRY PASSED AS A PARAMETER, DONT CONTINUE             20047300 T  0173:3
            TYPE := -QUITTING;                                                   20047400 T  0174:1
            GO TO EXIT;                                                          20047500 T  0175:1
            END;                                                                 20047600 T  0175:3
        END;                                                                     20047700 T  0175:3
          END OF SPECIAL HANDLING OF RUN CARDS;                                  20047800 T  0178:0
                                                                                 20048000 T  0178:0
IF TYPE = EQUATING THEN                                                          20048100 T  0178:0
    BEGIN                                                                        20048200 T  0178:3
                                                                                 20048300 T  0179:1
%   ******   *****    *****                                                      20048400 T  0179:1
%   *        *    *   *    *                                                    20048500 T  0179:1
%   ****     *****    *****                                                      20048600 T  0179:1
%   *        *        *    *                                                    20048700 T  0179:1
%   *     0  *     0  *****  0                                                  20048800 T  0179:1
                                                                                 20048900 T  0179:1
    FPB:=GETSPACE(SEGO[5] INX 1,0,0)+2;                                          20049000 T  0179:1
    % SEGO[3] = SIZE OF THE FILE PARAMETER BLOCK ON DISK                         20049100 T  0182:1
    % SEGO[4] = RELATIVE DISK ADDRESS OF THE FILE PARAMETER BLOCK                20049200 T  0182:1
    % SEGO[7] = NUMBER OF FILES IN THE F.P.B.                                    20049300 T  0182:1
    % ETRLNG  = NUMBER OF WORDS PER FILE USED IN THE F.P.B.                      20049400 T  0182:1
    M[SEGO[5] INX FPB]:=0; % SET TO ZERO TO INSURE THAT STREAM STATEMENT         20049500 T  0182:1
                           % USED TO BUILD "IN-CORE" FPB WILL NOT SKAN          20049600 T  0184:2
                           % PAST THE END OF THE COMPILER GENERATED FPB.        20049700 T  0184:2
    FB:=GETSPACE(SEGO[7].[CF]×ETRLNG,0,1)+2;                                     20049800 T  0184:2
    % "FB" WILL BE "IN-CORE" FILE PARAMETER BLOCK LOCATION                       20049900 T  0188:0
      DISKWAIT(-FPB, SEGO[5] INX 0, ACTUALDISKADDRESS(SEGO[4].[CF]));            20050000 T  0188:0
                                                                                 20050100 T  0196:2
COMMENT FORMAT OF COMPILER GENERATED FPB:                                        20050200 T  0196:2
      CHRS 1 AND 2      = FILE NUMBER (12 BIT BINARY) STARTING WITH 1            20050300 T  0196:2
      CHR.  3           = FILE TYPE                                              20050400 T  0196:2
      CHRS  4 THRU 10   = MFID                                                   20050500 T  0196:2
      CHRS 11 THRU 17   = FID                                                    20050600 T  0196:2
      CHR  18           = LENGTH OF INTERNAL FILE NAME (6 BIT BINARY)            20050700 T  0196:2
      CHRS 19 THRU N    = INTERNAL NAME                                          20050800 T  0196:2
      FOR VERSION 1 ( VERSION NUMBER IN SEGO[5].[1:8] )                          20050900 T  0196:2
```

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NEXT TWO CHARACTERS FOLLOWING INTERNAL NAME CONTAIN:                20051000 T  0196:2
   [40:1]          = SENSITIVE BIT                                  20051100 T  0196:2
   [41:2]          = DISK SPEED (1=FAST, 2=SLOW, 0=USPECIFIED)      20051200 T  0196:2
   [43:5]          = EU NUMBER + 1                                  20051300 T  0196:2
                                                                    20051400 T  0196:2
COMMENT FORMAT OF "IN-CORE" FPB ( 5 WORDS FOR EACH FILE ENTRY )     20051500 T  0196:2
      WORD[0].[ 6:42]  = MFID                                       20051600 T  0196:2
      WORD[1].[ 6:42]  = FID                                        20051700 T  0196:2
      WORD[2].[ 1:17]  = REEL NUMBER   (3 BCL DIGITS)               20051800 T  0196:2
      WORD[2].[18:30]  = CREATION DATE (5 BCL DIGITS)               20051900 T  0196:2
      WORD[3].[ 1:5 ]  = CYCLE NUMBER (BINARY)                      20052000 T  0196:2
      WORD[3].[ 6:17]  = PRN (PHYSICAL REEL NUMBER) FOR NON-DISK FILES 20052100 T  0196:2
      WORD[3].[15:1 ]  = SENSITIVE BIT (DISK FILES ONLY)            20052200 T  0196:2
      WORD[3].[16:2 ]  = DISK SPEED    (DISK FILES ONLY)            20052300 T  0196:2
      WORD[3].[18:5 ]  = EU. NUMBER+1  (DISK FILES ONLY)            20052400 T  0196:2
      WORD[3].[23:1 ]  = IO CODE (INPUT=0,OUTPUT=1)                 20052500 T  0196:2
      WORD[3].[24:12]  = NUMBER OF ERRORS                           20052600 T  0196:2
      WORD[3].[36:6 ]  = LOGICAL UNIT NUMBER + 1                    20052700 T  0196:2
      WORD[3].[43:5 ]  = UNIT TYPE                                  20052800 T  0196:2
END OF COMMENT;                                                     20052900 T  0196:2
                                                                    20053000 T  0196:2
   FPBVERSION:=SEGO[5].[1:8]; % NEWER VRSN.CONTAINS EU,SPD,ETC.     20053100 T  0196:2
   STREAM(TOG:=(FPBVERSION=1),T1:=0,T2:=0,C:=0,FPB,FB);             20053200 T  0198:0
      BEGIN                                                         20053300 T  0200:2
      SI:=FPB;                                                      20053400 T  0200:2
   LL: IF SC="0" THEN % FIRST DIGIT OF FILE NUMBER                  20053500 T  0200:3
         BEGIN                                                      20053600 T  0201:1
         SI:=SI+1; IF SC="0" THEN GO TO L2; % END OF FPB            20053700 T  0201:1
         END ELSE SI:=SI+1;                                         20053800 T  0202:1
      SI:=SI+1; T1:=SI; SI:=SI+1; % FILE TYPE LOCATION              20053900 T  0202:3
      2(DS:=LIT"0"; DS:=7CHR); % MFID,FID                          20054000 T  0203:2
      T2:=DI; DI:=LOC C; DI:=DI+7; DS:=CHR; DI:=T2; %INT.NAME SIZE  20054100 T  0204:3
      DS:=15LIT"0"; % ZERO OUT REEL,DATE,CYCLE,ETC.                 20054200 T  0206:0
      T2:=SI; SI:=T1; DS:=CHR; SI:=T2; % FILE TYPE                  20054300 T  0208:1
      GO TO SK; L1: GO TO LL; L2: GO TO XXIT; SK:                   20054400 T  0209:1
      SI:=SI+C; % SKIP OVER INTERNAL NAME                            20054500 T  0210:0
      TOG(T2:=DI; DI:=DI-6; SKIP 3DB; SKIP 4SB;                     20054600 T  0210:2
         IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB; % SENSITIVE    20054700 T  0212:0
         2(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB)); % SPEED    20054800 T  0213:2
         5(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB)); % EU       20054900 T  0215:2
         DI:=T2));                                                  20055000 T  0217:2
      DS:=8LIT"0"; % ZERO OUT FIFTH WORD OF FB                      20055100 T  0218:0
      GO TO L1;                                                     20055200 T  0219:1
XXIT: END STREAM STATEMENT;                                         20055300 T  0219:2
                                                                    20055400 T  0219:3
   IF MCPJOB THEN GO TO STOP; % NO LABEL EQUATION FOR "SYSTEM" JOBS 20055500 T  0219:3
                                                                    20055600 T  0220:3
%%% LABEL EQUATION PROCESSING                                       20055700 T  0220:3
                                                                    20055800 T  0220:3
   COMMENT LABEL EQUATION RECORD FORMAT:                            20055900 T  0220:3
                                                                    20056000 T  0220:3
      WORD[ 0]          =  MFID ( ZERO, IF NONE GIVEN )             20056100 T  0220:3
      WORD[ 1]          =  FID                                      20056200 T  0220:3
      WORD[ 2 ].[1:17] = REEL NUMBER ( 3 BCL DIGITS )               20056300 T  0220:3
               .[18:30] = CREATION DATE ( 5 BCL DIGITS )            20056400 T  0220:3
               .[42:1 ] = MARKER FOR FILE OPEN ( 1 = CDATE GIVEN )  20056500 T  0220:3
      WORD[ 3].[ 1:5 ] = CYCLE NUMBER                               20056600 T  0220:3
               .[15:8 ] = NUMBER OF COPIES -1                       20056700 T  0220:3
               .[23:1 ] = PACKETS                                   20056800 T  0220:3
               .[42:1 ] = "FORMS" REQUESTED                         20056900 T  0220:3
```

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                .[43:5 ] = UNIT TYPE                                          20057000 T  0220:3
        WORD[ 4].[ 0:6 ] = SIZE OF INTERNAL NAME                              20057100 T  0220:3
                .[ 6:42] = FIRST SEVEN CHARACTERS OF INTERNAL NAME            20057200 T  0220:3
        WORD[ 5] THROUGH WORD[11] = REMAINDER OF INTERNAL NAME                20057300 T  0220:3
        WORD[12].[15:1 ] = SENSITIVE BIT                                      20057400 T  0220:3
                .[16:2 ] = DISK SPEED (1=FAST,2=SLOW,0=NOT SPECIFIED)         20057500 T  0220:3
                .[18:5 ] = EQ NUMBER + 1                                      20057600 T  0220:3
        WORD[14] = START OF NEXT LBL.EQN.ENTRY (14 IF NO MORE ENTRIES)        20057700 T  0220:3
        WORD[29] = LINK TO NEXT ESP SEGMENT FOR LABEL EQUATION                20057800 T  0220:3
    END OF COMMENT;                                                           20057900 T  0220:3
                                                                              20058000 T  0220:3
     FOR L := 1 STEP 1 UNTIL 2 DO                                             20058100 T  0220:3
        BEGIN                                                                 20058200 T  0223:0
        LINK:=IF L THEN S[15] ELSE S[13]; % EQN FROM COMPILE/EXEC.            20058300 T  0223:0
         % S[15] = RELATIVE DISK ADDRESS IN CODE FILE FOR LABEL               20058400 T  0225:3
         %              EQUATION ENTERED AT COMPILE TIME                      20058500 T  0225:3
         % S[13] = ACTUAL ESP DISK ADDRESS OF LABEL EQUATION ENTERED          20058600 T  0225:3
         %              AT RUN TIME.                                          20058700 T  0225:3
        S2 := NOT L; % TRUE, IF LBL.EQN.ENTERED AT RUN TIME                   20058800 T  0225:3
        WHILE LINK NEQ 0 DO % IF LBL.EQN.EXISTS                               20058900 T  0226:3
           BEGIN                                                              20059000 T  0228:0
           IF LBL=0 THEN                                                      20059100 T  0228:0
           BEGIN                                                              20059110 T  0229:0
           M[(LBL:=[M[SPACE(30)]]&30[8:38:10]) INX NOT 1].[9:6]:=0;           20059120 T  0229:2
           END;                                                               20059130 T  0236:2
           % IF LINK=S[15],READ FROM CODE FILE ELSE READ FROM ESP DISK        20059200 T  0236:2
           DISKWAIT(-(LBL INX 0), 30,                                         20059300 T  0236:2
                   IF L THEN ACTUALDISKADDRESS(LINK) ELSE LINK);              20059400 T  0238:1
           I := 0; % START AT BEGINNING OF SEGMENT                            20059500 T  0245:3
           IF NOT L THEN FORGETESPDISK(LINK);                                 20059600 T  0246:2
           LINK := LBL[29]; % NEXT LINK                                       20059700 T  0248:1
           IF S2 THEN % RUN TIME LABEL EQUATION                               20059900 T  0249:1
              BEGIN                                                           20060000 T  0249:2
              % IF A COMPILE JOB, SAVE FID OF OBJECT FILE NAME IN              20060100 T  0250:0
              % JAR[30] TO PRINT MIX MESSAGE OF THE FORM:                      20060200 T  0250:0
              %     "ALGOL"/<MFID>/<FID>                                      20060300 T  0250:0
              IF JAR[MIX,0] LSS 0 THEN JAR[MIX,30]:=LBL[1];                   20060400 T  0250:0
              S2:=0; % USE THE FIRST EQUATION ONLY                            20060500 T  0254:0
              END;                                                            20060600 T  0254:3
           IF LBL[0] = 14 THEN GO TO STOP;                                    20060800 T  0254:3
UNBLK:     LINDX:=I×14; % INDEX INTO LABEL EQUATION SEGMENT                   20060900 T  0256:1
           STREAM(FN:=0 : FT:=[FT], ZERO:=0, T2:=0,                           20061000 T  0257:2
              TOG:=(FPBVERSION=1), FPB, F:=[LBL[LINDX+4]], C:=0);             20061100 T  0259:0
              BEGIN                                                           20061200 T  0261:2
              SI := F; DI:=LOC C; DI:=DI+7 ; DS:=CHR; % LBL.NAM.SIZE          20061300 T  0261:2
              SI := FPB;                                                      20061400 T  0262:2
           L: DI:=LOC FN; DI:=DI+6; DS:=2 CHR; % FILE NUMBER                  20061500 T  0262:3
              DI := LOC ZERO;  SI:=SI-2;                                      20061600 T  0263:2
              IF 2 SC = DC THEN GO TO XXIT; % FILE NUMBER=0                   20061700 T  0264:0
              DI:=FT; DS:=CHR; SI:=SI+14; % SAVE FILE TYPE FOR CHK BELOW       20061800 T  0264:3
              DI := F; % SI AT FPB INT.NAM,DI AT LBL.EQN.                     20061900 T  0265:2
              IF SC = DC THEN % SAME STRING SIZE                              20062000 T  0265:3
                 BEGIN                                                        20062100 T  0266:1
                 IF C SC=DC THEN GO TO XXIT; % ALL CHARACTERS MATCH           20062200 T  0266:1
                 END                                                          20062300 T  0267:1
              ELSE                                                            20062400 T  0267:1
                 BEGIN % NOT THE SAME SIZE                                    20062500 T  0267:2
                 SI:=SI-1; DI:=LOC T2; DI:=DI+7; DS:=CHR;                     20062600 T  0267:2
                 SI:=SI+T2; % SKIP OVER FPB ENTRY                             20062700 T  0268:2
                 END;                                                         20062800 T  0269:0
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                    TOG(SI:=SI+2); % SPEED AND EU CHARACTERS IN FPB(VERSION 1)      20062900 T  0269:0
                    GO TO L;                                                        20063000 T  0270:0
            XXIT:   END;                                                            20063100 T  0270:1
                                                                                    20063200 T  0270:2
                IF (T:=P) NEQ 0 THEN % VALID LABEL EQUATION                         20063300 T  0270:2
                    BEGIN                                                           20063400 T  0271:2
                    FBADRS:=(T-1)×ETRLNG+FB; % ADRS OF FB FILE ENTRY                20063500 T  0272:0
                    % FT IS FILE TYPE FROM FPB OBTAINED ABOVE                       20063600 T  0274:1
                    IF (FT1:=LBL[LINDX+3].[43:5]) NEQ @37 THEN FT:=FT1;%NEW TYP     20063700 T  0274:1
                    FT:=FT.[43:5]; % REMOVE "FORMS" BIT                             20063800 T  0278:0
                    TYPEDISK ← (FT=10) OR (FT=12) OR (FT=13) OR (FT=26);            20063900 T  0279:1
                    STREAM(X:=[LBL[LINDX]],TOG:=(TYPEDISK AND (FPBVERSION=1)),      20064000 T  0283:2
                         FBADRS);                                                   20064100 T  0285:2
                      BEGIN                                                         20064200 T  0286:0
                      SI:=X; DS:=3WDS; DS:=CHR; % MFID,FID,REEL,DATE,CYCLE          20064300 T  0286:0
                      TOG(SI:=SI+2; SKIP 5SB; DI:=DI+2; SKIP 5DB;                   20064400 T  0286:3
                          IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB;               20064500 T  0288:1
                          JUMP OUT TO L); % SAVE EU/SPEED SPECS FOR DISK            20064600 T  0289:3
                      DS:=3CHR;                                                     20064700 T  0290:2
                    L: DS:=3CHR;                                                    20064800 T  0290:3
                      IF SC NEQ "←" THEN % NEW TYPE SPECIFIED                       20064900 T  0291:0
                        IF SC NEQ """ THEN DS:=CHR ELSE DS:=SET;                    20065000 T  0291:2
                      END STREAM STATEMENT;                                         20065100 T  0292:3
                    SENSEVAL := (EUVAL := LBL[LINDX+12].[15:8]).[40:1];             20065200 T  0293:0
                    SPDVAL   := EUVAL.[41:2];                                       20065300 T  0296:0
                    EUVAL    := EUVAL AND @37;                                      20065400 T  0297:1
                    IF SPDVAL GTR 0 THEN                                            20065500 T  0298:2
                      M[FBADRS+3]:=(*P(DUP))&SPDVAL[16:46:2];                       20065600 T  0299:1
                    IF SENSEVAL THEN % FILE SENSITIVE                               20065700 T  0303:0
                      M[FBADRS+3]:=(*P(DUP))&SENSEVAL[15:47:1];                     20065800 T  0303:1
                    IF EUVAL GTR 0 THEN % NEW EU NUMBER REQUESTED IN LBL.EQN.       20065900 T  0307:0
                      M[FBADRS+3]:=(*P(DUP))&EUVAL [18:43:5];                       20066000 T  0307:3
                    END; % IF VALID LABEL EQUATION                                  20066100 T  0311:2
                  IF (I:=I+1) = 1 THEN IF LBL[14] NEQ 14 THEN GO TO UNBLK;          20066200 T  0311:2
                  END; % WHILE LINK NEQ 0                                           20066300 T  0315:1
            STOP:  END; % FOR L                                                    20066400 T  0317:0
                FORGETSPACE(FPB);                                                   20066500 T  0319:1
                TRP[3] := [M[FB]] & (SEG0[7].[CF]×ETRLNG)[8:38:10];                 20066600 T  0320:0
                END; % IF TYPE = EQUATING                                           20066700 T  0324:0
                                                                                    20066800 T  0324:0
            EXIT:                                                                   20080000 T  0324:0
                P([RETURNRCW], STS, 0, RDS, 0, XCH, P&P[CTF], STF);                 20080100 T  0324:0
                END PROCEDURE SELECTRUN1;                                           20080200 T  0326:3
                                                                                    SIZE= 0327 WORDS
                                                                                    20080300 T  0000:0
                                                                                    20080400 T  0000:0
            PROCEDURE SELECTRUN2;                                                   20080500 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00515
              BEGIN                                                                 20080600 T  0000:0
              REAL    MSCW      = -2,                                               20080700 T  0000:0
                      F         = -1,                                               20080800 T  0000:0
                      MYMSCW    = -1,                                               20080900 T  0000:0
                      RCW       = +0,                                               20081000 T  0000:0
                      I         = +1,                                               20081100 T  0000:0
                      T         = +2,                                               20081200 T  0000:0
                      L         = +3,                                               20081300 T  0000:0
                      DT        = +4,                                               20081400 T  0000:0
                      MIX       = +5,                                               20081500 T  0000:0
                      HDR       = +6,                                               20081600 T  0000:0
                      LEVEL     = +7,                                               20081700 T  0000:0
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                MCPJOB        =  +8,                                  20081800 T  0000:0
                OLAYDISK      =  +9,                                  20081900 T  0000:0
                THISLINK      =  +10,                                 20082000 T  0000:0
                NEXTLINK      =  +11,                                 20082100 T  0000:0
                PREVLINK      =  +12,                                 20082200 T  0000:0
                TYPE          =  +13,                                 20082300 T  0000:0
                STACKLOC      =  +14,                                 20082400 T  0000:0
                SHEETLOCKED   =  +15;                                 20082500 T  0000:0
                                                                      20082600 T  0000:0
        ARRAY   S             =  +16[*],                              20082700 T  0000:0
                SEGO          =  +17[*],                              20082800 T  0000:0
                TRP           =  +18[*],                              20082900 T  0000:0
                LBL           =  +19[*],                              20083000 T  0000:0
                SD            =  NT2[*],                              20083100 T  0000:0
                TSKA          =  NT2[*];                              20083200 T  0000:0
                                                                      20083300 T  0000:0
        NAME    ADDR          = LBL +1;                               20083500 T  0000:0
        REAL    PASSLEVEL     = ADDR + 1,                             20083600 T  0000:0
                SVALUE        = PASSLEVEL,                            20083700 T  0000:0
                RETURNMSCW    = PASSLEVEL + 1,                        20083800 T  0000:0
                RETURNRCW     = RETURNMSCW + 1;                       20083900 T  0000:0
                                                                      20084000 T  0000:0
        DEFINE SHEETMAX = MIXMAX#;                                    20084100 T  0000:0
                                                                      20084200 T  0000:0
                                                                      20085300 T  0000:0
        %%%%                        ***NOTE****                       20085400 T  0000:0
        %%%% THE VARIABLES DECLARED ABOVE MUST CORRESPOND EXACTLY TO   20085500 T  0000:0
        %%%% THOSE DECLARED IN PROCEDURE SELECTRUN.                    20085600 T  0000:0
        REAL MESAGESPACE = RETURNRCW + 1; % LOCAL TO THIS PROCEDURE    20085700 T  0000:0
                                                                      20085710 T  0000:0
        LABEL DLX, BMSG, NG, SKIP, EXIT;                              20085800 T  0000:0
                                                                      20085900 T  0000:0
        DEFINE XCLOCKTIME =                                           20086000 T  0000:0
            (((NT2:=(XCLOCK DIV 3600)) MOD 60 + (NT2 DIV 60)×100 +    20086100 T  0000:0
             0.5 ) DIV 1)#;                                           20086200 T  0000:0
                                                                      20086300 T  0000:0
        DEFINE ACTUALDISKADDRESS(ACTUALDISKADDRESS1) =                20086400 T  0000:0
            ((JAR[MIX,((NT4:=ACTUALDISKADDRESS1) DIV (NT3:=JAR[MIX,8]))+10]  20086500 T  0000:0
             + (NT4 MOD NT3) + 0.5) DIV 1)#;                          20086600 T  0000:0
                                                                      20086700 T  0000:0
      $ SET OMIT = NOT(PACKETS)                                       20086799 T  0000:0
                                                                      20086810 T  0000:0
        DEFINE DALOCSIZE = 9#;                                        20087200 T  0000:0
                                                                      20087400 T  0000:0
        % VALUES ASSOCIATED WITH "TYPE" :                             20087500 T  0000:0
                                                                      20087600 T  0000:0
        DEFINE STARTING       =  1#,                                  20087700 T  0000:0
               CONTINUEING    =  2#,                                  20087800 T  0000:0
               QUITTING       =  3#,                                  20087900 T  0000:0
               RUNING         =  4#,                                  20088000 T  0000:0
               PASSING        =  5#,                                  20088100 T  0000:0
               EQUATING       =  6#;                                  20088200 T  0000:0
                                                                      20088300 T  0000:0
        SUBROUTINE DELINK;                                            20088400 T  0000:0
        % DELINKS THE SHEET ENTRY AND RETURNS SHEET DISK SPACE        20088500 T  0001:0
            BEGIN                                                     20088600 T  0001:0
            STREAM(A:=S[3],[8:10],B:=P(.SCHEDULEIDS));                20088700 T  0001:0
                BEGIN % MARK SCHEDULE SLOT "OPEN"                     20088800 T  0002:3
                SKIP A DB; DS:=RESET;                                 20088900 T  0002:3
                END;                                                  20089000 T  0003:2
```

```
                IF F = 0 THEN % SHEET ENTRY NOT PASSED AS PARAMETER                 20089100 T  0003:3
                    BEGIN                                                           20089200 T  0004:2
                    IF NEXTLINK=0 THEN SHEET[LEVEL].[FF]:=PREVLINK;                 20089300 T  0005:0
                    IF PREVLINK=0 THEN                                              20089400 T  0008:1
                        BEGIN                                                       20089500 T  0009:0
                        SHEET[LEVEL].[CF]:=NEXTLINK; GO DLX;                        20089600 T  0009:2
                        END;                                                        20089700 T  0012:0
                    IF LBL=0 THEN                                                   20089800 T  0012:0
                    BEGIN                                                           20089810 T  0013:0
                    M[(LBL:=[M[SPACE(30)]]&30[8:38:10]) INX NOT 1].[9:6]:=0;        20089820 T  0013:2
                    END;                                                            20089830 T  0020:2
                    DISKWAIT(=(LBL INX 0), 30, PREVLINK);                           20089900 T  0020:2
                    LBL[29]:=NEXTLINK;                                              20090000 T  0022:3
                    DISKWAIT( (LBL INX 0), 30, PREVLINK);                           20090100 T  0024:0
DLX:                FORGETESPDISK(THISLINK);                                        20090200 T  0026:0
                    END; % IF SHEET ENTRY NOT A PARAMETER                           20090300 T  0026:3
                END DELINK;                                                         20090400 T  0026:3
                                                                                    20090500 T  0027:0
            BOOLEAN SUBROUTINE REENTRY;                                             20090700 T  0027:0
                BEGIN                                                               20090800 T  0027:0
                POLISH(FALSE);                                                      20090900 T  0027:0
                IF JAR[MIX,2].[8:10] NEQ 0 THEN % NOT "GO" FROM COMPILE AND GO      20091000 T  0027:1
                IF NOT (S[2].[2:1]) THEN % NOT FS=FD                                20091100 T  0029:1
                FOR I:=1 STEP 1 UNTIL MIXMAX DO                                     20091200 T  0031:0
                IF JAR[I,*] NEQ 0 THEN                                              20091300 T  0033:0
                IF ((JAR[MIX,0] EQV JAR[I,0])) = (NOT 0) THEN % SAME MFID           20091400 T  0034:0
                IF ((JAR[MIX,0] LSS 0) OR % COMPILER                                20091500 T  0037:2
                (((JAR[MIX,1] EQV JAR[I,1])) = (NOT 0))) THEN % SAME FID            20091600 T  0039:2
                IF JAR[I,10] NEQ 0  THEN % COMPILER OR SAME MFID                    20091700 T  0042:3
                IF JAR[I,2].[8:10] NEQ 0 THEN % NOT "GO" PART OF COMP.& GO          20091800 T  0044:3
                IF PRYOR[I] GEQ 0 OR                                                20091900 T  0047:1
                NFO[(I-1)×NDX+1].[FF] NEQ 0 THEN % RUNNING                          20092000 T  0048:3
                    BEGIN                                                           20092100 T  0052:1
                    COMMENT MAKE THE ENTRY IN LINKED-LIST STYLE;                    20092200 T  0052:3
                    IF PRT[I,4].[FF] NEQ 0 THEN % ALREADY PRESENT                   20092300 T  0052:3
                        BEGIN                                                       20092400 T  0055:0
                        COMMENT ENTER AT TAIL OF PREVIOUS LIST;                     20092500 T  0055:2
                        DO NT1:=I UNTIL(I:=PRT[I,4].[24:6])=@77;                    20092600 T  0055:2
                        NFO[(MIX-1)×NDX+1]:=TRP[4]:=PRT[NT1,4];                     20092700 T  0059:1
                        NFO[(NT1-1)×NDX+1]:=PRT[NT1,4]:=                            20092800 T  0063:3
                        (*P(DUP))&MIX[24:42:6];                                     20092900 T  0066:3
                        END                                                         20093000 T  0069:1
                    ELSE                                                            20093100 T  0069:1
                        BEGIN                                                       20093200 T  0069:1
                        COMMENT CONSTRUCT NEW LIST;                                 20093300 T  0069:3
                        NFO[(I-1)×NDX+1]:=PRT[I,4]:=                                20093400 T  0069:3
                        (*P(DUP))&I[18:42:6]&MIX[24:42:6];                          20093500 T  0072:3
                        NFO[(MIX-1)×NDX+1]:=TRP[4]:=                                20093600 T  0076:1
                        PRT[I,4]&@77[24:42:6];                                      20093700 T  0078:3
                        END;                                                        20093800 T  0081:3
                    POLISH(DEL,TRUE);                                               20093900 T  0081:3
                    I:=MIXMAX;                                                      20094000 T  0082:1
                    END;                                                            20094100 T  0083:0
                REENTRY:=POLISH;                                                    20094200 T  0085:1
                END REENTRANT CODE LINKAGE ESTABLISHMENT SUBROUTINE;                20094300 T  0085:2
                                                                                    20094500 T  0085:3
            P(MYMSCW, STF);                                                         20094600 T  0085:3
            P(0); % MESAGE SPACE, LOCAL TO THIS PROCEDURE                           20094610 T  0086:3
                                                                                    20094700 T  0087:0
% ****  *****  ***  *****  *****  *****  *****                                      20094800 T  0087:0
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%     *   *  *   *       *       *  *  *  *       *       *                    20094900 T  0087:0
%     ****   *   *       *       *  *  *  *****  *****  *  **                  20095000 T  0087:0
%     *   *  *   *   *   *       *  *  *  *          *   *   *                 20095100 T  0087:0
%     ****   *****   ****        *  *  *  *****  *****  ***** 0                20095200 T  0087:0
                                                                               20095300 T  0087:0
  $ SET OMIT = NOT( DCSPO AND DATACOM )                                        20098900 T  0087:0
    IF BOJMESS THEN                                                            20100700 T  0087:0
      IF MCPJOB.[1:1] THEN % "SYSTEM" TYPE JOB                                 20100800 T  0087:3
        IF NOT (AUTOMESS) THEN % SUPPRESS BOJ/EOJ MESSAGE                      20100900 T  0089:0
          IF NOT (S[2].[2:1]) THEN % NOT ES-ED                                 20101000 T  0090:2
            IF S[2].[4:1] THEN % SUPRESS BOJ/EOJ MESSAGE                       20101100 T  0092:1
              BEGIN                                                            20101200 T  0093:3
              STREAM(N:=S[0], MIX, T:=T:=GETSPACE(4,0,0)+2);                   20101300 T  0094:1
                BEGIN                                                          20101400 T  0097:3
                DS:=6LIT" AUTO-";                                              20101500 T  0097:3
                SI:=LOC N; SI:=SI+1; DS:=7CHR;                                 20101600 T  0098:3
                DS:=2LIT" ="; SI:=LOC MIX; DS:=2DEC;                           20101700 T  0099:2
                DS:=LIT"←"; DI:=DI-3; DS:=FILL;                                20101800 T  0100:2
                END;                                                           20101900 T  0101:2
              SPOUT(T);                                                        20102000 T  0101:3
              GO TO SKIP;                                                      20102100 T  0102:2
              END;                                                             20102200 T  0103:0
  $ SET OMIT = PACKETS                                                         20104600 T  0103:0
    IF BOJMESS                                                                 20104700 T  0103:0
  $ POP OMIT % PACKETS                                                         20104800 T  0103:0
  $ SET OMIT = NOT(PACKETS)                                                    20104900 T  0103:0
    AND NOT S[2].[2:1] THEN % S[2].[2:1]=1 WHEN ES-ED                          20105200 T  0103:0
      BEGIN                                                                    20105300 T  0105:1
      STREAM(DAAT:=DT, DTOG:=NOT(MCPJOB) AND TRUE, SV :=0,                     20105400 T  0105:3
  $ SET OMIT = NOT(DCSPO AND DATACOM)                                          20105500 T  0107:2
          C:=S[18], A:=JARROW[MIX], MIX,  % S[18]=PRIORITY                     20105900 T  0107:2
          Q:=XCLOCKTIME, B:=MESAGESPACE:=GETSPACE(12,0,0)+2);                  20106000 T  0108:3
        BEGIN                                                                  20106100 T  0115:2
        SI:=LOC C; DS:=6DEC; DI:=DI-6; DS:=5FILL;      % PRIORITY              20106200 T  0115:2
        DI:=B; DI:=DI+6; DS:=LIT":";                                           20106300 T  0116:2
        SI:=A; SI:=SI+1; DS:=7CHR;                     % MFID                  20106400 T  0117:2
        DS:=LIT"/"; SI:=SI+1; DS:=7CHR;                % FID                   20106500 T  0118:1
        SI:=LOC MIX; DS:=LIT"="; DS:=2DEC;             % MIX                   20106600 T  0119:1
        SV:=DI; DI:=DI-2; DS:=FILL; DI:=SV;                                    20106700 T  0120:1
        DS:=5LIT" BOJ "; DS:=4DEC; DS:=LIT" ";         % TIME                  20106800 T  0121:1
        DTOG(SI:=LOC DAAT; SI:=SI+2;                                           20106900 T  0123:0
        3(DS:=2CHR; DS:=LIT"/"); DI:=DI-1);            % CDATE                 20107000 T  0124:0
  $ SET OMIT = NOT(DCSPO AND DATACOM)                                          20107100 T  0125:3
        DS:=LIT"←";                                                            20107500 T  0125:3
        END STREAM STATEMENT;                                                  20107600 T  0126:1
  $ SET OMIT = NOT(DCSPO AND DATACOM)                                          20107700 T  0126:2
                                                                               20108400 T  0126:2
      END;                                                                     20108500 T  0126:2
                                                                               20108700 T  0126:2
SKIP:                                                                          20108800 T  0126:2
                                                                               20108900 T  0126:2
                                                                               20109000 T  0126:2
%    *****  *****  *****     *****  *****  *****  *****                        20109100 T  0126:2
%    *      *      *            *  *      *   *  *   *                        20109200 T  0126:2
%    *****  *****  *  **       *  *****  *****  *   *                        20109300 T  0126:2
%        *  *      *   *      *  *      *   *  *   *                        20109400 T  0126:2
%    *****  *****  *****     *****  *****  *   *  *****                        20109500 T  0126:2
                                                                               20109600 T  0126:2
    IF F NEQ 0 THEN % SHEET ENTRY PASSED AS A PARAMETER                        20109700 T  0126:2
      BEGIN                                                                    20109800 T  0127:1
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            IF SEGO NEQ 0 THEN FORGETSPACE(SEGO);                                   20109900 T  0127:3
            SEGO:=S&S[7][CTC] % SEGMENT ZERO PRESENT AT CORE ADDRESS "S[7]"         20110000 T  0130:1
            END                                                                     20110100 T  0131:1
        ELSE                                                                        20110200 T  0132:0
            BEGIN                                                                   20110300 T  0132:0
            IF SEGO=0 THEN                                                          20110400 T  0135:0
            BEGIN                                                                   20110410 T  0136:0
            M[(SEGO:=[M[SPACE(30)]]&30[8:38:10]) INX NOT 1].[9:6]:=0;               20110420 T  0136:2
            END;                                                                    20110430 T  0143:2
            DISKWAIT(-(SEGO INX 0),30,M[HDR INX 10]); % READ SEGMENT ZERO           20110500 T  0143:2
            END; % IF SEGMENT ZERO WAS NOT PRESENT                                  20110600 T  0147:0
        JAR[MIX,2] := (*P(DLP)) & SEGO[2][1:1:2] &                                  20110700 T  0147:0
                      SEGO[2][5:2:3] &                                              20110900 T  0149:3
                      SEGO[7][3:2:1];                                               20111100 T  0151:0
        % SEGO[2].[1:1] = JOB COMPILED BY COBOL ( NO "DAT" ENTRY )                  20111200 T  0152:3
        % SEGO[2].[2:3], SEGO[7].[2:1] = USED FOR INTER-PROG.COMMUNICATION          20111300 T  0152:3
        IF SEGO[2].[2:1] THEN SOFTI:=SOFTI+1;                                       20111500 T  0152:3
    $ SET OMIT = NOT(BREAKOUT)                                                      20111800 T  0155:2
                                                                                    20115200 T  0155:2
%   *****  *****  *****  *****  *   *              *****  *****  *****              20115300 T  0155:2
%   *        *    *   *  *      *  *        *     *   *  *   *    *               20115400 T  0155:2
%   *****    *    *****  *      ***      *****   *****  *****    *               20115500 T  0155:2
%       *    *    *   *  *      *  *        *     *      *  *    *               20115600 T  0155:2
%   *****    *    *   *  *****  *   *              *      *   *    *               20115700 T  0155:2
                                                                                    20115800 T  0155:2
            % S[21] CONTAINS STACK SIZE, SEGO[3] CONTAINS PRT SIZE                  20115900 T  0155:2
            NFO[(MIX-1)xNDX+2].[CF] :=                                              20116500 T  0155:2
            (STACKLOC:=GETSPACE(SEGO[3] INX S[21] INX 64, 2, 3))+2;                 20116600 T  0158:0
                IF STACKLOC = 0 THEN % NO MEMORY                                    20116700 T  0162:2
                BEGIN                                                               20116800 T  0163:1
NG:             IF S[2] LSS 0 THEN % ES-ED OR XS-ED                                 20116900 T  0163:3
                    BEGIN                                                           20117000 T  0164:3
                    STREAM(D:=I:=SPACE(4));                                         20117100 T  0165:1
                        DS:=19LIT".NOT XS-ED(NO MEM)+";                             20117200 T  0168:0
                    SPOUTER(I,UNITNO,1);                                            20117300 T  0171:0
                    S[2] := ABS(S[2]); % MARK IT *NOT* XS-ED / ES-ED                20117400 T  0171:3
                    DISKWAIT((S INX 0), 30, THISLINK); % WRITE BACK SHEET           20117500 T  0173:2
                    END; % IF ES-ED / XS-ED                                         20117600 T  0175:2
                JARROW[MIX]:=0;                                                     20117610 T  0175:2
                CORE.[FF] := CORE.[FF] - S[20];                                     20117620 T  0176:3
                IF MESAGESPACE NEQ 0 THEN % BOJ MESAGE BUILT                        20117630 T  0179:1
                    BEGIN                                                           20117640 T  0180:0
                    FORGETSPACE(MESAGESPACE);                                       20117650 T  0180:2
                    MESAGESPACE:=0;                                                 20117660 T  0181:1
                    END;                                                            20117670 T  0182:0
                TYPE := "PASSING; GO TO EXIT;                                       20117700 T  0182:0
                END; % IF NO MEMORY                                                 20117800 T  0183:2
            IF NOT MCPJOB.[1:1] THEN % NOT "LDCNTRL","PRNPBT" AND OPTNS SET         20117900 T  0183:2
            IF STACKLOC GEQ @50000 THEN                                             20118000 T  0184:2
                BEGIN % MEMORY IS TOO TIGHT TO RUN (SAVE SPACE TO HIGH)             20118100 T  0185:3
                FORGETSPACE(STACKLOC+2); STACKLOC:=0; GO TO NG;                     20118200 T  0186:1
                END;                                                                20118300 T  0190:0
        IF MESAGESPACE NEQ 0 THEN % BOJ MESSAGE BUILD                               20118350 T  0190:0
            BEGIN                                                                   20118360 T  0190:3
            SPOUTER(MESAGESPACE,UNITNO,(BOJMESS AND NOT S[2].[2:1]));               20118370 T  0191:1
            % S[2].[2:1] = 1 WHEN ES-ED                                             20118380 T  0192:0
            MESAGESPACE:=0;                                                         20118390 T  0192:0
            END;                                                                    20118400 T  0192:3
        M[STACKLOC].[9:6] := MIX; % PLACE MIX INDEX IN MEMORY LINK                  20118600 T  0192:3
        % COMPUTE THE ADDRESS FOR THE PRT SUCH THAT PRTADRS.[42:6]=0                20118800 T  0195:2
```

```
T:=(((STACKLOC:=STACKLOC+2)+S[21]) OR 63) + 1; % S[21]=STACKSIZE                20118900 T  0195:2
IF ((I:=M[STACKLOC-2].[CF])-(L:=SEGO[3] INX T)) GTR 10 THEN                     20119000 T  0199:0
   BEGIN % RETURN REMAINDER OF PRT SPACE                                        20119100 T  0203:3
   IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);                                20119600 T  0204:1
   LOCKTOG(STOREMASK);                                                          20119700 T  0207:1
   M[L] := I & (STACKLOC-2)[CTF] & MIX[9:42:6]; % NEW LINK                      20119900 T  0210:3
   M[I].[FF]          := L;                     % BACK LINK                     20120000 T  0214:1
   M[STACKLOC-2].[CF] := L;                     % FORWARD LINK                  20120100 T  0216:2
   UNLOCKTOG(STOREMASK);                                                        20120600 T  0219:1
   FORGETSPACE(L+2);                                                            20120800 T  0222:3
   END; % IF PRT SPACE WAS TOO LARGE                                            20120900 T  0224:0
%   ZERO OUT STACK TO EASE PROBLEMS OF CONGENITAL DUMP-READERS                  20121000 T  0224:0
M[STACKLOC] := @3333333333333333;                                               20121100 T  0224:0
MOVE(T-STACKLOC-1,STACKLOC,STACKLOC+1);                                         20121200 T  0225:2
                                                                                20121300 T  0228:2
%  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .            20121400 T  0228:2
%  READ IN PRT FROM DISK                                                        20121500 T  0228:2
%  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .            20121600 T  0228:2
                                                                                20121700 T  0228:2
DISKWAIT(-T, SEGO[3].[CF], ACTUALDISKADDRESS(SEGO[2].[CF]));                    20121800 T  0228:2
% SEGO[2] = RELATIVE DISK ADDRESS OF THE PRT IN THE CODE FILE                   20121900 T  0237:0
% SEGO[3] = SIZE OF THE PRT                                                     20122000 T  0237:0
TRP:=PRTROW[MIX]:=[M[T]]&1023[8:38:10]; % DESCRIPTOR TO THE PRT                 20122100 T  0237:0
                                                                                20122200 T  0240:1
%  *****  *****  *****     ****    ***   *****  *****                           20122300 T  0240:1
%  *      *      *         *   *   *     *      *                              20122400 T  0240:1
%  *****  *****  *  **     *   *   *     *      *                              20122500 T  0240:1
%      *  *      *   *     *   *   *     *      *                              20122600 T  0240:1
%  *****  *****  ***** O   ****    ***   *****  * O                            20122700 T  0240:1
                                                                                20122800 T  0240:1
IF REENTRY THEN                                                                 20123000 T  0240:1
   BEGIN                                                                        20123100 T  0241:0
   % RE-ENTRANT JOB, PRT[4] POINTS TO EXISTING SEGMENT DICTIONARY               20123200 T  0241:2
   COMMENT BUILD PHONY ICW, IRCW, & INCW;                                       20123300 T  0241:2
   M[STACKLOC]   := @2222222222222222;                                          20123400 T  0241:2
   M[STACKLOC+1] := -FLAG(0&(TRP)[6:33:9]);                                     20123500 T  0243:0
   M[STACKLOC+2] := -FLAG(0);                                                   20123600 T  0246:3
   TRP[8]        := -FLAG(STACKLOC+2);                                          20123700 T  0249:1
   TRP[10]       := TRP&(STACKLOC+1)[18:33:15];                                 20123800 T  0251:2
   END % REENTRY                                                                20123900 T  0254:0
ELSE                                                                            20124000 T  0254:0
   BEGIN                                                                        20124100 T  0254:0
   NFO[(MIX-1)×NDX+1] :=                                                        20124700 T  0258:0
   TRP[4]:=[M[T:=GETSPACE(SEGO[1].[CF],1,1)+2]];                                20124900 T  0260:0
   DISKWAIT(-T, SEGO[1].[CF], ACTUALDISKADDRESS(SEGO[0].[CF]));                 20125000 T  0265:0
   % SEGO[0]= RELATIVE DISK ADDRESS OF SEGMENT DICTIONARY                       20125100 T  0273:2
   % SEGO[1]= SIZE OF THE SEGMENT DICTIONARY                                    20125200 T  0273:2
   M[TRP[4]] := SEGO[1].[CF] -1; % SEGDICT[0]=SIZE OF DICTIONARY                 20125300 T  0273:2
$ SET OMIT = NOT(AUXMEM)                                                        20125400 T  0276:2
   END; % NOT REENTRY                                                           20126400 T  0276:2
                                                                                20126600 T  0276:2
%  ****   *****  *      *****  *****                                            20126700 T  0276:2
%  *   *  *   *  *      *   *  *                                               20126800 T  0276:2
%  *   *  *****  *      *   *  *                                               20126900 T  0276:2
%  *   *  *   *  *      *   *  *                                               20127000 T  0276:2
%  ****   *   *  *****  *****  *****                                           20127100 T  0276:2
                                                                                20127200 T  0276:2
STREAM(D:=DALOCROW[MIX]:=[M[GETSPACE(DALOCSIZE,0,0)+2]] &                       20127300 T  0276:2
      DALOCSIZE[8:38:10]);                                                      20127400 T  0279:2
   BEGIN                                                                        20127500 T  0281:1
```

```
                SI:=D; SI:=SI-8; DS:=DALOCSIZE WDS;                                  20127600 T  0281:1
                END;                                                                 20127700 T  0282:0
            IF OLAYDISK NEQ 0 THEN % OLAY DISK OBTAINED ABOVE                        20127800 T  0282:1
               BEGIN                                                                 20127900 T  0283:0
               DALOC[MIX,0] := @200002;                                              20128000 T  0283:2
               DALOC[MIX,1] := OLAYDISK;                                             20128100 T  0285:1
               OLAYDISK     := 0;                                                    20128200 T  0287:0
               END;                                                                  20128300 T  0287:3
            OLAYMASK := TWO(MIX) OR OLAYMASK; % OLAYS NOW ALLOWABLE                  20128400 T  0287:3
                                                                                     20128500 T  0289:2
        %   *****  *****   *****    *****   *****  *    *                            20128600 T  0289:2
        %   *      *   *   *   *   *   *   *   *   *   **   *                        20128700 T  0289:2
        %   *      *   *   *   *   *   *   *   *   *   *  *  *                       20128800 T  0289:2
        %   *      *   *   *   *   *   *   *   *   *   *  *  * *                     20128900 T  0289:2
        %   *****  *****  *   *   *   *   *   *  *****  *   **                       20129000 T  0289:2
                                                                                     20129100 T  0289:2
            % PLACE "COMMON" VALUE IN FIRST SIMPLE VARIABLE IN THE PRT               20129200 T  0289:2
            NT1 := S[19]; % COMMON VALUE IN SHEET[19]                                20129300 T  0289:2
            FOR I:= @25 STEP 1 WHILE NT1 NEQ 0 AND I LSS SEG0[3] DO                  20129400 T  0290:2
            IF TRP[I]=0 THEN % SIMPLE VARIABLE (NOT A DESCRIPTOR)                    20129500 T  0295:3
                BEGIN                                                                20129600 T  0296:3
                TRP[I]:=NT1;                                                         20129700 T  0297:1
                NT1:=0                                                               20129800 T  0298:2
                END;                                                                 20129900 T  0298:2
            DELINK; % DELINK SHEET ENTRY FROM SHEET QUEUE                            20130000 T  0302:0
                                                                                     20130100 T  0303:0
        EXIT:                                                                        20140000 T  0303:0
                                                                                     20140100 T  0303:0
            P([RETURNRCW], STS, 0, RDS, 0, XCH, P&P[CTF], STF);                      20140200 T  0303:0
            END PROCEDURE SELECTRUN2;                                                20140300 T  0305:3
                                                                                                SIZE= 0306 WORDS
                                                                                     20140400 T  0000:0
        % FOR ADDITIONAL INFORMATION CONCERNING THE SHEET, SEE THE                   20140500 T  0000:0
        % DOCUMENT AT SEQUENCE NUMBER 20512000                                       20140600 T  0000:0
                                                                                     20140700 T  0000:0
        PROCEDURE SELECTRUN(F); VALUE F; REAL F;                                     20140800 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00526
            BEGIN                                                                    20140900 T  0000:0
                                                                                     20141000 T  0000:0
            REAL    MSCW        =  -2,                                               20141100 T  0000:0
                    F           =  -1,                                               20141200 T  0000:0
                    MYMSCW      =  -1,                                               20141300 T  0000:0
                    RCW         =  +0,                                               20141400 T  0000:0
                    I           =  +1,                                               20141500 T  0000:0
                    T           =  +2,                                               20141600 T  0000:0
                    L           =  +3,                                               20141700 T  0000:0
                    DT          =  +4,                                               20141800 T  0000:0
                    MIX         =  +5,                                               20141900 T  0000:0
                    HDR         =  +6,                                               20142000 T  0000:0
                    LEVEL       =  +7,                                               20142100 T  0000:0
                    MCPJOB      =  +8,                                               20142200 T  0000:0
                    OLAYDISK    =  +9,                                               20142300 T  0000:0
                    THISLINK    =  +10,                                              20142400 T  0000:0
                    NEXTLINK    =  +11,                                              20142500 T  0000:0
                    PREVLINK    =  +12,                                              20142600 T  0000:0
                    TYPE        =  +13,                                              20142700 T  0000:0
                    STACKLOC    =  +14,                                              20142800 T  0000:0
                    SHEETLOCKED =  +15;                                              20142900 T  0000:0
                                                                                     20143000 T  0000:0
            ARRAY   S           =  +16[*],                                           20143100 T  0000:0
```

```
                SEGO          =  +17[*],                                  20143200 T  0000!0
                TRP           =  +18[*],                                  20143300 T  0000!0
                LBL           =  +19[*],                                  20143400 T  0000!0
                SD            =  NT2[*],                                  20143500 T  0000!0
                TSKA          =  NT2[*];                                  20143600 T  0000!0
                                                                          20143700 T  0000!0
        NAME    ADDR          = LBL +1;                                   20143900 T  0000!0
        REAL    PASSLEVEL     = ADDR + 1,                                 20144000 T  0000!0
                SVALUE        = PASSLEVEL,                                20144100 T  0000!0
                RETURNMSCW    = PASSLEVEL + 1,                            20144200 T  0000!0
                RETURNRCW     = RETURNMSCW + 1;                           20144300 T  0000!0
                                                                          20144400 T  0000!0
        DEFINE SHEETMAX = MIXMAX#;                                        20144500 T  0000!0
                                                                          20144600 T  0000!0
                                                                          20145700 T  0000!0
        %%%%                    ***NOTE****                              20145800 T  0000!0
        %%%%  RETURNMSCW AND RETURNRCW ***MUST*** BE THE LAST TWO          20145900 T  0000!0
        %%%%  VARIABLES DECLARED IN THIS PROCEDURE.                        20146000 T  0000!0
                                                                          20146100 T  0000!0
        DEFINE XCLOCKTIME =                                               20146200 T  0000!0
            (((NT2!=(XCLOCK DIV 3600)) MOD 60 + (NT2 DIV 60)×100 +        20146300 T  0000!0
             0.5 ) DIV 1)#;                                               20146400 T  0000!0
                                                                          20146410 T  0000!0
      $ SET UMIT = NOT(PACKETS)                                           20146419 T  0000!0
                                                                          20146500 T  0000!0
        LABEL START, CONTINUE, LOAD, PASS, WINDUP, QUIT;                  20146600 T  0000!0
        LABEL JARSPACE, TRYAGAIN;                                         20146700 T  0000!0
                                                                          20146800 T  0000!0
        SWITCH SW := QUIT, START, CONTINUE, QUIT, QUIT, PASS;             20146900 T  0000!0
                                                                          20147000 T  0000!0
        COMMENT THE VALUE OF "TYPE" MAY DETERMINE WHICH PORTIONS OF       20147100 T  0000!0
        PROCEDURES "SELECTRUN1" AND/OR "SELECTRUN2" WILL BE EXECUTED.     20147200 T  0000!0
        PROCEDURE "SELECTRUN1" AND "SELECTRUN2" MAY, IN TURN, SPECIFY     20147300 T  0000!0
        THE BRANCH POINT IN THIS PROCEDURE.                               20147400 T  0000!0
        THE FOLLOWING DEFINES ARE USED TO SPECIFY THE BRANCH POINT        20147500 T  0000!0
        IN SWITCH "SW".                                                   20147600 T  0000!0
        END OF COMMENT;                                                   20147700 T  0000!0
                                                                          20147800 T  0000!0
        DEFINE STARTING       =  1#,                                      20147900 T  0000!0
               QONTINUEING    =  2#,                                      20148000 T  0000!0
               QUITTING       =  3#,                                      20148100 T  0000!0
               RUNING         =  4#,                                      20148200 T  0000!0
               PASSING        =  5#,                                      20148300 T  0000!0
               EQUATING       =  6#;                                      20148400 T  0000!0
                                                                          20148500 T  0000!0
        P(0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0);                   20148700 T  0000!0
        RCW := RCW & P(..SELECTRUN,LOD)[CTC];                             20149200 T  0005!1
                                                                          20149300 T  0006!3
        TYPE := STARTING;                                                 20149400 T  0006!3
                                                                          20149500 T  0007!2
      START:                                                              20149600 T  0007!2
                                                                          20149700 T  0007!2
        P1MIX := 0;                                                       20149800 T  0007!2
        IF F NEQ 0 THEN % SHEET ENTRY PASSED AS A PARAMETER               20149900 T  0008!1
          BEGIN                                                           20150000 T  0009!0
          S   := IOQUE & F[CTC]; % SHEET ENTRY                            20150100 T  0009!2
          HDR := F.[FF]; % CORE ADDRESS OF OBJECT FILE HEADER             20150200 T  0011!0
          END                                                             20150300 T  0012!1
        ELSE                                                              20150400 T  0012!1
          BEGIN                                                           20150500 T  0012!1
```

```
                IF TYPE=STARTING AND NOT SHEETLOCKED THEN                20150600 T  0012:3
                    BEGIN                                                20150700 T  0014:1
                    SLEEP([TOGLE],SHEETMASK);                            20150800 T  0014:3
                    LOCKTOG(SHEETMASK);                                  20150900 T  0016:1
                    SHEETLOCKED := 1;                                    20151000 T  0019:3
                    END;                                                 20151100 T  0020:2
                P([SVALUE], STS);                                        20151200 T  0020:2
                SELECTRUN1;                                              20151300 T  0021:1
                IF TYPE LSS 0 THEN                                       20151400 T  0021:3
                    GO TO SW[TYPE:=ABS(TYPE)];                           20151500 T  0022:2
                END;                                                     20151600 T  0027:3
                                                                         20151700 T  0027:3
            CONTINUE:                                                    20151800 T  0027:3
                                                                         20151900 T  0027:3
            P1MIX := 0;                                                  20152000 T  0027:3
            IF (MCPJOB :=                                                20152100 T  0028:2
                ((S[1] EQV "DISK    ")=(NOT 0)) AND                      20152200 T  0028:2
               (((S[0] EQV "PRNPBT ")=(NOT 0)) OR                        20152300 T  0030:1
                ((S[0] EQV "LIBMAIN")=(NOT 0)) OR                        20152400 T  0032:0
                ((S[0] EQV "LDCNTRL")=(NOT 0)))) THEN                    20152500 T  0034:0
                    IF (((S[0] EQV "PRNPBT ")=(NOT 0)) AND AUTOPRINT) OR 20152600 T  0036:3
                       (((S[0] EQV "LDCNTRL")=(NOT 0)) AND CDONLY) THEN  20152700 T  0040:0
                           MCPJOB.[1:1] := 1;                            20152800 T  0043:0
                                                                         20152900 T  0045:1
            % NOTE: A NEGATIVE SIGN FOR MCPJOB IMPLIES THAT THIS JOB     20153000 T  0045:1
            %       SHOULD BE STARTED REGARDLESS OF THE AVAILABILITY OF  20153100 T  0045:1
            %       SYSTEM CORE.                                         20153200 T  0045:1
                                                                         20153300 T  0045:1
            IF INTSIZE=0 THEN % NO INTRINSICS FILE                       20153400 T  0045:1
                IF NOT(MCPJOB) THEN % NOT "SYSTEM" PROGRAM               20153500 T  0046:0
                   BEGIN                                                 20153600 T  0047:0
                   STREAM(NT3:=NT3:=SPACE(4));                           20153700 T  0047:2
                   DS:=24 LIT"##NO INTRINSICS FILE...←";                 20153800 T  0050:1
                   SPOUT(NT3);                                           20153900 T  0053:3
                   SLEEP([INTSIZE],@1777);                               20154000 T  0054:2
                   END;                                                  20154100 T  0056:0
                                                                         20154200 T  0056:0
            WHILE(NT2:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;      20157700 T  0056:0
                                                                         20157800 T  0068:0
        %   *****  *      *****  *   *     ****   ***   *****  *   *     20157900 T  0068:0
        %   *   *  *      *   *   * *      *   *   *    *      *  *      20158000 T  0068:0
        %   *   *  *      *****    *       *   *   *    *****  ***       20158100 T  0068:0
        %   *   *  *      *   *    *       *   *   *        *  *  *      20158200 T  0068:0
        %   *****  *****  *   *    *       ****   ***   *****  *   *     20158300 T  0068:0
                                                                         20158400 T  0068:0
            IF NOT MCPJOB THEN % NOT "LIBMAIN","LDCNTRL","PRNPBT"        20158500 T  0068:0
            IF OLAYDISK=0 THEN % NO OLAY DISK OBTAINED YET               20158600 T  0068:2
            IF(OLAYDISK:=PETUSERDISK(500 OR M,1))=0 THEN % NO OLAY DISK  20159100 T  0069:3
                BEGIN                                                    20159200 T  0072:3
                IF S[2] LSS 0 THEN % XS-ED/ES-ED                         20159300 T  0073:1
                    BEGIN                                                20159400 T  0074:1
                    STREAM(D:=I:=SPACE(5));                              20159500 T  0074:3
                    DS:=25 LIT",NOT XS-ED(NO OLAY DISK)←";               20159600 T  0077:2
                    SPOUTER(I,UNITNO,1);                                 20159700 T  0081:1
                    END;                                                 20159800 T  0082:0
                GO TO PASS;                                              20159900 T  0082:0
                END; % IF NO OLAY DISK                                   20160000 T  0082:2
                                                                         20160200 T  0082:2
        COMMENT JOB WILL BE RUN ONLY IF:                                 20160300 T  0082:2
                1) AN XS OR ES MESSAGE HAS BEEN ENTERED FOR THIS JOB, (IN WHICH  20160400 T  0082:2
```

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                CASE SHEETDIDDLER TURNED ON S[2].[1:1] AND CALLED SELECTION),      20160500 T 0082:2
          OR 2) THE SUM OF THIS JOBS CORE REQUIREMENTS (S[20]) PLUS THE SUM        20160600 T 0082:2
                OF THE CORE REQUIREMENTS OF ALL OTHER JOBS ACTUALLY RUNNING        20160700 T 0082:2
                (CORE.[FF]) IS LESS THAN THE TOTAL AMOUNT OF CORE AVAILABLE        20160800 T 0082:2
                FOR USER PROGRAMS (THE INITIAL SPACE AVAILABLE (CORE.[CF])         20160900 T 0082:2
                TIMES THE MULTIPROCESSING FACTOR (CORE.[4:14])),                   20161000 T 0082:2
          OR 3) "LDCNTRL/DISK" IS BEING TESTED AND THE "CDONLY" OPTION IS SET      20161100 T 0082:2
                OR                                                                 20161200 T 0082:2
                "PRNPBT/DISK" IS BEING TESTED AND THE "AUTOPRNT" OPTION IS SET     20161300 T 0082:2
                                                                                   20161400 T 0082:2
                IF THE JOB BEING TESTED IS A "SYSTEM" JOB (LIBMAIN,LDCNTRL,        20161500 T 0082:2
                PRNPBT) AND THE ABOVE CONDITIONS ARE NOT SATISFIED, THE            20161600 T 0082:2
                THE APPARENT AMOUNT OF AVAILABLE CORE (AS SHOWN IN THE "CORE"      20161700 T 0082:2
                WORD) IS TESTED USING A FACTOR OF 1.1 TIMES THE ACTUAL FACTOR      20161800 T 0082:2
                IN ORDER TO ATTEMPT TO FORCE THESE JOBS IN.                        20161900 T 0082:2
          END OF COMMENT;                                                          20162000 T 0082:2
                                                                                   20162100 T 0082:2
          IF S[2].[8:10]=5 THEN % "RUN" JOB GETS SPECIAL HANDLING                  20162300 T 0082:2
        $ SET OMIT = NOT(DATACOM AND RJE )                                         20162400 T 0084:0
            BEGIN                                                                  20162700 T 0084:0
            TYPE := RUNING;                                                        20162800 T 0084:2
            P([SVALUE],STS);                                                       20162900 T 0085:1
            SELECTRUN1;                                                            20163000 T 0086:0
             IF TYPE LSS 0 THEN                                                    20163100 T 0086:2
                GO TO SW[TYPE:=ABS(TYPE)];                                         20163200 T 0087:1
            END; % IF A "RUN" REQUEST                                              20163300 T 0092:2
             IF NOMEM NEQ 0 THEN GO TO PASS;                                       20164000 T 0092:2
             IF (S[2] LSS 0) OR (MCPJOB.[1:1]) THEN GO TO JARSPACE;                20164200 T 0094:1
             % MCPJOB.[1:1]=1 MEANS RUN IT REGARDLESS OF CORE AVAILABILITY         20164300 T 0097:0
             % S[2].[1:2] ::: [0=NORMAL, 1=NOT USED, 2=XS-ED, 3=ES-ED]             20164400 T 0097:0
        $ SET OMIT = NOT (BREAKOUT)                                                20164600 T 0097:0
        $ SET OMIT = NOT(WORKSET)                                                  20165110 T 0097:0
              IF (I:=CORE.[4:14]/100) GTR 0 THEN % FACTOR GTR 0                    20165300 T 0097:0
                 IF MCPJOB THEN I:=1.10 × I;     % TRY AND FORCE IT IN              20165400 T 0099:1
              IF CORE.[FF] + S[20] GTR CORE.[CF]×I THEN GO TO PASS;                20165500 T 0101:3
                                                                                   20166800 T 0105:1
        %      ***  *****  *****  *****  *****  *****  *****  *****                 20166900 T 0105:1
        %       *   *   *  *   *  *      *   *  *   *  *      *                    20167000 T 0105:1
        %       *   *****  *****  *****  *****  *****  *      *****                20167100 T 0105:1
        %  *    *   *   *  *   *      *   *      *   *  *      *                    20167200 T 0105:1
        %  *****   *   *  *   *  *****  *      *   *  *****  *****                 20167300 T 0105:1
                                                                                   20167400 T 0105:1
        JARSPACE:                                                                  20167500 T 0105:1
                                                                                   20167600 T 0105:1
            % FIND A MIX SLOT FOR THIS JOB                                         20167700 T 0105:1
            FOR MIX:=1 STEP 1 UNTIL MIXMAX DO                                      20167800 T 0105:1
               IF JAR[MIX,*]=0 THEN GO LOAD;                                       20167900 T 0107:0
                                                                                   20168000 T 0110:3
            %  NO FREE SPACE IN JAR: PASS ENTRY WITHOUT DELINKING AND CONTINUE     20168100 T 0110:3
            GO TO PASS;                                                            20168200 T 0110:3
                                                                                   20168700 T 0111:1
        %  *      *****  *****  ****      ***  *****  *****                        20168800 T 0111:1
        %  *      *   *  *   *  *   *      *   *   *  *   *                        20168900 T 0111:1
        %  *      *   *  *****  *   *      *   *****  *****                        20169000 T 0111:1
        %  *      *   *  *   *  *   *   *  *   *   *  *   *                        20169100 T 0111:1
        %  *****  *****  *   *  ****    ****   *   *  *   *                        20169200 T 0111:1
                                                                                   20169300 T 0111:1
        LOAD:                                                                      20169400 T 0111:1
                                                                                   20169500 T 0111:1
            JARROW[MIX] := IOQUE & HDR[CTC];       % FILE HEADER BECOMES JAR ROW   20169600 T 0111:1
```

```
M[HDR-2].[9:6] := MIX; % PLACE MIX INDEX IN MEMORY LINK                    20169800 T  0113:1
CORE.[FF] := CORE.[FF] + S[20]; % ADD IN THE CORE ESTIMATE                 20170600 T  0116:2
$ SET OMIT = NOT(PACKETS)                                                  20170700 T  0119:0
JAR[MIX,0] := S[0];                                                        20171000 T  0119:0
JAR[MIX,1] := S[1];                                                        20171100 T  0121:0
JAR[MIX,2]:=S[2]&(IF (NT1:=S[2].[8:10])=5 THEN 2 ELSE NT1)[8:38:10];       20171200 T  0123:0
% IF THIS IS A "RUN" JOB, CHANGE IT TO SAY "EXECUTE"                       20171300 T  0128:0
% JAR[MIX,2].[8:10] = SHEET[2].[8:10] =                                   20171400 T  0129:1
%     0 = "GO" PART OF COMPILE AND GO                                      20171500 T  0129:1
%     1 = COMPILE AND GO                                                   20171600 T  0129:1
%     2 = EXECUTE                                                          20171700 T  0129:1
%     3 = COMPILE FOR SYNTAX                                               20171800 T  0129:1
%     4 = COMPILE TO LIBRARY                                               20171900 T  0129:1
%     5 = RUN JOB                                                          20172000 T  0129:1
STREAM(A:=JAR[MIX,3].[30:18], D:=[DT]); % CREATION DATE FROM HDR           20172100 T  0129:1
   BEGIN                                                                   20172200 T  0131:2
   SI:=LOC A; DS:=8DEC;                                                    20172300 T  0131:2
   END;                                                                    20172400 T  0132:0
GIMEDATE([DT].[CF], "DT); % CONVERT DATE TO ""MMDDYY"" FORMAT              20172500 T  0132:1
JAR[MIX,3] := S[16]; % PROCESS TIME LIMIT                                  20172600 T  0134:0
JAR[MIX,4] := S[17]; % I/O TIME LIMIT                                      20172700 T  0136:0
STREAM(DATE, A:=[I]); % CONVERT DATE TO OCTAL FOR LOGGING                  20172800 T  0138:0
    BEGIN                                                                  20172900 T  0139:0
    SI:=LOC DATE; DS:=8OCT;                                                20173000 T  0139:0
    END;                                                                   20173100 T  0139:2
JAR[MIX,5]:=(XCLOCK+P(RTR)) & I[1:25:23]; % DATE AND TIME                  20173200 T  0139:3
JAR[MIX,6] := S[6]&S[23][2:2:6]; % CARD/PSEUDO RDR, UNITNO IN [2:6]        20173300 T  0143:0
JAR[MIX,7] := 0; % IDLETIME ENTRY                                          20173800 T  0146:1
JAR[MIX,9].[FF] := 0; % ZERO OUT "CHAIN" DISK ADDRESS FIELD                20173900 T  0148:0
% JAR[MIX,8] THROUGH JAR[MIX,29] STILL CONTAIN CONTENTS OF                 20174100 T  0150:2
% OBJECT FILE HEADER AS OBTAINED ABOVE                                     20174200 T  0150:2
JAR[MIX,9] := M[HDR INX 9].[CF] & MCPJOB[1:47:1] &                         20174300 T  0150:2
                 (S[2].[4:1] AND NOT(S[2].[2:1] OR AUTOMESS))[2:47:1];     20174400 T  0154:2
 % S[2].[4:1]=1 MEANS SUPPRESS BOJ/EOJ MESSAGES                            20174500 T  0159:1
 % MARK JAR[9].[1:1]=1 FOR "LIBMAIN","PRNPBT","LDCNTRL"                    20174600 T  0159:1
IDLETIME;                                                                  20174800 T  0159:1
% INSURE THAT THIS JOB HAS A UNIQUE STARTING TIME (FOR LOG)                20174900 T  0159:3
TRYAGAIN:                                                                  20175000 T  0159:3
FOR I:=1 STEP 1 UNTIL MIXMAX DO                                            20175100 T  0159:3
    BEGIN                                                                  20175200 T  0161:0
    IF JARROW[I] NEQ 0 THEN % JOB RUNNING HERE                             20175300 T  0161:0
    IF I NEQ MIX THEN % NOT OUR JOB                                        20175400 T  0162:0
    IF JAR[MIX,5].[24:24]=JAR[I,5].[24:24] THEN % SAME START TIME          20175500 T  0163:1
        BEGIN                                                              20175600 T  0167:0
        JAR[MIX,5].[24:24]:=JAR[MIX,5].[24:24]+1; % BUMP THE TIME          20175700 T  0167:2
        GO TRYAGAIN;                                                       20175800 T  0172:1
        END;                                                               20175900 T  0172:3
    END;                                                                   20176000 T  0172:3
%%% SEE ALSO "SEGMENT ZERO" SECTION IN PROCEDURE "SELECTRUN2" FOR          20176200 T  0175:0
%%% FURTHER ALTERATIONS TO THE JAR.                                        20176300 T  0175:0
                                                                           20176400 T  0175:0
%    *****  *****  ****   *      *****  *****                             20176500 T  0175:0
%      *    *   *  *   *  *      *      *                                 20176600 T  0175:0
%      *    *****  ****   *      *****  *****                             20176700 T  0175:0
%      *    *   *  *   *  *      *          *                             20176800 T  0175:0
%      *    *   *  ****   *****  *****  *****                             20176900 T  0175:0
                                                                           20177000 T  0175:0
$ SET OMIT = NOT(STATISTICS)                                               20177200 T  0175:0
IF S[2].[2:1] OR (S[21] LSS 128) THEN S[21]:=128;                          20178100 T  0175:0
%  S[2].[2:1]=1 WHEN ES=ED, S[21] CONTAINS STACK SIZE                      20178200 T  0179:0
```

```
   NFO[(MIX-1)×NDX+2]:=0&S[20][CTF]&((CLOCK+P(RTR)) DIV 60)[1:31:17];   20178900 T 0179:0
   PRYOR[MIX]    := -1;                                                20179100 T 0184:2
   PROCTIME[MIX]:= -S[16]-CLOCK-P(RTR); % PROCESS TIME LIMIT IN S[16]  20179200 T 0186:0
$ SET OMIT = NOT(WORKSET)                                              20179210 T 0188:3
$ SET OMIT = NOT(NEWLOGGING)                                           20179300 T 0188:3
   IOTIME[MIX]   := -S[17];                 % I/O TIME LIMIT IN S[17]  20179600 T 0188:3
                                                                       20179700 T 0190:2
                  %%%%%    %     %%%%%    %%%   %   %                  20179800 T 0190:2
                  %   %   %%    %   %   %    %     % %                 20179900 T 0190:2
   P1MIX:=MIX;    %%%%%    %    %   %   %    %       %                20180000 T 0190:2
                  %        %    %   %   %    %     % %                 20180100 T 0191:1
                  %       %%%   %   %   %   %%%   %   %                20180200 T 0191:1
                                                                       20180300 T 0191:1
   USERCODE[MIX]:=ABS(S[24]); % USERCODE IN S[24]                      20180400 T 0191:1
   CHANGEABORT(S[6]);                                                  20180600 T 0193:0
   IF S[2].[8:10]=0 THEN FORGETESPDISK(S[25]); % FORGET OBJ.SKELETON   20180800 T 0194:0
    % S[2].[8:10]=0 FOR "GO" PART OF "COMPILE AND GO"                  20180900 T 0197:0
   STREAM(@:=FSROW[MIX]:=[M[GETSPACE(4,0,1)+2]]&4[8:38:10]);           20181000 T 0197:0
         DS:=32LIT"0";                                                 20181100 T 0201:3
$ SET OMIT = NOT(AUXMEM)                                               20185300 T 0206:1
                                                                       20185700 T 0206:1
   TYPE := CONTINUEING;                                                20185800 T 0206:1
                                                                       20185900 T 0207:0
   % SELECTRUN2 IS CONCERNED WITH:                                     20186000 T 0207:0
   %    BOJ MESSAGE                                                    20186100 T 0207:0
   %    SEGMENT ZERO                                                   20186200 T 0207:0
   %    STACK AND PRT                                                  20186300 T 0207:0
   %    SEGMENT DICTIONARY                                             20186400 T 0207:0
   %    DALOC                                                          20186500 T 0207:0
   %    COMMON                                                         20186600 T 0207:0
                                                                       20186700 T 0207:0
   P([SVALUE],STS);                                                    20186800 T 0207:0
   SELECTRUN2;                                                         20186900 T 0207:3
   IF TYPE LSS 0 THEN                                                  20187000 T 0208:1
      GO TO SW[TYPE:=ABS(TYPE)];                                       20187100 T 0209:0
                                                                       20187200 T 0214:1
   IF (SEG0[7].[CF]=0) THEN % BUILD A DUMMY FILE PARAMETER BLOCK       20187300 T 0214:1
         TRP[3]:=[M[GETSPACE(1,0,1)+2]] ELSE                           20187400 T 0215:3
      BEGIN                                                            20187500 T 0219:2
      TYPE := EQUATING; % BUILD FPB AND PROCESS LABEL EQUATION         20187600 T 0220:0
      P([SVALUE],STS);                                                 20187700 T 0220:3
      SELECTRUN1;                                                      20187800 T 0221:2
         IF TYPE.[1:1] THEN GO TO SW[TYPE:=ABS(TYPE)];                 20187900 T 0222:0
      END;                                                             20188000 T 0228:0
                                                                       20188100 T 0228:0
   NFO[(MIX-1)×NDX] := TRP[3];                                         20188600 T 0228:0
   % TRP[3] VALUE SET BY SELECTRUN1 FOR NON-MCP TYPE JOB                20188800 T 0230:2
   GO TO WINDUP;                                                       20188900 T 0230:2
                                                                       20189000 T 0231:0
PASS:                                                                  20189100 T 0231:0
                                                                       20189200 T 0231:0
   TYPE := PASSING;                                                    20189300 T 0231:0
   P([SVALUE],STS);                                                    20189400 T 0231:3
   SELECTRUN1;                                                         20189500 T 0232:2
   IF TYPE LSS 0 THEN                                                  20189600 T 0233:0
      GO TO SW[TYPE:=ABS(TYPE)]; % SELECTRUN1 DETERMINES BRANCH POINT  20189700 T 0233:3
                                                                       20189800 T 0239:0
WINDUP:                                                                20189900 T 0239:0
                                                                       20190000 T 0239:0
%     ***   **  *   ***   *****       ***  *****  ****                 20190100 T 0239:0
```

```
%      *    **  *    *      *          *   *   *  *   *   20190200 T  0239:0
%      *    * * *    *      *          *   *   *  ****    20190300 T  0239:0
%      *    *  **    *      *       *  *   *   *  *   *   20190400 T  0239:0
%     ***   *  **   ***     * 0     ****  *****  ****      20190500 T  0239:0
                                                           20190600 T  0239:0
 $ SET OMIT = NOT(WORKSET)                                 20190610 T  0239:0
    %   INITIALIZE OTHER PRT CELLS                         20190700 T  0239:0
    TRP[0]  := WORDOFCASE;                                 20190800 T  0239:0
    TRP[2]  := MEMORY;                                     20190900 T  0240:1
    TRP[10] := TRP&(STACKLOC+1)[18:33:15];                 20191000 T  0241:2
    IF JAR[MIX,0] LSS 0 THEN % COMPILE JOB                 20191100 T  0244:0
        BEGIN                                              20191200 T  0245:2
        IF(NT1:=JAR[MIX,2].[8:10])=4 THEN % COMPILE TO LIBRARY 20191300 T  0246:0
        TRP[@26]:=S[22] % SAVE FACTOR FOR OBJECT FILE IN SHEET[22] 20191400 T  0248:2
        ELSE IF NT1=3 THEN % COMPILE FOR SYNTAX ONLY       20191500 T  0249:3
            BEGIN                                          20191600 T  0251:3
            TRP[@26]:=-1; % SAVE FACTOR = (-1) % DONT SAVE OBJECT 20191700 T  0252:1
            JAR[MIX,2].[8:10]:=2; % MARK IT AN "EXECUTE" JOB 20191800 T  0253:3
            END;                                           20191900 T  0256:3
        END; % COMPILE JOBS                                20192000 T  0256:3
    TRP[6]:=FLAG(0&[TRP[6]][18:33:15]&32[8:38:10]);        20192100 T  0256:3
    IF JAR[MIX,2] GEQ 0 THEN % NOT COBOL                   20192200 T  0260:0
       TRP[11]:=FLAG(0&[TRP[11]][18:33:15]&8[8:38:10]); % "DAT" ENTRY 20192300 T  0261:2
    %   BRING IN STARTING SEGMENT&BUILD CONTROL WORDS FOR INITIATE% 20192400 T  0265:1
    MAKEPRESENT(TRP INX POLISH(SEGO[6],TRP[4],INX,LOD).[8:10]); 20192500 T  0265:1
    % SEGO[6] = STARTING SEGMENT NUMBER                    20192600 T  0268:2
    % SEGDICT[SEGO[6]].[8:10] = PRT LOCN. OF DESC. FOR STARTING SEGMENT 20192700 T  0268:2
    M[STACKLOC+2]:= -FLAG(POLISH(SEGO[6],TRP[4],INX,LOD).[18:15]); 20192800 T  0268:2
    M[STACKLOC+1]:= -FLAG(0&(TRP)[6:33:9]);                20192900 T  0272:3
    M[STACKLOC]  := @2222222222222222;                     20193000 T  0276:2
    TRP[8]       := -FLAG(STACKLOC+2); % INITIATE CONTROL WORD 20193100 T  0278:0
    IF(NT1:=TRP[4].[18:6]) NEQ 0 THEN                      20193200 T  0280:1
    INTABLEROW[MIX]:=INTABLEROW[NT1]                       20193300 T  0282:1
    ELSE IF NOT(JAR[MIX,9].[1:1]) THEN % NOT SYSTEM TYPE JOB 20193400 T  0283:2
        BEGIN                                              20193500 T  0287:3
        I:=INTSIZE;                                        20194100 T  0288:1
        INTABLEROW[MIX]:=[M[GETSPACE(I,1,1)+2]]&I[8:38:10]; 20194300 T  0289:0
        STREAM(A:=I,I:=INTABLEROW[MIX]);                   20194400 T  0293:1
            BEGIN                                          20194500 T  0294:2
            SI:=T; SI:=SI-8; DS:=A WDS;                    20194600 T  0294:2
            END;                                           20194700 T  0295:2
        END;                                               20194800 T  0295:3
                                                           20194900 T  0295:3
                                                           20195000 T  0295:3
    IF S[2].[2:1] THEN % S[2].[2:1]=1 WHEN ES-ED, CALL TERMINATE 20195100 T  0295:3
        BEGIN                                              20195200 T  0296:3
        JAR[MIX,2].[2:1]:=1; % MARK IT TERMINATED          20195400 T  0297:1
        TERMINATE(MIX &                                    20195500 T  0300:1
                  (IF JAR[MIX,2].[7:1] AND (*P([TRP[TSX]])).PBIT THEN 20195600 T  0300:3
                   90 ELSE 35)[CTF]);                      20195700 T  0303:3
        END                                                20196300 T  0305:3
    ELSE                                                   20196400 T  0305:3
    IF JAR[MIX,2].[7:1] THEN          % TASK WHOSE PARENT HAS 20196500 T  0305:3
    IF(TSKA:=*P([TRP[TSX]])).PBIT THEN % DECLARED TASK ARRAY 20196600 T  0307:3
        BEGIN                                              20196700 T  0310:0
        TSKA[1] := JAR[MIX,0];                             20196800 T  0310:2
        TSKA[2] := JAR[MIX,1];                             20196900 T  0312:2
        TSKA[3] := 2; % STATUS: ACTIVE                     20197000 T  0314:2
        TSKA[4] := MIX;                                    20197100 T  0315:3
        END;                                               20197200 T  0317:0
```

```
$ SET OMIT = NOT(NEWLOGGING)                                          20197300 T  0317:0
    SAVEMIX(MIX);                                                     20197600 T  0317:0
    PRYOR[MIX] := S[18]; % PRIORITY IN SHEET[18];                     20198500 T  0317:3
    IF F=0 THEN % SHEET ENTRY NOT PASSED AS A PARAMETER               20199200 T  0319:1
        BEGIN                                                         20199300 T  0320:0
        TYPE := (IF S[2].[1:1] THEN STARTING ELSE CONTINUEING);       20199400 T  0320:2
        % IF ES=ED THEN RE-START SHEET SEARCH; OTHERWISE,CONTINUE UN  20199500 T  0323:2
        GO TO START;                                                  20199600 T  0323:2
        END;                                                          20199700 T  0325:0
                                                                      20199800 T  0325:0
QUIT:                                                                 20210000 T  0325:0
                                                                      20210100 T  0325:0
    P1MIX := 0;                                                       20210200 T  0325:0
    IF SHEETLOCKED THEN UNLOCKTOG(SHEETMASK);                         20210300 T  0325:3
    IF S NEQ 0 THEN FORGETSPACE(S);          % SPACE FOR SHEET ENTRY 20210400 T  0330:0
    IF SEGO NEQ 0 THEN FORGETSPACE(SEGO); % SPACE FOR SEGMENT ZERO    20210500 T  0332:2
    IF OLAYDISK NEQ 0 THEN FORGETUSERDISK(OLAYDISK,-500);             20210600 T  0335:0
    IF LBL NEQ 0 THEN FORGETSPACE(LBL);   % SPACE FOR LABEL EQN.ENTRIES 20210700 T  0337:2
    KILL([MSCW]);                                                     20211400 T  0340:0
    END SELECTION ROUTINE;                                            20211600 T  0340:3
                                                                                SIZE= 0341 WORDS
        DEFINE%                                                       20212000 T  0000:0
            COMMA     = 10#,%                                         20213000 T  0000:0
            EQUAL     = 11#,%                                         20214000 T  0000:0
            PERIO     = 12#,%                                         20215000 T  0000:0
            SLASH     = 13#,%                                         20216000 T  0000:0
            QUEST     = 14#,%                                         20217000 T  0000:0
            POUND     = 15#,%                                %LP 1    20217500 T  0000:0
            SPECI     = 19#,%                                         20218000 T  0000:0
            IDENT     = 20#,%                                         20219000 T  0000:0
            UNLOCKV   = 22#,% A SWITCH LABEL (FUNC) IN                20219050 T  0000:0
            USEV      = 23#,% SECURITYMAINT USES THE ORDER OF         20219060 T  0000:0
            LOCKV     = 24#,% VALUES OF "UNLOCKV" THROUGH "OPEN".     20219100 T  0000:0
            FREE      = 25#,%                                         20219200 T  0000:0
            OPEN      = 26#,%                                         20219300 T  0000:0
            PACKET    = 27#,%                                         20219310 T  0000:0
            USER      = 28#,                                          20219400 T  0000:0
            RUNV      = 29#,                                          20219500 T  0000:0
            COMPI     = 30#,%                                         20220000 T  0000:0
            EXECU     = 31#,%                                         20221000 T  0000:0
            COPY      = 32#,                                          20222000 T  0000:0
            UNLOAD    = 33#,                                          20223000 T  0000:0
            ADDV      = 34#,                                          20224000 T  0000:0
            ENTER     = 35#,                                          20224500 T  0000:0
            REMOV     = 36#,                                          20225000 T  0000:0
            CHANG     = 37#,                                          20225500 T  0000:0
            ENDFI     = 39#,%                                         20226000 T  0000:0
$ SET OMIT = NOT(PACKETS)                                             20226099 T  0000:0
            DATAV     = 41#,%                                         20226500 T  0000:0
            LABEV     = 42#,%                                         20227000 T  0000:0
            SETV      = 43#,%                                         20228000 T  0000:0
            RESETV    = 44#,%                                         20228100 T  0000:0
        FILEV         =47#,                                           20228200 T  0000:0
        EXPIRED       =48#,                                           20228300 T  0000:0
        ACCESSD       =49#,                                           20228400 T  0000:0
            PROCE     = 50#,% A STORE NEAR THE END OF PCC             20229000 T  0000:0
            IO        = 51#,%  MAKES USE OF THE ORDER AND VALUES      20230000 T  0000:0
            PRIOR     = 52#,%  OF "PROCE" THRU "SAVEV".               20231000 T  0000:0
            COMMONV   = 53#,%                                         20232000 T  0000:0
            COREV     = 54#,%                                         20232500 T  0000:0
```

```
            STACK      = 55#,%                                                  20233000 T  0000!0
            SAVEV      = 56#,%  (SAVE #DAYS ON COMPILE TO LIBRARY)              20233500 T  0000!0
            ALGOL      = 60#,%                                                  20234000 T  0000!0
      FORTRAN          = 62#,%                                                  20235000 T  0000!0
      TSPOL            =63#,                                                    20235050 T  0000!0
            BASIC      = 64#,%                                                  20235075 T  0000!0
      COBOL68          =65#,                                                    20235080 T  0000!0
      WITH             = 66#,                                                   20235099 T  0000!0
      COBOL            = 67#,                                                   20235100 T  0000!0
            LIBRA      = 68#,%                                                  20236000 T  0000!0
            SYNTA      = 69#,%                                                  20237000 T  0000!0
            FROM       = 70#,%                                                  20238000 T  0000!0
            TOV        = 71#,%                                                  20239000 T  0000!0
            FORM       = 78#,   %SWITCH D(PCC) "FORM"="SPECIAL"%                20240000 T  0000!0
            NO         = 79#,%                                                  20241000 T  0000!0
            DISK       = 80#,%                                                  20242000 T  0000!0
            TAPE       = 81#,%                                                  20243000 T  0000!0
            PUNCH      = 82#,%                                                  20244000 T  0000!0
            PRINT      = 83#,%                                                  20245000 T  0000!0
            BACK       = 85#,%                                                  20246000 T  0000!0
            SPECIAL    = 90#,                                                   20247000 T  0000!0
            REMOTE     = 89#,                                                   20247500 T  0000!0
            EU         =91#,                                                    20247600 T  0000!0
            SLOW       =92#,                                                    20247700 T  0000!0
            B6500      =93#,                                                    20247800 T  0000!0
            FAST       = 94#,                                                   20247900 T  0000!0
            COPYN      =95#,                                                    20247910 T  0000!0
            MAXV       = 96#,                                                   20247920 T  0000!0
            FREEF      =97#,                                                    20247930 T  0000!0
            FIXED      = 98#,                                                   20247940 T  0000!0
            SENSE      = 100#,                                                  20247950 T  0000!0
            LATESIV    = 101#,                                                  20247960 T  0000!0
            PAPER      = 84#;%                                                  20248000 T  0000!0
COMMENT     RESWDS CONTAINS RESERVED WORDS FOR CONTROL CARDS;%                  20249000 T  0000!0
REAL        MSCW       =  -2,                                                   20288100 T  0000!0
            CARD       =  MSCW+1,          MYMSCW      =  CARD,                 20288105 T  0000!0
            RCW        =  +0,                                                   20288110 T  0000!0
            PROCVAL    =  RCW+1,   %IN CASE OF TYPED PROCEDURES                 20288115 T  0000!0
            A          =  PROCVAL+1,       T           =  A,                    20288120 T  0000!0
            CADDR      =  A+1,             SFID        =  CADDR,                20288125 T  0000!0
            CARDLOC    =  CADDR+1,                                              20288130 T  0000!0
            CDEX       =  CARDLOC+1,       SDEX        =  CDEX,                 20288135 T  0000!0
            CLOSET     =  CDEX+1,                                               20288140 T  0000!0
            CMPLR      =  CLOSET+1,                                             20288145 T  0000!0
            CN         =  CMPLR+1,                                              20288150 T  0000!0
            INV        =  CN+1,                                                 20288155 T  0000!0
            KOUNT      =  INV+1,                                                20288160 T  0000!0
            LASTSCAN   =  KOUNT+1,                                              20288165 T  0000!0
            LIBNO      =  LASTSCAN+1,                                           20288170 T  0000!0
            N1         =  LIBNO+1,                                              20288175 T  0000!0
            N2         =  N1+1,                                                 20288185 T  0000!0
            N3         =  N2+1,                                                 20288190 T  0000!0
            N4         =  N3+1,            U           =  N4,                   20288195 T  0000!0
            OPTN       =  N4+1,                                                 20288200 T  0000!0
            OPTNN      =  OPTN+1,                                               20288205 T  0000!0
            PADDR      =  OPTNN+1,         SFH         =  PADDR,                20288210 T  0000!0
            PDEX       =  PADDR+1,         SMID        =  PDEX,                 20288215 T  0000!0
            PPCPROCESS =  PDEX+1,                                               20288220 T  0000!0
            SFD        =  PPCPROCESS+1,                                         20288225 T  0000!0
            SMD        =  SFD+1,                                                20288230 T  0000!0
```

```
                SOURCE      =  SMD+1,                                          20288235 T  0000:0
                SPOUTUNIT   =  SOURCE+1,                                       20288240 T  0000:0
                ST          =  SPOUTUNIT+1,                                    20288245 T  0000:0
                T1          =  ST+1,                                           20288250 T  0000:0
                UNITNO      =  T1+1,                                           20288255 T  0000:0
                USERID      =  UNITNO+1;                                       20288260 T  0000:0
        ARRAY   ACCUM       =  USERID+1[*],                                    20288265 T  0000:0
                CEQN        =  ACCUM+1[*],                                     20288270 T  0000:0
                CMM         =  CEQN+1[*],                                      20288275 T  0000:0
                DIRECT      =  CMM+1[*],                                       20288280 T  0000:0
                NB          =  DIRECT+1[*],                                    20288285 T  0000:0
                PEQN        =  NB+1[*],                                        20288290 T  0000:0
                PROG        =  PEQN+1[*];                                      20288295 T  0000:0
        NAME    ADDR        =  PROG+1;                                         20288300 T  0000:0
        BOOLEAN ABORT       =  ADDR+1,                                         20288305 T  0000:0
                TOG         =  ABORT+1;                                        20288310 T  0000:0
        REAL    RETURNMSCW  =  TOG+1,          % THESE LOCALS MUST BE THE LAST 20288315 T  0000:0
                RETURNRCW   =  RETURNMSCW+1,   % THREE LOCALS OF CONTROLCARD   20288320 T  0000:0
                RETURNVAL   =  RETURNRCW+1;                                    20288325 T  0000:0
                                                                               20289000 T  0000:0
         $ SET OMIT = NOT(PACKETS)                                             20289009 T  0000:0
        COMMENT FETCH READS THE NEXT CONTROL CARD , SETS SOURCE TO BEGINNING   20290000 T  0000:0
                OF CARD , SETS LAST WORD OF CARD TO PERIOD.      ;%            20291000 T  0000:0
            PROCEDURE FETCH(UNITNO,CARDLOC,SOURCE);                            20292000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00538
                    VALUE UNITNO,CARDLOC;                                      20292100 T  0000:0
                    REAL  UNITNO,CARDLOC,SOURCE ;                              20292200 T  0000:0
                BEGIN%                                                         20293000 T  0000:0
                    REAL T,E;                                                  20294000 T  0000:0
                    E:=@14&UNITNO[45:1:1]; UNITNO:=ABS(UNITNO);                20294800 T  0000:0
                  IF (UNITNO OR 1)=31 THEN % DCOM OR ZIP                       20295000 T  0003:1
                    M[SOURCE:=CARDLOC]:=@1425452432373737                      20295100 T  0004:2
                  ELSE                                                         20295200 T  0006:3
                    BEGIN   % NOT DCOM                                         20295300 T  0007:1
         $ SET OMIT = PACKETS                                                  20295999 T  0009:0
                    IF UNITNO≥32 THEN T←                                       20296000 T  0009:0
         $ POP OMIT                                                            20296001 T  0010:1
         $ SET OMIT = NOT(PACKETS)                                             20296099 T  0010:1
                        READEMFROMDISK(CIDROW[UNITNO-32],%                     20297000 T  0010:1
                            [M[CARDLOC]]&10[8:38:10]) ELSE%                    20298000 T  0011:2
                DO BEGIN T←                                                    20298100 T  0014:0
                                                                               20298111 T  0014:2
                    WAITIO(CARDLOC INX @40000000,E,UNITNO);                    20299000 T  0014:2
                     IF UNITNO=30 OR T.[45:1] THEN                             20299020 T  0016:3
                     STREAM(Q←12,CARDLOC);                                     20299030 T  0018:2
                     BEGIN SI←LOC Q;SI←SI+7;DS←CHR;DS←4 LIT "END." END;        20299040 T  0020:0
                    IF UNITNO=25 THEN                                          20299110 T  0021:3
                    BEGIN                                                      20299111 T  0022:2
                    STREAM(T←0:CARDLOC);%                                      20300000 T  0023:0
                    BEGIN SI←CARDLOC;DI←LOC T;DI←DI+6;SI←SI-1;DS←2CHR;SI←SI-1; 20301000 T  0024:1
                        DI←CARDLOC;DI←DI-1;DS←LIT"<";B(60(IF SC="←" THEN       20301100 T  0025:3
                        BEGIN DS←CHR;JUMP OUT 2 TO L END;IF SC="<" THEN        20301200 T  0027:3
                        BEGIN DI←DI-1;IF SC≠DC THEN DI←DI-1 END ELSE           20301300 T  0029:1
                        DS←CHR));                                              20301400 T  0030:2
                    L:  DI←CARDLOC;DI←DI-1;SI←LOC T;SI←SI+6;DS←CHR;            20301500 T  0031:1
                    END;                                                       20301600 T  0032:2
                    END ELSE P(0);                                             20301700 T  0032:3
                END UNTIL P.[42:6]≠31;                                         20302000 T  0035:1
                M[(SOURCE + CARDLOC)+9]←0&",",[1:43:5];%                       20303000 T  0036:3
                  END;    % NOT DCOM                                           20303900 T  0040:2
```

```
                END    ;%                                                    20304000 T  0040:2
                                                                                   SIZE= 0041 WORDS
        COMMENT THE SCAN ROUTINE IS USED FOR CONTROL CARD SCANNING.%         20305000 T  0000:0
                SCAN  RETURNS THE FOLLOWING RESULTS :%                       20306000 T  0000:0
                      4  FOR IDENTIFIERS WHICH ARE NOT RESERVED%             20307000 T  0000:0
                      0  FOR PERIOD%                                         20308000 T  0000:0
                      1  FOR SLASH%                                          20309000 T  0000:0
                      2  FOR QUESTION MARK%                                  20310000 T  0000:0
                      5...  FOR IDENTIFIERS IN DIRECT.%                      20311000 T  0000:0
                      3  FOR OTHER SPECIAL CHARACTERS.%                      20312000 T  0000:0
                      13  FOR "PRIORITY"                  ;%                 20313000 T  0000:0
        REAL PROCEDURE SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,       20314000 T  0000:0
                                                          START OF REL SEGMENT; DISK ADDRESS = 00540
                      DIRECT);                                               20314050 T  0000:0
                VALUE UNITNO,CARDLOC                          ;              20314100 T  0000:0
                 REAL UNITNO,CARDLOC,SOURCE,      KOUNT,LASTSCAN ;            20314200 T  0000:0
               ARRAY ACCUM[*],DIRECT[*];                                     20314300 T  0000:0
          BEGIN%                                                             20315000 T  0000:0
          LABEL  GOGO,        TYPE0,TYPE1,TYPE2;%                            20316000 T  0000:0
          SWITCH TYPE ← TYPE0,TYPE1,TYPE2 ;%                                 20317000 T  0000:0
          DEFINE DSIZE =  56#;%                                              20318000 T  0000:0
          REAL  I;%                                                          20319000 T  0000:0
          LABEL PERPER;%                                                     20320000 T  0000:0
      GOGO:%                                                                 20321000 T  0000:0
          IF LASTSCAN THEN%                                                  20322000 T  0000:2
             BEGIN IF LASTSCAN < 0 OR UNITNO = 31 THEN%                      20323000 T  0000:3
                      BEGIN I ← QUEST; LASTSCAN ← 0; GO TO TYPE1 END;        20324000 T  0003:0
               FETCH(UNITNO,CARDLOC,SOURCE);                                 20325000 T  0005:3
               LASTSCAN:=0                                                   20325100 T  0007:1
      $ SET UMIT = NOT(PACKETS)                                              20325109 T  0007:2
             END;%                                                           20326000 T  0007:2
          I ← IDENT;%                                                        20327000 T  0008:1
          STREAM (J←0,K←0,SOURCE : ACCUM);%                                  20328000 T  0009:0
             BEGIN%                                                          20329000 T  0011:0
             SI ← SOURCE ; DI ← ACCUM ;  DI←DI+1;%                           20330000 T  0011:0
          L:  IF SC = " " THEN BEGIN SI←SI+1; GO L END;%                     20331000 T  0011:3
             IF SC = ALPHA THEN%                                             20332000 T  0012:3
               BEGIN%                                                        20333000 T  0013:1
             IF SC =@14 THEN GO TO L3;%                                      20334000 T  0013:1
               DS ← CHR ; TALLY ← 1;%                                        20335000 T  0014:0
             L1:  63(IF SC=ALPHA THEN BEGIN DS←CHR;%                         20336000 T  0014:2
                    TALLY←TALLY+1 END ELSE JUMP OUT);%                       20337000 T  0015:2
               K←TALLY; TALLY←0; J←TALLY;  DS←8 LIT" ";%                     20338000 T  0016:3
               END%                                                          20339000 T  0018:3
             ELSE IF SC = """ THEN%                                          20340000 T  0018:3
               BEGIN    SI ← SI+1;%                                          20341000 T  0019:2
               30(IF SC=""" THEN JUMP OUT;                                   20342000 T  0019:3
                  DS:=CHR; TALLY:=TALLY+1);                                  20342250 T  0021:0
               IF TOGGLE THEN                      % FOUND CLOSING QUOTE    20342500 T  0021:3
                  BEGIN DS:=8 LIT" "; SI:=SI+1;                              20342750 T  0022:0
                  K:=TALLY; TALLY:=1; J:=TALLY;                              20343000 T  0023:2
                  END                                                        20343250 T  0024:1
               ELSE                                % INVALID STRING         20343500 T  0024:1
                  BEGIN                                                      20343750 T  0024:2
                  SI←SI-31; GO L3;                                           20344000 T  0024:2
                  END;                                                       20344250 T  0025:0
               END%                                                          20345000 T  0025:0
             ELSE BEGIN%                                                     20346000 T  0025:0
          L3:%                                                               20347000 T  0025:1
               TALLY ← 2; J←TALLY; DI←LOC K; DI←DI+7; DS←CHR ;%              20348000 T  0025:1
```

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                    END;%                                                   20349000 T  0026:2
                SOURCE ← SI;%                                               20350000 T  0026:2
                    END;%                                                   20351000 T  0026:3
COMMENT  STACK NOW CONTAINS :  0 FOR IDENTIFIER & NO. OF CHRS%              20352000 T  0027:0
                               1 FOR "ID"        & NO. OF CHRS%             20353000 T  0027:0
                               2 FOR SPECIAL CHR & ACTUAL CHR    ;%         20354000 T  0027:0
            P([SOURCE],←);                                                  20355000 T  0027:0
            P([KOUNT],←);                                                   20356000 T  0027:2
            GO TO TYPE[POLISH];%                                            20357000 T  0028:0
        TYPE0:%                                                             20358000 T  0030:1
            BEGIN                                                           20361000 T  0030:1
            I←-2;   WHILE  DIRECT[I←I+2]≠0  DO%                             20362000 T  0030:1
                IF (DIRECT[I] EQV ACCUM[0])= NOT 0  THEN%                   20363000 T  0033:3
                BEGIN IF DIRECT[I+1] ≠QUEST OR UNITNO=25 OR UNITNO≥30 THEN  20364000 T  0035:3
                    BEGIN I←DIRECT[I+1];GO TO TYPE1 END END;%               20365000 T  0039:1
                I ← IDENT  ;  END;%                                         20366000 T  0042:3
            GO TO TYPE1  ;%                                                 20367000 T  0043:2
        TYPE2:%                                                             20368000 T  0044:0
            IF KOUNT≠"←" THEN ACCUM[0]← "      0" OR KOUNT;                 20368100 T  0044:0
            IF KOUNT="←" OR%                                                20369000 T  0047:0
                KOUNT ="." THEN%                                            20370000 T  0047:3
                    BEGIN LASTSCAN ← 1;%                                    20371000 T  0048:3
        PERPER:             I ← PERIO; GO TO TYPE1;%                        20372000 T  0050:1
                    END;%                                                   20373000 T  0053:0
            IF KOUNT="-" THEN BEGIN IF UNITNO≥32 THEN                       20374000 T  0053:0
                                    IF CIDTABLE[UNITNO-32,3]≥               20374100 T  0055:0
                                       CIDTABLE[UNITNO-32,7] THEN           20374200 T  0057:0
                                       BEGIN I←ENDFI; GO TO TYPE1 END;      20374300 T  0058:3
                                    IF UNITNO = 31 THEN                     20374310 T  0060:2
                                    BEGIN I←PERIO; GO TO TYPE1 END;         20374320 T  0061:1
                                    FETCH(UNITNO,CARDLOC,SOURCE);           20374400 T  0063:0
$ SET OMIT = NOT(PACKETS)                                                   20374409 T  0064:2
                                    GO TO GOGO;                             20374500 T  0064:2
                                END;                                        20374600 T  0065:0
            IF KOUNT = ";" THEN%                                            20375000 T  0065:0
                BEGIN LASTSCAN ← -1; GO TO PERPER END;%                     20376000 T  0065:3
            I ← IF KOUNT ="/" THEN SLASH ELSE%                              20377000 T  0068:0
                    (IF KOUNT = @14 THEN QUEST ELSE%                        20378000 T  0070:0
                    (IF KOUNT =","  THEN COMMA ELSE%                        20379000 T  0072:0
                    (IF KOUNT="=" THEN EQUAL ELSE %            %LP 1        20380000 T  0074:0
                (IF KOUNT="#" THEN POUND ELSE SPECI))));       %LP 1        20380500 T  0076:0
        TYPE1: SCN←I;                                                       20381000 T  0078:3
                END   SCAN  ;%                                              20382000 T  0079:2
                                                                                    SIZE= 0080 WORDS
PROCEDURE SEEKNAM(A,B,C,D,E,N); VALUE A,B; REAL A,B,C,D,E,N;                20382010 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00543
            BEGIN                                                           20382020 T  0000:0
            LABEL FIND,L;                                                   20382030 T  0000:0
            ARRAY NB[*];                                                    20382040 T  0000:0
            REAL I,T; INTEGER J;                                            20382050 T  0000:0
            INTEGER J1,J2,J3,K1,K2;                                         20382052 T  0000:0
            LABEL RESTART;                                                  20382054 T  0000:0
            IF C=0 THEN                                                     20382056 T  0000:0
            BEGIN N:=SPACE(60)-1;                                           20382058 T  0003:0
                J1:=J3:=0; K1:=K2:=MODULUS-1;                               20382060 T  0006:2
                IF A GEQ 0 THEN J1:=K1:=(A.[6:18]+A.[24:24]) MOD MODULUS;   20382062 T  0009:2
                IF B GEQ 0 THEN J3:=K2:=(B.[6:18]+B.[24:24]) MOD MODULUS;   20382064 T  0014:0
            END ELSE                                                        20382066 T  0018:2
            BEGIN I:=(T:=M[N]).[42:6];                                      20382068 T  0018:2
                J1:=T.[36:6]; J2:=T.[30:6]; J3:=T.[12:6];                   20382070 T  0021:2
```

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                K1:=T.[24:6]; K2:=T.[18:6];                                  20382072 T  0025:1
            END;                                                             20382074 T  0027:3
            NB:=[M[N+1]]&60[8:38:10];                                        20382076 T  0027:3
            IF C NEQ 0 THEN GO TO RESTART;                                   20382095 T  0030:2
            FOR J1:=J1 STEP 1 UNTIL K1 DO                                    20382100 T  0031:3
            FOR J2:=J3 STEP 1 UNTIL K2 DO                                    20382110 T  0033:0
            BEGIN J:=SCRAMBLE(J1,J2);                                        20382120 T  0034:0
                DO BEGIN                                                     20382130 T  0041:0
                    DISKWAIT(-N-1,60,J);                                     20382140 T  0041:0
                    FOR I:=0 STEP 3 UNTIL 57 DO                              20382150 T  0043:0
                    BEGIN                                                    20382160 T  0044:0
                    IF (T:=NB[I]) NEQ @14 THEN                               20382165 T  0044:0
                    IF (T EQV A)=NOT 0 OR A<0 THEN                           20382170 T  0045:2
                    IF (NB[I+1] EQV B)=NOT 0 OR B<0 THEN GO FIND;            20382180 T  0048:2
RESTART:            END;                                                     20382190 T  0053:0
                END UNTIL (J:=NB[2].[FF])=0;                                 20382195 T  0055:1
                END;                                                         20382200 T  0058:0
            FORGETSPACE(NB);                                                 20382202 T  0062:2
           IF C=0 THEN N:=0 ELSE C:=0;                                       20382204 T  0063:2
            GO TO L;                                                         20382206 T  0067:1
        FIND:                                                                20382210 T  0067:3
            D←NB[I];E←NB[I+1];                                               20382220 T  0067:3
            C:=NB[I+2].[CF];                                                 20382225 T  0070:3
            M[N]:=I&J1[36:42:6]&J2[30:42:6]&K1[24:42:6]&K2[18:42:6]&         20382226 T  0073:0
                J3[12:42:6];                                                 20382227 T  0078:0
        L:                                                                   20382230 T  0079:2
            END;        % SEEKNAME                                          20382240 T  0079:2
                                                                                     SIZE= 0080 WORDS
REAL PROCEDURE PPC                                                           20383000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00546
            (ADDR,EQN,X,DEX,TYPE,UNITNO,CARDLOC,SOURCE,ACCUM,LASTSCAN,       20384000 T  0000:0
             DIRECT);                                                        20384100 T  0000:0
        VALUE                TYPE,UNITNO,CARDLOC                    ;        20385000 T  0000:0
         REAL ADDR,      DEX,TYPE,UNITNO,CARDLOC,SOURCE,      LASTSCAN ;    20386000 T  0000:0
        ARRAY EQN[*],X[*],ACCUM[*],DIRECT[*];                                20386100 T  0000:0
            BEGIN%                                                           20387000 T  0000:0
            REAL IOD,KOUNT;                                                  20388000 T  0000:0
            LABEL  EXIT,ERROR,NEXT,LFORM,LNO,LDISK,LTAPE,LPUNCH,LPAPER,%     20389000 T  0000:0
                ROUND,PROTECT,                                               20390000 T  0000:0
                SERIAL,UPDATE,SPO,DSKCHECK,                    % (SHM)       20391000 T  0000:0
                DOWN,LREMOTE,                                                20392000 T  0000:0
                LSPECIAL,LPRINT,LBACK,LCOPY,LFREE;                           20393000 T  0000:0
            SWITCH  D ← LFORM,LNO,LDISK,LTAPE,LPUNCH,LPRINT,LPAPER,%         20394000 T  0000:0
                LBACK,SERIAL,UPDATE,SPO,%                                    20395000 T  0000:0
                LREMOTE,LSPECIAL,ERROR,ERROR,ERROR,ERROR,LCOPY,ERROR,        20396000 T  0000:0
                LFREE,ERROR,PROTECT;                                         20396010 T  0000:0
            REAL NOLBL,TPNO ;%                                               20397000 T  0000:0
            BOOLEAN FAROUT;                                                  20397050 T  0000:0
            REAL SUBROUTINE SCAN;                                            20397100 T  0000:0
                BEGIN SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,   20397200 T  0001:0
                              DIRECT)                                        20397300 T  0003:0
                END;                                                         20397400 T  0003:2
            IF  TYPE = FILEV  THEN%                                          20398000 T  0004:3
                BEGIN%                                                       20399000 T  0007:1
                IF  ADDR =0  THEN ADDR←X[13]←GETESPDISK ;%                   20400000 T  0007:3
                IF   DEX  =  2   THEN%                                       20401000 T  0011:1
                    BEGIN%                                                   20402000 T  0012:0
                    EQN [29] ← GETESPDISK;%                                  20403000 T  0012:2
                    DISKIO( IOD , EQN    INX.0"1  ,30, ADDR);%               20404000 T  0014:0
                    ADDR ← EQN[29];%                                         20405000 T  0016:3
```

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        DEX ← 0;%                                                   20406000 T 0018:0
        SLEEP([IOD], IOMASK);%                                      20407000 T 0019:0
        END;%                                                       20408000 T 0020:2
    IF (TYPE:=SCAN) < IDENT THEN GO TO ERROR;                       20409000 T 0020:2
    EQN ← (14 × DEX) INX  EQN ;%                                    20410000 T 0023:2
    EQN[12]:=0; % ZERO OUT EU/SPEED CELL                % (SHM)     20410100 T 0025:2
    STREAM( KOUNT, ACCUM, Z ← [EQN[4]]);%                           20411000 T 0026:3
        BEGIN%                                                      20412000 T 0028:2
        SI ← LOC KOUNT ; SI←SI+7; DI←Z; DS←CHR;%                    20413000 T 0028:2
        SI ← ACCUM ; SI←SI+1;  DS← KOUNT CHR ;%                     20414000 T 0029:2
        END ;%                                                      20415000 T 0030:2
    IF X[0]<0 THEN IF KOUNT=4 AND ACCUM[0].[6:24]="CARD"            20415100 T 0030:3
        THEN FAROUT ← TRUE;                                         20415200 T 0034:1
    IF SCAN ≠ EQUAL THEN GO TO ERROR;                               20416000 T 0036:0
    IF SCAN < IDENT THEN GO TO ERROR;                               20416500 T 0038:0
    EQN[2] ← EQN[3]←%                                               20417000 T 0040:0
    EQN[0]←0;  EQN[1] ← ACCUM[0];%                                  20418000 T 0041:0
    IF  (TYPE←SCAN)= SLASH  THEN%                                   20419000 T 0044:3
    BEGIN  IF SCAN≥IDENT  THEN%                                     20420000 T 0047:0
        BEGIN   EQN[0]←EQN[1]; EQN[1]←ACCUM[0]   ;%                 20421000 T 0049:2
    ;   END    ELSE   GO TO   ERROR;%                               20422000 T 0053:0
            TYPE ← SCAN  END;%                                      20423000 T 0053:0
    IF TYPE = COMMA THEN%                                           20424000 T 0054:2
        BEGIN%                                                      20425000 T 0055:1
    IF(TYPE←SCAN)≠ IDENT OR KOUNT >3 THEN  GO TO ERROR;%            20426000 T 0055:3
        STREAM ( S ← 3-KOUNT,KOUNT,ACCUM, T←[EQN[2]]);%             20427000 T 0059:3
        BEGIN  SI←ACCUM; SI←SI+1; DI←DI+S; DS←KOUNT NUM;%           20428000 T 0062:1
        END;%                                                       20429000 T 0063:3
    IF(TYPE←SCAN)= COMMA THEN%                                      20430000 T 0064:0
        BEGIN%                                                      20431000 T 0066:0
        IF(TYPE←SCAN)≠ IDENT OR KOUNT>5 THEN GO TO ERROR;%          20432000 T 0066:2
            STREAM( S←8-KOUNT,KOUNT,ACCUM, T←[EQN[2]]);%            20433000 T 0070:3
            BEGIN SI←ACCUM; SI←SI+1; DI←DI+S;DS←KOUNT NUM%          20434000 T 0073:1
            END;%                                                   20435000 T 0074:3
        EQN[2].[42:1] ← 1;% SO FILE OPEN KNOWS ITS LABELEQUAT       20435500 T 0075:0
        IF(TYPE←SCAN)= COMMA  THEN%                                 20436000 T 0077:2
            BEGIN%                                                  20437000 T 0080:0
        IF(TYPE←SCAN)≠IDENT OR KOUNT>1 THEN GO TO ERROR;            20438000 T 0080:2
            STREAM(S←1-KOUNT,KOUNT,ACCUM,T←[EQN[3]]);               20439000 T 0084:3
            BEGIN SI←ACCUM; SI←SI+1; DI←DI+S;DS←KOUNT NUM;%         20440000 T 0087:1
            END;    TYPE ← SCAN;%                                   20441000 T 0088:3
            END% CYCLE ;%                                           20442000 T 0090:2
        END% CREATION DATE ;%                                       20443000 T 0090:2
        END;%REEL  NUMBER;%                                         20444000 T 0090:2
    TPNO←037;%                                                      20445000 T 0090:2
    NOLBL ← 0;%                                                     20446000 T 0091:1
ROUND:%                                                             20447000 T 0092:0
    WHILE TYPE≠PERIO AND (TYPE < FORM OR TYPE > FREEF) DO           20448000 T 0092:0
     TYPE:=SCAN;                                                    20448100 T 0095:1
    IF TYPE = PERIO THEN GO TO EXIT;%                               20449000 T 0098:0
    GO TO D[TYPE-FORM];%                                            20450000 T 0099:1
  NEXT:     TYPE←SCAN;  GO TO  ROUND;%                              20451000 T 0111:3
LFORM:%                                                             20452000 T 0114:0
    EQN[3].[42:1]←1; GO TO NEXT;%                                   20453000 T 0114:0
LNO:%                                                               20454000 T 0117:0
    NOLBL ← 1; GO TO NEXT;%                                         20455000 T 0117:0
LDISK:%                                                             20456000 T 0118:1
    TPNO:=10; GO TO DSKCHECK;                           % (SHM)     20457000 T 0118:1
LTAPE:%                                                             20458000 T 0119:2
    TPNO ← 2; GO TO NEXT;%                                          20459000 T 0119:2
```

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LPUNCH:%                                                                20460000 T  0120:3
     TPNO:=0;                                                           20460100 T  0120:3
     IF (TYPE:=SCAN)=PERIO THEN GO TO EXIT;                             20461000 T  0121:2
     IF TYPE=FREEF THEN GO TO LFREE ELSE                                20461050 T  0124:2
     IF TYPE=BACK THEN                                                  20461100 T  0125:1
     TPNO←20 ELSE                                                       20461200 T  0126:2
     BEGIN TPNO←21; IF SCAN≠BACK THEN GO ERROR END;                     20461300 T  0127:3
     IF SCAN=PERIO THEN GO ERROR;                                       20461400 T  0131:0
     IF (TYPE←SCAN)=PERIO THEN                                          20461500 T  0133:0
          TPNO←TPNO+4 ELSE                                              20461600 T  0135:0
     IF TYPE=FREEF THEN GO TO LFREE ELSE                                20461650 T  0136:3
     IF TYPE=DISK THEN                                                  20461700 T  0138:0
          TPNO←TPNO+2 ELSE                                              20461800 T  0139:1
     IF TYPE≠TAPE THEN GO ERROR;                                        20461900 T  0141:0
          IF TYPE≠PERIO THEN GO NEXT ELSE GO EXIT;                      20461950 T  0142:3
LPAPER:%                                                                20462000 T  0144:2
     TYPE ← SCAN; TPNO ← 7; GO TO NEXT;%                                20463000 T  0144:2
LSPECIAL:%                                                              20464000 T  0147:3
     TPNO ← 3; GO TO NEXT;%                                             20465000 T  0147:3
LPRINT:%                                                                20466000 T  0149:0
     TPNO:=1;                                                           20466100 T  0149:0
     IF (TYPE:=SCAN)=PERIO THEN GO TO EXIT;                             20467000 T  0149:3
     IF TYPE=FREEF THEN GO TO LFREE ELSE                                20467100 T  0152:2
     IF TYPE=BACK THEN                                          %P      20468000 T  0153:1
LBACK:    TPNO←6 ELSE                                           %P      20469000 T  0154:2
     BEGIN TPNO←4; IF SCAN≠BACK THEN GO ERROR END;              %P      20470000 T  0155:3
     IF SCAN=PERIO THEN GO ERROR;                               %P      20471000 T  0159:0
     IF (TYPE←SCAN)=PERIO THEN                                  %P      20472000 T  0161:0
          TPNO←22-TPNO ELSE                                     %P      20473000 T  0163:0
     IF TYPE=FREEF THEN GO TO LFREE ELSE                                20473100 T  0164:3
     IF TYPE=DISK THEN                                          %P      20474000 T  0166:0
          TPNO←21-TPNO ELSE                                     %P      20475000 T  0167:1
     IF TYPE≠TAPE THEN GO ERROR;                                %P      20476000 T  0169:0
          IF TYPE ≠PERIO THEN GO NEXT ELSE GO EXIT;                     20477000 T  0170:3
LFREE:                                                                  20478500 T  0172:2
$ SET OMIT = NOT(PACKETS)                                               20478504 T  0172:2
          GO TO NEXT;                                                   20478508 T  0172:2
LCOPY:    IF (TYPE:=SCAN) NEQ IDENT OR KOUNT GTR 3 THEN GO TO ERROR;    20478510 T  0173:0
          STREAM(A:=0:KOUNT,ACCUM);                                     20478520 T  0176:0
          BEGIN SI:=ACCUM;SI:=SI+1;DI:=LOC A;DS:=KOUNT OCT END;         20478530 T  0178:2
          IF(TYPE:=P(DUP)) GTR 256 OR P(XCH)LSS 1 THEN GO ERROR;        20478540 T  0180:0
          EQN[3].[15:8]:=TYPE-1;GO TO NEXT;                             20478550 T  0183:0
ERROR:%                                                                 20479000 T  0186:2
     PPC←TRUE;GO DOWN;%                                                 20480000 T  0186:2
SPO:      TPNO←11;GO TO NEXT;%                                          20481000 T  0187:3
LREMOTE:  TPNO← 19;  GO NEXT;                                           20481100 T  0189:0
SERIAL: TPNO:=12; GO TO DSKCHECK;                           % (SHM)      20482000 T  0190:1
UPDATE:   TPNO←13; GO TO DSKCHECK;                                      20483000 T  0191:2
PROTECT:  TPNO←26;                                                      20483100 T  0192:3
DSKCHECK:                                                   % (SHM)      20484000 T  0193:2
          IF (TYPE:=SCAN)=COMMA THEN GO TO DSKCHECK;        % (SHM)      20484050 T  0193:2
          IF TYPE=EU THEN                                   % (SHM)      20484100 T  0196:2
             BEGIN                                          % (SHM)      20484150 T  0197:1
             IF SCAN NEQ EQUAL THEN GO TO ERROR ELSE        % (SHM)      20484200 T  0197:3
             IF (TYPE:=SCAN) NEQ IDENT OR KOUNT GTR 2 THEN GO ERROR;     20484250 T  0199:2
             STREAM(KOUNT,ACCUM,T:=[TYPE]);                 % (SHM)      20484300 T  0203:0
                BEGIN                                       % (SHM)      20484350 T  0205:1
                SI:=ACCUM; SI:=SI+1; DI:=T; DS:=KOUNT OCT;  % (SHM)      20484400 T  0205:1
                END;                                        % (SHM)      20484450 T  0206:2
             EQN[12].[18:5]:=TYPE+1;                        % (SHM)      20484500 T  0206:3
```

```
                    GO TO DSKCHECK;                                   % (SHM)      20484550 T  0209:3
                    END % IF EU                                       % (SHM)      20484600 T  0210:1
                 ELSE IF TYPE=FAST OR TYPE=SLOW THEN                  % (SHM)      20484650 T  0210:1
                    BEGIN                                             % (SHM)      20484700 T  0212:2
                    EQN[12].[16:2]:=1+(TYPE=SLOW);                    % (SHM)      20484750 T  0213:0
                    GO TO DSKCHECK;                                   % (SHM)      20484800 T  0216:2
                    END                                                           20484850 T  0217:0
                 ELSE IF TYPE = SENSE THEN                                        20484855 T  0217:0
                    BEGIN                                                         20484860 T  0218:1
                    EQN[12].[15:1]:=1;                                            20484865 T  0218:3
                    GO TO DSKCHECK;                                               20484870 T  0221:1
                    END;                                                          20484875 T  0221:3
                 GO TO ROUND;                                         % (SHM)      20484900 T  0221:3
          EXIT:%                                                                  20485000 T  0222:1
             IF   NOLBL THEN TPNO ← IF TPNO=2 THEN 9 ELSE%                        20486000 T  0222:1
                        (IF TPNO =3 THEN 5  ELSE%                                 20487000 T  0225:0
                 (IF TPNO=7 THEN 8 ELSE%                                          20488000 T  0227:0
                 (IF TPNO=@37 THEN 9 ELSE TPNO)));%                               20489000 T  0229:0
             IF FAROUT THEN IF UNITNO≥32 THEN CIDROW[UNITNO-32].[3:5] ← 0         20489100 T  0231:3
                      ELSE IF UNITNO=23 THEN READERA.[FF] ← 0                     20489200 T  0235:1
                      ELSE IF UNITNO=24 THEN READERB.[FF] ← 0;                    20489300 T  0238:3
             EQN[3].[43:5]←TPNO;%                                                 20490000 T  0242:3
                 DEX  ←  DEX+1;%                                                  20491000 T  0245:1
                 END%                                                             20492000 T  0246:3
             ELSE%                                                                20493000 T  0246:3
                 BEGIN%                                                           20494000 T  0246:3
             DO UNTIL (IOD ← SCAN) = EQUAL OR IOD = PERIO;%                       20495000 T  0247:1
             IF IOD = PERIO THEN GO TO ERROR;%                                    20496000 T  0250:2
                 IOD ← SCAN;%                                                     20497000 T  0251:3
                 STREAM (K←0: A ← [ACCUM[0]],KOUNT);%                             20498000 T  0253:2
                      BEGIN%                                                      20499000 T  0255:1
                      SI ← A ; SI←SI+1; DI←LOC K;%                                20500000 T  0255:1
                      KOUNT(IF SC<"0" THEN BEGIN DS←LIT"+";                       20500100 T  0256:0
                            JUMP OUT TO ERR; END; SI←SI+1);                       20500200 T  0257:2
                            SI←SI-KOUNT;                                          20500300 T  0258:2
                      DS ← KOUNT  OCT ;%                                          20501000 T  0259:0
                      ERR:                                                        20501100 T  0259:2
                 END;%                                                            20502000 T  0259:2
             IF (TPNO←P).[1:1] THEN GO TO ERROR;                                  20503000 T  0259:3
             IF TYPE=PROCE OR TYPE=IO THEN X[16+TYPE-PROCE]←TPNO×3600             20504000 T  0261:2
             ELSE IF TYPE=COREV THEN X[20] ← TPNO DIV 64                          20504500 T  0265:2
             ELSE IF TYPE≥PRIOR AND TYPE≤SAVEV THEN X[18+TYPE-PRIOR]←TPNO;        20505000 T  0270:0
             IF TYPE = COREV THEN                                                 20507000 T  0276:0
             BEGIN DO UNTIL (IOD:=SCAN)=MAXV OR IOD=PERIO;                        20507100 T  0276:3
                 IF IOD=MAXV THEN P([X[20]],IOR) ELSE GO TO DOWN;                 20507200 T  0280:2
             END;                                                                 20507300 T  0282:2
             DO UNTIL SCAN = PERIO;%                                              20508000 T  0282:2
                 END;%                                                            20509000 T  0285:0
          DOWN:%                                                                  20510000 T  0285:0
             END;%                                                                20511000 T  0285:0
                                                                                                SIZE= 0286 WORDS
       PROCEDURE SECURITYMAINT( TYPE,SMID,SFID,CMM,SFH,CARD);                     20511100 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00556
       VALUE TYPE,SMID,SFID,SFH,CARD;                                             20511110 T  0000:0
       REAL  TYPE,SMID,SFID,SFH,CARD;                                             20511120 T  0000:0
       ARRAY CMM[*];                                                              20511130 T  0000:0
       BEGIN                                                                      20511140 T  0000:0
       REAL N4,OPTN,T1;                                                           20511150 T  0000:0
       REAL T=TYPE;                                                               20511155 T  0000:0
       LABEL SEC3,FUNC0,FUNC1,FUNC2,FUNC3,SEC4,EXYT;                              20511160 T  0000:0
```

```
LABEL ERR,ERROR,FUNCJ;%                                                  20511165 T  0000:0
SWITCH FUNC←FUNCJ,FUNC0,FUNC1,FUNC2,FUNC3;%                              20511170 T  0000:0
LABEL EXIT; %                                                            20511171 T  0000:0
        N4:= ABS(CMM[5]);                                                20511181 T  0000:0
        IF ((CMM[0]EQV "DECK   ")=NOT 0) AND                             20511182 T  0002:0
           (((CMM[1]AND @77000000007777)EQV @12000000003714)=NOT 0)      20511184 T  0003:3
        OR SYSTEMFILE(CMM[0],CMM[1]) THEN GO TO ERROR;                   20511188 T  0005:2
        IF TYPE = USEV AND                                               20511295 T  0008:3
        ((CMM[0]EQV SMID)=NOT 0 AND (CMM[1]EQV SFID)=NOT 0) THEN         20511300 T  0009:2
        ELSE                                                             20511305 T  0013:2
        IF (OPTN:=DIRECTORYSEARCH(CMM[0],CMM[1],4)) GEQ 64 THEN          20511306 T  0014:0
        BEGIN                                                            20511311 T  0020:3
        IF TYPE=USEV AND M[OPTN+2]<0 THEN GO TO ERR;                     20511312 T  0021:1
        IF (T1←((N4 EQV MCP)=NOT 0) OR (CMM[5]=NOT(-0))) OR              20511315 T  0025:0
          (M[OPTN+2]>0 AND(N4 EQV ABS(M[OPTN+2]))=NOT 0)THEN             20511320 T  0029:2
        GO TO SEC3 ELSE                                                  20511330 T  0035:0
        BEGIN ERR: FORGETSPACE(OPTN);                                    20511340 T  0035:0
                   FORGETSPACE(DIRECTORYSEARCH(CMM[0],CMM[1],14));       20511350 T  0036:2
          END;                                                           20511360 T  0038:3
        END;                                                             20511363 T  0038:3
ERROR:                                                                   20511365 T  0038:3
        STREAM(A:=[CMM[0]],B:=(OPTN:=GETSPACE(10,0,0)+2));               20511370 T  0038:3
        BEGIN SI:=A; SI:=SI+1; DS:=LIT" "; DS:=7 CHR;                    20511380 T  0042:0
              SI:=SI+1; DS:=LIT"/"; DS:=7 CHR;                           20511390 T  0043:1
              DS:=24 LIT " SECURITY MAINT IGNORED←";                     20511400 T  0044:1
        END STREAM;                                                      20511410 T  0047:2
        SPOUTER(OPTN&CARD[9:9:9],CARD,1);                                20511420 T  0047:3
        GO TO EXYT;                                                      20511430 T  0049:2
    SEC3:                                                                20511440 T  0050:0
        GO TO FUNC[TYPE-UNLOCKV];                                        20511450 T  0050:0
  FUNCJ:M[OPTN INX 5]←M[OPTN INX 6]←@14;%                                20511455 T  0054:0
        CMM[2] := " UNLOCK"; CMM[3] := "ED←←   ";%                       20511457 T  0057:3
        GO TO SEC4;%                                                     20511459 T  0060:1
  FUNC0:                                                                 20511460 T  0063:0
        M[OPTN INX 5]:=-SMID; M[OPTN INX 6]:= SFID;                      20511470 T  0063:0
        CMM[2]:= " SECURE"; CMM[3]:= "D WITH ";                          20511480 T  0067:1
        M[SFH+2] := P(DUP,LOD,SSB);                                      20511490 T  0069:3
        GO TO SEC4;                                                      20511500 T  0072:1
  FUNC1:                                                                 20511510 T  0075:0
        IF (T1←T1 AND (M[OPTN+2]=0)) THEN M[OPTN+2]←CMM[6];              20511515 T  0075:0
        SMID:=M[OPTN+5]; SFID:=M[OPTN+6];                                20511520 T  0080:3
        M[OPTN INX 5]:= M[OPTN INX 6]:=0;                                20511525 T  0084:3
        CMM[2]←" LOCKED";CMM[3]←" FROM  ";CMM[4]←" WITH :";GO TO SEC4;   20511530 T  0088:2
  FUNC2:                                                                 20511540 T  0096:0
M[OPTN INX 5]←M[OPTN INX 2],[6:42]; M[OPTN INX 2]←M[OPTN INX 6]←0;       20511550 T  0096:0
        CMM[2]:= " FREE F"; CMM[3]:= "ILE←←  "; GO TO SEC4;              20511560 T  0104:1
  FUNC3:                                                                 20511570 T  0110:0
        M[OPTN INX 5]:=  @14;   M[OPTN INX 6]:= 0;                       20511580 T  0110:0
        CMM[2]:= " PUBLIC";CMM[3]:= " FILE←←";                           20511590 T  0114:0
    SEC4:                                                                20511600 T  0116:2
        DISKWAIT(OPTN,[CF],30,OPTN,[FF]);                                20511610 T  0116:2
        P(DIRECTORYSEARCH(-CMM[0],CMM[1],14),DEL);                       20511620 T  0118:3
$ SET OMIT = PACKETS                                                     20511639 T  0121:0
        IF SECMSG THEN                                                   20511640 T  0121:0
        BEGIN                                                            20511650 T  0121:3
$ POP OMIT                                                               20511651 T  0122:1
        STREAM(A:=ABS(SMID),B:=SFID,C:=CMM,Q:=(T LSS FREE)%              20511660 T  0122:1
              AND (T≠UNLOCKV) AND (ABS(SMID)≠12),%                       20511662 T  0124:2
              X:=(SFID=0 OR ABS(SFID)=12) %                              20511663 T  0126:3
              AND T LSS FREE AND T≠UNLOCKV,%                             20511664 T  0128:3
```

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                    Y←T=LOCKV AND(((N4 EQV MCP)=NOT 0)AND((CMM[6] EQV MCP)≠      20511665 T  0130:3
                    NOT 0)) AND T1,D←OPTN←OPTN INX 0);                          20511666 T  0135:2
                BEGIN SI:=C; SI:=SI+1; DS:=LIT" "; DS:=7 CHR; DS:=LIT"/";       20511670 T  0138:3
                    3(SI:=SI+1; DS:=7 CHR);                                     20511680 T  0140:2
                    X(DI:=DI-7; DS:=2 LIT"++");                                 20511685 T  0141:2
                    Q(DS:=LIT" ";SI:=LOC A;SI:=SI+1;DS:=7 CHR; DS:=LIT"/";      20511690 T  0143:0
                    SI←SI+1; DS←7 CHR);                                         20511700 T  0145:1
                    Y(X(DI←DI-18); SI←C;4(SI←SI+8);SI←SI+1;DS←7 CHR;            20511702 T  0146:0
                      SI←SI+9; DS←7 CHR); DS← LIT "←";                          20511704 T  0149:0
                END STREAM;                                                     20511710 T  0150:1
                SPOUTER(OPTN&CARD[9:9:9],CARD,SECMSG);                          20511720 T  0150:2
            $ SET OMIT = PACKETS                                                20511729 T  0152:1
                END ELSE FORGETSPACE(OPTN);                                     20511730 T  0152:1
            $ POP OMIT                                                          20511731 T  0155:3
        EXYT:                                                                   20511800 T  0155:3
    END SECUTITYMAINT;                                                          20511810 T  0155:3
                                                                                        SIZE= 0156 WORDS
    COMMENT  THE PRT CELL "SHEET" GIVES DISK ADDRESS OF 1ST SHEET ENTRY         20512000 T  0000:0
        *** ENTRIES IN THE SHEET ARE AS FOLLOWS:                                20512400 T  0000:0
            S[ 0]          = 1ST NAME (7 CHRS)                                  20512800 T  0000:0
                 .[ 2:1 ] = "CANDE" JOB (TSS ONLY)                              20513200 T  0000:0
            S[ 1]          = 2ND NAME (7 CHRS)                                  20513600 T  0000:0
            S[ 2].[ 1: 2] = 0 NORMAL                                            20514000 T  0000:0
                              2 JOB HAS BEEN XS-ED (FORCED RUN)                 20514400 T  0000:0
                              3 JOB HAS BEEN ES-ED (FORCED RUN AND DS)          20514800 T  0000:0
            S[ 2].[ 4:1 ] = SUPPRESS BOJ/EOJ MESSAGES FOR SYSTEM JOBS           20515200 T  0000:0
            S[ 2].[ 8:10] = 0 GO JOB (FROM COMPILE & GO)                        20515600 T  0000:0
                          = 1 COMPILER (FOR COMPILE & GO)                       20516000 T  0000:0
                          = 2 EXECUTE JOB                                       20516400 T  0000:0
                          = 3 COMPILER (FOR SYNTAX CHECK)(SET TO 2 LATER)       20516800 T  0000:0
                          = 4 COMPILER (FOR COMPILE TO LIBRARY)                 20517200 T  0000:0
                          = 5 RUN JOB                                           20517600 T  0000:0
            S[ 2].[18:15] = SKELETONS DISK ADDRESS (IF S[2].[8:10] = 1,2,4      20518000 T  0000:0
            S[ 2].[33:15] = PRIORITY, SAME AS S[18]                             20518400 T  0000:0
            S[ 3].[ 1:1 ] = SET BY SELECTRUN WHEN "SCHEDULED" MESSAGE           20518800 T  0000:0
                              IS SENT (IF SCHEDULED)                            20519200 T  0000:0
            S[ 3].[ 2: 1] = 1 RESTART JOB                                       20519600 T  0000:0
            S[ 3].[ 8:10] = SCHEDULE-ID FOR THIS JOB                            20520000 T  0000:0
            S[ 5]          = STARTING TIME FOR LOG                              20520400 T  0000:0
            S[ 6]          = LOCATION OF LAST PART OF LOG                       20520800 T  0000:0
            S[ 7]          = CORE ADDRESS OF SEGMENT ZERO (WHEN THE             20521200 T  0000:0
                              SHEET IS PASSED TO SELECTRUN AS A PARAMETER)      20521600 T  0000:0
            S[13]          = DISK ADDRESS OF LABEL EQUATION ENTRIES             20522000 T  0000:0
                              APPLICABLE TO THIS EXECUTION ONLY (SEE BELOW)     20522400 T  0000:0
            S[14]          = ACTUAL MFID OF JOB (TSS ONLY). THIS MAY BE         20522800 T  0000:0
                              BE DIFFERENT FROM S[0] FOR SOME JOBS              20523200 T  0000:0
                              WHICH ARE STARTED BY CANDE.                       20523600 T  0000:0
            S[15]          = DISK ADDRESS OF LABEL EQUATION ENTRIES             20524000 T  0000:0
                              PRESENTED WHEN PROGRAM WAS COMPILED AND           20524400 T  0000:0
                              APPLICABLE TO ALL EXECUTIONS                      20524800 T  0000:0
            S[16]          = ESTIMATED PROCESSOR TIME                           20525200 T  0000:0
            S[17]          = ESTIMATED I/O TIME                                 20525600 T  0000:0
            S[18]          = PRIORITY                                           20526000 T  0000:0
            S[19]          = COMMON VALUE                                       20526400 T  0000:0
            S[20]          = ESTIMATED CORE REQUIREMENTS                        20526800 T  0000:0
            S[20].[ 2:1 ] = "CAN-T EXPAND" BIT (TSS)                            20527200 T  0000:0
                 .[33:15] = ESTIMATED CORE REQUIREMENT                          20527600 T  0000:0
            S[21]          = STACK SIZE                                         20528000 T  0000:0
            S[22]          = SAVE FACTOR FOR OBJECT FILE (COMPILATIONS)         20528400 T  0000:0
            S[23].[2:6]    = UNITNO OF CARD/PSEUDO READER IN CONTROLCARD.       20528800 T  0000:0
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S[23].[9:9]    = REMOTE STATION ADDRESS, ELSE 0                          20529200 T  0000:0
S[23].[24:24]  = TIME JOB PUT IN SHEET(FOR TS MSG)                       20529600 T  0000:0
S[24]          = USER CODE                                               20530000 T  0000:0
S[25]          = DISK ADDRESS OF FILE HEADER FOR THE JOB                 20530400 T  0000:0
S[26]          = LOGLINE (TSS)                                           20530800 T  0000:0
S[27]          = FID FOR COMPILES,TAPE NAME FOR LIBMAIN.                 20531200 T  0000:0
S[29]          = DISK ADDRESS OF NEXT SHEET ENTRY (=0 IF LAST)           20531600 T  0000:0
*** ENTRIES FOR LABEL EQAT. ARE AS FOLLOWS:                              20532000 T  0000:0
F[0]           = MULTI-FILE ID (7 CHRS)                                  20532400 T  0000:0
F[1]           = FILE ID      (7 CHRS)                                   20532800 T  0000:0
F[2].[0:18]    = REEL NO    (3 CHRS)                                    20533200 T  0000:0
F[2].[18:30]   = CREATION DATE  (5 CHRS)                                 20533600 T  0000:0
F[3].[0:6]     = CYCLE    (1 CHR)                                       20534000 T  0000:0
F[3].[15:8]    = NUM COPIES OF PBD OR PUD FILE                           20534400 T  0000:0
F[3].[23:1]    = 1, IF "FREEF" PBD PACKET FILE                           20534800 T  0000:0
F[3].[42:1]    = 1  FOR FORMS REQUIRED                                   20535200 T  0000:0
F[3].[43:5]    = 0  FOR CP  (FILE TYPES )                                20535600 T  0000:0
                 1  FOR LP                                               20536000 T  0000:0
                 2  FOR MT                                               20536400 T  0000:0
                 3  FOR SPECIFIC UNIT                                    20536800 T  0000:0
                 4  FOR LP  (MAY BACKUP)                                 20537200 T  0000:0
                 5  FOR SPECIFIC (UNLABLED)                              20537600 T  0000:0
                 6  FOR LP  (MUST BACKUP)                                20538000 T  0000:0
                 7  FOR PT                                               20538400 T  0000:0
                 8  FOR PT (UNLABLED)                                    20538800 T  0000:0
                 9  FOR MT (UNLABLED)                                    20539200 T  0000:0
                10  FOR DISK                                             20539600 T  0000:0
F[4].[0:6]     = NO OF CHARS IN INTERNAL NAME                            20540000 T  0000:0
F[4].[6:42]    = INTERNAL NAME (MAY CONTINUE TO F[11])                   20540400 T  0000:0
F[12].[15:1]   = "SENSITIVE" BIT                                         20540800 T  0000:0
F[12].[16:2]   = DISK SPEED                                              20541200 T  0000:0
F[12].[18:5]   = EU NUMBER + 1                                           20541600 T  0000:0
F[14]= F[25]   SAME AS ABOVE FOR NEXT FILE (F[14]=14 IF NO NEXT)         20542000 T  0000:0
F[29]          = DISK ADRS.OF NXT.LBL.EQUAT.ENTRY(=0 IF NONE)            20542400 T  0000:0
**** ALSO SEE PROCEDURE "SELECTRUN1" (SEQ.NO.20055600) FOR               20542800 T  0000:0
**** FURTHER INFORMATION ON LABEL EQUATION AND THE FILE                 20543200 T  0000:0
**** PARAMETER BLOCK.                                                    20543600 T  0000:0
                                                                         20544000 T  0000:0
**** CONTENTS OF THE JAR:                                               20544400 T  0000:0
JAR[0].[ 1:1 ]  =  COMPILE JOB                                           20544800 T  0000:0
      .[ 2:1 ]  = "CANDE" JOB (TSS ONLY)                                 20545200 T  0000:0
      .[ 6:42]  =  MFID OF THE JOB                                       20545600 T  0000:0
JAR[1].[ 1:1 ]  =  JOB IS BEING DS-ED                                    20546000 T  0000:0
      .[ 2:1 ]  =  JOB IS BEING ES-ED                                    20546400 T  0000:0
      .[ 6:42]  =  FID OF THE JOB                                        20546800 T  0000:0
JAR[2].[ 1:1 ]  =  COBOL JOB                                             20547200 T  0000:0
      .[ 2:1 ]  =  DECLARED SOFTWARD INTERRUPTS                          20547600 T  0000:0
      .[ 3:1 ]  =  JOB HAS MAINTENANCE LOG ENTRY                         20548000 T  0000:0
      .[ 4:1 ]  =  INTER-PROGRAM COMMUNICATION                           20548400 T  0000:0
      .[ 5:1 ]  =  DECLARED SOFTWARE INTERRUPTS                          20548800 T  0000:0
      .[ 6:1 ]  =  INVOKED OR INVOKING IPC PROG,FILE                     20549200 T  0000:0
      .[ 7:1 ]  =  INVOKED IPC PROGRAM FILE                              20549600 T  0000:0
      .[ 8:1 ]  =  INTER-PROGRAM COMMUNICATION                           20550000 T  0000:0
      .[18:15]  =  DISK ADDRESS FOR THE SKELETON SHEET (COMPILATIONS     20550400 T  0000:0
      .[33:15]  =  PRIORITY                                              20550800 T  0000:0
JAR[3]          =  PROCESS TIME LIMIT                                    20551200 T  0000:0
JAR[4]          =  IO TIME LIMIT                                         20551600 T  0000:0
JAR[5].[ 1:23]  =  STARTING DATE (OCTAL)                                 20552000 T  0000:0
      .[24:24]  =  STARTING TIME (OCTAL)                                 20552400 T  0000:0
JAR[6].[ 1:1 ]  =  JOB IS SD-ED                                          20552800 T  0000:0
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```
                .[ 2:0 ]  =  PSEUDO-READER NUMBER                                  20553200 T  0000:0
                .[18:15]  =  SIZE OF LOG INFORMATION (BATCH)                       20553600 T  0000:0
                .[33:15]  =  DISK ADDRESS OF FIRST RECORD FOR THE LOG              20554000 T  0000:0
        JAR[7]            =  IDLETIME ENTRY (BATCH)                                20554400 T  0000:0
        JAR[7]            =  MFID OF JOB (TSS ONLY). THIS MAY BE DIFFERENT         20554800 T  0000:0
                              FROM JAR[0] FOR SOME JOBS STARTED BY CANDE.          20555200 T  0000:0
        JAR[8]            =  LENGTH OF CODE FILE ROW                               20555600 T  0000:0
        JAR[9].[ 1:1 ]    =  "SYSTEM" JOB (LIBMAIN,LDCNTRL,PRNPBT)                 20556000 T  0000:0
                .[ 2:1 ]  =  SUPPRESS PRINTING OF BOJ/EOJ MESSAGES                 20556400 T  0000:0
                .[ 3:1 ]  =  JOB HAS BEEN "STOPPED" (WORKSET PATCH)                20556410 T  0000:0
                .[18:15]  =  DISK ADDRESS FOR "CHAIN" IF NON-ZERO                  20556800 T  0000:0
                .[33:15]  =  NUMBER FOR DISK ROWS IN CODE FILE                     20557200 T  0000:0
        JAR[10] THROUGH JAR[29] = DISK ADDRESS OF CODE FILE ROWS                   20557600 T  0000:0
        JAR[30]           = FID OF OBJECT FILE (BATCH COMPILES ONLY)               20558000 T  0000:0
        END OF COMMENT;                                                            20558400 T  0000:0
    REAL PROCEDURE LIBCC;                                                          20566000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00562
    BEGIN LABEL NEXT,LOOP;                                                         20566011 T  0000:0
    REAL      CNTSENS     =  RETURNVAL+1,     % BEGIN LOCALS TO LIBCC              20566245 T  0000:0
              HOLD1       =  CNTSENS+1,                                            20566247 T  0000:0
              HOLD2       =  HOLD1+1,                                              20566250 T  0000:0
              HOLD3       =  HOLD2+1,                                              20566255 T  0000:0
              REPEAT      =  HOLD3+1,                                              20566260 T  0000:0
              TYM         =  REPEAT+1;                                             20566265 T  0000:0
    BOOLEAN   FIRSTIME    =  TYM+1;                                                20566270 T  0000:0
        LABEL CCA,QUIT,POWIE,CHAN,REMO,INCSC,GETEM,ENTE,LCOPY,SEEK,INIT;           20566600 T  0000:0
        LABEL DOWNR,OUTR;                                                          20566610 T  0000:0
        SWITCH SW←LCOPY,LCOPY,ENTE,ENTE,REMO,CHAN;                                 20566700 T  0000:0
        DEFINE ZIPMIX=CARD.[18:6]#;                                                20566740 T  0000:0
        SUBROUTINE BOTH;                                                           20566750 T  0000:0
        BEGIN CMM[0]:="LIBMAIN"; CMM[1]:="DISK    ";                               20566755 T  0001:0
              CMM[2]:=0&2[8:38:10]; CMM[13]:=0;                                    20566760 T  0003:2
    $ SET OMIT = PACKETS                                                           20566765 T  0007:0
              CMM[23]:=0&CARD[9:9:9];                                              20566770 T  0007:0
    $ POP OMIT                                                                     20566775 T  0009:1
    $ SET OMIT = NOT(PACKETS)                                                      20566780 T  0009:1
        END OF BOTH;                                                               20566797 T  0009:1
        SUBROUTINE GETEMFORREM; %STORE NAMES OF SENSITIVE FILES IN ESPDISK         20566800 T  0012:0
        BEGIN CNTSENS:=CNTSENS+2;                                                  20566805 T  0012:0
              IF CNTSENS GTR 26                                                    20566810 T  0013:1
                THEN BEGIN PROG[29]:=GETESPDISK;                                   20566815 T  0013:2
                           DISKWAIT(PROG INX 0,30,LIBNO);                          20566820 T  0016:0
                           LIBNO:=PROG[29];                                        20566825 T  0018:0
                           CNTSENS:=2;                                             20566830 T  0019:0
                     END;                                                          20566835 T  0019:3
              PROG[CNTSENS]:=CMM[2];                                               20566840 T  0019:3
              PROG[CNTSENS+1]:=CMM[3];                                             20566845 T  0021:1
        END OF GETEMFORREM;                                                        20566850 T  0023:1
        REAL SUBROUTINE SCAN;                                                      20566875 T  0023:2
             SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,                  20566900 T  0024:0
                      DIRECT);                                                     20566902 T  0026:0
        REAL SUBROUTINE SKAN;                                                      20566905 T  0027:1
        BEGIN                                                                      20566910 T  0028:0
        STREAM(X:=0:CN:=0,ACCUM);                                                  20566915 T  0028:0
        BEGIN                                                                      20566920 T  0029:3
        SI:=ACCUM;SI:=SI+1;                                                        20566925 T  0029:3
        8(IF SC GEQ "0" THEN BEGIN SI:=SI+1;TALLY:=TALLY+1; END ELSE               20566930 T  0030:1
          IF SC=" " THEN JUMP OUT ELSE BEGIN TALLY:=0;JUMP OUT END);               20566935 T  0031:3
          CN:=TALLY;SI:=SI-CN;DI:=LOC X;DS:=CN OCT;                                20566940 T  0034:0
        END;                                                                       20566945 T  0035:2
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            SKAN:=P;                                                    20566950 T  0035:3
            END OF SKAN;                                                20566955 T  0036:0
            P(RCW,MYMSCW,STF);                                          20567000 T  0036:1
            RCW:=RCW & P(XCH)[CTC];                                     20567010 T  0038:1
            P(0,0,0,0,0,0,0); % ZERO LOCALS OF LIBCC                    20567015 T  0039:2
            LIBCC:=0;                                                   20567020 T  0041:1
            FIRSTIME:=TRUE;                                             20567025 T  0042:0
            UNITNO←CARD.[2:6];                                          20567100 T  0042:3
            CARDLOC←CARD INX 0;                                         20567200 T  0044:0
            GO TO SW[T-COPY];                                           20567300 T  0045:1
        LCOPY:                                                          20567400 T  0049:3
        ENTE:                                                           20567500 T  0049:3
                IF (CN:=SCAN)=IDENT THEN                                20567600 T  0049:3
                BEGIN;                                                  20567700 T  0052:0
                    IF(PROG[0]:=SKAN)=0 THEN PROG[0]:=511 ELSE CN:=SCAN;  20567800 T  0052:2
                    IF PROG[0]>511 THEN PROG[0]:=511;                   20567900 T  0058:2
                END ELSE PROG[0]:=511;                                  20568000 T  0061:1
                CMM[19]:=0;                                             20568050 T  0063:0
         $ SET OMIT = NOT B6500LOAD                                     20568059 T  0064:1
                IF CN=TOV AND T GTR UNLOAD THEN                         20568100 T  0064:1
                BEGIN                                                   20568200 T  0066:0
                    IF (CN:=SCAN)=EU THEN                               20568300 T  0066:2
                    BEGIN                                               20568400 T  0069:0
                    IF(CN:=SCAN)≠IDENT THEN GO TO INCSC;                20568500 T  0069:2
                    IF P(SKAN,DUP)>19 THEN BEGIN P(DEL);GO INCSC END;   20568600 T  0072:2
                    CN←P+1;CMM[19].[9:6]←CN;                            20568610 T  0076:0
                    IF CN>NEUP.NEUF THEN GO TO INCSC;                   20568611 T  0079:2
                    END                                                 20568620 T  0081:1
                    ELSE IF CN=SLOW THEN CMM[19]←P(DUP,LOD) OR M ELSE   20568630 T  0081:1
                    IF CN=FAST THEN CMM[19].[3:1]←1 ELSE GO TO INCSC;   20568640 T  0085:0
                    CN:=SCAN;                                           20568650 T  0089:1
                END;                                                    20568700 T  0090:2
                IF CN=LATESTV AND T GTR UNLOAD THEN                     20568710 T  0090:2
                BEGIN                                                   20568712 T  0092:1
                    CN:=SCAN;                                           20568714 T  0092:3
                    CMM[19].[4:1]:=1;                                   20568716 T  0094:2
                END;                                                    20568718 T  0097:0
                IF CN=EXPIRED THEN                                      20568728 T  0097:0
                BEGIN                                                   20568729 T  0097:3
                    PROG[0].[9:1]:=1;                                   20568730 T  0098:1
                    CN:=SCAN;                                           20568740 T  0100:3
                END;                                                    20568750 T  0102:2
                IF CN=ACCESSD THEN                                      20568760 T  0102:2
                BEGIN                                                   20568770 T  0103:1
                    PROG[0].[8:1]:=1;                                   20568780 T  0103:3
                    CN:=SCAN;                                           20568790 T  0106:1
                END;                                                    20568795 T  0107:2
                IF UNITNO=23 OR UNITNO=24 OR UNITNO≥32 THEN             20568900 T  0107:2
                    PROG[0].[2:6]←UNITNO;                               20569000 T  0110:1
                IF SCAN≠IDENT THEN GO TO INCSC;                         20569100 T  0113:1
                PROG[1]:=CMM[27]:=ACCUM[0];                             20569200 T  0115:0
                PROG[28]←0;                                             20569250 T  0117:2
                BOTH;                                                   20569300 T  0118:3
                LIBNO←GETESPDISK;CMM[19].[CF]←LIBNO;                    20569800 T  0120:0
                CMM[19].[FF]←T;                                         20569810 T  0123:0
        GETEM:  %   SCAN FILE NAMES AND STORE THEM IN ESPDISK           20569900 T  0125:0
                FOR CN←2 STEP 2 UNTIL 26 DO                             20570000 T  0125:0
                BEGIN                                                   20570100 T  0126:0
                IF (OPTN←SCAN)=EQUAL THEN PROG[CN]←-1                   20570200 T  0126:0
                    ELSE IF OPTN≥IDENT THEN PROG[CN]←ACCUM[0] ELSE GO POWIE;  20570300 T  0129:0
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                IF SCAN≠SLASH THEN GO POWIE;                                  20570400 T  0133:1
            IF (OPTN←SCAN)=EQUAL THEN PROG[CN+1]←-1                           20570500 T  0135:0
                ELSE IF OPTN≥IDENT THEN PROG[CN+1]←ACCUM[0] ELSE GO POWIE;    20570600 T  0138:2
                IF (OPTN←SCAN)=PERIO OR OPTN=POUND THEN GO TO QUIT%LP 1       20570700 T  0143:1
                    ELSE IF OPTN≠COMMA THEN GO POWIE;                         20570800 T  0146:0
            END;                                                              20570900 T  0148:0
            PROG[29]←GETESPDISK;                                              20571000 T  0150:1
            DISKWAIT(PROG INX 0,30,LIBNO);                                    20571100 T  0151:3
            LIBNO←PROG[29];                                                   20571300 T  0153:3
            GO GETEM;                                                         20571400 T  0154:3
        QUIT:                                                                 20571500 T  0155:1
            PROG[29]←0;                                                       20571600 T  0155:1
            PROG[CN+2]←⍟14;                                                   20571700 T  0156:2
            DISKWAIT(PROG INX 0,30,LIBNO);                                    20571800 T  0159:1
            LIBNO←ABS(CMM[19]);                                               20572000 T  0160:1
            GO INIT;                                                          20572100 T  0161:2
        POWIE:                                                                20572200 T  0162:0
            IF CMM[19].[CF]≠LIBNO THEN % MORE THAN ONE SEGMENT USED           20572300 T  0162:0
            BEGIN                                                             20572400 T  0163:2
                DISKWAIT(-PROG.[CF],30,CMM[19].[CF]);                         20572500 T  0164:0
                FORGETESPDISK(CMM[19].[CF]);                                  20572700 T  0167:0
                CMM[19]←PROG[29];                                             20572800 T  0168:2
                GO POWIE;                                                     20572900 T  0170:0
            END;                                                              20573000 T  0170:2
            FORGETESPDISK(LIBNO);                                             20573100 T  0170:2
            GO INCSC;                                                         20573200 T  0171:1
        REMO:                                                                 20573300 T  0171:3
            IF (CN←SCAN)=EQUAL THEN CMM[0]←-1 ELSE                            20573400 T  0171:3
            IF CN≥IDENT THEN CMM[0]←ACCUM[0] ELSE GO INCSC;                   20573500 T  0176:0
            IF SCAN≠SLASH THEN GO INCSC;                                      20573600 T  0179:1
            IF (CN←SCAN)=EQUAL THEN CMM[1]←-1 ELSE                            20573700 T  0181:0
            IF CN≥IDENT THEN CMM[1]←ACCUM[0] ELSE GO INCSC;                   20573800 T  0185:0
            CN:=T:=0;                                                         20573850 T  0188:1
            IF (CMM[0] OR CMM[1]) LSS 0 THEN                                  20573900 T  0189:2
        SEEK:                                                                 20574000 T  0191:1
            SEEKNAM(CMM[0],CMM[1],CN,CMM[2],CMM[3],OPTN) ELSE                 20574100 T  0191:3
            BEGIN                                                             20574200 T  0196:0
                CMM[2]:=CMM[0];                                               20574300 T  0196:2
                CMM[3]:=CMM[1];                                               20574400 T  0198:0
                CN:=1;                                                        20574500 T  0199:2
            END;                                                              20574600 T  0200:1
            IF CN NEQ 0                                                       20574700 T  0200:1
              THEN T:=IF SYSTEMFILE(CMM[2],CMM[3])                            20574750 T  0200:2
                        THEN 2                                                20574800 T  0202:2
                        ELSE DIRECTORYSEARCH(CMM[2],CMM[3],5)                 20574850 T  0203:0
              ELSE IF OPTN NEQ 0 THEN GO OUTR;                                20574875 T  0205:3
            IF T GEQ 64 THEN                                                  20574900 T  0208:1
            BEGIN IF HOLD3:=NOT(M[T+4].[44:1]) THEN BEGIN FORGETSPACE(T);     20574905 T  0209:0
                T:=DIRECTORYSEARCH(CMM[2],CMM[3]&(UNITNO=25 OR UNITNO=30)     20574910 T  0213:2
                [1:47:1],4); END;                                             20574915 T  0216:0
                IF M[T+4].[43:2]=3 THEN BEGIN FORGETSPACE(T); T:=1; END;      20574920 T  0218:1
            END;                                                              20574922 T  0222:3
            IF CARD.[8:1] THEN GO DOWNR;                                      20574925 T  0222:3
            IF T LSS 2                                                        20574950 T  0224:1
              THEN IF T=1                                                     20575000 T  0224:2
                      THEN LBMESS(ABS(CMM[2]),CMM[3],-7,45,0,SPOUTUNIT,1)     20575050 T  0225:3
                      ELSE LBMESS(CMM[0],CMM[1],-7,15,0,SPOUTUNIT,1)          20575100 T  0229:3
              ELSE IF T=2                                                     20575150 T  0233:1
                      THEN LBMESS(CMM[2],CMM[3],-7,25,0,SPOUTUNIT,1)          20575200 T  0234:1
                      ELSE IF T GEQ 64                                        20575250 T  0238:0
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                    THEN BEGIN                                                  20575300 T  0239:0
                         IF M[T+2] NEQ 0 AND (USERID EQV MCP) NEQ               20575350 T  0240:0
                            NOT 0 AND (USERID EQV ABS(M[T+2])) NEQ              20575400 T  0243:2
                            NOT 0                                               20575450 T  0246:3
                           THEN BEGIN                                           20575500 T  0246:3
                                LBMESS(CMM[2],CMM[3],-7,41,                     20575550 T  0248:1
                                       0,SPOUTUNIT,1);                          20575600 T  0250:1
                                FORGETSPACE(DIRECTORYSEARCH(CMM[2],             20575650 T  0251:1
                                            CMM[3],14));                        20575700 T  0252:0
                                END                                             20575750 T  0253:2
                           ELSE IF M[T+4].[43:2] NEQ 0                          20575800 T  0253:2
                                THEN BEGIN                                      20575850 T  0256:0
DOWNR:                                IF FIRSTIME                               20575900 T  0257:0
                                        THEN BEGIN                              20575950 T  0257:0
                                             FIRSTIME:=0;                       20576000 T  0257:3
                                             CMM[19]:=(LIBNO:=                  20576050 T  0258:2
                                             GETESPDISK)&36[CTF];               20576100 T  0259:0
                                             END;                               20576150 T  0261:0
                                      M[T+4].[43:2]:=1;                         20576200 T  0261:0
                                      DISKWAIT(T.[CF],30,T.[FF]);               20576210 T  0264:1
                                      IF HOLD3 THEN FORGETSPACE(                20576215 T  0266:2
                                      DIRECTORYSEARCH(CMM[2],                   20576216 T  0267:2
                                      CMM[3],14));                              20576217 T  0268:1
                                      GETEMFORREM;                              20576220 T  0269:2
                                      END                                       20576250 T  0271:0
                                ELSE FORGETSPACE(DIRECTORYSEARCH(               20576300 T  0271:0
                                      CMM[2],CMM[3],6                           20576350 T  0271:3
$ SET OMIT = NOT (PACKETS)                                                      20576395 T  0273:0
                                      ));                                       20576415 T  0273:0
                                FORGETSPACE(T);                                 20576450 T  0273:3
                                END;                                            20576475 T  0274:2
                         IF CN NEQ 0 AND (CMM[0] OR CMM[1]) LSS 0 THEN GO SEEK;  20576500 T  0274:2
OUTR:                    IF (CN:=SCAN)=COMMA THEN GO REMO;                      20576600 T  0278:0
                         IF CN=PERIO THEN                                       20576700 T  0280:2
                              IF NOT FIRSTIME THEN                              20576710 T  0281:1
                                   BEGIN OPTN:=CN; PROG[29]:=0;                 20576720 T  0282:1
                                         PROG[CNTSENS+2]:=@14;                  20576730 T  0284:3
                                         DISKWAIT(PROG INX 0,30,LIBNO);         20576740 T  0286:2
                                         LIBNO:=ABS(CMM[19]);                   20576750 T  0288:2
                                         BOTH;                                  20576752 T  0289:3
                                         M[CARDLOC-2]:=0;                       20576754 T  0291:0
                                         M[CARDLOC-1]:=10;                      20576756 T  0293:0
                                         CMM[6]:=GETESPDISK & 10[18:33:15];     20576758 T  0295:0
$ SET OMIT = NOT(DATACOM AND RJE)                                               20576760 T  0297:0
                                         DISKWAIT(CARDLOC-2,11,CMM[6] INX 0);   20576768 T  0297:0
                                         GO INIT;                               20576770 T  0299:2
                                   END                                          20576780 T  0300:0
                                        ELSE GO CCA                             20576790 T  0300:0
                              ELSE GO INCSC;                                    20576800 T  0300:0
CHAN:                                                                           20576850 T  0300:0
                    T:=0; % T USED AS BIT MASK FOR SYNTAX CHECK                 20576900 T  0300:0
                    FOR CN:=0 STEP 1 UNTIL 3 DO % SCAN INPUT REQUEST            20576925 T  0300:3
                       BEGIN                                                    20576950 T  0302:0
                       OPTN := SCAN;                                            20576975 T  0302:0
                       T := (OPTN=EQUAL) & T[43:44:4]; % SHIFT PREVIOUS VALUE LEFT  20577000 T  0303:2
                       IF T THEN CMM[CN] := (-1) ELSE                           20577025 T  0305:3
                       IF OPTN GEQ IDENT THEN CMM[CN] := ACCUM[0] ELSE          20577050 T  0308:0
                       GO TO INCSC; % INCORRECT REQUEST                         20577075 T  0311:1
                       OPTN := SCAN; % SKIP "/",","," OR ")"                    20577100 T  0311:1
                       END; % SCANNING INPUT REQUEST                             20577125 T  0312:2
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                IF (T NEQ 0) AND (T NEQ 5) AND (T NEQ 10) THEN GO INCSC;          20577150 T 0314:3
                % T=5  FOR =/<NAME1> TO =/<NAME2>                                  20577175 T 0318:1
                % T=10 FOR <NAME1>/= TO <NAME2>/=                                  20577200 T 0318:1
                % T=0  FOR <NAME1>/<NAME2> TO <NAME3>/<NAME4>                      20577225 T 0318:1
                IF (REPEAT:=(T GTR 0)) THEN                                       20577250 T 0318:1
                   BEGIN                                                          20577275 T 0319:2
                   HOLD1 := CMM[0]; HOLD2 := CMM[1]; TYM:=1; CN:=0;               20577300 T 0320:0
LOOP:              SEEKNAM(HOLD1, HOLD2, CN, CMM[0], CMM[1], HOLD3);              20577325 T 0323:2
                   IF CN = 0 THEN % NOT FOUND IN DIRECTORY                        20577350 T 0327:0
                      BEGIN                                                       20577375 T 0327:3
                      IF TYM = 1 THEN % FIRST PASS, NULL SEARCH                   20577400 T 0328:1
                         BEGIN                                                    20577425 T 0329:0
                         LBMESS(HOLD1, HOLD2, -5, 15, %NOT CHANGED, NOT ON DISK   20577450 T 0329:2
                               0, SPOUTUNIT,1);                                   20577475 T 0331:0
                         END;                                                     20577500 T 0332:0
                      GO TO NEXT;                                                 20577525 T 0332:0
                      END;                                                        20577550 T 0332:2
                   TYM := 2;                                                      20577575 T 0332:2
                   IF HOLD1 LSS 0 THEN CMM[2] := CMM[0] ELSE                      20577600 T 0333:1
                   IF HOLD2 LSS 0 THEN CMM[3] := CMM[1]; % USE NAME "FOUND"       20577625 T 0336:0
                   END;                                                           20577650 T 0339:1
             IF (T:=DIRECTORYSEARCH(CMM[2],CMM[3],5)) NEQ 0 THEN                  20577675 T 0339:1
                BEGIN                                                             20577700 T 0342:0
                FORGETSPACE(T);                                                   20577725 T 0342:2
                LBMESS(CMM[0], CMM[1], -5, 29, % NOT CHANGED, DUP FILE            20577750 T 0343:1
                      0, SPOUTUNIT, 1);                                           20577775 T 0345:1
                END ELSE                                                          20577800 T 0346:1
             BEGIN                                                                20577805 T 0346:1
                T:=IF SYSTEMFILE(CMM[0],CMM[1]) THEN 2 ELSE                       20577810 T 0346:3
                   DIRECTORYSEARCH(CMM[0],CMM[1],5);                              20577815 T 0349:2
                IF T GEQ 64 THEN                                                  20577820 T 0351:3
                BEGIN IF NOT(M[T+4].[44:1]) THEN BEGIN FORGETSPACE(T);            20577823 T 0352:2
                      T:=DIRECTORYSEARCH(CMM[0],CMM[1]&(UNITNO=25)[1:47:1],       20577826 T 0356:2
                      4); END;                                                    20577827 T 0359:1
                      IF M[T+4].[43:2]=3 THEN BEGIN FORGETSPACE(T); T:=1;         20577829 T 0360:1
                                                 END;                             20577832 T 0364:3
                END;                                                              20577833 T 0364:3
                IF T LSS 2 THEN                                                   20577835 T 0364:3
                LBMESS(CMM[0],CMM[1],-5,15+((T=1)×30), % NOT CHANGED              20577875 T 0365:2
                      % 45 = IN USE, 15 = NOT ON DISK                             20577900 T 0369:2
                      0, SPOUTUNIT, 1)                                            20577925 T 0369:2
             ELSE IF T=2 THEN                                                     20577950 T 0370:1
               LBMESS(CMM[0], CMM[1], -5, 25, % NOT CHANGED, SYSTEM FILE          20577975 T 0371:3
                      0, SPOUTUNIT, 1)                                            20578000 T 0374:1
             ELSE IF M[T+2] NEQ 0 AND                  % NOT FREE FILE             20578025 T 0375:0
              (USERID EQV MCP) NEQ NOT 0 AND           % NOT MCP                   20578050 T 0377:3
              (USERID EQV ABS(M[T+2])) NEQ NOT 0 THEN % NOT CREATOR               20578075 T 0380:1
                BEGIN                                                             20578100 T 0383:2
                LBMESS(CMM[0], CMM[1], -5, 41, % NOT CHANGED, INVALID USER        20578125 T 0384:0
                      0, SPOUTUNIT, 1);                                           20578150 T 0386:0
                IF M[T+4].[43:2] NEQ 1 THEN                                       20578175 T 0387:0
                FORGETSPACE( DIRECTORYSEARCH(CMM[0], CMM[1], 14 ) );              20578200 T 0389:2
                FORGETSPACE(T);                                                   20578210 T 0392:1
                END                                                               20578225 T 0393:0
             ELSE                                                                 20578250 T 0393:0
                BEGIN % CHANGE OK                                                 20578275 T 0393:0
                M[T+4]:=(*P(DUP))&2[1:46:2];                                      20578300 T 0393:2
                T:=T&EUF(*CMM[2],CMM[3],T INX 0-1)[18:33:15];                     20578375 T 0396:3
                FORGETSPACE(DIRECTORYSEARCH(CMM[0],CMM[1],8));                    20578400 T 0400:3
                HEADERUNLOCK(CMM[2],CMM[3],T);                                    20578425 T 0403:0
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$ SET OMIT = PACKETS                                                    20578450 T  0405:1
          IF LIBMSG THEN                                                20578475 T  0405:1
$ POP OMIT                                                              20578500 T  0406:0
              LBMESS(CMM[0], CMM[1], 52, % CHANGED TO                   20578525 T  0406:0
                     CMM[2], CMM[3], SPOUTUNIT, LIBMSG);                20578550 T  0408:0
          PBCOUNT:=PBCOUNT-((((CMM[0] EQV "PBD    ")=NOT 0) OR          20578575 T  0410:1
          ((CMM[0] EQV "PUD    ")=NOT 0)) AND (CMM[1].[CF]=1))          20578600 T  0412:1
          +((((CMM[2] EQV "PBD    ")=NOT 0) OR                          20578625 T  0415:3
          ((CMM[2] EQV "PUD    ")=NOT 0)) AND (CMM[3].[CF]=1));         20578650 T  0418:0
          END;                                                          20578675 T  0422:2
        END;                                                            20578685 T  0422:2
       IF REPEAT THEN GO TO LOOP; % FIND REMAINING FILES                20578700 T  0422:2
NEXT:                                                                   20578725 T  0423:2
        IF OPTN=COMMA THEN GO CHAN;                                     20579900 T  0423:2
        IF OPTN=PERIO THEN GO TO CCA ELSE GO INCSC;                     20580000 T  0424:3
INIT:   LIBCC+LIBNO; GO TO CCA;                                         20580100 T  0426:2
INCSC:  LIBCC+1;                                                        20580200 T  0431:0
CCA:    CADDR:=CDEX:=0;                                                 20580300 T  0431:3
        IF (LIBNO:=PROCVAL) GTR 1 THEN PROCVAL:=2 ELSE                  20580305 T  0433:0
            IF LIBNO THEN PROCVAL:=6 ELSE PROCVAL:=0;                   20580310 T  0435:2
        RETURNVAL:=PROCVAL;                                             20580330 T  0438:3
        P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                    20580340 T  0439:2
END; % LIBCC PROCEDURE                                                  20580350 T  0442:1
                                                                                SIZE= 0443 WORDS
REAL PROCEDURE CCSET; FORWARD;                                          20580400 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00577
PROCEDURE CCFINISH;                                                     20580800 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00577
BEGIN                                                                   20580852 T  0000:0
REAL    TEMP        =  RETURNRCW+1;   % BEGIN LOCALS OF CCFINISH        20581080 T  0000:0
        P(RCW,MYMSCW,STF);                                              20581125 T  0000:0
        RCW:=RCW & P(XCH)[CTC];                                         20581130 T  0001:0
        P(0);  % ZERO LOCAL OF CCFINISH                                 20581140 T  0002:1
        PPCPROCESS:=0;                                                  20581150 T  0002:2
        CN:=T;                                                          20581200 T  0003:1
        IF OPTN = PERIO OR OPTN = LIBRA THEN                            20581250 T  0004:0
        BEGIN                                                           20581300 T  0005:3
            CMM[22]:= PROG[22];                                         20581350 T  0006:1
            PROG[2].[CF]:= IF PROG[18] > 32767 THEN 32767               20581400 T  0007:3
                           ELSE PROG[18];                               20581450 T  0009:3
        IF PROG[20] > 512 THEN PROG[20]:= 512;                          20581500 T  0012:1
        IF PADDR NEQ 0 THEN                                             20581550 T  0015:0
                BEGIN                                                   20581600 T  0015:3
                PEQN[29]:= 0;                                           20581650 T  0016:1
                IF PDEX=0 THEN PEQN[0]:=14;                             20581700 T  0017:2
                IF PDEX=1 THEN PEQN[14]:= 14;                           20581750 T  0020:0
                 DISKWAIT(PEQN,[CF],30,PADDR);                          20581800 T  0022:2
                END;                                                    20581850 T  0024:2
        PROG[29]:= 0;                                                   20581900 T  0024:2
        CMM[2].[18:15]:= CLOSET:= GETESPDISK;                           20581950 T  0025:3
        DISKWAIT(PROG.[CF],30,CLOSET);                                  20582000 T  0028:2
        END;                                                            20582050 T  0030:2
        IF CADDR NEQ 0 THEN                                             20582100 T  0030:2
                BEGIN                                                   20582150 T  0031:1
                CEQN[29]:= 0;                                           20582200 T  0031:3
                IF CDEX=0 THEN CEQN[0]:= 14;                            20582250 T  0033:0
                IF CDEX=1 THEN CEQN[14]:= 14;                           20582300 T  0035:2
                 DISKWAIT(CEQN,[CF],30,CADDR);                          20582350 T  0038:0
                END;                                                    20582400 T  0040:0
        COMPLEXSLEEP((SCHEDULEIDS≠NOT 0) AND SHEETFREE);                20582440 T  0040:0
```

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19900670    ACCIDENTAL ENTRY AT 1
                    LOCKTOG(SHEETMASK);                                                  20582450 T  0047:0
                    CDEX:= GETESPDISK;                                                   20582500 T  0050:2
                    CMM[2].[CF]:= IF CMM[18] > 32767 THEN 32767 ELSE CMM[18];            20582550 T  0051:2
                    PDEX:= IF CMM[18] > MIXMAX THEN MIXMAX ELSE CMM[18];                 20582600 T  0056:0
                    IF LIBNO NEQ 0 THEN CMM[19]:= LIBNO;                                 20582650 T  0059:1
                    IF CMM[20] > 512 THEN CMM[20] := 512;                                20582700 T  0061:3
                    STREAM(A:=0:S:=P(.SCHEDULE[DS]));                                    20582750 T  0064:2
                    BEGIN SI:=S;                                                         20582800 T  0065:3
                          47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                           20582850 T  0066:0
                             IF SB THEN BEGIN END ELSE JUMP OUT);                        20582900 T  0067:0
                          DS:= SET; A:= TALLY;                                           20582950 T  0068:2
                    END STREAM;                                                          20583000 T  0069:0
                     TEMP:= P; CMM[3]:= 0&TEMP[8:38:10];                                 20583050 T  0069:1
                     CMM[23].[24:24]+(CLOCK+P(RTR))DIV 60;                               20583100 T  0072:0
                     IF SHEET[PDEX].[CF] NEQ 0 THEN                                      20583150 T  0075:2
                        BEGIN                                                            20583200 T  0077:0
                         DISKWAIT(-PROG.[CF],30,PADDR:=SHEET[PDEX].[FF]);                20583250 T  0077:2
                        PROG[29]:= CDEX;                                                 20583300 T  0081:1
                         DISKWAIT(PROG.[CF],30,PADDR);                                   20583350 T  0082:2
                        END                                                              20583400 T  0084:2
                     ELSE SHEET[PDEX]:= CDEX;                                            20583450 T  0084:2
                     SHEET[PDEX].[18:15]:= CDEX;                                         20583500 T  0087:1
                     CMM[29]:= 0;                                                        20583550 T  0089:1
                    DISKWAIT(CMM.[CF],30,CDEX);                                          20583600 T  0090:2
                     UNLOCKTOG(SHEETMASK);                                               20583650 T  0092:2
                     T:= CN;                                                             20583700 T  0096:0
                    P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                         20583710 T  0096:3
              END CCFINISH;                                                              20583750 T  0099:2
                                                                                                 SIZE= 0100 WORDS
              REAL PROCEDURE CCCOMPILE;                                                  20583800 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00581
              BEGIN COMMENT SETUP OF COMPILER LABEL EQUATION CODE: PN1/PN2;              20583860 T  0000:0
              REAL SUBROUTINE SCAN;                                                      20584150 T  0000:0
                   SCAN.SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);          20584200 T  0001:0
              LABEL SKN,EXIT;                                                            20584250 T  0004:1
              DEFINE ZIPMIX=CARD.[18:6]#;                                                20584275 T  0004:1
              DEFINE DISKTYPE = 10#;%                                                    20584300 T  0004:1
                     P(RCW,MYMSCW,STF);                                                  20584325 T  0004:1
                     RCW:=RCW & P(XCH)[CTC];                                             20584330 T  0006:1
                     T:=SCAN;%                                                           20584350 T  0007:2
                     CEQN[0]:=ACCUM[0];%                                                 20584400 T  0009:2
                     T:=SCAN;%                                                           20584450 T  0011:0
                     T:=SCAN;%                                                           20584500 T  0012:2
                     CEQN[1]:=ACCUM[0];%                                                 20584550 T  0014:2
                     CEQN[2]:=0;%                                                        20584600 T  0016:0
                     CEQN[3]:=DISKTYPE;%                                                 20584650 T  0017:1
                     CEQN[4]:=@423462425606060;%                                         20584700 T  0018:2
                     CEQN[12]:=0; % EU/SPEED CELL                          % (SHM)      20584710 T  0019:3
                     CDEX   :=1;%                                                        20584750 T  0021:0
                     IF ((UNITNO+1)AND 24)=24 OR UNITNO GEQ 32 THEN%                     20584800 T  0021:3
                     BEGIN CEQN[14]:=CEQN[16]:=CEQN[17]:=0;%                             20584850 T  0024:2
                           CEQN[15]:= "CARD 00" OR ((IF UNITNO GEQ 32 THEN%              20584900 T  0028:1
                                     "C/" ELSE @5772) + UNITNO);%                        20584950 T  0029:3
                     CEQN[18]:=@423215124000000; CDEX:=2;%                               20585000 T  0032:2
                     IF UNITNO GEQ 32 THEN CIDROW[UNITNO-32].[3:5]:=1 ELSE%              20585050 T  0034:2
                     IF UNITNO=23 THEN READERA.[FF] + 1 ELSE                             20585100 T  0038:3
                     IF UNITNO=24 THEN READERB.[FF] + 1;                                 20585125 T  0047:2
                     END;                                                                20585150 T  0050:2
                     WHILE (CN:=SCAN) LSS ALGOL OR CN GTR COBOL DO                       20585200 T  0050:2
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                IF CN=PERIO THEN BEGIN CCCOMPILE:=1; GO EXIT END;                20585250 T  0054:2
                     IF CN=WITH THEN                                             20585300 T  0057:2
                     IF (CN←SCAN)=PERIO THEN BEGIN CCCOMPILE←1; GO EXIT END;     20585350 T  0058:1
                     IF CN<ALGOL OR CN>COBOL THEN                                20585355 T  0062:3
                      IF(T:=DIRECTORYSEARCH(ACCUM[0],"DISK   ",5))≠0 THEN        20585360 T  0064:2
                      BEGIN IF NOT M[T+4].[8:1] THEN                             20585365 T  0067:2
                            BEGIN LBMESS(ACCUM[0],"DISK   ",-22,0,               20585370 T  0070:1
                                        0,SPOUTUNIT,1);                          20585375 T  0072:2
                            FORGETSPACE(T); CCCOMPILE←1; GO EXIT;                20585380 T  0073:2
                            END; FORGETSPACE(T);                                 20585385 T  0077:0
                      END;                                                       20585390 T  0077:3
          COMMENT SET UP NOMINAL VALUES FOR PROGRAM PARAMETERS;%                 20585400 T  0077:3
                CMM[0]:=-(CMPLR:=ACCUM[0]); CMM[1]:=CEQN[0];                     20585450 T  0077:3
                CMM[2]:=0;                                                       20585500 T  0081:2
                CMM[13]:= CADDR:= GETESPDISK;                                    20585550 T  0082:3
           $ SET OMIT = PACKETS                                                  20585599 T  0084:3
                CMM[23]←0&CARD[9:9:9]&UNITNO[2:42:6];                            20585600 T  0084:3
           $ POP OMIT                                                            20585601 T  0088:0
           $ SET OMIT = NOT(PACKETS)                                             20585609 T  0088:0
                CMM[27]:=CEQN[1]; %FID FOR SCHED MESS.                           20585630 T  0088:0
          %    GET OPTION (GO,SYNTAX CHECK, OR LIBRARY)                          20585650 T  0089:2
          SKN:      DO OPTN:=SCAN UNTIL OPTN=PERIO OR OPTN=SYNTA OR OPTN=LIBRA   20585700 T  0089:2
                    OR OPTN=QUEST; % IN CASE OF HYPHEN IN COMMENT PORTION        20585705 T  0093:3
                IF OPTN=QUEST THEN                                               20585710 T  0095:3
                   IF SOURCE=(CARDLOC&1[30:45:3]) THEN                           20585715 T  0096:2
                     BEGIN                                                       20585720 T  0098:3
                     OPTN:=PERIO; SOURCE:=CARDLOC;                               20585725 T  0099:1
                     END ELSE GO TO SKN;                                         20585730 T  0100:3
                CMM[2].[8:10] := IF OPTN=PERIO THEN 1 ELSE                       20585750 T  0100:3
                                 IF OPTN=SYNTA THEN 3 ELSE 4;%(OPTN=LIBRA)       20585800 T  0103:3
                IF OPTN NEQ SYNTA THEN                                           20585850 T  0107:1
          % SET UP PROG ARRAY FOR COMPILE AND GO OR COMPILE TO LIBRARY JOBS      20585900 T  0108:0
                BEGIN                                                            20585950 T  0108:0
                     PROG[0]:= CEQN[0];                                          20586000 T  0108:2
                     PROG[1]:= CEQN[1];                                          20586050 T  0110:0
                     PROG[2]:=PROG[15]:= 0;                                      20586100 T  0111:2
                     PROG[16]:=PROG[17]:= @377777777777;                         20586150 T  0113:3
                     PROG[18]:= (MIXMAX+1) DIV 2;                                20586200 T  0116:0
                     PROG[19]:= 0;                                               20586250 T  0118:1
                     PROG[20]:= -1;                                              20586300 T  0119:2
                     PROG[21]:= 512;                                             20586350 T  0121:0
                     PROG[22]:= 10;                                              20586400 T  0122:1
                     PROG[23]:= CMM[23];                                         20586450 T  0123:2
                     PROG[24]:= USERID;                                          20586500 T  0125:0
                END;                                                             20586550 T  0126:1
          EXIT:     RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC            20586600 T  0126:1
                    P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                 20586625 T  0127:0
          END CCCOMPILE;                                                         20586650 T  0129:3
                                                                                           SIZE= 0132 WORDS
          REAL PROCEDURE INITIALIZEIT;                                           20586700 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00586
          BEGIN LABEL TRYAGAIN,LS,SPLAT,SPUT,EXIT;                               20586715 T  0000:0
          REAL      CMM1          =  RETURNVAL+1;   % BEGIN LOCAL TO INITIALIZEIT 20586950 T  0000:0
          REAL SUBROUTINE SCAN;                                                  20587050 T  0000:0
               SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);      20587100 T  0001:0
                P(RCW,MYMSCW,STF);                                               20587110 T  0004:1
                RCW:=RCW & P(XCH)[CTC];                                          20587120 T  0006:1
                P(0); % ZERO LOCAL TO INITIALIZEIT                               20587130 T  0007:2
                PROG[13]:=@ADDR:=PDEX:=0; % IN CASE PROGRAM NOT IN DIRECTORY     20587150 T  0007:3
          TRYAGAIN:                                                              20587170 T  0010:0
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                IF (T:=DIRECTORYSEARCH(ABS(CMM[0]),CMM1:=IF CMM[0] LSS 0 THEN      20587200 T  0010:0
                   "DISK    " ELSE CMM[1],3))=0 THEN                               20587250 T  0012:0
                BEGIN                                                              20587300 T  0015:3
                   IF (CMM[0] EQV "LIBMAIN")=NOT 0 THEN                            20587310 T  0016:1
                   IF (CMM[1] EQV "DISK    ")=NOT 0 THEN                           20587320 T  0018:0
                   BEGIN                                                           20587330 T  0020:1
                   ENTERSYSFILE(1);                                                20587340 T  0020:3
                   GO TRYAGAIN;                                                    20587350 T  0021:2
                   END;                                                            20587360 T  0024:0
                   IF CARD.[9:9]=0 THEN GO TO LS;                                  20587370 T  0024:0
         $ SET OMIT = NOT(DATACOM)                                                 20587399 T  0025:3
                      BEGIN                                                        20587500 T  0025:3
         LS:          LBMESS(ABS(CMM[0]),CMM1,-15,0,0,SPOUTUNIT,1);                20587550 T  0025:3
         SPLAT:                                                                    20587650 T  0028:3
                      IF UNITNO GEQ 32 THEN BEGIN INITIALIZEIT:=5;GO EXIT END;     20587700 T  0028:3
                      END;                                                         20587750 T  0031:1
                   DO T+SCAN UNTIL T>IDENT AND T≤RESETV;                           20587800 T  0031:1
                   IF UNITNO=31 AND NT1 GEQ 0 THEN BEGIN INITIALIZEIT:=7;          20587850 T  0034:3
                                                   GO EXIT END;                    20587900 T  0037:3
                   NT1:=0; INITIALIZEIT:=1; GO EXIT ;                              20587950 T  0038:1
                END;                                                               20587975 T  0040:1
                IF M[T INX 4].[9:2]=2 THEN                                         20588000 T  0040:1
                BEGIN FORGETSPACE(T);                                              20588010 T  0042:3
                   GO TO SPOT;                                                     20588020 T  0044:0
                END;                                                               20588030 T  0044:2
              IF SECURITYCHECK(ABS(CMM[0]),                                        20588050 T  0044:2
                   CMM1,USERID,T)=0 THEN                                           20588100 T  0045:2
                   BEGIN                                                           20588150 T  0047:0
                      OPTN:=0; CMM[2]:=T;                                          20588200 T  0047:2
                      P(DIRECTORYSEARCH(NABS(CMM[0]),CMM[1]:=CMM1,13),DEL);        20588250 T  0049:2
                      INITIALIZEIT:=4;                                             20588350 T  0052:2
                      GO TO EXIT;                                                  20588360 T  0053:1
                   END;                                                            20588370 T  0053:3
                   DISKIO(N1,-(PEQN INX 0-1),30,M[T+10]);                          20588400 T  0053:3
                   P(M[T INX 4].[9:2]=3); FORGETSPACE(T);%NOTE FOR BELOW           20588450 T  0058:0
                   CMM[24]:= USERID;                                               20588500 T  0061:1
                   CMM[25]:= T.[FF];                                               20588550 T  0062:2
                   SLEEP([N1],IOMASK);                                             20588600 T  0064:1
                   FOR T:=1 STEP 1 UNTIL 4 DO                                      20588650 T  0065:3
                   IF (NOT ABS(PEQN[T]&Q[CTC])) NEQ NOT 0 THEN T:= 7;              20588700 T  0067:0
         $ SET OMIT = NOT(BREAKOUT)                                                20588710 T  0072:3
         $ SET OMIT = BREAKOUT                                                     20588730 T  0072:3
                   IF PEQN[3].[1:1] THEN P(DEL,T:=0);% CAN-T RESTART;              20588740 T  0072:3
         $ POP OMIT                                                                20588745 T  0075:1
                   IF NOT (P OR T) THEN %NOT CODE                                  20588750 T  0075:1
                   BEGIN                                                           20588800 T  0076:0
         SPOT:     LBMESS(ABS(CMM[0]),CMM1,-19,0,0,SPOUTUNIT,1);                   20588900 T  0076:2
                   P(DIRECTORYSEARCH(NABS(CMM[0]),CMM1,13),DEL);                   20589000 T  0079:2
                   GO TO SPLAT;                                                    20589150 T  0081:2
                   END;                                                            20589200 T  0082:0
                   IF PEQN[6] LSS 0 THEN FOR T:=15 STEP 1 UNTIL 22 DO              20589250 T  0082:0
                   CMM[T]:=PEQN[T] ELSE                                            20589300 T  0085:0
                   BEGIN                                                           20589350 T  0088:3
                      CMM[15]:= 0;                                                 20589400 T  0089:1
                      CMM[16]:= CMM[17]:= @377777777777;                           20589450 T  0090:2
                      CMM[18]:=(MIXMAX+1) DIV 2;                                   20589460 T  0092:3
                      CMM[19]:= 0;                                                 20589470 T  0095:0
                      CMM[20]:= PEQN[7].[FF];                                      20589480 T  0096:1
                      CMM[21]:= 512;                                               20589490 T  0098:2
                   END;                                                            20589500 T  0099:3
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INITIALIZEIT:=3;                                                                20589550 T  0099:3
EXIT:      RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                    20589600 T  0100:2
           P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                         20589610 T  0101:1
END INITIALIZEIT;                                                               20589650 T  0104:0
                                                                                         SIZE= 0106 WORDS
REAL PROCEDURE CCUNIT;                                                          20589700 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00590
BEGIN LABEL U1,ERROR,EXIT;                                                      20589720 T  0000:0
REAL SUBROUTINE SCAN;                                                           20589950 T  0000:0
     SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);               20590000 T  0001:0
      P(RCW,MYMSCW,STF);                                                        20590010 T  0004:1
      RCW:=RCW & P(XCH)[CTC];                                                   20590020 T  0006:1
      T:= SCAN; CN:= ACCUM[0];                                                  20590050 T  0007:2
      T←SCAN; IF T≠EQUAL THEN GO ERROR;                                         20590100 T  0010:2
      FOR T:= 0 STEP 1 UNTIL 31 DO                                              20590150 T  0013:3
          IF CN.[6:18]=TINU[T].[30:18] THEN GO TO U1;                           20590200 T  0015:0
        GO ERROR;                                                               20590250 T  0019:3
U1: IF LABELTABLE[T] NEQ @314 THEN BEGIN CCUNIT:=6; GO EXIT END;                20590300 T  0020:1
     CN:= SCAN;                                                                 20590350 T  0023:0
     MULTITABLE[T]:=RDCTABLE[T]:=0;                                             20590400 T  0024:2
     LABELTABLE[T]:= ACCUM[0];                                                  20590450 T  0026:3
     IF (CN:= SCAN) = SLASH THEN                                                20590500 T  0028:1
        BEGIN MULTITABLE[T]:= LABELTABLE[T];                                    20590550 T  0030:0
              CN←SCAN; LABELTABLE[T]←ACCUM[0]; CN←SCAN;                         20590600 T  0032:0
        END;                                                                    20590610 T  0036:2
                IF CN=COMMA THEN                                                20590650 T  0036:2
                BEGIN IF(CN←SCAN)≠IDENT OR KOUNT>3 THEN GO ERROR;               20590655 T  0037:1
                STREAM(R←0:KOUNT,ACCUM);                                        20590660 T  0041:3
                BEGIN SI←ACCUM;SI←SI+1;DI←LOC R;DS←KOUNT OCT END;               20590665 T  0043:2
                RDCTABLE[T]←P(XCH,RDCTABLE[T])&P(XCH)[14:38:10];                20590668 T  0045:0
                IF(CN←SCAN)=COMMA THEN                                          20590670 T  0047:3
                BEGIN IF(CN←SCAN)≠IDENT OR KOUNT>5 THEN GO ERROR;               20590675 T  0050:0
                STREAM(R←0:KOUNT,ACCUM);                                        20590680 T  0054:3
                BEGIN SI←ACCUM;SI←SI+1;DI←LOC R;DS←KOUNT OCT END;               20590685 T  0056:2
                RDCTABLE[T]←P(XCH,RDCTABLE[T])&P(XCH)[24:31:17];                20590688 T  0058:0
                IF(CN←SCAN)=COMMA THEN                                          20590690 T  0060:3
                BEGIN IF(CN←SCAN)≠IDENT OR KOUNT>2 THEN GO ERROR;               20590695 T  0063:0
                STREAM(R←0:KOUNT,ACCUM);                                        20590700 T  0067:3
                BEGIN SI←ACCUM;SI←SI+1;DI←LOC R;DS←KOUNT OCT END;               20590705 T  0069:2
                RDCTABLE[T]←P(XCH,RDCTABLE[T])&P(XCH)[41:41:7];                 20590710 T  0071:0
                END %CYCLE                                                      20590715 T  0073:3
                END %CREATION DATE                                              20590720 T  0073:3
                END; %REEL NUMBER                                               20590725 T  0073:3
          IF CN≠ PERIO THEN DO CN←SCAN UNTIL CN=PERIO;CCUNIT←0;GO EXIT;         20590730 T  0073:3
ERROR: CCUNIT←6;                                                                20590740 T  0079:0
EXIT:     RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                     20590750 T  0079:3
          P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                          20590751 T  0080:2
END CCUNIT;                                                                     20590800 T  0083:1
                                                                                         SIZE= 0084 WORDS
REAL PROCEDURE CCSECMAINT;                                                      20590850 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00593
BEGIN LABEL EXIT,CCC;                                                           20590910 T  0000:0
REAL SUBROUTINE SCAN;                                                           20591350 T  0000:0
     SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);               20591400 T  0001:0
        LABEL OPTN0,OPTN1,OPTN2,SEC1,SEC2,SEC5,ST1,                             20591500 T  0004:1
              ST2,LS;                                                           20591550 T  0004:1
        SWITCH SW:=OPTN0,OPTN1,OPTN2;                                           20591600 T  0004:1
        P(RCW,MYMSCW,STF);                                                      20591610 T  0004:1
        RCW:=RCW & P(XCH)[CTC];                                                 20591620 T  0006:1
        GO TO SW[OPTNN];                                                        20591650 T  0007:2
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OPTNO:    USERID:= ABS(USERID);                                          20591700 T  0010:0
          IF SCAN LSS IDENT THEN BEGIN CCSECMAINT:=6;GO EXIT END;        20591750 T  0011:0
          SMID:= CMM[0]:= ACCUM[0]; CN:=SCAN;                            20591800 T  0014:1
          IF SCAN LSS IDENT THEN BEGIN CCSECMAINT:=6; GO EXIT END;       20591850 T  0017:2
          SFID:= CMM[1]:= ACCUM[0]; CDEX:= 0;                            20591900 T  0021:1
          IF (SFH:=DIRECTORYSEARCH(SMID,SFID,4))=0 THEN GO TO LS;        20591950 T  0024:0
          IF NOT(SYSTEMFILE(CMM[CDEX] ,CMM[CDEX+1]) OR                   20592000 T  0026:3
               (SMID EQV "PBD    ")=NOT 0) AND (M[SFH+5]=0                20592050 T  0028:3
               AND M[SFH+2] NEQ 0) THEN                                  20592100 T  0032:1
% INHIBIT USE ON PUBLIC, SECURE FILES                                    20592150 T  0035:1
          BEGIN CN:=SCAN; GO TO OPTN2 END;                               20592200 T  0035:1
          OPTN:=0; CMM[2]:= SFH;                                         20592250 T  0039:0
          P(DIRECTORYSEARCH(NABS(CMM[0]),CMM[1],14),DEL);                20592300 T  0041:0
OPTN1:    STREAM(USERID,Q:=USERID>0,B:=[CMM],D:=CN:=GETSPACE(10,0,0)+2); 20592400 T  0043:1
          BEGIN Q(SI:=LOC USERID; SI:=SI+1;DS:=LIT " "; DS:= 7CHR;);     20592450 T  0047:1
               DS:= 17LIT " INVALID USER OF "; SI:=B;                    20592500 T  0049:2
               SI:=SI+1; DS:= 7CHR; DS:=LIT "/"; SI:=SI+1; DS:= 7CHR;    20592550 T  0052:1
                DS:=LIT"←";                                              20592600 T  0053:3
          END STREAM;                                                    20592650 T  0054:1
          SPOUTER(CN&CARD[9:9:9],SPOUTUNIT,1);                           20592700 T  0054:2
          FORGETSPACE(CMM[2]);                                           20592725 T  0056:1
          IF OPTN NEQ 0 THEN GO TO SEC5;                                 20592750 T  0057:1
          IF UNITNO GEQ 32 THEN BEGIN CCSECMAINT:=5;GO EXIT END;         20592800 T  0058:2
          GO TO CCC;                                                     20592850 T  0061:0
OPTN2:    CMM[5]:=USERID;                                                20592900 T  0061:2
          ST:= CDEX:= 0;                                                 20592950 T  0062:3
     SEC1: FOR OPTN:=0 STEP 1 UNTIL 1 DO                                 20593000 T  0064:0
          BEGIN CN:=SCAN;                                                20593050 T  0065:0
               IF T=OPEN AND CN=UNLOCKV AND OPTN=0 THEN                  20593060 T  0066:2
                BEGIN T:=UNLOCKV; GO TO SEC1 END                         20593100 T  0069:1
                 ELSE IF CN LSS IDENT AND CN NEQ EQUAL THEN GO TO ST1;   20593150 T  0071:0
                 CMM[OPTN]:= IF CN=EQUAL THEN -1 ELSE ACCUM[0];          20593200 T  0074:0
                 CN:=SCAN;                                               20593250 T  0077:3
          END;                                                           20593300 T  0079:2
          IF CN=WITH THEN BEGIN CN←SCAN;CMM[6]←IF CN≥IDENT THEN ACCUM[0] 20593310 T  0081:3
                         ELSE USERID; CN←SCAN END ELSE CMM[6]←USERID;    20593320 T  0086:2
          IF CMM[0] GEQ 0 AND CMM[1] GEQ 0 THEN GO TO SEC2;              20593350 T  0091:1
          N1:= CMM[0]; N2:= CMM[1]; N3:= 0; ST:= 1;                      20593400 T  0094:1
     ST2: SEEKNAM (N1,N2,N3,CMM[0],CMM[1],T1);                           20593450 T  0097:3
          IF N3 NEQ 0 THEN GO TO SEC2;                                   20593500 T  0102:0
          ST:= 0; GO TO SEC5;                                            20593550 T  0103:1
     SEC2: IF (ABS(USERID)EQV MCP) NEQ NOT 0 THEN                        20593600 T  0104:2
          IF SYSTEMFILE(CMM[CDEX],CMM[CDEX+1]) OR                        20593650 T  0107:0
             (CMM[0] EQV "PBD    ")= NOT 0 THEN GO SEC5;                 20593700 T  0109:2
          SECURITYMAINT(T,SMID,SFID,CMM,SFH,SPOUTUNIT);                  20593750 T  0112:1
     SEC5: IF ST THEN GO TO ST2;                                         20593800 T  0114:2
          IF CN=COMMA THEN GO SEC1;                                      20593850 T  0115:2
          IF T=USEV THEN                                                 20593900 T  0116:3
          HEADERUNLOCK(SMID,SFID,SFH);                                   20593950 T  0117:2
          GO TO CCC;                                                     20594000 T  0119:3
LS: LBMESS(CMM[0],CMM[1],-15,0,0,SPOUTUNIT,1);                           20594350 T  0122:0
     IF UNITNO GEQ 32 THEN BEGIN CCSECMAINT:=5; GO EXIT END;             20594400 T  0125:0
CCC: DO T←SCAN UNTIL T>IDENT AND T≤RESETV;                               20594450 T  0127:2
     IF UNITNO=31 AND NT1 GEQ 0 THEN BEGIN CCSECMAINT:=7; GO EXIT END;   20594500 T  0131:3
     NT1:= 0;  CCSECMAINT:=1; GO EXIT;                                   20594550 T  0135:1
ST1:      IF T=USEV THEN                                                 20594600 T  0137:1
          HEADERUNLOCK(SMID,SFID,SFH);                                   20594650 T  0138:0
          CCSECMAINT:=6;                                                 20594700 T  0140:1
EXIT:     RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC              20594750 T  0141:0
          P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                   20594751 T  0141:3
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END CCSECMAINT;                                                                  20594800 T  0144:2
                                                                                        SIZE= 0145 WORDS
REAL PROCEDURE CCLABEL;                                                          20594850 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00598
BEGIN LABEL EXIT;                                                                20594870 T  0000:0
      P(RCW,MYMSCW,STF);                                                         20595080 T  0000:0
      RCW:=RCW & P(XCH)[CTC];                                                    20595090 T  0001:1
      CN:=0;                                                                     20595150 T  0002:2
      UNITCODE[UNITNO-23]:= USERID;                                              20595200 T  0003:1
      MULTITABLE[UNITNO]:= 0;                                                    20595250 T  0005:0
      RDCTABLE[UNITNO]:= 1&1[14:38:10];                                          20595300 T  0006:1
      IF UNITNO=23 THEN BEGIN CN:=READERA.[FF];READERA:=CARDLOC END              20595350 T  0008:2
      ELSE IF UNITNO=24 THEN BEGIN CN:=READERB.[FF];READERB:=CARDLOC END         20595400 T  0011:3
      ELSE IF UNITNO GEQ 32 THEN BEGIN CN:= CIDROW[UNITNO-32].[3:5];             20595450 T  0015:2
                                 CIDROW[UNITNO-32].[3:5]:= 0;                    20595500 T  0019:1
                                 CIDROW[UNITNO-32].[18:15]:= CARDLOC;            20595550 T  0022:1
                        M[CARDLOC-4].[3:6]:=20;M[CARDLOC-3]:=UNITNO-32;          20595560 T  0024:3
                                 END;                                            20595600 T  0030:2
      IF CN THEN BEGIN LABELTABLE[UNITNO]:= "CARD 00" OR                         20595650 T  0030:2
                 ((IF UNITNO GEQ 32 THEN "C/" ELSE @5772) + UNITNO);             20595700 T  0032:0
                  CCLABEL:=8; GO EXIT;                                           20595750 T  0035:2
                 END;                                                            20595800 T  0040:0
      IF T = LABEV THEN BEGIN                                                    20595850 T  0040:0
                        MULTITABLE[UNITNO]:=M[CARDLOC+1].[6:42];                 20595900 T  0041:1
                        STREAM(A:=0,B:=0,C:=0:D:=CARDLOC+3);                     20595950 T  0045:0
                        BEGIN D1:=LOC A; S1:=D;DS:=30CT;                         20596000 T  0047:1
                              DS:=50CT; DS:=20CT; END;                           20596050 T  0048:0
                        P(P(XCH)&P[24:31:17]&P(XCH)[14:38:10],                   20596100 T  0048:3
                        [RDCTABLE[UNITNO]],+);%                                  20596150 T  0050:3
                        LABELTABLE[UNITNO]:=M[CARDLOC+2].[6:42];                 20596200 T  0051:2
                        END                                                      20596250 T  0055:1
      ELSE IF SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT)             20596300 T  0055:1
      GEQ IDENT THEN LABELTABLE[UNITNO]:=ACCUM[0]                                20596350 T  0057:3
           ELSE BEGIN IF UNITNO GEQ 32 THEN                                      20596400 T  0060:1
                      CIDROW[UNITNO-32].[18:15]:=0;                              20596450 T  0062:1
                      CCLABEL:=6; GO EXIT;                                       20596500 T  0065:1
                      END;                                                       20596550 T  0066:2
                CCLABEL:=8;                                                      20596600 T  0066:2
EXIT:      RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                     20596650 T  0067:1
           P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                          20596651 T  0068:0
END CCLABEL;                                                                     20596700 T  0070:3
                                                                                        SIZE= 0072 WORDS
BOOLEAN PROCEDURE CCFIND;                                                        20596750 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00601
BEGIN LABEL FINDX;                                                               20596760 T  0000:0
          P(RCW,MYMSCW,STF);                                                     20596945 T  0000:0
          RCW:=RCW & P(XCH)[CTC];                                                20596947 T  0001:1
                IF T=ENDFI THEN BEGIN P(0); GO TO FINDX END;                     20596950 T  0002:2
                IF T=DATAV THEN BEGIN P(1); GO TO FINDX; END;                    20597000 T  0004:2
                IF T=LABEV THEN BEGIN P(1); GO TO FINDX; END;                    20597050 T  0006:2
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                            20597100 T  0008:2
          FINDX: CCFIND:=P;                                                      20597450 T  0008:2
          RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                      20597459 T  0009:0
          P([RETURNRCW],STS,P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                20597460 T  0009:3
END CCFIND;                                                                      20597500 T  0013:0
                                                                                        SIZE= 0014 WORDS
PROCEDURE CONTROLCARD(CARD); VALUE CARD; REAL CARD;                              20597550 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00602
BEGIN                                                                            20597600 T  0000:0
     LABEL CC,CCTYPE,COMPILE,INITIALIZATION,BEFORETRYNEXT,TRYNEXT,               20597650 T  0000:0
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        CONTROLER,CONTROLA,COMPILEJOB,COMJOB,EXEC,EXRUN,RUN,                20597700 T  0000:0
        USERS,USES,SECBUMB,UNLUX,LOX,FREES,OPENS,ENTE,                      20597750 T  0000:0
        LCOPY,CHANGE,REMOVE,UNITI,INCSC,ENDF,ENDECK,SAVEND,                 20597800 T  0000:0
        LABE,FINIS,ZIPEXIT,EXIT,SET,RSET,DOWN;                              20597850 T  0000:0
    LABEL CCC,PACK,PACK2,WAIT,ZIPLIST;                                      20597880 T  0000:0
    SWITCH TYPE← UNLUX,USES,LOX,FREES,OPENS,PACK,USERS,                     20597900 T  0000:0
                RUN,COMPILE,EXEC,LCOPY,LCOPY,ENTE,ENTE,REMOVE,              20597950 T  0000:0
                 CHANGE,UNITI,ENDF,WAIT,LABE,LABE,SET,RSET;                 20598000 T  0000:0
    SWITCH SW← CC,CCTYPE,INITIALIZATION,BEFORETRYNEXT,SECBUMB,ENDECK,       20599000 T  0000:0
                INCSC,ZIPEXIT,EXIT,PACK2;                                   20599100 T  0000:0
    DEFINE ZIPMIX=CARD.[18:6]#, PSOURCE=CARD.[24:6]#;                       20600000 T  0000:0
    REAL SUBROUTINE SCAN;                                                   20600020 T  0000:0
        SCAN:=SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);       20600040 T  0001:0
$ SET OMIT = NOT(PACKETS)                                                   20600099 T  0004:1
        P(0,0,0,0,0,0,0,0,0,0);%                                            20600600 T  0004:1
        P(0,0,0,0,0,0,0,0,0,0);%                                            20600650 T  0007:2
        P(0,0,0,0,0,0,0,0,0,0);%                                            20600700 T  0010:0
        P(0,0,0,0,0,0,0,0,0);                                               20600750 T  0012:2
        % DO NOT ZERO THE LAST THREE LOCALS (RETURN=MSCW, RCW, & VAL)       20600755 T  0014:3
        RCW:=RCW & P(..CONTROLCARD,LOD)[CTC];                               20600760 T  0014:3
        UNITNO := CARD.[2:6];                                               20600850 T  0016:1
        IF CARD.[33:15] = 0 THEN                                            20600900 T  0017:2
            BEGIN CARD.[33:15] := GETSPACE(13,0,0)+4;                       20600950 T  0018:3
            IF WAITIO(CARD INX @40000000,@15,UNITNO).[45:3] NEQ 0%          20601000 T  0022:0
            THEN                                                            20601050 T  0024:2
                BEGIN LABELTABLE[UNITNO] := @114;%                          20601100 T  0024:3
                RRRMECH := NOT TWO (UNITNO) AND RRRMECH;%                   20601150 T  0026:2
                FORGETSPACE(CARD INX NOT 1);%                               20601200 T  0028:2
                KILL([MSCW]);                                               20601250 T  0030:0
                END;                                                        20601300 T  0030:3
            END;                                                            20601350 T  0030:3
COMMENT GET OWN STACK AND GET RID OF INDEPENDENT STACK;%                    20601400 T  0030:3
COMMENT SET UP ACCUM ARRAY FOR SCAN;%                                       20601450 T  0030:3
        ACCUM:=[M[GETSPACE(10,0,0)+2]]&10[8:38:10];%                        20601500 T  0030:3
        ACCUM[0] := 0;%                                                     20601550 T  0034:2
        IF (CCTBLWORD:=P(CCTBLWORD,DUP)&(P.[FF]+1)[CTF]).[FF]>1 THEN        20601600 T  0035:3
        BEGIN                                                               20601620 T  0039:1
            IF CCTBLADDR=0 THEN SLEEP([CCTBLWORD],@77777);                  20601640 T  0039:3
            DIRECT:=[M[CCTBLWORD]]&CCTABLSZ[8:38:10];                       20601660 T  0043:0
        END ELSE                                                            20601680 T  0046:0
        BEGIN                                                               20601700 T  0046:0
            DIRECT:=[M[T:=SPACE(CCTABLSZ)]]&CCTABLSZ[8:38:10];              20601720 T  0049:0
            DISKWAIT(-T,CCTABLSZ,MESSAGETABLE[3].[22:26]);                  20601740 T  0054:3
            CCTBLADDR:=T;                                                   20601760 T  0057:3
        END;                                                                20601780 T  0059:0
        CMM:=[M[GETSPACE(130,2,0)+2]]&30[8:38:10];%                         20601850 T  0059:0
        PEQN:=(31 INX (CEQN:=(31 INX(PROG:=(31 INX CMM))))));%              20601900 T  0062:3
         % PLACE "." IN COL 73 ;%                                           20601950 T  0066:1
        CARDLOC := CARD INX 0;%                                             20602000 T  0066:1
        IF UNITNO=25 OR UNITNO=26 OR UNITNO=30 OR UNITNO=31 THEN            20602050 T  0067:2
        SOURCE:=CARDLOC ELSE                                                20602100 T  0071:1
        M[(SOURCE:=CARDLOC)+9] := @3277320000000000; % ".", 2B XTRA SAFE    20602150 T  0072:2
        IF UNITNO GEQ 32 AND UNITCODE[UNITNO-23].[1:1] THEN                 20602200 T  0075:2
           UNITCODE[UNITNO-23]:=M[CARDLOC + 10];                            20602250 T  0078:0
        IF UNITNO=25 OR UNITNO=31 THEN USERID:=MCP ELSE%                    20602300 T  0081:2
        BEGIN IF UNITNO=26 THEN UNITNO:=31;%                                20602350 T  0085:1
        USERID:=UNITCODE[UNITNO-23];%                                       20602400 T  0089:0
$ SET OMIT = NOT(DATACOM AND RJE )                                          20602409 T  0090:2
        END;%                                                               20602450 T  0090:2
        SPOUTUNIT:=(                                                        20602460 T  0090:2
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 $ SET OMIT = NOT(PACKETS)                                          20602469 T  0090:2
                        0)&CARD[9:9:9];                             20602500 T  0090:2
 $ SET OMIT = NOT(PACKETS)                                          20602509 T  0092:1
COMMENT SCAN FOR CARD WITH QUESTION MARK IN COL. 1;%                20602550 T  0092:1
CC:       IF SCAN NEQ QUEST THEN GO TO INCSC;%                      20602650 T  0092:1
          T:=SCAN;                                                  20602700 T  0094:0
CCTYPE:     IF (T LSS UNLOCKV) OR (T GTR RESETV) THEN               20602800 T  0095:2
          GO TO INCSC;%                                             20602850 T  0097:1
          IF CARD.[9:9] NEQ 0 THEN%                                 20602900 T  0098:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                 20602909 T  0099:1
          IF CCFIND THEN GO TO INCSC;                               20602950 T  0099:1
          IF (T LEQ ENTER) AND (T GEQ RUNV) THEN                    20603000 T  0101:0
              BEGIN %                                               20603050 T  0102:3
                M[CARDLOC - 2] := 0;%                               20603100 T  0103:1
                M[CARDLOC -1]  :=10;%                               20603150 T  0105:1
                CMM[6]:= GETESPDISK & 10[18:33:15];%                20603200 T  0107:1
 $ SET OMIT = NOT(DATACOM AND RJE )                                 20603209 T  0109:1
                DISKWAIT(CARDLOC-2,11,CMM[6] INX 0);                20603250 T  0109:1
              END;%                                                 20603350 T  0111:3
 $ SET OMIT = NOT(PACKETS)                                          20603359 T  0111:3
%   WRITE OUT CONTROL CARD FOR LOGGING ROUTINE%                     20603400 T  0111:3
%   BRANCH ON 1ST WORD ON CONTROL CARD%                             20603450 T  0111:3
          LIBNO:=0;                                                 20603500 T  0111:3
          TOG:= FALSE;                                              20603550 T  0112:2
          GO TO TYPE[T-UNLOCKV];                                    20603600 T  0113:1
% COMPILER CALL OUT CARD%                                           20603700 T  0126:1
COMPILE: IF CCCOMPILE THEN GO INCSC;                                20603750 T  0126:1
INITIALIZATION: OPTNN:=INITIALIZEIT; GO DOWN;                       20603900 T  0127:2
BEFORETRYNEXT: IF OPTN=PERIO THEN GO TO CONTROLER;                  20604050 T  0129:0
TRYNEXT: IF KOUNT=@14 THEN                                          20604100 T  0130:1
             IF SOURCE=(CARDLOC&1[30:45:3]) THEN                    20604105 T  0131:0
                BEGIN                                               20604110 T  0133:1
                PPCPROCESS:=1; T:=SCAN; GO CONTROLA;                20604115 T  0133:3
                END;                                                20604120 T  0137:0
           IF SCAN NEQ PERIO THEN GO TRYNEXT;                       20604125 T  0137:0
CONTROLER: PPCPROCESS:= 1;                                          20604150 T  0139:0
            IF SCAN NEQ QUEST THEN GO TO INCSC;                     20604200 T  0139:3
            T:= SCAN;                                               20604250 T  0142:0
CONTROLA: IF (T LSS SETV OR T GTR COBOL) AND ACCUM[0] NEQ CMPLR THEN 20604300 T  0143:2
           IF T GEQ UNLOCKV AND T LEQ LABEV THEN                    20604350 T  0146:2
           GO TO FINIS ELSE GO TO INCSC;                            20604360 T  0148:3
           IF CARD.[9:9] NEQ 0 THEN                                 20604400 T  0149:3
 $ SET OMIT = NOT(DATACOM AND RJE )                                 20604409 T  0151:0
           IF CCFIND THEN GO TO INCSC;                              20604450 T  0151:0
 $ SET OMIT = NOT(PACKETS)                                          20604479 T  0152:3
           IF T GEQ ALGOL OR ACCUM[0]=CMPLR THEN                    20604500 T  0152:3
            IF OPTN=EXECU OR OPTN=RUNV THEN                         20604550 T  0154:3
               GO TO TRYNEXT                                        20604600 T  0157:0
            ELSE GO TO COMPILEJOB;                                  20604650 T  0157:0
          IF OPTN=SYNTA THEN GO TO TRYNEXT;                         20604700 T  0158:0
          IF OPTN=EXECU OR OPTN=RUNV THEN GO TO COMJOB;             20604750 T  0159:1
% CALL PPC FOR COMPILE AND GO JOB%                                  20604800 T  0161:3
          IF PPC(PADDR,PEQN,PROG,PDEX,T,UNITNO,CARDLOC,SOURCE,ACCUM, 20604850 T  0161:3
                LASTSCAN,DIRECT) THEN GO TO INCSC;                  20604900 T  0165:0
          GO TO CONTROLER;                                          20604950 T  0166:3
COMPILEJOB: T:=SCAN;                                                20605000 T  0167:1
COMJOB: IF PPC(CADDR,CEQN,CMM,CDEX,T,UNITNO,CARDLOC,SOURCE,ACCUM,   20605050 T  0168:2
                LASTSCAN,DIRECT) THEN GO TO INCSC;                  20605100 T  0171:3
         GO TO CONTROLER;                                           20605150 T  0173:2
COMMENT EXECUTE CARD;%                                              20605250 T  0174:0
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EXEC: P(EXECU);                                                          20605300 T  0174:0
EXRUN: OPTN:=P;                                                          20605320 T  0174:1
        CMM[13]:=CADDR:=CDEX:=0;                                         20605340 T  0174:3
        T:=SCAN; CMM[0]:=ACCUM[0];                                       20605360 T  0177:0
        T:=SCAN; T:=SCAN;                                                20605380 T  0180:0
        IF ((CMM[1]:=ACCUM[0]) EQV "DISK    ") = NOT 0 THEN              20605400 T  0183:2
          IF (CMM[0] EQV "PRNPBT ")=NOT 0 OR (CMM[0] EQV "LIBMAIN")=NOT 0 20605440 T  0186:1
          THEN IF UNITNO NEQ 31 THEN GO TO INCSC;                        20605460 T  0189:2
        CMM[2]:=0&(IF OPTN=RUNV THEN 5 ELSE 2)[8:38:10];                 20605480 T  0192:1
        CMM[23]:=0&CARD[9:9:9]&(                                         20605500 T  0196:2
 $ SET OMIT = NOT(PACKETS)                                               20605509 T  0198:1
                                UNITNO)[2:42:6];                         20605520 T  0198:1
        GO TO INITIALIZATION;                                            20605550 T  0199:3
RUN: P(RUNV);                                                            20605600 T  0204:0
     GO TO EXRUN;                                                        20605650 T  0204:1
USERS: T:=SCAN; T:=SCAN;                                                 20605700 T  0204:3
        IF (USERID.[1:1] AND USERID≠MCP)                                 20605750 T  0208:2
 $ SET OMIT = NOT(DATACOM AND RJE )                                      20605759 T  0209:3
        THEN BEGIN                                                       20605800 T  0209:3
             USERID:=ACCUM[0];                                           20605810 T  0211:2
 $ SET OMIT = NOT(PACKETS)                                               20605819 T  0212:2
             END;                                                        20605830 T  0212:2
CCC: %COME HERE TO FLUSH TO NEXT INITIAL WORD                            20605870 T  0212:2
 $ SET OMIT = NOT(PACKETS)                                               20605879 T  0212:2
 $ SET OMIT = PACKETS                                                    20605899 T  0212:2
        DO T←SCAN UNTIL T>IDENT AND T≤RESETV;                            20605900 T  0212:2
 $ POP OMIT                                                              20605901 T  0216:3
        GO TO CCTYPE;                                                    20606000 T  0216:3
USES: OPTNN:=0; OPTNN:=CCSECMAINT; GO DOWN;                              20606050 T  0217:1
SECBOMB: OPTNN:=1; OPTNN:=CCSECMAINT; GO DOWN;                           20606100 T  0219:2
UNLOX:                                                                   20606150 T  0221:3
LOX:                                                                     20606200 T  0221:3
FREES:                                                                   20606250 T  0221:3
OPENS:                                                                   20606300 T  0221:3
        OPTNN:=2; OPTNN:=CCSECMAINT; GO DOWN;                            20606350 T  0221:3
ENTE::                                                                   20606400 T  0224:0
LCOPY:                                                                   20606450 T  0224:0
CHANGE:                                                                  20606500 T  0224:0
REMOVE:                                                                  20606550 T  0224:0
        OPTNN:=LIBCC;                                                    20606600 T  0224:0
DOWN:   GO SW[OPTNN];                                                    20606610 T  0225:0
SET: TOG:= TRUE;                                                         20606650 T  0231:0
RSET: IF CCSET THEN GO CC ELSE GO INCSC;                                 20606700 T  0231:3
UNITI: OPTNN:=CCUNIT; GO DOWN;                                           20606800 T  0233:1
INCSC:                                                                   20606850 T  0234:3
        IF PPCPROCESS THEN                                               20606860 T  0234:3
        P(DIRECTORYSEARCH(=CMM[0],IF CMM[0] LSS 0 THEN "DISK    " ELSE   20606865 T  0235:0
                                CMM[1], 13),DEL);                        20606870 T  0238:3
 $ SET OMIT = NOT(PACKETS)                                               20606874 T  0240:0
        LASTSCAN := 0;                                                   20607000 T  0240:0
        STREAM(CARDLOC, U:=TINU[UNITNO], ACCUM, MIX:=ZIPMIX,             20607020 T  0240:3
              ZZP:=UNITNO=31, CRD:=SPOUTUNIT,[CF]=0,                     20607040 T  0243:0
              D:=T:=SPACE(15));                                          20607060 T  0245:0
        BEGIN                                                            20607080 T  0247:2
             DS:=20LIT"*CONTROL CARD ERROR ";                            20607100 T  0247:2
             SI:=LOC U; SI:=SI+5; DS:=3 CHR;                             20607120 T  0250:1
             ZZP(DI:=DI-22; DS:=24LIT"ZIP ERROR, IGNORED, MIX=";         20607140 T  0251:0
             SI:=LOC MIX; DS:=2 DEC; DS:=LIT":";                         20607160 T  0255:0
             D:=DI; DI:=DI-3; DS:=FILL; DI:=D);                          20607180 T  0256:0
             DS:=4LIT" AT ";                                             20607200 T  0257:1
```

```
                SI:=ACCUM; SI:=SI+1;                                    20607220 T  0258:0
                7(IF SC=" " THEN SI:=SI+1 ELSE DS:=CHR);                20607240 T  0258:2
                CRD(DS:=LIT":"; SI:=CARDLOC; 2(DS:=36 CHR));            20607260 T  0260:1
                DS:=LIT"+";                                             20607280 T  0262:2
            END;                                                        20607300 T  0263:0
            IF UNITNO≠25 THEN                                           20607500 T  0263:1
               BEGIN                                                    20607550 T  0264:0
                     SPOUTER(T,SPOUTUNIT,1);                            20607600 T  0264:2
                     IF UNITNO=30 OR UNITNO=31 THEN GO ZIPEXIT;         20607700 T  0265:1
                     IF UNITNO GEQ 32 THEN GO ENDECK;                   20607750 T  0267:3
               END ELSE                                                 20607800 T  0269:0
               BEGIN P(WAITIO(T,0,25),DEL);                             20608000 T  0269:0
                     FORGETSPACE(T);                                    20608050 T  0272:2
        $ SET OMIT = PACKETS                                            20608059 T  0273:1
                  GO TO ENDF;                                           20608060 T  0273:1
        $ POP OMIT                                                      20608061 T  0273:3
        $ SET OMIT = NOT(PACKETS)                                       20608069 T  0273:3
               END;                                                     20608100 T  0273:3
        $ SET OMIT = NOT(PACKETS)                                       20608109 T  0273:3
            DO DB                                                       20608150 T  0273:3
                FETCH(-UNITNO,CARDLOC,SOURCE)                           20608200 T  0273:3
               UNTIL SCAN=QUEST                                         20608250 T  0274:3
            UNTIL SCAN=ENDFI;                                           20608300 T  0276:1
        ENDF::                                                          20608450 T  0279:0
        $ SET OMIT = NOT(PACKETS)                                       20608459 T  0279:0
            IF UNITNO NEQ 30 THEN UNITCODE[UNITNO-23]:=-0;              20608500 T  0279:0
              IF UNITNO=23 THEN READERA:=0 ELSE                         20608510 T  0282:1
              IF UNITNO=24 THEN READERB:=0 ELSE                         20608520 T  0284:1
             IF UNITNO GEQ 25 THEN                                      20608550 T  0286:3
             IF UNITNO GEQ 32 THEN                                      20608600 T  0288:0
        PACK2:    %PACKET CARDS END HERE FROM PSEUDO-READERS            20608610 T  0289:1
                IF CIDTABLE[UNITNO-32,3] LSS CIDTABLE[UNITNO-32,7]THEN  20608650 T  0290:0
                BEGIN FETCH(-UNITNO,CARDLOC,SOURCE);                    20608700 T  0293:1
        $ SET OMIT = NOT(PACKETS)                                       20608709 T  0295:1
                     GO CC;                                             20608810 T  0295:1
                END ELSE                                                20608820 T  0295:3
                BEGIN                                                   20608830 T  0295:3
        $ SET OMIT = NOT(PACKETS)                                       20608839 T  0296:1
        $ SET OMIT = PACKETS                                            20608859 T  0296:1
        ENDECK:                                                         20608860 T  0296:1
        $ POP OMIT                                                      20608861 T  0296:1
                     ENDOFDECK((UNITNO-32),SPOUTUNIT&CARD[1:1:1]);      20608870 T  0296:1
                     GO ZIPEXIT;                                        20608880 T  0298:3
                END ELSE                                                20608890 T  0299:1
                GO ZIPEXIT;                                             20608900 T  0299:1
                IF(TWB(UNITNO) AND SAVEWORD) NEQ 0 THEN GO TO SAVEND;   20608950 T  0299:1
                IF WAITIO(CARDLOC&400[18:33:15],@15,UNITNO),[45:3] NEQ 0 THEN 20609000 T  0301:2
                BEGIN                                                   20609050 T  0304:0
        SAVEND: LABELTABLE[UNITNO]:= @114;                              20609100 T  0304:3
                RRRMECH:= NOT (NT1:= TWO(UNITNO)) AND RRRMECH OR        20609150 T  0306:0
                        NT1 AND SAVEWORD;                               20609200 T  0308:0
                GO TO ZIPEXIT;                                          20609250 T  0309:2
                END;                                                    20609300 T  0310:0
                M[(SOURCE:= CARDLOC)+9]:= 0&","[1:43:5];                20609350 T  0310:0
                USERID:= UNITCODE[UNITNO-23];                           20609400 T  0313:2
                GO TO CC;                                               20609410 T  0315:0
        PACK:   IF UNITNO<32 THEN GO INCSC;                             20609420 T  0315:2
                GO PACK2;                                               20609450 T  0316:3
        LABE: OPTNN:=CCLABEL; GO DOWN;                                  20609500 T  0317:1
        WAIT:                                                           20609555 T  0318:3
```

```
 $ SET OMIT = NOT(PACKETS)                                          20609559 T  0318:3
FINIS:;     CCFINISH;                                               20609600 T  0318:3
 $ SET OMIT = NOT(PACKETS)                                          20609659 T  0319:2
            SELECTION;                                              20609700 T  0319:2
            IF UNITNO NEQ 31 THEN                                   20609750 T  0320:3
            BEGIN                                                   20609760 T  0321:2
 $ SET OMIT = PACKETS                                               20609799 T  0322:0
            IF LIBNO NEQ 0 AND (UNITNO=23 OR UNITNO=24 OR UNITNO GEQ 32)  20609800 T  0322:0
               AND T NEQ ENDFI THEN                                 20609850 T  0325:0
            BEGIN                                                   20609900 T  0326:3
                LABELTABLE[UNITNO]:=@214;                           20609950 T  0327:1
                SLEEP([LABELTABLE[UNITNO]],@100);                   20610000 T  0328:2
                LABELTABLE[UNITNO]:=-@14;                           20610050 T  0330:1
            END;                                                    20610060 T  0331:3
 $ POP OMIT                                                         20610061 T  0331:3
            GO CCTYPE;                                              20610100 T  0331:3
            END;                                                    20610150 T  0332:1
ZIPEXIT:    FORGETSPACE(CARDLOC-2);                                 20610200 T  0332:1
EXIT::                                                              20610250 T  0333:2
 $ SET OMIT = NOT(PACKETS)                                          20610259 T  0333:2
          FORGETSPACE(ACCUM INX 0);%                                20610300 T  0333:2
          FORGETSPACE(CMM INX 0);%                                  20610350 T  0335:2
          IF (CCTBLWORD:=P(CCTBLWORD,DUP)&(P.[FF]-1)[CTF]).[FF]=0 THEN  20610400 T  0337:0
          BEGIN                                                     20610410 T  0340:2
               FORGETSPACE(CCTBLADDR);                              20610420 T  0341:0
               CCTBLADDR:=0;                                        20610430 T  0342:1
          END;                                                      20610440 T  0343:2
          IF UNITNO GEQ 32 AND UNITNO LEQ 63 THEN                   20610500 T  0343:2
             PSEUDOCOPY:= PSEUDOCOPY - 1;                           20610550 T  0345:1
          KILL([MSCW]);                                             20610600 T  0347:0
END CONTROLCARD;                                                    20610650 T  0347:3
                                                                                SIZE= 0348 WORDS
REAL PROCEDURE CCSET;                                               20700000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00614
BEGIN LABEL MORE,SEEK,SKIP,CCERR,L1,L2;                             20701000 T  0000:0
REAL      FXTOG        =  RETURNVAL+1,    % BEGIN LOCALS OF CCSET  20702000 T  0000:0
          LOK          =  FXTOG+1,                                 20702100 T  0000:0
          N            =  LOK+1,                                   20703000 T  0000:0
          SENSETOG     =  N+1;                                     20704000 T  0000:0
REAL SUBROUTINE SCAN;                                               20705000 T  0000:0
     SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);   20706000 T  0001:0
     P(RCW,MYMSCW,STF);                                             20707000 T  0004:1
     RCW:=RCW & P(XCH)[CTC];                                        20708000 T  0006:1
     P(0,0,0,0); % ZERO LOCALS OF CCSET                             20709000 T  0007:2
     UNITNO:=CARD.[2:6];                                            20710000 T  0008:2
     CARDLOC:=CARD INX 0;                                           20711000 T  0009:3
     IF NOT (FXTOG:=(CN:=SCAN)=FIXED) THEN                          20712000 T  0011:0
     IF NOT (SENSETOG:=(CN=SENSE)) THEN                             20713000 T  0013:3
     IF CN ≠ ACCESSD THEN GO TO CCERR;                              20714000 T  0015:3
MORE:                                                               20715000 T  0017:2
     IF (CN:=SCAN)=EQUAL THEN CMM[0]:=-1 ELSE                       20716000 T  0017:2
     IF CN GEQ IDENT THEN CMM[0]:=ACCUM[0] ELSE GO CCERR;           20717000 T  0022:0
     IF SCAN NEQ SLASH THEN GO TO CCERR;                            20718000 T  0025:1
     IF (CN:=SCAN)=EQUAL THEN CMM[1]:=-1 ELSE                       20719000 T  0027:0
     IF CN GEQ IDENT THEN CMM[1]:=ACCUM[0] ELSE                     20720000 T  0031:0
     GO TO CCERR;                                                   20721000 T  0034:1
     CN:=T:=0;                                                      20722000 T  0034:1
SEEK:                                                               20723000 T  0035:2
     IF (CMM[0] OR CMM[1]) LSS 0 THEN                               20724000 T  0035:2
     SEEKNAM(CMM[0],CMM[1],CN,CMM[2],CMM[3],N) ELSE                 20725000 T  0037:1
```

```
BEGIN CN:=1; CMM[2]:=CMM[0]; CMM[3]:=CMM[1] END;                          20726000 T  0042:0
IF CN NEQ 0 THEN                                                          20727000 T  0046:1
BEGIN                                                                     20728000 T  0047:0
     IF NOT FXTOG THEN IF SYSTEMFILE(CMM[2],CMM[3]) THEN                  20729000 T  0047:2
     BEGIN T:=2; GO SKIP; END;                                            20730000 T  0050:0
     T:=DIRECTORYSEARCH(CMM[2],CMM[3],19);                                20731000 T  0051:3
END ELSE IF N=0 THEN BEGIN CMM[2]:=CMM[0]; CMM[3]:=CMM[1]; GO L1;         20732000 T  0054:0
                         END                                              20733000 T  0059:1
                    ELSE GO L2;                                           20734000 T  0059:1
SKIP:                                                                     20735000 T  0059:1
          IF T GEQ 64 THEN                                                20736000 T  0059:1
           BEGIN                                                          20737000 T  0060:0
           IF M[T+4].[43:2]=3 THEN                                        20738000 T  0060:2
             BEGIN DISKWAIT(T,[CF],-30,T,[FF]); T:=1; GO L1; END;         20739000 T  0063:0
           IF (USERID EQV MCP)= NOT 0 OR                                  20740000 T  0067:1
              (USERID EQV ABS(M[T+2]))= NOT 0 OR                          20741000 T  0069:2
              (NOT SENSETOG AND (M[T+2]=0)) THEN                          20742000 T  0072:3
             BEGIN                                                        20743000 T  0075:3
             LOK:=0;                                                      20744000 T  0076:1
             IF FXTOG                                                     20745000 T  0077:0
               THEN M[T+4].[42:1]:=TOG                                    20746000 T  0077:0
               ELSE IF SENSETOG                                           20747000 T  0079:2
                      THEN IF LOK:=((M[T+4].[43:2]=1) AND NOT TOG)        20748000 T  0081:2
                             THEN M[T+4].[43:2]:=0                        20749000 T  0084:3
                             ELSE IF M[T+4].[43:2]=1                      20750000 T  0088:1
                                     THEN ELSE M[T+4].[43:2]:=TOG×2       20751000 T  0092:1
                      ELSE BEGIN                                          20752000 T  0095:3
                           M[T+4].[11:1]:=TOG;                            20753000 T  0098:0
                           STREAM(DATE,J:=5);                             20754000 T  0101:1
                            BEGIN SI:=LOC DATE; DS:=8OCT; END;            20755000 T  0102:1
                           M[T+3].[12:18]:=JUNK;                          20756000 T  0103:0
                           END;                                           20757000 T  0106:1
             DISKWAIT(T,[CF],-30,T,[FF]);                                 20758000 T  0106:1
 $ SET OMIT = SHAREDISK                                                   20759000 T  0108:3
             UNLOCKDIRECTORY;                                             20760000 T  0108:3
 $ POP OMIT                                                               20761000 T  0112:1
 $ SET OMIT = PACKETS                                                     20762000 T  0112:1
             IF RSTOG THEN                                                20763000 T  0112:1
 $ POP OMIT                                                               20764000 T  0113:0
              IF LOK THEN P(DIRECTORYSEARCH(=CMM[2],CMM[3],6),DEL)        20765000 T  0113:0
                   ELSE LBMESS(CMM[2],CMM[3],IF TOG THEN 12 ELSE 11,      20766000 T  0116:2
                          13+(SENSETOG×47)-(FXTOG×3),0,SPOUTUNIT,RSTOG)   20767000 T  0121:0
             END                                                          20768000 T  0123:3
            ELSE LBMESS(CMM[2],CMM[3],-(11+TOG),41,0,SPOUTUNIT,1)         20769000 T  0124:3
          END                                                             20770000 T  0128:2
          ELSE                                                            20771000 T  0128:3
L1:            LBMESS(CMM[2],CMM[3],-(11+TOG),15+((T=1)×30)+((T=2)×10),   20771100 T  0128:3
               0,SPOUTUNIT,1);                                            20772000 T  0134:2
 $ SET OMIT = SHAREDISK                                                   20772100 T  0135:3
    UNLOCKDIRECTORY;                                                      20772200 T  0135:3
 $ POP OMIT                                                               20772300 T  0139:1
    IF CN NEQ 0 AND (CMM[0] OR CMM[1]) LSS 0 THEN GO SEEK;                20779000 T  0139:1
L2: IF (CN:=SCAN)=COMMA THEN GO MORE;                                     20780000 T  0142:3
    IF CN=PERIO THEN CCSET:=1;                                            20781000 T  0145:2
CCERR: RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                  20782000 T  0147:2
       P([RETURNBCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                       20783000 T  0148:1
END CCSET;                                                                20784000 T  0151:0
                                                                                SIZE= 0153 WORDS
 $ SET OMIT = NOT(DATACOM )                                               20999999 T  0000:0
REAL SECONDCTR;                                                           22000000 T  0000:0
```

```
$ SET OMIT = NOT(SHAREDISK)                                                  22000499 T  0000:0
PROCEDURE NSECOND;%                                                          22001000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00620
        BEGIN REAL RCW=+0, I=RCW+1, J=I+1;                                   22002000 T  0000:0
              REAL MSCW=-2;                                                  22002500 T  0000:0
              ARRAY A=J+1[*];                                                22003000 T  0000:0
$ SET OMIT = NOT SHAREDISK                                                   22003990 T  0000:0
              P(0,0,0);                                                      22006000 T  0000:0
$ SET OMIT = NOT SHAREDISK                                                   22006090 T  0000:3
              A ← [M[GETSPACE(3×MIXMAX+3,0,0)+2]]&90[8:38:10];               22008000 T  0000:3
$ SET OMIT = NOT(DCLOG AND DATACOM )                                         22008049 T  0005:2
              SLEEP([TOGLE],ABORTMASK);                                      22009000 T  0005:2
              LOCKTOG(ABORTMASK);                                            22010000 T  0007:0
              HALT; IDLETIME;%                                               22011000 T  0010:2
              J:=NEUP.NEUF ;                                                 22011100 T  0011:2
$ SET OMIT = NOT(SHAREDISK )                                                 22011190 T  0012:3
              FOR I:=J-1 STEP -1 UNTIL 0 DO                                  22011300 T  0012:3
               BEGIN                                                         22011400 T  0017:0
                EUIO[I+EUIOFFSET]:=*P(DUP)×EUTAPER+PEUIO[I];                 22011500 T  0017:0
                PEUIO[I]:=0;                                                 22011600 T  0020:1
               END;                                                          22011700 T  0021:2
$ SET OMIT = NOT(SHAREDISK )                                                 22011790 T  0023:0
              WHILE (J:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;         22012000 T  0023:0
              CHANGEDATE(0);                                                 22012500 T  0030:2
              A[0]←J; A[2]←"ABORT";J←0;                                      22013000 T  0031:1
              A[1] ← DATE;%                                                  22014000 T  0034:2
              IF (CLOCK AND @17777)=0 THEN                                   22014100 T  0035:3
              BEGIN FOR I:=1 STEP 1 UNTIL MIXMAX DO                          22014400 T  0037:0
                    IF *[JARROW[I]] NEQ 0 THEN                               22014500 T  0041:0
                    IF REPLY[I] LSS 0 THEN % WAITING FOR SOMETHING           22014600 T  0042:1
$ SET OMIT = NOT(WORKSET)                                                    22014610 T  0043:3
                          REPLY[I]:=VWY;                                     22014640 T  0043:3
                    END;                                                     22014900 T  0047:3
                    FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                        22015000 T  0047:3
                        BEGIN J ← J+3;%                                      22016000 T  0049:0
                              IF JARROW[I] ≠ 0 THEN%                         22017000 T  0050:1
                                  BEGIN A[J] ← JAR[I,3]+PROCTIME[I];         22018000 T  0051:1
                                        NT1 ← IOTIME[I]+JAR[I,4];%           22019000 T  0054:2
                                        WHILE NT1 < 0 DO NT1←NT1+CLOCK+P(RTR);  22020000 T  0056:3
                                        A[J+1] ← NT1;%                       22021000 T  0059:0
                                        A[J+2] ← JAR[I,7];%                  22022000 T  0062:0
                                        IF TERMIX=@1777 THEN                 22023000 T  0064:2
                                        IF PROCTIME[I]>0 THEN                22023500 T  0065:1
                                           TERMINATE(I&15[18:33:15]) ELSE    22024000 T  0066:3
                                        IF A[J+1]> JAR[I,4] THEN             22024500 T  0068:2
                                           TERMINATE(I&83[18:33:15]);        22025000 T  0071:1
                                  END%                                       22026000 T  0073:0
                              ELSE A[J] ← A[J+1] ← A[J+2] ← 0;%              22027000 T  0073:0
                        END;%                                                22028000 T  0077:3
                    DISKIO(J,A INX 0-1,3×MIXMAX+3,ESPDISKTOP+1);             22029000 T  0080:0
                    UNLOCKTOG(ABORTMASK);                                    22030000 T  0084:1
$ SET OMIT = NOT(DCLOG AND DATACOM )                                         22030099 T  0087:3
                    NOPROCESSTOG ← NOPROCESSTOG-1;%                          22031000 T  0087:3
                    FOR I ← 20 STEP 1 UNTIL 21 DO%                           22032000 T  0089:0
                        BEGIN IF NOT UNIT[I].[16:1] THEN%                    22033000 T  0090:0
                                  UNIT[I].[17:1] ← 0;%                       22034000 T  0091:1
                              STARTIO(I);%                                   22035000 T  0094:1
                        END;%                                                22036000 T  0095:0
$ SET OMIT = NOT(DFX)                                                        22036999 T  0097:1
                    IF TERMIX ≠ @1777 THEN%                                  22038000 T  0097:1
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                    IF TERMINALCLOCK ≠ 0 THEN%                                  22039000 T  0098:0
                    IF CLOCK-TERMINALCLOCK > 512 THEN%                          22040000 T  0099:1
                    FOR I ← 0 STEP 2 UNTIL JOBNUM DO%                           22041000 T  0101:0
                    IF BED[I],[3:5] = TERMIX,[33:15] THEN%                      22042000 T  0103:0
                    IF (JAR[TERMIX,[CF],0] EQV "LIBMAIN")≠NOT 0                 22042100 T  0105:0
                    OR (JAR[TERMIX,[CF],1] EQV "DISK    ")≠NOT 0 THEN           22042150 T  0107:2
                         BEGIN BED[I] ← BED[JOBNUM];%                           22043000 T  0111:1
                              BED[I+1] ← BED[JOBNUM+1];%                        22044000 T  0113:1
                              INDEPENDENTRUNNER(P(,RUN),TERMIX,[33:15],0);      22045000 T  0115:3
                              I ← JOBNUM ← JOBNUM-2;%                           22046000 T  0117:2
                              TERMINALCLOCK ← 0;%                               22047000 T  0119:1
                         END;%                                                  22048000 T  0120:0
                    SLEEP([J],IOMASK);%                                         22049000 T  0122:1
                    FORGETSPACE(A);%                                            22050000 T  0123:3
          $ SET OMIT = NOT(STATISTICS)                                          22050909 T  0124:3
          $ SET OMIT = NOT(SHAREDISK)                                           22050999 T  0124:3
                    NSECONDREADY:=TRUE;                                         22053700 T  0124:3
                    SECONDCTR:=0;                                               22053800 T  0126:2
                    KILL([MSCW]);                                               22053900 T  0127:1
               END;%                                                            22054000 T  0128:0
                                                                                          SIZE= 0131 WORDS
          PROCEDURE STATUS;%                                                    22055000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00625
               BEGIN REAL U=+1,%                                                22056000 T  0000:0
                         MSCW=-2,                                               22056500 T  0000:0
                         T=U+1,%                                                22057000 T  0000:0
                         T1=T+1;%                                               22058000 T  0000:0
                    INTEGER%                                                    22059000 T  0000:0
                         I=T1+1;%                                               22060000 T  0000:0
                    ARRAY AREA=I+1[*];%                                         22061000 T  0000:0
                    REAL HDR = AREA+1,                                          22061100 T  0000:0
                         SEGO= HDR + 1,                                         22061110 T  0000:0
                         F   = SEGO+1;                                          22061120 T  0000:0
                    ARRAY SHEAT = F+1[*];                                       22061130 T  0000:0
                    LABEL TRYAGAIN,LDCNTRL,DISK;                                22061200 T  0000:0
                    LABEL L,EL,NOTREADY,DIE,ACCEPT,SCRATCH,INPUT,TESTBACKUP,    22062000 T  0000:0
                         COMMON;                                                22063000 T  0000:0
                    LABEL CARD,PRINTER,TAPE,DRUM,DISC,SPO,PUNCH,UNLD,           22064000 T  0000:0
                         PAPERPUNCH,PAPER,DATACOM;                              22064500 T  0000:0
                    SWITCH S := CARD,PRINTER,TAPE,DRUM,DISC,SPO,PUNCH,UNLD,     22065000 T  0000:0
                         PAPERPUNCH,PAPER,DATACOM;%                             22066000 T  0000:0
                    REAL RCW=+0;%                                               22067000 T  0000:0
               SUBROUTINE SPACEA;%                                              22068000 T  0000:0
                    BEGIN AREA ← (GETSPACE(12,0,0)+2 INX MEMORY)&10[8:38:10] END;%  22069000 T  0001:0
               SUBROUTINE AUTOLOADER;                                           22069010 T  0005:0
                    BEGIN                                                       22069020 T  0005:0
               TRYAGAIN:                                                        22069025 T  0005:0
                    IF (HDR:=DIRECTORYSEARCH(P(LDCNTRL),P(DISK),3)) ≠ 0 THEN    22069030 T  0005:0
                    BEGIN                                                       22069040 T  0007:1
                    SHEAT := [M[F:=GETSPACE(31,0,0)+2]] & 30[8:38:10];          22069050 T  0007:3
                    STREAM(S:=F-1, D:=F); % ZERO OUT THE SHEAT ENTRY            22069060 T  0012:0
                         BEGIN                                                  22069070 T  0013:2
                         SI:=S; DS:=30 WDS;                                     22069080 T  0013:2
                         END;                                                   22069090 T  0014:0
                    SEGO := GETSPACE(30,0,0)+2;                                 22069100 T  0014:1
                    DISKWAIT(-SEGO, 30, M[HDR INX 10]);                         22069110 T  0016:2
                    F,[FF] := HDR; % CORE ADDRESS OF HEADER IN [FF] OF PARAM.   22069120 T  0019:1
                    SHEAT[7] := SEGO;  % CORE ADRS OF SEGMENT ZERO IN SHEAT[7]  22069130 T  0020:2
                    SHEAT[0] := P(LDCNTRL);                                     22069140 T  0021:3
                    SHEAT[1] := P(DISK);                                        22069150 T  0023:0
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SHEAT[2] := 0 & 2[8:38:10] & 1[4:47:1];                          22069160 T  0024:1
% [4:1] IN SHEET[2] MEANS SUPRESS BOJ/EOJ MESSAGES                22069170 T  0027:2
SHEAT[16] := SHEAT[17] := @377777777777; % TIME LIMITS           22069180 T  0027:2
SHEAT[19] := U;              % COMMON VALUE                      22069190 T  0029:3
SHEAT[20] := 4;              % CORE ESTIMATE                     22069200 T  0031:0
SHEAT[21] := 150;            % STACK SIZE                        22069210 T  0032:1
                                                                 22069220 T  0033:2
STREAM(A:=0 : S := P(.SCHEDULEIDS));                             22069230 T  0033:2
   BEGIN                                                         22069240 T  0034:3
   SI:=S;                                                        22069250 T  0034:3
   47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                          22069260 T  0035:0
   IF SB THEN ELSE JUMP OUT);                                    22069270 T  0036:0
   DS:=SET; A:=TALLY;                                            22069280 T  0037:2
   END STREAM STATEMENT;                                         22069290 T  0038:0
                                                                 22069300 T  0038:1
I := P;                                                          22069310 T  0038:1
SHEAT[3].[8:10] := I;        % SCHEDULE NUMBER                    22069320 T  0038:3
SHEAT[23] := (CLOCK + P(RTR)) DIV 60;                            22069330 T  0041:1
SHEAT[25] := HDR.[FF]; % DISK ADDRESS OF FILE HEADER             22069340 T  0043:2
STREAM(U, I:=I:=GETSPACE(11,0,0)+2);                             22069350 T  0045:1
   BEGIN                                                         22069360 T  0048:1
   DI:=DI+16;                                                    22069370 T  0048:1
   DS:=31LIT"CC EXECUTE LDCNTRL/DISK;COMMON=";                   22069380 T  0048:2
   SI:=LOC U; DS:=8DEC;                                          22069390 T  0052:3
   DS:=6LIT";END.←";                                             22069400 T  0053:1
   END STREAM STATEMENT;                                         22069410 T  0054:1
M[I] := 0; M[I+1]:=10;                                           22069420 T  0054:2
SHEAT[6] := GETESPDISK & 10[18:33:15];                           22069430 T  0058:0
DISKWAIT(I, 11, SHEAT[6].[CF]);                                  22069440 T  0060:0
FORGETSPACE(I);                                                  22069450 T  0062:0
MULTITABLE[U] := "CONTROL";                                      22069460 T  0062:3
LABELTABLE[U] := (-"DECK    ");                                  22069470 T  0064:0
RDCTABLE[U]   := 1 & 1[14:38:10];                                22069480 T  0065:2
IF U THEN READERA:=0 ELSE READERB:=0;                            22069490 T  0067:3
INDEPENDENTRUNNER(P(.SELECTRUN),F,160);                          22069500 T  0073:3
END ELSE % IF IN DIRECTORY                                       22069510 T  0075:0
BEGIN                                                            22069520 T  0075:0
ENTERSYSFILE(2);                                                 22069530 T  0075:2
GO TRYAGAIN;                                                     22069540 T  0076:1
LDCNTRL::: "LDCNTRL";                                            22069550 T  0076:3
   DISK::: "DISK    ";                                           22069560 T  0078:0
END;                                                             22069570 T  0079:0
  END SUBROUTINE AUTOLOADER;                                     22069600 T  0079:0
P(0,0,0,0,0,0,0,0,0);%                                           22071000 T  0079:1
SPACEA;%                                                         22073000 T  0082:1
WHILE (T ← P(RRR) OR RRRMECH) ≠ READY DO%                        22074000 T  0083:0
   BEGIN I ← O&TINU(U ← (P(T EQV NOT READY,DUP,DUP,x,x)%         22075000 T  0085:1
            x@1000000000000).%                                   22076000 T  0087:2
            [3:6]][5:11:7]/@1000000000000;%                      22077000 T  0088:0
         IF T < READY THEN%                                      22078000 T  0091:0
            BEGIN     COMMENT SOMETHING WENT NOT READY;%         22079000 T  0091:3
                      READY ← READY AND NOT I;%                  22080000 T  0092:1
                IF LABELTABLE[U] ≥ 0 THEN%                       22081000 T  0093:3
                  BEGIN%                                         22082000 T  0094:3
L:                   LABELTABLE[U] ← @114;%                      22083000 T  0095:1
                     IF (U AND @774) NEQ 16 THEN                 22084000 T  0096:2
                        MULTITABLE[U]:=0;                        22084500 T  0097:3
                  END;%                                          22085000 T  0099:2
EL:             RRRMECH ← RRRMECH AND NOT I;%                    22086000 T  0099:2
            END OF NOT READY%                                    22087000 T  0101:0
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                    ELSE BEGIN      COMMENT SOMETHING WENT READY;%                    22088000 T  0101:0
                              READY ← READY OR I;%                                    22089000 T  0103:0
                              UNIT[U].[13:1] ← 0;%                                    22090000 T  0104:1
                              IF LABELTABLE[U] ≠ @114 THEN%                           22091000 T  0106:3
                                   BEGIN RRRMECH ← RRRMECH OR I;%                     22092000 T  0107:3
                                        IF LABELTABLE[U] = @214 THEN%                 22093000 T  0109:2
                                             BEGIN I ← I AND NOT SAVEWORD;%           22094000 T  0110:2
                                                  GO TO L;%                           22095000 T  0112:2
                                        END;%                                         22096000 T  0113:0
                                        STARTIO(U);%                                  22097000 T  0113:0
                                        GO TO COMMON;%                                22098000 T  0113:3
                                   END;%                                              22099000 T  0114:1
                              IF (U AND @774) NEQ 16 THEN                             22100000 T  0114:1
                                   MULTITABLE[U]:=RDCTABLE[U]:=0;                     22100500 T  0115:2
                              IF (I AND SAVEWORD) ≠ 0 THEN%                           22101000 T  0118:1
                                   BEGIN RRRMECH ← I AND SAVEWORD OR RRRMECH;         22102000 T  0119:2
                                        GO TO COMMON;%                                22103000 T  0121:3
                                   END;%                                              22104000 T  0122:1
                              GO S[UNIT[U].[1:4]];%                                   22105000 T  0122:1
                    TAPE: P(WAITIO(@4200000000,5,U),DEL);%                            22106000 T  0129:2
                         IF (T ← WAITIO(AREA INX @120540000000,@7500045,U)).%         22107000 T  0131:0
                              [45:3] ≠ 0 THEN%                                        22108000 T  0133:2
                    NOTREADY: BEGIN READY ← READY AND NOT I;%                         22109000 T  0134:2
                              GO TO L;%                                               22110000 T  0136:2
                         END;%                                                        22111000 T  0140:0
                         IF MODIOS AND NOT T.[42:1] THEN  BEGIN          %AI          22111500 T  0140:0
                              DO UNTIL (T1←WAITIO(AREA INX @340000012,@55,U))≠0;%AI  22112000 T  0142:2
                         END ELSE T1←WAITIO(@4200000000,5,U);            %AI          22112500 T  0146:0
                              IF T1.[45:3]≠0 THEN GO TO NOTREADY;        %AI          22113000 T  0149:3
                         DO UNTIL NOT (T1←WAITIO(@500000000,@165,U)) OR               22114000 T  0151:2
                              (TRANSACTION[U]←0);%                                    22115000 T  0153:2
                         IF T1.[42:1] THEN                                            22115020 T  0155:2
                         BEGIN; STREAM(T←TINU[U],A←AREA);                             22115030 T  0156:1
                                   BEGIN SI←LOC T; SI←SI+5; DS←LIT"#";                22115040 T  0158:1
                                        DS←3 CHR; DS←10 LIT "-BAD LOAD←";             22115050 T  0159:1
                                   END;                                               22115060 T  0161:0
                         SPOUT(AREA INX 0); SPACEA; GO TO L;                          22115070 T  0161:1
                         END;                                                         22115075 T  0167:0
                         IF T1.[45:1] THEN GO TO NOTREADY;%                           22116000 T  0167:0
                         PRNTABLE[U]←0&(NOT T1)[1:43:1];%                             22117000 T  0168:2
                         IF T.[43:1] THEN%                                            22118000 T  0171:0
                              BEGIN;STREAM(T←TINU[U],AREA);%                          22119000 T  0171:3
                                        BEGIN SI ← LOC T; SI ← SI+5;%                 22120000 T  0173:3
                                             DS ← LIT "#"; DS ← 3 CHR;%               22121000 T  0174:1
                                             DS ← 14 LIT " PARITY, RW/L←"%            22122000 T  0175:0
                                        END;%                                         22123000 T  0177:0
                    DIE:                SPOUT(AREA INX 0); SPACEA;                    22124000 T  0177:1
                                        LABELTABLE[U] ← @314;%                        22125000 T  0180:0
                                        GO TO EL;%                                    22126000 T  0181:1
                              END;%                                                   22127000 T  0181:3
                         IF T.[42:1] THEN%                                            22128000 T  0181:3
                              BEGIN;STREAM(T←TINU[U],AREA);%                          22129000 T  0182:2
                                        BEGIN SI ← LOC T; SI ← SI+5;%                 22130000 T  0184:2
                                             DS ← LIT "#"; DS ← 3 CHR;%               22131000 T  0185:0
                                             DS ← 15 LIT " TAPE MK, RW/L←";%          22132000 T  0185:3
                                        END;%                                         22133000 T  0188:0
                                        GO TO DIE;%                                   22134000 T  0188:1
                              END;%                                                   22135000 T  0188:3
                         STREAM(Y←0!AREA,X←[T]);%                                     22136000 T  0188:3
                              BEGIN DS ← 8 LIT " LABEL  ";%                           22137000 T  0190:2
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                    SI ← AREA; DI ← DI-8;%                                  22138000 T  0191:3
                    IF 8 SC = DC THEN TALLY ← 1;%                           22139000 T  0192:1
                    AREA ← TALLY;%                                          22140000 T  0193:0
                    SI ← SI+45; DI ← LOC Y; DS ← 5 OCT;%                    22141000 T  0193:1
                    SI ← LOC AREA; DI ← X; DS ← WDS;%                       22142000 T  0194:0
                END;%                                                       22143000 T  0194:3
            NT1 ← P;%                                                       22144000 T  0195:0
            IF T THEN PRNTABLE[U].[30:18]:=NT1 ELSE                         22145000 T  0195:2
                BEGIN STREAM(Y:=0:AREA,X:=[T]);                             22145050 T  0198:3
                    BEGIN DS:=4 LIT "VOL1";                                 22145100 T  0201:0
                        SI:=AREA; DI:=DI-4;                                 22145150 T  0201:3
                        IF 4 SC=DC THEN TALLY:=1;                           22145200 T  0202:1
                        AREA:=TALLY; SI:=SI+1;                              22145250 T  0203:0
                        DI:=LOC Y; DS:=5 OCT;                               22145300 T  0203:2
                        SI:=LOC AREA; DI:=X; DS:=WDS;                       22145350 T  0204:0
                    END;                                                    22145400 T  0204:3
                NT1:=P;                                                     22145450 T  0205:0
                IF T THEN BEGIN PRNTABLE[U].[30:18]:=NT1;                   22145500 T  0205:2
                        USASITAPE([AREA].[CF],T,1,U,1);                     22145550 T  0208:3
                        END;                                                22145600 T  0211:1
                END;                                                        22145650 T  0211:1
            IF NOT T1.[43:1] THEN%                                          22146000 T  0211:1
                BEGIN IF T THEN%                                            22147000 T  0212:1
                        BEGIN                                               22148000 T  0213:0
                            IF P(AREA[1],DUP)="PBTMCP " OR                  22156000 T  0213:2
                            P(XCH)="PUTMCP " THEN GO INPUT;                 22156100 T  0214:3
                            IF AREA[4].[12:30] > DATE THEN%                 22157000 T  0216:2
                            BEGIN IF RETMSG THEN                            22158000 T  0218:0
                                STREAM(T←TINU[U],A←[AREA[6]]);              22159000 T  0219:1
                                BEGIN SI←LOC T;SI←SI+5;DS←3 CHR;            22160000 T  0221:1
                                    DS←5 LIT " RET ";                       22161000 T  0222:0
                                END ELSE GO TO INPUT;                       22162000 T  0223:0
ACCEPT:                         T1 ← GETSPACE(4,0,0)+2;%                    22163000 T  0223:1
                                STREAM(A←[AREA[1]],T1);%                    22164000 T  0225:2
                                    BEGIN SI ← A; SI ← SI+40;%              22165000 T  0226:3
                                        DS ← LIT "#";%                      22166000 T  0227:1
                                        DS ← 8 CHR; SI ← A;%                22167000 T  0227:3
                                        2(DS ← LIT " ";%                    22168000 T  0228:1
                                        SI ← SI+1; DS ← 7 CHR);             22169000 T  0229:0
                                        DS ← LIT "←";%                      22170000 T  0229:3
                                    END;%                                   22171000 T  0230:1
                                SPOUT(T1);%                                 22172000 T  0230:2
                                GO TO INPUT;%                               22173000 T  0231:1
                            END ELSE%                                       22174000 T  0234:0
SCRATCH:                        LABELTABLE[U] ← 0;%                         22175000 T  0234:0
                        END ELSE GO TO UNLD;                                22176000 T  0235:3
                END%                                                        22177000 T  0235:3
            ELSE IF T THEN BEGIN%                                           22178000 T  0235:3
INPUT:      LABELTABLE[U] ← AREA[2];%                                       22179000 T  0237:0
            MULTITABLE[U] ← AREA[1];%                                       22180000 T  0238:2
            STREAM(A←[AREA[3]],B←[T]);%                                     22181000 T  0240:0
                BEGIN SI ← A; DS ← 3 OCT;%                                  22182000 T  0241:1
                    DS ← 5 OCT; DS ← 2 OCT%                                 22183000 T  0241:3
                END;%                                                       22184000 T  0242:1
            RDCTABLE[U] ← I&T1[24:31:17]&T[14:38:10];%                      22185000 T  0242:2
            IF (MULTITABLE[U]="PBTMCP " OR                                  22188000 T  0245:3
                MULTITABLE[U]="PUTMCP ") AND                                22188100 T  0246:3
                LABELTABLE[U] = "BACK-UP" THEN%                             22189000 T  0248:0
                BEGIN LABELTABLE[U] ← #322212342546447;%                    22190000 T  0249:1
                STREAM(A←TINU[U],PN←MULTITABLE[U]="PUTMCP ",                22191000 T  0251:0
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                                        AREA);                                          22191100 T  0252:3
                                          BEGIN SI ← LOC A; SI ← SI+5;%                 22192000 T  0253:2
                                                PN(DS←3 LIT"#CP"; JUMP OUT TO L);       22192100 T  0254:0
                                                DS←3 LIT"#LP"; L:                       22192200 T  0256:0
                                                DS←12 LIT" BACK-UP ON ";                22193000 T  0256:3
                                                DS ← 3 CHR; DS ← LIT "←";%              22194000 T  0258:2
                                          END;%                                         22195000 T  0259:1
                                    SPOUT(AREA INX 0); SPACEA;                          22196000 T  0259:2
                                    END;%                                               22197000 T  0262:0
                                 END ELSE%                                              22198000 T  0262:0
                          PAPER:%                                                       22199000 T  0262:0
                          UNLD:          LABELTABLE[U] ← @314;%                         22200000 T  0267:0
                               GO TO COMMON;%                                           22201000 T  0268:1
                          PRINTER:%                                                     22202000 T  0268:3
                               T ← WAITIO(@6000000000,4,U),[45:1];%                     22203000 T  0268:3
                               UNIT[U].[16:2] ← 0;%                                     22204000 T  0271:0
                               IF T THEN GO TO NOTREADY;%                               22205000 T  0273:2
                          TESTBACKUP:                                                   22205500 T  0274:2
                               IF AUTOPRINT THEN                                        22206000 T  0274:2
                                  IF PRINTORPUNCHWAIT(-U,0) THEN GO TO COMMON;          22207000 T  0275:1
                               GO TO SCRATCH;                                           22208000 T  0277:3
                          CARD:%                                                        22209000 T  0280:0
                               RRRMECH:=RRRMECH OR 1;                                   22209200 T  0280:0
                               IF CDONLY THEN                                           22209400 T  0281:1
                                 BEGIN                                                  22209500 T  0282:0
                                 AUTOLOADER;                                            22209600 T  0282:2
                                 GO TO COMMON;                                          22209700 T  0284:0
                                 END;                                                   22209800 T  0284:2
                               LABELTABLE[U]:=-@14;                                     22212200 T  0284:2
                               INDEPENDENTRUNNER(P(.CONTROLCARD),0&U[3:43:5],192);      22212400 T  0286:0
                               GO TO COMMON;%                                           22213000 T  0288:1
                          PUNCH:                                                        22213500 T  0288:3
                               STARTIO(U);                                              22213600 T  0288:3
                               IF UNIT[U].[15:3]=0 THEN GO TESTBACKUP ELSE GO TO SCRATCH; 22213700 T  0289:2
                          DRUM:%                                                        22214000 T  0292:0
                          DISC:                                                         22215000 T  0292:0
                          SPO:%                                                         22216000 T  0292:0
                          PAPERPUNCH:%                                                  22218000 T  0292:0
                          DATACOM:%                                                     22219000 T  0292:0
                               STARTIO(U);%                                             22220000 T  0292:0
                               GO TO SCRATCH;%                                          22221000 T  0292:3
                          COMMON:   END OF READY;%                                      22222000 T  0293:1
                          END;%                                                         22223000 T  0293:1
                     STATUSBIT ← TRUE;%                                                 22224000 T  0293:3
                     FORGETSPACE(AREA.[33:15]);%                                        22225000 T  0295:2
                     KILL([MSCW]);                                                      22226000 T  0297:0
                     END STATUS;%                                                       22227000 T  0297:3
                                                                                                SIZE= 0298 WORDS
               BOOLEAN PROCEDURE OLAY(LOC);   % MADE SAVE IN INITIALIZE                  22228000 T  0000:0
                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00635
                     VALUE LOC;  REAL LOC;%                                             22229000 T  0000:0
                     BEGIN REAL LINK, MOM, FRONT, BACK, CHAR, BS, STACK, S, SB,%        22230000 T  0000:0
                          T, X, DESC, DISK, IOD, MIX, JOBKILLED, MIXUP, SEGNO;%         22231000 T  0000:0
                          ARRAY NAME SEGDICT;%                                          22232000 T  0000:0
                          REAL RESULT=+1;%                                              22233000 T  0000:0
                          ARRAY SPRT[*];                                                22234000 T  0000:0
                          REAL CORE, CUED;  REAL INITCW=MIXUP;                          22235000 T  0000:0
                          REAL TYPE13, RSLT, NOAUX;                                     22235500 T  0000:0
                $ SET OMIT = NOT(NEWLOGGING)                                            22235599 T  0000:0
                $ SET OMIT = NOT(WORKSET)                                               22235610 T  0000:0
```

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LABEL EXIT; % ALL AVENUES MUST LEAD TO HERE                                22235700 T 0000:0
LABEL AROUND, CODE, BACKAGAIN, MCP, INTRINSIC;%                            22236000 T 0000:0
LABEL RETRY, AGAIN, FOG;                                                   22236100 T 0000:0
DEFINE TSKA = SPRT#;                                                       22236150 T 0000:0
BOOLEAN SUBROUTINE AWAKEN;%                                                22237000 T 0000:0
BEGIN COMMENT AWAKEN CHECKS TO SEE IF WE HAVE HALTED                       22238000 T 0001:0
     THE JOB ON PROCESSOR 2.  IF SO, IT RESTARTS THE                       22239000 T 0001:0
     TIMING FOR HIM, AND CALLS "HALT" TO CHECK INTERRUPTS;%                22240000 T 0001:0
     IF JOBKILLED THEN%                                                    22241000 T 0001:0
     BEGIN                                                                 22242000 T 0001:1
$ SET OMIT = NEWLOGGING                                                    22242099 T 0001:3
          STARTLOG(P2MIX,0);                                               22242100 T 0001:3
$ POP OMIT                                                                 22242101 T 0004:1
          JOBKILLED ← FALSE;  OLAY ← RESULT OR 2;%                         22243000 T 0004:1
          HALT;  NOPROCESSTOG ← NOPROCESSTOG-1;%                           22244000 T 0006:1
     END;%                                                                 22245000 T 0008:0
AWAKEN ← RESULT END;%                                                      22246000 T 0008:0
SUBROUTINE STOP;%                                                          22247000 T 0008:3
BEGIN COMMENT STOP HALTS THE JOB ON PROCESSOR 2, AND                       22248000 T 0009:0
     CLOCKS HIM OFF.  IT SETS JOBKILLED SO THAT AWAKEN                     22249000 T 0009:0
     CAN DO ITS DIRTY WORK BEFORE RETURNING;%                              22250000 T 0009:0
     JOBKILLED ← TRUE;  P(HP2);%                                           22251000 T 0009:0
     STOPLOG(P2MIX,0);                                                     22252000 T 0010:0
END STOPPER;%                                                              22253000 T 0012:2
SUBROUTINE CODEOVERLAY;%                                                   22254000 T 0012:3
BEGIN COMMENT CODEOVERLAY HANDLES ALL CASES OF MARKING                     22255000 T 0013:0
     A NORMAL-STATE SEGMENT AS NOT-PRESENT.  IT DOES THIS                  22256000 T 0013:0
     A SINGLE PRT AND STACK AT A TIME, AND IS ONLY CALLED                  22257000 T 0013:0
     REPEATEDLY FOR RE-ENTRANT CODE OR INTRINSICS;%                        22258000 T 0013:0
     IF CHAR THEN S ← M[SB ← M[S].[FF]].[FF] ELSE S ← S-1;%                22259000 T 0013:0
     SPRT ← PRT[MIX,10];%                                                  22260000 T 0019:3
     IF SPRT[X].[2:1] THEN BEGIN%                                          22261000 T 0021:1
% NEED TO DO PRT AND STACK SEARCH ONLY IF PRESENT IN THIS PRT              22262000 T 0022:3
          DO UNTIL (X ← (SPRT[X] ← (*P(DUP))&0[2:2:1]%                     22263000 T 0022:3
                    &(SPRT[X].[CF]-FRONT)[CTC]).[6:12])≥2^048;%            22264000 T 0024:0
AROUND:%                                                                   22265000 T 0029:0
          WHILE (STACK := HUNT(BS).[CF]) LSS S DO                          22266000 T 0029:0
          BEGIN CORE ← (DESC ← NFLAG(M[STACK])).[CF];%                     22267000 T 0031:2
               IF CORE ≥ FRONT AND CORE < BACK THEN                        22268000 T 0034:1
               IF DESC LSS 0 THEN%PROG. DESC OR RCW.                       22269000 T 0036:0
               IF DESC.[3:1] THEN%DESC                                     22270000 T 0037:1
               IF DESC.[2:1] THEN%PRESENT                                  22270050 T 0038:2
           IF DESC.[6:2]=1 THEN %TYPE 13 INTRINSIC DESC                    22270100 T 0039:3
              M[STACK]:=FLAG(DESC & 0[2:2:1]                               22270200 T 0041:2
                         & (MOM.[8:10])[CTC]) ELSE                         22270300 T 0043:1
% DESCRIPTOR -- INSERT OFFSET AND RESET P-BIT                              22271000 T 0045:3
                M[STACK] ← FLAG(DESC&0[2:2:1]%                             22272000 T 0045:3
                                  &(CORE-FRONT)[CTC])%                     22273000 T 0049:1
               ELSE                                                        22273100 T 0051:0
               ELSE BEGIN%                                                 22274000 T 0051:3
% CONTROL WORD (RCW) -- UNFLAG IN STACK, PUT OFFSET INTO                   22275000 T 0052:3
%     CORRESPONDING MSCW, AND MOM INTO RCW.[CF]                            22276000 T 0052:3
                    M[X ← DESC.[FF]] ←%                                    22277000 T 0052:3
                         (*P(DUP))&(CORE-FRONT)[CTC];%                     22278000 T 0054:2
                    M[STACK] ← DESC&SEGNO[CTC];%                           22279000 T 0056:2
               END;%                                                       22280000 T 0058:2
               BS ← STACK+1;%                                              22281000 T 0058:2
          END;%                                                            22282000 T 0059:3
          IF CHAR AND (STACK<SB) THEN%                                     22283000 T 0060:1
          BEGIN BS ← SB;  S ← HUNT(BS+1).[CF];  GO AROUND END;             22284000 T 0061:2
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                    IF P(SPRT[19],TOP) THEN P(DEL) ELSE                %DS   22284100 T 0065:1
                    BEGIN CORE:=POLISH,[CF];                           %DS   22284200 T 0066:3
                         IF CORE < FRONT OR CORE ≥ BACK THEN                 22284300 T 0068:1
                          ELSE SPRT[19]:=(*P(DUP))&0[2:2:1]            %DS   22284400 T 0070:0
                                        &(CORE-FRONT)[CTC];            %DS   22284500 T 0072:1
                    END;                                               %DS   22284600 T 0074:2
          $ SET OMIT = NOT(STATISTICS)                                       22284699 T 0074:2
                  END OF PRESENT IN PRT CASE;%                               22285000 T 0074:2
              END OF CODEOVERLAY;%                                           22286000 T 0074:2
        SUBROUTINE INT13;   %STACK SEARCH FOR TYPE 13 INTRINSIC CALLS        22286010 T 0074:3
              BEGIN CHAR:=P(PRT[MIX,8],DUP),[32:1];                          22286020 T 0075:0
                   S:=P INX 0; BS:=PRT[MIX,10],[FF];                         22286030 T 0077:1
              IF CHAR THEN S:=M[SB:=M[S],[FF]],[FF] ELSE S:=S-1;             22286040 T 0080:2
        AGAIN:    WHILE (STACK := HUNT(BS),[CF]) LSS S DO                    22286050 T 0087:1
                        BEGIN CORE:=(DESC:=NFLAG(M[STACK])),[CF];%           22286060 T 0089:3
                        IF CORE GEQ FRONT AND CORE LSS BACK THEN%            22286070 T 0092:2
                             IF DESC.[1:2] NEQ 0 THEN                        22286075 T 0094:1
                             IF DESC.[1:3]=7 THEN%                           22286080 T 0096:0
                              M[STACK]:=FLAG(DESC&0[2:2:1]&(MOM.[8:10])[CTC])  22286090 T 0097:3
                             ELSE                                            22286100 T 0101:0
                             BEGIN M[DESC.[FF]]:=(*P(DUP))&(CORE-FRONT)[CTC];  22286110 T 0102:0
                                  M[STACK]:=DESC&(MOM.[8:10])[CTC]&          22286120 T 0105:0
                                        1[33:47:1];                          22286130 T 0107:3
                             END;                                            22286140 T 0109:1
                        BS:=STACK+1;                                         22286150 T 0109:1
                        END;                                                 22286160 T 0110:2
                   IF CHAR AND (STACK LSS SB) THEN%                          22286170 T 0111:0
                   BEGIN BS:=SB; S:=HUNT(BS+1),[CF]; GO AGAIN; END;          22286180 T 0112:1
        END OF TYPE 13 INTRINSIC STACK SEARCH;                               22286190 T 0116:0
              COMMENT   OLAY HANDLES OVERLAYS.  THERE ARE 3 CLASSES          22287000 T 0116:1
                   OF THINGS WHICH MAY BE OVERLAID:                          22288000 T 0116:1
                   1)   OBJECT PROGRAM DATA SEGMENTS                         22289000 T 0116:1
                   2)   OBJECT PROGRAM CODE SEGMENTS                         22290000 T 0116:1
              AND  3)   MCP (NON-SAVE) PROCEDURES.                           22291000 T 0116:1
                   EACH OF THESE CLASSES GETS SPECIAL HANDLING.              22292000 T 0116:1
                   WHICH WILL BE DESCRIBED AS WE COME TO IT;                 22293000 T 0116:1
        % THIS CODE IS COMMON TO ALL CLASSES AND ALL CASES                   22294000 T 0116:1
      $ SET OMIT = NOT(NEWLOGGING)                                           22294099 T 0116:1
      $ SET OMIT = NOT(WORKSET)                                              22294110 T 0116:1
              LINK ← M[LOC];  MOM ← M[LOC+1];%                               22295000 T 0116:1
              FRONT := LOC + 2; BACK := LINK.[CF];                           22296000 T 0127:0
              IF (MIX ← LINK.[9:6])=0 THEN GO TO MCP;%                       22297000 T 0129:2
        % <MIX>=0 AND NON-SAVE MEANS MCP PROCEDURE OR INTRINSIC               22298000 T 0131:3
              IF MIX=P2MIX THEN STOP;%                                       22299000 T 0131:3
              CHAR ← (INITCW ← PRT[MIX,8]),[32:1];%                          22300000 T 0134:0
              S ← INITCW.[CF];  BS ← PRT[MIX,10].[FF];%                      22301000 T 0136:2
        % CHAR IS CWMF,  S IS TOP-OF-STACK,  BS IS BASE OF STACK             22302000 T 0140:0
              IF LINK.[3:6]=1 THEN GO TO CODE;%                              22303000 T 0140:0
        % TYPE=1 MEANS PROGRAM -- ONLY ALTERNATIVE IS DATA                   22304000 T 0141:3
              IF CHAR THEN%                                                  22305000 T 0141:3
        % SPECIAL CHECKS FOR ADDRESS SAVED IN CHARACTER MODE                 22306000 T 0142:0
              BEGIN CHAR:=(((T:=M[S-1],[CF]) ≥ FRONT AND T < BACK) OR        22307000 T 0142:0
        % M-REGISTER FROM ICW (SOURCE ADDRESS)                               22308000 T 0146:2
                   ((T:=M[S-2],[FF])≥ FRONT AND T < BACK));                  22309000 T 0146:2
        % S-REGISTER FROM ILCW (DESTINATION ADDRESS)                         22310000 T 0151:2
                   IF NOT CHAR THEN%                                         22311000 T 0151:2
                   BEGIN X ← M[S ← M[S].[FF]],[FF]+1];%                      22312000 T 0152:0
        % M[S].[FF] IS ADDRESS OF RCW,  M[RCW].[FF] IS ADDRESS OF MSCW        22313000 T 0157:1
                   DO CHAR ← ((T ← M[S ← S-1],[CF])≥FRONT                    22314000 T 0157:1
                        AND T < BACK) UNTIL (S ≤ X) OR CHAR;                 22315000 T 0160:1
```

```
% SEARCH THROUGH STREAM LOCALS AND PARAMETERS FOR ADDRESSES                22316000 T  0164:0
          S ← X;%                                                          22317000 T  0164:0
            END;%                                                          22318000 T  0164:3
        END;%                                                              22319000 T  0164:3
        IF CHAR THEN          %TELL BREAKOUT ABOUT IT                      22320000 T  0164:3
        BEGIN P(AWAKEN,SSN); GO EXIT;                                      22320100 T  0165:0
        END;                                                               22320200 T  0167:3
% CANNOT OVERLAY IF MAY BE ADDRESSES IN CHAR MODE STACK                    22321000 T  0167:3
        IOD←M[MOM].[8:10];                                                 22322000 T  0167:3
        IF (DISK:=MOM.[FF]) NEQ 0 THEN % OLAY ADDRESS PRESENT              22323000 T  0169:3
          BEGIN                                                            22323200 T  0171:2
$ SET OMIT = NOT(AUXMEM)                                                   22323400 T  0172:0
          MOM.[FF]:=0;                                                     22324800 T  0172:0
          END;                                                             22325000 T  0173:1
        IF DISK=0 THEN DISK:=DISKSPACE(IOD,MIX,NOAUX);                     22325200 T  0173:1
        IF DISK LSS 0 THEN        % NO OLAY DISK                           22325400 T  0176:1
        BEGIN P(AWAKEN); GO EXIT;                                          22325410 T  0177:0
        END;                                                               22325430 T  0179:2
$ SET OMIT = NOT(STATISTICS)                                               22325600 T  0179:2
        IF (S:=S-1) GTR MOM THEN IF MOM GTR BS THEN BS:=MOM+1;             22326400 T  0179:2
% IF MOTHER IS IN STACK, ONLY SEARCH ABOVE IT                              22326600 T  0184:1
        WHILE (STACK:=HUNT(BS).[CF]) LSS S DO                              22326800 T  0184:1
          BEGIN                                                            22327000 T  0186:3
          IF (DESC:=NFLAG(M[STACK])).[1:2]=1 THEN                          22327200 T  0186:3
% ONLY WORRY ABOUT DATA DESCRIPTORS WHICH ARE PRESENT                      22327400 T  0189:2
            IF DESC.[FF]=MOM THEN                                          22327600 T  0189:2
% THIS ONE DEMANDS ACTION -- IT POINTS INTO OUR ARRAY                      22327800 T  0191:1
              IF DESC.[8:10]=0 THEN                                        22328000 T  0191:1
% NAME DESCRIPTOR -- PUT IN OFFSET AND RESET P-BIT                         22328200 T  0193:0
                M[STACK]:=FLAG((DESC.[CF]-FRONT)&MOM[CTF])                 22328400 T  0193:0
              ELSE                                                         22328600 T  0195:3
% NORMAL ROW DESCRIPTOR -- ZERO CORE FIELD AND RESET P-BIT                 22328800 T  0196:3
                M[STACK]:=FLAG(0&DESC[8:8:25]);                            22329000 T  0196:3
            BS:=STACK+1;                                                   22329200 T  0200:0
          END;                                                             22329400 T  0201:1
        IF M[MOM].[3:3] NEQ 7 % NOT READ ONLY ALREADY WRITTEN              22329600 T  0201:3
$ SET OMIT = NOT(BREAKOUT)                                                 22329800 T  0203:2
        THEN                                                               22330400 T  0203:2
          BEGIN                                                            22330600 T  0203:3
$ SET OMIT = NOT(AUXMEM)                                                   22330800 T  0204:1
RETRY:    DISKIO(RSLT,FRONT-1,IOD&1[3:47:1],DATADDRESS(MIX,DISK));         22331400 T  0204:1
          % [3:1] IN SIZE MARKS I/O AS ORIGINATING FROM OLAY                22331600 T  0208:1
          M[MOM]:=(*P(DUP))&0[2:47:1]&5[CTC];                              22331800 T  0208:1
          P(AWAKEN,DEL);                                                   22332000 T  0211:2
          % CF=5 IN MOTHER IS INTERLOCK FOR MAKEPRESENT                     22332200 T  0213:1
          SNOOZE(0,[RSLT],IOMASK);                                         22332400 T  0213:1
          IF RSLT.[26:7] NEQ 0 THEN % I/O ERROR                            22332600 T  0214:2
            BEGIN                                                          22332800 T  0215:3
$ SET OMIT = NOT(AUXMEM)                                                   22333000 T  0216:1
            IF (DISK:=DISKSPACE(IOD,MIX,-0)) LSS 0 THEN                    22333800 T  0216:1
              BEGIN % NO OLAY DISK                                         22334000 T  0218:3
              M[MOM]:=(*P(DUP))&6[CTC];        % TERMINATE MARKER           22334200 T  0219:1
              GO TO FOG;                                                   22334400 T  0221:2
              END;                                                         22334600 T  0222:0
            GO TO RETRY; % TRY AGAIN WITH ANOTHER ADDRESS                  22334800 T  0222:0
            END; % IF I/O ERROR                                            22335000 T  0222:2
          M[MOM]:=(*P(DUP))&DISK[CTC]; % PUT DISK ADDRESS IN MOTHER         22335200 T  0222:2
          END % IF READ ONLY, NOT YET WRITTEN                              22335400 T  0224:3
        ELSE                                                               22335600 T  0224:3
          BEGIN                                                            22335800 T  0224:3
```

```
                M[MOM]:=(*P(DUP))&0[2:47:1]&DISK[CTC];                    22336000 T  0225:1
                P(AWAKEN,DEL);                                            22336200 T  0228:2
                END;                                                      22336400 T  0230:1
            IF M[MOM].[3:3]=6 THEN M[MOM].[5:1]←1;                        22349100 T  0230:1
FOG:        FORGETSPACE(FRONT);                                           22350000 T  0235:2
            P(TRUE); GO EXIT;                                             22351000 T  0236:1
        CODE:%                                                            22352000 T  0237:0
        % OBJECT PROGRAM CODE TO BE OVERLAID                              22353000 T  0237:0
            IF (T ← M[S].[CF])≥FRONT AND T≤BACK THEN%                     22354000 T  0237:0
        % CANNOT OVERLAY NORMAL STATE SEGMENT HE WILL RETURN TO           22355000 T  0240:2
            BEGIN P(AWAKEN); GO EXIT;                                     22356000 T  0240:2
            END;                                                          22356020 T  0242:2
            IF SOFTI>0 THEN                                               22356100 T  0242:2
            IF JAR[MIX,2].[5:1] THEN        % SOFTWARE INTERRUPTS         22356140 T  0243:1
              IF (TSKA ← PRT[MIX,TSX]).PBIT THEN                          22356150 T  0245:1
                IF (T ← TSKA[8].[FF])≠0 THEN                              22356200 T  0247:3
                    IF (T←M[T].[CF])≥FRONT AND T≤BACK THEN                22356300 T  0250:2
                    BEGIN P(AWAKEN); GO EXIT;                             22356400 T  0254:2
                    END;                                                  22356420 T  0256:2
            IF (MIXUP ← (SEGDICT ← PRT[MIX,4]).[FF])≠0 THEN%              22357000 T  0256:2
        % RE-ENTRANT CODE TO BE OVERLAID -- CHECK OTHER USERS, TOO        22358000 T  0259:3
            BEGIN MIXUP ← MIXUP.[39:6];%                                  22359000 T  0259:3
                DO BEGIN%                                                 22360000 T  0261:2
                    IF MIXUP=P2MIX THEN STOP;%                            22361000 T  0261:2
        % STOP OTHER USER OF THIS CODE IF RUNNING ON PROCESSOR 2          22362000 T  0264:0
                    IF (T ← M[PRT[MIXUP,8]].[CF])≥FRONT AND T≤BACK%       22363000 T  0264:0
                    THEN BEGIN P(AWAKEN); GO EXIT;                        22364000 T  0267:2
                        END;                                              22364100 T  0270:2
        % SAME CRITERIA APPLY TO ALL USERS OF THIS CODE                   22365000 T  0270:2
                    IF SOFTI>0 THEN                                       22365100 T  0270:2
                    IF JAR[MIXUP,2].[5:1] THEN      % SOFTWARE INTERRUPTS  22365140 T  0271:1
                      IF (TSKA ← PRT[MIXUP,@26]).PBIT THEN                22365150 T  0273:1
                        IF (T ← TSKA[8].[FF])≠0 THEN                      22365200 T  0275:3
                            IF (T←M[T].[CF])≥FRONT AND T≤BACK THEN        22365300 T  0278:2
                            BEGIN P(AWAKEN); GO EXIT;                     22365400 T  0282:2
                            END;                                          22365420 T  0284:2
                END UNTIL (MIXUP ← PRT[MIXUP,4].[24:6])=@77;%             22366000 T  0284:2
        % CHECK ALL USERS ON MIX-INDEX LINKED LIST                        22367000 T  0287:2
            END;%                                                         22368000 T  0287:2
        % IF WE REACH THIS POINT, WE CAN AND WILL OVERLAY THE AREA        22369000 T  0287:2
    $ SET OMIT = NOT(AUXMEM)                                              22369999 T  0287:2
        BACKAGAIN::                                                       22371200 T  0287:2
    $ SET OMIT = AUXMEM                                                   22371210 T  0287:2
        X←SEGDICT[SEGNO←MOM].[8:10];CODEOVERLAY;                          22371220 T  0287:2
    $ POP OMIT                                                            22371221 T  0292:0
    $ SET OMIT = NOT(AUXMEM)                                              22371299 T  0292:0
            IF MIXUP THEN%                                                22372000 T  0292:0
        % RE-ENTRANT CODE BEING OVERLAID -- MUST FIX ALL STACKS AND PRTS  22373000 T  0292:1
            IF (MIX ← PRT[MIX,4].[24:6])≠@77 THEN%                        22374000 T  0292:1
        % SET UP CHAR, S, AND BS FOR NEXT USERS STACK                     22375000 T  0295:1
            BEGIN CHAR ← (S ← PRT[MIX,8]).[32:1];%                        22376000 T  0295:1
                S ← S INX 0; BS ← PRT[MIX,10].[FF];%                      22377000 T  0298:1
        % GO DO STACK SEARCH AND PRT FIX-UP FOR ANOTHER USER              22378000 T  0301:3
                GO TO BACKAGAIN;%                                         22379000 T  0301:3
            END;%                                                         22380000 T  0302:1
    $ SET OMIT = NOT(AUXMEM)                                              22380049 T  0302:1
    $ SET OMIT = AUXMEM                                                   22383049 T  0302:1
            SEGDICT[MOM]←(*P(DUP))&MOM[FTF];%                             22383050 T  0302:1
            FORGETSPACE(FRONT); P(AWAKEN,DEL,TRUE); GO EXIT;              22383100 T  0304:2
    $ POP OMIT                                                            22383101 T  0307:0
```

```
% NOW WAS THAT NOT TRIVIALITY PERSONIFIED...                                22384000 T  0307:0
McP:%                                                                       22385000 T  0307:0
     IF P(LINK.[3:6],DUP)=7 OR P(XCH)=13 THEN GO TO INTRINSIC;              22386000 T  0307:0
     X ← -2;  BS ← (P(0,RDF)).[FF];%                                        22387000 T  0310:1
% SET BS TO POINT AT RCW FOR CALL ON OLAY                                   22388000 T  0313:0
     DO BEGIN%                                                              22389000 T  0313:0
          OLAY ← NOT(S ← ((CORE ← (T ← M[BS]).[CF])≤BACK                    22390000 T  0313:0
                    AND CORE≥FRONT));%                                      22391000 T  0315:2
% S IS TRUE IF THE RCW POINTS TO THE ROUTINE TO BE OVERLAID                 22392000 T  0318:1
          BS ← T.[FF];%                                                     22393000 T  0318:1
% POINT T TO CORRESPONDING MSCW                                             22394000 T  0319:2
          WHILE (T ← M[BS]).[16:1] DO BS ← T.[FF];%                         22395000 T  0319:2
% RUN DOWN STACK OF MSCWS UNTIL NOT MSFF                                    22396000 T  0323:3
          IF (BS ← T.[FF])≤64 THEN                                          22397000 T  0323:3
% END OF STACK -- THIS IS RATIONALE FOR OBSCURE USE OF "P(0,STF)"           22398000 T  0325:2
               BS ← BED[X ← X+2].[FF];%                                     22399000 T  0325:2
     END UNTIL (X>JOBNUM) OR S;%                                            22400000 T  0328:3
     IF RESULT THEN%                                                        22401000 T  0330:2
     BEGIN M[MOM] ← (*P(DUP))&(*P(.ESPBIT))[CTC];%                          22402000 T  0330:3
          FORGETSPACE(FRONT);%                                              22403000 T  0333:3
     END;%                                                                  22404000 T  0334:2
     P(RESULT AND 1); GO EXIT;                                              22405000 T  0334:2
INTRINSIC:%                                                                 22406000 T  0335:3
     FOR MIX←1 STEP 1 UNTIL MIXMAX DO%                                      22407000 T  0335:3
     IF INTABLEROW[MIX]≠0 THEN%                                             22408000 T  0337:0
     BEGIN IF MIX=P2MIX THEN STOP;%                                         22409000 T  0338:0
          IF (T ← M[PRT[MIX,8]].[CF])≥FRONT AND T≤BACK%                     22410000 T  0341:0
          THEN BEGIN P(AWAKEN); GO EXIT;                                    22411000 T  0344:2
               END;                                                         22411020 T  0347:2
     END;%                                                                  22412000 T  0347:2
     FOR MIX←1 STEP 1 UNTIL MIXMAX DO%                                      22413000 T  0349:3
     IF INTABLEROW[MIX]≠0 THEN                                              22413010 T  0351:0
     BEGIN SEGNO ← MOM.[8:10]-1;%                                           22415000 T  0352:0
          STREAM(A ← SEGNO AND 3: T ← [INTABLE[MIX,SEGNO DIV 4]]);          22416000 T  0354:1
          BEGIN SI ← T;  SI ← SI+A;  SI ← SI+A;  DI ← LOC A;%               22417000 T  0357:1
               DI ← DI+6;  DS ← 2 CHR;  END STREAMING;%                     22418000 T  0358:3
          IF (SEGNO ← POLISH)≠0 THEN%                                       22419000 T  0359:2
          IF SEGNO = @2000 THEN INT13 ELSE                                  22419500 T  0360:2
          BEGIN CHAR ← P(PRT[MIX,8], DUP).[32:1];%                          22420000 T  0363:0
               TYPE13:=SEGNO.[37:1];                                        22420200 T  0367:1
               SEGNO:=SEGNO AND @1777; %IGNORE TYPE 13 BIT                  22420500 T  0368:2
               S ← POLISH INX 0;  BS ← PRT[MIX,10].[FF];%                   22421000 T  0369:3
               SEGDICT ← PRT[MIX,4];%                                       22422000 T  0373:0
               X:=SEGDICT[SEGNO].[8:10];                                    22423000 T  0374:2
               IF TYPE13 AND NOT PRT[MIX,X].[2:1] THEN                      22423100 T  0376:2
% TYPE 13 REFERENCE ALSO EXISTS AND TYPE 7 REFERENCE IS NOT PRESENT         22423200 T  0378:3
                    INT13 ELSE                                              22423300 T  0378:3
               BEGIN                                                        22423400 T  0380:0
               CODEOVERLAY;                                                 22423500 T  0380:2
               SEGDICT[SEGNO] ← (*P(DUP))&MOM[FTF];%                        22424000 T  0382:0
               END;                                                         22424500 T  0384:1
          END;%                                                             22425000 T  0384:1
     END;%                                                                  22426000 T  0384:1
     INTRNSC[MOM.[8:10]] ← (*P(DUP))&MOM[FTC];%                             22427000 T  0386:2
     FORGETSPACE(FRONT);%                                                   22428000 T  0389:0
     P(AWAKEN,DEL,TRUE);                                                    22429000 T  0389:3
EXIT:                                                                       22429100 T  0391:2
 $ SET OMIT = NOT(NEWLOGGING)                                               22429199 T  0391:2
 $ SET OMIT = NOT(WORKSET)                                                  22429210 T  0391:2
     P(RTN);                                                                22429300 T  0391:2
```

```
END OF OVERLAY;%     REVISION OF MAY 31, 1967...                                22430000 T  0391:3
                                                                                       SIZE= 0393 WORDS
PROCEDURE CHANGEABORT(X);  VALUE X;  REAL X;%                                   22900000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00649
BEGIN ARRAY A[*], B[*];%                                                        22901000 T  0000:0
     REAL J, T;%                                                                22902000 T  0000:0
                                                                                22903000 T  0000:0
     A←[M[SPACE(210)]]&210[8:38:10];                                            22904000 T  0000:0
     SLEEP([TOGLE], ABORTMASK);%                                                22905000 T  0004:3
     LOCKTOG(ABORTMASK);                                                        22906000 T  0006:1
     DISKWAIT(-A,[CF],210,ESPDISKTOP+1);                                        22907000 T  0009:3
     WHILE (A[0]:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;                  22909000 T  0012:2
     A[1] ← DATE;%                                                              22910000 T  0020:2
     J ← 3×P1MIX;%                                                              22911000 T  0021:3
     A[J] ← A[J+1] ← A[J+2] ← 0;%                                               22912000 T  0023:0
     B←JARROW[P1MIX];   %CANT WATCH JAR AND LOSE CONTROL, TOO.                  22913000 T  0027:1
     A[J+90] ← B[0];                                                            22914000 T  0028:1
     A[J+91] ← B[1];                                                            22915000 T  0030:1
     A[J+92] ← X&B[5][1:25:23];                                                 22916000 T  0032:1
     A[180+P1MIX]←USERCODE[P1MIX];                                              22917000 T  0035:1
     DISKWAIT(A,[CF],210,ESPDISKTOP+1);                                         22918000 T  0037:1
     UNLOCKTOG(ABORTMASK);                                                      22920000 T  0039:3
     FORGETSPACE(A);%                                                           22921000 T  0043:1
END;%                                                                           22922000 T  0044:1
                                                                                       SIZE= 0045 WORDS
 $ SET OMIT = NOT(DATACOM )                                                     22999999 T  0000:0
REAL SPACESTACK;                                                                23500000 T  0000:0
 SAVE PROCEDURE FORGETSPACE(LOC);%                                              24000000 T  0000:0
                                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00613
                    VALUE LOC;%                                                 24001000 T  0000:0
                    REAL LOC;%                                                  24002000 T  0000:0
BEGIN%                                                                          24003000 T  0000:0
     REAL B,BACK,F,FRONT,LINK,X,T,SIZE;%                                        24004000 T  0000:0
     LOC ← *P(.LOC) INX 0 -2;%                                                  24005000 T  0000:0
     IF (B← M[BACK← (LINK← M[LOC]).[FF]]).[CF]≠LOC OR                           24006000 T  0004:0
          (F←M[FRONT←LINK.[CF]]).[FF]≠LOC OR LINK<0 THEN                        24007000 T  0009:0
               PUNT(3);              % INVALID LINK                             24007100 T  0014:0
     IF F<0 THEN                                                                24007200 T  0015:1
               BEGIN%                                                           24008000 T  0016:0
                M[LOC]←LINK &F[CTC];%                                           24009000 T  0016:2
                M[F]←M[F] & LOC[CTF];%                                          24010000 T  0018:2
                M[T←M[FRONT+2]]←M[T] &(X←M[FRONT+1])[CTC];%                     24011000 T  0021:1
                M[X+1]←T%                                                       24012000 T  0027:2
               END;%                                                            24013000 T  0028:3
     IF B<0%                                                                    24014000 T  0029:2
          THEN%                                                                 24015000 T  0030:0
               BEGIN%                                                           24016000 T  0030:1
                M[BACK]←B&(T←M[LOC].[CF])[CTC];%                                24017000 T  0030:3
                M[T]←M[T]& BACK[CTF];%                                          24018000 T  0034:2
                M[BACK+1]←M[BACK+1]&(SIZE←T-BACK-2)[CTF];%                      24019000 T  0037:1
               END%                                                             24020000 T  0042:2
          ELSE   %BACK IN USE                                                   24021000 T  0042:2
               BEGIN%                                                           24022000 T  0042:2
                M[LOC+2]←AVAIL;%                                                24023000 T  0043:0
                M[LOC+1]←(T←M[AVAIL]) &(SIZE←M[LOC].[CF ]-LOC-2)[CTF            24024000 T  0045:0
                ];%                                                             24025000 T  0050:3
                M[T+1]←LOC+1;%                                                  24026000 T  0051:2
                M[AVAIL]←T &(LOC+1)[CTC]%                                       24027000 T  0054:0
               ; M[LOC]←-M[LOC]%                                                24028000 T  0055:3
               END;%                                                            24029000 T  0057:2
```

```
    IF LOC≤LEFTOFF THEN IF M[LOC].[CF]>LEFTOFF THEN LEFTOFF←M[LOC].[FF];        24030000 T  0059:0
$ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                        24030100 T  0063:0
    END FORGETSPACE;%                                                           24031000 T  0063:0
                                                                                         SIZE= 0066 WORDS
SAVE INTEGER PROCEDURE ACTSPACE(SIZE,SAVEF);                                    24032050 T  0000:0
                                                                     START OF SAVE SEGMENT; BASE ADDRESS = 00679
  VALUE SIZE,SAVEF; REAL SIZE; BOOLEAN SAVEF;                                   24032100 T  0000:0
  BEGIN REAL LINK,LOC,X,Y,T;                                                    24032200 T  0000:0
$ SET OMIT = NOT(STATISTICS)                                                    24032300 T  0000:0
      REAL SIZEF,LOS;                                                           24032700 T  0000:0
      LABEL SVSEARCH,ROCKABYE,START,OVSEARCH,OVERLAY,XX;                        24032800 T  0000:0
      IF SAVEF THEN%  ATTEMPT TO ALLOCATE AT START OF MEMORY                    24032900 T  0000:0
      BEGIN LINK ← MSTART;%                                                     24033000 T  0002:1
SVSEARCH:%                                                                      24033100 T  0003:2
            IF (LOC ← LINK.[CF])=0 THEN GO TO ROCKABYE;                         24033200 T  0003:2
            IF (LINK ← M[LOC])≥0 THEN%                                          24033300 T  0005:3
            BEGIN IF NOT LINK.[2:1] THEN%                                       24033400 T  0007:3
                  BEGIN  % OVRLAY ONLY IF POTENTIAL SPACE ADEQUATE              24033500 T  0009:1
                        SIZEF ← -2; X ← T ← LOC;                                24033600 T  0009:3
                        IF (Y←LINK.[FF]) ≠ 0 THEN                               24033700 T  0012:0
                          IF M[Y] < 0 THEN SIZEF←M[(T+Y)+1].[FF];               24033800 T  0013:3
                        WHILE SIZE>SIZEF AND (Y←M[X]).[1:2]≠1 DO                24033900 T  0019:2
                        SIZEF ← SIZEF - X + (X ← Y.[CF]);                       24034000 T  0023:2
                        IF SIZE > SIZEF THEN                                    24034100 T  0026:3
                        BEGIN LINK ← Y;  GO SVSEARCH; END;                      24034200 T  0027:2
                        IF OLAY(LOC) THEN % RE-SET "LINK"                       24034300 T  0029:1
                          IF (Y←M[LINK+T])>0 OR Y.[CF]=LOC                      24034400 T  0030:0
                          OR M[Y].[FF]≠LINK THEN                                24034500 T  0033:3
                           % MEM LINK AT "T" NO LONGER VALID                    24034600 T  0037:0
                          LINK ← MSTART;%                                       24034700 T  0037:0
                      END;%                                                     24034800 T  0038:1
                      GO TO SVSEARCH;%                                          24034900 T  0038:1
                END;%                                                           24035000 T  0038:3
                IF (SIZEF ← M[T+LOC+1].[FF])<SIZE THEN GO SVSEARCH;%            24035100 T  0038:3
                M[ACTSPACE:=LOC]:=ABS(LINK&1[2:47:1]);                          24035200 T  0043:0
                LINK ← M[T];    M[LINK+1] ← Y ← M[T+1];%                        24035300 T  0046:1
                M[Y] ← (*P(DUP))&LINK[CTC];%                                    24035400 T  0051:2
                IF SIZEF>SIZE+DELTA THEN%                                       24035500 T  0053:3
                BEGIN M[LOC] ← (X ← *P(DUP))&(Y ← LOC+SIZE+2)[CTC];%            24035600 T  0055:0
                      M[X] ← (*P(DUP))&Y[CTF];%                                 24035700 T  0059:3
                      M[Y] ← X.[CF]&LOC[CTF];%                                  24035800 T  0062:0
                      FORGETSPACE(Y+2);%                                        24035900 T  0064:2
                END;%                                                           24036000 T  0065:3
            END ELSE                                                            24036100 T  0065:3
            BEGIN% ALLOCATE ON "SPACE AVAILABLE" BASIS                          24036150 T  0065:3
START:%                                                                         24036200 T  0066:1
                IF (LINK ← POLISH(M[AVAIL], 0, SIZE, CFX, LLL,%                 24036300 T  0066:1
                  0, INX, ,T, STD)).[FF]=@77777 THEN%                           24036400 T  0068:1
                BEGIN%                                                          24036500 T  0071:0
OVSEARCH:%                                                                      24036600 T  0071:2
                      IF (LINK:=M[LEFTOFF]).[1:2] = 0 THEN                      24036700 T  0071:2
                      BEGIN% OVERLAY ONLY IF POTENTIAL SPACE ADEQUATE           24036800 T  0074:0
                            SIZEF:=-2; X:=LEFTOFF;                              24036900 T  0074:2
                            IF (Y:=LINK.[CF]) ≠ 0 THEN                          24037000 T  0076:1
                                IF M[Y] < 0 THEN SIZEF ← M[Y+1].[FF];           24037100 T  0078:0
                            WHILE SIZE > SIZEF AND (Y←M[X]).[1:2]≠1 DO          24037200 T  0083:1
                            BEGIN SIZEF←SIZEF+Y.[CF]-X; X←Y.[FF] END;           24037300 T  0087:1
                            IF SIZE > SIZEF THEN                                24037400 T  0093:0
                            BEGIN LEFTOFF ← Y.[FF];                             24037500 T  0093:3
                            IF LEFTOFF=0 OR X=0 THEN GO TO XX                   24037600 T  0095:2
```

```
                                ELSE GO TO OVSEARCH END;                                24037700 T  0097:1
OVERLAY:%                       OVERLAY ATTEMPTED CYCLICALLY, USING LEFTOFF             24037800 T  0098:1
                                IF (IF P1MIX=0 THEN 1 ELSE                              24037900 T  0098:1
                                     IF (X:=LINK.[9:6])≠P1MIX THEN 1 ELSE               24038000 T  0100:1
                                     ((TWO(X) AND OLAYMASK)≠0)) THEN                    24038100 T  0103:1
                                     IF OLAY(LEFTOFF) THEN GO TO START;                 24038200 T  0105:0
                            END;%                                                       24038300 T  0107:0
                            IF (LEFTOFF+LINK.[FF])=0 THEN                               24038400 T  0107:0
XX:                         IF LOS THEN GO TO ROCKABYE ELSE LOS+1;                      24038500 T  0108:3
                            GO TO OVSEARCH;                                             24038600 T  0111:0
                       END;%                                                            24038700 T  0111:2
                       IF (SIZEF + LINK.[FF])>SIZE+DELTA THEN%                          24038800 T  0111:2
                       BEGIN M[T] + LINK&(X + SIZEF-SIZE-2)[CTF];%                      24038900 T  0113:3
                            LOC + T+X+1;%                                               24039000 T  0117:3
                            X + (Y + M[T-1])&(T-1)[CTF];%                               24039100 T  0119:2
                            M[Y] + (*P(DUP))&LOC[CTF];%                                 24039200 T  0123:0
                            M[T-1] + Y&LOC[CTC];%                                       24039300 T  0125:1
                       END ELSE                                                         24039400 T  0127:3
                       BEGIN                                                            24039450 T  0127:3
                            M[LINK+1] + Y + M[T+1];%                                    24039500 T  0128:1
                            M[Y] + (*P(DUP))&LINK[CTC];%                                24039600 T  0132:0
                            X + M[LOC + T-1];%                                          24039700 T  0134:1
                       END;%                                                            24039800 T  0136:3
                       M[ACTSPACE:=LOC]:=ABS(X&1[2:47:1]);                              24039900 T  0136:3
                  END;%                                                                 24040000 T  0140:0
            $ SET OMIT = NOT(STATISTICS)                                                24040100 T  0140:0
                       M[LOC+1]:=0;                                                     24041900 T  0140:0
ROCKABYE:                                                                               24042000 T  0142:0
  END ACTSPACE;                                                                         24042100 T  0142:0
                                                                                                SIZE= 0143 WORDS
SAVE INTEGER PROCEDURE GETSPACE(SIZE,TYPE,SAVEF);                                       24042200 T  0000:0
                                                                          START OF SAVE SEGMENT; BASE ADDRESS = 00822
  VALUE SIZE,TYPE,SAVEF;                                                                24042300 T  0000:0
  REAL SIZE,TYPE; BOOLEAN SAVEF;                                                        24042400 T  0000:0
  BEGIN                                                                                 24042500 T  0000:0
        REAL COUNT,T,MESS;                                                              24042550 T  0000:0
        LABEL NEWSTART;                                                                 24042600 T  0000:0
        SUBROUTINE TELLSPO;                                                             24042625 T  0000:0
        BEGIN P(MESS≠0);                                                                24042650 T  0001:0
             IF (MESS:=GETSPACE(3,2,0)+2)=2 THEN PUNT(3);                               24042675 T  0001:3
             STREAM(X:=P: P1MIX, SIZE, MESS);                                           24042700 T  0005:3
             BEGIN SI:=LOC P1MIX; DS:=2 DEC;                                            24042725 T  0007:1
                  DS:=8 LIT" NO MEM ";                                                  24042750 T  0007:3
                  DS:=5 DEC; DS:=5 LIT" WDS←";                                          24042775 T  0009:0
                  X(DI:=DI-17; DS:=2 LIT"OK");                                          24042800 T  0010:1
             END;                                                                       24042825 T  0011:3
             P(DEL);                                                                    24042850 T  0012:0
             IOREQUEST(MESS&@274[1:40:8], P(DUP),                                       24042875 T  0012:1
               [17]&@231[10:40:8]);                                                     24042900 T  0014:0
        END OF TELLING SPO ABOUT NO MEMS;                                               24042925 T  0015:2
NEWSTART:                                                                               24042950 T  0015:3
        IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);                                   24043000 T  0017:0
        LOCKTOG(STOREMASK);                                                             24043100 T  0020:0
  $ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                              24043200 T  0023:2
        P(SPACESTACK,STS);                                                              24043500 T  0023:2
        T:=ACTSPACE(SIZE,SAVEF);                                                        24043600 T  0024:1
        P([MESS],STS);                                                                  24043700 T  0025:3
        UNLOCKTOG(STOREMASK);                                                           24043800 T  0026:2
        IF T=0 THEN                                                                     24043900 T  0030:0
             BEGIN%                                                                     24044000 T  0030:3
```

```
                    IF SAVEF.[46:1] THEN P(0,RTN);                          24044100 T  0031:1
                    NOMEM←NOMEM+1;                                          24044200 T  0033:0
                    TAR[P1MIX].[20:1]:=1;                                   24044250 T  0035:3
                    IF (COUNT←COUNT+1)>5 THEN                               24044300 T  0038:1
                      IF MESS=0 THEN TELLSPO;                               24044400 T  0040:0
                    SLEEP([CLOCK], NOT CLOCK);%                             24045100 T  0043:0
                    NOMEM←NOMEM-1;                                          24045200 T  0044:3
                    TAR[P1MIX].[20:1]:=0;                                   24045250 T  0047:2
                    GO TO NEWSTART;%                                        24045300 T  0050:0
                END;%                                                       24045400 T  0050:2
            M[GETSPACE:=T]:=(←P(DUP))&TYPE[3:42:6]&P1MIX[9:42:6];           24045500 T  0050:2
            IF MESS≠0 THEN TELLSPO;                                         24045600 T  0054:3
        END GETSPACE;                                                       24046200 T  0057:0
                                                                                   SIZE= 0058 WORDS
    SAVE INTEGER PROCEDURE DISKSPACE(WORDS,MIX,AUX);                        24101000 T  0000:0
                                                                 START OF SAVE SEGMENT; BASE ADDRESS = 00880
    VALUE WORDS,MIX,AUX;                                                    24102000 T  0000:0
    INTEGER WORDS,MIX; REAL AUX;                                            24103000 T  0000:0
       BEGIN ARRAY LOC=+2[*];                                               24104000 T  0000:0
            INTEGER   INDEX=NT1,                                            24105000 T  0000:0
                      SEG  =NT2,                                            24106000 T  0000:0
                      CNTRS=NT3,                                            24107000 T  0000:0
                      SIZE =NT4,                                            24108000 T  0000:0
                      LIMIT=NT5;                                            24109000 T  0000:0
            REAL      T    =NT6;                                            24110000 T  0000:0
            LABEL     L1,                                                   24111000 T  0000:0
                      FINAL,                                                24112000 T  0000:0
                      BADEXIT,                                              24112500 T  0000:0
                      EXIT;                                                 24113000 T  0000:0
            DEFINE    HEURISTIC = 2#;                                       24114000 T  0000:0
            REAL SUBROUTINE FINDSEG;                                        24115000 T  0000:0
            BEGIN;  STREAM(A←0:T);                                          24116000 T  0001:0
                      BEGIN SI←LOC T;  SI←SI+3;                             24117000 T  0002:1
                          5(IF SC="0" THEN JUMP OUT TO L;                   24118000 T  0002:3
                            SI←SI+1;  TALLY←TALLY+1);                       24119000 T  0004:0
                      L:   A←TALLY;                                         24120000 T  0004:3
                      END STREAM;                                           24121000 T  0005:0
                FINDSEG ← POLISH                                            24122000 T  0005:1
            END FINDSEG;                                                    24123000 T  0005:1
            SUBROUTINE FIND;                                                24124000 T  0005:3
            BEGIN POLISH(0);                                                24125000 T  0006:0
                T ← LOC[INDEX];                                             24126000 T  0006:1
                SEG ← T.[9:3];                                              24127000 T  0007:1
                CNTRS ← T.[2:7];                                            24128000 T  0008:2
                IF SEG>4 THEN                                               24129000 T  0009:3
L1:               IF (SEG + FINDSEG)=5 THEN GO TO FINAL                     24130000 T  0010:2
                ELSE CNTRS ←0;                                              24131000 T  0013:0
                IF SIZE+CNTRS>100 THEN GO TO L1;                            24132000 T  0014:1
                P(DEL,(INDEX×256)+SEG×100+CNTRS);                           24133000 T  0016:0
                STREAM(A←0:SEG,T←[T]);                                      24134000 T  0018:2
                BEGIN SI←T;  SI←SI+3;  SI←SI+SEG;                           24135000 T  0020:0
                      DI←LOC A;  DI←DI+7;  SEG←DI;                          24136000 T  0021:0
                      T←SI;  DS←CHR;  TALLY←A;                              24137000 T  0021:3
                      TALLY←TALLY+1;  A←TALLY;                              24138000 T  0023:0
                      SI←SEG;  DI←T;  DS←CHR;                               24139000 T  0023:2
            L5:;                                                            24139500 T  0024:1
                END STREAM;                                                 24140000 T  0024:1
                IF (POLISH=63) OR (CNTRS + CNTRS+SIZE)=100 THEN             24141000 T  0024:2
                BEGIN CNTRS ← 0;  SEG ← FINDSEG END;                        24142000 T  0027:0
                LOC[INDEX] ← T&SEG[9:45:3]&CNTRS[2:41:7];                   24143000 T  0029:2
```

```
FINAL:     IF (DISKSPACE ← POLISH)≠0 THEN                                  24144000 T  0032:3
           BEGIN IF SEG=5 THEN INDEX ← 0;                                  24145000 T  0033:3
                 LOC[0] ← LIMIT&INDEX[CTF];                                24146000 T  0036:1
                 GO TO EXIT;                                               24147000 T  0038:0
       END  END FIND;                                                      24148000 T  0038:2
$ SET OMIT = NOT(AUXMEM)                                                   24148999 T  0038:3
       P(DALOCROW[MIX]);                                                   24150000 T  0038:3
       SIZE ← (WORDS+29) DIV 30;                                           24151000 T  0039:3
       IF (LIMIT := LOC[0].[CF])=0 THEN GO TO BADEXIT;                     24152000 T  0041:2
       IF (INDEX ← LOC[0].[FF])≠0 THEN FIND;                               24153000 T  0044:0
       INDEX ← 2;                                                          24154000 T  0048:0
       DO FIND UNTIL (INDEX := INDEX+2)>LIMIT;                             24155000 T  0048:3
   BADEXIT:                                                                24155500 T  0052:1
       DISKSPACE ← -1;                                                     24156000 T  0052:1
   EXIT:                                                                   24157000 T  0053:1
$ SET OMIT = NOT(STATISTICS)                                               24157199 T  0053:1
       STREAM(A←0:L←LIMIT.[41:6],T←[LOC[1]]);                              24158000 T  0053:1
       BEGIN SI←T;  DI←A;                                                  24159000 T  0055:2
             L(SI←SI+11;                                                   24160000 T  0056:0
               5(IF SC="0" THEN DI←DI+8;  SI←SI+1));                       24161000 T  0056:3
             A←DI;                                                         24162000 T  0058:2
       END STREAM;                                                         24163000 T  0058:3
       IF (POLISH<HEURISTIC) THEN                                          24164000 T  0059:0
             IF ((SEG ← TWO(MIX)) AND OLAYMASK)≠0 THEN                     24165000 T  0059:2
             BEGIN OLAYMASK ← NOT SEG AND OLAYMASK;                        24166000 T  0062:1
                 INDEPENDENTRUNNER(P(.GETMOREOLAYDISK),MIX,64);            24167000 T  0064:1
             END;                                                          24168000 T  0065:2
   END DISKSPACE;                                                          24169000 T  0065:2
                                                                                     SIZE= 0066 WORDS
SAVE PROCEDURE DISKRTN(SEGNO, SIZE);                                       24200000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00946
   VALUE      SEGNO, SIZE;                                                 24201000 T  0000:0
   INTEGER    SEGNO, SIZE;                                                 24202000 T  0000:0
   BEGIN INTEGER  INDEX=NT1,                                               24203000 T  0000:0
                  WORD =NT2,                                               24204000 T  0000:0
                  COUNT=NT3,                                               24205000 T  0000:0
                  DRUM =NT4,                                               24206000 T  0000:0
                  X    =NT5;                                               24207000 T  0000:0
       ARRAY      LOC  =+1[*];                                             24208000 T  0000:0
       LABEL      L;                                                       24209000 T  0000:0
$ SET OMIT = NOT(AUXMEM)                                                   24209099 T  0000:0
       P(DALOC[P1MIX,*]);                                                  24210000 T  0000:0
       COUNT ← TWO(24-6×(SEGNO.[39:9] DIV 100));                           24211000 T  0000:2
       X ← (INDEX ← 0&SEGNO[41:33:6])-1;                                   24212000 T  0003:3
       IF (WORD ← LOC[INDEX].[18:30]-COUNT)=0 THEN                         24213000 T  0006:2
       BEGIN LOC[INDEX] ← 0;                                               24214000 T  0009:0
   L:        IF P(LOC[0],[FF],DUP)≠0 THEN                                24221000 T  0010:3
               IF LOC[POLISH-1]<0 THEN P(XIT);                             24222000 T  0012:3
             LOC[0] ← (*P(DUP))&INDEX[CTF];                                24223000 T  0015:1
       END ELSE BEGIN LOC[INDEX]← (*P(DUP))&WORD[18:18:30];                24224000 T  0017:1
             IF LOC[X]<0 THEN                                              24225000 T  0020:1
               IF (WORD DIV COUNT).[42:6]=0 THEN GO TO L;                  24226000 T  0021:1
   END  END  DISKRTN;                                                      24227000 T  0024:0
                                                                                     SIZE= 0025 WORDS
$ SET OMIT = NOT(DATACOM )                                                 24499999 T  0000:0
$ SET OMIT = NOT(SHAREDISK)                                                24599999 T  0000:0
$ SET OMIT = NOT(DATACOM AND DCSPO )                                       24999999 T  0000:0
$ SET OMIT = NOT(DATACOM )                                                 25049999 T  0000:0
$ SET OMIT = NOT(B6500LOAD)                                                27990099 T  0000:0
PROCEDURE LIBRARYLOADSPECIALCASE(Z); VALUE Z; REAL Z;                      27997600 T  0000:0
```

```
                                                                START OF REL SEGMENT; DISK ADDRESS = 00651
BEGIN COMMENT LIBRARYLOAD HAS BEEN BROKEN-UP TO PREVENT SIZE OVERFLOW          27997605 T  00001:0
              AND THE TIE UP OF CORE BY CODE NOT OFTEN USED. THIS              27997610 T  00001:0
              PROCEDURE DOES INITIAL SET-UP AND OTHER SPECIAL FUNCTIONS        27997615 T  00001:0
              FOR LIBRARYLOAD. IT REFERENCES THE LIBRARYLOAD LOCALS            27997620 T  00001:0
              BY F-RELATIVE DECLARATIONS AND CHANGES TO LOCAL                  27997625 T  00001:0
              DECLARATIONS IN LIBRARYLOAD SHOULD BE MADE WITH THE              27997630 T  00001:0
              CORRESPONDING CHANGES HERE TO LINE UP THE STACK                  27997635 T  00001:0
              CORRECTLY. ADDITIONS SHOULD BE MADE BEFORE DECLARATIONS          27997640 T  00001:0
              OF LOCAL VARIABLES FOR B6500LOAD;                                27997645 T  00001:0
      REAL COMMON=-4,MSCW=-2,RCW=+0;                                           27997650 T  00001:0
      REAL  ALPHA=+1,          EADD=ALPHA+1,                                   27997656 T  00001:0
            FID=EADD+1,        FN=FID+1,                                       27997658 T  00001:0
            I=FN+1,            IC=I+1,                                         27997660 T  00001:0
            J=IC+1,            K=J+1,                                          27997662 T  00001:0
            LAST=K+1,          LOADING=LAST+1,                                 27997664 T  00001:0
            MID=LOADING+1,     N=MID+1,                                        27997666 T  00001:0
            N1=N+1,            N2=N1+1,                                        27997668 T  00001:0
            Q=N2+1,            REEL=Q+1,                                       27997670 T  00001:0
            SEG=REEL+1,        SIZE=SEG+1,                                     27997672 T  00001:0
            SN=SIZE+1,         T=SN+1,                                         27997674 T  00001:0
            TYPE=T+1,          U=TYPE+1,                                       27997676 T  00001:0
            UNITNO=U+1,        W=UNITNO+1,                                     27997678 T  00001:0
            Y=W+1;                                                             27997680 T  00001:0
      BOOLEAN BB=Y+1,          B6500=BB+1,                                     27997682 T  00001:0
              LATEST=B6500+1,  TOGS=LATEST+1;                                  27997684 T  00001:0
      ARRAY AROW=TOGS+1[*],    H=AROW+1[*],                                    27997686 T  00001:0
            IOD=H+1[*],        LAB=IOD+1[*],                                   27997688 T  00001:0
            LBL=LAB+1[*],      S=LBL+1[*],                                     27997690 T  00001:0
            X=S+1[*];                                                          27997692 T  00001:0
$ SET OMIT = NOT(B6500LOAD)                                                    27997694 T  00001:0
   LABEL TRYNEXT,BAC,FINDIT,TRYAGN,BACK,LOADEM,FINDFILENAMES,EXIT;             27997710 T  00001:0
   LABEL CASE0,CASE1,CASE2;                                                    27997715 T  00001:0
   SWITCH SWIT:= CASE0,CASE1,CASE2;                                            27997720 T  00001:0
   DEFINE SKIPDIR=TOGS.[47:1]#,REEL1START=TOGS.[46:1]#,                        27997725 T  00001:0
          SPACITSW=TOGS.[45:1]#,CHKLBL=TOGS.[44:1]#,                           27997730 T  00001:0
          DSED=(TERMIX.[CF]=P1MIX)#,SPACER=5&@1400[CTF]#,                      27997735 T  00001:0
          SPOUTUNIT=0#,                                                        27997737 T  00001:0
          MM=@37700040#,SM=@37700000#;                                         27997740 T  00001:0
%*************************************************************               27997745 T  00001:0
SUBROUTINE GETASEGMENT;                                                        27997750 T  00001:0
BEGIN                                                                          27997755 T  00011:0
    SEG:=S[29];                                                                27997760 T  00011:0
    DISKWAIT(-S.[CF],30,SEG);                                                  27997765 T  00021:0
    FORGETESPDISK(SEG);                                                        27997770 T  00041:1
    I:=2;                                                                      27997775 T  00051:0
END; % OF GETASEGMENT                                                          27997780 T  00051:3
%*************************************************************               27997785 T  00061:0
SUBROUTINE ABORT;                                                              27997790 T  00061:0
BEGIN                                                                          27997795 T  00061:0
    IF LOADING THEN P(DIRECTORYSEARCH(X[J],X[J+1],5+LOADING),DEL);             27997800 T  00061:0
    IF U≥0 THEN                                                                27997805 T  00091:3
    BEGIN                                                                      27997810 T  00101:2
        STOPTIMING(5,1023);                                                    27997815 T  00111:0
        STOPTIMING(0,1023);                                                    27997820 T  00121:0
        BLASTQ(U);                                                             27997825 T  00131:0
        SETNOTINUSE(U,0);                                                      27997830 T  00131:3
    END;                                                                       27997835 T  00141:3
    WHILE S[29]≠0 DO GETASEGMENT;                                              27997840 T  00141:3
$ SET OMIT = PACKETS                                                           27997845 T  00171:2
```

```
            IF UNITNO≠0 AND LABELTABLE[UNITNO]=@214 THEN                    27997850 T  0017:2
                LABELTABLE [UNITNO]←@114;                                   27997855 T  0019:2
        $ POP OMIT                                                          27997856 T  0021:1
            STREAM(T←T←GETSPACE(5,0,0)+2);                                  27997860 T  0021:1
            BEGIN DS←21LIT"LIBRARY LOAD ABORTED←"; END;                     27997865 T  0024:0
            SPOUT (T);                                                      27997875 T  0027:1
            GO INITIATE;                                                    27997890 T  0028:0
        END; % ABORT                                                        27997895 T  0028:2
        %*************************************************************     27998050 T  0028:3
        BOOLEAN SUBROUTINE LABELCHECK;                                      27998055 T  0028:3
        BEGIN                                                               27998060 T  0029:0
        TRYNEXT:                                                            27998065 T  0029:0
            P(WAITIO(LAB INX @120540000000,0,U),DEL);                       27998070 T  0029:0
        $ SET OMIT = NOT(B6500LOAD)                                         27998075 T  0031:1
                IF @40≠WAITIO(SPACER,@40,U) THEN                            27998115 T  0031:1
                    P(WAITIO(@4740000005,0,U),DEL);                         27998120 T  0033:2
            IF DSED THEN ABORT;                                             27998125 T  0035:2
            IF (NOT B6500 AND ((NFLAG(LAB[0]).[6:42] EQV "LABEL  ")≠NOT 0   27998130 T  0038:0
            OR (NFLAG(LAB[2]).[6:24] EQV "FILE")≠NOT 0))                    27998135 T  0041:0
        $ SET OMIT = NOT(B6500LOAD)                                         27998140 T  0044:2
            THEN BEGIN                                                      27998155 T  0044:2
                STREAM(A←[TINU[U]],T←T←GETSPACE(10,0,0)+2);                 27998160 T  0045:1
                BEGIN SI←A;SI←SI+5;DS←LIT".";DS←3 CHR;                      27998165 T  0048:2
                    DS←21 LIT" NOT A LIBRARY TAPE←";                        27998170 T  0049:3
                END;                                                        27998175 T  0052:3
                SPOUT(T); T←1;                                              27998185 T  0053:0
            END ELSE T←0;                                                   27998200 T  0054:2
            IF T=0 AND NOT B6500 THEN                                       27998205 T  0059:3
            IF NFLAG(LAB[2]).[30:18]=0 AND SKIPDIR THEN                     27998210 T  0061:1
            BEGIN                                                           27998215 T  0064:2
            SPACITSW←1; CHKLBL←FALSE;                                       27998220 T  0065:0
            GO TO BACK; %BRANCH INTO SPACIT.                                27998225 T  0068:2
        BAC:                                                                27998230 T  0069:0
            SPACITSW←0; CHKLBL←TRUE;                                        27998235 T  0069:0
            GO TO TRYNEXT;                                                  27998240 T  0072:2
            END;                                                            27998245 T  0073:0
            LABELCHECK←T;                                                   27998250 T  0073:0
        END;                                                                27998255 T  0073:2
        %*************************************************************     27998260 T  0073:3
        SUBROUTINE FINDTHETAPE;                                             27998265 T  0073:3
        BEGIN                                                               27998270 T  0074:0
    FINDIT:                                                                 27998275 T  0074:0
            IF (U←FINDINPUT(MID,FID,REEL,-0,0,0,0,0,1,5)) < 0 THEN ABORT;   27998280 T  0074:0
            REEL←RDCTABLE[U].[14:10]; %FORCE REEL CONTINUITY IF IL-ED.      27998285 T  0080:0
            RRRMECH:=TWO(U) OR RRRMECH;                                     27998290 T  0081:2
        $ SET OMIT = NOT(B6500LOAD)                                         27998295 T  0083:1
                IF CHKLBL THEN IF LABELCHECK THEN                           27998305 T  0083:1
            BEGIN                                                           27998310 T  0086:0
                SETNOTINUSE(U,1);                                           27998315 T  0086:2
                GO FINDIT;                                                  27998320 T  0087:2
            END;                                                            27998325 T  0088:0
            STARTIMING(5,U);                                                27998330 T  0088:0
            M[PRT[P1MIX,3] INX (5×REEL+3)].[23:1] := 1;                     27998335 T  0089:0
            RDCTABLE[U].[8:6]:=P1MIX;                                       27998340 T  0094:0
            STREAM (S←PRNTABLE[U].[18:30],T←[T]);                           27998345 T  0096:2
            BEGIN SI←LOC S; DS←8DEC; DI←DI-7; DS←6FILL; END;                27998350 T  0098:1
        $ SET OMIT = PACKETS                                                27998355 T  0099:2
            IF OPNMESS THEN                                                 27998360 T  0099:2
        $ POP OMIT                                                          27998361 T  0100:1
            FILEMESSAGE(" IN "&TINU[U][6:30:18],T,                          27998365 T  0100:1
```

```
                    MID,FID,REEL,0,0,OPNMESS);                                  27998370 T  0100:1
        END; % OF FINDTHETAPE                                                   27998390 T  0104:1
        %*************************************************************          27998395 T  0106:0
        BOOLEAN SUBROUTINE ENDOFREEL;                                           27998400 T  0106:0
        BEGIN                                                                   27998405 T  0106:0
            BLASTQ(U);                                                          27998410 T  0106:0
        IF P(WAITIO(LAB INX @120540000000,@2000040,U),DUP)=@20 THEN             27998415 T  0106:3
        BEGIN % PAR ON ENDING LABEL:TEST FOR LAST FILE ON TAPE(EOF)             27998420 T  0109:2
            LAB[4]:=(*P(DUP))&(WAITIO(SPACER,@40,U)=@40)[47:47:1];              27998425 T  0110:0
            P(WAITIO(5&@3400[CTF],@377,U),DEL);                                 27998430 T  0114:2
        END;                                                                    27998435 T  0116:2
    $ SET OMIT = NOT(B6500LOAD)                                                 27998440 T  0116:2
            NT1:=P;                                                             27998470 T  0116:2
            IF DSED THEN ABORT;                                                 27998475 T  0117:0
        IF ((NOT B6500) AND NFLAG(LAB[4]) AND NT1≠@40)                          27998480 T  0120:0
    $ SET OMIT = NOT(B6500LOAD)                                                 27998485 T  0122:0
        THEN BEGIN                                                              27998495 T  0122:0
                STOPTIMING(5,1023);%                                            27998500 T  0123:0
                SETNOTINUSE(U,0);                                               27998505 T  0124:0
                REEL←REEL+1;                                                    27998510 T  0125:0
    $ SET OMIT = NOT(B6500LOAD)                                                 27998515 T  0126:1
                FID:=LAB[2];                                                    27998540 T  0126:1
                FINDTHETAPE;                                                    27998545 T  0127:1
                ENDOFREEL←TRUE;                                                 27998550 T  0128:0
            END ELSE ENDOFREEL←FALSE;                                           27998555 T  0128:2
        END;        %   OF SUBROUTINE  ENDOFREEL                                27998560 T  0132:2
        %*************************************************************          27998570 T  0132:3
        SUBROUTINE SPACIT;%                                                     27998575 T  0132:3
        BEGIN                                                                   27998580 T  0133:0
    BACK:   WHILE WAITIO(SPACER,MM,U)≠@40 DO                                    27998585 T  0133:0
            BEGIN                                                               27998590 T  0135:3
                IF DSED THEN ABORT;                                             27998595 T  0135:3
                IF STOPJOB=P1MIX THEN STOPM(0);                                 27998600 T  0139:0
            END;                                                                27998605 T  0141:0
            IF ENDOFREEL AND NOT SPACITSW THEN GO BACK;                         27998610 T  0143:0
            IF SPACITSW THEN GO TO BAC; %BRANCH TO LABELCHECK ELSE EXIT         27998615 T  0146:0
        END;                                                                    27998620 T  0147:2
        %*************************************************************          27998625 T  0147:3
        BOOLEAN SUBROUTINE NOTLOADINGFROMREEL1;                                 27998630 T  0147:3
        BEGIN %SKIP LAST PORTION OF FILE FROM PREVIOUS REEL                     27998635 T  0148:0
            SPACIT;                                                             27998640 T  0148:0
            IF LABELCHECK THEN P(0) ELSE                                        27998645 T  0149:0
                IF (NFLAG(LAB[2]) EQV "FILE000") = NOT 0 THEN                   27998650 T  0150:3
                BEGIN REEL1START←FALSE; P(1) END ELSE P(0);                     27998655 T  0153:1
        NOTLOADINGFROMREEL1:=P;                                                 27998660 T  0158:1
        END;                                                                    27998665 T  0158:2
        %*************************************************************          27998730 T  0158:3
        P(Z,RCW,MSCW,STF); RCW:=RCW&P(XCH)[CTC];                                27998740 T  0158:3
        GO TO SWIT[P];                                                          27998750 T  0161:2
    CASE0:                                                                      27998760 T  0163:3
        S:=[M[SPACE(30)]]&30[8:38:10];                                          27998770 T  0163:3
        TYPE:=COMMON.[FF];                                                      27998780 T  0167:2
        S[29]:=COMMON.[CF];                                                     27998790 T  0168:3
    $ SET OMIT = NOT(B6500LOAD)                                                 27998809 T  0170:2
        LATEST:=COMMON.[4:1];                                                   27998815 T  0170:2
        COMMON ← IF COMMON.[9:6]≠0 THEN -COMMON.[9:6] OR M ELSE                 27998820 T  0171:3
                IF COMMON.[3:1] THEN 1 OR M ELSE                                27998830 T  0175:2
                IF COMMON.[2:1] THEN 2 OR M ELSE 0;                             27998840 T  0178:0
        REEL:=1;                                                                27998850 T  0181:1
        GETASEGMENT;                                                            27998860 T  0182:0
```

```
        STREAM(MID:=MID:=S[1],B:=PRT[P1MIX,3]);                                 27998870 T  0183:0
        BEGIN DS:=16 LIT"0DIRCTRY0DISK   ";DS:=25 LIT"0";SI:=LOC MID;           27998880 T  0185:2
            SI:=SI+1;DS:=7 CHR;DS:=8 LIT"0FILE000";DS:=24 LIT"0";               27998890 T  0191:2
        END;                                                                    27998900 T  0196:2
        UNITNO:=S[0].[2:6];                                                     27998910 T  0196:3
        LAB:=[M[SPACE(15)]]&15[8:38:10];                                        27998920 T  0198:1
        MID:=S[1];                                                              27998930 T  0202:0
        FID:="FILE000";                                                         27998940 T  0203:0
        REEL1START←TRUE; CHKLBL←TRUE;                                           27998950 T  0203:3
    TRYAGN: FINDTHETAPE;                                                        27998960 T  0207:1
     $ SET OMIT = NOT(B6500LOAD)                                                27998969 T  0208:0
        IF FID≠LAB[2] OR REEL≠1 THEN                                            27998990 T  0208:0
         IF NOT NOTLOADINGFROMREEL1 THEN                                        27999000 T  0210:0
            BEGIN STREAM(A←[TINU[U]],T←T←SPACE(10));                            27999010 T  0212:1
                BEGIN SI←A;SI←SI+5;DS←LIT".";DS←3CHR;                           27999020 T  0216:0
                      DS←20 LIT" NOT A LIBRARY TAPE";                           27999030 T  0217:1
                      DS←LIT"←";                                                27999040 T  0220:0
                      END;                                                      27999050 T  0220:2
                      SPOUT(T); SETNOTINUSE(U,1);                               27999060 T  0220:3
                      REEL←1;                                                   27999070 T  0222:2
                      GO TO TRYAGN;                                             27999080 T  0223:1
                END;                                                            27999090 T  0225:0
        MID←LAB[1];                                                             27999100 T  0225:0
        SKIPDIR:=TRUE;                                                          27999110 T  0226:0
        X:=[M[T:=SPACE(1024)]]&1023[8:38:10];                                   27999120 T  0227:3
        IF NOT B6500 THEN MID←LAB[1];                                           27999130 T  0232:0
        STARTIMING(0,18);                                                       27999140 T  0234:0
        P(WAITIO((                                                              27999150 T  0235:0
     $ SET OMIT = NOT(B6500LOAD)                                                27999169 T  0235:1
                X)&@5400[CTF],0,U),DEL);                                        27999180 T  0235:1
     $ SET OMIT = NOT(B6500LOAD)                                                27999199 T  0237:1
        IF DSED THEN ABORT;                                                     27999280 T  0237:1
        IF (N:=M[T-1]) LSS 900 THEN                                             27999290 T  0240:0
        BEGIN % GET RID OF EXTRA MEMORY SPACE IF NOT NEEDED                     27999300 T  0242:2
            X:=[M[SPACE(N)]]&N[8:38:10];                                        27999310 T  0243:0
            MOVE(N,T,X);                                                        27999320 T  0246:3
            FORGETSPACE(T);                                                     27999330 T  0248:2
        END;                                                                    27999340 T  0249:1
    FINDFILENAMES:                                                              27999350 T  0249:1
        FOR I:=2 STEP 2 UNTIL 26 DO                                             27999360 T  0249:1
        BEGIN                                                                   27999370 T  0252:0
            J:=IF X[0]=@114 AND NOT REEL1START THEN X[1]-2 ELSE -2;             27999380 T  0252:0
            IF (FN←S[I])=@14 THEN GO LOADEM;                                    27999390 T  0257:1
            SN←S[I+1];W←1;                                                      27999400 T  0259:1
            WHILE X[J←J+2]≠@14 DO % MARK FILES TO BE LOADED                     27999410 T  0261:2
                IF FN<0 OR (FN EQV X[J])=NOT 0 THEN                             27999420 T  0264:0
                IF SN<0 OR (SN EQV X[J+1])=NOT 0 THEN W←X[J]←-X[J];             27999430 T  0266:3
            IF W GTR 0 THEN LBMESS(FN,SN,-1,17,TINU[U],SPOUTUNIT,1);            27999440 T  0273:3
        END;                                                                    27999470 T  0277:3
        IF S[28]=@14 THEN GO LOADEM;                                            27999480 T  0280:0
        GETASEGMENT;                                                            27999490 T  0281:2
        GO FINDFILENAMES;                                                       27999500 T  0283:0
    LOADEM:                                                                     27999510 T  0283:2
        W←J←-2;                                                                 27999520 T  0283:2
        WHILE X[J←J+2]≠@14 DO IF X[J].[1:1] THEN W←J;                           27999530 T  0285:0
        IF W<0 THEN ABORT;                                                      27999540 T  0290:1
        X[W+2]←@14;                                                             27999550 T  0293:0
        IF TYPE=ADDV THEN                                                       27999560 T  0294:3
        FOR W←W STEP -2 UNTIL 0 DO                                              27999570 T  0295:2
        IF X[W].[1:1] THEN                                                      27999580 T  0297:0
```

```
                IF DIRECTORYSEARCH(X[W],X[W+1],5)≠0 THEN X[W]:=@14 ELSE          27999590 T  0298:0
                    W:=0 ELSE X[W]:=0;                                           27999600 T  0303:0
                CHKLBL←FALSE;                                                    27999610 T  0308:1
                J←0;                                                             27999620 T  0310:0
                IF @40=WAITIO(LAB INX @120540000000,@40,U) THEN                  27999630 T  0310:3
                IF B6500 THEN P(WAITIO(LAB INX @120540000000,0,U),DEL) ELSE      27999640 T  0313:1
                        J←ENDOFREEL;                                             27999650 T  0316:3
                IF NOT J THEN& CHECK ENDING LABEL IF NOT LAST FILE OR B6500LOAD  27999660 T  0320:2
                IF ((NOT B6500) AND (NFLAG(LAB[1])EQV MID)≠NOT 0 OR              27999670 T  0321:0
                    (NFLAG(LAB[2]) EQV "FILE000")≠NOT 0)                         27999680 T  0324:1
            $ SET OMIT = NOT(B6500LOAD)                                          27999699 T  0325:3
                THEN BEGIN STREAM(A:=[TINU[U]],J:=J:=SPACE(10));                 27999720 T  0325:3
                    BEGIN SI ← A; SI ← SI+5; DS ← LIT","; DS ← 3 CHR;            27999730 T  0330:1
                        DS ← 29 LIT " BAD FILE000 ON LIBRARY TAPE←";             27999740 T  0331:2
                    END;      SPOUT (J); ABORT;                                  27999760 T  0335:2
                END;                                                             27999790 T  0338:0
                CHKLBL←TRUE;                                                     27999800 T  0338:0
                J←IF X[0]=@114 AND NOT REEL1START THEN X[1] ELSE 0;              27999810 T  0339:3
                H:=[M[SPACE(31+6×B6500)]]&36[8:38:10];                           27999820 T  0344:1
                AROW:=[M[SPACE(2)]]&2[8:38:10];                                  27999830 T  0349:0
                AROW[0]:=[M[SPACE(902)]]&901[8:38:10];                           27999840 T  0352:3
                AROW[1]:=AROW[0]&SPACE(902)[CTC];                                27999850 T  0357:0
                IOD:=[M[SPACE(2)]]&2[8:38:10];                                   27999860 T  0360:2
            $ SET OMIT = NOT(B6500LOAD)                                          27999879 T  0364:1
                GO TO EXIT;                                                      27999900 T  0364:1
            CASE1: FINDTHETAPE; GO TO EXIT;                                      27999910 T  0366:0
            CASE2: ABORT;                                                        27999920 T  0367:2
            EXIT: P(0,RDS,0,XCH,P&P[CTF],STF);                                   27999930 T  0369:0
        END OF LIBARYLOADSPECIALCASE;                                            27999940 T  0371:0
                                                                                 SIZE= 0372 WORDS
        PROCEDURE LIBRARYLOAD;                                                   28000000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00664
        BEGIN REAL COMMON=-4;                                                    28001100 T  0000:0
            REAL ALPHA,    EADD,     FID,     FN,                                28001200 T  0000:0
                 I,        IC,       J,       K,                                 28001300 T  0000:0
                 LAST,     LOADING,  MID,     N,                                 28001400 T  0000:0
                 N1,       N2,       Q,       REEL,                              28001500 T  0000:0
                 SEG,      SIZE,     SN,      T,                                 28001600 T  0000:0
                 TYPE,     U,        UNITNO,  W,                                 28001700 T  0000:0
                 Y;                                                              28001800 T  0000:0
            BOOLEAN        BB,       B6500,   LATEST,                            28001900 T  0000:0
                           TOGS;                                                 28002000 T  0000:0
            ARRAY          AROW[*],  H[*],    IOD[*],                            28002100 T  0000:0
                           LAB[*],   LBL[*],  S[*],                              28002200 T  0000:0
                           X[*];                                                 28002300 T  0000:0
        $ SET OMIT = NOT(B6500LOAD)                                              28002400 T  0000:0
            DEFINE DSED=(TERMIX,[CF]=P1MIX)#,                                    28006000 T  0000:0
                SPOUTUNIT=0#,                                                    28006100 T  0000:0
                SPACER=5&@1400[CTF]#,                                            28007000 T  0000:0
                MM=@37700040#,                                                   28008000 T  0000:0
                SM=@37700000#;                                                   28009000 T  0000:0
            LABEL EXIT,TRYNEXT,BAC,PARERR,EXT,LOOP,WATE,BACK,                    28010000 T  0000:0
                  BADHEADER,OK,WY,BADLOAD,LAY,SKIPPER,FALLOUT,ENDLOOP;           28010100 T  0000:0
            DEFINE SKIPDIR=TOGS.[47:1]#,REEL1START=TOGS.[46:1]#,                 28011050 T  0000:0
                   SPACITSW=TOGS.[45:1]#,CHKLBL=TOGS.[44:1]#;                    28011060 T  0000:0
            DEFINE INITIALSETUP = LIBRARYLOADSPECIALCASE(0)#,                    28011070 T  0000:0
                   FINDTHETAPE  = LIBRARYLOADSPECIALCASE(1)#,                    28011080 T  0000:0
                   ABORT        = LIBRARYLOADSPECIALCASE(2)#;                    28011090 T  0000:0
            %*************************************************************      28012000 T  0000:0
            DEFINE NOTLOADED(NOTLOADED1) =                                       28013000 T  0000:0
```

```
        BEGIN NT3:=NOTLOADED1; NOLOADMESS; END#;                                28014000 T  0000:0
    SUBROUTINE NOLOADMESS;                                                      28015000 T  0000:0
        LBMESS(ABS(X[J]),X[J+1],-1,NT3,TINU[U],SPOUTUNIT,1);                    28016000 T  0001:0
    %*************************************************************             28061000 T  0005:1
    BOOLEAN SUBROUTINE LABELCHECK;                                              28062000 T  0005:1
    BEGIN                                                                       28063000 T  0006:0
    TRYNEXT:                                                                    28063100 T  0006:0
        IF WAITIO(LAB INX @120540000000,@40&@20[CTF],U)=@40 AND                 28063300 T  0006:0
          NOT B6500 THEN                  % MISSING LABEL - FAKE IT.            28063400 T  0009:0
        BEGIN STREAM(A:=1, B:=[LAB[2]]);                                        28063500 T  0009:3
            BEGIN SI:=LOC A; SI:=SI+5;                                          28063600 T  0011:2
                DI:=DI+5; DS:=3 ADD;                                            28063700 T  0012:0
            END;                                                                28063800 T  0012:2
            P(WAITIO(@340000005,@377,U),DEL);                                   28063900 T  0012:3
        END;                                                                    28064000 T  0014:1
  $ SET OMIT = NOT(B6500LOAD)                                                   28064099 T  0014:1
          IF @40≠WAITIO(SPACER,@40,U) THEN                                      28065000 T  0014:1
              P(WAITIO(@4740000005,0,U),DEL);                                   28065610 T  0016:2
        IF DSED THEN ABORT;                                                     28066000 T  0018:2
        IF (NOT B6500 AND ((NFLAG(LAB[0]).[6:42] EQV "LABEL  ")≠NOT 0           28067000 T  0021:0
        OR (NFLAG(LAB[2]).[6:24] EQV "FILE")≠NOT 0))                            28067100 T  0024:0
  $ SET OMIT = NOT(B6500LOAD)                                                   28068999 T  0027:2
        THEN BEGIN                                                              28070000 T  0027:2
            STREAM(A←[TINU[U]],T←T←GETSPACE(10,0,0)+2);                         28071000 T  0028:1
            BEGIN SI←A;SI←SI+5;DS←LIT".";DS←3 CHR;                              28072000 T  0031:2
                DS←21 LIT" NOT A LIBRARY TAPE←";                                28073000 T  0032:3
            END;                                                                28074000 T  0035:3
            SPOUT(T); T←1;                                                      28075000 T  0036:0
        END ELSE T←0;                                                           28076000 T  0037:2
        IF T=0 AND NOT B6500 THEN                                               28076100 T  0043:3
        IF NFLAG(LAB[2]).[30:18]=0 AND SKIPDIR THEN                             28076110 T  0045:1
        BEGIN                                                                   28076200 T  0048:2
        SPACITSW←1; CHKLBL←FALSE;                                               28076300 T  0049:0
        GO TO BACK; %BRANCH INTO SPACIT.                                        28076400 T  0052:2
    BACK:                                                                       28076500 T  0053:0
        SPACITSW←0; CHKLBL←TRUE;                                                28076600 T  0053:0
        GO TO TRYNEXT;                                                          28076750 T  0056:2
        END;                                                                    28076800 T  0057:0
        LABELCHECK←T;                                                           28077000 T  0057:0
    END;                                                                        28078000 T  0057:2
    %*************************************************************             28079000 T  0057:3
    BOOLEAN SUBROUTINE ENDOFREEL;                                               28095000 T  0057:3
    BEGIN                                                                       28096000 T  0058:0
        BLASTQ(U);                                                              28097000 T  0058:0
    IF P(WAITIO(LAB INX @120540000000,@2000040,U),DUP)=@20 THEN                 28098000 T  0058:3
    BEGIN % PAR ON ENDING LABEL:TEST FOR LAST FILE ON TAPE(EOF)                 28098010 T  0061:2
        LAB[4]:=(*P(DUP))&(WAITIO(SPACER,@40,U)=@40)[47:47:1];                  28098020 T  0062:0
        P(WAITIO(5&@3400[CTF],@377,U),DEL);                                     28098030 T  0066:2
    END;                                                                        28098040 T  0068:2
  $ SET OMIT = NOT(B6500LOAD)                                                   28098099 T  0068:2
        IF B6500 THEN P(DEL) ELSE NT1:=P;                                       28098600 T  0068:2
        IF DSED THEN ABORT;                                                     28099000 T  0073:2
    IF ((NOT B6500) AND NFLAG(LAB[4]) AND NT1≠@40)                              28101000 T  0076:0
  $ SET OMIT = NOT(B6500LOAD)                                                   28101099 T  0078:0
    THEN BEGIN                                                                  28102000 T  0078:0
            STOPTIMING(5,1023);%                                                28103000 T  0079:0
            SETNOTINUSE(U,0);                                                   28104000 T  0080:0
            REEL←REEL+1;                                                        28105000 T  0081:0
  $ SET OMIT = NOT(B6500LOAD)                                                   28105949 T  0082:1
            FID:=LAB[2];                                                        28106000 T  0082:1
```

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                    FINDTHETAPE;                                                28107000 T  0083:1
                    ENDOFREEL←TRUE;                                             28108000 T  0084:0
                END ELSE ENDOFREEL←FALSE;                                       28109000 T  0084:2
            END;        %   OF SUBROUTINE  ENDOFREEL                            28110000 T  0085:2
            %*************************************************************      28111000 T  0085:3
            BOOLEAN SUBROUTINE CHECK;                                           28112000 T  0085:3
            BEGIN                                                               28113000 T  0086:0
                IF (Y:=IOD[W]).[27:2]≠0 THEN % PARITY ERROR OR EOF              28114000 T  0086:0
                BEGIN                                                           28115000 T  0088:0
                    IF Y.[7:1] AND Y.[27:1] THEN % END OF REEL                  28116000 T  0088:2
                    BEGIN                                                       28117000 T  0090:1
                        IF NOT ENDOFREEL THEN                                   28118000 T  0090:3
                        BEGIN                                                   28119000 T  0092:1
                            P(WAITIO(@4740000020,@377,U),DEL);                  28120000 T  0092:3
                            NOTLOADED(33);                                      28121000 T  0094:1
                            Y ← 1;                                              28121500 T  0096:0
                            GO TO EXT;                                          28121600 T  0096:3
                        END;                                                    28122000 T  0099:0
                        IF WAITIO(IOD[W] INX @16040540000000,SM,U)≠0 THEN       28123000 T  0099:0
                            GO PARERR;                                          28124000 T  0101:2
                        IF IOD[1-W].[7:1] THEN % ANOTHER TAPE IO IN PROGRESS    28125000 T  0102:0
                        BEGIN                                                   28126000 T  0103:2
                            IF WAITIO(IOD[1-W],SM,U)≠0 THEN GO PARERR;          28127000 T  0104:0
                            IOD[1-W]:=(*P(DUP)) OR IOMASK;                      28128000 T  0107:0
                        END;                                                    28129000 T  0109:2
                        Y:=0;                                                   28129100 T  0109:2
                    END ELSE % PARITY ERROR                                     28130000 T  0110:1
PARERR:             BEGIN                                                       28131000 T  0110:1
                        NOTLOADED(IF Y.[7:1] THEN 27 ELSE 35);                  28132000 T  0113:0
                        Y:=1;                                                   28135000 T  0117:0
                    END;                                                        28136000 T  0117:3
                END ELSE % CHECK RECORD SIZE                                    28137000 T  0117:3
                IF Y.[7:1] THEN                                                 28138000 T  0117:3
                BEGIN                                                           28139000 T  0119:0
                    IF (Y:=((M[AROW[W] INX NOT 0]≠900+B6500) AND N<N1)) THEN    28140000 T  0119:2
                        NOTLOADED(39);                                          28141000 T  0124:0
                ELSE Y:=0;                                                      28143000 T  0126:0
EXT:            CHECK ← Y;                                                      28144000 T  0127:1
            END; % OF CHECK                                                     28145000 T  0127:3
            %*************************************************************      28146000 T  0128:0
            SUBROUTINE IO;                                                      28147000 T  0128:0
            BEGIN                                                               28148000 T  0128:0
                IF IC THEN                                                      28149000 T  0128:0
                BEGIN                                                           28150000 T  0128:1
                    IOREQUEST(*(IOD[W]:=(AROW[W] INX @540000000)                28151000 T  0128:3
                        &(SIZE+B6500)[8:38:10]&TINU[U][3:3:5])OR @2017700000,   28152000 T  0130:1
                        IOD[W],[IOD[W]]&U[12:42:6]);                            28153000 T  0134:2
                    N:=N+30;                                                    28154000 T  0136:3
                END ELSE                                                        28155000 T  0138:0
                BEGIN                                                           28156000 T  0138:0
                DISKIO(IOD[W],AROW[W] INX B6500-1,(T:=IF(T:=LAST-Q+1)           28157000 T  0141:0
                        LSS 30 THEN 30×T ELSE 900),Q);                          28158000 T  0145:0
                    Q:=Q+30;                                                    28159000 T  0149:1
        $ SET OMIT = NOT(STATISTICS)                                            28159099 T  0150:2
                END;                                                            28160000 T  0150:2
            END; % OF IO                                                        28161000 T  0150:2
            %*************************************************************      28162000 T  0150:3
            BOOLEAN SUBROUTINE LOADAROW;                                        28163000 T  0150:3
            BEGIN                                                               28164000 T  0151:0
                SIZE:=900;                                                      28164500 T  0151:0
```

```
                    N1:=                                                    28165000 T  0151:3
          $ SET OMIT = NOT B6500LOAD                                        28165490 T  0151:3
                       H[8];                                                28166000 T  0151:3
                    LAST:=(@:=H[K+9])+N1-1;                                 28166500 T  0152:3
                    IOD[1]:=N2:=W:=N:=0;                                    28167000 T  0155:3
                    IC:=1;                                                  28168000 T  0158:2
                    IO; % FIRE UP FIRST TAPE READ                           28169000 T  0159:1
                    W ←1;% SWAP BUFFERS                                     28170000 T  0160:0
                    IF N<N1 THEN% CANNOT DO ROW WITH ONE READ               28171000 T  0160:3
          LOOP:     IO;                                                     28172000 T  0161:2
          WATE:     COMPLEXSLEEP((((IOD[0] OR IOD[1]) AND IOMASK)≠0) OR DSED);  28173000 T  0163:0
20582440  ACCIDENTAL ENTRY AT P1MIX
                    IF DSED THEN ABORT;                                     28174000 T  0171:3
                    N2←N2+15;% COUNT NUMBER OF OPERATIONS COMPLETED         28175000 T  0174:1
                    W←IF (IOD[0] AND IOD[1] AND IOMASK)≠0 THEN 1-W ELSE     28176000 T  0175:2
                         ((IOD[1] AND IOMASK)≠0);                           28177000 T  0179:2
                    IF NOT(Y←CHECK) THEN% NO ERRORS WERE DETECTED           28178000 T  0181:2
                    BEGIN% KEEP GOING                                       28179000 T  0183:3
                         IC←1-IOD[W].[7:1];% SWAP UNITS                     28180000 T  0184:1
                         IF N<N1 THEN GO TO LOOP;% ROW IS NOT FINISHED      28181000 T  0186:1
                         IF N2+302N THEN SIZE←T; % CHANGE SIZE FOR LAST RECORD  28182000 T  0187:2
                         IF IOD[W].[24:1] THEN GO TO LOOP;% MORE WRITING TO DO  28183000 T  0190:0
                         IF N2<N THEN BEGIN IOD[W]←0; GO TO WATE END;%      28184000 T  0191:3
                    END;%                                                   28185000 T  0194:3
                    LOADAROW:=Y;                                            28186000 T  0194:3
               END; % OF LOADAROW                                           28187000 T  0195:1
               %*************************************************************  28188000 T  0195:2
                SUBROUTINE SPACIT;%                                         28189000 T  0195:2
               BEGIN  %                                                     28190000 T  0196:0
          BACK:     WHILE WAITIO(SPACER,MM,U)≠@40 DO                        28191000 T  0196:0
                    BEGIN                                                   28192000 T  0198:3
                         IF DSED THEN ABORT;                                28193000 T  0198:3
                         IF STOPJOB=P1MIX THEN STOPM(0);                    28194000 T  0201:1
                    END;                                                    28195000 T  0203:1
                   IF ENDOFREEL AND NOT SPACITSW THEN GO BACK;              28196000 T  0205:0
                    IF SPACITSW THEN GO TO BAC; %BRANCH TO LABELCHECK ELSE EXIT.  28196100 T  0208:0
               END; % SPACIT                                                28197000 T  0209:2
               %*************************************************************  28198000 T  0209:3
               INITIALSETUP;                                                28200000 T  0209:3
               DO                                                           28255000 T  0219:3
               BEGIN                                                        28256000 T  0219:3
                    IF LABELCHECK THEN ABORT;                               28257000 T  0219:3
                    IF WAITIO((*[AROW[0]])&@5400[CTF],@2000000,U)=@20 THEN  28258000 T  0222:1
                    GO TO BADHEADER; % RD HDR CKING FOR PARITY              28258050 T  0225:0
                    MOVE(30+5*B6500,AROW[0].[CF]+B6500,H);                  28258100 T  0225:2
          $ SET OMIT = NOT(B6500LOAD)                                       28258149 T  0229:2
                    IF DSED THEN ABORT;                                     28259000 T  0229:2
                    T:=-1;                                                  28259900 T  0232:0
                    IF (NOT B6500) AND (M[AROW[0] INX NOT 0] NEQ 30) THEN   28260000 T  0233:0
                    GO TO BADHEADER ELSE                                    28260010 T  0236:1
                    BEGIN                                                   28260020 T  0236:1
                    STREAM(A:=0:D:=H);                                      28260030 T  0237:0
                         BEGIN SI:=0; 30(IF SB THEN BEGIN TALLY:=1; JUMP OUT END  28260040 T  0238:2
                                   ELSE SI:=SI+8); A:=TALLY;                28260050 T  0240:1
                         END;                                               28260060 T  0241:1
                    IF P THEN P(1) ELSE                                     28260070 T  0241:2
                    IF(NT1:=H[9].[43:5])>20 OR NT1=0 THEN P(1) ELSE         28260080 T  0242:1
                    BEGIN  I:=0;                                            28260090 T  0248:3
                         FOR W:=10 STEP 1 UNTIL 29 DO                       28260100 T  0250:0
                         BEGIN                                              28260110 T  0251:0
```

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                    I:=I+(NT2:=(H[W] NEQ 0));                                   28260120 T  0251:0
                    IF W GEQ NT1 +10 THEN IF NT2 THEN W:=31;                    28260130 T  0253:2
                END;
                IF ((W=31) OR (I GTR NT1) OR((I NEQ 0) AND (H[8]=0)))           28260140 T  0256:3
                THEN P(1) ELSE P(0);                                            28260150 T  0259:0
            END END;                                                            28260160 T  0262:3
            IF P THEN                                                           28260180 T  0264:2
            BEGIN                                                               28260190 T  0264:2
BADHEADER:                                                                      28260200 T  0264:2
                NOTLOADED(43);                                                  28260250 T  0265:0
                H[2] ← LAB[2];                                                  28260300 T  0265:0
                SPACIT;                                                         28260500 T  0267:0
                IF H[2]≠LAB[2] THEN ABORT; % FOR WE ARE LOST                    28260600 T  0268:2
                GO TO ENDLOOP;                                                  28260700 T  0270:0
            END ELSE                                                            28260800 T  0272:2
            IF X[J].[1:1] THEN                                                  28260900 T  0273:0
            IF (X[J].[2:4] NEQ 0 OR X[J+1].[1:5] NEQ 0 OR ABS(X[J])=@114)       28261000 T  0273:0
            THEN NOTLOADED(37) ELSE                                             28261100 T  0274:2
            IF (T←DIRECTORYSEARCH(X[J]&(3+4×(TYPE=ADDV))[1:45:3],X[J+1],        28261110 T  0279:3
                 4+(TYPE=ADDV))) GEQ 2 THEN                                     28262000 T  0283:0
            IF T=2 THEN                                                         28263000 T  0287:3
                NOTLOADED(25) ELSE                                              28264000 T  0290:1
            BEGIN                                                               28265000 T  0291:2
                LOADING:=9;                                                     28267000 T  0294:0
                IF DSED THEN ABORT;                                             28268000 T  0294:2
                IF (I:=TYPE NEQ ADDV AND M[T+2] NEQ 0 AND                       28269000 T  0295:1
                    ((USERCODE[P1MIX] EQV ABS(MCP)) NEQ NOT 0) AND              28269500 T  0297:3
                    ((USERCODE[P1MIX] EQV ABS(M[T+2])) NEQ NOT 0)) OR           28270000 T  0300:3
                    (LATEST AND M[T+3].[30:18] GTR H[3].[30:18]) THEN           28271000 T  0303:3
                BEGIN                                                           28272000 T  0307:3
                HEADERUNLOCK(ABS(X[J]),X[J+1],T);                               28273000 T  0311:3
                T:=-1;                                                          28274000 T  0312:1
                NOTLOADED(64-I×23);                                             28275000 T  0315:1
                END;                                                            28276000 T  0316:1
            END ELSE                                                            28278000 T  0319:0
            IF T=1 THEN % IT WAS "IF-ED"                                        28279000 T  0319:0
            BEGIN                                                               28280000 T  0319:0
                T:=-1;                                                          28281000 T  0320:1
                NOTLOADED(45);                                                  28282000 T  0320:3
            END ELSE IF DSED THEN ABORT;                                        28283000 T  0321:3
            IF T=0 OR (T GEQ 64 AND TYPE NEQ ADDV) THEN                         28285000 T  0324:0
            BEGIN                                                               28286000 T  0327:0
                IF T GEQ 64 THEN                                                28287000 T  0329:3
                IF M[T+8]≠H[8] THEN                                             28288000 T  0330:1
                BEGIN                                                           28289000 T  0331:0
                    FORGETSPACE(T);                                             28290000 T  0333:3
                    P(DIRECTORYSEARCH(X[J],X[J+1],6),DEL);                      28291000 T  0334:1
                    T←0;                                                        28292000 T  0335:0
                END;                                                            28293000 T  0337:2
                IF T=0 THEN                                                     28294000 T  0338:1
                BEGIN                                                           28295000 T  0338:1
                    T:=GETSPACE(30,0,1)+2;%FIXES POSSIBLE PROBLEM               28296000 T  0339:0
                    MOVE(30,T-1,T);                                             28297000 T  0339:2
                    M[T+4]←-0&SYSNO[4:46:2]&1[2:47:1];                          28298000 T  0341:3
                END ELSE                                                        28299000 T  0343:3
                EADD←T.[18:15];                                                 28302000 T  0348:0
                LBL ← [M[T]] & 30[8:38:10];                                     28303000 T  0348:0
                FOR W:=H[9].[43:5]+10 STEP 1 UNTIL 29 DO H[W]:=0;               28304000 T  0349:3
                IF (LBL[9]:=(*P(DUP)) AND 31) = 0 THEN LBL[7]:=-1;              28305000 T  0352:0
                FOR W:=LBL[9]+10 STEP 1 UNTIL 29 DO LBL[W]:=0;                  28305500 T  0358:3
                                                                                28306000 T  0363:1
```

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                    W:=0;                                                   28306500 T  0369:2
                    WHILE (W←W+1) LEQ H[9].[43:5] DO                        28307000 T  0370:1
                        IF H[9+W]≠0 THEN                                    28308000 T  0373:1
                     IF (H[9+W]:=LBL[9+W]) LEQ 0 THEN                       28309000 T  0374:3
          OK:           IF(H[9+W]:=PETUSERDISK(H[8] OR M.COMMON)) LSS 1 THEN 28310000 T  0378:1
                        BEGIN                                               28311000 T  0382:2
          WY:           I←SPACE(10);                                        28311200 T  0383:0
                        STREAM(J←JARROW[P1MIX],P1MIX,H←H[8],M←X[J],F←X[J+1], 28311210 T  0385:1
                            I);                                             28311220 T  0388:1
                        BEGIN DS←14 LIT "#NO USER DISK:"; SI←J;SI←SI+1;     28311230 T  0388:3
                        DS←7CHR;DS←LIT"/";SI←SI+1;DS←7CHR;                  28311240 T  0391:1
                        DS←LIT"=";SI←LOC P1MIX;DS←2DEC;J←DI;DI←DI-2;DS←FILL; 28311250 T  0392:2
                        DI←J;DS←LIT"(";SI←LOC M;SI←SI+1;DS←7CHR;SI←SI+1;    28311260 T  0394:1
                        DS←LIT"/";DS←7CHR;DS←2LIT")-";SI←LOC H;DS←8 DEC;    28311270 T  0396:0
                        DS←7LIT" SEGS.←";DI←DI-15;DS←7FILL;                 28311280 T  0397:3
                        END;                                                28311290 T  0399:2
                        SPOUT(I);                                           28311300 T  0399:3
                            REPLY[P1MIX] := -(I:=VIF&VWY[36:42:6]&          28311400 T  0400:2
                                VOF[30:42:6]&VOK[24:42:6]);                 28311410 T  0402:1
                            COMPLEXSLEEP(REPLY[P1MIX]≥0 OR DSED             28311500 T  0405:2
                                        OR PRT[P1MIX,@25]=5);               28311600 T  0405:2
28173000    ACCIDENTAL ENTRY AT 5
                            IF NOT WHYSLEEP(I) THEN GO TO WY;               28311700 T  0414:1
                            IF REPLY[P1MIX]=VOK THEN GO TO OK;              28311800 T  0415:2
                            IF  REPLY[P1MIX]=VOF THEN                       28311910 T  0417:0
                            BEGIN COMMON ← COMMON AND NOT M; GO TO OK; END; 28311920 T  0418:0
                            FOR W:=W STEP -1 UNTIL 1 DO                     28314000 T  0420:2
                                IF H[9+W]≠0 THEN                            28315000 T  0422:0
                                IF LBL[9+W]=0 THEN                          28316000 T  0423:2
                                    FORGETUSERDISK(H[9+W],-H[8]);           28317000 T  0425:2
                            FORGETSPACE(T);                                 28318000 T  0430:2
                            IF DSED THEN ABORT;                             28318200 T  0431:1
                            IF LBL[9]≠0 THEN                                28318600 T  0433:3
                              P(DIRECTORYSEARCH(X[J],X[J+1],14),DEL);       28318800 T  0434:3
                            NOTLOADED(31);                                  28319000 T  0437:3
                            IF X[J+2]≠@14 THEN SPACIT;                      28321000 T  0440:0
                            GO TO ENDLOOP;                                  28322000 T  0443:0
                        END;                                                28323000 T  0443:2
                    STREAM(A←[H[1]],D←DATE);                                28328000 T  0444:0
                    BEGIN SI←LOC D;DI←LOC D;DS←8 OCT;                       28329000 T  0445:1
                        SI←SI-4;DI←A;DS←4 CHR;                              28330000 T  0446:0
                    END;                                                    28331000 T  0446:3
                    H[4]:=M[T+4]&H[4][8:8:3]&0[11:47:1]&H[4][36:36:6]       28332000 T  0447:0
                        &H[4][43:43:1];                                     28332100 T  0451:3
                    H[1].[25:23]←XCLOCK←P(RTR);                             28333000 T  0454:1
                    IF LBL[9]=0 THEN                                        28333100 T  0457:1
                        ENTERUSERFILE(ABS(X[J]),X[J+1],H,[CF]-1)            28333200 T  0458:1
                    ELSE                                                    28333300 T  0458:1
                    BEGIN W:=IF H[9] LSS LBL[9] THEN LBL[9] ELSE H[9];      28333400 T  0462:3
                        FOR W:=W+9 STEP -1 UNTIL 10 DO                      28333500 T  0467:0
                        IF H[W]=0 THEN                                      28333600 T  0471:1
                          IF LBL[W]≠0 THEN        % EXTRA ROW IN DISK FILE   28333700 T  0472:1
                            FORGETUSERDISK(LBL[W],LBL[8]) ELSE ELSE         28333800 T  0473:3
          $ SET OMIT = NOT SHAREDISK                                        28333890 T  0476:1
                        ;DISKWAIT(H INX 0,30,EADD);                         28334100 T  0476:1
                    END;                                                    28334200 T  0479:1
                    FORGETSPACE(T);                                         28334500 T  0479:1
                    LOADING:=TRUE;                                          28335000 T  0480:0
                    FOR K:=1 STEP 1 UNTIL H[9].[43:5] DO                    28336000 T  0480:3
                        IF H[K+9]≠0 THEN % ROW IS ASSIGNED                  28337000 T  0485:1
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                                IF LOADAROW THEN % THERE WAS AN ERROR                    28338000 T  0486:3
                                BEGIN                                                    28339000 T  0488:0
                                     COMPLEXSLEEP((IOD[0]=0 OR (IOD[0] AND IOMASK)≠0)    28339100 T  0488:2
                                          AND(IOD[1]=0 OR (IOD[1] AND IOMASK)≠0          28339110 T  0488:2
                                               ) OR DSED);                               28339200 T  0488:2
28311600    ACCIDENTAL ENTRY AT P1MIX
                 BADLOAD:                                                                28339500 T  0500:1
                                     BLASTQ(U);                                          28340000 T  0500:1
                                     P(WAITIO(@004740000020,@377,U),DEL);                28340100 T  0501:0
                                     LOADING:=FALSE;                                     28341000 T  0502:2
                                     P(DIRECTORYSEARCH(X[J],X[J+1],6),DEL);              28342000 T  0503:1
                                     IF X[J+2]≠@14 THEN SPACIT;                          28343000 T  0505:3
                                     GO ENDLOOP;                                         28344000 T  0509:0
                                IF STOPJOB=P1MIX THEN STOPM(0);                          28345000 T  0511:0
                        $ SET OMIT = NOT B6500LOAD                                       28345040 T  0514:0
                                IF WAITIO(SPACER,MM,U) ≠ @40 THEN                        28345100 T  0514:0
                                BEGIN NOTLOADED(56);                                     28345200 T  0516:1
                                     GO TO BADLOAD;                                      28345400 T  0519:0
                                END;                                                     28345500 T  0521:0
                                P(DIRECTORYSEARCH(X[J],X[J+1],14),DEL);                  28346000 T  0521:0
                                BB ← TRUE; % MARK THAT A FILE HAS BEEN LOADED            28346100 T  0523:2
                        $ SET OMIT = PACKETS                                             28346999 T  0524:1
                                IF LIBMSG THEN                                           28347000 T  0524:1
                        $ POP OMIT                                                       28347001 T  0525:0
                                LBMESS(ABS(X[J]),X[J+1],1,0,TINU[U],SPOUTUNIT,LIBMSG);   28348000 T  0525:0
                                LOADING:=FALSE;                                          28349000 T  0529:3
                        $ SET OMIT = NOT B6500LOAD                                       28349890 T  0530:2
                                GO FALLOUT;                                              28350000 T  0530:2
                           END;                                                          28351000 T  0531:0
                           IF X[J+2]=@14 THEN GO ENDLOOP ELSE                            28352000 T  0531:0
                           FOR K←1 STEP 1 UNTIL H[9].[43:5] DO                           28353000 T  0532:2
                           IF H[K+9]≠0 THEN                                              28354000 T  0537:2
                           BEGIN                                                         28355000 T  0539:0
                                IF STOPJOB=P1MIX THEN STOPM(0);                          28356000 T  0539:2
                                N:=W:=SIZE:=LOADING:=0;                                  28357000 T  0541:2
                                IC:=1;                                                   28358000 T  0543:3
                                IO; % READ HEADER                                        28359000 T  0544:2
                                W:=1;                                                    28360000 T  0546:0
                                FOR N1←H[8] DIV 30 + ((H[8] MOD 30)≠0) STEP -1 UNTIL 2 DO 28361000 T  0546:3
                                BEGIN  %   SPACE OVER FILE                               28362000 T  0553:0
                                     IO;                                                 28363000 T  0553:0
                 LAY:                COMPLEXSLEEP(((IOD[0] OR IOD[1]) AND IOMASK)≠0      28364000 T  0554:0
                                     OR DSED);                                           28365000 T  0554:0
28339200    ACCIDENTAL ENTRY AT P1MIX
                                     IF DSED THEN ABORT;                                 28366000 T  0562:3
                                     W←((IOD[1] AND IOMASK)≠0);                          28367000 T  0565:1
                                     IF IOD[W].[27:2]≠0 THEN                             28368000 T  0567:1
                                     IF IOD[W].[27:1] THEN %  END OF REEL                28369000 T  0568:3
                                     BEGIN                                               28370000 T  0570:1
                                          IF NOT ENDOFREEL THEN                          28371000 T  0570:3
                                          BEGIN                                          28371100 T  0572:1
                        $ SET OMIT = NOT B6500LOAD                                       28371120 T  0572:3
                                               P(WAITIO(@4740000020,@377,U),DEL,         28371200 T  0572:3
                                                 WAITIO(@4740000020,@377,U),DEL);        28371250 T  0574:1
                                               SPACIT;                                   28371300 T  0575:3
                                               GO TO ENDLOOP;                            28371350 T  0577:0
                                          END;                                           28371400 T  0579:0
                                          IO;                                            28372000 T  0579:0
                                          W:=1-W;                                        28373000 T  0580:0
                                          IF (IOD[W] AND IOMASK)=0 OR IOD[W].[27:1] THEN 28374000 T  0581:1
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                    N1:=N1+1;                                                   28375000 T  0584:0
                END ELSE      %       PARITY ERROR                              28376000 T  0585:3
                BEGIN                                                           28377000 T  0585:3
                    SPACIT;                                                     28378000 T  0586:1
                    GO ENDLOOP;                                                 28379000 T  0587:0
                END;                                                            28380000 T  0587:2
            END;                                                                28381000 T  0587:2
            IF N120 THEN  %         WAIT FOR LAST READ TO FINISH                28382000 T  0588:0
            BEGIN                                                               28383000 T  0588:3
                N1:=(-1);                                                       28384000 T  0589:1
                IOD[W]:=0;                                                      28385000 T  0590:1
                GO LAY;                                                         28386000 T  0591:2
            END;                                                                28387000 T  0592:0
        END;                                                                    28388000 T  0592:0
SKIPPER: DO UNTIL WAITIO(SPACER,MM,U)=@40;                                      28388500 T  0592:2
FALLOUT: WHILE ENDOFREEL DO P(WAITIO(SPACER,@40,U),DEL);                        28389000 T  0595:1
ENDLOOP: LOADING:=FALSE;                                                        28390000 T  0600:0
        IF DSED THEN ABORT;                                                     28391000 T  0600:3
    END UNTIL X[J:=J+2]=@14;                                                    28392000 T  0603:1
    IF NOT BB THEN                                                              28392200 T  0605:3
    BEGIN                                                                       28392300 T  0606:1
        STREAM(BB←BB←GETSPACE(5,0,0)+2);                                        28392400 T  0606:3
        BEGIN DS←18LIT"NULL LIBRARY LOAD←"; END;                                28392500 T  0609:2
        SPOUT (BB);                                                             28392600 T  0612:1
    END;                                                                        28392700 T  0613:0
    STOPTIMING(0,1023);                                                         28393000 T  0613:0
    STOPTIMING(5,1023);                                                         28394000 T  0614:0
    SETNOTINUSE(U,0);                                                           28395000 T  0615:0
$ SET OMIT = PACKETS                                                            28395999 T  0616:0
        IF UNITNO≠0 AND LABELTABLE[UNITNO]=@214 THEN                            28396000 T  0616:0
            LABELTABLE [UNITNO]←@114;                                           28397000 T  0618:0
$ POP OMIT                                                                      28397001 T  0619:3
        GO INITIATE;                                                            28398000 T  0619:3
END; % OF LIBRARY LOAD PROCEDURE                                                28399000 T  0620:1
                                                                                        SIZE= 0622 WORDS
PROCEDURE LIBRARYDUMP;                                                          28400000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00685
BEGIN                                                                           28401000 T  0000:0
    REAL COMMON=-4;                                                             28402000 T  0000:0
    REAL I,J,T,U,UNITNO,DUMPING,W,Y,TM,REEL,IC,N,N1,LAST,N2;                    28403000 T  0000:0
    REAL Q,MID,FID,MAX,EXP,GTRMAX,K,K1,SEG,MIDCTR,SIZE,TYPE;                    28404000 T  0000:0
  REAL RC,B;  %  ONE IO                                                         28404001 T  0000:0
    ARRAY X[*],S[*],AROW[*],H[*],IOD[*],LBL[*];                                 28405000 T  0000:0
REAL TOGS;                                                                      28405100 T  0000:0
DEFINE DISKPARITY  = TOGS.[47:1]#,                                              28405200 T  0000:0
       DUMPDIR     = TOGS.[46:1]#,                                              28405300 T  0000:0
       NOLBL       = TOGS.[45:1]#,                                              28405400 T  0000:0
       TAPEPARITY  = TOGS.[44:1]#,                                              28405500 T  0000:0
       SPOUTUNIT   = 0#,                                                        28406000 T  0000:0
       DSED        = (TERMIX.[CF]=P1MIX)#,                                      28406100 T  0000:0
       SPACER      = 5&@3400[CTF]#,                                             28406200 T  0000:0
       MM          = @37700040#;                                                28406300 T  0000:0
LABEL TAPEPAR,PARERR,LOOP,WATE,DISPAR,GETONE,NEXTNAME,GETMORE,                  28407000 T  0000:0
      WRITIT,BACK,BADHDR,NEXT;                                                  28407100 T  0000:0
    %*********************************************************                  28408000 T  0000:0
    DEFINE NOTDUMPED(NOTDUMPED1) =                                              28408100 T  0000:0
        BEGIN NT1:=NOTDUMPED1; NODUMPMESS; END#;                                28408200 T  0000:0
    SUBROUTINE NODUMPMESS;                                                      28408300 T  0000:0
        LBMESS(%[J],X[J+1],-3,NT1,IF DUMPING THEN TINU[U] ELSE 0,               28408400 T  0001:0
                SPOUTUNIT,1);                                                   28408500 T  0005:2
```

```
%*************************************************************  28408600 T  0006:2
SUBROUTINE GETASEGMENT;                                         28409000 T  0006:2
BEGIN                                                           28410000 T  0007:0
     SEG:=S[29];                                                28411000 T  0007:0
     DISKWAIT(^S,[CF],30,SEG);                                  28412000 T  0008:0
     FORGETESPDISK(SEG);                                        28413000 T  0010:1
     I:=2;                                                      28414000 T  0011:0
END; % OF GETASEGMENT                                           28415000 T  0011:3
%*************************************************************  28441000 T  0012:0
SUBROUTINE ABORT;                                               28442000 T  0012:0
BEGIN                                                           28442500 T  0012:0
     IF DUMPING THEN J:=J-2 ELSE                                28443000 T  0012:0
     BEGIN X[J]:=@14;                                           28443500 T  0014:0
          J:=-2;                                                28444000 T  0015:3
     END;                                                       28444500 T  0016:3
     WHILE X[J:=J+2]≠@14 AND J LSS 1022 DO                      28445000 T  0016:3
          P(DIRECTORYSEARCH(^X[J],X[J+1],13),DEL);              28446000 T  0020:1
     IF U GEQ 0 THEN                                            28447000 T  0023:2
     BEGIN                                                      28448000 T  0024:1
          STOPTIMING(0,1023);                                   28449000 T  0024:3
          STOPTIMING(5,1023);                                   28450000 T  0025:3
          BLASTQ(U);                                            28451000 T  0026:3
          SETNOTINUSE(U,0);                                     28452000 T  0027:2
     END;                                                       28453000 T  0028:2
     WHILE S[29]≠0 DO GETASEGMENT;                              28454000 T  0028:2
$ SET OMIT = PACKETS                                            28454999 T  0031:2
     IF UNITNO≠0 AND LABELTABLE[UNITNO]=@214 THEN               28455000 T  0031:2
          LABELTABLE[UNITNO]:=@114;                             28456000 T  0033:2
$ POP OMIT                                                      28456001 T  0035:1
     GO TO INITIATE;                                            28457000 T  0035:1
END; % OF ABORT                                                 28458000 T  0035:3
%*************************************************************  28458500 T  0036:0
SUBROUTINE SPACIT;                                              28458600 T  0036:0
BEGIN                                                           28458700 T  0036:0
     WHILE WAITIO(SPACER,MM,U) ≠ @40 DO                         28458800 T  0036:0
     BEGIN                                                      28458900 T  0038:3
          IF DSED THEN ABORT;                                   28459000 T  0038:3
          IF STOPJOB=P1MIX THEN STOPM(0);                       28459100 T  0042:0
     END;                                                       28459200 T  0044:0
     P(WAITIO([TM],@40,U),DEL);          % WRITE THE TM BACK   28459300 T  0047:0
END; % OF SPACIT                                                28459400 T  0048:2
%*************************************************************  28459500 T  0048:3
SUBROUTINE WRITENDINGLABEL;                                     28460000 T  0048:3
BEGIN                                                           28461000 T  0049:0
     P(WAITIO([TM],@40,U),DEL);                                 28462000 T  0049:0
     IF DSED THEN ABORT;                                        28463000 T  0050:2
     P(WAITIO(LB&&@5000[CTF],@40,U),DEL);                       28464000 T  0053:0
     IF DSED THEN ABORT;                                        28465000 T  0055:1
END; % OF WRITE ENDING LABEL                                    28466000 T  0058:0
%*************************************************************  28467000 T  0060:0
SUBROUTINE CHECK;                                               28468000 T  0060:0
BEGIN                                                           28469000 T  0060:0
     IF (Y:=IOD[W]).[27:2]≠0 THEN % PARITY ERROR OR EOT         28470000 T  0060:0
     BEGIN                                                      28471000 T  0062:0
          IF Y.[7:1] AND Y.[27:1] THEN % END OF TAPE            28472000 T  0062:2
          BEGIN                                                 28473000 T  0064:1
               IF IOD[1-W].[7:1] THEN                           28474000 T  0064:3
               BEGIN                                            28475000 T  0066:1
                    SLEEP([IOD[1-W]],IOMASK);                   28476000 T  0066:3
                    IF IOD[1-W].[28:1] THEN GO PARERR;          28477000 T  0069:0
```

```
                    IOD[1-W].[27:1]:=0;                                  28478000 T  0071:1
                END;                                                     28479000 T  0074:1
TAPEPAR:        LBL[4]:=(*P(DUP)) OR 1;                                  28480000 T  0074:1
                IF LBL[2].[30:18]=0 THEN %FILE000 LAST FILE              28480100 T  0076:1
                STREAM(A←(J+4) DIV 2,B←[LBL[2]]);                        28480200 T  0077:3
                BEGIN SI←LOC A; DI←DI+5; DS←3 DEC END;                   28480300 T  0080:2
                P(WAITIO([TM],@40,U),DEL);                               28481000 T  0081:2
                P(WAITIO(LBL&@5000[CTF],@40,U),DEL);                     28482000 T  0083:0
                P(WAITIO([TM],@40,U),DEL);                               28483000 T  0085:1
                SETNOTINUSE(U,1);                                        28484000 T  0086:3
                STOPTIMING(5,1023);                                      28485000 T  0087:3
                LBL[4]:=(*P(DUP)) AND NOT(1);                            28486000 T  0088:3
                STREAM(REEL:=REEL:=REEL+1,LBL);                          28487000 T  0091:0
                BEGIN SI:=LOC REEL;                                      28488000 T  0093:1
                    DI:=DI+24; DS:=3 DEC;                                28489000 T  0093:2
                END;                                                     28490000 T  0094:0
                IF (U:=LABELASCRATCH(LBL)) LSS 0 THEN ABORT;             28491000 T  0094:1
                 DUMPDIR←TRUE; %DUMP DIRECTORY                           28491100 T  0098:0
                STARTIMING(5,U);                                         28492000 T  0099:3
            END ELSE % PARITY ERROR                                      28493000 T  0100:3
PARERR:     BEGIN                                                        28494000 T  0100:3
                IF Y.[7:1] THEN     % TAPE                               28495000 T  0103:0
                BEGIN                                                    28495500 T  0103:3
                    SPACIT;                                              28496000 T  0104:1
                    P(WAITIO(H&@5000[CTF],@40,U),DEL);                   28496500 T  0105:0
                    TAPEPARITY:=TRUE;                                    28497000 T  0107:1
                    GO TO TAPEPAR;                                       28497500 T  0109:0
                END;                                                     28498000 T  0111:0
                DISKPARITY:=TRUE;                                        28499000 T  0111:0
            END;                                                         28500000 T  0112:3
        END;                                                             28501000 T  0112:3
    END; % OF SUBROUTINE CHECK                                           28502000 T  0112:3
    %*********************************************************           28503000 T  0113:0
    SUBROUTINE IO;                                                       28504000 T  0113:0
    BEGIN                                                                28505000 T  0113:0
        IF IC THEN                                                       28506000 T  0113:0
            IOREQUEST(-(IOD[W]:=(AROW[W] INX @500000000)&                28507000 T  0113:1
                SIZE[8:38:10]&TINU[U][3:3:5]) OR @2017700000,            28508000 T  0115:2
                IOD[W],[IOD[W]]&U[12:42:6])                              28509000 T  0119:0
        ELSE                                                             28510000 T  0120:1
        BEGIN                                                            28511000 T  0121:1
            DISKIO(IOD[W],-(AROW[W] INX 0-1),(T←IF (T←LAST-Q-N+1) LSS    28512000 T  0124:0
                30 THEN 30×T ELSE 900),Q+N);                             28513000 T  0129:2
            N:=N+30;                                                     28514000 T  0133:2
$ SET OMIT = NOT(STATISTICS)                                             28514099 T  0134:3
        END;                                                             28515000 T  0134:3
    END; % OF IO                                                         28516000 T  0134:3
    %*********************************************************           28517000 T  0135:0
    SUBROUTINE DUMPAROW;                                                 28518000 T  0135:0
    BEGIN                                                                28519000 T  0135:0
        N1 ← H[8]; SIZE ← 900;%                                          28520000 T  0135:0
        LAST←(Q←H[K+9])+H[8]-1;%                                         28521000 T  0136:3
IOD[1]:=N2:=W:=N:=IC:=RC:=0;                                             28522000 T  0140:0
        IO; % FIRE UP FIRST DISK READ                                    28523000 T  0143:3
        W ←1;% SWAP BUFFERS                                              28524000 T  0145:0
    IF B←(N<N1) THEN% CANNOT DO ROW WITH ONE READ                        28525000 T  0145:3
LOOP:   IO;                                                              28526000 T  0147:0
 WATE: IF B    THEN COMPLEXSLEEP((((IOD[1-W]) AND IOMASK)≠0) OR DSED)    28527000 T  0149:0
ELSE % 1 IO                                                              28527001 T  0149:1
```

28365000 ACCIDENTAL ENTRY AT @1MIX

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                    COMPLEXSLEEP((((IOD[RC])AND IOMASK)≠0) OR DSED);                    28527002 T  0157:2
28527001    ACCIDENTAL ENTRY AT P1MIX
                         IF DSED THEN ABORT;                                            28528000 T  0166:0
                         N2←N2+15;% COUNT NUMBER OF OPERATIONS COMPLETED                28529000 T  0169:0
                         W←IF (IOD[0] AND IOD[1] AND IOMASK)≠0 THEN 1-W ELSE            28530000 T  0170:1
                              ((IOD[1] AND IOMASK)≠0);                                  28531000 T  0174:1
                         CHECK;                                                         28532000 T  0176:1
                         IF DISKPARITY OR TAPEPARITY THEN GO TO DISPAR;                 28532500 T  0177:0
                         IC←1-IOD[W].[7:1];% SWAP UNITS                                 28533000 T  0179:2
                         IF N<N1 THEN GO TO LOOP;% ROW IS NOT FINISHED                  28534000 T  0181:2
                         IF N2+302N THEN SIZE←T; % CHANGE SIZE FOR LAST RECORD          28535000 T  0182:3
                         IF IOD[W].[24:1] THEN GO TO LOOP;% MORE WRITING TO DO          28536000 T  0185:1
                    IF N2<N THEN BEGIN IOD[W]:=0;RC:=1-W;B:=0;GO TO WATE;END;%FIX ODD#  28537000 T  0187:0
                   DISPAR:        END;%OF DUMPAROW                                     28538000 T  0192:0
                        %*************************************************************  28539000 T  0192:1
                        S:=[M[SPACE(30)]]&30[8:38:10];                                  28540000 T  0192:1
                        TYPE:=COMMON.[FF];                                              28541000 T  0205:3
                        S[29]:=COMMON.[CF];                                             28542000 T  0207:0
                        GETASEGMENT;                                                    28543000 T  0208:3
                        STREAM(MID:=MID:=S[1],B:=PRT[P1MIX,3]);                         28544000 T  0210:0
                        BEGIN DS:=16 LIT"0DIRCTRY0DISK   ";DS:=25 LIT"0";SI:=LOC MID;   28545000 T  0212:2
                             SI:=SI+1;DS:=7 CHR;DS:=8 LIT"0FILE000";DS:=24 LIT"0";      28546000 T  0218:2
                        END;                                                            28547000 T  0223:2
                        UNITNO:=S[0].[2:6];                                             28548000 T  0223:3
                        X:=[M[SPACE(1023)]]&1023[8:38:10];                              28549000 T  0225:1
                        MAX←S[0].[CF];                                                  28550000 T  0229:0
                        EXP:=S[0].[8:2];                                                28551000 T  0230:2
                        GTRMAX←S[0]<0;                                                  28552000 T  0232:0
                        X[0]:=@14;                                                      28553000 T  0233:2
                        MOVE(1022,X,[X[1]]);                                            28554000 T  0234:3
                        U:=-1;                                                          28554500 T  0236:3
                   GETONE:                                                              28555000 T  0237:3
                        IF DSED THEN ABORT;                                             28555500 T  0237:3
                        IF I>26 THEN GETASEGMENT;                                       28556000 T  0241:0
                        IF (S[I] OR S[I+1])<0 THEN SEEKNAM(S[I],S[I+1],W,X[J],X[J+1],Y) ELSE  28557000 T  0243:0
                        BEGIN                                                           28558000 T  0251:1
                             X[J]:=S[I];                                                28559000 T  0252:0
                             X[J+1]:=S[I+1];                                            28560000 T  0253:2
                             W:=1;                                                      28561000 T  0256:0
                        END;                                                            28562000 T  0256:3
                        IF W≠0 THEN                                                     28563000 T  0256:3
                        BEGIN                                                           28564000 T  0257:2
                             T←0;                                                       28565000 T  0258:0
                             K←I;                                                       28566000 T  0258:3
                             FOR N←J-2 STEP-2 UNTIL 0 DO                                28567000 T  0259:2
                                  IF (X[J] EQV X[N])=NOT 0 THEN                         28568000 T  0263:3
                                  IF (X[J+1] EQV X[N+1])=NOT 0 THEN GO TO NEXTNAME;     28569000 T  0265:3
                             IF GTRMAX THEN                                             28569200 T  0270:1
                             BEGIN                                                      28569300 T  0270:2
                                  J:=J+2;                                               28569400 T  0271:0
                                  GO TO NEXTNAME;                                       28569500 T  0272:1
                             END ELSE                                                   28569600 T  0272:3
                             IF NOT SYSTEMFILE(X[J],X[J+1]) THEN                        28570000 T  0272:3
                             IF (T:=DIRECTORYSEARCH(X[J]&1[3:47:1],X[J+1] OR M,3))      28571000 T  0275:2
                               LSS 64 THEN                                              28571002 T  0279:2
                             BEGIN                                                      28572000 T  0280:3
                                  IF DSED THEN ABORT;                                   28573000 T  0281:1
                                  IF T=1 THEN NOTDUMPED(45) ELSE IF T NEQ 2 THEN K:=0   28574000 T  0284:0
                                       ELSE NOTDUMPED(25);                              28576000 T  0288:3
                                  GO TO NEXTNAME;                                       28577000 T  0292:0
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                    END;                                                    28578000 T  0292:2
                    IF T GEQ 64 THEN                                        28579000 T  0292:2
                    BEGIN                                                   28580000 T  0293:1
                         IF M[T+2]≠0 THEN                                   28581000 T  0293:3
                         IF (USERCODE[P1MIX] EQV ABS(MCP))≠NOT 0 THEN       28582000 T  0295:3
                        IF (USERCODE[P1MIX] EQV ABS(M[T+2])) NEQ NOT 0 THEN %  28583000 T  0299:0
                         BEGIN                                              28584000 T  0302:3
                              P(DIRECTORYSEARCH(-X[J],X[J+1],13),DEL);      28585000 T  0303:1
                              NOTDUMPED(41);                                28586000 T  0306:0
                              GO TO NEXTNAME;                               28588000 T  0308:0
                         END;                                               28589000 T  0308:2
                         IF EXP NEQ 0 THEN                                  28590000 T  0308:2
                         BEGIN                                              28591000 T  0309:1
                              IF EXP THEN                                   28592000 T  0309:3
                              BEGIN                                         28593000 T  0310:0
                                   STREAM(T:=0:A:=CALCULATEPURGE(-M[T+3],[2:10]));  28594000 T  0310:2
                                   BEGIN SI:=LOC A;DI:=LOC T;DS:=8 OCT END; 28595000 T  0314:1
                                   IF P GTR M[T+3],[12:18] THEN J:=J+2 ELSE 28596000 T  0315:1
                                   P(DIRECTORYSEARCH(-X[J],X[J+1],13),DEL); 28597000 T  0319:1
                              END ELSE                                      28598000 T  0322:2
                              BEGIN                                         28599000 T  0322:2
                                   IF M[T+4],[11:1] THEN J:=J+2 ELSE        28600000 T  0323:0
                                   P(DIRECTORYSEARCH(-X[J],X[J+1],13),DEL); 28601000 T  0326:3
                              END;                                          28602000 T  0330:0
                         END ELSE J:=J+2;                                   28603000 T  0330:0
                    END;                                                    28605000 T  0331:3
               NEXTNAME:                                                    28607000 T  0331:3
                    IF (S[I] OR S[I+1])<0 THEN I←I-2 ELSE W←0;              28608000 T  0331:3
                    IF T GEQ 64 THEN FORGETSPACE(T);                        28609000 T  0337:0
                END;                                                        28610000 T  0339:0
                IF K LSS I THEN LBMESS(S[I],S[I+1],-3,15,0,SPOUTUNIT,1);    28612000 T  0339:0
                IF S[I←I+2]≠@14 THEN                                        28614000 T  0343:3
                IF J<(2*MAX) OR GTRMAX THEN GO GETONE ELSE                  28615000 T  0345:3
                BEGIN                                                       28616000 T  0348:0
                     LBL:=[M[SPACE(30)]]&30[8:38:10];                       28617000 T  0348:3
                     J←-2;                                                  28618000 T  0352:2
                     LBL[0]:=-MAX;                                          28619000 T  0353:2
                     LBL[1]←MID;                                            28620000 T  0355:0
                     LBL[28]←0;                                             28621000 T  0356:1
                     STREAM(A←MIDCTR:ONE←1,MID←[MID]);                      28622000 T  0357:2
                     BEGIN SI←LOC A;SI←SI+7;IF SC="0" THEN                  28623000 T  0359:0
                          BEGIN TALLY←2;SI←MID;SI←SI+2;5(IF SC=" " THEN JUMP OUT;  28624000 T  0360:0
                               SI←SI+1;TALLY←TALLY+1);A←TALLY;DI←DI+A;DS←LIT"1";  28625000 T  0362:0
                          END ELSE BEGIN DI←DI+A;SI←SI+16;DS←ADD;END;       28626000 T  0364:0
                     END;                                                   28627000 T  0365:1
                     MIDCTR←0;                                              28628000 T  0365:2
                     COMMON←SEG←GETESPDISK;                                 28629000 T  0366:0
                     COMMON.[FF]:=TYPE;                                     28630000 T  0367:2
               GETMORE:                                                     28631000 T  0368:3
                     FOR K←2 STEP 2 UNTIL 26 DO                             28632000 T  0368:3
                     BEGIN                                                  28634000 T  0370:0
                          LBL[K]←X[J←J+2];                                  28635000 T  0370:0
                          IF LBL[K]=@14 THEN GO WRITIT;                     28636000 T  0372:2
                          LBL[K+1]←X[J+1];                                  28637000 T  0374:0
                                                                            28638000 T  0376:2
                     END;                                                   28639000 T  0376:2
               WRITIT:                                                      28640000 T  0378:3
                     LBL[29]←IF K≠ 28 THEN 0 ELSE GETESPDISK;               28641000 T  0378:3
                     DISKWAIT(LBW INX 0,30,SEG);                            28642000 T  0382:1
                     IF K=28 THEN                                           28643000 T  0384:1
```

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BEGIN                                                                   28644000 T  0385:0
     SEG←LBL[29];                                                       28645000 T  0385:2
     GO GETMORE;                                                        28646000 T  0386:2
END;                                                                    28647000 T  0387:0
FORGETSPACE(LBL);                                                       28648000 T  0387:0
LBMESS("LIBMAIN","DISK    ",50,0,0,SPOUTUNIT,1);                        28649000 T  0388:0
M[(T:=GETSPACE(12,0,0)+4)-4].[9:6]:=0;                                  28650000 T  0390:1
IF (J←USERCODE[P1MIX])=ABS(NOT 0) THEN                                  28651000 T  0395:2
BEGIN                                                                   28652000 T  0397:2
     J←0;                                                               28653000 T  0398:0
     K←31;                                                              28654000 T  0398:3
END ELSE K←26;                                                          28655000 T  0399:2
STREAM(J,COMMON,T);                                                     28656000 T  0402:3
BEGIN                                                                   28657000 T  0404:0
     DS←8 LIT"CC USER=";SI←LOC J;SI←SI+1;DS←7 CHR;                      28658000 T  0404:0
     DS←29 LIT";EXECUTE LIBMAIN/DISK;COMMON=";                          28659000 T  0406:0
     DS←8 DEC; DS←6 LIT";END.←";                                        28660000 T  0410:0
END;                                                                    28661000 T  0411:1
$ SET OMIT = NOT(PACKETS)                                               28661099 T  0411:2
T←T&P1MIX[18:42:6]&K[3:43:5];                                           28661300 T  0411:2
INDEPENDENTRUNNER(P(.CONTROLCARD),T,192);                               28662000 T  0414:1
$ SET OMIT = NOT(PACKETS)                                               28662099 T  0415:2
J←T←0;                                                                  28663000 T  0415:2
GO GETONE;                                                              28664000 T  0416:3
END;                                                                    28665000 T  0417:1
X[J]←@14; %     MARK END OF DIRECTORY                                   28666000 T  0417:1
IF J=0 THEN                                                             28667000 T  0418:2
BEGIN                                                                   28668000 T  0419:1
     STREAM(MID,D:=I:=SPACE(10));                                       28669000 T  0419:3
     BEGIN DS:=14 LIT"-NULL LIBRARY ";SI:=LOC MID;                      28670000 T  0422:3
          SI:=SI+1;DS:=7 CHR; DS:=LIT"←";                               28671000 T  0425:0
     END;                                                               28672000 T  0426:0
     SPOUT(I);                                                          28673000 T  0426:1
     GO TO INITIATE;                                                    28674000 T  0427:0
END;                                                                    28675000 T  0427:2
TM←0&"2←"[1:37:11];%                                                    28676000 T  0427:2
IF J LSS 900 THEN                                                       28677000 T  0429:1
BEGIN                                                                   28678000 T  0430:0
     T:=SPACE(J+1);                                                     28679000 T  0430:2
     MOVE(J+1,X,T);                                                     28680000 T  0433:1
     FORGETSPACE(X);                                                    28681000 T  0435:2
     X:=[M[T]]&(J+1)[8:38:10];                                          28682000 T  0436:2
END;                                                                    28683000 T  0439:1
REEL:=1;                                                                28684000 T  0439:1
LBL:=[M[TAPELABEL(MID,FID:="FILE000",1,1,100)]]&10[8:38:10];            28685000 T  0440:0
IF (U:=LABELASCRATCH(LBL)) LSS 0 THEN ABORT;                            28686000 T  0444:1
STARTIMING(0,18);                                                       28687000 T  0448:0
STARTIMING(5,U);                                                        28688000 T  0449:0
P(WAITIO(X&(J+1)[8:38:10]&@5000[CTF],@40,U),DEL);                       28689000 T  0450:0
WRITENDINGLABEL;                                                        28690000 T  0453:3
AROW:=[M[SPACE(2)]]&2[8:38:10];                                         28691000 T  0455:0
AROW[0]:=[M[SPACE(900)]]&900[8:38:10];                                  28692000 T  0458:3
AROW[1]:=[M[SPACE(900)]]&900[8:38:10];                                  28693000 T  0463:0
IOD:=[M[SPACE(2)]]&2[8:38:10];                                          28694000 T  0467:1
J:=-2;                                                                  28695000 T  0471:0
DUMPING:=TRUE;                                                          28696000 T  0472:0
WHILE X[J←J+2]≠@14 DO %                                                 28697000 T  0472:3
BEGIN;                                                                  28698000 T  0475:1
     STREAM(A←(J+2) DIV 2,B←[LBL[2]]);                                  28699000 T  0475:1
     BEGIN SI:=LOC A;DI:=DI+5;DS:=3 DEC END;                            28700000 T  0477:2
```

```
                LABELTABLE[U]←-LBL[2]; % ENTER FILE ID FOR OL MESSAGE                28701000 T  0478:2
                H:=[M[DIRECTORYSEARCH(X[J],X[J+1],5)]]&30[8:38:10];                  28702000 T  0480:1
                H[9]:=(*P(DUP)) AND 31;                                              28702100 T  0484:2
                IF NOLBL THEN NOLBL←FALSE ELSE                                       28702200 T  0486:2
                BEGIN                                                                28702300 T  0489:2
                P(WAITIO(LBL&@5000[CTF],@40,U),DEL);                                 28703000 T  0492:0
                IF DSED THEN ABORT;                                                  28704000 T  0494:1
                P(WAITIO([TM],@40,U),DEL);                                           28705000 T  0497:0
                IF DSED THEN ABORT;                                                  28706000 T  0498:2
                END;                                                                 28706100 T  0501:0
                IF P([H[9]],LOD,DUP)=0 OR P(XCH)>20 THEN                             28706500 T  0501:0
                 GO TO BADHDR;                                                       28706600 T  0503:2
                P(WAITIO(H&@5000[CTF],@40,U),DEL);                                   28707000 T  0504:1
BACK:           IF DSED THEN ABORT;                                                  28708000 T  0506:2
                FOR K←1 STEP 1 UNTIL H[9] DO% WRITE OUT FILE, ROW BY ROW             28709000 T  0509:0
                IF H[K+9]≠0 THEN                                                     28710000 T  0513:0
                BEGIN                                                                28711000 T  0514:2
                   DUMPAROW;                                                         28711200 T  0515:0
                   IF TAPEPARITY THEN                                                28711300 T  0516:0
                   BEGIN                                                             28711400 T  0516:3
                      TAPEPARITY:=FALSE;                                             28711500 T  0517:1
                      GO BACK;                                                       28711600 T  0519:0
                   END;                                                              28711700 T  0521:0
                   IF DISKPARITY THEN                                                28711800 T  0521:0
                   BEGIN                                                             28711900 T  0521:3
                      SPACIT;                                                        28712000 T  0522:1
                      IF DSED THEN ABORT;                                            28712190 T  0523:0
BADHDR:                                                                              28712195 T  0526:0
                      H:=H&20[8:38:10];                                              28712200 T  0526:0
                      P(WAITIO(H&@5000[CTF],@40,U),DEL);                             28712210 T  0528:0
                      WRITENDINGLABEL;                                               28712220 T  0530:1
                      P(DIRECTORYSEARCH(-X[J],X[J+1],13),DEL);                       28712225 T  0531:0
                      NOTDUMPED(IF DISKPARITY THEN 35 ELSE 43);                      28712228 T  0533:3
                      FORGETSPACE(H);                                                28712230 T  0538:0
                      DISKPARITY:=FALSE;                                             28712233 T  0539:0
                      GO TO NEXT;                                                    28712235 T  0540:3
                   END;                                                              28712500 T  0543:0
                   IF STOPJOB=P1MIX THEN STOPM(0);                                   28713000 T  0543:0
                END;                                                                 28714000 T  0545:0
                FORGETSPACE(H);                                                      28715000 T  0545:2
                WRITENDINGLABEL;                                                     28716000 T  0546:2
          $ SET OMIT = PACKETS                                                       28716999 T  0548:0
                IF LIBMSG THEN                                                       28717000 T  0548:0
          $ POP OMIT                                                                 28717001 T  0548:3
                LBMESS(X[J],X[J+1],3,0,TINU[U],UNITNO,LIBMSG);                       28717100 T  0548:3
                P(DIRECTORYSEARCH(-X[J],X[J+1],13),DEL);                             28718000 T  0553:1
                IF DUMPDIR THEN                                                      28718100 T  0556:0
                BEGIN X[0]←@114; X[1]←J+2; %FLAG X[0] AND OFFSET INTO X[1]           28718110 T  0556:3
                     LBL[2].[30:18]:=0; %FILE000                                     28718120 T  0560:1
                     P(WAITIO(LBL&@5000[CTF],@40,U),DEL);                            28718140 T  0562:3
                     IF DSED THEN ABORT;                                             28718150 T  0565:0
                     P(WAITIO([TM],@40,U),DEL);                                      28718160 T  0568:0
                     IF DSED THEN ABORT;                                             28718170 T  0569:2
                     IOD[0]←0; W←1; SIZE←X.[8:10];                                   28718180 T  0572:0
                     IOREQUEST(-(IOD[W]←(X INX @500000000)&                          28718182 T  0575:2
                                 SIZE[8:38:10]&TINU[U][3:3:5]) OR @2017700000,       28718184 T  0577:1
                                 IOD[W],[IOD[W]]&U[12:42:6]);                        28718186 T  0580:3
                     COMPLEXSLEEP((((IOD[W]) AND IOMASK)≠0) OR DSED);                28718188 T  0583:0
28527002    ACCIDENTAL ENTRY AT P1MIX
                     IF DSED THEN ABORT;                                             28718190 T  0591:0
```

```
                    CHECK;                                                          28718192 T  0594:0
                    IF NOT IOD[W].[27:1] THEN                                       28718194 T  0595:0
                    BEGIN WRITENDINGLABEL; DUMPDIR←FALSE END ELSE NOLBL←TRUE;       28718200 T  0596:1
                 END;                                                               28718210 T  0605:3
NEXT:   END;%ALL FILES NOW WRITTEN                                                  28719000 T  0605:3
        P(WAITIO([TM],@40,U),DEL);                                                  28720000 T  0606:1
        STOPTIMING(0,1023);                                                         28721000 T  0607:3
        STOPTIMING(5,1023);%                                                        28722000 T  0608:3
        SETNOTINUSE(U,1);                                                           28723000 T  0609:3
        IF TYPE=UNLOAD THEN                                                         28724000 T  0610:3
            FOR J←0 STEP 2 WHILE X[J]≠@14 DO                                        28725000 T  0611:2
                    IF DIRECTORYSEARCH(-X[J],X[J+1],7)=3 THEN X[J+2]:=@14;          28726000 T  0616:1
 $ SET OMIT = PACKETS                                                               28726999 T  0622:0
        IF UNITNO≠0 AND LABELTABLE[UNITNO]=@214 THEN                                28727000 T  0622:0
            LABELTABLE [UNITNO]←@114;                                               28728000 T  0624:0
 $ POP OMIT                                                                         28728001 T  0625:3
        GO INITIATE;                                                                28729000 T  0625:3
END; % OF LIBRARYDUMP                                                               28730000 T  0626:1
                                                                                                SIZE= 0627 WORDS
PROCEDURE LIBRARYZERO;                                                              28800000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00706
BEGIN                                                                               28801000 T  0000:0
        REAL COMMON=-4;                                                             28802000 T  0000:0
        REAL TYPE,SEG,I,J,K,N1,Q,N,W,T,THING,ZEROING;                               28803000 T  0000:0
        ARRAY S[*],X[*],RSULT[*],BUFFADR[*],IOD[*],H[*];                            28804000 T  0000:0
        LABEL GETONE,LOOP,WATE,ARD;                                                 28806000 T  0000:0
        DEFINE DSED=(TERMIX.[CF]=P1MIX)#;                                           28807000 T  0000:0
        %*************************************************************             28808000 T  0000:0
        SUBROUTINE GETASEGMENT;                                                     28809000 T  0000:0
        BEGIN                                                                       28810000 T  0001:0
            SEG:=S[29];                                                             28811000 T  0001:0
            DISKWAIT(-S.[CF],30,SEG);                                               28812000 T  0002:0
            FORGETESPDISK(SEG);                                                     28813000 T  0004:1
            I:=2;                                                                   28814000 T  0005:0
        END; % OF GETASEGMENT                                                       28815000 T  0005:3
        %*************************************************************             28816000 T  0006:0
        SUBROUTINE ABORT;                                                           28817000 T  0006:0
        BEGIN                                                                       28818000 T  0006:0
            IF ZEROING THEN                                                         28821000 T  0006:0
            BEGIN                                                                   28821500 T  0006:1
            H[4].[43:2]:=1;                                                         28822000 T  0006:3
            H[4].[2:1]:=0;                                                          28822500 T  0009:1
            DISKWAIT(THING.[CF],30,THING.[FF]);                                     28823000 T  0011:3
            FORGETSPACE(H);                                                         28823500 T  0014:0
            END;                                                                    28824000 T  0015:0
            WHILE S[29] NEQ 0 DO GETASEGMENT;                                       28824250 T  0015:0
            GO INITIATE;                                                            28824500 T  0018:2
        END; % OF ABORT                                                             28827000 T  0019:0
        %*************************************************************             28828000 T  0019:1
        SUBROUTINE IO;                                                              28829000 T  0019:1
        BEGIN                                                                       28830000 T  0020:0
            STREAM(DSKADR:=Q+N,D:=(BUFFADR INX (2×W)));                             28831000 T  0020:0
                BEGIN SI:=LOC DSKADR; DS:=BDEC; END;                                28831500 T  0022:3
            RSULT[W]:=0;                                                            28831600 T  0023:2
            IOREQUEST(-IOD[W]&@377[25:40:8],                                        28832000 T  0024:3
                    IOD[W]&(IF (T:=N1-N) LSS 63 THEN 512+T ELSE 512+63)             28832500 T  0026:3
                    [CTF],(W INX RSULT));                                           28833000 T  0031:1
            N:=N+63;                                                                28833500 T  0033:0
        END; % OF IO                                                                28834000 T  0034:1
        %*************************************************************             28834500 T  0034:2
```

```
                    SUBROUTINE ZEROAROW;                                                28835000 T  0034:2
                    BEGIN                                                               28835500 T  0035:0
                         N1:=H[8];          %NO. OF SEGMTS/ROW                          28836000 T  0035:0
                         Q:=H[K+9];         %DISK ADDR OF ROW                           28836500 T  0036:0
                         W:=0;              %BUFFER NO.                                 28837000 T  0037:2
                         N:=0;              %INDEX OF SEGMTS                            28837500 T  0038:1
                         IO;                                                            28838000 T  0039:0
                         W:=1;              %SWAP BUFFERS                               28838500 T  0040:0
                         IF N GEQ N1 THEN RSULT[1]:=RSULT[1] OR IOMASK ELSE             28839000 T  0040:3
                LOOP:    IO;                                                            28847000 T  0044:0
                WATE:    COMPLEXSLEEP((((RSULT[1-W]) AND IOMASK)≠0) OR DSED);           28848000 T  0046:0
28718188    ACCIDENTAL ENTRY AT P1MIX
                         IF DSED THEN ABORT;                                            28849000 T  0054:2
                         W←IF (RSULT[0] AND RSULT[1] AND IOMASK)≠0 THEN 1-W ELSE        28850000 T  0057:0
                              ((RSULT[1] AND IOMASK)≠0);                                28851000 T  0061:0
                         IF N<N1 THEN GO TO LOOP;% ROW IS NOT FINISHED                  28852000 T  0063:0
                         COMPLEXSLEEP((((RSULT[1-W]) AND IOMASK) NEQ 0) OR DSED);       28852100 T  0064:1
28848000    ACCIDENTAL ENTRY AT P1MIX
                         IF DSED THEN ABORT;                                            28852200 T  0072:2
                    END;%OF ZEROAROW                                                    28853000 T  0075:0
                    %*****************************************************              28854000 T  0075:1
                    S:=[M[SPACE(30)]]&30[8:38:10];                                      28855000 T  0075:1
                    X:=[M[SPACE(1023)]]&1023[8:38:10];                                  28856000 T  0084:1
                    TYPE:=COMMON.[FF];                                                  28857000 T  0088:0
                    S[29]:=COMMON.[CF];                                                 28858000 T  0089:1
                    GETASEGMENT;                                                        28859000 T  0091:0
                    X[0]:=@14;                                                          28860000 T  0092:0
                    MOVE(1022,X,[X[1]]);                                                28861000 T  0093:1
                GETONE:                                                                 28862000 T  0095:1
                    IF DSED THEN ABORT;                                                 28863000 T  0095:1
                    IF I>26 THEN GETASEGMENT;                                           28864000 T  0098:0
                    X[J]:=S[I];                                                         28865000 T  0100:0
                    X[J+1]:=S[I+1];                                                     28866000 T  0101:2
                    J:=J+2;                                                             28867000 T  0104:0
                    IF S[I+I+2]≠@14 THEN GO GETONE;                                     28868000 T  0105:1
                    IOD:=[M[SPACE(8)]]&2[8:38:10];                                      28869000 T  0107:3
                    RSULT:=(2 INX IOD)&18[8:38:10];                                     28870000 T  0111:2
                    BUFFADR:=(4 INX IOD)&4[8:38:10];                                    28871000 T  0114:0
                    IOD[0]:=(BUFFADR INX 0)&1[8:38:10]&3[5:46:2];                       28872000 T  0116:2
                    IOD[1]:=(BUFFADR INX 2)&1[8:38:10]&3[5:46:2];                       28873000 T  0120:2
                    J:=-2;                                                              28877000 T  0124:2
                    ZEROING:=1;                                                         28878000 T  0125:2
                    WHILE X[J+J+2]≠@14 DO %                                             28879000 T  0126:1
                    BEGIN                                                               28880000 T  0128:3
                         H:=[M[THING:=DIRECTORYSEARCH(X[J],X[J+1],5)]]&30[8:38:10];     28881000 T  0128:3
                         IF DSED THEN ABORT;                                            28882000 T  0133:2
                         IF THING=0 OR M[THING+4].[43:2]=3 THEN GO ARD;                 28882100 T  0136:0
                         H[4]:=(*P(DUP))&3[43:46:2]&1[2:47:1]&SYSNO[4:46:2];            28882200 T  0140:1
                         DISKWAIT(THING.[CF],30,THING.[FF]);                            28882400 T  0144:3
                         LBMESS(X[J],X[J+1],62,0,0,0,1);                                28883000 T  0147:0
                         FOR K←1 STEP 1 UNTIL H[9].[43:5] DO% WRITE OUT FILE, ROW BY ROW 28884000 T  0150:1
                         IF H[K+9]≠0 THEN BEGIN ZEROAROW;                               28885000 T  0154:3
                                        IF STOPJOB=P1MIX THEN STOPM(0);                 28885500 T  0158:0
                                   END;                                                 28885600 T  0160:0
                         H[4].[43:2]:=0; % NO LONGER SENSITIVE OR BEING ZEROED           28886000 T  0160:2
                         DISKWAIT(THING.[CF],30,THING.[FF]);                            28887000 T  0163:0
                         FORGETSPACE(H);                                                28888000 T  0165:1
                         P(DIRECTORYSEARCH(X[J],X[J+1],6),DEL);                         28889000 T  0166:1
                ARD:                                                                    28889550 T  0168:3
                    END;                                                                28890000 T  0168:3
```

```
      GO INITIATE;                                                          28891000 T  0169:1
   END; % OF LIBRARYZERO                                                    28892000 T  0169:3
                                                                                     SIZE= 0170 WORDS
   $ SET OMIT = NOT(AUXMEM)                                                 28999999 T  0000:0
   COMMENT  ERRORMESSER IS CALLED BY ERRORFIXER (IF OPTION 33 IS ON) TO     30900000 T  0000:0
            TYPE OUT A PSEUDO-TERMINAL MESSAGE. IT DOES ABOUT THE SAME      30901000 T  0000:0
            THING AS THE FIRST PART OF TERMINALMESSAGE;                     30902000 T  0000:0
   PROCEDURE ERRORMESSER(TYPE); VALUE TYPE; REAL TYPE;                      30903000 T  0000:0
                                                          START OF REL SEGMENT; DISK ADDRESS = 00712
      BEGIN INTEGER S,ADR,BF,SA,N;                                          30904000 T  0000:0
            NAME SD;                                                        30905000 T  0000:0
            LABEL L;                                                        30906000 T  0000:0
            BF←GETSPACE(10,0,0)+2;                                          30907000 T  0000:0
            SD←PRT[P1MIX,4];                                                30908000 T  0003:3
            NT1←SD[0];                                                      30909000 T  0005:1
            ADR←M[PRT[P1MIX,8]].[CF];                                       30910000 T  0006:0
            FOR S←1 STEP 1 UNTIL NT1 DO                                     30911000 T  0008:3
                IF (SA←SD[S].[18:15])>1023 AND SA≤ADR AND SD[S]>0 THEN      30912000 T  0010:0
                IF M[SA-1].[18:15]+SA≥ADR THEN GO L;                        30913000 T  0015:2
            S←0;                                                            30914000 T  0022:0
     L:     SD←[M[SPACE(TERMSGSZ)]];                                        30915000 T  0022:3
            ADR←ADR-SA;                                                     30916000 T  0026:1
            DISKWAIT(-(SD INX 0),TERMSGSZ,MESSAGETABLE[1].[22:26]);         30917000 T  0027:2
            N←IF TYPE=1 THEN 11 ELSE IF TYPE=2 THEN 9 ELSE IF TYPE=4 THEN   30918000 T  0031:0
                    7 ELSE IF TYPE=8 THEN 13 ELSE 5;                        30919000 T  0035:3
            STREAM(M←[SD[N]],J←[JAR[P1MIX,0]],P1MIX,S,ADR,X←S≠0,BF);        30920000 T  0039:3
            BEGIN SI←M; SI←SI+2; DS←6 CHR; BF←DI; DI←LOC M; SI←SI+1;        30921000 T  0043:3
                  DI←DI+7; DS←CHR; DI←BF; DS←M CHR; DS←8 LIT" BRANCH ";     30922000 T  0045:1
                  SI←J; SI←SI+1; DS←7 CHR; DS←LIT"/";                       30923000 T  0047:3
                  SI←SI+1; DS←7CHR; DS←LIT"="; SI←LOC P1MIX;                30924000 T  0049:0
                  DS←2DEC; BF←DI; DI←DI-2; DS←FILL; DI←BF;                  30924500 T  0050:1
                X(DS←5 LIT", S ="; SI←LOC S; DS←4 DEC; DS←5 LIT", A =";     30925000 T  0051:2
                    DS←4 DEC; BF←DI; DI←DI-4; DS←3 FILL;                    30926000 T  0054:2
                    DI←BF; DI←DI-13; DS←3 FILL);                            30927000 T  0055:2
                  DI←BF; DS← LIT"←";                                        30928000 T  0056:2
            END;                                                            30929000 T  0057:1
            FORGETSPACE(SD);                                                30929500 T  0057:2
            SPOUTER(BF,0,ERRORMSG);                                         30930000 T  0058:1
      END ERRORMESSER;                                                      30931000 T  0059:0
                                                                                     SIZE= 0060 WORDS
   PROCEDURE ERRORFIXER(TYPE); VALUE TYPE; INTEGER TYPE;                    31000000 T  0000:0
                                                          START OF REL SEGMENT; DISK ADDRESS = 00714
      COMMENT LOOKS FOR RUN-TIME-ERROR ACTION LABELS IN ALGOL PROGRAMS,     31001000 T  0000:0
          AND HANDLES THEM, RETURNING ONLY IF NO LABEL GIVEN;               31002000 T  0000:0
      BEGIN ARRAY AIT[*],PRTD[*];                                           31003000 T  0000:0
            NAME        ADDR;                                               31004000 T  0000:0
            REAL I, GOT, ADR=ADDR,LABLE;                                    31005000 T  0000:0
            CHECKSTACKSPACE;                                                31005010 T  0000:0
                        IF TYPE =2 THEN%OVRFLW                              31005050 T  0005:3
                        IF JAR[P1MIX,2].[3:1] THEN                          31005100 T  0006:2
                        IF(PRT[P1MIX,@51]AND @20)≠0 THEN                    31005200 T  0008:2
                        BEGIN I←M[ADR+PRT[P1MIX,8] INX 0];                  31005300 T  0011:0
                        STREAM(I←(I INX 0)&I[30:10:2],GOT←[GOT]);           31005310 T  0014:3
                         BEGIN SI←I;SI←SI-2;DI←DI+6;DS←2 CHR END;           31005320 T  0017:1
                        IF GOT.[45:3]=5 THEN M[ADR-3]←@7777777777777;       31005330 T  0018:2
                        M[ADR-2]←@7777777777777777;                         31005350 T  0022:1
                              PRT[P1MIX,@51].[45:2]←2;                      31005400 T  0024:1
                        GO TO INITIATE;                                     31005500 T  0027:1
                        END;                                                31005600 T  0027:3
                PRTD ← PRTROW[P1MIX];                                       31006100 T  0027:3
```

```
                    WHILE (AIT←PRTD      [AITNDX]).PBIT=0 DO                          31007000 T  0028:3
                        MAKEPRESENT([PRTD      [AITNDX]] INX 0);                     31008000 T  0031:1
                  I←AIT[0]+1;                                                        31009000 T  0036:0
                  DO I←I-1 UNTIL((GOT← (ADDR←AIT[I]).OWNBIT AND ( ADR.[CF]           31010000 T  0037:2
                        =TYPE)) OR(I≤1)); % LOOK FOR ENTRY                           31011000 T  0040:1
                  IF GOT THEN % WILL REINITIATE THE GUY, SO SET HIM UP               31012000 T  0043:3
                  BEGIN IF (LABLE←M[ ADR.MOM])≠0 THEN                                31013000 T  0044:0
                        IF LABLE≠15 THEN                                             31013050 T  0047:0
                        IF LABLE.BLKCNTR≤(PRTD[16]+(LABLE.MOM≠0))THEN                31013100 T  0048:1
                        BEGIN IF PRTD      [CURBLKCNTR]>LABLE.BLKCNTR THEN           31014000 T  0051:3
                              BEGIN PRTD      [CURBLKCNTR]←LABLE.BLKCNTR+1;          31015000 T  0053:3
                                    ASR;                                             31016000 T  0056:2
                              END; IF(ADDR←LABLE.MOM)=0 THEN                         31017000 T  0057:0
                                   LABLE.MOM←ADDR←PRTD[10].MOM+2;                    31017100 T  0058:3
                              ADDR←ADDR&ADR[33:33:15];                               31017200 T  0062:2
            $ SET OMIT = PACKETS                                                     31017209 T  0063:3
                              IF ERRORMSG THEN                                       31017210 T  0063:3
            $ POP OMIT                                                               31017211 T  0064:2
                              ERRORMESSER(TYPE);                                     31017220 T  0064:2
                              IF PRTD[LABLE.[CF]].PBIT=0 THEN                        31017300 T  0065:3
                                   MAKEPRESENT([PRTD[LABLE.[CF]]].[CF]);             31017400 T  0067:3
                              DO UNTIL(*(ADDR←HUNT(ADDR+1))).[1:3]=4;                31018000 T  0070:1
                                ADDR     [1]←M[PRTD      [8] INX NOT 0];             31019000 T  0073:2
                                ADDR     [2]←M[PRTD      [8]]&0[10:10:2]&            31020000 T  0076:3
                        (LABLE)[18:18:15]&PRTD      [(LABLE).[CF]][33:33:15];        31021000 T  0079:3
                              PRTD      [8]←P(DUP,LOD)&(ADDR INX 2)[33:33:15];       31022000 T  0082:0
                              GO INITIATE;                                           31023000 T  0084:2
                        END; END;                                                    31024000 T  0085:0
                    END ERRORFIXER;                                                  31025000 T  0085:0
                                                                                          SIZE= 0086 WORDS
                PROCEDURE JOBMESS(MIX,Q,A,B,C,D); VALUE MIX,Q,A,B,C,D;%              32000000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00717
                    REAL MIX,Q,A,B,C,D;%                                             32000100 T  0000:0
                    COMMENT : THIS PROCEDURE CAN BE USED TO BUILD AND SPOUT A MESSAGE 32000110 T  0000:0
                              THAT IS TO BE PRECEEDED BY A <JOB SPECIFIER> WHICH IT  32000120 T  0000:0
                              BUILDS AUTOMATICALLY FOR THE MIX GIVEN;                32000130 T  0000:0
                    BEGIN REAL BUF,T;%                                               32000200 T  0000:0
            $ SET OMIT = NOT(PACKETS)                                                32000249 T  0000:0
                    LABEL EXIT;                                                      32000280 T  0000:0
                    BUF ← (GETSPACE(9,0,0)+2);                                       32000300 T  0000:0
                    IF MIX = 0 THEN                                                  32000400 T  0002:3
                    BEGIN T:=SPACE(30);DISKWAIT(-T,30,0);                            32000500 T  0003:2
                          STREAM(M:=M[T+10+5×SYSNO],F:=M[T+11+5×SYSNO],BUF);         32000510 T  0007:3
                          BEGIN DS:=2LIT"0:";SI:=LOC M;SI:=SI+1;DS:=7CHR;            32000520 T  0013:2
                                DS:=LIT"/";SI:=SI+1;DS:=7CHR;DS:=3LIT"= 0";          32000530 T  0014:3
                          END;                                                       32000540 T  0016:2
                          FORGETSPACE(T);T:=(BUF+2)&4[30:45:3];%                     32000600 T  0016:3
                    END ELSE%                                                        32000700 T  0019:3
                    IF JARROW[MIX]≠0 THEN                                            32000750 T  0019:3
                    BEGIN; STREAM(C←0:R← IF (T← PRYOR[MIX])<0 THEN T ELSE T INX 0,   32000800 T  0021:1
                      J ← JARROW[MIX],MIX,A ← IF JAR[MIX,0]<0 THEN JAR[MIX,30]       32000810 T  0026:0
                      ELSE 0,BUF);                                                   32000812 T  0029:2
                    BEGIN DS ← LIT " "; SI ← LOC R; DS ← 6 DEC;%                     32000850 T  0031:0
                          DI ← DI-6; DS ← 5 FILL; DI ← BUF; DI ← DI+7;%              32001000 T  0032:0
                          DS ← LIT ":"; SI ← J;                                      32001100 T  0033:0
                          IF SC="+" THEN                                             32001120 T  0033:3
                              BEGIN  SI ← SI+1; DS ← 7 CHR; DS ← LIT " ";            32001140 T  0034:1
                                     SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";            32001160 T  0035:1
                                     SI ← LOC A; SI ← SI+1; DS ← 7 CHR;              32001180 T  0036:1
                              END ELSE                                               32001200 T  0037:0
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                    BEGIN  SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";                32001220 T  0037:1
                           SI ← SI+1; DS ← 7 CHR;                              32001240 T  0038:1
                    END;                                                       32001260 T  0038:3
                DS ← LIT "="; SI ← LOC MIX; DS ← 2 DEC;%                       32001300 T  0038:3
                C ← DI; DI ← DI -2; DS ← 2 FILL;%                              32001400 T  0039:3
            END STREAM;                                                        32001450 T  0040:2
            T := POLISH;                                                       32001475 T  0040:3
$ SET UMIT = NOT(PACKETS)                                                      32001499 T  0041:1
            END ELSE                        % NO SUCH MIX                       32001550 T  0041:1
            BEGIN FORGETSPACE(BUF);                                            32001575 T  0041:1
                GO TO EXIT;                                                    32001600 T  0042:2
            END;                                                               32001625 T  0043:0
            STREAM(A←[A],Z←0,T);%                                              32001700 T  0043:0
            BEGIN SI ← A; DS ← LIT " ";%                                       32001800 T  0044:1
                4(IF SC ≠ "+" THEN                                             32001900 T  0045:0
                BEGIN TALLY ← 7; SI ← SI +1;      %                            32001910 T  0045:3
                    6(L: IF SC = "0" THEN%                                     32001920 T  0046:1
                    BEGIN TALLY ← TALLY + 63; SI ← SI + 1;                     32002000 T  0047:0
                    END ELSE JUMP OUT);%                                       32002050 T  0047:2
                    Z ← TALLY; DS ← Z CHR;%                                    32002070 T  0048:2
                END ELSE SI ← SI + 8);%                                        32002090 T  0049:1
                DS ← LIT "←";%                                                 32002100 T  0050:0
            END STREAM;%                                                       32002200 T  0050:2
            SPOUTER(BUF & Q[9:9:9],UNITNO,1);                                  32002300 T  0050:3
EXIT:                                                                          32002350 T  0052:2
    END JOBMESS;%                                                              32002400 T  0052:2
                                                                                           SIZE= 0053 WORDS
PROCEDURE MIXPRINT(Q); VALUE Q; REAL Q;                                        32100000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00719
    COMMENT THIS PROCEDURE INVOKES JOBMESS TO TYPE THE JOB SPECIFIERS          32100010 T  0000:0
        OF EACH ACTIVE MIX;%                                                   32100020 T  0000:0
    BEGIN REAL T,I;                                                            32100100 T  0000:0
        FOR I←1 STEP 1 UNTIL MIXMAX DO                                         32100200 T  0000:0
        IF JAR[I,*] ≠ 0 THEN%                                                  32100300 T  0002:0
        BEGIN JOBMESS(I,Q,-0,-0,-0,-0); T ← 1 END;%                            32100350 T  0003:0
        IF NOT T THEN% NULL MIX                                                32100400 T  0009:2
        BEGIN; STREAM(T←T←GETSPACE(2,0,0)+2); DS←11LIT " NULL MIX←";%          32100500 T  0010:0
            SPOUT(T & Q[9:9:9]);%                                              32100600 T  0015:1
        END NULL MIX;                                                          32100700 T  0017:0
    END MIXPRINT;%                                                             32100800 T  0017:0
                                                                                           SIZE= 0018 WORDS
 $ SET UMIT = NOT(DATACOM AND DCSPO )                                          34999999 T  0000:0
PROCEDURE DOLITTLE(OK,T,A,B,Z); VALUE T,A,B; REAL OK,T,A,B,Z;                  36001000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00720
BEGIN COMMENT FILE Q&A;                                                        36002000 T  0000:0
LABEL E,L; REAL @; NAME N=Z;                                                   36003000 T  0000:0
DEFINE X=REPLY[P1MIX]#, DS=TERMIX,[CF]=P1MIX#;                                 36004000 T  0000:0
IF OK THEN GO E;                                                               36005000 T  0000:0
L:  FILEMESS(A,B,N[0],N[1],N[2],N[3],N[4]);                                    36006000 T  0001:1
X←-T&1[2:47:1]; COMPLEXSLEEP(X>0 OR Q←OK OR DS);                               36007000 T  0006:2
28852100    ACCIDENTAL ENTRY AT P1MIX
IF DS THEN GO E; IF NOT Q THEN IF NOT WHYSLEEP(T) THEN GO L;                   36008000 T  0017:2
E:  NT6←X; X←0                                                                 36009000 T  0021:2
END OF DOLITTLE;                                                               36010000 T  0023:0
                                                                                           SIZE= 0024 WORDS
REAL PROCEDURE FINDOUTPUT(MID,FID,REEL,CDATE,CYCLE,TYPE,FORMS,KIND);           37000000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00721
            VALUE MID,FID,REEL,CDATE,CYCLE,TYPE,FORMS;                         37001000 T  0000:0
            REAL MID,FID,REEL,CDATE,CYCLE,TYPE,FORMS,KIND;                     37002000 T  0000:0
BEGIN INTEGER GOTL,GOTT,GOTB,GOTP,GOTC;                                        37003000 T  0000:0
```

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        REAL U;                                                                 37003100 T 0000:0
        LABEL EXIT,SW,ON,OWT,AROUND,OUKID,X,ROUND,CLAIMT,THERE,SOMEWHERE;       37004000 T 0000:0
        REAL MID=MID;  %FAKE OUT COMPILER                                       37004100 T 0000:0
  $ SET OMIT = NOT(PACKETS)                                                     37004199 T 0000:0
LABEL W3;                                                                       37005000 T 0000:0
        REAL SUBROUTINE DSED; DSED←TERMIX.[33:15]=P1MIX;%                       37006000 T 0000:0
        LABEL CP,MT,SU,PP,CKFM,DOITOVER;                                %P      37007000 T 0002:3
        DEFINE PNTOG=(TYPE=0 OR TYPE GEQ 20)#;                                  37007100 T 0002:3
        SWITCH TYPESW←CP,ROUND,MT,SU,ROUND,SU,ROUND,PP,PP,MT;           %P      37008000 T 0002:3
        REAL SUBROUTINE PRINTER;%                                               37009000 T 0002:3
        BEGIN IF LABELTABLE[20]=0 THEN BEGIN U←20; P(1) END ELSE%               37010000 T 0003:0
              IF LABELTABLE[21]=0 THEN BEGIN U←21; P(1) END ELSE P(0);%         37011000 T 0005:2
              PRINTER←GOTL←P;%                                                  37012000 T 0009:1
        END PRINTER;%                                                           37013000 T 0010:0
        REAL SUBROUTINE PTPUNCH;%                                               37014000 T 0010:1
        BEGIN IF LABELTABLE[26]=0 THEN BEGIN U←26; P(1) END ELSE%               37015000 T 0011:0
              IF LABELTABLE[29]=0 THEN BEGIN U←29; P(1) END ELSE P(0);%         37016000 T 0013:2
              PTPUNCH←GOTP←P;%                                                  37017000 T 0017:1
        END PTPUNCH;%                                                           37018000 T 0018:0
        REAL T1,T2,T3;%                                                         37019000 T 0018:1
        REAL SUBROUTINE PUNCH;%                                                 37019100 T 0018:1
        BEGIN IF LABELTABLE[22]=0 THEN BEGIN U←22;P(1) END ELSE P(0);           37019200 T 0019:0
              PUNCH←GOTC←P;                                                     37019300 T 0022:1
        END PUNCH;                                                              37019400 T 0023:0
        REAL SUBROUTINE MAGTAPE;%                                               37020000 T 0023:1
        BEGIN IF NOT(GOTL OR GOTB OR GOTC) THEN%                                37021000 T 0024:0
        BEGIN IF T1≠0 THEN%                                                     37022000 T 0025:2
              BEGIN FOR U←0 STEP 1 UNTIL 15 DO%                                 37023000 T 0026:3
                    IF (MULTITABLE[U] EQV T1)=NOT 0 THEN%                       37024000 T 0028:0
                    IF LABELTABLE[U]<0 THEN%                                    37025000 T 0029:3
                    IF RDCTABLE[U].[8:6]=P1MIX THEN%                            37026000 T 0031:1
                    IF (T3←PRNTABLE[U])<0 THEN%                                 37027000 T 0033:1
                    IF M[M[T3.[15:15]-3] INX 5].[41:1] THEN%                    37028000 T 0035:1
                    BEGIN P(1); GO OWT END;%                                    37029000 T 0039:2
              END;%                                                             37030000 T 0043:0
              FOR U←0 STEP 1 UNTIL 15 DO%                                       37031000 T 0043:0
              IF LABELTABLE[U]=0 THEN BEGIN P(1); GO OWT END;%                  37032000 T 0044:0
        END;%                                                                   37033000 T 0048:2
              P(0);%                                                            37034000 T 0048:2
        OWT:  MAGTAPE←GOTT←P;%                                                  37035000 T 0048:3
        END MAGTAPE;%                                                           37036000 T 0049:2
        SUBROUTINE BADFM;      %BUILD AND SPOUT BAD FM MESSAGE %                37036100 T 0049:3
        BEGIN                                                           %RHR    37036200 T 0050:0
              T1←GETSPACE(10,0,0)+2;                                    %RHR    37036300 T 0050:0
              STREAM(A←TINU[U],MX←P1MIX,T1);                            %RHR    37036400 T 0052:1
              BEGIN DS←19 LIT "INVALID INPUT UNIT ";                    %RHR    37036500 T 0053:3
                    SI←LOC MX; DS←2 DEC; DS←2 LIT"FM";                  %RHR    37036600 T 0056:2
                    SI←LOC A; SI←SI+5; DS←3 CHR;                        %RHR    37036800 T 0057:2
                    DS←LIT "←"; DI←DI-8; DS←FILL;                       %RHR    37036900 T 0058:1
              END; SPOUT(T1);                                           %RHR    37037000 T 0059:1
              LABELTABLE[U]←@114; READY←READY AND (U←NOT TWO(U));               37037100 T 0060:1
              RRRMECH←RRRMECH AND U; SAVEWORD←SAVEWORD AND U;           %RHR    37037200 T 0064:0
        END BADFM SUBROUTIN;                                            %RHR    37037300 T 0066:2
        REAL SUBROUTINE BKUPTAPE;%                                              37038000 T 0066:3
        BEGIN IF NOT(GOTL OR GOTC) THEN                                         37039000 T 0067:0
              FOR U←0 STEP 1 UNTIL 15 DO%                                       37040000 T 0068:0
              IF (LABELTABLE[U] EQV T3)=NOT 0 THEN%                             37041000 T 0070:0
              IF (MULTITABLE[U] EQV T2)=NOT 0 THEN%                             37042000 T 0071:3
              BEGIN P(1); GO AROUND END;%                                       37043000 T 0074:0
              P(0);%                                                            37044000 T 0077:2
```

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AROUND:     BKUPTAPE←GOTB←P;%                                          37045000 T  0077:3
      END BKUPTAPE;%                                                   37046000 T  0078:2
 $ SET OMIT = NOT(PACKETS)                                             37046004 T  0078:3
     IF TYPE>1 AND TYPE≠4 AND TYPE≠6 AND TYPE<15 THEN GO SOMEWHERE;    37046020 T  0078:3
 ROUND:  IF TYPE=1 OR TYPE=4 OR (TYPE>16 AND TYPE<19) THEN             37046040 T  0086:0
         IF PRINTER THEN BEGIN KIND←1; GO CKFM END;            %P      37046060 T  0089:3
         IF TYPE=0 OR (TYPE>20 AND TYPE) THEN                          37046070 T  0093:0
         IF PUNCH THEN BEGIN KIND←6; GO CKFM END;                      37046075 T  0095:1
         IF TYPE=4 OR TYPE=6 OR TYPE=16 OR TYPE=18 OR                  37046080 T  0099:0
         (TYPE GEQ 20 AND NOT TYPE.[46:1]) THEN                        37046090 T  0102:3
         BEGIN T1←0; T2←IF TYPE GEQ 20 THEN "PUTMCP " ELSE "PBTMCP ";  37046100 T  0105:0
             T3←@122212342546447;                                      37046110 T  0109:0
             IF BKUPTAPE THEN GO THERE;                        %P      37046120 T  0109:3
             IF MAGTAPE THEN                                   %P      37046140 T  0111:3
CLAIMT:      BEGIN MULTITABLE[U]←T2; LABELTABLE[U]←-T3;        %P      37046160 T  0113:0
                 RRRMECH←TWO(U) OR RRRMECH;                    %P      37046170 T  0116:1
                 IF REEL=0 THEN REEL←1;                                37046175 T  0118:0
                 T1←GETSPACE(10,0,0)+4;                        %P      37046180 T  0120:0
                     STREAM(U:=TINU[U],N:=PRNTABLE[U].[30:18],         37046190 T  0122:1
                         A←REEL,B←DATE,C←CYCLE,D←0,PN←TYPE GEQ 20,     37046192 T  0124:0
                         T←T1-2);                                      37046194 T  0125:3
                 BEGIN DS←12LIT" NEW PBT ON"; SI←LOC U; SI←SI+5;   %P  37046200 T  0126:3
                         PN(D←DI; DI←DI-6; DS←2LIT"UT"; DI←D);         37046205 T  0129:0
                     DS←3 CHR;DS←25LIT"← LABEL  OPBTMCP OBACK-UP";%P   37046210 T  0131:0
                         PN(D←DI; DI←DI-14; DS←2LIT"UT"; DI←D);        37046212 T  0134:3
                         SI := LOC A; DS := 3 DEC;                     37046215 T  0136:3
                         SI:=SI+3;DS:=5CHR;SI:=SI+7;DI:=DI+1;DS:=CHR;  37046217 T  0137:1
                         15(DS:=2 LIT"0");DI:=DI-11;SI:=LOC N;         37046220 T  0138:2
                         DS:=5 DEC;                                    37046221 T  0140:0
                 END;                                              %P  37046240 T  0140:1
                 P(WAITIO(T1&8[8:38:10]&5[21:45:3],0,U),DEL);      %P  37046260 T  0140:2
                 SPOUT(T1-2);                                          37046270 T  0144:0
                 T1.[1:11]:=@1737;                                     37046280 T  0145:1
                 P(WAITIO([T1],0,U),DEL);                          %P  37046300 T  0147:0
THERE:           LABELTABLE[U].[1:5]←@20; KIND←7; GO EXIT          %P  37046320 T  0148:2
         END; END;                                                 %P  37046340 T  0152:2
     IF (TYPE GEQ 15 AND TYPE LEQ 18) OR TYPE GEQ 22 THEN              37046350 T  0156:0
         BEGIN                                                         37046360 T  0158:3
 $ SET OMIT = NOT(PACKETS)                                             37046369 T  0159:1
         BEGIN                                                         37046450 T  0159:1
 $ SET OMIT = NOT(PACKETS)                                             37046459 T  0159:1
             T3:=NEXTCDNUM(1);                                         37046470 T  0159:1
             T2:=001;                                                  37046480 T  0160:2
         END;                                                          37046490 T  0161:1
         KIND:=12;                                                     37046500 T  0161:1
         STREAM(T3,T2,D:=T1:=U:=SPACE(30));                            37046520 T  0162:1
             BEGIN                                                     37046530 T  0166:0
                 DS←8 LIT"0@+1.013";DS←24 LIT"0";                      37046540 T  0166:0
                 DS:=7 LIT"8400000";DS:=10 LIT"0";                     37046560 T  0170:2
                 SI:=LOC T3;SI:=SI+4; DS:=4 CHR;                       37046580 T  0173:1
                 SI:=LOC T2; DS:=3 DEC;                                37046590 T  0174:0
                 46(DS←4 LIT"0");                                      37046600 T  0174:2
             END; M[T1+1]←M[T1+8]← PBDROWSZ+1;                         37046620 T  0175:3
 $ SET OMIT = NOT(SHAREDISK)                                           37046624 T  0180:1
             M[T1+5]←MID&(TYPE GEQ 22)[3:47:1]; % CP BK UP TOG         37046630 T  0180:1
             GO EXIT                                           %P      37046640 T  0183:3
         END;                                                      %P  37046660 T  0184:1
W3:      FILEMESS("#.. ..."&(IF TYPE=6 OR TYPE=20 THEN "   " ELSE      37046680 T  0184:1
                 (IF PNTOG THEN "CP" ELSE "LP"))[12:36:12]             37046690 T  0187:3
                 &(IF TYPE<2 THEN "   " ELSE IF TYPE GEQ 20 THEN      37046700 T  0191:0
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                    "PUT" ELSE "PBT")[30:30:18],                                  37046710 T  0194:2
                    (IF TYPE<2 THEN "RQD    " ELSE " MT RQD"),MID,FID,            37046720 T  0196:3
                    REEL,CDATE,CYCLE); REPLY[P1MIX]:=-VWY&VOU[36:42:6];           37046740 T  0199:2
               COMPLEXSLEEP(((IF (TYPE≠6 AND TYPE≠20) THEN IF PNTOG THEN          37046760 T  0203:0
                    PUNCH ELSE PRINTER ELSE 0) OR REPLY[P1MIX]                    37046770 T  0203:0
                    >0 OR(IF TYPE>1 THEN BKUPTAPE OR MAGTAPE ELSE 0) OR           37046780 T  0203:0
                    DSED)); IF DSED THEN GO X;                                    37046800 T  0203:0
36007000    ACCIDENTAL ENTRY AT DSED
               IF NOT(GOTB OR GOTT OR GOTL OR GOTC) THEN                          37046820 T  0224:3
               BEGIN IF NOT WHYSLEEP(VWY&VOU[36:42:6]) THEN GO W3;                37046840 T  0226:3
                  IF PNTOG THEN BEGIN U←REPLY[P1MIX].[FF]; GO CP END;             37046850 T  0229:2
          OUKID:  TYPE←IF (U←REPLY[P1MIX].[FF])=1 THEN 4 ELSE            %P      37046860 T  0242:0
                     IF U=2 THEN 1 ELSE IF U=3 THEN 6 ELSE 15;                    37046880 T  0245:2
                  REPLY[P1MIX]←0; GO  ROUND;                             %P      37046900 T  0250:1
               END; REPLY[P1MIX]←0;                                      %P      37046920 T  0252:0
               IF GOTB THEN GO THERE ELSE IF GOTT THEN GO CLAIMT ELSE             37046940 T  0253:1
               IF GOTC THEN KIND←6 ELSE KIND←1;                                   37046950 T  0254:2
          CKFM:  IF FORMS THEN                                           %P      37046960 T  0258:2
               BEGIN LABELTABLE[U]←-FID; MULTITABLE[U]←MID;              %P      37046980 T  0258:3
                  DOLITTLE(FALSE,                                                 37047000 T  0262:0
                        VWY&VOK[36:42:6]&VOU[30:42:6]&VFM[24:42:6],               37047010 T  0262:2
                  "#... FM"&TINU[U][12:30:18],"RQD    ",MID);                     37047020 T  0265:3
                  IF NT6=VOK THEN GO EXIT;                                        37047100 T  0268:0
                  KIND←LABELTABLE[U]←MULTITABLE[U]←GOTL←U←0;             %P      37047500 T  0269:1
                  IF NOT DSED THEN IF NT6.[CF]=VFM THEN                           37047600 T  0273:1
                  IF (U←NT6.[FF])≠20 AND U≠21 THEN                  %RHR          37047605 T  0276:0
                  BEGIN BADFM; GO ROUND END ELSE                    %RHR          37047610 T  0279:1
                  BEGIN LABELTABLE[U]←-FID;                         %RHR          37047625 T  0284:0
                     MULTITABLE[U]←MID; KIND←UNIT[U].[1:4];         %RHR          37047650 T  0286:0
                     GO EXIT;                                       %RHR          37047660 T  0289:0
                  END ELSE BEGIN REPLY[P1MIX]←NT6; GO OUKID; END; %RHR            37047670 T  0289:2
               END; GO X;                                                %P      37047700 T  0291:3
     SOMEWHERE: IF NOT FORMS THEN GO SW;                                          37047800 T  0292:1
               DOLITTLE(FALSE,VWY&VFM[36:42:6],"#FM RQD",0,MID); U:=NT6.[FF];     37048000 T  0293:0
               IF NOT DSED THEN                                                   37048100 T  0297:0
               IF U LSS 16 THEN                                                   37048200 T  0298:1
               IF PRNTABLE[U].[1:1] THEN ELSE GO TO SOMEWHERE;                    37048300 T  0299:2
               GO TO X;                                                           37048400 T  0301:2
          SW:  GO TO TYPESW[TYPE];%                                               37056000 T  0303:0
          CP:  TYPE←IF U=1 THEN 21 ELSE IF U=3 THEN 20 ELSE                       37058000 T  0309:0
                  IF U=5 THEN 0 ELSE 22; REPLY[P1MIX]←0; GO ROUND;                37059000 T  0313:0
          PP:  DOLITTLE(PTPUNCH,VWY,"#PP RQD",0,MID); GO X;                       37085000 T  0317:2
37046800    ACCIDENTAL ENTRY AT PTPUNCH
          SU:  T1←FID.[6:18],%                                                    37096000 T  0326:0
               FOR U←0 STEP 1 UNTIL 31 DO%                                        37097000 T  0327:1
               IF TINU[U].[30:18]=T1 THEN GO ON;%                                 37098000 T  0328:0
               GO TO MT;%                                                         37099000 T  0332:1
          ON:  DOLITTLE(LABELTABLE[U]=0,VWY,"#...   "&T1[12:30:18],               37100000 T  0332:3
37085000    ACCIDENTAL ENTRY AT 0
               "RQD    ",MID); GO X;                                              37100010 T  0339:1
          MT:  T1←MID;%                                                           37112000 T  0343:0
               DOLITTLE(MAGTAPE,VWY,"#MT RQD",0,MID);                             37113000 T  0343:3
37100000    ACCIDENTAL ENTRY AT MAGTAPE
               IF DSED THEN GO TO X;                                              37121000 T  0350:0
               IF (T1←PRNTABLE[U].[15:15])≠0 THEN%                                37122000 T  0351:3
               BEGIN FILECLOSE(T1&3[18:33:15]);%                                  37123000 T  0353:3
                  M[M[T1-3] INX 5].[39:4]←1;%                                     37124000 T  0355:2
               END;%                                                              37125000 T  0360:0
          X:   IF DSED THEN U←-1 ELSE                                             37172000 T  0360:0
               BEGIN KIND←UNIT[U].[1:4];                                          37173000 T  0362:2
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        LABELTABLE[U]←"FID; MULTITABLE[U]←MID;%                                37174000 T  0365:3
        RDCTABLE[U]←P(DUP,LOD)&REEL[14:38:10]&CDATE[24:31:17]                  37174100 T  0368:2
                    &CYCLE[41:41:7];                                           37174200 T  0370:3
        END; EXIT: FINDOUTPUT←U                                                37175000 T  0373:0
    END FINDOUTPUT;%                                                           37176000 T  0373:0
                                                                                        SIZE= 0375 WORDS
    REAL PROCEDURE FINDINPUT(MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN);    37177000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00734
                VALUE  MID,FID,REEL,CDATE,CYCLE,COBOL,   OF,MODE,FN;%          37178000 T  0000:0
                REAL   MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN;%          37179000 T  0000:0
    BEGIN REAL T1,T2,U,LO,HI,FIRST,IL;                                         37180000 T  0000:0
        REAL A=COBOL;                                                          37180100 T  0000:0
        INTEGER S,COUNT;                                                       37180200 T  0000:0
        INTEGER USASI=IL;                                                      37180300 T  0000:0
        ARRAY FPB=LO[*];                                                       37180400 T  0000:0
        LABEL LOOK,SEE,SRCHOUT;                                                37180500 T  0000:0
        LABEL START,WHY,SXIT,X,Y,READALABEL,REW,EXIT;                          37180600 T  0000:0
        LABEL ONN,DUN,FAIL;                                                    37180650 T  0000:0
        DEFINE UNLABELED = UL#;                                                37180700 T  0000:0
                                                                               37180990 T  0000:0
        REAL SUBROUTINE DSED; DSED←TERMIX.[33:15]=P1MIX;%                      37181000 T  0000:0
                                                                               37185300 T  0002:3
        SUBROUTINE CHECKTERMIX;  % LET CALLER ATTEND HIS RESPONSIBILITIES.     37185310 T  0002:3
        BEGIN                                                                  37185320 T  0003:0
           IF DSED THEN                                                        37185330 T  0003:0
           BEGIN                                                               37185340 T  0004:0
                IF (JAR[P1MIX,0] EQV "LIBMAIN")≠NOT 0 AND                      37185350 T  0004:2
                   (JAR[P1MIX,1] EQV "DISK   ")≠NOT 0  THEN                    37185360 T  0006:3
                BEGIN                                                          37185370 T  0009:1
                     U:=-1;                                                    37185380 T  0009:3
                     GO TO EXIT;                                               37185390 T  0010:3
                END ELSE GO TO INITIATE;                                       37185400 T  0014:0
           END;                                                                37185410 T  0015:0
        END;     %   CHECKTERMIX                                               37185420 T  0015:0
                                                                               37185990 T  0015:1
        REAL SUBROUTINE SEARCH;%                                               37186000 T  0015:1
        BEGIN COUNT←0; IF NOT DSED THEN                                        37187000 T  0016:0
    $ SET OMIT = NOT(PACKETS)                                                  37187099 T  0018:1
    $ SET OMIT = PACKETS                                                       37187999 T  0018:1
       BEGIN IF (LO:=JAR[P1MIX,6].[2:6]) GEQ 32 THEN HI:=LO ELSE               37188000 T  0018:1
            BEGIN HI:=LO:=0; GO TO FAIL; END;                                  37188100 T  0022:2
    $ POP OMIT                                                                 37188101 T  0024:3
        LOOK:          FOR U←LO STEP 1 UNTIL HI DO%                            37189000 T  0024:3
                       IF (LABELTABLE[U] EQV FID)≠NOT 0 THEN%                  37190000 T  0026:0
                       IF (MULTITABLE[U] EQV MID)≠NOT 0 THEN%                  37191000 T  0027:3
                       IF ((T1←RDCTABLE[U]).[14:10]=REEL) OR (REEL=0) THEN%    37192000 T  0030:0
                       IF (T1.[24:17]=CDATE) OR (CDATE=0) THEN%                37193000 T  0033:2
                       IF (T1.[41:7]=CYCLE) OR (CYCLE=0) THEN%                 37194000 T  0036:1
                       BEGIN                                                   37195000 T  0039:0
    $ SET OMIT = NOT(PACKETS)                                                  37195009 T  0039:2
                            COUNT:=COUNT+1; P(U,XCH);                          37195030 T  0039:2
                       END;                                                    37195040 T  0041:1
    FAIL:                                                                      37195050 T  0043:2
    $ SET OMIT = NOT(PACKETS)                                                  37195099 T  0043:2
            IF LO = HI THEN IF COUNT = 1 THEN GO SEE ELSE                      37195200 T  0043:2
            IF LO=0 THEN IF (LO:=JAR[P1MIX,6].[2:6])=23 OR LO=24               37195250 T  0045:2
            THEN HI:=LO ELSE GO TO ONN ELSE                                    37195280 T  0050:0
    ONN:    BEGIN LO:=32; HI:=PSEUDOMAXT; END ELSE                             37195300 T  0052:0
            IF LO=32 THEN BEGIN LO:=23; HI:=24; END ELSE                       37195350 T  0054:0
            IF LO=23 THEN BEGIN LO:= 0; HI:=15; END ELSE GO TO DUN;            37195400 T  0057:1
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                GO TO LOOK;                                                  37195450 T  0060:2
DUN:                IF CYCLE.[1:1] THEN % PBT                                37195500 T  0061:0
                        BEGIN                                                37195550 T  0061:3
                        IF COUNT=0 THEN IF FID.[1:5]<3 THEN                  37195600 T  0062:1
                        BEGIN FID.[1:5]←FID.[1:5]+1;                         37195650 T  0064:3
                              LO←0; HI←15; GO LOOK;                          37195700 T  0068:0
                        END ELSE FID.[1:5]←1;                                37195750 T  0070:0
                        GO SRCHOUT;                                          37195800 T  0072:1
                    END;                                                     37195850 T  0072:3
                    IF COUNT=0 THEN                                          37196200 T  0072:3
                    IF MID≠0 THEN%                                           37197000 T  0073:2
                    IF NOT CDATE.[1:1] THEN % NOT LIBMAIN/DISK               37197500 T  0074:3
                    FOR U←0 STEP 1 UNTIL 15 DO%                              37198000 T  0076:1
                    IF (MULTITABLE[U] EQV MID)=NOT 0 THEN%                   37199000 T  0078:0
                    IF (RDCTABLE[U].[24:17]=CDATE) OR (CDATE=0) THEN         37199100 T  0079:3
                    IF LABELTABLE[U]>0 THEN%                                 37200000 T  0082:3
                    BEGIN COUNT←COUNT+1;                                     37201000 T  0084:1
                          P(U,XCH);                                          37202000 T  0086:0
                    END ELSE%                                                37203000 T  0086:2
                    IF RDCTABLE[U].[8:6]=P1MIX THEN%                         37204000 T  0086:2
                    IF (T1←M[M[PRNTABLE[U].[15:15]=3] INX 5]).[41:1] THEN    37205000 T  0088:2
                        IF T1.[43:1] OR T1.[40:1]=0 THEN%                    37206000 T  0093:2
                    BEGIN COUNT←COUNT+1; P(U,XCH) END;                       37207000 T  0096:1
            SEE:                                                             37207500 T  0100:3
                END;                                                         37208000 T  0100:3
            SRCHOUT:                                                         37208500 T  0100:3
                SEARCH←S←COUNT>0;                                            37209000 T  0100:3
            END SEARCH;%                                                     37210000 T  0102:1
                                                                             37210090 T  0102:2
            REAL SUBROUTINE RESEARCH;                                        37210100 T  0102:2
            BEGIN                                                            37210150 T  0103:0
        $ SET OMIT = NOT PACKETS                                             37210170 T  0103:0
                P(SEARCH);                                                   37210200 T  0103:0
                DO P(DEL) UNTIL (COUNT:=COUNT-1) LSS 0;                      37210250 T  0104:0
                RESEARCH←S;                                                  37210300 T  0106:2
            END RESEARCH;                                                    37210400 T  0107:0
                                                                             37210990 T  0107:1
            REAL SUBROUTINE REED;%                                           37211000 T  0107:1
            BEGIN IF (HI←WAITIO(T1,LO&@377[18:33:15],U) AND @367)≠0 THEN     37212000 T  0108:0
                  IF (HI AND NOT LO)≠0 THEN                                  37213000 T  0111:1
            BEGIN BLASTQ(U); SETNOTINUSE(U,0); STOPTIMING(FN,1023);          37214000 T  0113:1
                      FILEMESS(-"PARITY ","ON ... "&TINU[U][24:30:18],%      37215000 T  0116:2
                              MID,FID,REEL,CDATE,CYCLE);%                    37216000 T  0118:3
                  END;%                                                      37217000 T  0120:1
                  IF DSED THEN                                               37218000 T  0120:1
                  BEGIN                                                      37218100 T  0121:0
                    SETNOTINUSE(U,0);                                        37218200 T  0121:2
                    STOPTIMING(FN,1023);                                     37218300 T  0122:2
                    CHECKTERMIX;                                             37218400 T  0123:2
                  END;                                                       37219000 T  0125:0
                  REED←HI;%                                                  37220000 T  0125:0
            END REED;%                                                       37221000 T  0125:2
                                                                             37221090 T  0128:0
            SUBROUTINE SEARCHCOM; % FILE SEARCH FOR COM 30                   37221100 T  0128:0
            BEGIN P(DEL);                                                    37221120 T  0128:0
                IF NOT SEARCH THEN U:=-1 ELSE                                37221140 T  0128:1
                IF COUNT=1 THEN U:=P ELSE                                    37221160 T  0130:3
                BEGIN                                                        37221180 T  0133:0
                    S:=COUNT; T1:=0;                                         37221200 T  0133:2
                    COUNT:=IF COUNT>8 THEN 8 ELSE COUNT;                     37221220 T  0135:0
```

```
                    WHILE (COUNT:=COUNT-1) GEQ 0 DO                                  37221240 T  0137:3
                    BEGIN U:=P;                                                      37221260 T  0140:0
                        IF T1 THEN                                                   37221280 T  0140:2
                        BEGIN                                                        37221300 T  0140:3
                            T1:=0; M[A].[30:18]:=TINU[U].[30:18];                    37221320 T  0141:1
                            A:=A+1;                                                  37221340 T  0145:2
                        END ELSE                                                     37221360 T  0146:3
                        BEGIN                                                        37221380 T  0146:3
                            T1:=1; M[A].[12:18]:=TINU[U].[30:18];                    37221400 T  0147:1
                        END;                                                         37221420 T  0151:2
                    END;                                                             37221440 T  0151:2
                    U:=-S;                                                           37221460 T  0152:0
                END;                                                                 37221480 T  0153:0
                GO EXIT;                                                             37221500 T  0153:0
            END;                                                                     37221520 T  0153:2
                                                                                     37221990 T  0153:3
        START:%                                                                      37222000 T  0153:3
            IF UL<0 THEN SEARCHCOM ELSE                                              37222100 T  0156:2
            IF UL THEN GO TO WHY ELSE %                                              37222500 T  0159:0
            IF NOT SEARCH THEN%                                                      37223000 T  0159:3
        WHY:  BEGIN FILEMESS("#NO FIL",0,MID,FID,REEL,CDATE,CYCLE);                  37224000 T  0162:1
                FIRST:=VOK&VWY[36:42:6]&VUL[30:42:6]&VIL[24:42:6];                   37225000 T  0165:0
                IF COBOL THEN                                                        37225050 T  0168:3
                    FIRST:=FIRST&(VOF×OF)[18:42:6]&(VFR×UL)[12:42:6];                37225100 T  0169:0
                REPLY[P1MIX]←-FIRST&1[2:47:1];                                       37226000 T  0173:1
                COMPLEXSLEEP(RESEARCH OR (REPLY[P1MIX]>0) OR DSED);                  37227000 T  0175:3
37113000    ACCIDENTAL ENTRY AT DSED
                CHECKTERMIX;                                                         37228000 T  0183:1
                IF S THEN S←SEARCH ELSE                                              37229000 T  0184:0
                BEGIN IF NOT WHYSLEEP(FIRST) THEN GO TO WHY;                         37229500 T  0186:2
                    IF (T2:=(T1:=REPLY[P1MIX]).[FF]) GTR 64 THEN % IL                37230000 T  0189:1
                    BEGIN STREAM(T2:);                            % MID/FID           37230250 T  0192:0
                        BEGIN SI:=T2;                                                37230500 T  0193:2
                        LL:   SI:=SI+1; IF SC≠"L" THEN GO TO LL;                     37230750 T  0193:3
                              SI:=SI+1; T2:=SI;                                      37231000 T  0194:3
                        END;                                                         37231250 T  0195:1
                        T2:=P;                                                       37231500 T  0195:2
                        NAMEID(HI,T2); MID:=HI; NAMEID(HI,T2);                       37232000 T  0196:0
                        NAMEID(HI,T2); FID:=HI;                                      37232250 T  0198:3
                        FORGETSPACE(T1,[FF]-1);                                      37232500 T  0200:2
                        GO TO Y;                                                     37232750 T  0202:1
                    END;                                                             37233000 T  0202:3
                    IF T1=VOK THEN GO TO Y;                       % OK               37233250 T  0202:3
                    IF NOT (IL:=T1.[CF]=VIL) THEN                 % OF, FR           37233500 T  0204:0
                    BEGIN U:=-1;                                                     37233750 T  0206:0
                        REPLY[P1MIX]:=0;                                             37234000 T  0207:2
                        GO TO EXIT;                                                  37234250 T  0208:3
                    END;                                                             37234500 T  0209:1
                    UNLABELED←-LABELTABLE[U←T1.[18:15]]=@314;%                       37235000 T  0209:1
                    P(U);                                                            37235100 T  0212:1
                    COUNT:=1;                                                        37235250 T  0212:2
                    IF LABELTABLE[U]=0 THEN                                          37235500 T  0213:1
                    BEGIN MULTITABLE[U]:=MID;                                        37235750 T  0214:1
                        LABELTABLE[U]:=FID;                                          37236000 T  0216:0
                    END ELSE                                                         37236250 T  0217:1
                    BEGIN MID:=MULTITABLE[U].[6:42];                                 37236500 T  0217:1
                        FID:=LABELTABLE[U].[6:42];                                   37236750 T  0220:0
                    END;                                                             37237000 T  0222:1
                END;                                                                 37238000 T  0222:1
                REPLY[P1MIX]:=0;                                                     37239000 T  0222:1
```

```
                END;%                                                                   37240000 T  0223:2
                IF COUNT>1 THEN                                                         37240100 T  0223:2
        SXIT: BEGIN FILEMESS("#DUP    ","FIL     ",MID,FID,REEL,CDATE,CYCLE);            37240200 T  0224:1
                WHILE (COUNT←COUNT-1)≥0 DO                                              37240300 T  0227:0
                BEGIN IF (U←P)≤16 THEN IF MID≠0 THEN                                    37240400 T  0229:1
                      IF (T1←PRNTABLE[U].[15:15])≠0 THEN                                37240500 T  0231:2
                         FILECLOSE(T1&@12[18:33:15]);                                   37240600 T  0234:0
                      STREAM(X←[TINU[U]]:D←S←GETSPACE(10,0,0)+2);                       37240700 T  0235:3
                      BEGIN SI←X; SI←SI+5; DS←8 LIT " DUP ON ";                         37240800 T  0239:1
                            DS←3 CHR; DS←LIT "←";                                       37240900 T  0241:0
                            X←DI;                                                       37240910 T  0241:3
                      END;                                                              37241000 T  0242:0
                      T1←P;                                                             37241010 T  0242:1
                      IF U≥32 THEN IF CIDROW[U    -32]≠0 THEN                           37241020 T  0242:3
                            STREAM(DK←CIDTABLE[U    -32,2],T1);                         37241030 T  0245:2
                                 BEGIN DI←DI-1; DS←6 LIT ",DECK ";                      37241040 T  0248:1
                                 SI←LOC DK; SI←SI+1; DS←7 CHR;                          37241050 T  0249:2
                                 END;                                                   37241060 T  0250:1
                      SPOUT(S);                                                         37241100 T  0250:2
                END;                                                                    37241200 T  0251:1
                REPLY[P1MIX]:= -VWY&VOK[36:42:6]&VIL[30:42:6];                          37241300 T  0254:0
                COMPLEXSLEEP(DSED OR (REPLY[P1MIX]>0));                                 37241400 T  0257:2
37227000    ACCIDENTAL ENTRY AT 0
                CHECKTERMIX;                                                            37241500 T  0264:1
                IF (T1:=REPLY[P1MIX]).[33:15]=VIL THEN                                  37241510 T  0265:0
                  BEGIN REPLY[P1MIX]←0;                                                 37241520 T  0267:0
                        IF T1.[FF] > 64 THEN GO SXIT;                                   37241525 T  0268:3
                        P(T1.[18:15]);                                                  37241530 T  0270:2
                        GO TO X;                                                        37241540 T  0271:1
                  END;                                                                  37241550 T  0271:3
                IF NOT WHYSLEEP(VWY&VOK[36:42:6]&VIL[30:42:6]) THEN                     37241600 T  0271:3
                   BEGIN S:=SEARCH;GO SXIT END;                                         37241610 T  0274:3
        Y:            REPLY[P1MIX]:=0; GO TO START;                                     37241700 T  0277:0
              END;                                                                      37241800 T  0278:3
        X:                                                                              37241810 T  0278:3
              LABELTABLE[U+P].[1:5]←@20;                                                37241900 T  0278:3
              IF NOT UNLABELED THEN                                                     37242000 T  0281:2
              BEGIN FPB:=PRT[P1MIX,3];                                                  37242100 T  0282:0
                  FPB[FN]:=MID;                                                         37242200 T  0284:0
                  FPB[FN+1]:=FID;                                                       37242300 T  0285:1
              END;                                                                      37242400 T  0287:0
              IF U LSS 16 THEN                                                          37242600 T  0287:0
              IF MID≠0 THEN                                                             37242800 T  0287:3
              BEGIN IF (T1←PRNTABLE[U].[15:15])≠0 THEN%                                 37243000 T  0289:0
                    BEGIN FILECLOSE(T1&3[18:33:15]);%                                   37244000 T  0291:2
                          M[M[T1-3] INX 5].[39:4]←1;%                                   37245000 T  0293:1
                    END;%                                                               37246000 T  0297:3
                    RRRMECH←TWO(U) OR RRRMECH; STARTIMING(FN,U);                        37248000 T  0297:3
                    IF UNLABELED OR IL OR CYCLE.[1:1] THEN GO EXIT;                     37248500 T  0300:2
                    T1 ← (GETSPACE(11,0,0)+2)&10[8:38:10]&MODE[21:47:1]%                37249000 T  0303:0
                       &3[23:46:2];%                                                    37250000 T  0306:0
                    LO←@40; FIRST←1;%                                                   37251000 T  0308:1
READADALABEL:       IF REED ≠ 0 THEN IF FIRST THEN%                                     37252000 T  0309:3
REW:                BEGIN FIRST←WAITIO(@4200000000,0,U); GO READALABEL END ELSE         37253000 T  0312:1
                    BEGIN SETNOTINUSE(U,1); FORGETSPACE(T1.[33:15]);                    37254000 T  0316:0
                          STUPTIMING(FN,1023); GO TO START END;                         37255000 T  0318:3
                    STREAM(Y:=0:X:=0,T1);                                               37255100 T  0320:1
                       BEGIN  DI:=LOC X; DS:=8 LIT "VOL1HDR1";                          37255200 T  0321:3
                              SI:=T1; DI:=DI-8;                                         37255300 T  0323:1
                              IF 4 SC=DC THEN TALLY:=1 ELSE                             37255400 T  0323:3
```

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                    BEGIN  SI:=T1; IF 4 SC=DC THEN TALLY:=2; END;                37255500 T  0324:3
                       Y:=TALLY;                                                 37255700 T  0325:3
                  END;                                                           37255800 T  0326:0
                IF(USASI:=P)>0 THEN USASITAPE(T1,[CF],USASI,2,U,0);              37255900 T  0326:1
               STREAM(M←0,F←0,R←0,D←0,C←0:S←T1 INX 1);%                          37256000 T  0330:0
               BEGIN SI←S; DI←LOC M; DS←2 WDS; DS←3 OCT;%                        37257000 T  0332:3
                     DS:=5 OCT;DS:=2 OCT;                                        37258000 T  0333:3
               END;%                                                             37259000 T  0334:1
               IF (P=CYCLE OR CYCLE=0) AND (P(XCH)=CDATE OR CDATE=0) AND%        37260000 T  0334:2
                  (P(XCH)=REEL OR REEL=0)AND ((P(XCH) EQV FID)=NOT 0) AND%       37261000 T  0338:0
                  ((P(XCH) EQV MID)=NOT 0) THEN%                                 37262000 T  0341:3
               BEGIN FORGETSPACE(T1,[33:15]); T1←@340000005;%                    37263000 T  0343:2
                     LO←0;T1←REED; GO TO EXIT;%                                  37264000 T  0346:0
               END;%                                                             37265000 T  0350:0
               IF FIRST THEN GO REW;%                                            37266000 T  0350:0
            LO:=@60; DO UNTIL (FIRST:=REED),[42:1]; DO UNTIL REED,[42:1];        37267000 T  0351:0
            IF USASI>0 THEN DO UNTIL REED,[42:1] ELSE FIRST:=REED;               37267050 T  0357:0
               LO←@40; GO READALABEL;                                            37267100 T  0362:2
          END;%                                                                  37268000 T  0363:3
EXIT: FINDINPUT←U;%                                                              37269000 T  0363:3
END FINDINPUT;%                                                                  37270000 T  0364:3
                                                                                          SIZE= 0366 WORDS
PROCEDURE STARTIMING(FN,U); VALUE FN,U; REAL FN,U;%                              37271000 T  0000:0
                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00747
BEGIN ARRAY FPB[*]; INTEGER I,J;%                                                37272000 T  0000:0
      FPB←PRT[P1MIX,3];%                                                         37273000 T  0000:0
      IF U<32 THEN                                                               37273100 T  0002:1
BEGIN IF FPB[FN+4]≥0 THEN                                                        37274000 T  0003:0
      BEGIN IF (I←FPB[FN+3],[36:6])≠0 THEN%                                      37275000 T  0005:0
            IF I NEQ U+1 OR FPB[FN+2],[8:10] NEQ RDCTABLE[U],[14:10]             37276000 T  0008:0
            THEN                                                                 37276010 T  0011:2
            IF (I←FPB,[8:10])<(1023-ETRLNG) THEN                                 37276100 T  0012:3
            BEGIN J←GETSPACE(I+ETRLNG,2,1)+2;%                                   37277000 T  0015:3
 $ SET OMIT = SHAREDISK                                                          37277999 T  0019:0
                  MOVE(I,FPB,J);%                                                37278000 T  0019:0
 $ POP OMIT                                                                      37278001 T  0020:3
 $ SET OMIT = NOT SHAREDISK                                                      37278099 T  0020:3
                  MOVE(ETRLNG,[FPB[FN]],J+I);%                                   37278200 T  0020:3
                  FORGETSPACE(FPB,[33:15]);%                                     37279000 T  0023:0
                  NFO[(P1MIX-1)×NDX]←                                            37279100 T  0024:2
                  PRT[P1MIX,3]←FPB←[M[J]]&(I+ETRLNG)[8:38:10];%                  37280000 T  0026:0
                  FPB[FN+4]←0; FPB[FN+3],[24:12]←0;%                             37281000 T  0030:3
            END;%                                                                37282000 T  0035:2
            FPB[FN+4]←FPB[FN+4]-CLOCK-P(RTR);%                                   37283000 T  0035:2
            FPB[FN+3],[36:6]←U+1;%                                               37284000 T  0039:0
           IF U LSS 16 THEN% RDC & PRN LOG ENTRIES                               37284100 T  0042:2
           BEGIN ;                                                               37284110 T  0043:1
           STREAM(R:=RDCTABLE[U],[14:10],D:=RDCTABLE[U],[24:17],                 37284120 T  0043:3
                  C:=RDCTABLE[U],[41:7],T:=[FPB[FN  +2]]);                       37284130 T  0046:0
           BEGIN SI:=LOC R;DS:=3DEC;DS:=5DEC;DS:=DEC END;                        37284140 T  0048:1
           FPB[FN  +3],[6:17]:=PRNTABLE[U],[31:17];                              37284150 T  0049:2
           END;                                                                  37284310 T  0053:1
END   END ELSE                                                                   37285000 T  0053:1
BEGIN IF (I←FPB[FN+4])≤0 THEN                                                    37285100 T  0053:1
      BEGIN FPB[FN+4]←I+CLOCK+P(RTR); I←FPB[FN+3],[36:6]-1;                      37285200 T  0055:3
            FPB[FN+3],[24:12]←P(DUP),[24:12]+(J←TINU[I],[18:12]);                37285300 T  0061:2
            IF I<16 THEN                                                         37285305 T  0066:3
                        IF J>0 THEN FILEMESS("#    IO"&TINU[I]                   37285310 T  0067:2
                  [12:30:18],"ERRORS:",FPB[FN],FPB[FN+1],J,0,0);                 37285320 T  0070:0
            TINU[I],[18:12]←0;                                                   37285400 T  0073:3
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END END END TIMING;                                                    37285500 T  0076:1
                                                                                SIZE= 0079 WORDS
REAL PROCEDURE DISKADDRESS(MID,FID,FPB3,A,H,IO);                % (SHM)  37286000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00750
   VALUE MID,FID,FPB3,A,H,IO;                                   % (SHM)  37286100 T  0000:0
   REAL  MID,FID,FPB3,A,IO;                                     % (SHM)  37286200 T  0000:0
   ARRAY H[*];                                                          37286300 T  0000:0
BEGIN LABEL EOF, EOF2;                                                  37287000 T  0000:0
      INTEGER I;                                                        37287250 T  0000:0
      REAL T, V;                                                        37287500 T  0000:0
      IF A≥0 THEN%                                                      37288000 T  0000:0
      BEGIN T←(A DIV H[0].[30:12])×H[0].[42:6];%                        37289000 T  0001:3
            IF H[9] LEQ I:=(IF H[1]=0 THEN 0 ELSE T DIV H[1]) THEN      37290000 T  0005:2
            GO TO EOF;                                                  37290100 T  0010:0
            IF H[I:=I+10]=0 THEN       % NEW ROW NEEDED.                37291000 T  0010:2
              IF IO THEN GO TO EOF ELSE  % EOF ON A READ.               37291200 T  0012:2
              IF IO=2 THEN               % CALLED FROM FILEOPEN SO       37291400 T  0013:1
                 BEGIN                   % DONT EXPAND THE FILE YET.     37291600 T  0014:3
                 T:=1;                                                  37291800 T  0015:1
                 GO TO EOF2;                                            37292000 T  0016:0
                 END                                                    37292200 T  0016:2
              ELSE                                                      37292400 T  0016:2
              IF H[4] THEN             % IN DIRECTORY, UPDATE HEADER.  37292600 T  0016:2
                 P(DIRECTORYSEARCH(=MID,FID,=H&I[CTF]),DEL)             37292800 T  0017:2
              ELSE                     % NOT IN DIRECTORY.             37293000 T  0020:3
                 BEGIN                                          % (SHM) 37293210 T  0020:3
                 IF (V:=FPB3.[18:5]) GTR 0 THEN % EU SPECIFIED  % (SHM) 37293220 T  0021:1
                    V:=(IF V GTR 20 THEN 0 ELSE =V) ELSE        % (SHM) 37293230 T  0023:0
                 IF (V:=FPB3.[16:2]) GTR 0 THEN % SPEED SPECIFIED %(SHM) 37293240 T  0026:2
                    V:=(IF V GTR 2 THEN 0 ELSE V) ELSE          % (SHM) 37293250 T  0028:3
                 V:=0; % NO SPEED OR EU SPECIFIED               % (SHM) 37293260 T  0032:0
                 H[1] := PETUSERDISK(H[8],V);                   % (SHM) 37293270 T  0033:1
                 END;                                           % (SHM) 37293330 T  0035:2
            T←H[I]+I←T MOD H[1];%                                       37294000 T  0035:2
            STREAM(D←[T]); BEGIN SI←D; DS←8 DEC END;%                   37295000 T  0038:1
      END ELSE%                                                         37296000 T  0039:3
EOF:  T←0;%                                                             37297000 T  0039:3
EOF2:                                                                   37297500 T  0041:0
      DISKADDRESS←T;%                                                   37298000 T  0041:0
END DISKADDRESS;%                                                       37299000 T  0041:3
                                                                                SIZE= 0043 WORDS
PROCEDURE SETNOTINUSE(U,RWL); VALUE U,RWL; REAL U,RWL;                  37302000 T  0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00752
BEGIN REAL I,J;                                                         37303000 T  0000:0
      IF U<16 THEN P(WAITIO(@4200000000,@377,U),DEL);                   37303200 T  0000:0
      SLEEP([TOGLE],STATUSMASK);                                        37304000 T  0003:1
      RRRMECH←((I←TWO(U)) AND SAVEWORD) OR ((I←NOT I) AND RRRMECH);%    37305000 T  0004:3
      READY←READY AND I;%                                               37306000 T  0008:3
      IF RWL THEN                                                       37312000 T  0010:0
BEGIN                                                                   37313000 T  0010:1
      STREAM(S←[TINU[U]],M←MULTITABLE[U],F←LABELTABLE[U],               37314000 T  0010:3
            N←IF U<16 THEN PRNTABLE[U].[30:18] ELSE 0,                  37314100 T  0012:2
            T:=MULTITABLE[U]=0, TT:=U GEQ 16, DI:=J:=SPACE(10));        37314200 T  0015:2
            BEGIN SI←S; SI←SI+5; DS←LIT "#"; DS←3 CHR;%                 37315000 T  0019:3
                  DS←6 LIT " RW/L "; SI←LOC M; SI←SI+1;                 37316000 T  0021:0
                  DS←7 CHR; DS←LIT " "; SI←SI+1; DS←7 CHR;              37316100 T  0022:2
                  T(M←DI;DI←DI-15;DS←7FILL;DI←M); TT(JUMP               37316200 T  0023:3
                  OUT TO LA); DS←LIT "("; DS←5 DEC; DS←LIT")";          37316300 T  0026:0
            LA:   DS←LIT "←";                                           37316400 T  0028:0
            END;%                                                       37317000 T  0028:2
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                    SPOUT(J);                                                   37318000 T  0028:3
                  LABELTABLE[U]←@214;                                           37318100 T  0029:2
            END ELSE LABELTABLE[U]←@114;                                        37319000 T  0030:3
                  MULTITABLE[U]←RDCTABLE[U]←0;                                  37319010 T  0034:1
                  IF U<16 THEN PRNTABLE[U]←0 ;                                  37319020 T  0036:2
            END SETNOTINUSE;                                                    37319100 T  0039:0
                                                                                        SIZE= 0040 WORDS
            PROCEDURE BLASTQ(U);                                                37320000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00754
            VALUE U;  REAL U;                                                   37321000 T  0000:0
            BEGIN                                                               37322000 T  0000:0
                REAL I,X;                                                       37323000 T  0000:0
                BOOLEAN SUBROUTINE CHECKIO;                                     37323100 T  0000:0
                BEGIN                                                           37323200 T  0001:0
                    CHECKIO:=(I:=UNIT[U]).[5:8]≠0 OR (I.[14:1] AND I.[13:5]≠@31);  37323300 T  0001:0
                END;                                                            37323400 T  0005:3
                IF CHECKIO THEN COMPLEXSLEEP(NOT CHECKIO);                      37324000 T  0006:0
 37241400     ACCIDENTAL ENTRY AT CHECKIO
                IF I.[16:1] THEN                    % SKIP I/O IN PROCESS        37326000 T  0014:1
                BEGIN I:=NFLAG(LOCATQUE[X:=I.[FF]]);                            37327000 T  0015:0
                    LOCATQUE[X].[FF]:=@77777;                                   37328000 T  0017:3
                    UNIT[U].[CF]:=X;                                            37329000 T  0019:3
                END ELSE                                                        37330000 T  0021:3
                    UNIT[U].[5:43]:=(NOT 0).[18:30];                            37331000 T  0021:3
                WHILE (I:=I.[FF])≠@77777 DO                                     37332000 T  0027:1
                BEGIN RETURNIOSPACE(I);                                         37333000 T  0029:2
                    I:=NFLAG(LOCATQUE[I]);                                      37334000 T  0032:3
                END;                                                            37335000 T  0034:0
            END BLASTQ;%                                                        37336000 T  0036:0
                                                                                        SIZE= 0037 WORDS
            PROCEDURE BUILDLABEL(LABLE,MID,FID,REEL,CDATE,CYCLE,PFACT,PTN,BLKODE,%  37337000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00756
                                BSIZE,RSIZE);%                                  37338000 T  0000:0
                            VALUE LABLE,MID,FID,REEL,CDATE,CYCLE,PFACT,PTN,BLKODE,  37339000 T  0000:0
                                BSIZE,RSIZE;%                                   37340000 T  0000:0
                            ARRAY LABLE[*];%                                    37341000 T  0000:0
                            REAL  MID,FID,REEL,CDATE,CYCLE,PFACT,PTN,BLKODE,%   37342000 T  0000:0
                                BSIZE,RSIZE;%                                   37343000 T  0000:0
            BEGIN;STREAM(D←[PFACT]); BEGIN SI←D; SI←SI+5; DS←3 OCT END;%        37344000 T  0000:0
                PFACT←CALCULATEPURGE(PFACT);%                                   37345000 T  0001:3
                STREAM(S←[MID],LABLE);%                                         37346000 T  0003:0
                BEGIN DS←8 LIT " LABEL  "; SI←S; DS←2 WDS;%                     37347000 T  0004:1
                      DS←3 DEC; DS←5 DEC; DS←2 DEC; SI←SI+3; DS←5 CHR;%         37348000 T  0006:0
                      DS←14 LIT "0"; DS←5 DEC; SI←SI+7; DS←CHR;%                37349000 T  0007:1
                      DS←5 DEC; DS←5 DEC; DS←11 LIT "0"%                        37350000 T  0010:0
                END;%                                                           37351000 T  0012:1
                IF (BSIZE←LABLE.[8:10])>10 THEN%                                37352000 T  0012:2
                STREAM(J←JARROW[P1MIX],D←[LABLE[10]]);%                         37353000 T  0014:2
                BEGIN SI←J; SI←SI+1; DS←LIT " "; DS←7 CHR;%                     37354000 T  0016:2
                      SI←SI+1; DS←LIT "/"; DS←7 CHR; 12(DS←2 LIT " ");%         37355000 T  0017:3
            END   END GUILDLABEL;%                                              37356000 T  0019:3
                                                                                        SIZE= 0021 WORDS
             $ SET OMIT = PACKETS                                               37356999 T  0000:0
            PROCEDURE FILEMESS(I,K,M,F,R,D,C);                                  37357000 T  0000:0
                                                                      START OF REL SEGMENT; DISK ADDRESS = 00757
                VALUE I,K,M,F,R,D,C;                                            37357100 T  0000:0
                REAL I,K,M,F,R,D,C;                                             37357200 T  0000:0
             $ POP OMIT                                                         37357201 T  0000:0
             $ SET OMIT = NOT(PACKETS)                                          37357299 T  0000:0
            BEGIN REAL Z,L;%                                                    37359000 T  0000:0
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                L←GETSPACE(12,0,0)+2;%                                          37360000 T  0000:0
                 STREAM(Z:I←[I],J←[JAR[P1MIX,*]],P1MIX,L);                      37361000 T  0002:3
                 BEGIN SI←I;                                                    37362000 T  0005:0
                       IF SC="+" THEN BEGIN TALLY←1; DS←LIT "="; SI←SI+1 END ELSE%  37363000 T  0005:1
                       BEGIN SI←SI+1; IF SC≠"#" THEN DS←LIT " " END;%           37364000 T  0007:0
                       DS←7 CHR; DS←LIT " ", L←DI;%                             37365000 T  0008:1
                       2(DI←LOC Z; IF 8 SC≠DC THEN BEGIN DI←L; SI←SI-7; DS←7 CHR;%  37366000 T  0009:1
                                                         DS←LIT " "; L←DI END);%  37367000 T  0011:0
                       DI←L; SI←SI+1; DS←7 CHR; DS←LIT " "; L←DI;%              37368000 T  0012:0
                       3(DI←LOC Z; IF 8 SC≠DC THEN BEGIN DI←L; SI←SI-8; DS←7 DEC;  37369000 T  0013:2
                                                         L←DI; DI←DI-7; DS←6 FILL;  37370000 T  0015:1
                                                         DI←L; DS←LIT " "; L←DI;  37371000 T  0016:0
                                                   END);                        37372000 T  0017:0
                       DI←L; DI←DI-1; DS←LIT ":";%                              37375000 T  0017:1
                       Z←TALLY; SI←LOC Z; SI←SI+7;%                             37376000 T  0018:1
                       IF SC="0" THEN BEGIN SI←J; SI←SI+1; DS←7 CHR; DS←LIT "/";%  37377000 T  0019:0
                                            SI←SI+1; DS←7 CHR; DS←LIT "=";%     37378000 T  0020:3
                                            SI←LOC P1MIX; DS←2 DEC;             37379000 T  0021:3
                                            L←DI; DI←DI-2; DS←FILL; DI←L END;   37379500 T  0022:1
                       DS←LIT "←";%                                             37380000 T  0023:1
                 END;%                                                          37381000 T  0023:3
                 IF P THEN BEGIN TERMINATE(P1MIX); TERMINALMESSAGE(-L) END;%    37382000 T  0024:0
                 SPOUTER(L,0,TYPE);                                             37383000 T  0026:1
            END FILEMESS;%                                                      37384000 T  0027:0
                                                                                        SIZE= 0028 WORDS
            PROCEDURE FILLBUFFERS(CURRENT,FINAL,COBOL,NR);                      37385000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00758
                 VALUE CURRENT,FINAL,COBOL,NR;                                  37385500 T  0000:0
                 REAL  CURRENT,FINAL,COBOL,NR;                                  37386000 T  0000:0
            BEGIN ARRAY LOCAT[*];%                                              37387000 T  0000:0
                 INTEGER I,J,K,D;%                                              37388000 T  0000:0
                 INTEGER FIRSTLOC=J,PREVLOC=K,CURLOC=D;                         37388100 T  0000:0
                 REAL T=LOCAT;                                                  37388200 T  0000:0
                 REAL T1;                                                       37388250 T  0000:0
                 REAL NF=T1+1;                    % MUST BE AT THE TOP OF THE STACK  37388275 T  0000:0
                 LABEL LINK;                                                    37388300 T  0000:0
                 REAL BSIZE=CURRENT,N=FINAL,U=COBOL,ALPHA=NR;                   37388400 T  0000:0
                 IF ALPHA<512 THEN                                              37388500 T  0000:0
                 BEGIN                                                          37388600 T  0002:1
                 P(NR-(COBOL GTR 0));             % INITIALIZE NF                37388700 T  0002:3
                 IF COBOL THEN FINAL:=CURRENT;                                  37388800 T  0004:0
                 J←FINAL.[33:15]-K←CURRENT.[33:15];%                            37389000 T  0005:2
                 D←2&(NOT CURRENT)[1:22:1];%                                    37390000 T  0008:1
                 LOCAT←M[K+D]; NR←NR-1;%                                        37391000 T  0010:1
                 FOR I←1 STEP 1 UNTIL NF DO%                                    37392000 T  0013:2
                 BEGIN IOREQUEST(FLAG(FINAL),CURRENT,LOCAT);%                   37393000 T  0015:0
                       M[LOCAT]←M[LOCAT]&0[26:26:7] AND NOT(M OR IOMASK);%      37394000 T  0016:3
                       IF NOT COBOL THEN                                        37394025 T  0021:3
                       IF I=1 THEN IF P(FINAL.[3:5],DUP)=6 OR P(XCH)=7 THEN     37394050 T  0022:1
                    BEGIN                                                       37394100 T  0026:2
                    SLEEP(LOCAT & 0 [3:13:30],IOMASK);                          37394150 T  0027:0
                    STREAM(N←0,L←0:NDIV64←0,BACC←T1←FINAL.[7:1],                37394200 T  0029:3
                           BUF ← (M[LOCAT] INX T1)-(1-T1));                     37394250 T  0032:1
                    BEGIN   DI ← LOC N; SI ← BUF; BACC(SI ← SI+4);              37394260 T  0035:1
                            IF 4 SC≠DC THEN GO OWT;                             37394280 T  0036:3
                            DI ← LOC N; BACC(SI ← BUF); DS ← 4 OCT;             37394300 T  0037:2
                            SI ← LOC L; DI ← LOC BACC; SI ← SI-2; DI ← DI-1;    37394350 T  0039:0
                            DS ← 1 CHR; SI ← BUF;                               37394360 T  0040:0
                            CI ← CI+BACC; GO FWD;                               37394400 T  0040:2
                            NDIV64(SI ← SI-32; SI ← SI-32); SI ← SI-N; SI ← SI+4;  37394450 T  0041:1
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                    GO ON;                                                  37394460 T  0043:1
            FWD:    NDIV64(SI ← SI+32; SI ← SI+32); SI ← SI+N;              37394500 T  0043:2
            ON:     DI ← LOC L; DS ← 4 OCT;                                 37394550 T  0045:1
            OWT:                                                            37394560 T  0045:3
            END STREAM;                                                     37394600 T  0045:3
            T1 ← P;                                                         37394650 T  0046:0
            IF P(DUP)=0 OR P(XCH)≠T1 THEN TERMINATE(P1MIX&108[CTF]);        37394700 T  0046:2
            END;                                                            37394800 T  0050:0
               IF NR>0 THEN STREAM(NR,T←M[LOCAT],LOCAT);%                   37395000 T  0050:0
                            BEGIN SI←LOCAT; SI←SI+8; DS←NR WDS;%            37396000 T  0053:3
                                  SI←LOC T; DS←WDS END;%                    37397000 T  0054:3
               CURRENT.[33:15]←K←M[K+D].[18:15];%                           37398000 T  0055:2
               FINAL.[33:15]←K+J;%                                          37399000 T  0059:1
         END   END ELSE                                                     37400000 T  0061:0
         BEGIN                                                              37401000 T  0063:1
         T←ALPHA&U[12:42:6] OR M;%                                          37404000 T  0063:3
         FOR I←N-1 STEP -1 UNTIL 0 DO%                                      37405000 T  0066:0
         BEGIN M[ALPHA+I]←(CURLOC←GETSPACE(BSIZE+4,2,1)+2)+2;               37406000 T  0070:1
   $ SET OMIT = NOT(BREAKOUT)                                               37406099 T  0075:1
               IF FIRSTLOC=0 THEN FIRSTLOC←CURLOC;%                         37407000 T  0075:1
               M[CURLOC+1]←0; MOVE(BSIZE+1,CURLOC+1,CURLOC+2);              37408000 T  0077:1
LINK:          M[CURLOC]←FLAG(T)&(PREVLOC+2)[18:33:15];%                    37412000 T  0082:1
               M[CURLOC+BSIZE+3]←FLAG(T)&(PREVLOC+BSIZE+1)[18:33:15];%      37413000 T  0085:0
               PREVLOC←CURLOC;%                                             37414000 T  0089:1
         END;%                                                              37415000 T  0090:0
         IF I=(-1) THEN BEGIN CURLOC←FIRSTLOC; GO TO LINK END;%             37416000 T  0090:2
         END END FILL OR GET BUFFERS;                                       37417000 T  0093:1
                                                                                   SIZE= 0094 WORDS
REAL PROCEDURE FILEHEADER(MID,FID,NROWS,SIZE,BLEN,RLEN,S);%                 37418000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00762
                  VALUE   MID,FID,NROWS,SIZE,BLEN,RLEN,S;%                  37419000 T  0000:0
                  REAL    MID,FID;%                                         37420000 T  0000:0
                  INTEGER         NROWS,SIZE,BLEN,RLEN,S;%                  37421000 T  0000:0
BEGIN REAL Q,LPER,SPER; ARRAY T=Q[*];                                       37422000 T  0000:0
      INTEGER N1,R1,L1,W;                                                   37422100 T  0000:0
   $ SET OMIT = NOT SHAREDISK                                               37422199 T  0000:0
      LABEL T1FILL,EXIT;                                                    37422300 T  0000:0
      SPER←(BLEN+29) DIV 30;%                                               37424000 T  0000:0
      IF S.[42:6]=0 THEN RLEN←BLEN;%                                        37425000 T  0003:3
   $ SET OMIT = SHAREDISK                                                   37425499 T  0006:1
      Q:=S.[13:3];                                                          37425500 T  0006:1
   $ POP OMIT                                                               37425501 T  0007:2
   $ SET OMIT = NOT SHAREDISK                                               37425599 T  0007:2
      LPER←BLEN DIV RLEN;%                                                  37426000 T  0007:2
      IF (NROWS+SIZE)=0 THEN%                                               37427000 T  0008:3
    BEGIN                                                                   37428000 T  0010:0
        IF (N1:=SECURITYCHECK(MID,FID,USERCODE[P1MIX],Q)) LSS 0 THEN        37428100 T  0010:2
   $ SET OMIT = NOT SHAREDISK                                               37428199 T  0013:1
              GO TO EXIT;                                                   37428300 T  0013:1
   $ SET OMIT = NOT SHAREDISK                                               37428399 T  0013:3
        T:=N1&P(,T,EOD,XCH)[CTF];                                           37429000 T  0013:3
   $ SET OMIT = NOT SHAREDISK                                               37429099 T  0015:2
            N1←T[7]+1;                                                      37430000 T  0015:2
              IF(L1←T[0].[1:14])=0 THEN L1←30;                              37431000 T  0017:0
            R1←T[0].[30:12];                                                37432000 T  0020:1
            W ←N1 DIV R1 × T[0].[42:6]×30 +N1 MOD R1×L1;                    37433000 T  0021:3
            T[7]← W← W DIV 30 DIV SPER×LPER                                 37434000 T  0026:1
                 +(W DIV 30 MOD SPER×30 + W MOD 30 + RLEN-1)                37435000 T  0028:0
                      DIV RLEN-1;                                           37436000 T  0032:0
T1FILL:     T[1]←(T[8] DIV SPER)× SPER;                                     37437000 T  0034:2
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                T[4]:=(*P(DUP))&0[11:47:1] OR 1;                                  37437500 T  0037:0
            END ELSE%                                                             37439000 T  0040:0
        $ SET OMIT = SHAREDISK                                                    37439999 T  0040:0
            BEGIN T:=M OR (GETSPACE(30,8,1)+@360000700002);                       37440000 T  0040:0
                STREAM(T); BEGIN 60(DS←4 LIT "0") END;%                           37441000 T  0043:1
        $ POP OMIT                                                                37441001 T  0045:3
        $ SET OMIT = NOT SHAREDISK                                                37441099 T  0045:3
                T[3]←XCLOCK+P(RTR);                                               37441500 T  0045:3
                T[7] ← -1;                                                        37442000 T  0047:2
                T[1]:=T[8]:=((SIZE+(LPER-1))DIV LPER)× SPER;                      37443000 T  0049:0
                T[9] ← NROWS;                                                     37444000 T  0053:1
            END;%                                                                 37445000 T  0054:2
            T[0] ←SPER&LPER[30:36:12]&BLEN[15:33:15]&RLEN[1:34:14];               37446000 T  0054:2
            FILEHEADER ← NFLAG(T);                                                37447000 T  0058:3
        EXIT:                                                                     37447500 T  0060:0
        END FILEHEADER;%                                                          37448000 T  0060:0
                                                                                          SIZE= 0062 WORDS
        PROCEDURE PURGEIT(U); VALUE U; INTEGER U;%                                37449000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00765
        BEGIN ARRAY LABLE=+1[*];%                                                 37450000 T  0000:0
            REAL RCW=+0,EOF=+2;%                                                  37451000 T  0000:0
            REAL MSCW=-2;                                                         37451500 T  0000:0
            P(0,0);                                                               37453000 T  0000:0
            P(WAITIO(@4200000000,@377,U),DEL);                                    37453100 T  0000:2
            LABLE←[M[GETSPACE(10,0,0)+2]]&10[8:38:10]&5[21:45:3];%                37454000 T  0002:0
            BUILDLABEL(LABLE,0,"X",1,0,1,0,PRNTABLE[U],[30:18],0,0,0);%           37455000 T  0006:3
            P(WAITIO(LABLE+@37700000,U),DEL);%                                    37456000 T  0011:0
            EOF←@1737000000000000;%                                               37457000 T  0012:3
            P(WAITIO([EOF],@37700000,U),DEL);%                                    37458000 T  0013:2
            FORGETSPACE(LABLE,[33:15]);                                           37463000 T  0015:0
            SETNOTINUSE(U,0);                                                     37464000 T  0016:2
            KILL([MSCW]);                                                         37465000 T  0017:2
        END PURGEIT;%                                                             37466000 T  0018:1
                                                                                          SIZE= 0022 WORDS
        PROCEDURE KRUNCHER(H); ARRAY H[*];                                        37500000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00766
            BEGIN DEFINE E=H[7]#,RL=H[1]#,RPB=H[0].[30:12]#,                      37501000 T  0000:0
                MAXROWS=H[9]#,                                                    37501500 T  0000:0
                BCL=H[0].[42:6]#,BRL=H[8]#;                                       37502000 T  0000:0
            ARRAY A[*];                                                           37504000 T  0000:0
            LABEL FORGET,EXIT,AGAIN,DONE;                                         37505000 T  0000:0
            INTEGER NB,NBR;                                                       37506000 T  0000:0
            REAL I,J,K,T;                                                         37507000 T  0000:0
            A:=[M[SPACE(41)]]&40[8:38:10];                                        37508000 T  0000:0
            MOVE(41,A,[CF]-1,A);                                                  37509000 T  0005:2
            IF E LSS 0 THEN GO TO EXIT;                                           37510000 T  0008:2
            NB:=E DIV RPB;                                                        37511000 T  0010:0
            NBR:=RL DIV BCL;                                                      37512000 T  0012:1
            IF RL NEQ BRL THEN                                                    37513000 T  0014:2
            FOR I:=10 STEP 1 UNTIL 29 DO                                          37514000 T  0015:3
            IF H[I] NEQ 0 THEN                                                    37515000 T  0017:0
        $ SET OMIT = SHAREDISK                                                    37515995 T  0018:0
                FORGETUSERDISK(H[I]+RL,BRL-RL);                                   37516000 T  0018:0
        $ SET OMIT = NOT SHAREDISK                                                37516050 T  0023:3
            BRL:=RL;                                                              37517000 T  0023:3
            IF NB LSS NBR THEN                                                    37520000 T  0025:1
            BEGIN A[0]:=H[NT2:=10];                                               37521000 T  0026:0
                NT4:=1;                                                           37521100 T  0028:2
                RL:=(NB+1)×BCL;                                                   37521200 T  0029:1
                GO TO FORGET;                                                     37521300 T  0032:1
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                    END;                                                    37521400 T  0032:3
                    T:=(K:=J:=1)+NBR×20;                                    37522000 T  0032:3
AGAIN:              IF(NT1:=NBR DIV J)=0 THEN GO TO DONE;                   37523000 T  0035:2
                    IF (NT2:=NB DIV NT1) GTR 19 THEN GO TO DONE;            37524000 T  0037:3
                    IF NBR MOD J=0 THEN                                     37525000 T  0040:0
                    BEGIN IF (NT3:=NT1×NT2+NT1) LSS T THEN                  37526000 T  0041:1
                         BEGIN K:=J; T:=NT3; NT4:=NT2+1 END;                37527000 T  0044:0
                    END;                                                    37528000 T  0047:1
                    J:=J+1;                                                 37529000 T  0047:1
                    GO TO AGAIN;                                            37530000 T  0048:2
DONE:               IF K=1 THEN GO TO EXIT;                                 37530100 T  0049:0
                    NT2:=NB DIV NBR + 10;                                   37530200 T  0050:1
                    RL:=RL DIV K;                                           37531000 T  0052:0
                    FOR I:=10 STEP 1 UNTIL NT2 DO                           37532000 T  0054:0
                    BEGIN IF (NT1:=H[I]-RL) GTR 0 THEN                      37533000 T  0055:0
                         FOR J:=1 STEP 1 UNTIL K DO                         37534000 T  0057:1
                              A[(I-10)×K+J-1]:=NT1+J×RL;                    37535000 T  0059:0
                    END;                                                    37536000 T  0065:3
                    FOR K:=NT4 STEP 1 UNTIL 19 DO A[K]:=0;                  37538000 T  0068:0
                    IF MAXROWS LSS (NT5:=(NT4×20)+NT4) THEN MAXROWS:=NT5;   37538500 T  0072:2
FORGET:             IF NB+1 NEQ NBR THEN                                    37539000 T  0076:3
$ SET OMIT = SHAREDISK                                                      37541995 T  0078:0
                         FORGETUSERDISK(A[NT4-1]+RL,(NT2-9)×BRL-NT4×RL);    37542000 T  0078:0
$ SET OMIT = NOT SHAREDISK                                                  37542005 T  0083:2
                    MOVE(20,A,[H[10]]);                                     37543000 T  0083:2
                    BRL:=RL;                                                37544000 T  0085:2
EXIT:               FORGETSPACE(A);                                         37545000 T  0087:0
          END;                                                              37546000 T  0088:0
                                                                                   SIZE= 0089 WORDS
PROCEDURE DISKFILEOPEN(ALPHA); VALUE ALPHA; INTEGER ALPHA;                  38000000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00769
BEGIN REAL RCW=+0,MSCW=-2;                                                  38001000 T  0000:0
     REAL IOM=IOMASK,IOMASK=+1;                                             38002000 T  0000:0
     INTEGER NBUFS=+2,FNUM=+3,RLEN=+4,TYPE=+5,IO=+6,BLEN=+7,U=+8,           38003000 T  0000:0
             KIND=+9,MODE=+10,DIREC=+11,FORMS=+12,COBOL=+13,                38004000 T  0000:0
             UNLABELED=+14,OPTIONAL=+15,CNTCTL=+16;                         38005000 T  0000:0
     REAL T1=+17,T2=+18,MASK=+19,STATE=+20;                                 38006000 T  0000:0
     REAL MFID=+21,FID=+22; INTEGER REEL=+23,CDATE=+24,CYCLE=+25;           38007000 T  0000:0
     ARRAY FIB=+26[*],FPB=+27[*];%                                          38008000 T  0000:0
     INTEGER ACCESS=+28,FIB7=+29;                                           38009000 T  0000:0
     LABEL AGN,EXIT;                                                        38009100 T  0000:0
     ARRAY HEADER=+30[*];%                                                  38010000 T  0000:0
     REAL TOG=+31;%                                                         38010100 T  0000:0
     SUBROUTINE DISKSETUP;%                                                 38011000 T  0000:0
      BEGIN IF STATE.[42:1] THEN%                                           38012000 T  0001:0
         BEGIN                                                              38013000 T  0001:3
              IF NFLAG(FIB[14]+FLAG(FILEHEADER(MFID                         38013100 T  0002:1
$ SET OMIT = NOT SHAREDISK                                                  38013199 T  0003:0
                   ,FID&FIB[5][1:45:1],FIB[8].[20:5]                        38013300 T  0003:0
                   ,FIB[8].[25:23],BLEN,RLEN,STATE)))<6 THEN                38013400 T  0005:0
              BEGIN P(DEL);                                                 38013500 T  0009:1
                   TOG:= 1;                                                 38013510 T  0010:0
$ SET OMIT = NOT SHAREDISK                                                  38013519 T  0010:3
                   GO TO EXIT;                                              38013600 T  0010:3
              END;                                                          38013700 T  0011:1
              IF FIB[8].[20:28]≠0 THEN FPB[FNUM+2].[18:30]←DATE ELSE        38013900 T  0011:1
                BEGIN% OLD FILE,VERIFY LABEL EQUATION DATE IF ANY           38014000 T  0016:1
                     HEADER := FIB[14];%                                    38014100 T  0016:3
                     STREAM(H:=HEADER[3],[30:18],B:=[T2]);                  38014200 T  0017:3
                     BEGIN SI:=LOC H; DS:=8 DEC; END;%                      38014300 T  0019:2
```

```
                    AGN: IF CDATE NEQ 0 AND CDATE NEQ HEADER[3].[30:18] THEN          38014400 T  0020:1
                         BEGIN% WRITE DATE CHECK MESSAGE                              38014500 T  0021:2
            DOLITTLE(FALSE,                                                           38014600 T  0023:1
                  VWY&VOF[36:42:6]&VOK[30:42:6],                                      38014610 T  0023:3
            "#DAT CK"," =00000"&T2[18:18:30],MFID);                                   38014620 T  0026:0
                            IF TERMIX.[CF]=P1MIX THEN                                 38014700 T  0028:0
                            BEGIN                                                     38014800 T  0029:1
                                FORGETSPACE(DIRECTORYSEARCH(MFID,FID,                 38014900 T  0029:3
$ SET OMIT = NOT SHAREDISK                                                            38014949 T  0030:3
                                          FIB[5],[13:3]+10));                         38015000 T  0030:3
                                GO TO INITIATE;                                       38015100 T  0032:3
                            END;%                                                     38015200 T  0033:1
                            IF P(NT6,DUP)=VOK OR P(XCH)=VOF THEN CDATE←0;             38015400 T  0033:1
                            GO AGN                                                    38015500 T  0036:2
                         END;% VERIFICATION                                           38015600 T  0037:0
                         FPB[FNUM+2].[18:30]:=T2;% BCL DATE                           38015700 T  0039:0
                    END OLD FILES;%                                                   38015800 T  0042:0
                    STARTIMING(FNUM,18);%                                             38015900 T  0042:0
                    FPB:=PRT[P1MIX,3];      % STARTIMING MOVES THE FPB                38015950 T  0043:0
                END;%                                                                 38016000 T  0044:2
                HEADER←FIB[14];%                                                      38020000 T  0044:2
                KIND←4; U←18;%                                                        38021000 T  0045:2
                MODE←0;%                                                              38022000 T  0047:0
                IF NOT COBOL THEN UNLABELED←1;%                                       38023000 T  0047:3
                CNTCTL←BLEN≤1023;%                                                    38024000 T  0049:2
$ SET UMIT = NOT SHAREDISK                                                            38024004 T  0050:3
            IF FIB[8].[20:28]=0 THEN % NOT CREATING                                   38024010 T  0050:3
            IF HEADER[8]<(((BLEN+29) DIV 30) THEN %BLKSIZE > ROWSIZE                  38024020 T  0052:1
            BEGIN BLEN←HEADER[8]×30; FORGETSPACE(HEADER INX 0);                       38024030 T  0054:3
            P(DIRECTORYSEARCH(¬MFID,FID,STATE.[13:3]+10),DEL);                        38024040 T  0058:1
            FIB[14]←HEADER←FLAG(FILEHEADER(MFID,FID&FIB[5][1:45:1],0,0,               38024050 T  0061:0
                                    BLEN,RLEN,STATE));                                38024060 T  0064:0
            FIB[18].[3:15]←BLEN;                                                      38024070 T  0066:1
            END;                                                                      38024080 T  0068:3
            IF COBOL>0 AND (FIB[13].[22:1] OR TYPE=10 OR TYPE=26) THEN                38024100 T  0068:3
            BEGIN     COBOL:=3;                 %IF COBOL=IO OR COBOL=RANDOM          38024200 T  0072:3
                      BLEN := BLEN + RLEN;      % THEN CHANGE BUFFSIZE TO             38024300 T  0074:0
            END;                                %  BUFFSIZE + RECSIZE                 38024400 T  0075:1
              GETBUFFERS((IF CNTCTL THEN BLEN%                                        38025000 T  0075:1
                              ELSE ((BLEN+29) DIV 30)×30)+1,%                         38026000 T  0076:1
                        NBUFS,U,ALPHA);%                                              38027000 T  0079:1
              IF COBOL = 3 THEN                 %IF COBOL=IO OR COBOL=RANDOM          38027100 T  0080:1
            BEGIN     COBOL := 1;               % THEN CHANGE BUFFSIZE TO            38027200 T  0081:0
                      BLEN := BLEN - RLEN;      % BUFFSIZE - RECSIZE                  38027300 T  0082:1
            END;                                % (SEE ABOVE                          38027400 T  0083:2
              FIB[16]←M[ALPHA]&CNTCTL[23:47:1]&IO[24:47:1]%                           38028000 T  0083:2
                  &((BLEN+29) DIV 30)[27:42:6]%                                       38029000 T  0086:1
                  &(IF CNTCTL THEN BLEN ELSE 1023)[8:38:10]%                          38030000 T  0088:1
                  &TINU[18][3:3:5] OR M OR IOMASK;%                                   38031000 T  0090:3
              FIB[16].[2:1]:=(HEADER.[31:2] AND (IO+1))≠0;                            38032000 T  0094:1
                FIB[5].[1:1]:= NOT FIB[16].[2:1];                                     38033000 T  0099:0
                IF FIB[5].[1:1] THEN                                                  38034000 T  0102:2
              FOR MASK:=10 STEP 1 UNTIL 29 DO HEADER[MASK]:=0;                        38035000 T  0103:2
              FIB[19]←(IF DIREC THEN BLEN-RLEN+1 ELSE 1)                              38036000 T  0108:2
                    INX FIB[16]&0[27:27:6];                                           38037000 T  0111:3
              IF STATE.[46:2]≠0 THEN FIB[19].[8:10]←RLEN;%                            38038000 T  0114:0
              FS[P1MIX,(T2:=(FNUM DIV ETRLNG)),[40:4]]←(*P(DUP)) OR                   38039000 T  0118:1
                (TWO(0&T2[43:44:4])×((NOT HEADER).[31:2]));                           38040000 T  0121:1
              T2←IF COBOL THEN 0 ELSE FIB[19].[33:15]-FIB[16].[33:15];                38041000 T  0125:1
                FIB[10].[3:15]:=M[ALPHA]-2;    %HEAD OF BUFFER RING                   38041100 T  0129:2
```

```
                FOR MASK←0 STEP 1 UNTIL NBUFS-1 DO%                                38042000 T  0133:1
                M[ALPHA+MASK]←(P(DUP,LOD)+T2)%                                     38043000 T  0137:2
                          &P(FLAG(FIB[19-ABS(3×COBOL)]),XCH)[CTC];                 38044000 T  0139:3
                FIB[16]:=FIB[16] OR M;                                             38045000 T  0143:1
                FIB[5].[45:1]←0;                                                   38045100 T  0145:1
                IF P([FIB[14]],LOD).[FF]=2 THEN FIB[5].[11:2]←1;%INPUT ONLY.       38045105 T  0147:3
                IF HEADER[4].[10:1] AND NOT IO THEN                                38045110 T  0152:2
                  FILEMESS(-"CODE   ","FILE   ",MFID,FID,0,0,0);                   38045120 T  0154:1
        $ SET OMIT = NOT(PACKETS)                                                  38045149 T  0157:1
            END DISKSETUP;%                                                        38046000 T  0157:1
            P(RCW,MSCW,STF);                                                       38047000 T  0160:0
            RCW:=RCW&P(XCH)[CTC];                                                  38048000 T  0161:0
            DISKSETUP;                                                             38049000 T  0162:1
            IF COBOL<0 THEN   % ADJUST UPPER BOUND FOR COBOL 68                    38049200 T  0163:0
               BEGIN  MASK ← (IF IO AND NOT FIB[13].[22:1]                         38049300 T  0163:3
                        THEN HEADER[7]                                             38049400 T  0164:3
                        ELSE  (((HEADER[9] × HEADER[1]) DIV                        38049500 T  0166:3
                                 HEADER[0].[42:6]) × HEADER[0].[30:12]) - 1);      38049600 T  0168:3
               IF FIB[3]=0 OR FIB[3]>MASK THEN FIB[3]←MASK; %LESSOR OF 2 EVILS     38049700 T  0171:3
               END;                                                                38049800 T  0176:1
            IF P(TYPE,DUP)=10 OR P(XCH)=26 THEN                                    38050000 T  0176:1
            BEGIN                                                                  38051000 T  0178:1
               IF COBOL<1 THEN     % ALGOL OR COBOL 68                             38052000 T  0178:3
                 FOR MASK ← 0 STEP 1 UNTIL NBUFS-1 DO                              38053000 T  0179:2
                 IF COBOL THEN M[M[ALPHA+MASK] INX NOT 2] ← NOT 0                  38053500 T  0184:1
                          ELSE M[ALPHA+MASK]←P(DUP,LOD)&1[27:47:1];                38054000 T  0187:3
                FIB[6]←FIB[7]←0;%                                                  38055000 T  0193:0
                FIB[17]←IF IO THEN 0 ELSE BLEN;%                                   38056000 T  0195:1
            END ELSE                                                               38057000 T  0198:0
            BEGIN                                                                  38058000 T  0198:0
                T2←(MFID+FIB[16]).[33:15];%                                        38059000 T  0198:2
                FIB7←FIB[7];                                                       38060000 T  0200:2
                IF COBOL THEN%                                                     38061000 T  0201:2
                 BEGIN  IF COBOL>0 THEN                                            38062000 T  0201:3
                          IF NOT (FIB7=0 OR FIB[13].[22:1]) THEN                   38062500 T  0203:0
                          BEGIN  FIB7 ← FIB7 - 1;                                  38063000 T  0205:3
                                 OPTIONAL ← NBUFS - 1;                             38063500 T  0207:2
                          END ELSE  OPTIONAL ← NBUFS - 2                           38064000 T  0208:3
                          ELSE BEGIN       % COBOL 68                              38064200 T  0209:2
                               OPTIONAL ← NBUFS - 1;                               38064400 T  0211:0
                               IF DIREC THEN FIB7 ← FIB[7] ← FIB[3];               38064600 T  0212:1
                               END;                                                38065000 T  0215:0
                     FID←FIB[16];%                                                 38066000 T  0215:0
                     MASK←0;%                                                      38067000 T  0216:0
                END ELSE%                                                          38068000 T  0216:3
                BEGIN OPTIONAL←NBUFS-1;%                                           38069000 T  0216:3
                     MASK←(FID+FIB[19]).[33:15]-T2;%                               38070000 T  0218:2
                END;%                                                              38071000 T  0221:0
                IF (STATE.[46:2]≠0 AND NOT COBOL) OR IO THEN                       38072000 T  0221:0
                IF M[ALPHA].[2:1] THEN                                             38073000 T  0223:2
                FOR T1←0 STEP 1 UNTIL OPTIONAL DO%                                 38074000 T  0225:2
                BEGIN IF (M[T2]:=                                                  38074500 T  0227:0
                        DISKADDRESS(FPB[FNUM], FPB[FNUM+1], FPB[FNUM+3],           38075000 T  0227:3
                        FORMS:=((HEADER[0].[30:12]×T1)&DIREC[1:47:1])+FIB7,        38075500 T  0230:2
                        HEADER, IO&(NOT HEADER[4])[46:47:1])) > 1 THEN             38076000 T  0233:0
                     BEGIN                                                         38076500 T  0237:2
                          IF (USERCODE[P1MIX] EQV MCP)≠NOT 0 THEN                  38077000 T  0238:0
                          IF P(M[MFID],DUP).[3:6]=0 AND                            38077500 T  0240:2
                            P(XCH)<DIRDSK×DSKTOG THEN                              38078000 T  0243:1
                          BEGIN                                                    38078500 T  0245:1
```

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                    TERMINATE(P1MIX);                                   38079000 T  0245:3
                    TERMINALMESSAGE(30);                                38079500 T  0246:2
                 END;                                                   38080000 T  0247:1
                 IOREQUEST(FLAG(FID),MFID&1[24:47:1],M[T2-2]);          38080500 T  0247:1
                 M[ALPHA]:=FLAG(MFID)&0[26:26:7] AND NOT                38081000 T  0251:0
                   (M OR IOMASK);                                       38081250 T  0253:1
              END ELSE                                                  38081500 T  0255:0
              IF M[T2]=0 THEN      % EOF IF INPUT, FULL HDR IF OUTPT    38081750 T  0255:0
                M[ALPHA]:=P(DUP,LOD)&1[27:47:1] AND NOT M;              38082000 T  0257:0
              IF COBOL<0 THEN M[M[ALPHA] INX NOT 2] +                   38082400 T  0261:0
                 (IF FORMS≥0 THEN FORMS DIV FIB[11] ELSE NOT 0);        38082500 T  0264:2
              STREAM(N←NBUFS-1,T←M[ALPHA],ALPHA);%                      38083000 T  0268:1
              BEGIN SI←ALPHA; SI←SI+8; DS←N WDS;%                       38084000 T  0270:3
                   SI←LOC T; DS←WDS;%                                   38085000 T  0271:3
              END;%                                                     38086000 T  0272:1
             MFID.[33:15]←T2←M[T2-2].[18:15];%                          38087000 T  0272:2
              FID.[33:15]←T2←MASK;%                                     38088000 T  0276:1
           END;%                                                        38089000 T  0278:0
           IF (NBUFS-1)≠OPTIONAL THEN FIB[16].[33:15]←M[ALPHA] ;%       38090000 T  0280:1
           FORMS←(FORMS←FIB7 MOD HEADER[0].[30:12])×RLEN;               38091000 T  0284:3
          SLEEP([M[ALPHA]],IOMASK);%                                    38092000 T  0287:3
           IF COBOL ≥ 0 THEN            % NOT COBOL 68                  38092900 T  0289:3
            IF FIB[13].[22:1]THEN M[ALPHA].[33:15]←FIB[16]INX 1 ELSE    38093000 T  0290:2
           M[ALPHA].[33:15]←FIB[16].[33:15]+FORMS+1;%                   38094000 T  0295:2
            IF (NBUFS-1)≠OPTIONAL AND IO AND NOT FIB[13].[22:1] THEN    38095000 T  0300:0
              FIB[ 17 ]←0  ELSE                                         38096000 T  0303:1
           FIB[17]←IF DIREC THEN FORMS+RLEN%                            38097000 T  0305:0
                          ELSE BLEN-FORMS;%                             38098000 T  0307:0
        END;                                                            38099000 T  0309:1
    EXIT:                                                               38099100 T  0309:1
          P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                       38100000 T  0309:1
    END DISKFILEOPEN;                                                   38101000 T  0312:2
                                                                                SIZE= 0313 WORDS
    PROCEDURE OTHERFILEOPENIN(ALPHA); VALUE ALPHA; INTEGER ALPHA;       38102000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00780
    BEGIN REAL RCW=+0,MSCW=-2;                                          38102100 T  0000:0
        REAL IOM=IOMASK, IOMASK=+1;                                     38102200 T  0000:0
        INTEGER NBUFS=+2,FNUM=+3,RLEN=+4,TYPE=+5,IO=+6,BLEN=+7,U=+8,    38102300 T  0000:0
                KIND=+9,MODE=+10,DIREC=+11,FORMS=+12,COBOL=+13,         38102400 T  0000:0
                UNLABELED=+14,OPTIONAL=+15,CNTCTL=+16;                  38102500 T  0000:0
        REAL T1=+17,T2=+18,MASK=+19,STATE=+20;                          38102600 T  0000:0
        REAL MFID=+21,FID=+22; INTEGER REEL=+23,CDATE=+24,CYCLE=+25;    38102700 T  0000:0
        ARRAY FIB=+26[*],FPB=+27[*];%                                   38102800 T  0000:0
        INTEGER ACCESS=+28,FIB7=+29;                                    38102900 T  0000:0
        ARRAY HEADER=+30[*];%                                           38103000 T  0000:0
         REAL TOG=+31;                                                  38103100 T  0000:0
        REAL USASI=NT1, RHEAD=HEADER;                                   38103200 T  0000:0
        LABEL FIND,DCN,DC19;                                            38103300 T  0000:0
        SUBROUTINE TYPEOPEN;%                                           38103400 T  0000:0
            BEGIN                                                       38103500 T  0001:0
              T1:=(OPNMESS AND ((T1:=JAR[P1MIX,0])>0 OR                 38103600 T  0001:0
                 COPNMESS AND T1<0));                                   38103700 T  0003:3
     $ SET OMIT = PACKETS                                               38103800 T  0006:2
              IF T1 THEN                                                38103900 T  0006:2
     $ POP OMIT                                                         38104000 T  0006:3
                 BEGIN NT2:=0;                                          38104100 T  0006:3
                    IF U<16 THEN                                        38104200 T  0008:0
                    STREAM(S:=PRNTABLE[U].[30:18], D:=[NT2]);           38104300 T  0008:3
                      BEGIN SI ← LOC S; DS ← 8 DEC;          %          38104400 T  0011:0
                         DI ← DI-7; DS ← 6 FILL;             %          38104500 T  0011:2
```

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                    END;                                                  %   38104600 T 0012:0
                  FILEMESSAGE((" IN ")&                                       38104700 T 0012:1
                    TINU[U][6:30:18], NT2, FPB[FNUM], FPB[FNUM+1],            38104800 T 0012:1
                    IF KIND=2 OR KIND=9 THEN P(REEL,CDATE) ELSE               38104900 T 0012:1
                    P(0,0), P, CYCLE, T1);                                    38105000 T 0012:1
              END;                                                            38105100 T 0020:0
          END;                                                                38105200 T 0020:0
      SUBROUTINE REED;%                                                       38105300 T 0022:0
      BEGIN IF (T2←WAITIO(T1,(MASK OR @40)&@377[CTF],U) AND @367)≠0 THEN      38105400 T 0022:0
            IF (T2 AND NOT MASK)≠0 THEN                                       38105500 T 0025:2
            BEGIN STOPTIMING(FNUM,1023); BLASTQ(U); SETNOTINUSE(U,0);         38105600 T 0027:3
                FILEMESS(-"PARITY ","ON ... "&TINU[U][24:30:18],%             38105700 T 0031:0
                      MFID,FID,REEL,CDATE,CYCLE);%                            38105800 T 0033:1
            END;%                                                             38105900 T 0034:3
            IF TERMIX.[CF]=P1MIX THEN                                         38106000 T 0034:3
            BEGIN STOPTIMING(FNUM,1023); SETNOTINUSE(U,0);                    38106100 T 0036:0
                GO TO INITIATE;                                               38106200 T 0038:2
            END;                                                              38106300 T 0039:0
      END REED;%                                                              38106400 T 0039:0
      REAL SUBROUTINE CNTLBITS;%                                              38106500 T 0042:0
            CNTLBITS←IOMASK&MODE[21:47:1]&DIREC[22:47:1]&CNTCTL[23:47:1]      38106600 T 0042:0
                &IO[24:47:1]&(KIND=7 OR KIND>9 AND KIND≤12)[20:47:1]          38106700 T 0044:2
                &(IF KIND=1OR KIND=7OR KIND=12THEN@20ELSE 0)[27:42:6];        38106800 T 0049:0
      SUBROUTINE LABELAREA;%                                                  38106900 T 0054:0
            M[T1←ALPHA-2]←M OR (GETSPACE((T1←M[T1].[8:10])+4,2,1)+4)          38107000 T 0056:0
                      &T1[8:38:10]&CNTLBITS[18:18:15];%                       38107100 T 0061:3
      P(ALPHA); % DETERMINE IF BRANCH TO DC19                                 38109000 T 0065:1
      P(RCW,MSCW,STF);                                                        38110000 T 0066:1
      RCW:=RCW&P(XCH)[CTC];                                                   38110500 T 0067:1
      IF P=2 THEN GO DC19;                                                    38111000 T 0068:2
      IF STATE.[41:1] THEN%                                                   38111500 T 0069:2
      BEGIN U←FIB[15].[25:5];%                                                38112000 T 0070:1
      END ELSE%                                                               38112500 T 0072:1
      BEGIN IF (U←FINDINPUT(MFID,FID,REEL,CDATE,CYCLE,COBOL,UNLABELED,        38113000 T 0072:1
                        OPTIONAL,MODE,FNUM))<0 THEN%                          38113500 T 0074:3
            BEGIN FIB[5].[39:4]←9; GO TO FIND END;%                           38114000 T 0076:3
            STARTIMING(FNUM,IF U>31 THEN 18 ELSE U);                          38114500 T 0080:1
            FPB:=PRT[P1MIX,3];          % STARTIMING MAY HAVE MOVED IT.       38115000 T 0083:1
            KIND:=IF U GTR 31 THEN 11 ELSE UNIT[U].[1:4];                     38115100 T 0084:3
            TYPEOPEN;%                                                        38115500 T 0088:1
            IF U<16 THEN BEGIN RRRMECH←TWO(U) OR RRRMECH;                     38116000 T 0089:0
                        PRNTABLE[U].[15:15]←ALPHA;%                           38116500 T 0092:0
                  END;%                                                       38117000 T 0094:2
%                                                                       TGW   38117500 T 0094:2
            IF (T1←RDCTABLE[U].[14:10])≠0 THEN REEL←T1;                       38118000 T 0094:2
            STATE.[39:4]←0;%                                                  38118500 T 0097:3
      END;%                                                                   38119000 T 0099:2
      IF KIND=0 THEN%                                                         38119500 T 0099:2
      BEGIN IF U=23 THEN BEGIN T1←READERA; READERA←0 END%                     38120000 T 0100:1
                  ELSE BEGIN T1←READERB; READERB←0 END;%                      38120500 T 0103:2
            M[ALPHA-2]:=[M[T1]]&10[8:38:10]&1[24:47:1];%                      38121000 T 0105:2
            M[T1-4].[3:12]:=P1MIX;%                                           38121500 T 0110:0
            MODE:=0;%                                                         38122000 T 0113:1
            CNTCTL:=DIREC:=0;%                                                38122500 T 0114:0
            IF BLEN<T1←(MODE+1)×10 THEN BLEN←T1;%                             38123000 T 0115:1
      END ELSE%                                                               38123500 T 0118:3
      IF KIND=2 THEN%                                                         38124000 T 0118:3
      BEGIN IF NOT UNLABELED THEN BEGIN%                                      38124500 T 0120:0
            IF DIREC AND NOT FIB[16].[22:1] THEN                              38125000 T 0121:2
            BEGIN IF NOT STATE.[40:1] THEN BEGIN%                             38125500 T 0123:1
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                T1←5&3[23:46:2] OR M;%                                  38126000 T  0125:1
                MASK←0; REED;%                                          38126500 T  0127:2
                MASK:=@60; DO REED UNTIL T2.[42:1];                     38127000 T  0129:0
                DO REED UNTIL T2.[42:1];                                38127500 T  0132:1
                MASK←0; REED;            END;%                          38128000 T  0134:1
            END;                                                        38128500 T  0136:0
            CNTCTL←1; LABELAREA;%                                       38129000 T  0136:0
            T1:=NFLAG(M[ALPHA-2]);%                                     38129500 T  0138:0
            IF DIREC THEN T1:=T1.[8:10]-1 INX T1;%                      38130000 T  0140:1
            MASK:=@40; REED;                                            38130500 T  0143:1
            STREAM(Y:=0:X:=0,X1:=0,X2:=0,Z:=T1);                        38131000 T  0145:0
              BEGIN  DI:=LOC X; DS:=24 LIT "VOL1HDR1HDR2EOF1EOF2EOV1";  38131500 T  0147:0
                     DI:=LOC X;                                         38132000 T  0150:2
                     6(TALLY:=TALLY+1;                                  38132500 T  0150:3
                     SI:=Z;                                             38133000 T  0151:1
                     IF 4 SC=DC THEN                                    38133500 T  0151:2
                     JUMP OUT TO B);                                    38134000 T  0152:0
                     TALLY:=0;                                          38134500 T  0152:3
              B:                                                        38135000 T  0153:0
                     Y:=TALLY;                                          38135500 T  0153:0
              END;                                                      38136000 T  0153:1
            IF (USASI:=P)>0 THEN                                        38136500 T  0153:2
            USASITAPE(T1.[CF],USASI,4,U,DIREC) ELSE                     38137000 T  0154:2
            IF M[T1 INX 6].[24:6]=1 THEN                                38137500 T  0157:1
            BEGIN                                                       38138000 T  0160:1
              REED;                                                     38138500 T  0160:3
              MASK←@60;                                                 38139000 T  0162:0
              T1←5&3[23:46:2] OR M;                                     38139500 T  0162:3
              T2←0;                                                     38140000 T  0165:0
            END;                                                        38140500 T  0165:3
            IF T2 NEQ @40 THEN DO REED UNTIL T2.[42:1] ELSE             38141000 T  0165:3
              FOR CNTCTL←DIREC STEP 1 UNTIL 2 DO% DIREC = 0 OR 1     %DB 38141500 T  0169:1
              P(WAITIO(@4740000005&(NOT DIREC)[22:47:1],@377,U),DEL);%DB 38142000 T  0171:0
                                        END;%                           38142500 T  0176:0
            CNTCTL←BLEN≤1023;%                                          38143000 T  0176:0
          END ELSE%                                                     38143500 T  0177:1
          IF KIND=9 THEN%                                               38144000 T  0177:1
          BEGIN UNLABELED←CNTCTL←1;%                                    38144500 T  0179:3
            DIREC←0;%                                                   38145000 T  0181:2
          END ELSE%                                                     38145500 T  0182:1
          IF KIND=11 THEN                                               38146000 T  0182:1
          BEGIN T1←CIDROW[U-32].[18:15];                                38146500 T  0183:2
            CIDROW[U-32].[18:15]←0;                                     38147000 T  0186:1
            M[ALPHA-2]:=[M[T1]]&10[8:38:10]&1[24:47:1];%                38147500 T  0188:3
            M[T1-4].[3:12]:=P1MIX;%                                     38148000 T  0193:1
            MODE:=0;%                                                   38148500 T  0196:2
            CNTCTL:=DIREC:=0;%                                          38149000 T  0197:1
            FIB[13].[1:9]←NBUFS←1; FIB[13].[10:9]←1;                    38149500 T  0198:2
            IF BLEN<10 THEN BLEN←10;                                    38150000 T  0204:0
          END ELSE                                                      38150500 T  0206:0
DCN:: FILEMESS(-"I/O ERR",0,MFID,FID,REEL,CDATE,CYCLE);%                38151000 T  0206:0
      P(1);                                                             38151500 T  0209:2
          IF BLEN=0 THEN GO TO DCN;%                                    38151800 T  0209:3
          IF NOT FIB[18].[1:1] OR P THEN                                38151900 T  0211:0
            GETBUFFERS(BLEN,NBUFS,U,ALPHA);                             38152000 T  0212:2
      GO FIND;                                                          38152100 T  0214:2
DC19:                                                                   38152250 T  0216:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                     38152500 T  0216:0
          FIB[14]:=NBUFS;                                               38156500 T  0216:0
          U:=30; KIND:=13;                                              38157000 T  0217:1
```

```
                FIB[13].[1:9]← NBUFS+2;                                          38157500 T  0218:3
                FIB[18]:=(*P(DUP))&(BLEN:=BLEN)[3:33:15]&BLEN[CTF];              38158000 T  0221:3
                IF MFID>0 THEN                                                   38158500 T  0225:1
                    BEGIN     ;                                                  38159000 T  0226:0
                    STREAM(A←0,B←0:MFID,FID,C←0);                                38159500 T  0226:2
                        BEGIN                                                    38160000 T  0228:2
                        SI← LOC MFID;  DI← LOC A;                                38160500 T  0228:2
                        2(C← SI; 8(IF SC≥0 THEN IF SC≤9 THEN TALLY← TALLY+1      38161000 T  0229:0
                                  ELSE JUMP OUT ELSE JUMP OUT; SI← SI+1));       38161500 T  0230:3
                          SI← C; C← TALLY; DS← C DCT; TALLY← 0; SI← LOC FID);    38162000 T  0233:0
                        END;                                                     38162500 T  0234:3
                    FID← P;                                                      38163000 T  0235:0
                    MFID←P;                                                      38163500 T  0235:2
                    END;                                                         38164000 T  0236:0
            M[ALPHA-2]← 0&MFID[9:44:4]&FID[14:44:4];                             38164500 T  0236:0
        FIND::                                                                   38191500 T  0240:0
            P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                              38192000 T  0240:0
        END OTHER FILE OPEN IN;                                                  38192500 T  0242:2
                                                                                          SIZE= 0243 WORDS
        PROCEDURE OTHERFILEOPENOUT(ALPHA); VALUE ALPHA; INTEGER ALPHA;           38200000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00789
        BEGIN REAL RCW=+0,MSCW=-2;                                               38200100 T  0000:0
            REAL IOM=IOMASK, IOMASK=+1;                                          38200200 T  0000:0
            INTEGER NBUFS=+2,FNUM=+3,RLEN=+4,TYPE=+5,IO=+6,BLEN=+7,U=+8,         38200300 T  0000:0
                    KIND=+9,MODE=+10,DIREC=+11,FORMS=+12,COBOL=+13,              38200400 T  0000:0
                    UNLABELED=+14,OPTIONAL=+15,CNTCTL=+16;                       38200500 T  0000:0
            REAL T1=+17,T2=+18,MASK=+19,STATE=+20;                               38200600 T  0000:0
            REAL MFID=+21,FID=+22; INTEGER REEL=+23,CDATE=+24,CYCLE=+25;         38200700 T  0000:0
            ARRAY FIB=+26[*],FPB=+27[*];%                                        38200800 T  0000:0
            INTEGER ACCESS=+28,FIB7=+29;                                         38200900 T  0000:0
            ARRAY HEADER=+30[*];%                                                38201000 T  0000:0
             REAL TOG=+31;                                                       38201100 T  0000:0
            REAL USASI=NT1, RHEAD=HEADER;                                        38201200 T  0000:0
            LABEL LPS,FIND,UCN,PBS;                                              38201300 T  0000:0
            SUBROUTINE TYPEOPEN;%                                                38201400 T  0000:0
                BEGIN                                                            38201500 T  0001:0
                    T1:=(OPNMESS AND ((T1:=JAR[P1M1X,0])>0 OR                    38201600 T  0001:0
                        COPNMESS AND T1<0));                                     38201700 T  0003:3
        $ SET OMIT = PACKETS                                                     38201800 T  0006:2
                    IF T1 THEN                                                   38201900 T  0006:2
        $ POP OMIT                                                               38202000 T  0006:3
                        BEGIN NT2:=0;                                            38202100 T  0006:3
                            IF U<16 THEN                                         38202200 T  0008:0
                            STREAM(S:=PRNTABLE[U].[30:18], D:=[NT2]);            38202300 T  0008:3
                              BEGIN SI ← LOC S; DS ← 8 DEC;          %           38202400 T  0011:0
                                    DI ← DI-7; DS ← 6 FILL;          %           38202500 T  0011:2
                              END;                                   %           38202600 T  0012:0
                            FILEMESSAGE((" OUT")&                                38202700 T  0012:1
                              TINU[U][0:30:18], NT2, FPB[FNUM], FPB[FNUM+1],     38202800 T  0012:1
                              IF KIND=2 OR KIND=9 THEN P(REEL,CDATE) ELSE        38202900 T  0012:1
                              P(0,0), P, CYCLE, T1);                             38203000 T  0012:1
                        END;                                                     38203100 T  0020:0
                    END;                                                         38203200 T  0020:0
            SUBROUTINE REED;%                                                    38203300 T  0022:0
             BEGIN IF (T2←WAITIO(T1,(MASK OR @40)&@377[CTF],U) AND @367)≠0 THEN  38203400 T  0022:0
                    IF (T2 AND NOT MASK)≠0 THEN                                  38203500 T  0025:2
                    BEGIN STOPTIMING(FNUM,1023); BLASTQ(U); SETNOTINUSE(U,0);    38203600 T  0027:3
                        FILEMESS(="PARITY ","ON ... "&TINU[U][24:30:18],%        38203700 T  0031:0
                            MFID,FID,REEL,CDATE,CYCLE);%                         38203800 T  0033:1
                    END;%                                                        38203900 T  0034:3
```

```
                IF TERMIX.[CF]=P1MIX THEN                                   38204000 T  0034:3
                 BEGIN STOPTIMING(FNUM,1023); SETNOTINUSE(U,0);             38204100 T  0036:0
                      GO TO INITIATE;                                       38204200 T  0038:2
                 END;                                                       38204300 T  0039:0
            END REED;%                                                      38204400 T  0039:0
           REAL SUBROUTINE CNTLBITS;%                                       38204500 T  0042:0
                 CNTLBITS←IOMASK&MODE[21:47:1]&DIREC[22:47:1]&CNTCTL[23:47:1]  38204600 T  0042:0
                      &IU[24:47:1]&(KIND=7 OR KIND>9 AND KIND≤12)[20:47:1]  38204700 T  0044:2
                      &(IF KIND=10R KIND=7OR KIND=12THEN@20ELSE 0)[27:42:6];  38204800 T  0049:0
           SUBROUTINE LABELAREA;%                                           38204900 T  0054:0
                 M[T1+ALPHA-2]←M OR (GETSPACE((T1+M[T1].[8:10])+4,2,1)+4)   38205000 T  0056:0
                           &[1[8:38:10]&CNTLBITS[18:18:15]];%               38205100 T  0061:3
            P(RCW,MSCW,STF);                                                38210000 T  0065:1
            RCW:=RCW&P(XCH)[CTC];                                           38210500 T  0067:0
                 IF STATE.[41:1] THEN%                                      38211500 T  0068:1
                 BEGIN U←FIB[15].[25:5];%                                   38212000 T  0069:0
                 END ELSE%                                                  38212500 T  0071:0
                 BEGIN T2:=FPB[FNUM+3];      % SAVES COPIES FOR BACK UP      38213000 T  0071:0
                   IF (U:=FINDOUTPUT(MFID,FID,REEL,CDATE,CYCLE,TYPE         38213500 T  0073:0
$ SET OMIT = NOT PACKETS                                                    38214000 T  0074:2
                      ,FORMS,KIND))>40 THEN                                 38215500 T  0074:2
                   BEGIN FIB[14].[3:15]←U;                                  38216000 T  0076:2
                      FPB[FNUM+2].[18:30]←DATE;                             38216500 T  0079:2
                      IF MCP≠NOT(-0) THEN M[U+2]←USERCODE[P1MIX];           38217000 T  0082:2
                      M[U+3]←XCLOCK+P(RTR);                                 38217500 T  0087:1
                   T1:=SPACE(30);                                           38218000 T  0089:3
                   MOVE(30,U,T1);                                           38218500 T  0092:0
                   STREAM(DATE,B:=T1+3);                                    38219000 T  0093:2
                   BEGIN SI:=LOC DATE;DS:=80CT;DI:=DI-8;DS:=2LIT"+2";END;   38219500 T  0095:0
                   M[T1+1]←(XCLOCK+P(RTR))&(M[T1+3])[6:30:18];              38220000 T  0096:2
                   M[T1+4]:= 0&SYSNO[4:46:2]&1[2:47:1];                     38220500 T  0101:1
                   M[T1+5]←(*P(DUP))&1[2:47:1]; %ABORTED PBD TOG.           38221000 T  0105:1
$ SET OMIT = RJE AND DATACOM                                                38221500 T  0108:2
                   P(0);                                                    38222000 T  0108:2
$ POP OMIT                                                                  38222500 T  0108:3
$ SET OMIT = NOT(RJE AND DATACOM)                                           38223000 T  0108:3
                   M[T1+6]←P(XCH);                                          38226500 T  0108:3
                   M[U-1]:=ELF(IF TYPE NEQ 0 AND TYPE LSS 20 THEN           38227000 T  0110:3
                      "PBD    " ELSE "PUD    ",M[U+6],T1-1);                38227500 T  0114:0
                   FORGETSPACE(T1);                                         38228000 T  0118:2
$ SET OMIT = PACKETS                                                        38228500 T  0119:1
                      IF PBDREL OR OPNMESS THEN                             38229000 T  0119:1
$ POP OMIT                                                                  38229500 T  0121:0
                      FILEMESSAGE((IF TYPE GEQ 20 OR TYPE=0 THEN "PUD...."  38230000 T  0121:0
                                 ELSE "PBD....")&M[U+6][24:6:24],           38230500 T  0121:0
                                 "OUT    "&M[U+6][30:30:18],                38231000 T  0121:0
                                 MFID,FID,0,0,0,                            38231500 T  0121:0
                                 (PBDREL OR OPNMESS));                      38232000 T  0121:0
                      STARTIMING(FNUM,U+18);                                38232500 T  0131:1
                      FPB:=PRT[P1MIX,3]; % STARTIMING MAY HAVE MOVED IT.    38233000 T  0132:3
                   END ELSE                                                 38233500 T  0134:1
                   IF U LSS 0 THEN %DSED                                    38234000 T  0134:1
                   BEGIN FIB[5].[39:4]:=9; GO FIND END ELSE                 38234500 T  0140:3
                   BEGIN                                                    38235000 T  0144:1
                      STARTIMING(FNUM,U);%                                  38235500 T  0144:3
                      FPB:=PRT[P1MIX,3];    % WATCH OUT FOR STARTIMING.     38236000 T  0145:3
                      TYPEOPEN;%                                            38236500 T  0147:1
                      IF TYPE=5 OR TYPE=8 OR TYPE=9 THEN UNLABELED←1;%      38237000 T  0148:0
                      IF U<16 THEN BEGIN RRRMECH←TWO(U) OR RRRMECH;         38237500 T  0152:0
                                 PRNTABLE[U].[15:15]←ALPHA;%                38238000 T  0155:0
```

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                END;                                    END;                                    38238500 T  0157:2
              END;%                                                                             38239000 T  0157:2
        IF KIND=6 THEN%                                                                         38239500 T  0157:2
        BEGIN BLEN:=10;                                                                         38240000 T  0158:1
              FIB[18]:=(*P(DUP))&BLEN[CTC]&BLEN[CTF]&BLEN[3:33:15];                             38240500 T  0159:2
              MODE←DIREC←CNTCTL←0;%                                                             38241000 T  0163:0
        END ELSE%                                                                               38241500 T  0164:3
        IF KIND=1 THEN%                                                                         38242000 T  0164:3
        BEGIN MODE←DIREC←CNTCTL←0;%                                                             38242500 T  0166:0
LPS:                                                                                            38243000 T  0168:1
              IF NOT COBOL THEN M[ALPHA-2]←0&15[8:38:10];%                                      38243500 T  0168:1
        END ELSE%                                                                               38244000 T  0172:1
        IF KIND=12 THEN                                                                         38244500 T  0172:1
        BEGIN TYPE←IF (TYPE≠0 AND TYPE<20) THEN 15 ELSE 22;                                     38245000 T  0173:2
PBS:    MODE←DIREC←0; FIB[13].[1:9]←NBUFS←CNTCTL←1; FIB[13].[10:9]←1;                           38245500 T  0177:3
              BLEN←IF TYPE≥20 THEN 10 ELSE IF BLEN>17 THEN 17 ELSE BLEN;                        38246000 T  0185:0
              M[T1←GETSPACE(92,3,1)+2]←M[T1-1]←[M[ALPHA]]&(T1+2)[CTF]&                          38246500 T  0189:3
                U[12:42:6];                                                                     38247000 T  0195:2
              DISKIO(RHEAD,-T1-75,11,JAR[P1MIX,6],[CF]);                                        38247500 T  0197:2
              M[ALPHA]:=T1+2;                                                                   38248000 T  0201:0
              FIB[14]←(*P(DUP))&(T1+2)[CTC]&(T1+56)[CTF];                                       38248500 T  0203:0
              FIB[18]←(*P(DUP))&BLEN[CTC]&BLEN[CTF]&BLEN[03:33:15];                             38249000 T  0206:2
              STREAM(D←T1+1); 2(36(DS←8 LIT"0"));                                               38249500 T  0210:0
              FIB[5].[FF]←(M[T1+91]←FIB[5].[FF]&1[18:47:1])+1;                                  38250000 T  0213:3
              SLEEP([RHEAD],IOMASK);                                                            38250500 T  0220:0
              HEADER:=[M[T1]]&92[8:38:10];                                                      38251000 T  0221:2
            HEADER[74]←MFID;                                                                    38251500 T  0223:3
            HEADER[75]←FID;                                                                     38252000 T  0225:0
            HEADER[87]←FORMS;                                                                   38252500 T  0226:1
            HEADER[88]:=T2.[15:8];          % COPIES                                            38253000 T  0227:2
            HEADER[76]←ABS(JAR[P1MIX,0]);                                                       38253500 T  0229:1
            HEADER[77]←ABS(JAR[P1MIX,1]);                                                       38254000 T  0231:2
              GO TO LPS;                                                                        38254500 T  0233:3
        END ELSE                                                                                38255000 T  0234:1
        IF KIND=7 THEN%                                                                         38255500 T  0234:1
        BEGIN TYPE←IF (TYPE≠0 AND TYPE<20) THEN 6 ELSE 20;                                      38256000 T  0235:2
        IF SVPBT THEN SAVEWORD:=TWO(U) OR SAVEWORD;                                             38256500 T  0239:3
              GO TO PBS,                                                                        38257000 T  0242:3
        END ELSE%                                                                               38257500 T  0243:1
        IF KIND=2 THEN%                                                                         38258000 T  0243:1
        BEGIN IF PRNTABLE[U]≥0 THEN GO TO DCN;%                                                 38258500 T  0244:2
              CNTCTL←MODE;%                                                                     38259000 T  0246:2
        END ELSE%                                                                               38259500 T  0247:1
        IF KIND=8 THEN%                                                                         38260000 T  0247:1
        BEGIN UNLABELED←CNTCTL←1;%                                                              38260500 T  0248:2
              DIREC←0;%                                                                         38261000 T  0250:1
        END;%                                                                                   38261500 T  0251:0
        IF UNLABELED THEN%                                                                      38262000 T  0251:0
        BEGIN IF COBOL THEN%                                                                    38262500 T  0251:1
              BEGIN MASK←0;%                                                                    38263000 T  0252:0
                    IF KIND=1 THEN BEGIN T1←@4000100000; REED END ELSE                          38263500 T  0253:1
                    IF KIND=7 OR KIND=12 THEN                                                   38264000 T  0256:0
                    BEGIN                                                                       38264500 T  0259:3
                    IF TYPE < 20 THEN                                                           38265000 T  0260:1
                    BEGIN                                                                       38265500 T  0261:0
                          HEADER[73]←@1540176000100000&FIB[5][FTC];                             38266000 T  0261:2
                          FIB[5].[FF]←FIB[5].[FF]+1;                                            38266500 T  0263:2
                          FIB[14].[FP]:=T1+38;                                                  38267000 T  0267:0
                    END;                                                                        38267500 T  0269:2
                    GO FIND;                                                                    38268000 T  0269:2
```

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                    END;                                                    38268500 T  0271:0
                END;%                                                       38269000 T  0271:0
            END ELSE%                                                       38269500 T  0271:0
            BEGIN IF COBOL THEN%                                            38270000 T  0271:0
                BEGIN M[ALPHA-2]←P(DUP,LOD)&CNTLBITS[18:18:15];%            38270500 T  0271:3
                    IF U<16 THEN%                                           38271000 T  0275:3
                    STREAM(N←PRNTABLE[U],[30:18],D←M[ALPHA-2]);%            38271500 T  0276:2
                        BEGIN SI←LOC N; DI←DI+53; DS←5 DEC END;%            38272000 T  0280:0
                END ELSE%                                                   38272500 T  0281:0
                BEGIN IF REEL=0 THEN REEL←1;%                               38273000 T  0281:0
                    IF CYCLE=0 THEN CYCLE←1;%                               38273500 T  0283:2
                    IF CDATE=0 THEN STREAM(DATE,CD←[CDATE]);%               38274000 T  0285:2
                        BEGIN SI←LOC DATE; SI←SI+3; DS←5 OCT END;           38274500 T  0287:3
                    LABELAREA;%                                             38275000 T  0288:3
                    BUILDLABEL(M[ALPHA-2],MFID,FID,REEL,CDATE,CYCLE,%       38275500 T  0290:0
                        FIB[4],(IF U<16 THEN PRNTABLE[U],[30:18]            38276000 T  0293:0
                                ELSE 0),STATE,[46:2],%                      38276500 T  0295:0
                        BLEN,RLEN);%                                        38277000 T  0297:1
                END;%                                                       38277500 T  0298:0
                M[M[ALPHA-2] INX P(DUP),[8:10]]←@3700000000000000;%         38278000 T  0298:0
                IF (P(KIND,DUP)=7 OR (P(XCH,DUP)=12 OR P(XCH)=1)) THEN      38278500 T  0301:3
                IF KIND=7 AND FIB[13],[28:10]≠COBOL THEN GO FIND ELSE       38279000 T  0305:0
                BEGIN IF TYPE GEQ 20 THEN % MAKE CP BACK-UP LABEL           38279500 T  0308:0
                BEGIN M[M[ALPHA-2] INX 4]:=FLAG(NABS(JAR[P1MIX,0]));        38280000 T  0309:2
                    M[M[ALPHA-2] INX 5]:=FLAG(JAR[P1MIX,1]&17[1:43:5]);     38280500 T  0314:2
                    STREAM(A:=[M[M[ALPHA-2] INX 6]]);                       38281000 T  0319:3
                    BEGIN DS:=15 LIT" PUNCH BACK-UP "; DS:=LIT"%";          38281500 T  0322:3
                        2(DS:=8 LIT"%%%%%%%%");                             38282000 T  0325:2
                    END;                                                    38282500 T  0327:1
                END ELSE % MAKE LP LABEL                                    38283000 T  0327:2
                BEGIN T1:=M[M[ALPHA-2]INX 3];                               38283500 T  0327:2
                    DISKIO(T2,NABS(M[ALPHA-2]INX 1),11,JAR[P1MIX,6],[CF]);  38284000 T  0332:1
                    M[M[ALPHA-2]INX 13]:=FLAG(NABS(JAR[P1MIX,0]));          38284500 T  0336:3
                    M[M[ALPHA-2]INX 14]:=FLAG(JAR[P1MIX,1]&17[1:43:5]);     38285000 T  0341:2
                    SLEEP([T2],IOMASK);                                     38285500 T  0346:3
                    M[M[ALPHA-2] INX 3]:=T1;                                38286000 T  0348:1
                END;                                                        38286500 T  0351:2
                    M[M[ALPHA-2] INX 1]:=MFID;                              38287000 T  0351:2
                    M[M[ALPHA-2] INX 2]:=FID;                               38287500 T  0354:3
                    IF KIND=1 THEN M[ALPHA-2]←P(DUP,LOD)&1[27:42:6] ELSE    38288000 T  0358:0
                    BEGIN HEADER[73]←(FIB[5],[FF] OR @360170100000000)&     38288500 T  0362:2
                        (TYPE<20)[32:47:1];                                 38289000 T  0365:1
                        FIB[5]←P(DUP,LOD,0,1,CFX,+);                        38289500 T  0367:1
                        STREAM(L←M[ALPHA-2],B←[HEADER[56]]);                38290000 T  0369:3
                        BEGIN SI←L; DS←17 WDS END;                          38290500 T  0372:1
                        FIB[14],[FF]←[HEADER[38]]; GO FIND;                 38291000 T  0373:0
                END;  END;                                                  38291500 T  0377:0
                T1←NFLAG(M[ALPHA-2]);%                                      38292000 T  0377:0
                MASK←0; REED;%                                              38292500 T  0379:1
                IF KIND=2 THEN%                                             38293000 T  0381:0
                BEGIN T2←@1737000000000000;%                                38293500 T  0381:3
                    T1←NFLAG([T2]);%                                        38294000 T  0383:0
                    REED;%                                                  38294500 T  0384:0
                END;%                                                       38295000 T  0385:0
            END;%                                                           38295500 T  0385:0
            P(0);                                                           38296000 T  0385:0
                IF BLEN=0 THEN                                              38296500 T  0385:1
DCN:            FILEMESS("I/O ERR",0,MFID,FID,REEL,CDATE,CYCLE);            38296750 T  0386:0
                IF NOT FIB[18],[1:1] OR P THEN                              38297000 T  0389:2
                    GETBUFFERS(BLEN,NBUFS,U,ALPHA);                         38297500 T  0391:0
```

```
FIND:;
      P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);
END OTHER FILE OPEN OUT;

PROCEDURE DISKCLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00803
BEGIN REAL RCW=+0,MSCW=-2;
      ARRAY FIB=+1[*],FPB=+2[*],HEADER=+3[*];%
%%%      DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP
      INTEGER KIND=+4,NBUFS=+5,U=+6,BLEN=+7,CODE=+8,
              UNLABELED=+9,COBOL=+10,I=+11,J=+12,
              FNUM=+13;
      REAL MID=+14,FID=+15,R=+16,D=+17,C=+18,FORMS=+19,STATE=+20;
      LABEL L1,L2,L3,EOF,CLEANUP;
      LABEL OBJTYPE,DUMMY;
      REAL STA=+21;%
      REAL T1=+22,T2=+23,T3=+24,IOD=+25;%
      ARRAY SEGO=+26[*],SKEL=+27[*];%
      REAL T=+28,ACCESS=+29;%
      BOOLEAN COMPGO=+30;
 $ SET OMIT = NOT SHAREDISK
      SUBROUTINE COOLOFF;
      BEGIN FOR I←0 STEP 1 UNTIL NBUFS-1 DO%
            BEGIN IF NOT M[ALPHA+I].[19:1] THEN%
                        SLEEP([M[ALPHA+I]],IOMASK);%
                  IF KIND≠4 THEN
                  IF M[ALPHA+I].[27:1] THEN GO TO EOF;%
            END;%
EOF:  END COOLOFF;%
%
      BOOLEAN SUBROUTINE WRITTENON;     % PICKS UP THE ACCESSED BITS FROM
      BEGIN J:=0;                       % THE BUFFERS.
            IF (T:=FIB[10].[3:15]) NEQ 0 THEN
            BEGIN
                  FOR I:=NBUFS-1 STEP -1 UNTIL 0 DO
                  IF M[T].[11:1] THEN J:=I:=-1 ELSE T:=M[T].[FF]-2;
            END;
            WRITTENON:=J;
      END;
%
      DEFINE REW=CODE.[47:1]#,%
             KRUNCH=NOT CODE.[42:1]#,
             REL=CODE.[46:1]#,%
             TIME=CODE.[45:1]#,%
             LOCK=NOT CODE.[44:1]#,%
             PURGE=NOT CODE.[43:1]#;%
      DEFINE TECH=STATE.[46:2]#,              OPENIO=FIB[13].[22:1]#,
             WRITBACK=FIB[13].[23:1]#,        LASTIO=FIB[13].[46:1]#,
             WRITEAFTEREOF=FIB[13].[44:2]#,   INPUT=STATE.[43:1]#;
%
%     START OF CODE
%
      P(RCW,MSCW,STF);          RCW ← RCW & P(XCH)[CTC];
      HEADER ← FIB[14];         ACCESS ← FIB[4].[27:3];
      IF COBOL THEN
      BEGIN  IF COBOL > 0 THEN                        % COBOL 61
             BEGIN IF WRITBACK AND TECH=0 AND LASTIO AND
                   (OPENIO OR NOT(INPUT))   THEN
                     IF ACCESS=1 AND WRITEAFTEREOF≠0 THEN
                       BEGIN  FIB[7] ← *P(DUP) - 1;
```

```
38298000 T  0393:0
38298500 T  0393:0
38299000 T  0395:2
                SIZE= 0398 WORDS
38355000 T  0000:0
38356000 T  0000:0
38357000 T  0000:0
38358000 T  0000:0
38359000 T  0000:0
38360000 T  0000:0
38361000 T  0000:0
38362000 T  0000:0
38363000 T  0000:0
38364000 T  0000:0
38364100 T  0000:0
38365000 T  0000:0
38366000 T  0000:0
38366010 T  0000:0
38366020 T  0000:0
38366099 T  0000:0
38370700 T  0000:0
38370800 T  0001:0
38371000 T  0005:1
38372000 T  0007:2
38373000 T  0010:2
38374000 T  0011:1
38375000 T  0014:2
38376000 T  0015:0
38376500 T  0015:1
38377000 T  0015:1
38377200 T  0016:0
38377400 T  0016:3
38377600 T  0018:3
38377800 T  0019:1
38378000 T  0023:2
38378200 T  0030:3
38378400 T  0030:3
38378600 T  0031:1
38379000 T  0031:2
38380000 T  0031:2
38381000 T  0031:2
38382000 T  0031:2
38383000 T  0031:2
38384000 T  0031:2
38385000 T  0031:2
38385400 T  0031:2
38385500 T  0031:2
38385600 T  0031:2
38386000 T  0031:2
38386010 T  0031:2
38386020 T  0031:2
38387000 T  0031:2
38388000 T  0034:1
38389000 T  0036:3
38389100 T  0037:0
38389200 T  0038:1
38389300 T  0042:2
38389400 T  0045:0
38389500 T  0048:0
```

```
                    HEADER[7] ← *P(DUP) - 1;                                38389600 T  0050:2
                END ELSE WRITEAFTEREOF ← 0;                                 38389700 T  0052:2
            IF TECH=0 THEN IF WRITEAFTEREOF=2 THEN                          38389800 T  0055:2
                BEGIN  FIB[7] ← *P(DUP) + 1;                                38389900 T  0058:3
                       HEADER[7] ← *P(DUP) + 1;                             38390000 T  0061:1
                END ELSE IF WRITEAFTEREOF=1 THEN                            38390100 T  0063:1
                BEGIN  FIB[7] ← *P(DUP) - 1;                                38390200 T  0065:1
                       HEADER[7] ← *P(DUP) - 1;                             38390300 T  0067:3
                END;                                                        38390400 T  0069:3
            WRITEAFTEREOF ← 0;                                              38390500 T  0069:3
        END;                                                                38391000 T  0072:1
        IF ACCESS=1 THEN                          % IF RANDOM                38391010 T  0072:1
       BEGIN IF COBOL > 0 THEN                    % COBOL61                  38391020 T  0073:0
            BEGIN ACCESS ← 4;                                               38391025 T  0074:1
                IF FIB[13].[10:9] = 2 THEN   % SEEK IN PROCESS              38391030 T  0075:2
                BEGIN                                                       38391035 T  0077:0
$ SET OMIT = NOT SHAREDISK                                                  38391039 T  0077:2
                COOLOFF; FIB[13].[10:9] ← 1;                                38391050 T  0077:2
                END                                                         38391055 T  0081:2
            END ELSE IF FIB[17]<BLEN THEN ACCESS←4;  % COBOL68              38391060 T  0081:2
        END;                                                                38391070 T  0084:1
        IF FIB[13].[23:1] AND ACCESS=0 THEN                                 38391080 T  0084:1
          BEGIN FIB[7]←P(DUP,LOD)-1;                                        38391090 T  0086:1
            ACCESS←4;                                                       38391100 T  0088:3
    END;  END;                                                              38391110 T  0089:2
    IF NOT STATE.[41:1] THEN%                                               38392000 T  0089:2
    BEGIN IF ACCESS=1 THEN%                                                 38393000 T  0090:2
        BEGIN                                                               38394000 T  0091:3
$ SET OMIT = NOT SHAREDISK                                                  38394099 T  0092:1
            COOLOFF;                                                        38394300 T  0092:1
        END ELSE%                                                           38395000 T  0093:0
        IF ACCESS=0 THEN%                                                   38396000 T  0093:0
        BEGIN COOLOFF; IF NOT STATE.[43:1] THEN%                            38397000 T  0094:1
            IF FIB[17]<BLEN AND STATE.[46:2]≠0 THEN%                        38398000 T  0097:0
            BEGIN R:=SPACE(((BLEN+29) DIV 30)×30+1);                        38399000 T  0100:0
                IF (M[R]←M[FIB[16]]←%                                       38400000 T  0104:3
DISKADDRESS(MID,FID,FPB[FNUM+3],FIB[7]-1,HEADER,0)) NEQ 0 THEN  % (SHM)     38401000 T  0106:2
            BEGIN                                                           38401100 T  0111:3
                P(WAITIO(FIB[16]&1[24:47:1]&R[33:33:15],%                   38402000 T  0112:1
                        0,U),DEL);%                                         38403000 T  0114:2
                MOVE(FIB[17],R+BLEN-FIB[17]+1,%                             38404000 T  0115:2
                        FIB[16] INX BLEN-FIB[17]+1);%                       38405000 T  0118:2
                P(WAITIO(FIB[16],0,U),DEL);%                                38406000 T  0121:0
                IF NOT FIB[16].[24:1] THEN HEADER[4].[11:1]←1;              38406500 T  0122:3
                                                                END;        38407000 T  0127:0
                FORGETSPACE(R);%                                            38408000 T  0127:0
            END;%                                                           38409000 T  0127:3
        END ELSE%                                                           38410000 T  0127:3
        BEGIN                                                               38411000 T  0127:3
$ SET OMIT = NOT SHAREDISK                                                  38411009 T  0128:1
            COOLOFF;                                                        38411030 T  0128:1
          IF (FIB[17]LSS BLEN AND STATE.[46:2]NEQ 0)OR ACCESS=4 THEN        38411100 T  0129:0
        BEGIN       IF ACCESS=4 THEN                                        38411200 T  0132:0
                        IF FIB[13].[23:1] OR NOT STATE.[43:1] THEN          38411300 T  0133:3
                            ACCESS:=2;                                      38411400 T  0136:2
            IF (M[FIB[16]]:=DISKADDRESS(MID,FID,FPB[FNUM+3],  % (SHM)       38411500 T  0137:3
                            FIB[7],HEADER,0))=0 THEN ACCESS:=4;             38411600 T  0140:2
                    IF ACCESS≠4 THEN                                        38411700 T  0144:1
                      BEGIN P(WAITIO(FIB[16]&0[24:24:1],0,U),DEL);          38411750 T  0145:0
                            HEADER[4].[11:1]←1; END;                        38411800 T  0148:1
```

```
                END;    IF ACCESS = 4 THEN ACCESS := 2;                          38411900 T  0150:3
                END;%                                                            38412000 T  0152:3
            END;%                                                                38412100 T  0152:3
          HEADER[4].[43:1]:=FPB[FNUM+3].[15:1];                                  38412200 T  0152:3
          IF (NOT REW) OR LOCK OR REL OR TIME THEN                               38419000 T  0156:2
          BEGIN                                                                  38420000 T  0160:3
            FORMS←HEADER[3];                                                     38421000 T  0161:1
            STREAM(PF←[FIB[4]],D←FPB[FNUM+2].[18:30],H←[HEADER[3]],S←[T]);       38422000 T  0162:1
            BEGIN SI←PF;SI←SI+5;DS←3 OCT;SI←LOC D;DI←H;DS←8 OCT END;             38423000 T  0165:2
            HEADER[3]←(P(DUP,LOD,SSN))&(P(DUP))[12:30:18]&T[2:38:10];            38424000 T  0167:1
          END;                                                                   38425000 T  0171:0
            IF LOCK OR HEADER[4].[43:1] THEN                                     38426000 T  0171:0
            BEGIN IF NOT HEADER[4] THEN%FILE IS BEING CREATED                    38427000 T  0173:1
                BEGIN                                                            38428000 T  0174:2
                  IF KRUNCH THEN KRUNCHER(HEADER);                               38429000 T  0175:0
                      HEADER[4].[9:3]:=5;% MARK AS NEW FORMAT,ACCESSED           38430000 T  0177:2
                     IF JAR[P1MIX,0] < 0 AND FIB[4].[29:1] THEN                  38431000 T  0180:0
% COMPILER CLOSING CODE FILE WITH LOCK ********************************          38432000 T  0182:3
                     BEGIN                                                       38433000 T  0182:3
                          SEGO ← [M[GETSPACE(62,2,0)+2]]&30[8:38:10];            38434000 T  0183:1
                          SKEL ← 31 INX SEGO; T3 ← JAR[P1MIX,2].[FF];            38435000 T  0187:0
                          % READ IN SEGMENT ZERO                                 38436000 T  0190:3
                          DISKWAIT(-SEGO.[CF],30,HEADER[10]);                    38437000 T  0190:3
                          % READ IN SKELETON SHEET                               38438000 T  0193:1
                          DISKWAIT(-SKEL.[CF],30,T3);                            38439000 T  0193:1
                          IF SKEL[20]<0 THEN SKEL[20] ← SEGO[7].[FF];            38440000 T  0195:2
                          IF JAR[P1MIX,2].[8:10]=1 THEN                          38441000 T  0199:1
                             BEGIN % COMPILE AND GO **********************       38442000 T  0201:1
                               SKEL[6]:=JAR[P1MIX,6]&                            38442100 T  0201:3
                                        (PRT[P1MIX,3].[8:10]+20)[CTF];           38442200 T  0203:1
                             DISKWAIT(SKEL.[CF],30,T3);                          38443000 T  0206:0
                             COMPGO ← TRUE;                                      38444000 T  0208:0
                        END                                                      38445000 T  0208:3
                      ELSE                                                       38446000 T  0208:3
                        BEGIN % COMPILE TO LIBRARY ******************            38447000 T  0208:3
                             FOR T1 ← 15 STEP 1 UNTIL 22 DO                      38448000 T  0209:1
                                 SEGO[T1] ← SKEL[T1];                            38449000 T  0210:0
                             IF (T2 ← SKEL[13]) = 0 THEN GO TO L3;               38450000 T  0213:3
                             SKEL[13] ← 0; % IN CASE I CALL TERMINATE            38451000 T  0215:3
                             DISKWAIT(SKEL.[CF],30,T3);                          38452000 T  0217:0
                IF(T1:=DISKADDRESS(MID,FID,FPB[FNUM+3],HEADER[7]:=  % (SHM)      38453000 T  0219:0
                              (*P(DUP))+1,HEADER,0))=0 THEN                      38454000 T  0221:1
                                 FILEMESS(-"DISK    ","OVRFLOW",MID,FID,          38455000 T  0224:3
                                                          R,D,C);                38456000 T  0226:2
                             SEGO[15] ← T1 ← HEADER[7];                          38457000 T  0227:3
                        L1:  DISKWAIT(-SKEL.[CF],30,T2);                         38458000 T  0229:3
                             FORGETESPDISK(T2);                                  38459000 T  0232:0
                             IF (T2←SKEL[29]) = 0 THEN GO TO L2;                 38460000 T  0232:3
                IF(T3:=DISKADDRESS(MID,FID,FPB[FNUM+3],HEADER[7]:=  % (SHM)      38461000 T  0234:3
                              (*P(DUP))+1,HEADER,0))=0 THEN                      38462000 T  0237:0
                                 FILEMESS(-"DISK    ","OVRFLOW",MID,FID,          38463000 T  0240:2
                                                          R,D,C);                38464000 T  0242:1
                             SKEL[29] ← T3 ← HEADER[7];                          38465000 T  0243:2
                             DISKWAIT(SKEL.[CF],30,                              38466000 T  0245:2
                                   I←HEADER[T1 DIV HEADER[8]+10] +               38467000 T  0247:0
                                            T1 MOD HEADER[8]);                   38468000 T  0248:3
                             T1 ← T3;                                            38469000 T  0250:3
                             GO TO L1;                                           38470000 T  0251:2
                        L2:  DISKWAIT(SKEL.[CF],30,                              38471000 T  0254:0
                                   I←HEADER[T1 DIV HEADER[8]+10] +               38472000 T  0255:2
```

```
                                        T1 MOD HEADER[8]);                          38473000 T 0257:1
                L3:         SEGO[6] ← P(DUP,LOD,SSN); % "NEW FORMAT"                38474000 T 0259:1
                              HEADER[4].[10:1]←1;%MARK AS PROGRAM FILE              38475000 T 0261:0
                              DISKWAIT(SEGO.[CF],30,HEADER[10]);                    38476000 T 0263:2
                            END COPY OF LABEL EQUATION CARDS;                       38477000 T 0265:3
                          FORGETSPACE(SEGO);                                        38478000 T 0265:3
                          IF HEADER[7]<HEADER[8]-1 THEN                             38479000 T 0266:3
                            BEGIN FORGETUSERDISK(HEADER[10]+HEADER[7]+1,            38480000 T 0268:2
                                                 HEADER[7]-HEADER[8]+1);            38481000 T 0271:0
                                HEADER[8] ← HEADER[7]+1;                            38482000 T 0273:0
                            END;                                                    38483000 T 0275:0
                          FOR T1:=-1 STEP 1 UNTIL 4 DO                              38484000 T 0275:0
DUMMY ::                  IF P(.OBJTYPE,T1,+,LOD)=ABS(JAR[P1MIX,0]) THEN            38485000 T 0276:0
                            HEADER[4].[36:6]:=T1+2;                                 38486000 T 0278:2
                        END;                                                        38488000 T 0284:1
                        HEADER[1]←FORMS&HEADER[3][6:30:18];                         38489000 T 0284:1
                         IF (HEADER[2]:=USERCODE[P1MIX]).[1:1] OR                   38490000 T 0286:3
                          MCP=NOT(-0) THEN HEADER[2]←0;                             38491000 T 0288:3
                       HEADER[5] := HEADER[6] := 0;                                 38492000 T 0292:3
                       IF COMPGO THEN                                               38494000 T 0295:0
                        BEGIN PRT[P1MIX,026]←IOD←GETESPDISK;                        38495000 T 0295:1
                            DISKWAIT(HEADER.[CF],30,IOD);                           38496000 T 0298:1
                        END ELSE                                                    38497000 T 0300:1
                        BEGIN                                                       38498000 T 0300:1
                        ENTERUSERFILE(MID,FID,HEADER.[CF]-1);                       38499000 T 0300:3
                        END;                                                        38500000 T 0303:2
                  END;%                                                             38501000 T 0303:2
              END;%                                                                 38502000 T 0303:2
              IF REW AND NOT(LOCK OR REL OR TIME) THEN                              38503000 T 0303:2
            BEGIN                                                                   38503200 T 0307:3
              IF HEADER[4] THEN                                                     38503400 T 0308:1
              IF WRITTENON THEN HEADER[4].[11:1]:=1;                                38503600 T 0308:3
              STATE.[39:4]:=2;                                                      38503800 T 0313:0
            END ELSE                                                                38504000 T 0314:3
            BEGIN                                                                   38504500 T 0314:3
              HEADER[1]←FORMS&HEADER[3][6:30:18];                                   38505000 T 0315:1
               IF HEADER[4] THEN%FILE ALREADY EXISTS                                38506000 T 0317:3
              BEGIN                                                                 38507000 T 0318:1
                  J:=WRITTENON OR HEADER[4].[11:1];                                 38507500 T 0318:3
          $ SET OMIT = SHAREDISK                                                    38507799 T 0321:3
                I←IF FIB[5].[1:1] OR NOT J THEN FIB[5].[13:3]+10 ELSE               38507800 T 0321:3
                    (HEADER INX 0)&FIB[5][30:13:3];                                 38508000 T 0326:0
          $ POP OMIT                                                                38508001 T 0328:3
          $ SET OMIT = NOT SHAREDISK                                                38508599 T 0328:3
                IF(I←DIRECTORYSEARCH(MID,FID&J[3:47:1],I))≠0 THEN                   38509000 T 0328:3
                    IF PURGE THEN                                                   38510000 T 0332:0
                    IF M[I+4].[12:4]=0 THEN                                         38511000 T 0333:2
                    IF NOT SYSTEMFILE(MID,FID) THEN                                 38512000 T 0336:2
                    IF SECURITYCHECK(MID,FID,USERCODE[P1MIX],I).[45:1] THEN         38513000 T 0338:1
                       P(DIRECTORYSEARCH(-MID,FID,7),DEL);                          38515000 T 0341:0
                    IF I NEQ 0 THEN FORGETSPACE(I);                                 38516000 T 0343:1
              END ELSE%                                                             38517000 T 0345:1
              IF NOT LOCK THEN%                                                     38518000 T 0345:1
              IF HEADER[4].[43:1] THEN P(DIRECTORYSEARCH(-MID,FID,7),DEL) ELSE      38518500 T 0346:2
            BEGIN                                                                   38519000 T 0350:1
          $ SET OMIT = NOT(DISKLOG)                                                 38520000 T 0350:3
              FOR I←10 STEP 1 UNTIL 29 DO%                                          38522000 T 0350:3
              IF HEADER[I]≠0 THEN FORGETUSERDISK(HEADER[I],-HEADER[8]);%            38523000 T 0352:0
            END;                                                                    38524000 T 0357:2
              FORGETSPACE(HEADER);                                                  38525000 T 0357:2
```

```
            STATE.[39:4]←1;%                                                    36526000 T  0358:2
        END;                                                                    38527000 T  0360:1
            IF NOT COBOL THEN FIB[4].[27:3]←3;                                  38528000 T  0360:1
            GO CLEANUP;%                                                        38529000 T  0363:3
    OBJTYPE:: "BASIC  ",  %1%                                                  38530000 T  0364:1
              "ALGOL  ",  %2%                                                  38531000 T  0366:0
              "COBOL  ",  %3%                                                  38532000 T  0367:0
              "FORTRAN",  %4%                                                  38533000 T  0368:0
              "TSPOL  ",  %5%                                                  38534000 T  0369:0
              "XALGOL ",  %6%                                                  38535000 T  0370:0
                      0;  %DUMMY%                                              38536000 T  0371:0
    CLEANUP:                                                                    38537000 T  0372:0
            P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                             38538000 T  0372:0
    END DISK CLOSE;                                                             38539000 T  0374:2
                                                                                        SIZE= 0375 WORDS
    PROCEDURE BACKCLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%                    38540000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00816
    BEGIN REAL RCW=+0,MSCW=-2;                                                  38541000 T  0000:0
            ARRAY FIB=+1[*],FPB=+2[*],HEADER=+3[*];%                            38542000 T  0000:0
    %%%        DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP    38543000 T  0000:0
            INTEGER KIND=+4,NBUFS=+5,U=+6,BLEN=+7,CODE=+8,                      38544000 T  0000:0
                    UNLABELED=+9,COBOL=+10,I=+11,J=+12,                         38545000 T  0000:0
                    FNUM=+13;                                                   38546000 T  0000:0
            REAL MID=+14,FID=+15,R=+16,D=+17,C=+18,FORMS=+19,STATE=+20;         38547000 T  0000:0
            LABEL AGAIN,EOF,EOT,CLOSEOUT,PBD,PUD;                               38548000 T  0000:0
            REAL STA=+21;%                                                      38548100 T  0000:0
            REAL T1=+22,T2=+23,T3=+24,IOD=+25;%                                 38549000 T  0000:0
            ARRAY SEGO=+26[*],SKEL=+27[*];                                      38550000 T  0000:0
            SUBROUTINE COOLOFF;%                                                38552000 T  0000:0
            BEGIN FOR I←0 STEP 1 UNTIL NBUFS-1 DO%                              38553000 T  0001:0
                  BEGIN IF NOT M[ALPHA+I].[19:1] THEN%                          38554000 T  0005:1
                              SLEEP([M[ALPHA+I]],IOMASK);%                      38555000 T  0007:2
                        IF KIND≠4 THEN                                          38556000 T  0010:2
                        IF M[ALPHA+I].[27:1] THEN GO TO EOF;%                   38557000 T  0011:1
                  END;%                                                         38558000 T  0014:2
    EOF:    END COOLOFF;%                                                       38559000 T  0015:0
            REAL T=+28,ACCESS=+29;%                                             38561000 T  0015:1
            BOOLEAN COMPGO=+30;                                                 38562000 T  0015:1
            REAL TYPE=+31;                                                      38562100 T  0015:1
            DEFINE REW=CODE.[47:1]#,%                                           38563000 T  0015:1
                   REL=CODE.[46:1]#,%                                           38564000 T  0015:1
                   TIME=CODE.[45:1]#,%                                          38565000 T  0015:1
                   LOCK=NOT CODE.[44:1]#,%                                      38566000 T  0015:1
                   PURGE=NOT CODE.[43:1]#;%                                     38567000 T  0015:1
     $ SET OMIT = PACKETS                                                       38567950 T  0015:1
            DEFINE TOREELNO = 33:33:15#;                                        38568000 T  0015:1
     $ SET OMIT = NOT PACKETS                                                   38568050 T  0015:1
    %                                                                           38569000 T  0015:1
            SUBROUTINE CKBKUP;                                                  38570000 T  0015:1
            BEGIN M[M[ALPHA]INX 17    ]←M[ALPHA]&(FIB[5]                 )[FTC]; 38571000 T  0016:0
                  FIB[5]←P(DUP,LOD,0,1,CFX,+);                                  38572000 T  0020:1
                  IF NOT PRTROW[P1MIX].[7:1] THEN                               38573000 T  0022:3
                  IF FIB[14].[CF]=FIB[14].[FF]                                  38573100 T  0024:0
                THEN BEGIN PBIO(ALPHA,FIB[14]);SLEEP([M[ALPHA]],IOMASK)END ELSE 38574000 T  0025:3
                     BEGIN; STREAM(S←            M[ALPHA],Z←FIB[14].[FF]);      38575000 T  0031:3
                          BEGIN SI←S; DS←18 WDS END;                            38576000 T  0035:0
                          FIB[14].[FF]←P(DUP).[FF]-18;                          38577000 T  0035:3
            END;    END;                                                        38578000 T  0038:3
            P(RCW,MSCW,STF);                                                    38580000 T  0039:0
            RCW:=RCW&P(XCH)[CTC];                                               38581000 T  0040:0
```

```
                J←LOCK;                                                 38581100 T  0041:1
                IF T1←(FIB[9].[1:1] AND KIND=7) THEN % MULTI-REEL PBT FILE  38581200 T  0042:3
                BEGIN                                                   38581300 T  0045:1
                     FIB[9].[1:1]←0;                                    38581400 T  0045:3
                     COOLOFF;                                           38581500 T  0048:1
                     GO TO EOT;                                         38581600 T  0049:0
                END;                                                    38581700 T  0049:2
                IF FIB[17]<0 THEN                                       38582000 T  0049:2
                BEGIN M[ALPHA].[FF]←@60020; IF TYPE<20 THEN CKBKUP;     38583000 T  0050:2
                M[ALPHA].[18:1]←0; CKBKUP END%                          38584000 T  0056:0
                     ELSE IF FIB[17]<BLEN THEN%                         38585000 T  0060:0
           BEGIN IF NOT COBOL THEN FIB[17]←FIB[17]-(STATE.[46:2]=3);%   38586000 T  0063:0
                STREAM(N:=FIB[17],D:=M[ALPHA].[CF]);                    38587000 T  0067:2
                     BEGIN N(DS:=8 LIT " "); END;                       38587500 T  0070:0
      M[ALPHA]←FLAG(FIB[16]&0[20:47:1]); CKBKUP;                        38588000 T  0072:1
           END ELSE COOLOFF;                                            38589000 T  0076:0
           M[ALPHA]←(*P(DUP))&(@60000)[CTF]&(TYPE<20)[32:47:1];         38590000 T  0078:0
           IF NOT UNLABELED THEN                                        38591000 T  0081:3
           BEGIN IF TYPE<20 THEN CKBKUP;                                38591100 T  0082:1
                M[ALPHA]←(*P(DUP))&2[18:45:3]&M[ALPHA-2][8:8:10];       38592000 T  0085:0
                STREAM(L←M[ALPHA-2],B←M[ALPHA]); BEGIN SI←L; DS←17 WDS END;  38593000 T  0090:0
           END; M[ALPHA].[20:1]←1; IF FIB[14].[FF]≠FIB[14].[CF] THEN    38594000 T  0093:3
           BEGIN CKBKUP; FIB[14].[FF]←P(DUP);END; CKBKUP;               38595000 T  0099:0
           IF KIND=12 THEN % PBD                                        38596000 T  0104:0
           BEGIN T←FIB[14].[3:15];                                      38597000 T  0104:3
                IF (R:=M[T+7]×3) NEQ 0 THEN                             38598000 T  0106:3
                BEGIN IF R < PBDROWSZ THEN                              38598100 T  0109:3
                BEGIN FORGETUSERDISK(M[T+10]+R,PBDROWSZ-R+1);           38599000 T  0111:0
                     M[T+8]←R;                                          38600000 T  0115:1
                END;                                                    38601000 T  0117:1
                M[T+1]←M[T+3];                                          38602000 T  0117:1
                STREAM(A←FPB[FNUM+2].[18:30],T←T+3);                    38603000 T  0120:2
                BEGIN SI←LOC A;DS←8 OCT;DI←DI-8;DS←2 LIT"+2";           38604000 T  0123:1
                     SI←T;SI←SI+5;DS←3 CHR;                             38605000 T  0124:2
                END;                                                    38606000 T  0125:1
                M[T+1].[6:18]←M[T+3].[30:18];                           38607000 T  0125:2
                IF I:=TYPE>20 THEN M[T+5].[3:1]:=0;                     38607100 T  0130:2
                R:=M[T+6];                                              38607200 T  0135:2
      $ SET OMIT = DATACOM AND RJE                                      38607299 T  0137:2
                P(0);                                                   38607300 T  0137:2
      $ POP OMIT                                                        38607301 T  0137:3
      $ SET OMIT = NOT(DATACOM AND RJE )                                38607399 T  0137:3
                M[T+6]:=P(XCH);                                         38607900 T  0137:3
                M[T+5].[2:1]←0;                                         38607950 T  0139:3
                DISKWAIT(T,30,M[T-1]);                                  38608000 T  0143:0
                J:=R&1[TUREELNO];                                       38608100 T  0145:2
AGAIN:          P(DIRECTORYSEARCH(-(IF I THEN P(PUD) ELSE P(PBD)),J,14),  38608200 T  0146:3
                  DEL);                                                 38608300 T  0149:3
                IF J≠R THEN                                             38608400 T  0150:0
                BEGIN STREAM(ONE:=1, D:=[J]);                           38608500 T  0150:3
                     BEGIN SI:=LOC ONE; DS:=8 ADD END;                  38608600 T  0152:1
                     GO AGAIN;                                          38608700 T  0153:0
                END;                                                    38608800 T  0155:0
      $ SET OMIT = NOT PACKETS                                          38608890 T  0155:0
                     IF AUTOPRINT                                       38609100 T  0155:0
      $ SET OMIT = NOT RJE                                              38609190 T  0155:0
                       THEN P(PRINTORPUNCHWAIT(R&1[32:32:16],I          38609300 T  0155:0
      $ SET OMIT = NOT RJE                                              38609390 T  0157:3
                                 ), DEL);                               38609500 T  0157:3
      $ SET OMIT = NOT PACKETS                                          38609590 T  0158:2
```

```
$ SET OMIT = PACKETS                                                    38609999 T  0158:2
            IF PBDREL OR CLOSEMESS THEN                                 38610000 T  0158:2
$ POP OMIT                                                              38610001 T  0160:1
            FILEMESSAGE((IF I THEN P(PUD) ELSE P(PBD))&R[24:6:24],      38610100 T  0160:1
                        ("REL    ")&R[30:30:18],MID,FID,                38610200 T  0160:1
                        FIB[7],0,0,(PBDREL OR CLOSEMESS));              38610250 T  0160:1
            END;                                                        38610500 T  0166:3
            FORGETSPACE(FIB[14].[3:15]); FIB[14].[3:15]:=0;             38610600 T  0166:3
        END       ELSE                                                  38622000 T  0170:3
EOT:    BEGIN T←@1737000000000000;                                      38623000 T  0170:3
            J←WAITIO([T],@40,U)≠0 OR J;                                 38624000 T  0173:3
            I := SPACE(8);                                              38625000 T  0176:2
            STREAM(PN:=TYPE GEQ 20,D:=0,I);                             38626000 T  0178:3
            BEGIN                                                       38626100 T  0180:2
                DS:=24LIT" LABEL  OPBTMCP OBACK=UP";                    38626200 T  0180:2
                PN(D:=DI; DI:=DI-14; DS:=2LIT"UT"; DI:=D);              38626300 T  0183:3
                20(DS:=2LIT"  ")                                        38626400 T  0185:3
            END;                                                        38626500 T  0186:3
        IF NOT UNLABELED THEN M[I+4]←M[M[ALPHA-2] INX 4].[42:6];        38628000 T  0187:0
        M[I+3]←T1; % MARK ENDING TAPE LABEL FOR MULTI-REEL COND.        38628100 T  0193:0
        J←WAITIO(I&8[8:38:10]&5[21:45:3],@40,U)≠0 OR J;%                38629000 T  0195:0
        FORGETSPACE(I);%                                                38630000 T  0199:3
        FOR I←0 STEP 1 UNTIL 1 DO%                                      38631000 T  0200:2
            P(WAITIO(@1000000340000005,@40,U),DEL);%                    38632000 T  0203:0
        IF (TWO(U) AND SAVEWORD)≠0 THEN%                                38633000 T  0206:3
            SETNOTINUSE(U,0) ELSE                                       38634000 T  0208:2
BEGIN%                                                                  38635000 T  0210:0
    RDCTABLE[U]←(*P(DUP))&0[8:8:6]&R[14:38:10];                         38637000 T  0212:0
    PRNTABLE[U].[15:15]←0;                                              38638000 T  0215:2
    RRRMECH:=NOT TWO(U) AND RRRMECH;                                    38638500 T  0218:0
    I:= IF (AUTOPRINT AND R=1) THEN NOT                                 38639000 T  0220:0
        PRINTORPUNCHWAIT(-U,TYPE GEQ 20) AND 1 ELSE 1;                  38639100 T  0222:1
    IF I THEN IF J THEN SETNOTINUSE(U,0) ELSE LABELTABLE[U].[1:5]:=1;   38640000 T  0226:0
     END; END;                                                          38641000 T  0231:2
STATE.[FF]←0;                                                           38642000 T  0231:2
     GO CLOSEOUT;%                                                      38643000 T  0232:3
PBD:::   "PBD    ";                                                     38644000 T  0233:1
PUD:::   "PUD    ";                                                     38644500 T  0235:0
CLOSEOUT:                                                               38645000 T  0236:0
     P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                            38646000 T  0236:0
END BACK CLOSE;                                                         38647000 T  0238:2
                                                                                 SIZE= 0239 WORDS
PROCEDURE OTHERCLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%               38648000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00824
BEGIN REAL RCW=+0,MSCW=-2;                                              38649000 T  0000:0
     ARRAY FIB=+1[*],FPB=+2[*],HEADER=+3[*];%                           38650000 T  0000:0
%%%     DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP   38651000 T  0000:0
     INTEGER KIND=+4,NBUFS=+5,U=+6,BLEN=+7,CODE=+8,                     38652000 T  0000:0
             UNLABELED=+9,COBOL=+10,I=+11,J=+12,                        38653000 T  0000:0
             FNUM=+13;                                                  38654000 T  0000:0
     REAL MID=+14,FID=+15,R=+16,D=+17,C=+18,FORMS=+19,STATE=+20;        38655000 T  0000:0
      REAL STA=+21;%                                                    38655100 T  0000:0
      REAL T1=+22,T2=+23,T3=+24,IOD=+25;%                               38656000 T  0000:0
     ARRAY SEGO=+26[*],SKEL=+27[*];                                     38657000 T  0000:0
     REAL T=+28,ACCESS=+29;%                                            38658000 T  0000:0
     BOOLEAN COMPGO=+30;                                                38659000 T  0000:0
     LABEL PX,PBD;                                                      38660000 T  0000:0
     LABEL CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,CC;                38661000 T  0000:0
     SWITCH SW←CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,BKUP;          38662000 T  0000:0
     LABEL EOF,ON,DNE,CLEANUP;%                                         38663000 T  0000:0
```

```
                LABEL EOD;                                                      38664000 T  0000:0
                SUBROUTINE COOLOFF;%                                            38665000 T  0000:0
                BEGIN FOR I←0 STEP 1 UNTIL NBUFS-1 DO%                          38666000 T  0001:0
                      BEGIN IF NOT M[ALPHA+I].[19:1] THEN%                      38667000 T  0005:1
                                SLEEP([M[ALPHA+I]],IOMASK);%                    38668000 T  0007:2
                            IF KIND≠4 THEN                                      38669000 T  0010:2
                            IF M[ALPHA+I].[27:1] THEN GO TO EOF;%               38670000 T  0011:1
                      END;%                                                     38671000 T  0014:2
          EOF:  END COOLOFF;%                                                   38672000 T  0015:0
                DEFINE REW=CODE.[47:1]#,%                                       38674000 T  0015:1
                       REL=CODE.[46:1]#,%                                       38675000 T  0015:1
                       TIME=CODE.[45:1]#,%                                      38676000 T  0015:1
                       LOCK=NOT CODE.[44:1]#,%                                  38677000 T  0015:1
                       PURGE=NOT CODE.[43:1]#;%                                 38678000 T  0015:1
                SUBROUTINE EMPTY;%                                              38680000 T  0015:1
                IF FIB[17]<BLEN AND (STATE.[46:2]≠0 OR KIND=1) THEN             38681000 T  0016:0
                BEGIN IF NOT COBOL THEN FIB[17]←FIB[17]-(STATE.[46:2]=3);%      38682000 T  0019:2
                      STREAM(KIND,N:=FIB[17],D:=M[ALPHA].[CF]);                 38683000 T  0024:0
                      BEGIN SI←LOC KIND; SI←SI+7;%                              38684000 T  0026:3
                            IF SC="2" THEN DS←LIT "←" ELSE%                     38685000 T  0027:1
                            IF SC="5" THEN DS←LIT "←" ELSE N(DS←8 LIT " ");%    38686000 T  0028:2
                      END;%                                                     38687000 T  0031:3
                      P(WAITIO(FIB[16]&(BLEN-FIB[17]×(KIND=2))[8:38:10]%        38688000 T  0032:0
                                                ,@40,U),DEL);%                  38689000 T  0034:3
                      FIB[6]←FIB[6]+1;                                          38690000 T  0036:2
                END ELSE COOLOFF;%                                              38691000 T  0038:2
                LABEL CLOSEOUT;%                                                38692000 T  0040:1
                LABEL EOFIT;%                                                   38693000 T  0040:1
                P(RCW,MSCW,STF);                                                38695000 T  0040:1
                RCW:=RCW&P(XCH)[CTC];                                           38696000 T  0042:0
                GO TO SW[KIND];                                                 38697000 T  0043:1
          CR:   COOLOFF; BLASTQ(U);%                                            38699000 T  0050:3
                IF I≥NBUFS THEN DO UNTIL WAITIO(M[ALPHA-2],@40,U)≠0 ELSE%       38700000 T  0052:3
                BEGIN I←M[ALPHA+I].[33:15];%                                    38701000 T  0057:2
                      T←FIB[16].[33:15]-2;%                                     38702000 T  0060:2
                      FOR J←1 STEP 1 UNTIL NBUFS DO%                            38703000 T  0062:2
                      BEGIN IF (I>T) AND (I≤(T+BLEN+1)) THEN GO ON;%            38704000 T  0064:0
                            T←M[T].[18:15]-2;%                                  38705000 T  0067:2
                      END;%                                                     38706000 T  0070:1
                ON:   MOVE(10,T+2,M[ALPHA-2]);%                                 38707000 T  0072:2
                END;%                                                           38708000 T  0075:3
                IF JAR[P1MIX,0]<0 THEN%                                         38709000 T  0075:3
                IF PRT[P1MIX,@25]≠0 THEN%                                       38710000 T  0077:1
          DNE:  BEGIN STREAM(I: E←"ENDPACK", D←M[ALPHA-2]);%                    38711000 T  0079:1
                      BEGIN SI←D;%                                              38712000 T  0082:2
                      L:    SI←SI+1; IF SC=" " THEN GO TO L;%                   38713000 T  0082:3
                            DI←LOC E; DI←DI+1;                                  38714000 T  0083:3
                            IF 3 SC=DC THEN TALLY←1;                            38715000 T  0084:1
                $ SET OMIT = NOT(PACKETS)                                       38715099 T  0085:0
                            I←TALLY;%                                           38716000 T  0085:0
                      END;%                                                     38717000 T  0085:1
                      IF NOT P THEN%                                            38718000 T  0085:2
                      BEGIN BLASTQ(U);%                                         38719000 T  0085:3
                            DO UNTIL WAITIO(M[ALPHA-2],@40,U)≠0;%               38720000 T  0087:0
                            GO TO DNE;%                                         38721000 T  0090:2
                      END;%                                                     38722000 T  0092:0
                END;%                                                           38723000 T  0092:0
                BLASTQ(U);                                                      38724000 T  0092:0
          CC::                                                                  38725000 T  0092:3
                M[M[ALPHA-2] INX NOT 3].[9:6]:=0;                               38726000 T  0092:3
```

```
        LABELTABLE[U]←-@14;                                                 38730000 T  0097:3
        RDCTABLE[U]←0;                                                      38731000 T  0099:1
         IF 32≤U AND U≤63 THEN PSEUDOCOPY←PSEUDOCOPY+1;                     38732000 T  0100:2
        INDEPENDENTRUNNER(P(..CONTROLCARD),(M[ALPHA-2],[CF])&               38732100 T  0104:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                         38732199 T  0106:2
                                                U[2:42:6]&JAR[P1MIX,6][1:1:1],  38732300 T  0106:2
                                                192);                       38732400 T  0109:1
        GO CLOSEOUT;%                                                       38733000 T  0109:3
CP:     EMPTY;%                                                             38735000 T  0110:1
        IF NOT UNLABELED THEN P(WAITIO(M[ALPHA-2],0,U),DEL);%               38736000 T  0111:0
        SETNOTINUSE(U,FORMS OR PUNCHLCK);                                   38737000 T  0114:3
        GO CLOSEOUT;%                                                       38738000 T  0116:3
LP:     EMPTY;%                                                             38740000 T  0117:1
        P(WAITIO(@4000100000,0,L),DEL);%                                    38741000 T  0118:0
        IF NOT UNLABELED THEN P(WAITIO(M[ALPHA-2],0,U),DEL);%               38742000 T  0119:2
        SETNOTINUSE(U,FORMS);                                               38743000 T  0123:1
        GO CLOSEOUT;%                                                       38744000 T  0124:1
SP:     IF STATE.[43:1] THEN COOLOFF ELSE EMPTY;%                           38746000 T  0126:0
        GO CLOSEOUT;%                                                       38747000 T  0130:0
MT:     IF NOT STATE.[41:1] THEN%                                           38749000 T  0130:2
        BEGIN IF STATE.[43:1] THEN%                                         38750000 T  0131:2
              BEGIN COOLOFF; BLASTQ(U);%                                    38751000 T  0132:3
                    IF NOT REW THEN                                         38752000 T  0134:3
                    BEGIN T←@1000000140000005&STATE[22:44:1];%              38753000 T  0135:3
                   IF 12NBUFS THEN DO UNTIL WAITIO(T,@377,U).[42:1];        38754000 T  0138:0
                         IF NOT UNLABELED THEN                              38754100 T  0141:2
                         P(WAITIO(T,@377,U),DEL);                           38755000 T  0142:0
                    END;%                                                   38756000 T  0144:0
              END ELSE%                                                     38757000 T  0144:0
              BEGIN EMPTY;%                                                 38758000 T  0144:0
EOFIT:              T←@1737000000000000;%                                   38759000 T  0147:0
                    P(WAITIO([T],@40,U),DEL);%                              38760000 T  0147:3
                    IF NOT UNLABELED THEN%                                  38761000 T  0149:1
                    BEGIN;STREAM(BC←FIB[6],RC←FIB[7],D←M[ALPHA-2]);%        38762000 T  0149:3
                          BEGIN SI←LOC BC; DI←DI+40;%                       38763000 T  0153:1
                                DS←5 DEC; DS←7 DEC;%                        38764000 T  0153:3
                          END;%                                             38765000 T  0154:1
                          P(WAITIO(M[ALPHA-2],@40,U),DEL);%                 38766000 T  0154:2
                          P(WAITIO([T],@40,U),DEL);%                        38767000 T  0157:1
                          T←@1000000340000005;%                             38768000 T  0158:3
                          P(WAITIO(T,@40,U) ,DEL);%                         38769000 T  0159:2
                    END;%                                                   38770000 T  0161:0
              END;%                                                         38771000 T  0161:0
        END ELSE%                                                           38772000 T  0161:0
        IF FIB[18].[1:1]THEN BEGIN FIB[18].[1:1]←FIB[16]←0;                 38773000 T  0161:0
                                   FIB[10].[3:15]:=0; GO EOFIT END;         38773100 T  0169:0
        IF REW THEN%                                                        38774000 T  0172:0
        BEGIN P(WAITIO(@4200000000,@377,U),DEL);%                           38775000 T  0172:3
              STATE.[40:1]←0;%                                              38776000 T  0174:3
        END ELSE STATE.[40:1]←NOT STATE.[44:1];%                            38777000 T  0176:2
PX:     IF REL THEN%                                                        38778000 T  0180:2
        BEGIN SETNOTINUSE(U,0);                                             38779000 T  0181:1
              STATE.[41:2]←1;%                                              38780000 T  0182:3
        END ELSE STATE.[41:2]←2;%                                           38781000 T  0184:2
        IF LOCK THEN%                                                       38782000 T  0186:3
        BEGIN SETNOTINUSE(U,1);                                             38783000 T  0187:3
              STATE.[41:2]←1;%                                              38784000 T  0189:1
        END;%                                                               38785000 T  0191:0
        IF U LSS 16 THEN                                                    38786000 T  0191:0
        IF PURGE THEN%                                                      38787000 T  0191:3
```

```
        BEGIN IF PRNTABLE[U]<0 THEN%                                    38788000 T  0193:1
              INDEPENDENTRUNNER(P(,PURGEIT),U,64)                       38789000 T  0194:3
              ELSE SETNOTINUSE(U,0);                                    38789100 T  0196:1
             STATE.[41:2]←1;%                                           38790000 T  0198:0
        END;%                                                           38791000 T  0199:3
        GO TO CLEANUP;%                                                 38792000 T  0199:3
PP::    IF NOT STATE.[41:1] THEN%                                       38794000 T  0200:1
        BEGIN EMPTY; P(WAITIO(@2004500000000,@40,U),DEL) END;%          38795000 T  0202:0
        GO TO PX;                                                       38796000 T  0205:2
PR::    IF NOT STATE.[41:1] THEN BEGIN COOLOFF; BLASTQ(U) END;%         38798000 T  0207:0
        IF REW THEN P(WAITIO(@10340000000,@377,U),DEL);%                38799000 T  0210:3
        GO TO PX;%                                                      38800000 T  0213:2
CD::                                                                    38802000 T  0215:0
        IF M[ALPHA].[27:1] THEN MOVE(10,FIB[16].[33:15],M[ALPHA-2]) ELSE 38803000 T  0215:0
EOD:    DO UNTIL READEMFROMDISK(CIDROW[U-32],M[ALPHA-2]);              38804000 T  0220:2
 $ SET OMIT = PACKETS                                                   38804999 T  0224:2
        IF CIDTABLE[U-32,3] LSS CIDTABLE[U-32,7] THEN                   38805000 T  0224:2
 $ POP OMIT                                                             38805001 T  0227:3
        IF JAR[P1MIX,0]<0 AND PRT[P1MIX,21]≠0 OR JAR[P1MIX,1]<0 THEN    38806000 T  0227:3
        BEGIN                                                           38806050 T  0233:1
 $ SET OMIT = NOT(PACKETS)                                              38806099 T  0233:3
        BEGIN STREAM(E←"ENDWAIT": Q←@14, D←M[ALPHA-2]);                 38807000 T  0233:3
              BEGIN SI←LOC Q; SI←SI+7; IF SC≠DC THEN DI←DI+1; Q←DI; SI←Q; 38808000 T  0236:2
                 L: IF SC=" " THEN BEGIN SI←SI+1; GO TO L END;          38809000 T  0238:1
                    DI←LOC E; DI←DI+1; IF 3 SC≠DC THEN TALLY←1;         38810000 T  0239:1
 $ SET OMIT = NOT(PACKETS)                                              38810099 T  0240:2
                    E←TALLY;                                            38810500 T  0240:2
              END;                                                      38811000 T  0240:3
              IF P THEN GO TO EOD;                                      38812000 T  0241:0
        END;                                                            38813000 T  0241:3
        END;                                                            38813100 T  0241:3
        KIND←0;                                                         38814000 T  0241:3
        GO TO CC;                                                       38815000 T  0242:2
CLOSECUT:: STATE.[39:4]←1; TIME←1;%                                     38817000 T  0244:0
CLEANUP:: CLOSED: DK: BKUP: DC:                                         38818000 T  0247:2
        P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                         38819000 T  0248:0
END OTHER CLOSE;                                                        38820000 T  0250:2
                                                                                 SIZE= 0251 WORDS
PROCEDURE FILEOPEN(XTRA,ALPHA);                                         39000000 T  0000:0
                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00833
    VALUE ALPHA,XTRA; INTEGER ALPHA,XTRA;                               39000100 T  0000:0
BEGIN REAL RCW=+0;%                                                     39001000 T  0000:0
        REAL IOM=IOMASK, IOMASK;                                        39001100 T  0000:0
        REAL XTRAR=-4,XTRAC=-6;                                         39001200 T  0000:0
        INTEGER NBUFS,FNUM,RLEN,TYPE,IO,BLEN,U,KIND,                    39002000 T  0000:0
                MODE,DIREC,FORMS,COBOL,UNLABELED,OPTIONAL,CNTCTL;       39003000 T  0000:0
        REAL T1,T2,MASK,STATE;                                          39004000 T  0000:0
        REAL MFID,FID; INTEGER REEL,CDATE,CYCLE; %KEEP THESE TOGETHER   39004100 T  0000:0
        ARRAY FIB[*],FPB[*];%                                           39005000 T  0000:0
        INTEGER ACCESS,FIB7;                                            39006000 T  0000:0
        LABEL DCIN,PBS;                                                 39006100 T  0000:0
       LABEL DC19;                                                      39006800 T  0000:0
        LABEL DKRN,SPN,DKSN,DKUN,DKPN,DCN;                              39007000 T  0000:0
        SWITCH INSW←DKRN,SPN,DKSN,DKUN,DCIN;                            39008000 T  0000:0
        LABEL LOOK,EXIT,LOOKOUT,LPS,FINALIN,FINALOUT,SPDC;%             39009000 T  0000:0
        REAL SUBROUTINE DSED; DSED←TERMIX.[CF]=P1MIX;%                  39009050 T  0000:0
        REAL SUBROUTINE CNTLBITS;%                                      39026000 T  0002:3
             CNTLBITS←IOMASK&MODE[21:47:1]&DIREC[22:47:1]&CNTCTL[23:47:1] 39027000 T  0003:0
                  &IO[24:47:1]&(KIND=7 OR KIND>9 AND KIND≤12)[20:47:1]  39028000 T  0005:2
                  &(IF KIND=10R KIND=7OR KIND=12THEN@20ELSE 0)[27:42:6]; 39029000 T  0010:0
```

```
SUBROUTINE MAKEIODS;%                                                    39031000 T  0015:0
BEGIN FIB[16]←T1←((BLEN-1)×DIREC+M[ALPHA])&CNTLBITS[18:18:15]%           39032000 T  0017:0
        &(IF BLEN≤1023 THEN BLEN ELSE 1023)[8:38:10]%                    39033000 T  0021:0
        &TINU[IF (KIND=7 OR KIND=12) THEN IF TYPE<20                     39034000 T  0023:2
            THEN 20 ELSE 22 ELSE                                         39034050 T  0026:3
            IF KIND=11 THEN 23 ELSE U][3:3:5] OR M;                      39034100 T  0029:1
    FIB[19]←(IF STATE.[46:2]=0 THEN (DIREC INX T1)%                      39035000 T  0034:0
            &(2×DIREC+(BLEN>1023)+1)[3:43:5] ELSE%                       39036000 T  0037:0
        IF STATE.[46:2]=1 THEN ((NOT RLEN INX 2)×DIREC INX T1)           39037000 T  0040:2
            &RLEN[8:38:10]&(3×DIREC+2)[3:43:5] ELSE%                     39038000 T  0043:3
          (1-DIREC INX T1)&RLEN[8:38:10]&(DIREC+6)[3:43:5])%             39039000 T  0047:3
         &IO[25:47:1];%                                                  39040000 T  0051:2
    IF NOT (IO OR COBOL)THEN%                                            39041000 T  0053:0
        T1←FIB[19]&T1[3:3:5]&IO[25:25:1];%                               39042000 T  0054:0
    FIB[10].[3:15]←M[ALPHA]-2;   %HEAD OF BUFFER RING                    39042100 T  0057:2
    T2←T1.[33:15]-M[ALPHA];%                                             39043000 T  0061:1
    FOR MASK←0 STEP 1 UNTIL NBUFS-1 DO%                                  39044000 T  0063:3
    BEGIN                                                        %P      39045000 T  0068:0
    M[ALPHA+MASK]←FLAG((P(DUP,LOD)+T2)&P(T1,XCH)[33:33:15]);%            39046000 T  0068:0
    END;%                                                                39047000 T  0071:3
END MAKEIODS;%                                                           39048000 T  0072:1
LABEL DKRO,SPO,DKSO,DKUO,DKPO,DCO;                                       39049000 T  0072:2
SWITCH OUTSW←DKRO,SPO,DKSO,DKUO,DCO;%                                    39050000 T  0072:2
LABEL FIXFIB,FIND,SPACER;%                                               39054000 T  0072:2
LABEL PREFINAL,DK1;%                                                     39055000 T  0072:2
ARRAY HEADER[*];%                                                        39056000 T  0072:2
REAL TOG;                                                                39056100 T  0072:2
LABEL AGN;                                                               39056500 T  0072:2
FIB←M[ALPHA-3]; FPB←PRT[P1MIX,3];%                                       39083000 T  0072:2
IOMASK:=IOM;                                                             39083100 T  0084:1
NBUFS←FIB[13].[1:9]; FNUM←FIB[4].[13:11]; BLEN←FIB[18].[3:15];%          39084000 T  0085:0
TYPE←FPB[FNUM+3].[43:5];%                                                39085000 T  0089:2
STREAM(S ← [FPB[FNUM+2]], D ← [REEL]);%                                  39086000 T  0091:2
 BEGIN SI:=S;DS:=3OCT;DS:=5OCT;DS:=0CT END;%                             39087000 T  0093:1
P(CDATE, RSB, .CDATE,←);                                                 39087100 T  0094:2
IF FPB[FNUM+4]>0 THEN REEL ← CDATE ← CYCLE ← 0;                          39087500 T  0095:2
MODE←FIB[13].[24:1]; IO←FIB[13].[27:1]; RLEN←FIB[18].[33:15];%           39088000 T  0099:1
DIREC←FIB[13].[25:1]; FORMS←FPB[FNUM+3].[42:1];%                         39089000 T  0103:3
STATE←FIB[5]; UNLABELED←FIB[4].[2:1];                                    39090000 T  0107:1
MFID←FPB[FNUM]; FID←FPB[FNUM+1]; OPTIONAL←FIB[4].[5:1];%                 39091000 T  0109:3
COBOL←(FIB[13] AND 1)&([FIB].[8:10]=22)[1:47:1];  % COBOL 60 & 68        39091100 T  0113:3
KIND←FIB[4].[8:4]; REEL←FIB[13].[28:10];%                                39092000 T  0117:2
IF COBOL>0 OR FIB[4].[7:1] THEN      % COBOL 60 OR SORT                   39092010 T  0120:2
M[FIB INX NOT 1].[3:6]←2                                                 39092020 T  0122:2
ELSE M[ALPHA-7].[3:6]←2;                                                 39092030 T  0125:1
$ SET OMIT = NOT(DATACOM AND RJE )                                       39092039 T  0130:2
IF TYPE=19 THEN GO TO DC19 ELSE                                          39092045 T  0130:2
IF TYPE=26 THEN GO TO DKPN ELSE                                          39092050 T  0131:1
IF TYPE>26 THEN GO TO DCN;                                               39092055 T  0132:2
IF (TYPE=0 AND NOT IO) OR TYPE GTR 20 THEN                               39092060 T  0134:1
BEGIN IF USEPBD                                                          39092070 T  0136:3
$ SET OMIT = NOT(DATACOM AND RJE )                                       39092074 T  0137:1
      THEN TYPE:=22; GO TO LOOKOUT;                                      39092080 T  0137:1
END;                                                                     39092090 T  0139:3
IF TYPE=1 OR TYPE=4 OR (TYPE>14 AND TYPE<19) THEN                        39092100 T  0139:3
BEGIN IF USEPBD                                                          39092150 T  0143:2
$ SET OMIT = NOT(DATACOM AND RJE )                                       39092154 T  0144:0
      THEN TYPE:=15;                                                     39092160 T  0144:0
$ SET OMIT = NOT(PACKETS)                                                39092164 T  0146:0
      GO LOOKOUT;                                                        39092185 T  0146:0
```

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        END;                                                                    39092190 T  0146:2
        IF REEL=0 THEN REEL←1;                                                  39092200 T  0146:2
        IF IO THEN                                                              39092500 T  0148:2
           IF TYPE≠6 AND TYPE≠20 THEN                                           39093000 T  0148:3
             IF TYPE≥10 THEN GO TO INSW[TYPE-10] ELSE GO LOOK                   39093500 T  0151:0
           ELSE GO TO DCN;                                                      39094000 T  0156:3
        IF TYPE≥10 AND TYPE≠20 THEN GO TO OUTSW[TYPE-10] ELSE GO LOOKOUT;       39094500 T  0156:3
LOOK:   IF IO THEN OTHERFILEOPENIN(1) ELSE OTHERFILEOPENOUT(1);                 39095000 T  0163:0
        IF U LSS 0 THEN GO TO EXIT ELSE GO TO PREFINAL;                         39096000 T  0165:3
DCN:    FILEMESS(-"I/O ERR",0,MFID,FID,REEL,CDATE,CYCLE);%                      39143000 T  0167:2
        GETBUFFERS(BLEN,NBUFS, U,ALPHA);%                                       39144000 T  0170:0
PREFINAL::  MAKEIODS;%                                                          39145000 T  0171:2
        IF KIND=11 THEN                                                         39145100 T  0173:0
        BEGIN IF COBOL ≤ 0 THEN            % ALGOL OR COBOL68                    39145200 T  0173:3
              IF READEMFROMDISK(CIDROW[U-32],M[ALPHA]) THEN                     39145210 T  0175:0
                  M[ALPHA]←P(DUP,LOD)&0[2:2:1]&1[27:47:1];                      39145300 T  0178:0
        END ELSE                                                                39145400 T  0182:1
        FILLBUFFERS(FIB[16],FIB[19],COBOL,NBUFS);                               39146000 T  0182:1
        IF COBOL>0 THEN FIB[16]←(*P(DUP))&M[ALPHA][CTC];                        39147000 T  0186:0
FINALIN:: FIB[6] ← FIB[7] ← FIB[17] ← 0; GO TO FIXFIB;                          39148000 T  0190:0
LOOKOUT:: IF IO THEN OTHERFILEOPENIN(0) ELSE OTHERFILEOPENOUT(0);               39155000 T  0193:3
          IF U LSS 0 THEN GO TO EXIT ELSE GO TO FIND;                           39156000 T  0196:3
FINALOUT:: IF NOT FIB[18].[1:1] THEN GETBUFFERS(BLEN,NBUFS,U,ALPHA);%           39230000 T  0198:2
FIND:       MAKEIODS;%                                                          39231000 T  0202:1
            FIB[6]←FIB[7]←0;%                                                   39232000 T  0203:0
            FIB[17]←IF COBOL THEN FIB[18].[3:15]ELSE FIB[18].[18:15];%          39233000 T  0205:1
              IF KIND = 10 THEN                                                 39233100 T  0209:3
              FOR T2 ← 0 STEP 1 UNTIL (NBUFS-1) DO                              39233200 T  0210:2
              P(@170000000000,M[ALPHA+T2],←);                                   39233300 T  0215:1
              IF KIND=13 THEN                                                   39233400 T  0219:0
                  M[ALPHA+1]← P(DUP,LOD)&P(DUP,LNG)[24:24:1];                   39233500 T  0219:3
            GO TO FIXFIB;%                                                      39234000 T  0223:3
DCO:        U:=30; KIND:=10;                                                    39235000 T  0224:1
 $ SET OMIT = NOT(DATACOM AND RJE )                                             39235099 T  0225:3
            GO TO SPDC;                                                         39235200 T  0225:3
DC19:                                                                           39236000 T  0226:1
            OTHERFILEOPENIN(2);                                                 39236100 T  0226:1
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                           39236154 T  0227:0
            GO SPDC;                                                            39236160 T  0227:0
SPO::       MODE← 0;  U← 25;    KIND← 5;                                        39236900 T  0227:2
SPDC: CNTCTL←DIREC←0; UNLABELED←1;                                              39237000 T  0230:1
        STARTIMING(FNUM,U);%                                                    39238000 T  0232:1
        GO TO FINALOUT;%                                                        39239000 T  0233:1
SPN:: U←25; KIND←5;                                                             39240000 T  0233:3
        MODE←CNTCTL←DIREC←0; UNLABELED←1;%                                      39241000 T  0235:2
        STARTIMING(FNUM,U);%                                                    39242000 T  0238:0
        IF BLEN<10 THEN BLEN←10;%                                               39243000 T  0239:0
        GETBUFFERS(BLEN,NBUFS,U,ALPHA);%                                        39244000 T  0241:0
        MAKEIODS;%                                                              39245000 T  0242:2
        GO TO FINALIN;%                                                         39246000 T  0244:0
DKRN:: DKRO: ACCESS:=1;                                                         39247000 T  0244:2
             GO TO DK1;                                                         39248000 T  0245:3
DKUO::       IO:=1;                                                             39249000 T  0246:1
DKUN::       ACCESS:=2;                                                         39250000 T  0247:3
             GO TO DK1;                                                         39251000 T  0248:3
DKPN:: DKPO:                                                                    39252000 T  0249:1
 $ SET OMIT = NOT SHAREDISK                                                     39252999 T  0250:0
 $ SET OMIT = SHAREDISK                                                         39254999 T  0250:0
             GO TO DCN;                                                         39255000 T  0250:0
 $ POP OMIT                                                                     39255001 T  0250:2
```

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DKSN:: DKSO: ACCESS←0;                                                  39256000 T  0250:2
DK1:         DISKFILEOPEN(O);                                           39257000 T  0251:3
             IF TOG THEN GO TO EXIT;                                    39258000 T  0252:2
             GO TO FIXFIB;                                              39259000 T  0253:2
 DCIN:: U←30; KIND←10;                                                  39293100 T  0254:0
            CNTCTL←DIREC←0; UNLABELED←1;                                39293200 T  0255:2
            STARTIMING(FNUM,U);                                         39293300 T  0257:2
            GETBUFFERS(BLEN,NBUFS,U,ALPHA);                             39293400 T  0258:2
            IOMASK:=0; MAKEIODS;                                        39293500 T  0260:0
FIXFIB::    FIB[4].[2:1]←UNLABELED;%                                    39294000 T  0262:0
            FIB[4].[8:4]←KIND;%                                         39295000 T  0264:2
            FIB[15].[24:6]←U;                                           39296000 T  0267:0
            FIB[13].[28:10]←REEL;%                                      39297000 T  0269:2
            FPB←PRT[P1MIX,3];                                           39297010 T  0272:0
            FPB[FNUM+3].[43:5]←TYPE;                                    39297020 T  0273:2
            STREAM(REEL,D:=[FPB[FNUM+2]]);                              39297100 T  0276:2
            BEGIN DI:=D;SI:=LOC REEL;DS:=3DEC END;                      39297200 T  0278:1
            RDCTABLE[U].[8:6]←P1MIX;%                                   39298000 T  0279:1
            IF FIB[18].[1:1] THEN%                                      39299000 T  0281:3
            BEGIN FIB[16]←0;%                                           39300000 T  0282:3
                  FIB[5]←STATE&8[39:42:6];%                             39301000 T  0284:2
                  FIB[10].[3:15]←0;                                     39301100 T  0286:3
            END ELSE%                                                   39302000 T  0289:1
           FIB[5].[CF]←STATE&DIREC[44:47:1]&IO[39:43:5]&FIB[5][45:45:1]; 39303000 T  0289:1
            IF COBOL>0 OR FIB[4].[7:1] THEN M[FIB INX NOT 1].[3:6] ← 6  39304000 T  0293:2
                     ELSE M[ALPHA-7].[3:6]←4;%                          39305000 T  0299:3
            FIB[4].[27:3]←ACCESS;%                                      39306000 T  0305:0
            IF U<16 THEN IF KIND≠7 THEN FPB[FNUM+3].[23:1]:=IO;         39306010 T  0307:2
            IF (U←T1←FIB[10].[3:15])≠0 THEN                             39306100 T  0313:0
            DO BEGIN IF KIND=10 THEN M[U-1]←0;  %FAKE QUEUE             39306200 T  0315:2
            M[U-2].[3:6]←3 END UNTIL (U←M[U].[FF]-2)=T1;                39306300 T  0319:1
EXIT::%                                                                 39307000 T  0326:1
      IF XTRA THEN                                                      39307100 T  0327:0
         XTRAC:=NOT(FIB[4].[7:1] OR UNLABELED) AND XTRAC NEQ 2;         39307200 T  0327:1
      IF XTRA LSS 2 THEN GO TO INITIATE;                                39307300 T  0331:0
      RCW:=XTRAR;                                                       39307400 T  0332:3
END FILEOPEN;%                                                          39308000 T  0333:2
                                                                                 SIZE= 0334 WORDS
PROCEDURE SUSTATUS(A,DDD,B);  VALUE A,DDD,B;  REAL A,B;  ARRAY DDD[*];  39900000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00845
   BEGIN REAL RT1,I;                                                    39901000 T  0000:0
      ARRAY D[*],ZSF[*],VADAR[*];                                       39902000 T  0000:0
      SUBROUTINE SPOUTITNOW;                                            39903000 T  0000:0
      BEGIN                                                             39904000 T  0001:0
         STREAM(X:=[TINU[B]], D, EUNUM:=0, SU:=0, I, RT1);              39905000 T  0001:0
         BEGIN SI:=X; SI:=SI+5;                                         39906000 T  0003:2
            DS:=LIT" "; DS:=3 CHR; SI:=D;                               39907000 T  0004:0
            10(IF SC≠"0" THEN                                           39908000 T  0005:0
               BEGIN X:=SI; EUNUM:=TALLY;                               39909000 T  0005:3
                  SI:=LOC EUNUM; DS:= 3 LIT" EU"; DS:=DEC;              39910000 T  0006:1
                  DS:=4 LIT" SU "; TALLY:=0;                            39911000 T  0007:2
                  5(SU:=TALLY; SI:=X; SKIP SB; SKIP SU SB;              39912000 T  0008:2
                    IF SB THEN                                          39913000 T  0010:0
                    BEGIN SI:=LOC SU;                                   39914000 T  0010:2
                        DS:=DEC; DS:=LIT",";                            39915000 T  0010:3
                    END;                                                39916000 T  0011:2
                    TALLY:=TALLY+1);                                    39917000 T  0011:2
                  SI:=X; TALLY:=EUNUM;                                  39918000 T  0012:0
               END;                                                     39919000 T  0013:0
               TALLY:=TALLY+1; SI:=SI+1);                               39920000 T  0013:0
```

```
                    SI:=LOC 1; SI:=SI+7; DI:=DI-1;                          39921000 T  0013:3
                    IF SC≠"0" THEN                                          39922000 T  0014:2
                    BEGIN DS:=5 LIT" WENT";                                 39923000 T  0015:0
                         IF SC="2" THEN DS:=4 LIT" NOT";                    39924000 T  0016:0
                    END ELSE DS:=4 LIT" ARE";                               39925000 T  0017:1
                    DS:=8 LIT" READY.←";                                    39926000 T  0018:1
               END;                                                         39927000 T  0019:2
               SPOUT(RT1);                                                  39928000 T  0019:3
          END OF SPOUTITNOW;                                                39929000 T  0020:2
                                                                            39929100 T  0020:3
          SUBROUTINE DOIT;                                                  39930000 T  0020:3
          BEGIN                                                             39931000 T  0021:0
               IF NOT (ZSF[0] OR ZSF[1].[1:11]) ≠ NOT 0 THEN                39932000 T  0021:0
               BEGIN B:=18; D:=ZSF;                                         39933000 T  0023:3
                    RT1:=SPACE(20);                                         39934000 T  0026:0
                    SPOUTITNOW;                                             39935000 T  0028:1
               END;                                                         39936000 T  0029:0
               IF NOT (ZSF[2] OR ZSF[3].[1:11]) ≠ NOT 0 THEN                39937000 T  0029:0
               BEGIN B:=19; D:=[ZSF[2]];                                    39938000 T  0031:3
                    RT1:=SPACE(20);                                         39939000 T  0034:0
                    SPOUTITNOW;                                             39940000 T  0036:1
               END;                                                         39941000 T  0037:0
          END OF DOIT;                                                      39942000 T  0037:0
%                                                                           39942900 T  0037:1
%         START OF CODE                                                     39942910 T  0037:1
%                                                                           39942920 T  0037:1
          IF B≠0 THEN                                                       39943000 T  0037:1
          BEGIN D:=[MULTITABLE[16]]&2[8:38:10];                             39944000 T  0040:0
               RT1:=A;                                                      39945000 T  0042:2
 $ SET OMIT = DFX                                                           39945999 T  0043:1
               IF B THEN D:=2 INX D;                                        39946000 T  0043:1
 $ POP OMIT                                                                 39946001 T  0045:2
               IF NOT (IF B THEN P(RRR).[28:1] ELSE P(RRR).[29:1])          39947000 T  0045:2
 $ SET OMIT = DFX                                                           39947999 T  0048:1
                  OR NOT (D[0] OR D[1].[1:11]) = NOT 0                      39948000 T  0048:1
 $ POP OMIT                                                                 39948001 T  0050:2
               THEN                                                         39949000 T  0050:2
               BEGIN STREAM(X:=[TINU[B]], RT1);                             39950000 T  0051:2
                    BEGIN SI:=X; SI:=SI+5;                                  39951000 T  0053:1
                         DS:=LIT" "; DS:=3 CHR;                             39952000 T  0053:3
                         DS:=11 LIT" NOT READY←";                           39953000 T  0054:2
                    END;                                                    39954000 T  0056:1
                    SPOUT(RT1);                                             39955000 T  0056:2
               END ELSE SPOUTITNOW;                                         39956000 T  0057:1
          END ELSE                                                          39957000 T  0059:0
          BEGIN ZSF:=[M[SPACE(4)]]&4[8:38:10];                              39958000 T  0059:0
               VADAR:=[MULTITABLE[16]]&4[8:38:10];                          39959000 T  0063:1
               DISKWAIT(-A,-30,DIRECTORYTOP);                               39960000 T  0065:1
               FOR I:=0 STEP 1 UNTIL 3 DO                                   39961000 T  0067:0
                    ZSF[I]:=VADAR[I] AND NOT DDD[23+I];                     39962000 T  0068:0
               I:=1; DOIT;                                                  39963000 T  0073:1
               FOR I:=0 STEP 1 UNTIL 3 DO                                   39964000 T  0075:0
               BEGIN ZSF[I]:=NOT VADAR[I] AND DDD[23+I];                    39965000 T  0076:0
                    DDD[23+I]:=VADAR[I];                                    39966000 T  0079:0
               END;                                                         39967000 T  0081:0
               DISKWAIT(A,-30,DIRECTORYTOP);                                39968000 T  0083:1
               I:=2; DOIT;                                                  39969000 T  0084:3
               FORGETSPACE(ZSF);                                            39970000 T  0087:0
          END;                                                              39971000 T  0088:0
     END;                                                                   39972000 T  0088:0
```

```
                                                                                  SIZE= 0089 WORDS
PROCEDURE DIRECTORYBUILDER(A,DDD);                                      40000000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00848
        VALUE A,DDD;                                                    40001000 T  0000:0
        REAL A;                                                         40002000 T  0000:0
        ARRAY DDD[*];                                                   40003000 T  0000:0
BEGIN REAL Y,Z,B,C,I,J,T,RA,RL,RT1,R;INTEGER RADD,RLEN;                  40004000 T  0000:0
REAL NEXTLINK,AD,X,K,SEVEN7,FORTY,L,EUSU;                               40004500 T  0000:0
ARRAY SU[*];                                                            40005000 T  0000:0
ARRAY HEAD[*],KK[*],PL[*];                                              40005050 T  0000:0
REAL W,ESPADD,DISKTOP,SUPER,EUM,NT1,NT2,NT3,NT4;                        40005100 T  0000:0
BOOLEAN UCHANG,ERROR;INTEGER LO,REM,TN,TM,MN;REAL X1,X2,EUMASK;         40005110 T  0000:0
ARRAY ZSF[*],SOCK[*];                                                   40005200 T  0000:0
REAL D,Y1,Y2;                                                           40005210 T  0000:0
REAL AA,AAA;                                                            40005220 T  0000:0
LABEL FORGET;                                                           40005230 T  0000:0
            ARRAY V[*,*];                                               40006000 T  0000:0
            INTEGER S;                                                  40006100 T  0000:0
            ARRAY VR=V[*];                                              40007000 T  0000:0
            REAL H,FI,FJ;                                               40007500 T  0000:0
 $ SET OMIT = NOT SHAREDISK                                             40007990 T  0000:0
            LABEL LOOKATDKB,BACK,EXIT,M1,SKBLK,BYE;                     40008050 T  0000:0
DEFINE ROW=SU[X].[3:4]#,                                     %MC       40008100 T  0000:0
      LASTAVAIL=HEAD[0].[3:15]#,                                        40008110 T  0000:0
    AVAILABLE=HEAD[0].[FF]#,                                            40008120 T  0000:0
      FIRSTLINK=HEAD[0].[CF]#,                                          40008130 T  0000:0
      DA=9:24#,DAC=9:24:24#,                                     %MC    40008140 T  0000:0
    SIZE=PL[1].[DA]#,                                                   40008150 T  0000:0
    ADDRESS=PL[0].[DA]#,                                                40008160 T  0000:0
      HIGHLINK=PL[0].[CF]#,                                             40008170 T  0000:0
      LOWLINK=PL[1].[CF]#,                                              40008180 T  0000:0
      DISKRUNNING=[18:1]#,                                       %MC    40008190 T  0000:0
      FORTYMILLDISK=[19:1]#,                                     %MC    40008200 T  0000:0
      OCCUPIED=[20:1]#,                                          %MC    40008210 T  0000:0
       AV1=480#,AVBLOCK=16#;                                            40008220 T  0000:0
SUBROUTINE SAVIT;                                            %MC       40008300 T  0000:0
BEGIN                                                        %MC       40008310 T  0001:0
IF (W←W+2)≥28 THEN                                           %MC       40008320 T  0001:0
BEGIN ZSF[29]←ESPADD;DISKWAIT(ZSF INX 0,30,ESPADD←GETESPDISK);  %MC    40008330 T  0002:3
W←0 END;ZSF[W]←T;ZSF[W+1]←DDD[479-2×I];                      %MC       40008340 T  0007:1
END SAVIT;                                                   %MC       40008350 T  0012:1
 SUBROUTINE CLEAR;                                                      40009000 T  0012:2
        BEGIN V[S,0]←0;                                                 40010000 T  0013:0
              V[S,1] ← BYPASS.[CF];                                     40011000 T  0014:3
              V[S,2]←@14;                                               40012000 T  0017:0
              V[S,3]←V[S,4]←0;                                          40013000 T  0018:3
              MOVE(57,[V[S,2]],[V[S,5]]);                               40014000 T  0022:0
        END;                                                            40015000 T  0025:0
SUBROUTINE SETUP;                                            %MC       40016000 T  0025:1
BEGIN                                                                  40016020 T  0026:0
LO:=(X+1) MOD 5;LO:=LO+(LO=0)×5;                                       40016025 T  0026:0
IF RADD NEQ (LO:=LO×FORTY) OR (LO=RADD AND RLEN LSS FORTY) THEN        40016026 T  0030:0
BEGIN                                                        %MC       40016100 T  0033:3
IF Y:=(SU[X].[CF]=0) THEN                                              40016200 T  0034:1
    BEGIN                                                    %MC       40016220 T  0036:1
      NT1:=SU[X]:=(GETSPACE(16,0,0)+2)&SU[X][18:18:9];                 40016240 T  0036:3
      MOVE(16,NT1-1,NT1);                                              40016260 T  0041:1
    END;                                                     %MC       40016300 T  0043:1
M[SU[X] INX K]←RT1←GETSPACE(64+Y,0,0)+2;                     %MC       40016400 T  0043:1
KK←[M[RT1]]&(64+Y)[8:38:10];JUNK←61+Y;                                 40016410 T  0048:0
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```
MOVE(64+Y,RT1-1,RT1);                                                    40016420 T  0052:0
FOR R:=3×Y STEP 2 UNTIL JUNK DO KK[R]:=RT1+R+2;                          40016500 T  0054:2
HEAD←[M[M[SU[X]]]]&1[8:38:10];                                   %MC     40016510 T  0061:2
IF Y THEN                                                        %MC     40016600 T  0064:3
BEGIN                                                                    40016700 T  0065:0
    KK[1]:=KK[2]:=SEVEN7;                                                40016800 T  0065:2
    KK[1].[DA]:=LO;                                                      40016900 T  0067:3
    KK[2].[DA]:=IF X EQL 0 THEN FORTY-(DISKBOTTOM+5) ELSE FORTY;         40016910 T  0070:1
    M[SU[X]].[DA]:=LO;                                                   40016920 T  0075:3
      HEAD[0]:=RT1+1;                                                    40017050 T  0078:3
END;                                                                     40017100 T  0080:2
HEAD[0].[FF]←RT1+3×Y;                                            %MC     40017200 T  0080:2
HEAD[0].[3:15]←62+RT1+Y;                                         %MC     40017250 T  0083:2
END                                                                      40017260 T  0087:0
     ELSE                                                                40017270 T  0087:0
DO                                                                       40017275 T  0087:0
BEGIN SU[X].OCCUPIED:=1;                                                 40017280 T  0087:2
    RADD:=RADD-FORTY;                                                    40017285 T  0090:0
    X:=X-1;                                                              40017290 T  0091:1
END UNTIL (RLEN:=RLEN-FORTY) LSS FORTY;                                  40017295 T  0092:2
END OF SETUP;                                                    %MC     40017300 T  0094:3
SUBROUTINE BUILDAVAIL;                                           %MC     40027100 T  0095:0
BEGIN                                                            %MC     40027200 T  0095:0
BACK:ERROR←1;REM←0;                                              %MC     40027230 T  0095:0
IF (Z:=SU[X])≠0 AND Z.[CF]=0 THEN                                        40027240 T  0096:2
    BEGIN K:=0; SETUP; GO BACK END;                                      40027245 T  0099:2
IF (Z:=SU[X]).DISKRUNNING AND NOT Z.OCCUPIED AND RLEN>0 THEN             40027250 T  0102:2
    BEGIN                                                        %MC     40027260 T  0106:1
       IF M[SU[X]].[DA] GEQ RADD THEN                                    40027270 T  0106:3
       BEGIN                                                             40027280 T  0109:0
       P(M[M[SU[X]]],0&RADD[9:24:24],LLL,0,INX,.AD,←,DEL);       %MC     40027290 T  0109:2
       HEAD←[M[M[SU[X]]]]&1[8:38:10];PL←[M[AD]]&2[8:38:10];      %MC     40027295 T  0114:1
          IF ((RA:=ADDRESS)-(RL:=SIZE) LSS RADD-RLEN OR                  40039000 T  0119:3
           (REM:=IF(NT1:=RADD MOD FORTY)=0 THEN 0 ELSE NT1-RLEN) LSS     40039100 T  0124:0
           0)AND RADD NEQ RA THEN                                        40039200 T  0128:1
         BEGIN                                                   %MC     40040000 T  0130:0
           IF REM LSS 0 THEN RLEN:=RADD MOD FORTY;                       40040500 T  0130:2
           IF AVAILABLE=0 THEN%NEED ANOTHER ROW                  %MC     40041000 T  0133:0
             BEGIN                                               %MC     40042000 T  0134:3
               K←ROW;K←K+1;ROW←K;                                %MC     40042100 T  0135:1
               IF K GTR 15 THEN DO UNTIL FALSE;                  %MC     40043000 T  0140:2
                  SETUP;                                         %MC     40044000 T  0142:2
             END;                                                %MC     40045000 T  0144:0
           NEXTLINK←M[R←AVAILABLE];                              %MC     40046000 T  0144:0
           M[R]←AD&(RADD-RLEN)[DAC];                             %MC     40047000 T  0147:0
           IF AD.[CF]=SEVEN7 THEN M[SU[X]].[DA]←RADD-RLEN;       %MC     40047100 T  0150:0
         IF LOWLINK=SEVEN7 THEN                                          40048000 T  0155:1
           FIRSTLINK:=R                                                  40049000 T  0156:3
              ELSE                                                       40050000 T  0158:1
           M[LOWLINK].[CF]:=R;                                           40051000 T  0159:1
       M[R+1]:=PL[1]&(RADD-RLEN-(RA-RL))[DAC];                           40055000 T  0162:3
         PL[1]:=R&(RA-RADD)[DAC];                                        40056000 T  0167:2
           RLEN←0;                                               %MC     40056100 T  0170:1
           AVAILABLE←NEXTLINK;ERROR←FALSE;                       %MC     40057000 T  0171:0
       END                                                       %MC     40058000 T  0173:3
           ELSE%REDUCE EXISTING AREA(BEWARE OF ADDRESS CONFLICT OR%MC     40059000 T  0173:3
              %EU UNDERFLOW).                                    %MC     40060000 T  0173:3
     BEGIN                                                       %MC     40060050 T  0173:3
           IF RADD=RA AND RL GEQ RLEN THEN                               40060100 T  0174:1
         BEGIN                                                   %MC     40060200 T  0176:0
```

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                ADDRESS←RA-RLEN;                                  %MC    40060300 T  0176:2
                IF HIGHLINK=SEVEN7 THEN                           %MC    40060302 T  0179:2
                M[SU[X]].[DA]←ADDRESS;                            %MC    40060305 T  0181:0
                SIZE←RL-RLEN;ERROR←RLEN←0;                        %MC    40060400 T  0185:1
              END                                                 %MC    40060500 T  0189:2
              ELSE                                                %MC    40060600 T  0189:2
            IF RLEN>RL THEN                                       %MC    40061000 T  0189:2
             IF LOWLINK=SEVEN7 AND(X-1)MOD 5≠4 THEN               %MC    40062000 T  0190:3
              BEGIN                                               %MC    40063000 T  0194:3
                RADD←RADD-RL-1;RLEN←RLEN-RL-1;SIZE←0;ERROR←0;     %MC    40064000 T  0195:1
              END                                                 %MC    40065000 T  0202:0
              ELSE                                                       40065010 T  0202:0
             IF RADD-RLEN LSS (NT1:=M[LOWLINK].[DA]) THEN                40065020 T  0202:0
                BEGIN                                                    40065030 T  0206:1
                RLEN:=RLEN-(RADD-(RADD:=NT1));                           40065040 T  0206:3
                SUPER:=1;GO BACK;                                        40065050 T  0209:0
                END                                                      40065060 T  0210:1
                    ELSE                                                 40065070 T  0210:1
             IF RADD GTR RA-RL THEN                                      40065080 T  0210:1
                BEGIN                                                    40065090 T  0212:0
                RLEN:=RADD-(RA-RL);SUPER:=1;                             40065100 T  0212:2
                GO BACK;                                                 40065110 T  0215:0
                END                                                      40065120 T  0215:2
              ELSE  RLEN← 0                                       %MC    40066000 T  0215:2
              ELSE                                                %MC    40067000 T  0216:1
            BEGIN SIZE←RL-RLEN;ERROR←RLEN←0; END;                 %MC    40068000 T  0216:3
          END;                                                    %MC    40068050 T  0221:2
            IF SIZE=0 THEN                                        %MC    40068100 T  0221:2
            BEGIN                                                 %MC    40069000 T  0223:0
              IF HIGHLINK=SEVEN7 AND LOWLINK=SEVEN7 THEN          %MC    40070000 T  0223:2
              BEGIN                                               %MC    40071000 T  0226:3
              SU[X].OCCUPIED←TRUE;                                %MC    40072000 T  0227:1
                K←-1;                                             %MC    40073000 T  0229:3
               WHILE(Y←M[SU[X]INX (K←K+1)])≠0 AND K≤15 DO         %MC    40074000 T  0230:3
                  FORGETSPACE(Y);                                 %MC    40075000 T  0236:0
                FORGETSPACE(SU[X]);                               %MC    40076000 T  0237:1
              END                                                 %MC    40077000 T  0238:1
              ELSE                                                %MC    40078015 T  0238:1
              BEGIN                                               %MC    40078020 T  0238:1
                IF HIGHLINK=SEVEN7 THEN                           %MC    40078030 T  0238:3
                  BEGIN                                           %MC    40078031 T  0240:1
                  M[PL[1]].[CF]←SEVEN7;                           %MC    40078032 T  0240:3
                  M[SU[X]].[DA]←M[PL[1]].[DA];                    %MC    40078033 T  0243:1
                  END                                             %MC    40078034 T  0247:3
                      ELSE                                        %MC    40078035 T  0247:3
                  BEGIN                                           %MC    40078036 T  0247:3
              M[PL[0]+1].[CF]:=LOWLINK;                                  40078038 T  0248:1
                  IF LOWLINK=SEVEN7 THEN                          %MC    40078040 T  0252:0
                    FIRSTLINK←HIGHLINK                            %MC    40078042 T  0253:2
                        ELSE                                      %MC    40078046 T  0255:1
                M[PL[1]].[CF]:=HIGHLINK;                                 40078048 T  0256:3
                  END;                                            %MC    40078050 T  0260:2
                IF M[LASTAVAIL]=0 THEN                            %MC    40078052 T  0260:2
                      M[LASTAVAIL]←AD;LASTAVAIL←AD;               %MC    40078054 T  0262:3
                IF AVAILABLE=0 THEN AVAILABLE←AD;                 %MC    40078058 T  0268:0
            PL[0]:=0;                                                    40078060 T  0272:1
              END;                                                %MC    40078065 T  0273:2
        END;                                                      %MC    40078067 T  0273:2
  IF REM LSS 0 THEN BEGIN RADD←X MOD 5;RADD←(RADD+(RADD=0))×FORTY;         40078068 T  0273:2
     RLEN←ABS(REM); END;                                                 40078069 T  0278:1
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                X←X-(RLEN÷0);                                          %MC     40078070 T  0279:1
               END ELSE                                                        40078072 T  0281:0
               IF(NT1:=M[SU[X]].LDA]) GTR RADD-RLEN THEN                       40078074 T  0281:0
                  BEGIN RLEN:=RLEN-(RADD-(RADD:=NT1))}                         40078076 T  0284:3
                  SUPER:=1; GO BACK;                                           40078078 T  0287:2
                END                                                    %MC     40078080 T  0288:3
                ELSE                                                           40078085 T  0288:3
                  RLEN←0;                                              %MC     40078087 T  0288:3
             END;                                                      %MC     40078090 T  0290:0
        IF RLEN>0 AND NOT ERROR THEN GO BACK;                          %MC     40078091 T  0290:0
    SUPER:=SUPER OR (ERROR AND SU[X].DISKRUNNING);                             40078092 T  0292:1
    END OF COMPLEMENTING DISK DIRECTORY;                                       40078093 T  0294:3
    SUBROUTINE LOCKED;                                                         40100000 T  0295:0
    BEGIN                                                                      40100100 T  0295:0
    IF (X1:=(RADD-RLEN) DIV TN)=(X2:=RADD DIV TN) THEN                         40100200 T  0295:0
    IF(TWO(X1) AND EUM)=0 THEN BUILDAVAIL ELSE GO FORGET ELSE                  40100300 T  0298:1
    BEGIN                                                                      40100400 T  0302:0
        Y1:=RADD;Y2:=RLEN;                                                     40100500 T  0302:2
        IF(RLEN:=(X1+1)×TN-(RADD-Y2  )  )GTR 0 AND (TWO(X1) AND EUM)=0 THEN    40100600 T  0304:0
            BEGIN RADD:=(X1+1)×TN;X:=5×D+((Y1-Y2)DIV FORTY);BUILDAVAIL END;    40100700 T  0309:1
        IF (RLEN:=  Y1-(X2×TN)) GTR 0 AND (TWO(X2) AND EUM) EQL 0 THEN         40100800 T  0315:0
            BEGIN RADD:=Y1;X:=5×D+RADD DIV FORTY;BUILDAVAIL; END;              40100900 T  0319:1
        WHILE (X2:=X2-1) GTR X1 DO                                             40101100 T  0324:0
            BEGIN                                                              40101200 T  0326:1
            RLEN:=TN;X:=5×D+((RADD:=(X2+1)×TN)-1)DIV FORTY;                    40101250 T  0326:1
            IF (TWO(X2) AND EUM)=0 THEN BUILDAVAIL;                            40101300 T  0331:1
            END;                                                               40101400 T  0335:0
    END;                                                                       40101500 T  0335:2
    FORGET:                                                                    40101510 T  0335:2
    END OF LOCKED;                                                             40101600 T  0335:2
    %                                                                          40199900 T  0335:3
     $ SET OMIT = NOT SHAREDISK                                                40199990 T  0335:3
    SU←[M[RT1←GETSPACE(100,0,0)+2]]&100[8:38:10];                      %MC     40249100 T  0335:3
    SEVEN7:=@77777;FORTY:=40000;TN:=10000;MN:=1000000;TM:=10000000;            40249105 T  0354:1
    MOVE(100,RT1-1,RT1);                                                       40249110 T  0358:0
    SOCK:=[M[RT1:=SPACE(40)]]&40[8:38:10];                                     40249120 T  0360:0
    MOVE(40,RT1-1,RT1);                                                        40249130 T  0364:1
    X1:=NEUP.[3:15]-1;% CHECK ONLY UNITS THAT EXIST                            40249200 T  0366:1
    VR:=[MULTITABLE[16]]&4[8:38:10];                                           40249250 T  0368:0
    LOOKATDKB:                                                         %MC     40249300 T  0370:0
    FOR J:=0 STEP 1 UNTIL X1 DO                                                40250000 T  0370:0
    BEGIN                                                                      40251000 T  0376:0
    X2:=19;                                                                    40252000 T  0376:0
    FOR I:=0STEP 1 UNTIL X2 DO                                                 40253000 T  0376:3
    BEGIN                                                                      40254000 T  0378:0
        RADD:=MN×J+I×TN;                                                       40254100 T  0378:0
        STREAM(Q:=RADD,8:=40+A);                                               40255000 T  0380:1
        BEGIN SI:=LOC Q;DS:=8 DEC END;                                         40256000 T  0381:3
        IF I EQL 0 THEN                                                        40257000 T  0382:2
            BEGIN X2:=20×WAITIO(40+A INX@140000000,@64,18+C).[43:1]+X2;        40257030 T  0383:1
                  IF X2=39 THEN VR[NT1:=1+C×2]:=P(DUP,LOD) OR TWO(11-J);       40257060 T  0388:2
            END;                                                               40257100 T  0394:1
        IF NOT(R←WAITIO(40+A INX @100000000,@64,18+C)).[42:1] THEN             40258000 T  0394:1
        BEGIN                                                                  40261000 T  0398:1
        NT2:=(NT1:=5×J+50×C)+(I DIV(SU[NT1].FORTYMILLDISK+1)DIV 4);            40261010 T  0398:3
        SU[NT2]:=P(DUP,LOD)&1[18:47:1]&(X2>19)[19:47:1];                       40261040 T  0404:1
        IF R.[43:1] THEN                                                       40261042 T  0408:1
        BEGIN FORTY:=FORTY×((X2 GTR 19)+1);                                    40261043 T  0409:0
        SOCK[C×10+J]:=(*P(DUP)) OR TWO(I);                                     40261044 T  0411:3
        X:=NT2;RADD:=(RADD MOD MN)+(RLEN:=TN);BUILDAVAIL;                      40261046 T  0415:1
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        FORTY:=40000;                                                   40261047 T  0419:0
        END ELSE SUCK[C×10+J+20]:=(*P(DUP)) OR TWO(IF X2=19 THEN I ELSE  40261048 T  0419:3
                                  (I DIV 8)×4 + (I AND 3));             40261049 T  0428:3
        END ELSE %NOT READY CHECK NEXT SU                               40261050 T  0432:0
         BEGIN EUSU:=EUSU OR TWO(4-(IF X2=19 THEN I ELSE (I DIV 8)×4+(I AND  40261100 T  0432:0
                                  3))DIV 4);                            40261150 T  0436:3
                 I:=I+(((SU[NT1:=(5×J+50×C)].FORTYMILLDISK+1)×4)-1);    40261200 T  0439:1
    END END;                                                            40261250 T  0444:3
        STREAM(A:=(NOT EUSU).[43:5], J, D:=VR INX C INX C);             40261300 T  0447:0
        BEGIN SI:=LOC A; SI:=SI+7;                                      40261350 T  0450:1
            DI:=DI+J; DS:=CHR;                                          40261400 T  0450:3
        END;                                                            40261450 T  0451:2
        EUSU:=0;                                                        40261500 T  0451:3
    END;                                                                40262000 T  0452:2
     $ SET OMIT = NOT(DKBNODFX AND NOT DFX)                             40262299 T  0454:3
     $ SET OMIT = NOT(DFX)                                              40262369 T  0454:3
                J←DIRMOD;                                               40262500 T  0454:3
                V ← [M[GETSPACE( J ,0,0)+2]]& J [8:38:10];              40263000 T  0455:2
                J ← J-1;                                                40264000 T  0459:1
                FOR S ← 0 STEP 1 UNTIL J DO                             40264500 T  0460:2
                    BEGIN VR[S] ←  [M[GETSPACE(61,0,0)+1]]&62[8:38:10]; 40265000 T  0462:0
                        BYPASS←BYPASS-2;                                40266000 T  0466:1
                         CLEAR;                                         40267000 T  0467:2
                    END;                                                40268000 T  0469:0
                AAA:=AA:=SPACE(480);                                    40275200 T  0471:1
                DISKWAIT(-A,480,J:=DIRECTORYTOP+4);                     40275300 T  0474:0
                ZSF←[M[GETSPACE(31,0,0)+2]]&30[8:38:10];                40275500 T  0476:2
                ZSF[0]←@14;                                             40275600 T  0480:1
                W←0;                                                    40275700 T  0481:2
                FOR J:=J STEP 16 WHILE J≠16 DO                          40276000 T  0482:1
                BEGIN                                                   40277000 T  0486:1
                        DISKIO(NT3,-(AAA-1),480,J+16);                  40278000 T  0486:1
                        IF J+15 GEQ BYPASS.[CF] THEN                    40278100 T  0489:0
BYE:                      BYBY("DIRECTORY FULL←",15);                   40278150 T  0490:3
                        BYPASS.[FF]←J+15;                               40278200 T  0497:1
                        FOR I ← 0 STEP 1 UNTIL 14 DO%                   40279000 T  0499:0
                            BEGIN T ← DDD[478-2×I];%                    40280000 T  0500:0
                                H:=J+14-I;                              40280100 T  0502:0
                                IF T=@114 THEN                          40281000 T  0503:3
                                    BEGIN DDD[479-2×I]:=0;              40281100 T  0504:2
                                        UCHANG:=0;            %R61      40281110 T  0507:1
                                        I:=15;                          40281200 T  0508:0
                                    END ELSE                            40281300 T  0508:3
                                IF T=@14 OR                             40282000 T  0508:3
                                   DDD[424-I×30].[1:1] THEN             40283100 T  0510:0
                                    BEGIN DDD[478-2×I]:=@14;            40283200 T  0512:1
                                        UCHANG:=0;            %R61      40283210 T  0515:0
                                        DDD[479-2×I]:=NEXTSLOT;         40283300 T  0515:3
                                        IF NEXTSLOT=0 THEN              40283400 T  0518:0
                                        BEGIN FI:=I;FJ:=J+15 END;       40283500 T  0518:3
                                        NEXTSLOT:=H;                    40283600 T  0521:1
                                    END ELSE                            40284000 T  0522:0
                                    BEGIN DDD[429-I×30].[1:42]:=0;      40285000 T  0522:0
                                        B:=DDD[429-I×30];               40285005 T  0526:0
                                        IF (C←DDD[423-I×30])≥0 THEN     40285010 T  0528:0
                                        BEGIN DDD[423-I×30]←            40285020 T  0530:2
                                            -C&C[2:8:10];               40285030 T  0532:2
                                            UCHANG:=0;        %R61      40285035 T  0534:2
                                                    DDD[424-I×30]←0;    40285135 T  0535:1
                                        END                             40285140 T  0537:0
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                                                    ELSE                                  40285150 T 0537:2
                                                DDD[424-I×30]←P(DUP,LOD)                  40285160 T 0537:2
                                              AND @00370000000007774;                     40285170 T 0540:0
                                                IF C.[2:10]=0 OR                          40285500 T 0541:0
                                                   DDD[424-I×30].[44:1] THEN              40285600 T 0542:1
                                                   SAVIT;                                 40285700 T 0543:2
                                FOR C:=1 STEP 1 UNTIL B DO                                40286000 T 0546:0
                                BEGIN RADD:=DDD[429-I×30+C];                              40287000 T 0548:0
                                IF RADD GEQ DISKBOTTOM+5 THEN                             40290000 T 0550:2
                                BEGIN                                                     40290100 T 0551:3
                                IF (RADD:=RADD+(RLEN:=DDD[428-I×30])) GTR TM THEN         40290200 T 0552:1
                                BEGIN RADD:=RADD MOD TM;X:=50 END ELSE X:=0;              40290300 T 0555:3
                                IF SU[X:=X+5×(D:=RADD DIV MN)].FORTYMILLDISK THEN         40290400 T 0559:2
                                FORTY:=P(FORTY,DUP,+);                                    40290500 T 0563:0
                                X:=((RADD:=RADD MOD MN)-1) DIV FORTY + X;                 40290600 T 0564:3
                                IF (EUM:=SOCK[D]) NEQ 0 THEN LOCKED ELSE BUILDAVAIL;      40292050 T 0568:0
                                FORTY:=40000;                                             40292060 T 0573:0
                        IF SUPER THEN                                                     40292200 T 0573:3
                            BEGIN                                                %MC      40292210 T 0574:0
                            STREAM(A:=T,B:=DDD[479-2×I],T:=SUPER:=SPACE(10));             40292212 T 0574:2
                            BEGIN DS:=2LIT", "; SI:=LOC A; SI:=SI+1; DS:=7CHR; DS:=LIT"/";  40292214 T 0579:0
                                  SI:=SI+1; DS:=7CHR; DS:=19LIT" DISK ADDRESS ERROR";     40292216 T 0580:3
                                  DS:=LIT"+";                                             40292218 T 0584:0
                            END;                                                          40292220 T 0584:2
                            SPOUT(SUPER);                                                 40292222 T 0584:3
                            ERROR:=SUPER:=0;                                              40292230 T 0585:2
                            END;                                                 %MC      40292240 T 0586:3
                                END;                                                      40292250 T 0586:3
                                                    END;                         %MC      40292300 T 0586:3
                                                B:=DDD[479-2×I];                          40293010 T 0589:0
                                                S:=(S:=DISKBOTTOM                         40293020 T 0591:0
                                                 -SCRAMBLE(T,B)).                         40293030 T 0591:0
                                                 [36:11];                                 40293040 T 0598:2
                                                C:=V[S,0];                                40293050 T 0599:2
                                                V[S,C+2]:=T; V[S,C+3]:=B;                 40293060 T 0601:0
                                                V[S,C+4]:=H;                              40293070 T 0605:2
                                                IF (V[S,0]:=C+3)=60 THEN                  40293080 T 0607:3
                                                BEGIN V[S,4].[FF]←BYPASS←                 40293090 T 0610:2
                                                     BYPASS-2;                            40293100 T 0612:2
                                                     IF J+15≥BYPASS.[CF]THEN              40293101 T 0614:2
                                                       GO BYE;                            40293102 T 0615:1
                                                     DISKWAIT([V[S,2]].[CF],              40293110 T 0616:3
                                                      60,V[S,1]);                         40293120 T 0618:2
                                                     CLEAR;                               40293140 T 0620:0
                                                END;                                      40293150 T 0621:0
                            PBCOUNT:= ((((("PBD     " EQV T) = NOT 0) OR                  40309100 T 0621:0
                                        ((("PUD     " EQV T) = NOT 0)) AND                40309150 T 0622:2
                                       (B.[CF] = 1)) + PBCOUNT;                           40309200 T 0624:1
                                END;       END;%                                          40310000 T 0626:3
                            SLEEP([NT3],NOT 0);                                           40311000 T 0629:0
                            DDD:=DDD&P(DUP,AAA)[CTC];                                     40311100 T 0630:3
                            AAA:=P INX 0;  %SWAP DDD BUFFERS                              40311200 T 0632:2
                            DISKWAIT(AAA,480,J);                                          40311300 T 0633:2
                            IF I = 16 THEN%                                               40312000 T 0634:3
                                BEGIN%                                                    40313000 T 0635:2
                                    J ← 0;%                                               40314000 T 0636:0
                                END;%                                                     40315000 T 0636:3
                        END;%                                                             40317000 T 0636:3
                    FOR I:= 0 STEP 1 UNTIL DIRMOD-1 DO                                    40317200 T 0641:0
                        BEGIN DISKIO(T,[V[I,1]].[CF],60,V[I,1]);                          40317210 T 0645:1
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                    SLEEP([T],IOMASK);                                  40317220 T  0648:3
                    FORGETSPACE([V[I,1]]);                              40317230 T  0650:1
                END;                                                    40317240 T  0651:3
            B:=V.[CF];                                                  40317300 T  0652:1
            IF NEXTSLOT≠0 THEN                                          40317310 T  0653:3
            BEGIN                                                       40317320 T  0654:2
            DISKWAIT(-B,30,FJ);                                         40317400 T  0655:0
            VR[-2×FI+29]:=H;                                            40317500 T  0656:2
            DISKWAIT(B,30,FJ);                                          40317600 T  0659:0
            END ELSE NEXTSLOT:=H;                                       40317610 T  0660:1
            FORGETSPACE(B);                                             40317700 T  0661:2
            DDD:=DDD&A[CTC]; FORGETSPACE(AA);                           40317800 T  0662:1
            IF PBCOUNT=0 OR AUTOPRINT THEN ELSE                         40320100 T  0664:2
            BEGIN;STREAM(PBCOUNT,X←X←GETSPACE(10,0,0)+2);               40320200 T  0666:3
                BEGIN DS←11 LIT" THERE ARE"; X←DI; SI←LOC PBCOUNT;      40320300 T  0670:1
                    DS←4 DEC; DS←18 LIT" PB FILES ON DISK←";            40320400 T  0672:2
                    DI←X; DS←3 FILL;                                    40320500 T  0675:1
                END; SPOUT(X);                                          40320600 T  0675:3
            END;                                                        40320700 T  0676:3
        Z←USERDISKBOTTOM;                                       %MC    40321000 T  0676:3
        X:=-5; DDD[1]:=0;                                               40321100 T  0677:2
         $ SET OMIT = NOT(SHAREDISK)                                    40321104 T  0679:3
         $ SET OMIT = SHAREDISK                                         40321129 T  0679:3
        R:=0; VR:=AVTABLE;                                              40321130 T  0679:3
         $ POP OMIT                                                     40321131 T  0681:2
        RADD:=R;  R:=R-1 ;                                              40321135 T  0681:2
         NT3:=NEUP.NEUF-1;  % DONT USE NT3 BETWEEN HERE AND 40334065    40321140 T  0683:2
         FOR NT2:=0 STEP 1 UNTIL NT3 DO                                 40321200 T  0685:1
            BEGIN I←RA←-1;RLEN←RL←0;RADD←RADD+(Z-USERDISKBOTTOM)×30;    40321300 T  0686:0
                FORTY:=(SU[X:=X+5].FORTYMILLDISK+1)×FORTY;              40321310 T  0691:0
          WHILE (C:=SU[X+(I:=I+1)]).DISKRUNNING AND I LEQ 4 DO          40321400 T  0694:2
        IF NOT C.OCCUPIED THEN                                          40321500 T  0699:0
            BEGIN                                                       %MC 40321600 T  0700:0
                IF C.[CF]=0 THEN                                        %MC 40321700 T  0700:2
                  BEGIN                                                 %MC 40321800 T  0701:3
                   RA←RA+1;                                             %MC 40321810 T  0702:1
                   C:=0;                                                    40321910 T  0703:2
                      S:=(I+1)×FORTY;                                       40322000 T  0704:1
                   J←IF X+I=0 THEN                                      %MC 40322100 T  0706:0
                      FORTY-(DISKBOTTOM+5) ELSE FORTY;                      40322150 T  0707:1
                   END                                                  %MC 40322200 T  0710:1
                      ELSE                                              %MC 40322210 T  0710:1
                   BEGIN AD←M[M[SU[X+I]]],[CF];RA←-1;     END;          %MC 40322220 T  0710:1
                DO                                                      %MC 40322250 T  0715:1
                   BEGIN                                                %MC 40322300 T  0715:1
                      IF C≠0 THEN BEGIN S←M[AD].[DA];J←M[1+AD].[DA] END;%MC 40322400 T  0715:1
                      S:=S+(X MOD 50)DIV 5×MN;                              40322410 T  0721:0
                      IF J>RLEN THEN RLEN:=J;                               40322420 T  0723:3
                      IF X GEQ 50 THEN S:=S+TM;                             40322425 T  0725:3
                      IF J GTR 0 AND (NT1:=S-J) GEQ DISKBOTTOM+3 THEN       40322430 T  0728:1
                      IF (Y:=DDD[ABS(R)]).DEND EQL NT1 THEN                 40322440 T  0731:2
                      BEGIN DDD[R]:=S&(LO:=Y.DSIZE+J)[TODSIZE];             40322442 T  0734:1
                     IF LO GTR RLEN THEN RLEN:=LO END                       40322444 T  0738:2
                        ELSE                                            %MC 40322450 T  0740:2
                      BEGIN                                             %MC 40322460 T  0740:2
                         IF R=AV1 THEN                                  %MC 40322470 T  0741:0
                           BEGIN                                        %MC 40322480 T  0741:3
                              DISKWAIT(A,AV1,Z);Z←Z + AVBLOCK;R← -1;    %MC 40322600 T  0742:1
                           END;                                         %MC 40322700 T  0745:3
                   DDD[R←R+1]← S& J[TODSIZE];RL←RL+1;                       40322800 T  0745:3
```

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                    END;                                                    %MC     40323000 T  0750:1
                  IF C≠0 THEN                                               %MC     40323100 T  0750:1
                   IF M[AD].[CF]≠SEVEN7 THEN                                %MC     40323200 T  0751:0
                       AD←M[AD].[CF] ELSE                                   %MC     40323300 T  0753:2
                       BEGIN                                                %MC     40323400 T  0756:0
                       K←-1;                                                %MC     40323500 T  0756:2
                        WHILE (B←(M[SU[X+I]INX(K←K+1)]))≠0 AND K≤15 DO      %MC     40323600 T  0757:2
                          FORGETSPACE(B);FORGETSPACE(SU[X+I]);              %MC     40323700 T  0763:1
                        C←0;                                                %MC     40323710 T  0766:0
                       END;                                                 %MC     40323800 T  0766:3
                 END UNTIL C=0;                                             %MC     40323900 T  0766:3
          END;                                                                      40324000 T  0768:0
        IF (DDD[R].DEND MOD MN)=((NT1:=5×FORTY)-1) THEN DDD[R].DEND:=NT1+           40324102 T  0768:2
         NT2×MN;  % NT2 = X DIV 5                                                   40324104 T  0773:3
        RL←RL+1;                                                                    40324120 T  0776:0
         VR[NT2+1]:=0&(SU[X].FORTYMILLDISK+1)[TOSPEED]&RL[TONUMENT]&                40324200 T  0777:1
         RADD[TOSTARTWRD]&RLEN[TOMAXSIZ]&(NT2≥NEUP.[3:15] AND NT2<10)[TOEUNP];      40324210 T  0781:3
          IF R=AV1 THEN                                                             40324300 T  0787:1
            BEGIN                                                                   40324400 T  0788:0
              DISKWAIT(A,AV1,Z);                                                    40324500 T  0788:2
              Z←Z+AVBLOCK;R←-1;                                                     40325000 T  0789:3
            END;                                                                    40326000 T  0792:0
        DDD[R:=R+1]:=400000 DIV(2-SU[X].FORTYMILLDISK)+(X MOD 100)DIV 5×MN+1;       40327000 T  0792:0
          IF (LO:=RL DIV 4) LSS AVDIFFMIN THEN LO:=AVDIFFMIN ELSE                   40328000 T  0798:2
          IF LO>AVDIFFMAX THEN LO←AVDIFFMAX;                                        40329000 T  0801:2
            IF (R:=R+LO) GTR AV1 THEN                                               40330000 T  0805:0
             BEGIN                                                                  40331000 T  0806:3
              DISKWAIT(A,AV1,Z);Z←Z+AVBLOCK;                                        40332000 T  0807:1
                 R:=R-AV1 ;                                                         40333000 T  0809:3
             END;                                                                   40334000 T  0811:0
        FORTY:=40000 ;                                                              40334054 T  0811:0
        RADD:=R+1 ;                                                                 40334055 T  0811:3
        END;                                                                        40334056 T  0813:0
        DISKWAIT(A,AV1,Z);                                                          40334057 T  0815:1
         NT2:=NT3 + 3;  % NT2:=NEUP.NEUF+2                                          40334060 T  0816:2
         FOR NT1:=NT3 STEP -1 UNTIL 0 DO                                            40334065 T  0817:3
         IF (NT4:=(NOT SOCK[NT1+20]).[28:20]) ≠ 0 THEN % LOCK OUT THIS EU           40334070 T  0820:0
         BEGIN EUMASK:=TWO(NT1) OR EUMASK;  % TURN ON EU LOCK OUT MASK              40334075 T  0822:3
             IF NT1 THEN VR[NT1 DIV 2 + NT2].[8:20]:=NT4                            40334077 T  0825:0
             ELSE        VR[NT1 DIV 2 + NT2].[28:20]:=NT4;                          40334079 T  0827:3
         END;                                                                       40334081 T  0833:1
        VR[0]:=P(DUP,LOD)&EUMASK[TOMAXSIZ];                                         40334085 T  0835:2
         $ SET OMIT = NOT(SHAREDISK)                                                40334308 T  0838:0
                      FORGETSPACE(SU);                                              40335000 T  0838:0
         $ SET OMIT = SHAREDISK                                                     40335990 T  0839:0
                      UNLOCKDIRECTORY;                                              40336000 T  0839:0
         $ POP OMIT                                                                 40336010 T  0842:2
                 TOGLE:=TOGLE OR ABORTMASK OR USERDISKMASK;                         40336100 T  0842:2
                      IF L>1 THEN SPOUT(L);     % THERE ARE X PB FILES ON DISK      40338000 T  0844:1
                      MESSAGETABLEBUILDER;                                          40339000 T  0846:1
                      FOR W←W STEP -2 WHILE ZSF[W]≠@14 DO                           40353100 T  0846:3
                      BEGIN                                                         40353110 T  0851:0
                           IF W<0 THEN                                              40353120 T  0851:0
                           BEGIN                                                    40353130 T  0851:3
                                DISKWAIT(-(ZSF INX 0),30,ESPADD);                   40353140 T  0852:1
                                FORGETESPDISK(ESPADD);                              40353160 T  0854:2
                                ESPADD←ZSF[29];                                     40353170 T  0855:1
                                W←26;                                               40353180 T  0856:1
                           END;                                                     40353190 T  0857:0
                           FORGETSPACE(DIRECTORYSEARCH(ZSF[W],ZSF[W+1],6));         40353200 T  0857:0
```

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                END;                                                    40353210 T  0859:3
                FORGETSPACE(ZSF); FORGETSPACE(SOCK);                    40356550 T  0862:0
              SUSTATUS(A,DDD,0);                                        40356800 T  0864:0
          END;                                                          40400000 T  0865:2
                                                                                SIZE= 0866 WORDS
PROCEDURE REALFILECLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%            41000000 T  0000:0
                                                          START OF REL SEGMENT; DISK ADDRESS = 00877
BEGIN ARRAY FIB[*],FPB[*],HEADER[*];%                                   41001000 T  0000:0
%%%     DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP   41001500 T  0000:0
        INTEGER KIND,NBUFS,U,BLEN,CODE,UNLABELED,COBOL,I,J,FNUM;        41002000 T  0000:0
        REAL MID,FID,R,D,C,FORMS,STATE;                                 41003000 T  0000:0
      REAL RCW=+0,XTRA=-3;                                              41003100 T  0000:0
      LABEL PX,PBD;                                          %P         41004000 T  0000:0
    LABEL DC19;    REAL STA;                                            41004100 T  0000:0
      LABEL CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,CC;               41005000 T  0000:0
    SWITCH SW← CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,BKUP,DC19;     41006000 T  0000:0
      LABEL EOF,ON,ONE,CLEANUP;%                                        41007000 T  0000:0
      LABEL EOD;                                                        41007100 T  0000:0
      REAL T1,T2,T3,IOD; ARRAY SEGO[*],SKEL[*]; LABEL L1,L2,L3;         41007200 T  0000:0
      REAL T,ACCESS;%                                                   41017000 T  0000:0
      NAME SAIOD=T;                                                     41017100 T  0000:0
      BOOLEAN COMPGO;                                                   41017200 T  0000:0
      REAL TYPE;                                                        41017300 T  0000:0
      DEFINE REW=CODE.[47:1]#,%                                         41018000 T  0000:0
             KRUNCH=NOT CODE.[42:1]#,                                   41018100 T  0000:0
             REL=CODE.[46:1]#,%                                         41019000 T  0000:0
             TIME=CODE.[45:1]#,%                                        41020000 T  0000:0
             LOCK=NOT CODE.[44:1]#,%                                    41021000 T  0000:0
             PURGE=NOT CODE.[43:1]#;%                                   41022000 T  0000:0
      LABEL CLOSEOUT;%                                                  41035000 T  0000:0
      LABEL EOFIT;%                                                     41036000 T  0000:0
      CODE←(NOT *P(.ALPHA)).[18:15];%                                   41038000 T  0000:0
      ALPHA←P(.ALPHA,LOD).[33:15];%                                     41039000 T  0009:3
      FIB←M[ALPHA-3]; FPB←PRT[P1MIX,3];%                                41040000 T  0011:1
      IF (STATE←FIB[5]).[42:1] THEN GO TO CLOSED;%                      41041000 T  0014:3
      NBUFS←FIB[13].[1:9]; FNUM←FIB[4].[13:11];%                        41042000 T  0017:0
      U←FIB[15].[24:6];                                                 41043000 T  0020:0
      UNLABELED←FIB[4].[2:1];%                                          41044000 T  0021:2
      BLEN←FIB[18].[3:15];%                                             41045000 T  0023:0
      STREAM(S←[FPB[FNUM]],D←[MID]);%                                   41046000 T  0024:2
            BEGIN SI←S; DS←2 WDS; DS←3 OCT; DS←5 OCT; DS← OCT END;%     41047000 T  0025:3
      IF D<0 THEN D←D.[18:30];%                                         41047500 T  0027:1
      FORMS←FPB[FNUM+3].[42:1];%                                        41048000 T  0029:3
      I←FIB[13].[28:10];%                                               41049000 T  0031:3
      IF (R=0 AND I≠1) OR R≠0 THEN R←I;%                                41050000 T  0033:1
      COBOL←(FIB[13] AND 1)&([FIB].[8:10]=22)[1:47:1];  % COBOL 60 & 68 41051000 T  0037:1
      IF COBOL>0 OR FIB[4].[7:1] THEN  % COBOL 60 OR SORT               41051100 T  0041:0
      M[FIB INX NOT 1].[3:6]←2                                          41051200 T  0043:0
      ELSE M[ALPHA-7].[3:6]←2;                                          41051300 T  0045:3
      IF (I←J←FIB[10].[3:15])≠0 THEN   %THERE-S A BUFFER RING TO MARK   41051400 T  0051:0
      DO M[I-2].[3:6]←2 UNTIL (I←M[I].[FF]-2)=J;                        41051500 T  0053:2
      COMMENT MARK IT ALL DATA TO PROTECT IT FROM NSEC DS;              41051600 T  0061:0
      IF FIB.[7:1] THEN CHECKJOBORFILEMESS(P1MIX,ALPHA-3,U);            41051620 T  0061:0
      GO TO SWIKIND←FIB[4].[8:4]];%                                     41052000 T  0064:1
CR:CC:CP:LP:SP:MT:PP:PR:CD:                                             41054000 T  0073:2
      OTHERCLOSE(0);                                                    41055000 T  0073:2
      GO TO CLEANUP;%                                                   41142000 T  0074:1
BKUP: TYPE:=FPB[FNUM+3].[43:5]; BACKCLOSE(0);                           41144000 T  0074:3
CLOSEOUT::  STATE.[39:4]←1; TIME←1;%                                    41187000 T  0077:2
CLEANUP::%                                                              41188000 T  0081:2
```

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        IF NOT STATE.[41:1] THEN%                                          41189000 T  0082:0
        IF KIND≤2 OR KIND=11 OR KIND≥6 AND KIND≤9                          41190000 T  0083:0
$ SET OMIT = NOT(PACKETS)                                                  41190099 T  0086:1
        THEN BEGIN                                                         41190200 T  0086:1
$ SET OMIT = PACKETS                                                       41190299 T  0087:3
        IF CLOSEMESS THEN IF (T:=JAR[P1MIX,0])>0 OR T<0 AND COPNMESS THEN  41190300 T  0087:3
$ POP OMIT                                                                 41190301 T  0093:0
        FILEMESSAGE((                                                      41190600 T  0093:0
$ SET OMIT = NOT(PACKETS)                                                  41190699 T  0093:0
            " REL")&TINU[U][6:30:18],0,MID,FID,                            41190800 T  0093:0
            IF KIND=2 OR KIND=9 THEN R ELSE 0,                             41190900 T  0093:0
            IF KIND=2 OR KIND=9 THEN D ELSE 0,                             41191000 T  0093:0
            C,IF KIND=4 THEN 64 ELSE                                       41191100 T  0093:0
            CLOSEMESS AND ((T:=JAR[P1MIX,0])>0                             41191200 T  0093:0
            OR (T<0) AND COPNMESS));                                       41191300 T  0093:0
        END;                                                               41191500 T  0103:0
        IF (FIB[5]←STATE).[42:1] THEN FIB[4].[8:4]←3;%                     41194000 T  0103:0
        IF (T←FIB[10].[3:15])≠0 THEN   %THERE-S A BUFFER RING TO FORGET    41195000 T  0107:3
        BEGIN   %FORGETTING IT                                             41196000 T  0109:3
            FOR I←0 STEP 1 UNTIL NBUFS-1 DO%                               41197000 T  0110:1
            BEGIN J←M[T].[18:15]-2;%                                       41198000 T  0114:2
                FORGETSPACE(T);%                                           41199000 T  0117:1
                T←J;%                                                      41200000 T  0118:0
                M[ALPHA+I]←P(DUP,LOD)&0[2:2:1]&1[25:47:1]%                 41201000 T  0118:3
                            &(ALPHA+1)[33:33:15];%                         41202000 T  0121:3
            END;%                                                          41203000 T  0124:0
            FIB[10].[3:15]←0                                               41204000 T  0126:0
        END;%                                                              41205000 T  0127:0
        IF NOT UNLABELED THEN%                                             41206000 T  0128:2
        IF KIND≠0 THEN%                                                    41207000 T  0129:0
        IF (T←M[ALPHA-2].[33:15])≠0 THEN%                                  41208000 T  0130:1
            FORGETSPACE(T-2);%                                             41209000 T  0133:3
        M[ALPHA-2]←P(DUP,LOD)&P(0,XCH)[8:8:10];%                           41210000 T  0135:2
        FIB[6]←FIB[7]←0;%                                                  41211000 T  0139:0
        IF TIME THEN STOPTIMING(FNUM,1023);                                41212000 T  0141:1
      IF COBOL>0 OR FIB[4].[7:1] THEN          % COBOL 60 OR SORT         41212100 T  0143:2
          M[FIB INX NOT 1].[3:6]:=6 ELSE M[ALPHA-7].[3:6]:=4;              41212200 T  0145:2
        GO TO CLOSED;%                                                     41213000 T  0153:2
DK::    DISKCLOSE(0);                                                      41215000 T  0154:0
        GO CLEANUP;%                                                       41269000 T  0154:3
 DC::                                                                      41281000 T  0155:1
 $ SET OMIT = NOT(DATACOM )                                                41281999 T  0155:1
DC19::                                                                     41307010 T  0155:1
 $ SET OMIT = NOT(DATACOM)                                                 41307020 T  0156:0
        GO CLOSEOUT;                                                       41307290 T  0156:0
 CLOSED::                                                                  41308000 T  0156:2
      RCW:=XTRA;                                                           41309000 T  0156:2
END FILE CLOSE;                                                            41310000 T  0157:3
                                                                                       SIZE= 0158 WORDS
PROCEDURE LINKUP(TYPE,KEY); VALUE TYPE,KEY; REAL TYPE,KEY;                 41310100 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00883
  BEGIN                                                                    41310200 T  0000:0
    KEY := P(.KEY,LOD) INX 0 -1;                                           41310300 T  0000:0
    M[KEY+1]:= (*P(DUP))&TYPE[3:42:6]&(LOGENTRY:=LOGENTRY+1)[25:34:14];    41310400 T  0002:0
    M[KEY+2] := (*P(DUP)) & (XCLOCK + P(RTR))[3:24:24];                    41310500 T  0007:1
    IF (LOGHOLDER INX 0) = 0 THEN                                          41310600 T  0011:0
    BEGIN LOGHOLDER.[CF] := KEY;                                           41310700 T  0012:1
        INDEPENDENTRUNNER(P(.MAINTLOGGER),0,100);                          41310800 T  0014:0
    END ELSE M[LOGHOLDER.[FF]].[CF] := KEY;                                41310900 T  0015:1
    M[KEY].[CF] := 0; LOGHOLDER.[FF] := KEY;                               41311000 T  0018:2
```

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      IF (NUMAINTMESS:=NUMAINTMESS+1) > 0 THEN SLEEP([NUMAINTMESS],-0);          41311100 T  0022:0
    END  LINKUP;                                                                 41311200 T  0026:0
                                                                                           SIZE= 0027 WORDS
  PROCEDURE CHECKJOBORFILEMESS(MIX,FIB,U);                                       41312000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00884
    VALUE MIX,FIB,U; REAL MIX,FIB,U;                                             41312100 T  0000:0
    BEGIN                                                                        41312200 T  0000:0
      REAL KEY,FNUM;                                                             41312300 T  0000:0
        IF NOT JAR[MIX,2].[3:1] THEN                                             41312400 T  0000:0
        BEGIN                                                                    41312500 T  0002:1
          JAR[MIX,2].[3:1] := 1;                                                 41312600 T  0002:3
          KEY := GETSPACE(5,73,0)+2;                                             41312700 T  0005:3
          M[KEY-2].[9:6] := 0;                                                   41312800 T  0008:0
          M[KEY  ] := 0 & MIX[20:43:5];                                          41312900 T  0011:1
          M[KEY+1] := JAR[MIX,5].[6:18];                                         41313000 T  0013:3
          M[KEY+2] := JAR[MIX,5];                                                41313100 T  0017:0
          M[KEY+3] := JAR[MIX,0];                                                41313200 T  0019:3
          M[KEY+4] := JAR[MIX,1];                                                41313300 T  0022:2
          LINKUP(12,KEY);                                                        41313400 T  0025:1
        END;                                                                     41313500 T  0026:1
        IF FIB≠0 THEN IF NOT M[FIB].[6:1] THEN                                   41313600 T  0026:1
        BEGIN                                                                    41313700 T  0029:1
          M[FIB].[6:1] := 1;                                                     41313800 T  0029:3
          FNUM := M[M[FIB] INX 4].[13:11];                                       41313900 T  0032:2
          KEY := GETSPACE(5,73,0)+2;                                             41314000 T  0035:3
          M[KEY-2].[9:6] := 0;                                                   41314100 T  0038:0
          M[KEY  ] := 0 & MIX[20:43:5]                                           41314200 T  0041:1
                       & ((FNUM DIV ETRLNG)+1)[9:39:9];                          41314300 T  0042:2
          M[KEY+1] := JAR[MIX,5].[6:18];                                         41314400 T  0045:3
          M[KEY+2] := M[(FNUM:= PRT[MIX,3] INX FNUM)+3];                         41314500 T  0049:0
          M[KEY+3] := M[FNUM];                                                   41314600 T  0054:0
          M[KEY+4] := M[FNUM+1];                                                 41314700 T  0056:3
          LINKUP(13,KEY);                                                        41314800 T  0060:0
    END;END CHECKJOBORFILEMESS;                                                  41314900 T  0061:0
                                                                                           SIZE= 0062 WORDS
  PROCEDURE LOGOUTMAINT(B); VALUE B; REAL B;                                     41316000 T  0000:0
                                                                   START OF REL SEGMENT; DISK ADDRESS = 00887
    BEGIN                                                                        41316100 T  0000:0
      REAL RCW = +0;                                                             41316200 T  0000:0
      REAL MSOW=-2;                                                              41316250 T  0000:0
      REAL FH = +1, T1 = +2, T2 = +3, T3 = +4, SAVENTRY = +5;                    41316300 T  0000:0
      REAL MFID = +6, FID = +7; BOOLEAN FORKED = +8;                             41316400 T  0000:0
      INTEGER LASTL = +9, SEGNO = +10, SEGSIZ = +11, LDATE = +12;                41316410 T  0000:0
      LABEL CS,SCAN,NEWLOG,BUILDMESS,EXIT,FINISHUP;                              41316500 T  0000:0
      SUBROUTINE FIXCOLDHDR;                                                     41316505 T  0000:0
      BEGIN                                                                      41316510 T  0001:0
        M[FH INX 0]:= @0000500036000601;                                         41316515 T  0001:0
        M[FH INX 1]:= (XCLOCK+P(RTR)) & LDATE[6:30:18];                          41316520 T  0003:0
        STREAM(DATE,X:=FH INX 3);                                                41316525 T  0006:2
        BEGIN SI:=LOC DATE; DS:=8 OCT; DI:=X; DS:=2 LIT"+#";                     41316530 T  0008:0
              SI:=X; SI:=SI+5; DS:=3 CHR;                                        41316535 T  0009:1
        END;                                                                     41316540 T  0010:0
  $ SET OMIT = NOT(SHAREDISK)                                                    41316545 T  0010:1
  $ SET OMIT = SHAREDISK                                                         41316575 T  0010:1
        M[FH INX 4]:= 0 & 72[9:41:7]; % SYSTEM DATA FILE                         41316580 T  0010:1
  $ POP OMIT                                                                     41316585 T  0013:1
        M[FH INX 7]:= (LOGSIZE×6)-1;                                             41316590 T  0013:1
      END FIXCOLDHDR;                                                            41316595 T  0016:1
      P(0,0,0,0,0,0,0,0,0,0,0,0);                                                41317100 T  0018:0
      IF FORKED:= B=0 THEN  % INDEPENDENT RUNNER                                 41317200 T  0021:0
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```
          BEGIN IF MROW > 0 THEN SLEEP([MROW],-0);                          41317300 T  0022:1
                MROW := ABS(MROW);                                          41317400 T  0025:3
                LASTL := LOGENTRY;                                          41317500 T  0026:3
                LOGENTRY := 0;                                              41317600 T  0027:2
          END ELSE LASTL:=ABS(B)-2;                                         41317700 T  0028:1
          FID:= "MNTLOG "                                                   41317710 T  0030:1
      $ SET OMIT = NOT(SHAREDISK)                                           41317719 T  0030:2
                   ;                                                        41317730 T  0030:2
          STREAM(DATE,C:=[LDATE]); BEGIN SI:=LOC DATE; DS:=8 OCT; END;      41317780 T  0031:0
          T1:=SPACE(335);                                                   41317790 T  0032:3
          IF (FH:=DIRECTORYSEARCH(MFID:="MAINT  ",T3:="LOG    "            41317800 T  0035:0
      $ SET OMIT = NOT(SHAREDISK)                                           41317900 T  0036:1
                                                          ,5))=0 THEN       41318100 T  0036:1
          BEGIN                                                             41318200 T  0038:1
            FH:=SPACE(30);                                                  41318210 T  0038:3
            MOVE(30,FH-1,FH);                                               41318220 T  0041:0
            M[FH+ 9]:= 1;                                                   41318230 T  0043:0
            M[FH+10]:= GETUSERDISK(-(M[FH+8]:=LOGSIZE:=1000));              41318240 T  0045:0
      CS:   FIXCULDHDR;                                                     41318250 T  0050:1
            IF FH.[FF]=0 THEN ENTERUSERFILE(-MFID,T3,FH-1)                  41318360 T  0051:0
            ELSE DISKWAIT(FH INX 0,30,FH.[FF]);                             41318370 T  0052:1
            FID:= T3;                                                       41318380 T  0061:1
            MROW:= M[FH INX 10];                                            41318400 T  0062:0
            GO BUILDMESS;                                                   41318500 T  0064:0
          END;                                                              41318600 T  0064:2
          LOGSIZE:= M[FH INX 8];                                            41318610 T  0064:2
          IF M[FH INX 4].[45:1] THEN FORKED:=FORKED OR 2; % JUST COLD STARTED 41318620 T  0066:2
          IF B>0 THEN                                                       41318630 T  0070:1
          BEGIN                                                             41318640 T  0071:0
      $ SET OMIT = NOT(SHAREDISK)                                           41318649 T  0071:2
      $ SET OMIT = SHAREDISK                                                41318679 T  0071:2
            M[FH INX 4]:= 0 & 72[9:41:7]; % SYSTEM DATA FILE                41318680 T  0071:2
      $ POP OMIT                                                            41318681 T  0074:2
            DISKWAIT(-T1,5,MROW:=M[FH INX 10]);                             41318740 T  0074:2
            MLOG:= SEGNO:= M[T1].[24:15];                                   41318760 T  0077:3
      SCAN: IF MLOG≥LOGSIZE-1 THEN                                          41318780 T  0080:1
            BEGIN                                                           41318800 T  0081:2
              IF (FORKED AND 2)≠0 THEN GO CS;                               41318810 T  0082:0
              IF MLOG≠SEGNO THEN DISKWAIT(-T1,5,MROW);                      41318820 T  0083:3
              M[T1]:= P(DUP,LOD) & 1[2:47:1];                               41318840 T  0086:2
              DISKWAIT(T1,5,MROW);                                          41318860 T  0089:1
              MLOG:= IF SEGNO<LOGSIZE-1 THEN SEGNO ELSE LOGSIZE-2;          41318880 T  0090:2
              GO NEWLOG;                                                    41318900 T  0094:1
            END;                                                            41318920 T  0094:3
            DISKWAIT(-T1,30,MROW+(MLOG:=MLOG+1));                           41318940 T  0094:3
            IF M[T1]≠ NOT 0 THEN GO SCAN;                                   41318960 T  0097:3
            MLOG:= MLOG-1;                                                  41318980 T  0100:0
            LOGENTRY:= M[T1+1].[CF]; LASTL:= M[T1+1].[FF];                  41319000 T  0101:1
            IF (T3:=LOGHOLDER INX 0) ≠ 0 THEN                               41319020 T  0106:2
            WHILE T3≠0 DO                                                   41319040 T  0108:1
            BEGIN                                                           41319060 T  0110:0
              IF M[T3]<0 THEN M[T3].[FF]:= LOGENTRY:=LOGENTRY+1             41319080 T  0110:0
              ELSE M[T3+1].[25:14]:= LOGENTRY:=LOGENTRY+1;                  41319100 T  0113:2
              T3:= M[T3] INX 0;                                             41319120 T  0120:0
            END;                                                            41319140 T  0122:0
            IF LASTL≠0 THEN                                                 41319160 T  0122:2
            BEGIN                                                           41319180 T  0123:1
              DISKWAIT(-T1,30,MROW+(SEGNO:=LASTL DIV 30));                  41319200 T  0123:3
              T3:= (M[T1+(SEGSIZ:=LASTL MOD 30)].[39:9]+1)×5;               41319220 T  0126:3
              IF T3>5 THEN IF LASTL+T3 > (T2:=(MLOG+1)×30) THEN             41319240 T  0131:1
```

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                BEGIN                                                   41319260 T  0135:1
                  M[T1+SEGSIZ]:= P(DUP,LOD) & 1[2:47:1] &               41319280 T  0135:3
                              ((T2-LASTL) DIV 5 -1)[39:39:9];           41319300 T  0138:2
                  DISKWAIT(T1,30,MROW+SEGNO);                           41319320 T  0141:2
              END;END;                                                  41319340 T  0143:1
            END;                                                        41319360 T  0143:1
            M[T1  ] := 5 & 62[3:42:6] &                                 41319600 T  0143:1
                       (MLOG +(MDELTA≠0))[24:33:15] & LASTL[9:33:15];   41319700 T  0145:1
            M[T1+1] := LDATE & (XCLOCK+P(RTR))[3:24:24];                41319900 T  0148:3
            M[T1+2] := PATCHLEVEL;                                      41320000 T  0152:1
            M[T1+3] := LOGVERSION;                                      41320100 T  0154:1
            M[T1+4] := DATE;                                            41320200 T  0157:1
            DISKWAIT(T1,5,MROW);                                        41320220 T  0159:1
            IF B>0 THEN % CALLED FROM INITIALIZE                        41320240 T  0160:2
            BEGIN                                                       41320250 T  0161:1
              IF (FORKED AND 2)≠0 THEN FIXCOLDHDR;                      41320255 T  0161:3
              DISKWAIT(FH INX 0,30,FH.[FF]);                            41320260 T  0165:0
              GO FINISHUP;                                              41320270 T  0167:1
            END;                                                        41320280 T  0167:3
        NEWLOG:                                                         41320300 T  0167:3
            IF HOLDFREE=0 THEN SLEEP([TOGLE],HOLDMASK);                 41320310 T  0167:3
            LOCKTOG(HOLDMASK);                                          41320320 T  0171:0
            DISKWAIT(-T1,-30,DIRECTORYTOP-SYSNO);                       41320330 T  0174:2
            SEGNO:= (M[T1+22].[38:10] +1) MOD 1000;                     41320340 T  0176:3
            M[T1+22]:= P(DUP,LOD) & SEGNO[38:38:10];                    41320345 T  0180:1
            DISKWAIT(T1,-30,DIRECTORYTOP-SYSNO);                        41320350 T  0183:2
            UNLOCKTOG(HOLDMASK);                                        41320355 T  0185:2
            STREAM(A:=[ACTDATE],B:=SEGNO,C:=[MFID]);                    41320360 T  0189:0
            BEGIN                                                       41320370 T  0190:1
              SI:=A; SI:=SI+2; DI:=DI+1; DS:=4 CHR; SI:=LOC B; DS:=3 DEC;41320380 T  0190:1
            END;                                                        41320390 T  0191:3
            IF DIRECTORYSEARCH(-MFID,FID,5) ≠ 0 THEN GO NEWLOG;         41320400 T  0192:0
            M[FH INX 3]:= P(DUP,LOD) & LDATE[12:30:18]; % ACCESSED      41320410 T  0194:2
            MOVE(10,FH INX 0,T1);                                       41320420 T  0197:3
            M[FH INX 1]:= (XCLOCK+P(RTR)) & LDATE[6:30:18];             41320430 T  0199:3
            M[FH INX 3]:= P(DUP,LOD) & LDATE[30:30:18]; % CREATION      41320440 T  0203:1
            M[T1+ 4]:= 0 & 1[9:47:1]; % TYPE DATA                     41320450 T  0206:2
            M[T1+ 7]:= (T2:= (MLOG+(MDELTA≠0)+2))×6 -1;                 41320460 T  0209:2
            M[T1+ 8]:= T2+10; % TO SIMPLIFY DUMPING                    41320470 T  0214:2
            M[T1+ 9]:= 2;                                               41320480 T  0217:0
            M[T1+10]:= 0; MOVE(20,[M[T1+10]],[M[T1+11]]);               41320490 T  0219:0
            IF (M[T1+10]:= GETUSERDISK(-T2-10 OR M)) = 0 THEN           41320500 T  0224:2
            BEGIN                                                       41320550 T  0229:0
              STREAM(A:=[MFID],C:=T3:=SPACE(5));                        41320600 T  0229:2
                BEGIN                                                   41320700 T  0232:2
                DS:=18 LIT"-NO USER DISK FOR "; SI:=A; SI:=SI+1;        41320800 T  0232:2
                DS:=7 CHR; DS:=LIT"/"; SI:=SI+1; DS:=7 CHR; DS:=LIT"←";41320900 T  0235:2
                END;                                                    41321000 T  0237:1
              SPOUT(T3);                                                41321100 T  0237:2
              M[T1+10]:= GETUSERDISK(-T2-10);                           41321200 T  0238:1
            END;                                                        41321300 T  0241:3
            T3:=0; SEGNO:=M[T1+10];                                     41321350 T  0241:3
            DO BEGIN                                                    41321400 T  0244:2
              DISKWAIT(-T1-31,300,MROW+T3);                             41321450 T  0244:2
              DISKWAIT(T1+31,300,SEGNO+T3);                             41321500 T  0247:0
            END UNTIL (T3:=T3+10) GEQ T2;                               41321550 T  0249:1
            ENTERUSERFILE(-MFID,FID,T1-1);                              41321600 T  0251:2
            DISKWAIT(FH INX 0,30,FH.[FF]);                              41321650 T  0253:3
        BUILDMESS:                                                      41321700 T  0256:0
            MLOG:= MDELTA:= 0;                                          41321750 T  0256:0
```

```
          M[T1    ]:= 5 & 62[3:42:6];                                    41321800 T  0257:1
          M[T1+ 1]:= LDATE & (XCLOCK+P(RTR))[3:24:24];                   41321900 T  0259:3
          M[T1+ 2]:= PATCHLEVEL;                                         41322000 T  0263:1
          M[T1+ 3]:= LOGVERSION;                                         41322100 T  0265:1
          M[T1+ 4]:= DATE;                                               41322200 T  0268:1
          M[T1+30]:= NOT 0;                                              41322300 T  0270:1
          M[T1+31]:= NUMAINTMESS+100;                                    41322400 T  0272:2
          DISKWAIT(T1,32,MROW);                                          41322450 T  0275:0
          STREAM(A:=[MFID],TOG:=MFID="MAINT  ",M:=MROW,B:=T1);           41322500 T  0276:1
            BEGIN                                                        41322600 T  0278:1
            DS:=29 LIT"#NEW MAINTENANCE LOG FILE IS "; SI:=A; SI:=SI+1;  41322700 T  0278:1
            DS:=7 CHR; DS:=LIT"/"; SI:=SI+1; DS:=7 CHR; DS:=LIT"+";      41322800 T  0282:3
            TOG(DI:=DI-1; DS:=4 LIT" AT "; SI:=LOC M; DS:=8 DEC; DS:=LIT"+";  41322820 T  0284:2
                DI:=DI-9; DS:=7 FILL);                                   41322840 T  0287:0
            END;                                                         41322900 T  0287:3
        EXIT:                                                            41323000 T  0288:0
          SPOUT(T1);                                                     41323100 T  0288:0
          IF B>0 THEN                                                    41323110 T  0288:3
          BEGIN                                                          41323120 T  0289:2
            T1:= GETSPACE(15,9,0) +2;                                    41323130 T  0290:0
      FINISHUP:                                                          41323140 T  0292:1
            MOVE(13,B,T1+2);                                             41323150 T  0292:1
            M[T1   ]:= 2;                                                41323160 T  0294:1
            M[T1+1]:= LDATE;                                             41323170 T  0295:3
            LINKUP(15,T1);                                               41323180 T  0297:3
          END ELSE                                                       41323190 T  0298:3
          IF (T1:=P(.MAINTLOGARRAY,LOD) INX 0)≠0 THEN MOVE(31,T1-2,T1-1); 41323300 T  0298:3
          T1 := FH INX 0;                                                41323400 T  0306:0
          WHATMCP(T1+4);                                                 41323500 T  0307:1
          STREAM(KTR:=T1+4:);                                            41323600 T  0308:2
          BEGIN SI:=KTR;                                                 41323700 T  0310:0
                4(52(IF SC≠"←" THEN SI:=SI+1 ELSE JUMP OUT 2 TO LL));    41323800 T  0310:1
          LL:   KTR:=SI;                                                 41323900 T  0313:0
          END;                                                           41324000 T  0313:1
          NT1:= P INX 0;                                                 41324100 T  0313:2
          M[T1]:= (NT1-T1) DIV 5;                                        41324200 T  0314:2
          M[T1+1]:= LDATE;                                               41324300 T  0317:0
        $ SET OMIT = NOT(SHAREDISK)                                      41324400 T  0319:0
        $ SET OMIT = SHAREDISK                                           41324700 T  0319:0
          STREAM(A:=[AVTABLE[1]],N:=NEUP.NEUF,D:=T1+3);                  41324800 T  0319:0
        $ POP OMIT                                                       41324801 T  0321:2
          BEGIN SI:=LOC N; DS:=WDS; DI:=DI-6; SI:=A; SI:=SI+4;           41324900 T  0321:2
                N(IF SB THEN DS:=SET ELSE DS:=RESET; SI:=SI+8);          41325000 T  0322:3
          END;                                                           41325100 T  0325:0
        $ SET OMIT = NOT(SHAREDISK)                                      41325200 T  0325:1
          M[T1+2] := MCPBASE;                                            41325400 T  0325:1
          LINKUP(16,T1);                                                 41325500 T  0327:1
          IF FORKED THEN BEGIN MROW:=NABS(MROW); KILL([MSCW]); END;      41325600 T  0328:1
        END LOGOUTMAINT;                                                 41325700 T  0330:3
                                                                                   SIZE= 0331 WORDS
      PROCEDURE MAINTLOGGER(B); VALUE B; REAL B;                         41327000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00899
        BEGIN                                                            41327100 T  0000:0
          REAL RCW = +0;                                                 41327200 T  0000:0
          REAL MSCW=-2;                                                  41327250 T  0000:0
          ARRAY MLA = MAINTLOGARRAY[*];                                  41327300 T  0000:0
          REAL KLUDGE = +1, KEY = +2, TRANS = +3, RECS = +4, WT = +5;    41327400 T  0000:0
          REAL WMCP  = +6, WLOG = +7, WD = +8, A = +9, LASTENTRY = +10;  41327500 T  0000:0
          REAL T1 = +11, T2 = +12, U = +13;                              41327600 T  0000:0
          REAL LOCN= WLOG, NUM= WD;                                      41327700 T  0000:0
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LABEL LOGANOTHER,RECYCLE,KILLL;                                          41327800 T  0000:0
P(0,0,0,0,0,0,0,0,0,0,0,0,0);                                            41328000 T  0000:0
IF MROW > 0 THEN SLEEP([MROW],-0);                                       41328200 T  0003:1
MROW := ABS(MROW);                                                       41328300 T  0006:1
IF (A:=P(.MLA,LOD) INX 0) = 0 THEN                                       41328400 T  0007:1
BEGIN                                                                    41328500 T  0009:1
  MLA := [M[(A:=GETSPACE(33,9,0)+3)]] & 32[8:38:10];                     41328600 T  0009:3
  MOVE(31,A-2,A-1);                                                      41328700 T  0014:0
  MLA[30] := NOT 0;                                                      41328800 T  0016:2
  IF MDELTA≠0 THEN DISKWAIT(-A,30,MROW+MLOG+1);                          41328900 T  0018:0
END;                                                                     41329000 T  0021:3
LOGANOTHER:                                                              41329100 T  0021:3
IF M[LOCN:=LOGHOLDER INX 0] < 0 THEN                                     41329200 T  0021:3
BEGIN                                                                    41329300 T  0024:1
  MOVE(4,LOCN,[TRANS]); KLUDGE := TRANS INX 0;                           41329400 T  0024:3
  KEY := -0 & TRANS[26:20:13] & (TRANS.[2:1]+4)[3:42:6] &                41329500 T  0027:2
              TRANS[9:9:9] & TRANS[18:18:2] & TRANS[20:4:5];             41329600 T  0030:3
  TRANS:= TRANSACTION[U:=TRANS.[2:2]+16]&(XCLOCK+P(RTR))[3:24:24];       41329700 T  0034:2
  LOGHOLDER.[CF] := LOCN := [KLUDGE] INX 0;                              41329800 T  0038:2
  IF KLUDGE=0 THEN LOGHOLDER.[FF] := LOCN;                               41329900 T  0040:3
END;                                                                     41330000 T  0043:1
NUM := (M[LOCN+1].[39:9]+1) × 5;                                         41330100 T  0043:1
IF (LASTENTRY:=(MLOG+1)×30+MDELTA) + NUM > (LOGSIZE-1)×30 THEN           41330200 T  0046:3
BEGIN                                                                    41330300 T  0051:0
  IF MDELTA≠0 THEN                                                       41330400 T  0051:2
  BEGIN MLA[31]:=LOGENTRY; DISKWAIT(A,32,MROW+MLOG+1); END;              41330500 T  0052:1
  LOGOUTMAINT(-(M[LOCN+1].[25:14]+1));                                   41330600 T  0056:1
  LOGENTRY := 0; T1 := LOCN;                                             41330700 T  0059:2
  WHILE T1 ≠ 0 DO                                                        41330800 T  0061:0
  BEGIN                                                                  41330900 T  0062:1
    IF M[T1]<0 THEN M[T1].[FF] := LOGENTRY:=LOGENTRY+1                   41331000 T  0062:1
    ELSE M[T1+1].[25:14] := LOGENTRY:=LOGENTRY+1;                        41331100 T  0065:3
    T1 := M[T1] INX 0;                                                   41331200 T  0072:1
  END;                                                                   41331300 T  0074:1
  LASTENTRY := 30;                                                       41331400 T  0074:3
END;                                                                     41331500 T  0075:2
RECYCLE:                                                                 41331600 T  0075:2
  IF (T1:=30-MDELTA)  >  NUM THEN                                        41331700 T  0075:2
  BEGIN                                                                  41331800 T  0077:1
    MOVE(NUM,LOCN+1,[MLA[MDELTA]]);                                      41331900 T  0077:3
    MDELTA := MDELTA + NUM;                                              41332000 T  0080:0
  END ELSE                                                               41332100 T  0081:1
  BEGIN                                                                  41332200 T  0081:1
    MOVE(T1,LOCN+1,[MLA[MDELTA]]); MLA[31]:=LOGENTRY & LASTENTRY[CTF];   41332300 T  0081:3
    DISKWAIT(A, 32,MROW+(MLOG:=MLOG+1));                                 41332400 T  0085:0
    LOCN := LOCN + T1;                                                   41332500 T  0088:2
    NUM  := NUM - T1;                                                    41332600 T  0089:3
    MDELTA := 0; MOVE(31,A -2, A -1);                                    41332700 T  0091:0
    IF NUM ≠ 0 THEN GO RECYCLE;                                          41332800 T  0094:1
  END;                                                                   41332900 T  0095:2
  NUMAINTMESS:=NUMAINTMESS - 1;                                          41332950 T  0095:2
  IF (T1:=M[T2:=LOGHOLDER INX 1]) < 0 THEN        % SPOUT MESSAGE FOR RE-  41333000 T  0096:3
  IF (T1.[3:6] AND #76) = 4 THEN                  % COVERED DISK/DRUM ERR  41333001 T  0099:3
$ SET OMIT = PACKETS                                                     41333002 T  0102:0
  IF DISKMSG THEN                                 % IF REQUESTED TO DO SO  41333003 T  0102:0
$ POP OMIT                                                               41333004 T  0103:1
  BEGIN STREAM(A:=TINU[U], R:=RECS.[1:4], X:=KEY.[20:5], S:=WT.[27:6],   41333005 T  0103:1
              B:=[RECS], DSK:=T1.[8:1], D:=T1:=SPACE(10));               41333010 T  0106:0
        BEGIN SI:=LOC A; SI:=SI+5; DS:=LIT" "; DS:=3 CHR;                41333015 T  0110:1
              DS:=3 DEC; A:=DI; DI:=DI-3; DS:=2 FILL; DI:=A;             41333020 T  0111:2
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                DS:=14 LIT" RETRIES, MIX=";                                  41333025 T  0112:3
                DS:=2 DEC; A:=DI; DI:=DI-2; DS:=FILL; DI:=A;                 41333030 T  0114:3
                SI:=8; DS:=5 LIT", DA="; CI:=CI+DSK; GO TO DRM;              41333033 T  0116:0
                SI:=SI+1; DS:=7 CHR; DS:=7 LIT", SEGS=";                     41333036 T  0118:0
                SI:=LOC S; DS:=2 DEC; SI:=8; SI:=SI+16; GO TO L;             41333037 T  0119:3
            DRM: SI:=SI+11; 5(DS:=3 RESET;                                   41333039 T  0121:0
                3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB)); SI:=SI+2;    41333042 T  0121:3
            L:  DS:=4 LIT", R=";                                             41333045 T  0124:1
                16(DS:=3 RESET;                                              41333048 T  0125:0
                   3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB));           41333050 T  0125:2
                SI:=SI-5; DS:=5 LIT", IO=";                                  41333055 T  0127:3
                IF SB THEN DS:=2 LIT"4,"; SKIP SB;                           41333060 T  0129:0
                IF SB THEN DS:=2 LIT"3,"; SKIP SB;                           41333065 T  0130:1
                IF SB THEN DS:=2 LIT"2,"; SKIP SB;                           41333070 T  0131:2
                IF SB THEN DS:=2 LIT"1,";                                    41333075 T  0132:3
                DI:=DI-1; DS:=LIT"+";                                        41333080 T  0133:3
            END;                                                             41333085 T  0134:2
            SPOUTER(T1,PSEUDOMIX[KEY,[20:5]],DISKMSG OR 34);                 41333090 T  0134:3
        END;                                                                 41333095 T  0135:2
        IF (T1:=M[LOGHOLDER] INX 0) = 0 THEN                                 41333100 T  0135:2
        BEGIN                                                                41333200 T  0138:0
          IF MDELTA ≠ 0 THEN                                                 41333300 T  0138:2
          BEGIN                                                              41333400 T  0139:1
            MLA[31] := LOGENTRY & LASTENTRY[CTF];                            41333500 T  0139:3
            DISKWAIT(A,32,MROW+MLOG+1);                                      41333600 T  0141:2
          END;                                                               41333700 T  0143:3
          RECS := 5 & 62[3:42:6] & MLOG[24:33:15] & LASTENTRY[9:33:15];      41333800 T  0143:3
          WT   := 0 & (XCLOCK+P(RTR))[3:24:24];                              41333900 T  0147:2
          WMCP := PATCHLEVEL;                                                41334000 T  0149:3
          WLOG := LOGVERSION;                                                41334100 T  0150:2
          WD   := DATE;                                                      41334200 T  0152:1
          DISKWAIT([RECS ] INX 0,5,MROW);                                    41334300 T  0153:0
          T1 := M[LOGHOLDER] INX 0;                                          41334400 T  0154:3
        END;                                                                 41334500 T  0156:3
        IF M[T2] LSS 0 THEN M[T2],[2:1] := 1 ELSE FORGETSPACE(T2);           41334600 T  0156:3
        IF T1 ≠ 0 THEN BEGIN LOGHOLDER.[CF]:=T1; GO LOGANOTHER; END;         41334700 T  0162:3
      KILLL:                                                                 41334800 T  0165:3
        LOGHOLDER.[CF] := 0; MROW := NABS(MROW);                             41334900 T  0165:3
        IF LOGHOLDER.[9:9]=0 THEN BEGIN FORGETSPACE(A -1); MLA:=0; END;      41335000 T  0168:0
        KILL([MSCW]);                                                        41335100 T  0171:3
      END MAINTLOGGER;                                                       41335200 T  0172:2
                                                                                   SIZE= 0173 WORDS
$ SET OMIT = NOT(STATISTICS)                                                 41399999 T  0000:0
PROCEDURE MESSAGETABLEBUILDER;                                               41430000 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00905
BEGIN                                                                        41430100 T  0000:0
INTEGER I,I1,I2,TBL,TBLCNT;                                                  41430300 T  0000:0
DEFINE MARKER = "++++++++"#;                                                 41430400 T  0000:0
LABEL L, START;                                                              41430500 T  0000:0
    GO TO START; P(.L);                                                      41430600 T  0000:0
L:::                                                                         41430700 T  0002:0
%*** BEGINNING OF OPTION RESERVED WORD TABLE ****************************    41430800 T  0002:0
     "DRAO",    "0000",      %47%                                            41430900 T  0002:0
     "DRBO",    "0000",      %46%                                            41431000 T  0004:0
     "BOJO",    "0000",      %45%                                            41431100 T  0006:0
     "EOJO",    "0000",      %44%                                            41431200 T  0008:0
     "OPEN",    "0000",      %43%                                            41431300 T  0010:0
     "TERM",    "NATE",      %42%                                            41431400 T  0012:0
     "DATE",    "0000",      %41%                                            41431500 T  0014:0
     "TIME",    "0000",      %40%                                            41431600 T  0016:0
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        "ONEB",     "REAK",     %39%                                41431700 T  0018:0
        "AUTO",     "PRNT",     %38%                                41431800 T  0020:0
        "CLEA",     "RWRS",     %37%                                41431900 T  0022:0
    $ SET OMIT = NOT DATACOM                                        41432000 T  0024:0
        "    ",     "    ",     %36%                                41432300 T  0024:0
    $ RESET OMIT                                                    41432400 T  0026:0
        "CMPL",     "FILE",     %35%                                41432500 T  0026:0
        "CLOS",     "E000",     %34%                                41432600 T  0028:0
        "ERRO",     "RMSG",     %33%                                41432700 T  0030:0
        "RETO",     "0000",     %32%                                41432800 T  0032:0
        "LIBM",     "SG00",     %31%                                41432900 T  0034:0
        "SCHE",     "DMSG",     %30%                                41433000 T  0036:0
        "SECM",     "SG00",     %29%                                41433100 T  0038:0
        "DSKT",     "0G00",     %28%                                41433200 T  0040:0
        "RELT",     "0G00",     %27%                                41433300 T  0042:0
        "PBDR",     "EL00",     %26%                                41433400 T  0044:0
    $ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                        41433500 T  0046:0
            0,          0,      %25%                                41433800 T  0046:0
    $ RESET OMIT                                                    41433900 T  0048:0
        "DISK",     "MSG0",     %24%                                41434000 T  0048:0
        "NOT ",     "USED",     %23%                                41434100 T  0050:0
        "NOT ",     "USED",     %22%                                41434200 T  0052:0
        "PBDO",     "NLY0",     %21%                                41434300 T  0054:0
        "SAVE",     "PBT0",     %20%                                41434400 T  0056:0
        "RSMS",     "G000",     %19%                                41434500 T  0058:0
        "AUTO",     "UNLD",     %18%                                41434600 T  0060:0
        "RNAL",     "L000",     %17%                                41434700 T  0062:0
        "CODE",     "0LAY",     %16%                                41434800 T  0064:0
        "CORE",     "ST00",     %15%                                41434900 T  0066:0
        "DATA",     "0LAY",     %14%                                41435000 T  0068:0
        "HALT",     "0000",     %13%                                41435100 T  0070:0
        "NOT ",     "USED",     %12%                                41435200 T  0072:0
        "NOT ",     "USED",     %11%                                41435300 T  0074:0
        "NOT ",     "USED",     %10%                                41435400 T  0076:0
        "NOT ",     "USED",     % 9%                                41435500 T  0078:0
        "STOP",     "TEST",     % 8%                                41435600 T  0080:0
        "PNCH",     "LOCK",     % 7%                                41435700 T  0082:0
        "CDON",     "LY00",     % 6%                                41435800 T  0084:0
        "PKT0",     "NLY0",     % 5%                                41435900 T  0086:0
        "SEPA",     "RATE",     % 4%                                41436000 T  0088:0
        "NOT ",     "USED",     % 3%                                41436100 T  0090:0
        "ARDV",     "ARK ",     % 2%                                41436200 T  0092:0
        "AUTO",     "MESS",     % 1%                                41436300 T  0094:0
        "OPTN",     "0000",     % 0%                                41436400 T  0096:0
        "+000",     "0000",     %STP                                41436500 T  0098:0
        MARKER,                                                     41436600 T  0100:0
%*** END OF OPTION RESERVED WORD TABLE ********************************         41436700 T  0101:0
%*** BEGINNING OF TERMINAL MESSAGE TABLE ******************************         41440000 T  0101:0
            0,              % 0%                                    41440100 T  0101:0
        "8STACK ", "6OVRFLW",   % 1%                                41440200 T  0102:0
        "8OPRTR ", "5DS=EDO",   % 3%                                41440300 T  0104:0
        "8FLAG B", "2IT0000",   % 5%                                41440400 T  0106:0
        "8INVALD", "6 INDEX",   % 7%                                41440500 T  0108:0
        "8EXPON ", "6OVRFLW",   % 9%                                41440600 T  0110:0
        "8INTGR ", "6OVRFLW",   %11%                                41440700 T  0112:0
        "8DIV BY", "5 ZERO0",   %13%                                41440800 T  0114:0
        "8EXCESS", "5 TIMEO",   %15%                                41440900 T  0116:0
        "8INVALD", "6 ADRSS",   %17%                                41441000 T  0118:0
        "8UNEXP ", "6IO ERR",   %19%                                41441100 T  0120:0
        "8DC TU ", "8NOT OU",   %21%                                41441200 T  0122:0
```

options

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"8TPUT P", "6OSSBLE",                                          41441300 T  0124:0
"8FILE U", "8NOPENE",      %25%                                41441400 T  0126:0
"1D00000",                                                     41441500 T  0128:0
"8INVALI", "5D EOJO",      %28%                                41441600 T  0129:0
"8INVALI", "5D PRLO",      %30%                                41441700 T  0131:0
"8MEMORY", "8 PARIT",      %32%                                41441800 T  0133:0
"1Y00000",                                                     41441900 T  0135:0
"8OPRTR ", "5ES-ED.",      %35%                                41442000 T  0136:0
"8INVALD", "8 ARRAY",      %37%                                41442100 T  0138:0
"8 SIZE ", "3IDN...",                                          41442200 T  0140:0
"8INVALD", "8 INPUT",      %41%                                41442300 T  0142:0
"6 DATUM",                                                     41442400 T  0144:0
"8TYPE M", "8ISMATC",      %44%                                41442500 T  0145:0
"8H READ", "4STMT..",                                          41442600 T  0147:0
"8OUT OF", "5 DATA.",      %48%                                41442700 T  0149:0
"8NON-CO", "8NFORMA",      %50%                                41442800 T  0151:0
"8L ARRA", "2YS....",                                          41442900 T  0153:0
"8NON-SQ", "8UARE M",      %54%                                41443000 T  0155:0
"5ATRIX.",                                                     41443100 T  0157:0
"8NEARLY", "8 SINGU",      %57%                                41443200 T  0158:0
"8LAR MA", "4TRIX..",                                          41443300 T  0160:0
"8USER D", "4S-ED..",      %61%                                41443400 T  0162:0
"8INVALD", "8 DYNAM",      %63%                                41443500 T  0164:0
"8IC DIA", "1L.....",                                          41443600 T  0166:0
"8INVALD", "8 DETAC",      %67%                                41443700 T  0168:0
"1H.....",                                                     41443800 T  0170:0
"8PARITY", "6 ERROR",      %70%                                41443900 T  0171:0
"8DIMENS", "8ION SI",      %72%                                41444000 T  0173:0
"6ZE ERR",                                                     41444100 T  0175:0
"8INVALD", "8 FILE ",      %75%                                41444200 T  0176:0
"4NAME..",                                                     41444300 T  0178:0
"8INVALD", "8 BLOCK",      %78%                                41444400 T  0179:0
"5 EXIT.",                                                     41444500 T  0181:0
"8INVALI","5D COM.",       %81%                                41444600 T  0182:0
"8EXCESS", "8 IO TI",      %83%                                41444700 T  0184:0
"2ME....",                                                     41444800 T  0186:0
"8DS-ED ", "8BY TAS",      %86%                                41444900 T  0187:0
"8K ANCE", "4STOR..",                                          41445000 T  0189:0
"8ES-ED ", "8BY TAS",      %90%                                41445100 T  0191:0
"8K ANCE", "4STOR..",                                          41445200 T  0193:0
"8INVALI", "8D TASK",      %94%                                41445300 T  0195:0
"8 INITI", "5ATION.",                                          41445400 T  0197:0
"8INVALI", "8D TASK",      %98%                                41445500 T  0199:0
"8 CONTI", "8NUATIO",                                          41445600 T  0201:0
"1N.....",                                                     41445700 T  0203:0
"8SOFTWA", "8RE INT",      %103%                               41445800 T  0204:0
"8ERRUPT", "8 QUEUE",                                          41445900 T  0206:0
"6 OVFLW",                                                     41446000 T  0208:0
"8INVALD", "8 LINKE",      %108%                               41446100 T  0209:0
"6D TAPE",                                                     41446200 T  0211:0
        0,                 %STP%                               41449700 T  0212:0
MARKER,                                                        41449800 T  0213:0
%*** END OF TERMINAL MESSAGE TABLE ************************************** 41449900 T  0214:0
%*** BEGINNING OF KEYIN MESSAGE TABLE ************************************ 41450000 T  0214:0
COMMENT                                                        41450100 T  0214:0
KEYIN MESSAGE TABLE ENTRIES -                                  41450200 T  0214:0
EACH TABLE WORD IS CONFIGURED AS FOLLOWS:                      41450300 T  0214:0
[ 6:6 ] = - MIX OR INFO CODE -                                 41450400 T  0214:0
          0 = INFO MESSAGE ONLY                                41450500 T  0214:0
          1 = MIX OR INFO MESSAGE                              41450600 T  0214:0
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                2 = MIX MESSAGE ONLY                                    41450700 T  0214:0
[12:12] = TWO LETTER KEYBOARD MESSAGE                                   41450800 T  0214:0
[24:6 ] = - KEYIN PROCEDURE TO BE CALLED -                              41450900 T  0214:0
                0 = PROCEDURE KEYIN0 ( DIRECT CALL )                    41451000 T  0214:0
                1 = PROCEDURE KEYIN1 ( DIRECT CALL )                    41451100 T  0214:0
                2 = PROCEDURE KEYIN2 ( INDEPENDENT RUNNER )             41451200 T  0214:0
[33:1 ] = 1 FOR ALLOWABLE STANDARD RJE REQUESTS                         41451300 T  0214:0
[34:2 ] = - MIXCODE ( FOR MIX MESSAGES ) -                              41451400 T  0214:0
                1 = JOB SHOULD BE WAITING FOR THIS INPUT                41451500 T  0214:0
                2 = JOB SHOULD BE RUNNING, BUT NOT NECESSARILY          41451600 T  0214:0
                    WAITING                                             41451700 T  0214:0
                3 = JOB NEED NOT BE RUNNING                             41451800 T  0214:0
[36:12] = LABEL NUMBER ( SWITCH LOCATION IN PROCEDURE)                  41451900 T  0214:0
END OF COMMENT;                                                         41452000 T  0214:0
"2AX0501",              %AX% INPUT TO JOB FROM SPO                      41452100 T  0214:0
"2IL0102",              %IL% INPUT FILE WITH LABEL SPECIFIED            41452200 T  0215:0
"2UL0103",              %UL% INPUT FILE WITH UNKNOWN LABEL              41452300 T  0216:0
"0QT0004",              %QT% QUIT PROCESSING PRINTER-BACK UP            41452400 T  0217:0
"2QT0604",              %QT% QUIT PROCESSING PRINTER-BACK UP            41452500 T  0218:0
"2OU0105",              %OU% OUPUT TO SPECIFIED UNIT                    41452600 T  0219:0
"0WY0006",              %WY% SYSTEM INQUIRY                             41452700 T  0220:0
"2WY0506",              %WY% SYSTEM INQUIRY                             41452800 T  0221:0
"0RY0007",              %RY% READY PERIPHERAL UNIT OR SYSTEM            41452900 T  0222:0
"0DS0008",              %DS% TERMINATE JOB                              41453000 T  0223:0
"2DS0608",              %DS% TERMINATE JOB                              41453100 T  0224:0
"2SD0209",              %SD% TERMINATE JOB WITHOUT REMOVING DECK        41453200 T  0225:0
"0TF0410",              %TF% TYPE CORE FACTOR                           41453300 T  0226:0
"0SF0011",              %SF% SET CORE FACTOR                            41453400 T  0227:0
"2RM0512",              %RM% REMOVE DUP FILE                            41453500 T  0228:0
$ SET OMIT = NOT(DUMP OR DEBUGGING)                                     41453600 T  0229:0
"0DP7013",              %DP% CORE DUMP                                  41453900 T  0229:0
$ SET OMIT = NOT DEBUGGING                                              41454000 T  0230:0
"0DD7014",              %DD% DISK DUMP                                  41454500 T  0230:0
"0DB7015",              %DB% DISK BUG                                   41454600 T  0231:0
"0PT7016",              %PT% PRINT TRACE                                41454700 T  0232:0
$ RESET OMIT                                                            41454800 T  0233:0
"2ST0617",              %ST% STOP JOB                                   41454900 T  0233:0
"0CM0018",              %CM% CHANGE MCP                                 41455000 T  0234:0
"0SV0019",              %SV% SAVE PERIPHERAL UNIT                       41455100 T  0235:0
"0CL0020",              %CL% CLEAR PERIPHERAL UNIT OR SYSTEM            41455200 T  0236:0
"1BK0721",              %BK% BREAK                                      41455300 T  0237:0
"2OK0522",              %OK% CONTINUE PROCESSING JOB                    41455400 T  0238:0
"2FM0123",              %FM% FORMS READY                                41455500 T  0239:0
"2FR0124",              %FR% FINAL REEL (COBOL)                         41455600 T  0240:0
"2OF0125",              %OF% OPTIONAL FILE-COBOL, OK FILE-LIBMAIN       41455700 T  0241:0
"2TI0626",              %TI% PRINT TIME FOR JOB                         41455800 T  0242:0
"2PR0227",              %PR% PRINT PRIORITY OF JOB                      41455900 T  0243:0
"0RO0028",              %RO% RESET OPTION BIT                           41456000 T  0244:0
"0SO0029",              %SO% SET OPTION BIT                             41456100 T  0245:0
"2IT0230",              %IT% MAINTENANCE INTERRUPT                      41456200 T  0246:0
"0WI0481",              %WI% WHAT INTRINSIC                             41456300 T  0247:0
"2IF0532",              %IF% IGNORE IN-USE FILE                         41456400 T  0248:0
"1**77**",              %**% END OF FIRST KEYIN PROCEDURE CALLS         41459900 T  0249:0
$ SET OMIT = NOT(DATACOM AND DCSPO)                                     41460000 T  0250:0
"0BO7001",              %BO% BLACK OUT                                  41461500 T  0250:0
"0LI7002",              %LI% LOG IN                                     41461600 T  0251:0
"0LO7403",              %LO% LOG OUT                                    41461700 T  0252:0
"0ZZ7004",              %ZZ% SENSE EOT                                  41461800 T  0253:0
"0TC7005",              %TC% TIME AND CHARGES FOR REMOTE STATION        41461900 T  0254:0
"0HM7006",              %HM% HALT MESSAGES                              41462000 T  0255:0
```

KEYIN TABLE

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"2HR7207",          %HR% HALT MESSAGES FOR JOB                    41462100 T 0256!0
"0SS7408",          %SS% STATION TO STATION MESSAGE               41462200 T 0257!0
"2SS7208",          %SS% STATION TO STATION MESSAGE               41462300 T 0258!0
"0BS7009",          %BS% SET BACK UP SPO                          41462400 T 0259!0
"0US7010",          %US% RESET BACK UP SPO                        41462500 T 0260!0
"0SC7011",          %SC% PRINT SPO CONSOLES                       41462600 T 0261!0
"0QV7012",          %QV% SET REMOTE TIME OUT VALUE                41462700 T 0262!0
$ SET OMIT = NOT DATACOM                                          41462800 T 0263!0
"0RR7013",          %RR% RESET REMOTE AS NON-SPO                  41463100 T 0263!0
$ SET OMIT = NOT AUXMEM                                           41463200 T 0264!0
"0LA7014",          %LA% LIST AUXMEM FILES                        41463600 T 0264!0
"0CA7015",          %CA% CHANGE AUXMEM FILES                      41463700 T 0265!0
$ RESET OMIT                                                      41463800 T 0266!0
"0DT1016",          %DT% CHANGE DATE                              41463900 T 0266!0
"0WD1417",          %WD% WHAT DATE                                41464000 T 0267!0
"0TR1018",          %TR% SET TIME                                 41464100 T 0268!0
"0WT1419",          %WT% WHAT TIME                                41464200 T 0269!0
"0WM1420",          %WM% WHAT MCP                                 41464300 T 0270!0
"0CC1421",          %CC% CONTROL CARD (SEE 16043680 FOR QMARK)    41464400 T 0271!0
"0OL1022",          %OL% PRINT OUTPUT LABEL                       41464500 T 0272!0
"0PB1423",          %PB% START PRINTER BACK-UP                    41464600 T 0273!0
"0RN1024",          %RN% SET PSEUDO READERS                       41464700 T 0274!0
"0LD1025",          %LD% START LOAD CONTROL                       41464800 T 0275!0
"0RD1026",          %RD% REMOVE PSEUDO DECK                       41464900 T 0276!0
$ SET OMIT = NOT PACKETS                                          41465000 T 0277!0
"0RP7427",          %RP% REMOVE PACKET                            41465300 T 0277!0
$ RESET OMIT                                                      41465400 T 0278!0
"0ED1028",          %ED% END PSEUDO DECK                          41465500 T 0278!0
$ SET OMIT = NOT STATISTICS                                       41465600 T 0279!0
"0SI7029",          %SI% SET STATISTICS INTERVAL                  41465900 T 0279!0
$ SET OMIT = NOT(DATACOM AND DCLOG)                               41466000 T 0280!0
"0LR7030",          %LR% SET REMOTE LOG                           41466300 T 0280!0
$ RESET OMIT                                                      41466400 T 0281!0
"2OT1631",          %OT% PRINT VALUE OF PRT CELL                  41466500 T 0281!0
"2IN1632",          %IN% SET VALUE OF PRT CELL                    41466600 T 0282!0
"0FE1033",          %FE% ENTER MAINT. LOG COMMENT                 41466700 T 0283!0
"1OC1234",          %OC% ENTER OPERATOR COMMENT IN LOG            41466800 T 0284!0
"0SQ1035",          %SQ% DISK SQUASH                              41466900 T 0285!0
$ SET OMIT = NOT SEPTICTANK                                       41467000 T 0286!0
"0CS7036",          %CS% CREATE SEPTIC TANK                       41467400 T 0286!0
"0HS7037",          %HS% HALT SEPTIC TANK                         41467500 T 0287!0
$ RESET OMIT                                                      41467600 T 0288!0
$ SET OMIT = NOT(WORKSET)                                         41467700 T 0288!0
$ SET OMIT = WORKSET                                              41468000 T 0288!0
"0WK7338",          %WK% WORKSET REQUESTS                         41468100 T 0288!0
$ POP OMIT                                                        41468200 T 0289!0
"1**77**",          %**% END OF SECOND KEYIN PROCEDURES           41469900 T 0289!0
$ SET OMIT = NOT(DATACOM AND DCSPO)                               41470000 T 0290!0
"1WU7201",          %WU% WHAT (REMOTE) USERS                      41470500 T 0290!0
"0WP7002",          %WP% WHAT PROGRAMS ATTACHED TO REMOTES        41470600 T 0291!0
"2WA7202",          %WA% WHAT (REMOTES) ATTACHED TO JOB           41470700 T 0292!0
$ SET OMIT = NOT(DATACOM AND DCSPO AND DCLOG)                     41470800 T 0293!0
"0WR7003",          %WR% WHAT REMOTE LOG                          41471100 T 0293!0
$ RESET OMIT                                                      41471200 T 0294!0
"0MX2404",          %MX% LIST JOBS IN MIX                         41471300 T 0294!0
"1TS2305",          %TS% TYPE SCHEDULE                            41471400 T 0295!0
"2PS2306",          %PS% CHANGE PRIORITY OF JOB IN SCHEDULE       41471500 T 0296!0
"2ES2707",          %ES% REMOVE JOB FROM SCHEDULE                 41471600 T 0297!0
"2XS2308",          %XS% FORCE SELECTION FROM SCHEDULE            41471700 T 0298!0
"0LF2409",          %LF% LIST FILES FOR USER                      41471800 T 0299!0
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    "OLC2410",          %LC% LIST FILES FOR CREATOR                41471900 T  0300!0
    "OLS2411",          %LS% LIST FILES FOR SECURITY               41472000 T  0301!0
    "OEX2412",          %EX% LIST FILES EXPIRED                    41472100 T  0302!0
    "OPD2413",          %PD% PRINT DIRECTORY                       41472200 T  0303!0
$ SET OMIT = NOT(DATACOM AND DCSPO)                                 41472300 T  0304!0
    "1SM7214",          %SM% START MIX MESSAGES                    41472600 T  0304!0
$ RESET OMIT                                                        41472700 T  0305!0
    "OTO2415",          %TO% TYPE OPTIONS                          41472800 T  0305!0
    "OPO2416",          %PO% PRINT SPECIFIED OPTION                41472900 T  0306!0
    "OPG2017",          %PG% PURGE TAPE UNIT                       41473000 T  0307!0
$ SET OMIT = NOT AUXMEM                                             41473100 T  0308!0
    "1AU7418",          %AU% PRINT AUXMEM IN USE                   41473500 T  0308!0
$ SET OMIT = AUXMEM OR MONITOR                                      41473510 T  0309!0
    "OMS7019",          %MS% SET/RESET SYSTEM MONITOR              41473600 T  0309!0
$ RESET OMIT                                                        41473700 T  0310!0
    "OLN2020",          %LN% START LOG                             41473800 T  0310!0
    "OCD2421",          %CD% PRINT PSEUDO DECKS ON DISK            41473900 T  0311!0
$ SET OMIT = NOT PACKETS                                            41474000 T  0312!0
    "OPP7422",          %PP% PRINT PACKETS                         41474400 T  0312!0
    "OPC7423",          %PC% PACKET COUNT                          41474500 T  0313!0
$ RESET OMIT                                                        41474600 T  0314!0
    "1CU2624",          %CU% PRINT CORE USAGE                      41474700 T  0314!0
$ SET OMIT = NOT STATISTICS                                         41474800 T  0315!0
    "OSY7025",          %SY% SET STATISTICS FILES                  41475200 T  0315!0
    "OSL7026",          %SL% SET STATISTICS FILES                  41475300 T  0316!0
$ RESET OMIT                                                        41475400 T  0317!0
    "ORW2027",          %RW% REWIND TAPE UNIT                      41475500 T  0317!0
    "OCI2028",          %CI% CHANGE INTRINSIC FILES                41475600 T  0318!0
    "2CT2629",          %CT% CHANGE TIME LIMITS                    41475700 T  0319!0
    "2XT2630",          %XT% EXTEND TIME LIMITS                    41475800 T  0320!0
    "2TL2631",          %TL% PRINT TIME LIMITS                     41475900 T  0321!0
    "OXD2032",          %XD% CREATE BAD-DISK AREA                  41476000 T  0322!0
    "OMR2033",          %MR% MAKE RESERVE DISK                     41476100 T  0323!0
    "OMC2034",          %MC% MAKE COMPILER                         41476200 T  0324!0
$ SET OMIT = NOT BREAKOUT                                           41476300 T  0325!0
    "ORS7035",          %RS% RE-START AFTER BREAKOUT               41476600 T  0325!0
$ RESET OMIT                                                        41476700 T  0326!0
    "OHD2036",          %HD% HOW MUCH (AVAILABLE) DISK             41476800 T  0326!0
   "2SA2637",           %SA% SEG & REL ADDR OF RUNNING PROG        41476900 T  0327!0
    "1++0000",          %++% END OF TABLE                          41479700 T  0328!0
    MARKER,                                                         41479800 T  0329!0
%*** END OF KEYIN MESSAGE TABLE ****************************************** 41479900 T  0330!0
%*** BEGINNING OF CC RESERVED WORD TABLE ********************************** 41480000 T  0330!0
    "UNLOCK ",      22 ,                                            41480100 T  0330!0
    "USE    ",      23 ,                                            41480200 T  0332!0
    "LOCK   ",      24 ,                                            41480300 T  0334!0
    "FREE   ",      25 ,                                            41480400 T  0336!0
    "PUBLIC ",      26 ,                                            41480500 T  0338!0
    "PACKET ",      27 ,                                            41480700 T  0340!0
    "USER   ",      28 ,                                            41480900 T  0342!0
    "RUN    ",      29 ,                                            41481000 T  0344!0
    "R      ",      29 ,                                            41481100 T  0346!0
    "COMPILE",      30 ,    % SWITCH TYPE(CONTROLCARD)  %           41481200 T  0348!0
    "C      ",      30 ,                                            41481300 T  0350!0
    "EXECUTE",      31 ,    % "RUN" - "LABEL"                        41481400 T  0352!0
    "EX     ",      31 ,                                            41481500 T  0354!0
    "DUMP   ",      32 ,                                            41481600 T  0356!0
    "UNLOAD ",      33 ,                                            41481700 T  0358!0
    "ADD    ",      34 ,                                            41481800 T  0360!0
    "LOAD   ",      35 ,                                            41481900 T  0362!0
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        "REMOVE ",      36 ,                                                    41482000 T  0364:0
        "CHANGE ",      37 ,                                                    41482100 T  0366:0
        "UNIT   ",      38 ,                                                    41482200 T  0368:0
        "PACKEND",      39 ,                                                    41482400 T  0370:0
        "END    ",      39 ,                                                    41482600 T  0372:0
    $ SET OMIT = NOT PACKETS                                                    41482700 T  0374:0
        "DATA   ",      41 ,                                                    41483000 T  0374:0
        "LABEL  ",      42 ,                                                    41483100 T  0376:0
        "SET    ",      43 ,                                                    41483200 T  0378:0
        "RESET  ",      44 ,                                                    41483300 T  0380:0
        "FILE   ",      47 ,                                                    41483400 T  0382:0
        "EXPIRED",      48 ,                                                    41483500 T  0384:0
        "ACCESSD",      49 ,                                                    41483600 T  0386:0
        "PROCESS",      50 ,    % A STORE NEAR THE END OF PCC                    41483700 T  0388:0
        "IO     ",      51 ,    % MAKES USE OF THE ORDER AND VALUES              41483800 T  0390:0
        "PRIORIT",      52 ,    % OF "PROCESS" THRU "SAVE".                      41483900 T  0392:0
        "COMMON ",      53 ,                                                    41484000 T  0394:0
        "CORE   ",      54 ,                                                    41484100 T  0396:0
        "STACK  ",      55 ,                                                    41484200 T  0398:0
        "SAVE   ",      56 ,                                                    41484300 T  0400:0
        "ALGOL  ",      60 ,                                                    41484400 T  0402:0
        "XALGOL ",      61 ,                                                    41484500 T  0404:0
        "FORTRAN",      62 ,                                                    41484600 T  0406:0
        "TSPOL  ",      63 ,                                                    41484700 T  0408:0
        "BASIC  ",      64 ,                                                    41484800 T  0410:0
        "COBOL68",      65 ,                                                    41484900 T  0412:0
        "WITH   ",      66 ,                                                    41485000 T  0414:0
        "COBOL  ",      67 ,                                                    41485100 T  0416:0
        "LIBRARY",      68 ,                                                    41485200 T  0418:0
        "SYNTAX ",      69 ,                                                    41485300 T  0420:0
        "FROM   ",      70 ,                                                    41485400 T  0422:0
        "TO     ",      71 ,                                                    41485500 T  0424:0
        "FORM   ",      78 ,    % SWITCH D(PCC)                                 41485600 T  0426:0
        "NO     ",      79 ,    % "FORM"="SPECIAL"                               41485700 T  0428:0
        "DISK   ",      80 ,                                                    41485800 T  0430:0
        "TAPE   ",      81 ,                                                    41485900 T  0432:0
        "PUNCH  ",      82 ,                                                    41486000 T  0434:0
        "PRINT  ",      83 ,                                                    41486100 T  0436:0
        "BACK   ",      85 ,                                                    41486200 T  0438:0
        "SPECIAL",      90 ,                                                    41486300 T  0440:0
        "REMOTE ",      89 ,                                                    41486400 T  0442:0
        "SERIAL ",      86 ,                                                    41486500 T  0444:0
        "UPDATE ",      87 ,                                                    41486600 T  0446:0
        "SPO    ",      88 ,                                                    41486700 T  0448:0
        "PAPER  ",      84 ,                                                    41486800 T  0450:0
        "EU     ",      91 ,                                                    41486900 T  0452:0
        "SLOW   ",      92 ,                                                    41487000 T  0454:0
        "B6500  ",      93 ,                                                    41487100 T  0456:0
        "FAST   ",      94 ,                                                    41487200 T  0458:0
        "COPY   ",      95 ,                                                    41487300 T  0460:0
        "MAXIMUM",      96 ,                                                    41487400 T  0462:0
        "FREEF  ",      97 ,                                                    41487500 T  0464:0
        "FIXED  ",      98 ,                                                    41487600 T  0466:0
        "PROTECT",      99 ,                                                    41487700 T  0468:0
        "SENSITI",     100 ,                                                    41487800 T  0470:0
        "LATEST ",     101 ,                                                    41487900 T  0472:0
        "CC     ",      14 ,    % CC MUST EQUAL QUEST %                         41488900 T  0474:0
            0,          0 ,                                                     41489000 T  0476:0
        MARKER,                                                                 41489100 T  0478:0
%*** END OF CC RESERVED WORD TABLE ************************************          41489200 T  0479:0
```

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%*** BEGINNING OF LBMESS MESSAGE TABLE ************************          41490000 T  0479:0
     "←      ", % 0                                                      41490100 T  0479:0
     "LOADED ","←       ", % 1                                           41490200 T  0480:0
     "DUMPED ","←       ", % 3                                           41490300 T  0482:0
     "CHANGED"," ←      ", % 5                                           41490400 T  0484:0
     "REMOVED"," ←      ", % 7                                           41490500 T  0486:0
     "MC-ED ←", % 9                                                      41490600 T  0488:0
     "FIXED ←", % 10                                                     41490700 T  0489:0
     "RESET ←", % 11                                                     41490800 T  0490:0
     "SET ←  ", % 12                                                     41490900 T  0491:0
     "ACCESSE","D←      ", % 13                                          41491000 T  0492:0
     "NOT ON ","DISK←   ", % 15                                          41491100 T  0494:0
     "NOT ON ","TAPE←   ", % 17                                          41491200 T  0496:0
     "NOT EXE","CUTABLE"," CODE← ", % 19                                 41491300 T  0498:0
     "NOT A C","OMPILER","←       ", % 22                                41491400 T  0501:0
     "SYSTEM ","FILE←   ", % 25                                          41491500 T  0504:0
     "TAPE PA","RITY←   ", % 27                                          41491600 T  0506:0
     "DUP FIL","E←      ", % 29                                          41491700 T  0508:0
     "NO USER"," DISK← ", % 31                                           41491800 T  0510:0
     "UNEXPED"," EOF←   ", % 33                                          41491900 T  0512:0
     "DISK PA","RITY←   ", % 35                                          41492000 T  0514:0
     "BAD NAM","E←      ", % 37                                          41492100 T  0516:0
     "INV REC"," SIZE← ", % 39                                           41492200 T  0518:0
     "INVALID"," USER← ", % 41                                           41492300 T  0520:0
     "BAD HEA","DER←    ", % 43                                          41492400 T  0522:0
     "IN USE←", % 45                                                     41492500 T  0524:0
     "ADDED ←", % 46                                                     41492600 T  0525:0
     ",TAPE P","OSITION","ED←     ", % 47                                41492650 T  0526:0
     "AUTO-ZI","PPED←   ", % 50                                          41492700 T  0529:0
     "CHANGED"," TO ←   ", % 52                                          41493010 T  0531:0
     "MC-ED T","O ←     ", % 54                                          41493020 T  0533:0
     "EXTRA R","ECORDS←", % 56                                           41493030 T  0535:0
     "DUP LIB","RS←     ", % 58                                          41493040 T  0537:0
     "SENSITI","VE←     ", % 60                                          41493050 T  0539:0
     "BEING B","LANKED←", % 62                                           41493060 T  0541:0
     "NOT LAT","EST VER","SION←   ", % 64                                41493070 T  0543:0
     MARKER;                                                             41493100 T  0546:0
%*** END OF LBMESS MESSAGE TABLE ******************************          41493200 T  0547:0
%*** END OF RESERVED WORD AND MESSAGE TABLES ***************************  41500000 T  0547:0
START:                                                                   41500100 T  0547:0
     TBL:=I2:=M[P(..MESSAGETABLEBUILDER)],[CF]+2;                        41500200 T  0547:0
     WHILE M[TBL:=TBL+1]≠MARKER DO; % SEARCH FOR END OF OPTION TBLE      41500300 T  0550:0
     I1:=TBL; TBL:=TBL+1;                                                41500400 T  0555:0
     FOR I:=2 STEP 1 UNTIL MESSAGETABLESIZE DO                           41500500 T  0557:0
     WHILE M[TBL:=TBL+1] ≠ MARKER DO;                                    41500600 T  0558:0
     I:=I1-I2; I1:=(TBL+2)-I1;                                           41500700 T  0565:1
     STREAM(A:=I DIV 60,B:=(I:=(I MOD 60)),C:=I1 DIV 60,                 41500800 T  0568:1
          D:=(I1:=(I1 MOD 60)),E:=I2);                                   41500900 T  0571:1
     BEGIN                                                               41501000 T  0573:0
          SI:=E; DI:=E;                                                  41501100 T  0573:0
          A(60(SI:=SI+4; DS:=4 CHR));                                    41501200 T  0573:2
          B(SI:=SI+4; DS:=4 CHR);                                        41501300 T  0575:1
          C(DS:=60 WDS);                                                 41501400 T  0576:2
          D(DS:=WDS);                                                    41501500 T  0577:2
     END;                                                                41501600 T  0578:2
     TBL:=I2;                                                            41501700 T  0578:3
     FOR TBLCNT:=0 STEP 1 UNTIL (MESSAGETABLESIZE-1) DO                  41501800 T  0579:2
     BEGIN                                                               41501900 T  0583:3
          WHILE M[TBL:=TBL+1]≠MARKER DO; I:=TBL-I2;                      41502000 T  0583:3
          MESSAGETABLE[TBLCNT]:=GETUSERDISK((I+29) DIV 30)&I[8:38:10];   41502100 T  0590:1
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                DISKWAIT(I2,I,MESSAGETABLE[TBLCNT],[22:26]);                41502300 T  0594:1
                I2:=TBL:=TBL+1;                                             41502400 T  0596:1
            END;                                                            41502500 T  0598:0
        END BUILDING TABLES;                                                41502600 T  0598:2
                                                                                     SIZE= 0599 WORDS
        PROCEDURE ENTERSYSFILE(N); VALUE N; REAL N;                         41600000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00925
        %                                                                   41600100 T  0000:0
        BEGIN                                                               41600200 T  0000:0
            REAL A,J,WC,MFID,DISK;                                          41600300 T  0000:0
            ARRAY DDD[*];                                                   41600400 T  0000:0
            LABEL RETURN,EXIT;                                              41600500 T  0000:0
        %                                                                   41600600 T  0000:0
            IF N=1 THEN                                                     41600700 T  0000:0
            BEGIN                                                           41600800 T  0002:1
                MFID := "LIBMAIN"; J := 1;                                  41600900 T  0002:3
            END ELSE                                                        41601000 T  0004:1
            IF N=2 THEN                                                     41601100 T  0004:1
            BEGIN                                                           41601200 T  0006:3
                MFID := "LDCNTRL";                                          41601300 T  0007:1
            END ELSE                                                        41601400 T  0008:0
            IF N=3 THEN                                                     41601500 T  0008:0
            BEGIN                                                           41601600 T  0010:3
                MFID := "PRNPBT ";                                          41601700 T  0011:1
            END ELSE                                                        41601800 T  0012:0
            GO EXIT;                                                        41601900 T  0012:0
        %                                                                   41602000 T  0012:0
            DISK := "DISK   ";                                              41602100 T  0012:0
            IF (A:=DIRECTORYSEARCH(MFID,DISK,5)) ≠ 0 THEN                   41602200 T  0012:3
            BEGIN                                                           41602300 T  0015:0
                M[A INX 2] := MCP;                                          41602400 T  0015:2
                M[A INX 5] := M[A INX 6] := @14;                            41602500 T  0018:1
                DISKWAIT(A,[CF],30,A,[FF]);                                 41602600 T  0022:0
                GO RETURN;                                                  41602700 T  0024:1
            END;                                                            41602800 T  0027:0
            DDD := [M[A := SPACE(WC := 18:+30×J)]]&WC[8:38:10];             41602900 T  0027:0
            MOVE(WC,A-1,A);                                                 41603000 T  0032:3
            STREAM(DATE,D:=A+3);                                            41603100 T  0034:3
            BEGIN                                                           41603200 T  0036:1
                SI:=LOC DATE; DS:=8 OCT;                                    41603300 T  0036:1
                DI:=D; DS:=2 LIT"+#";                                       41603400 T  0036:3
                SI:=D; SI:=SI+5; DS:=3 CHR;                                 41603500 T  0037:2
            END;                                                            41603600 T  0038:1
            DDD[ 0] := @3600036000101;                                      41603700 T  0038:2
            DDD[ 1] := (XCLOCK+P(RTR))&DDD[3][6:30:18];                     41603800 T  0039:3
            DDD[ 2] := MCP;                                                 41603900 T  0042:3
            DDD[ 4].[9:2] := 3;                                             41604000 T  0044:3
            DDD[ 5] := DDD[6] := @14;                                       41604100 T  0047:1
            DDD[ 7] := 4+J;                                                 41604200 T  0049:2
            DDD[ 9] := 1;                                                   41604300 T  0051:1
            DDD[10] := RETUSERDISK((DDD[8] := 5+J)&1[2:47:1],1);            41604400 T  0052:2
            DDD[31] := 3-J;                                                 41604500 T  0057:0
            DDD[32] := DDD[38] := 2;                                        41604600 T  0058:3
            DDD[33] := 4-J;                                                 41604700 T  0061:0
            DDD[34] := 22;                                                  41604800 T  0062:3
            DDD[35] := 2+J+J;                                               41604900 T  0064:0
            DDD[36] := 6;                                                   41605000 T  0066:1
            DDD[37] := IF J THEN -1 ELSE 1;                                 41605100 T  0067:2
            DDD[47] := DDD[48] := @377777777777;          % TIME LMT        41605200 T  0070:2
            DDD[49] := IF J THEN (MIXMAX+1) DIV 2 ELSE 0;  % PRIORITY       41605300 T  0072:3
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        DDD[51] := IF J THEN 64 ELSE 4;                    % CORE EST          41605400 T  0076:2
        DDD[52] := IF J THEN 200 ELSE 150;                 % STACKSIZ          41605500 T  0079:1
        DDD[61] := @0000012600001011                                         41605600 T  0082:0
                  &(IF J THEN 35 ELSE IF N=2 THEN 23 ELSE 19)[24:38:10];     41605700 T  0082:3
        DDD[62] := @0024101100000000;                                        41605800 T  0087:3
        DDD[122-30xJ] := @0000220000200001;                                  41605900 T  0089:0
        DDD[169-30xJ] := FLAG(@2740010000100000);                            41606000 T  0091:1
        IF NOT J THEN                                                        41606100 T  0093:3
        STREAM(C:=N=2, D:=[DDD[91]]);                                        41606200 T  0094:1
        BEGIN                                                                41606300 T  0096:2
            CI:=CI+C; GO L1;                                                 41606400 T  0096:2
            DS:=40 LIT                                                       41606500 T  0097:1
                "012CONTROLDECK    1A022BACK-UPOF DECK1B00";                 41606600 T  0097:2
            GO L2;                                                           41606700 T  0102:2
        L1: DS:=40 LIT                                                       41606800 T  0102:3
                "012PRINTERBACK-UP1A0220000000PRINTER1B00";                  41606900 T  0103:0
        L2:                                                                  41607000 T  0108:0
        END;                                                                 41607100 T  0108:0
        ENTERUSERFILE(MFID,DISK,A-1);                                        41607200 T  0108:1
        DISKWAIT(A+31,WC-31,DDD[10]);                                        41607300 T  0110:1
    RETURN:                                                                  41607400 T  0112:3
        FORGETSPACE(A);                                                      41607500 T  0112:3
    EXIT:                                                                    41607600 T  0113:2
    END ENTERSYSFILE;                                                        41607700 T  0113:2
                                                                                     SIZE= 0120 WORDS
    COMMENT ARTN RETURNS ALL STORAGE FOR AN N-DIMENSIONAL ARRAY A;%          42473000 T  0000:0
    PROCEDURE ARTN(A,N); VALUE A,N; ARRAY A[*]; INTEGER N;%                  42474000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00929
                BEGIN INTEGER I;%                                            42475000 T  0000:0
                      IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);          42476000 T  0000:0
                      IF A.[18:15]≠0 THEN A←M[A.[18:15]];                    42476100 T  0003:1
                      IF N>1 THEN DO ARTN(A[I],N-1) UNTIL (I←I+1)≥A.SIZE;    42477000 T  0007:2
                            N←A INX 0;                                       42478000 T  0013:2
                      IF A.PBIT THEN                                         42478200 T  0015:0
                            BEGIN I←M[N-1].[FF];                             42478400 T  0016:0
                                  FORGETSPACE(N)                             42478600 T  0019:1
                            END ELSE I←N;                                    42478800 T  0019:2
                      IF I>511 THEN DISKRTN(I, A.SIZE);                      42479000 T  0021:1
                END ARTN;%                                                   42480000 T  0024:1
                                                                                     SIZE= 0025 WORDS
    COMMENT ASR IS THE ALGOL STORAGE RETURN COMMUNICATE;%                    42481000 T  0000:0
    PROCEDURE ASR; BEGIN INTEGER I,BCNTR; ARRAY AIT[*]; REAL TEMP;%          42482000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00930
                LABEL L,L1;                                                  42483000 T  0000:0
                REAL MOTHER; ARRAY DESC[*];%                                 42484000 T  0000:0
                WHILE (AIT←PRT[P1MIX,AITNDX]).PBIT=0 DO%                     42485000 T  0000:0
                      MAKEPRESENT([PRT[P1MIX,AITNDX]] INX 0);%               42486000 T  0004:2
                MEMORY[AIT INX NOT 1].[2:1]←1;%                              42487000 T  0007:0
                I:=AIT[0]+1;                                                 42488000 T  0010:3
                IF (BCNTR:=PRT[P1MIX,CURBLKCNTR]) LEQ 0 THEN                 42488100 T  0012:1
                BEGIN TERMINATE(P1MIX);                                      42488200 T  0014:1
                      TERMINALMESSAGE(78);                                   42488300 T  0015:2
                END;                                                         42488400 T  0016:1
            WHILE (TEMP←AIT[I←I+1]).BLKCNTR≥BCNTR%                           42489000 T  0016:1
              DO BEGIN DESC←MEMORY[MOTHER←TEMP.MOM];%                        42490000 T  0018:3
                IF TEMP.[1:2]≠1 THEN % CHECK FOR FAULT ENTRY                 42490100 T  0022:1
                      IF TEMP.[1:2]=2 THEN % FILE                            42491000 T  0023:2
                      IF TEMP.[33:15]=2 THEN BEGIN%                          42492000 T  0025:1
                      FILECLOSE((MOTHER+3)&((DESC[4].[25:2]=2)×@12)          42493000 T  0027:2
                                          [18:33:15]);                       42494000 T  0030:1
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                    GO TO L                    END ELSE%                                  42496000 T  0031:0
                    BEGIN FILECLOSE((DESC INX 5)&                                         42497000 T  0031:2
                          ((M[DESC[2] INX 4],[25:2]=2)×@12)                               42498000 T  0033:1
                                                        [18:33:15]);                      42499000 T  0036:1
                        FORGETSPACE(DESC INX 0);%                                         42500000 T  0037:0
                    END ELSE IF TEMP.[1:1] THEN % SAVE MYSELF TASK                        42501000 T  0038:2
                     IF MOTHER=TSX THEN ELSE IF % ARRAY FOR COM5                          42501040 T  0039:3
                     ((NT1←DESC[3])=1 OR(NT1=2 AND DESC[4]≠P1MIX))                        42501050 T  0042:0
                     THEN  % TASK ARRAY OF A SCHEDULED OR                                 42501060 T  0045:2
                           % RUNNING OFFSPRING                                            42501070 T  0045:3
                     BEGIN IF NT1=1 THEN                                                  42501100 T  0045:3
                                SHEETDIDDLER(0,20,DESC[4]); % ES                          42501200 T  0047:0
                        IF DESC[3]=2 THEN                % RUNNING                         42501300 T  0049:0
                       BEGIN TERMINATE(DESC[4]&86[CTF]);     % DS                         42501400 T  0050:0
                           HALT;                                                          42501500 T  0052:0
                           NOPROCESSTOG ← NOPROCESSTOG-1;                                 42501550 T  0052:2
                       END;                                                               42501600 T  0053:3
                       SLEEP([DESC[3]],-0);        % WAIT FOR DS                          42501650 T  0053:3
                       GO TO L1;                                                          42501700 T  0055:3
                     END ELSE GO TO L1 ELSE                                               42501800 T  0056:1
                     IF SOFTI>0 THEN IF JAR[P1MIX,2].[5:1] THEN                           42501810 T  0056:1
                          IF MOTHER=SFINTX THEN ELSE                                      42501820 T  0059:2
                     ELSE ELSE                                                            42501830 T  0061:1
L1:                ARTN(DESC,TEMP,DIMENSIONS);                                            42501900 T  0062:1
                    MEMORY[MOTHER]←0;%                                                    42502000 T  0064:2
L:                                                                                        42503000 T  0066:0
              END;%                                                                       42504000 T  0066:0
              AIT[0]←I;%                                                                  42505000 T  0066:2
              PRT[P1MIX,CURBLKCNTR]←BCNTR-1;%                                             42506000 T  0067:3
              IF I>0 THEN DO%%WIPE OUT BAD LABELS IN FAULT CELLS                          42506100 T  0070:0
                  IF AIT[I].[1:2]=1 THEN                                                  42506200 T  0071:1
                  IF M[AIT[I],MOM],BLKCNTR≥BCNTR THEN                                     42506300 T  0072:3
                  M[AIT[I].MOM]←0 UNTIL (I←I-1)≤0;                                        42506400 T  0076:1
                MEMORY[AIT INX NOT 1],[2:1]←0;%                                           42507000 T  0081:2
            END ASR;%                                                                     42508000 T  0085:1
                                                                                                  SIZE= 0086 WORDS
SAVE REAL PROCEDURE COREND; FORWARD;                                                      42509000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00971
PROCEDURE INTERRUPT(TYPE); VALUE TYPE; REAL TYPE;                                         42510000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00933
BEGIN LABEL FLAGBIT,INVALIDINDEX,EXPUNDERFLOW,DIVIDEBYZERO;                               42511000 T  0000:0
      LABEL XYT;                                                                          42511500 T  0000:0
      SWITCH SW←FLAGBIT,INVALIDINDEX,EXPUNDERFLOW,DIVIDEBYZERO;                           42512000 T  0000:0
      ARRAY TOP=-5[*];                                                                    42513000 T  0000:0
      REAL FLAGTESTER=-3;                                                                 42513500 T  0000:0
      REAL MOM,SIZE,ALOC,I;                                                               42514000 T  0000:0
      REAL RCW=+1,RCWL=+2,SAVIT=+4; NAME A=+3;                                            42515000 T  0000:0
      REAL R=+1,S=+2,Y=+3;                                                                42516000 T  0000:0
BOOLEAN SUBROUTINE DOUBLEPRECISION;                                                       42517010 T  0000:0
BEGIN R←M[S←PRT[P1MIX,8] INX 0]; %IRCW                                                    42517020 T  0001:0
      STREAM(R←(R INX 0)&R[30:10:2],Y←[Y]); %GET OP CODE                                  42517030 T  0004:1
      BEGIN SI←R; SI←SI-2; DI←DI+6; DS←2 CHR END;                                         42517040 T  0006:3
DOUBLEPRECISION←Y,[45:3]=5;                                                               42517050 T  0008:0
END;                                                                                      42517060 T  0009:2
      CHECKSTACKSPACE;%                                                   %WF             42517100 T  0009:3
      GO TO SW[TYPE];                                                                     42518000 T  0015:1
FLAGBIT:                                                                                  42520000 T  0018:1
      SAVIT←TOP;                                                                          42521000 T  0018:1
      NT1←AMALYSIS;                                                                       42522000 T  0019:1
      IF SYLLABLE.[41:7]≠@35 THEN                                                         42523000 T  0020:1
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                IF SYLLABLE.[45:3]≠0 THEN                                   42524000 T  0021:2
                BEGIN ERRORFIXER(16); TERMINATE(P1MIX); TERMINALMESSAGE(5) END;  42524100 T  0023:1
                A←PRT[P1MIX,4];                                             42524200 T  0026:0
                RCW ← M[RCWL + PRT[P1MIX,8] INX NOT ((SYLLABLE=@235)+2)];%  42525000 T  0027:2
                IF RCW.[33:1] THEN % TYPE 13 INTRNSC                        42525100 T  0032:0
                BEGIN                                                       42525110 T  0032:3
                I←0;                                                        42525115 T  0033:1
                Y←[I].[CF];                                                 42525120 T  0034:0
                I  ←FLAG((@2520000000000000)&(RCW.[34:14])[CTC]);           42525130 T  0035:1
                MAKEPRESENT(Y);                                             42525140 T  0037:1
                M[RCWL]←FLAG(RCW&(M[RCW.[FF]]INX (NFLAG( I )).[CF])[CTC]);  42525150 T  0038:0
                GO TO INITIATE;                                             42525160 T  0042:3
                END ELSE                                                    42525170 T  0043:1
                IF NOT PRT[P1MIX,A[RCW].[8:10]].[2:1] THEN%                 42525500 T  0043:1
                MAKEPRESENT(PRTROW[P1MIX] INX A[RCW].[8:10]);%              42526000 T  0048:0
                M[RCWL]←FLAG(RCW&(M[RCW.[18:15]] INX A[RCW].[18:15])[33:33:15]);  42527000 T  0051:1
                GO TO INITIATE;                                             42528000 T  0056:3
        INVALIDINDEX:                                                       42530000 T  0057:1
                FOR I←6 STEP 5 UNTIL 11 DO                                  42531000 T  0057:1
                IF TOP.[18:15]=(MOM←[PRT[P1MIX,I]].[33:15]) THEN            42532000 T  0058:0
                IF (SIZE←M[MOM].[8:10])<1023 THEN                           42533000 T  0061:1
                BEGIN IF M[MOM].[2:1]=0 THEN MAKEPRESENT(MOM);              42534000 T  0064:1
                      M[(ALOC←M[MOM].[33:15])-2].[2:1]←1;                   42535000 T  0068:0
                      IF (NT1:=M[ALOC-1].[FF])≠0 THEN DISKRTN(NT1, SIZE);   42535500 T  0073:0
                      M[MOM]←FLAG(0&MOM[18:33:15]                           42536000 T  0077:3
                            &(IF SIZE<512 THEN 2×SIZE ELSE 1023)[8:38:10]); 42537000 T  0079:0
                      IF TYPE ← P(FLAGTESTER,TOP,XCH,DEL) THEN MAKEPRESENT(MOM)  42537050 T  0083:2
                        ELSE                                                42537060 T  0085:3
                      MAKEPRESENT(ANALYSIS);                                42538000 T  0086:1
                      MOVE(SIZE,ALOC,M[MOM]);                               42539000 T  0087:3
                      FORGETSPACE(ALOC);                                    42539050 T  0090:0
                      IF TYPE THEN GO XYT;                                  42539060 T  0090:3
                      GO TO INITIATE;                                       42539100 T  0091:3
                END;                                                        42539200 T  0092:1
                ERRORFIXER(4); TERMINATE(P1MIX); TERMINALMESSAGE(7);        42540000 T  0094:2
        EXPUNDERFLOW:                                                       42542000 T  0096:3
                IF DOUBLEPRECISION THEN M[S-3]←0;                           42546000 T  0096:3
                M[S-2]←0;                                                   42547000 T  0100:2
                      IF JAR[P1MIX,2].[3:1] AND PRT[P1MIX,@51].[43:1] THEN  42547100 T  0102:2
                PRT[P1MIX,@51]←P(DUP,LOD) OR 6;                             42547200 T  0105:3
                GO TO INITIATE;                                             42548000 T  0108:3
        DIVIDEBYZERO:                                                       42550000 T  0109:1
                      IF (P(JAR[P1MIX,2],DUP)≥0 AND NOT(P(XCH).[3:1] AND    42550500 T  0109:1
                         PRT[P1MIX,@51].[44:1])) THEN                       42550600 T  0111:3
                BEGIN ERRORFIXER(8); TERMINATE(P1MIX); TERMINALMESSAGE(13) END  42551000 T  0114:0
                ELSE IF JAR[P1MIX,2] < 0 THEN IF PRT[P1MIX,11].[FF] = 0 THEN  42551090 T  0116:3
                      PRT[P1MIX,11]←1 ELSE PRT[P1MIX,PRT[P1MIX,11].[FF]]←1  42551100 T  0121:2
                ELSE                                                        42551110 T  0126:3
                BEGIN PRT[P1MIX,@51]←P(DUP,LOD) OR 1;                       42551200 T  0127:2
                      IF DOUBLEPRECISION THEN M[S-3]←0;                     42551300 T  0130:2
                      M[S-2]←0;                                             42551400 T  0134:2
                END;                                                        42551500 T  0136:2
                GO TO INITIATE;                                             42552000 T  0136:2
        XYT:                                                                42553000 T  0137:0
        END INTERRUPT;                                                      42554000 T  0137:0
                                                                                   SIZE= 0138 WORDS
         $ SET OMIT = NOT(DCLOG AND DATACOM )                               42599999 T  0000:0
         %  THE FORMAT OF DIRECTORY TOP%                                    44000000 T  0000:0
         %       D[0]=OPTION WORD%                                          44001000 T  0000:0
         %       D[1]=DATE%                                                 44002000 T  0000:0
```

```
%       D[2]=NUMBER OF ELECTRONIC UNITS%                                  44003000 T  0000:0
%       D[3]=HIGHEST ADDRESS OF BACKUP STORAGE%                           44004000 T  0000:0
%       D[4]=HIGHEST ADDRESS OF DIRECTORY%                                44005000 T  0000:0
%       D[5]=LAST NUMBER USED FOR CONTROL DECK%                           44006000 T  0000:0
%       D[6]=FIRST CONTROL DECK QUEUED (LOCATION IN DIRECTORY)%           44007000 T  0000:0
%       D[7]=LAST CONTROL DECK QUEUED (LOCATION IN DIRECTORY)%            44008000 T  0000:0
%       D[8]=NEXT NUMBER AVAILABLE FOR PRINTER BACKUP DISK        %P      44008100 T  0000:0
%       D[9]=CORE, CONTAINS MULTIPROCESSING FACTOR                        44008200 T  0000:0
%       D[10] THRU D[15] SPECIFY WHICH DC-STATIONS ARE SPO-LIKE.          44008300 T  0000:0
%       D[16]=QUEUE VALUES FOR SPO STATIONS                               44008305 T  0000:0
%      D[17] SPECIFIES WHAT THE SPOES ARE                                 44008310 T  0000:0
%       D[18]=TIME OF DAY                                                 44008320 T  0000:0
%       D[19]=VALUE OF FENCE (TIME SHARING MCP)                           44008330 T  0000:0
%       D[20].[8:10]=NUMBER OF LAST LOG FILE                              44008340 T  0000:0
%            .[18:30]=NUMBER OF ENTRIES IN LOG (TIMESHARING)              44008350 T  0000:0
%       D[21]=SCHEDWORD (TIMESHARING)                                     44008360 T  0000:0
%       D[22].[38:10]=NUMBER OF CURRENT MAINTENANCE LOG.                  44008380 T  0000:0
%            .[28:10]=NUMBER OF CURRENT REMOVTE LOG.                      44008390 T  0000:0
%       D[23] THRU D[26] SPECIFY WHICH SU-S WERE READY AT THE LAST H/L.   44008400 T  0000:0
%       D[27] IS RESERVED FOR USE BY THE LOCAL SITE.                      44008410 T  0000:0
%      D[28]=DISK ADDRESS OF DIRECTORYTOP                                 44008499 T  0000:0
PROCEDURE INTFINISH(AA);                                                  44008998 T  0000:0
                                                   START OF REL SEGMENT; DISK ADDRESS = 00938
    VALUE AA;REAL AA; FORWARD;                                            44008999 T  0000:0
SAVE PROCEDURE MOREINITIALIZE;FORWARD;                                    44009000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00971
SAVE PROCEDURE INITIALIZE;                                                44010000 T  0000:0
                                                   START OF SAVE SEGMENT; BASE ADDRESS = 00971
BEGIN                                                                     44010100 T  0000:0
    REAL A,B,C,I,J,T,W,Y,Z;                                               44011000 T  0000:0
    REAL INTS,INTSS,LASTL,LDATE,LOC,MEND;                                 44012000 T  0000:0
    REAL IRPB,IRPTB,IRPDBS,IRPTU,IRPBUF;                                  44013000 T  0000:0
    REAL T1=LASTL,SHLM=MEND;                                              44014000 T  0000:0
    INTEGER IRPBTS,IRPWRS;                                                44015000 T  0000:0
    INTEGER XCLICK=XCLOCK;                                                44016000 T  0000:0
    ARRAY DDD[*],GI[*];                                                   44017000 T  0000:0
    ARRAY X=W[*];                                                         44018000 T  0000:0
    LABEL UNITL,TINUL,MISSL;                                              44019000 T  0000:0
    LABEL AVLP,INLP,LT,LE,LF,LN,LP,LS;                                    44020000 T  0000:0
 $ SET OMIT = NOT SHAREDISK                                               44024990 T  0000:0
 SUBROUTINE XXXXXX; BEGIN A←X-X-X-X-X-X-X-X-X-X-X-X-X-X-X-X-X; END;%      44037000 T  0000:0
 SUBROUTINE MAKESAVE;                                                     44037200 T  0012:3
 BEGIN DISKWAIT(-C,M[I].[8:10],M[I]. [FF]+MCPBASE);                       44037300 T  0013:0
        M[I].[CF]←C; C←C+M[I].[8:10]+1;                                   44037400 T  0017:3
 END;                                                                     44037500 T  0023:0
    SUBROUTINE FIX;%                                                      44079000 T  0023:1
        BEGIN P([M[J]]&I[8:38:10],T,←);%                                  44080000 T  0024:0
            J ← J+I;%                                                     44081000 T  0026:1
        END;%                                                             44082000 T  0027:2
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                     44082049 T  0027:3
MCPBASE:=M[0].[18:30];                                                    44083000 T  0027:3
DIRECTORYTOP:=M[1];                                                       44083100 T  0035:1
 $ SET OMIT = NOT(SHAREDISK)                                              44083200 T  0036:3
            RESTARTING←1023;                                              44085000 T  0036:3
PEUIO:=EUIO:=[M[P133]]&20[8:38:10] ;                                      44085100 T  0037:2
            IOQUESLOTS:=32;                                               44085500 T  0040:1
            IOQUEAVAIL:=31;                                               44085600 T  0041:0
    HOLDER:=DIRECTORYTOP-7-(HOLDMAX+29) DIV 30;  % SEE ALSO 40200100      44086100 T  0041:3
    USERDISKBOTTOM:=HOLDER-DISKAVAILTABLEMAX;                             44086200 T  0044:2
    IF (I:=(USERDISKBOTTOM-50) DIV SYSMAX) > 247 THEN I:=247;             44086300 T  0045:3
```

```
ESPDISKBOTTOM:=50+(SYSNO×I); % BOTTOM OF ESPDISK                    44087000 T 0049:1
ESPDISKTOP←ESPDISKBOTTOM+I-8; %TOP OF ESPDISK                       44087100 T 0051:0
          RRRMECH ← @140000000;%                                    44088000 T 0052:3
          WITCHINGHOUR:=5184000;                                    44090500 T 0053:2
          WORDOFEASE:=@2525252525252525;                            44091000 T 0054:1
          NORROCESSTOG ← -1;%                                       44092000 T 0055:0
          SOFTI ← 0;                                                44092100 T 0056:0
$ SET OMIT = NOT STATISTICS                                         44092490 T 0056:3
STREAM(S←18,D←100);%                                                44093000 T 0056:3
     BEGIN%                                                         44094000 T 0057:3
          SI ← S; DS ← 11 WDS; D ← DI;                              44095000 T 0057:3
          DI ← S; 11(DS ← 8 LIT "102(0000" );                       44096000 T 0058:2
          19(SI ← SI+8);  S ← SI;                                   44097000 T 0060:2
          DI←D; DS←2 WDS;%                                          44098000 T 0061:2
          DI←S; DS←16 LIT"042(0000"%                                44099000 T 0062:0
     END;%                                                          44100000 T 0064:2
MSTART:=P(..INITIALIZE,LOD).[CF];                                   44101000 T 0064:3
AVAIL←@77776;%                                                      44102000 T 0066:1
AVLP:M[AVAIL]←@7777700000+AVAIL;%                                   44103000 T 0067:0
INLP:IF J←CORENO THEN%                                              44104000 T 0069:0
          BEGIN%                                                    44105000 T 0070:0
               MEMASK:=MEMASK OR TWO(AVAIL DIV 4096);               44106000 T 0070:2
               AVAIL←AVAIL-4096;%                                   44107000 T 0072:3
               GO TO AVLP%                                          44108000 T 0074:0
          END;%                                                     44109000 T 0074:2
     IF J=2 THEN GO TO INLP;%                                       44110000 T 0081:0
M[AVAIL+1]←AVAIL;%                                                  44111000 T 0082:1
M[MEND←AVAIL-1]←0&1[2:47:1]%                                        44112000 T 0084:1
                    &MSTART[CTF];%                                  44113000 T 0086:2
M[0]←MSTART&MEND[CTF]&1[2:47:1];%                                   44114000 T 0088:1
M[MSTART]←LASTL←MEND;%                                              44115000 T 0090:2
LOC←MEND-4094;%                                                     44116000 T 0092:2
LT:IF LOC>4095 THEN%                                                44117000 T 0093:3
     BEGIN%                                                         44118000 T 0094:2
          M[LOC]←@77777;%                                           44119000 T 0095:0
     LE:IF J←CORENO THEN%                                           44120000 T 0096:2
               BEGIN%                                               44121000 T 0097:2
               MEMASK:=MEMASK OR TWO(LOC DIV 4096);                 44122000 T 0098:0
                M[LOC+1]←LASTL&MSTART[CTF];%                        44123000 T 0100:1
                M[LASTL]←M[LASTL]&(LOC+1)[CTF];%                    44124000 T 0102:3
                M[MSTART]←LASTL←LOC+1;%                             44125000 T 0106:0
          LF:   M[LOC←LOC-4096]←(T←  LASTL )&MSTART[CTF]%           44126000 T 0108:2
                                                  &1[2:47:1];%      44127000 T 0111:1
     LS:IF J:=CORENO THEN                                           44128000 T 0113:0
               BEGIN                                                44128100 T 0114:0
               MEMASK:=MEMASK OR TWO(LOC DIV 4096);                 44128200 T 0114:2
               GO TO LF;                                            44128300 T 0116:3
               END;                                                 44128400 T 0122:0
                IF J=2 THEN GO TO LS;%                              44129000 T 0122:0
                M[LASTL]←M[LASTL]&LOC[CTF];%                        44130000 T 0123:1
                M[MSTART]←LASTL←LOC;%                               44131000 T 0126:0
               END    ELSE%                                        44132000 T 0128:0
          IF J=2 THEN GO TO LE;%                                    44133000 T 0128:0
          LOC←LOC-4096; GO TO LT%                                   44134000 T 0129:3
     END;%                                                          44135000 T 0131:2
LOC←M[MEND].[FF];%                                                  44136000 T 0133:0
LP:IF M[LOC].[2:1] THEN    BEGIN%                                   44137000 T 0135:1
LN: LOC←M[LOC].[FF];GO TO LP END;%                                  44138000 T 0137:1
          FORGETSPACE(LOC+2);%                                      44139000 T 0140:0
          IF LOC≠MSTART THEN%                                       44140000 T 0141:1
```

```
                    GO TO LN;%                                                  44141000 T  0142:0
          STOREDY←TRUE;%                                                        44142000 T  0142:2
          $ SET OMIT = NOT(DFX)                                                 44142999 T  0144:1
                STREAM(S←100,D←18);%                                            44144000 T  0144:1
                    BEGIN%                                                      44145000 T  0145:1
                    SI ← S; DS ← 11 WDS;                                        44146000 T  0145:1
                    19(DI ← DI+8); DS ← 2 WDS;                                  44147000 T  0145:3
                    END;%                                                       44148000 T  0146:3
                    SPACESTACK:=MEND-128;                                       44148100 T  0147:0
                    TAR:=[M[MEND-130]]&2[8:38:10];                              44148200 T  0148:1
     INTS:=GETSPACE(P(,,CORENDLOD),[CF]-P(,,INITIALIZELOD),                     44149000 T  0151:0
                        [CF],1,1)+2;                                            44150000 T  0152:3
     INTSS:=GETSPACE(200,12,1)+2;                                               44150005 T  0155:1
      $ SET OMIT = NOT(AUXMEM)                                                  44150009 T  0157:2
            I:=(MIXMAX+1)×12                        %PRT THRU USERCODE          44151000 T  0157:2
                    + MIXMAX×NDX                    % NFO                       44151010 T  0158:2
                    + JOBNUMAX                      % BED                       44151020 T  0159:1
                    +10                             % CHANNEL, CHANIO ARRAY     44151030 T  0160:0
      $ SET OMIT = NOT(AUXMEM)                                                  44151034 T  0160:2
                    +SLATESIZE                      % SLATE                     44151050 T  0160:2
      $ SET OMIT = NOT(WORKSET)                                                 44151051 T  0161:0
                    + MESSAGETABLESIZE                                          44151055 T  0161:0
                    +16                             % PRNTABLE                  44151060 T  0161:2
                    +(6×32)                         %I/O QUEUES                44151062 T  0162:0
      $SET OMIT=SHAREDISK                                                       44151064 T  0163:0
                    +65                             %TINU                      44151066 T  0163:0
      $SET OMIT=NOT OMIT                                                        44151068 T  0163:2
      $SET OMIT=NOT DFX                                                         44151074 T  0163:2
                    + PUNTSIZE                      %PUNTER                    44151080 T  0163:2
                    +48                             %ISTACK                    44151082 T  0164:0
                    +SPACESTACKSIZE                                             44151083 T  0164:2
                    +20                             %MAINTBUFFER               44151084 T  0165:0
                    -1                              % NFO[0] MUST START IN      44151085 T  0165:2
                                                    % SECOND MEM LINK          44151090 T  0166:0
                    +2*PSEUDOMAX1 + 9               % CIDROW,UNITCODE           44151092 T  0166:0
                    +3×(PSEUDOMAXT+1)               % I/O ASSGNMNT TBLS         44151094 T  0167:2
          $ SET OMIT = NOT(DCLOG AND DATACOM )                                  44151099 T  0168:3
          $ SET OMIT = NOT(DATACOM )                                            44151199 T  0168:3
          $ SET OMIT = NOT(STATISTICS)                                          44151219 T  0168:3
          $ SET OMIT = NOT(BREAKOUT)                                            44151299 T  0168:3
          $ SET OMIT = NOT(DEBUGGING OR DUMP)                                   44151399 T  0168:3
          $ SET OMIT = NOT(DCSPO AND DATACOM )                                  44151499 T  0168:3
          $ SET OMIT = NOT(DEBUGGING)                                           44151599 T  0168:3
          $ SET OMIT = NOT(PACKETS)                                             44151619 T  0168:3
                      +(W:=(ESPDISKTOP-ESPDISKBOTTOM+48) DIV 48) % ESPTAB       44151700 T  0168:3
          $ SET OMIT = NOT(SHAREDISK)                                           44151799 T  0171:2
          $ SET OMIT = NOT(SAVERESULTS)                                         44151820 T  0171:2
          $ SET OMIT = NOT(NEWLOGGING)                                          44151889 T  0171:2
          $ SET OMIT = NOT(DATACOM )                                            44151900 T  0171:2
          $ SET OMIT = NOT(DEBUGGING)                                           44151920 T  0171:2
                    + P(,OLAYLOD),[8:10]+1;                                     44151950 T  0171:2
                    J ← GETSPACE(I,0,0)+1;%                                     44152000 T  0174:0
                    M[J] ← 0;%                                                  44153000 T  0176:1
                    MOVE(I-1,J,J+1);%                                           44154000 T  0177:3
                    C←J+1; J←J %C IS USED IN MAKESAVE                           44154010 T  0180:1
          $ SET OMIT = NOT(DATACOM )                                            44154020 T  0181:2
          $ SET OMIT = NOT(DEBUGGING)                                           44154040 T  0181:2
                    + P(,OLAYLOD),[8:10]+1;                                     44154070 T  0181:2
                    WHILE FALSE DO; %C-REL CONS FIX                             44154080 T  0184:0
                    I←MIXMAX×NDX;                                               44154100 T  0185:1
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                    T←P(.NFO); FIX;                                          44154200 T  0186:2
                    I ← MIXMAX+1;%                                           44155000 T  0188:0
                    T ← P(.PRT); FIX;%                                       44156000 T  0189:1
                    T ← P(.INTABLE); FIX;%                                   44156100 T  0191:0
$ SET OMIT = NOT(AUXMEM)                                                     44156199 T  0193:0
                    T ← P(.JAR); FIX;%                                       44157000 T  0193:0
                    T←P(.PRYOR); FIX;                                        44157100 T  0195:0
                    T←P(.SHEET); FIX;                                        44157200 T  0197:0
                    T ← P(.PROCTIME); FIX;%                                  44158000 T  0199:0
                    T ← P(.IOTIME); FIX;%                                    44159000 T  0201:0
                    T ← P(.DALOC);  FIX;                                     44160000 T  0203:0
                    T:=P(.TAR); FIX;                                         44160050 T  0205:0
$ SET OMIT = NOT(STATISTICS)                                                 44160099 T  0207:0
$ SET OMIT = NOT(PACKETS)                                                    44160399 T  0207:0
$ SET OMIT = NOT(BREAKOUT)                                                   44160999 T  0207:0
                    T ← P(.REPLY); FIX;%                                     44162000 T  0207:0
                    T ← P(.FS); FIX;                                         44162050 T  0209:0
                    T:= P(.USERCODE); FIX;                                   44162100 T  0211:0
$ SET OMIT = NOT(DATACOM )                                                   44162109 T  0213:0
$ SET OMIT = NOT(DCLOG AND DATACOM )                                         44162119 T  0213:0
$ SET OMIT = NOT(NEWLOGGING)                                                 44162199 T  0213:0
                    I ← JOBNUMAX; T ← P(.BED); FIX;%                         44163000 T  0213:0
$ SET OMIT = NOT(WORKSET)                                                    44163010 T  0216:0
                    I ← 5;                                                   44164000 T  0216:0
                    T ← P(.CHANNEL); FIX;                                    44164010 T  0216:3
                    T ← P(.CHANIO); FIX;                                     44164020 T  0219:0
$ SET OMIT = NOT(AUXMEM OR MONITOR)                                          44164099 T  0221:0
                    I ← PSEUDOMAX1; T← P(.CIDROW); FIX;                      44164500 T  0221:0
$ SET OMIT = NOT(PACKETS)                                                    44164599 T  0224:0
$ SET OMIT = NOT(DEBUGGING OR DUMP)                                          44164999 T  0224:0
$ SET OMIT = NOT(DEBUGGING)                                                  44165099 T  0224:0
$ SET OMIT = NOT(DCSPO AND DATACOM )                                         44165599 T  0224:0
                    I ← MESSAGETABLESIZE; T ← P(.MESSAGETABLE); FIX;         44165700 T  0224:0
                    I:=SLATESIZE; T:= P(.SLATE); FIX;%                       44166000 T  0227:0
                    I←16;                                                    44166200 T  0230:0
                    T ← P(.PRNTABLE); FIX;%                                  44167000 T  0230:3
$SET OMIT=NOT DFX                                                            44167200 T  0233:0
$SET OMIT=SHAREDISK                                                          44167500 T  0233:0
                    I:=65;                                                   44167600 T  0233:0
$SET OMIT=NOT OMIT                                                           44167700 T  0233:3
                    T:=P(.TINU);FIX;                                         44168000 T  0233:3
                    I:=32;                                                   44168100 T  0236:0
                    T:=P(.UNIT);FIX;                                         44168200 T  0236:3
                    T ← P(.FINALQUE); FIX;%                                  44169000 T  0239:0
                    T ← P(.LOCATQUE); FIX;%                                  44170000 T  0241:0
                    T ← P(.IOQUE); FIX;%                                     44171000 T  0243:0
$ SET OMIT = NOT(STATISTICS)                                                 44171099 T  0245:0
                    T ← P(.TRANSACTION); FIX;%                               44172000 T  0245:0
                    T ← P(.WAITQUE); FIX;%                                   44173000 T  0247:0
                    SPACESTACK:=J; J:=J+SPACESTACKSIZE;                      44173010 T  0249:0
$ SET OMIT = NOT(SHAREDISK)                                                  44173099 T  0251:0
                    ESPTAB←J; J←W+J;                                         44173200 T  0251:0
                    ESPCOUNT:=ESPDISKTOP-ESPDISKBOTTOM;                      44173300 T  0253:0
                         I ← PSEUDOMAXT + 1;                                 44174000 T  0254:1
                    T ← P(.LABELTABLE); FIX;%                                44175000 T  0255:2
                    T ← P(.MULTITABLE); FIX;%                                44176000 T  0257:0
                    T ← P(.RDCTABLE); FIX;%                                  44177000 T  0259:0
$ SET OMIT = NOT(STATISTICS)                                                 44177099 T  0261:0
$ SET OMIT = NOT(SAVERESULTS)                                                44177999 T  0261:0
                    I ← PSEUDOMAX1 + 9;  T ← P(.UNITCODE); FIX;              44178100 T  0261:0
```

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                I:=48; T:=P(.ISTACK); FIX;                                  44179000 T  0264:0
                I:=20; T:=P(.MAINTBUFFER); FIX;                             44179050 T  0267:0
                I:=PUNTSIZE; T:=P(.PUNTER); FIX;                            44179100 T  0270:0
                STACKUSE ← TRUE;%                                           44180000 T  0273:0
$ SET OMIT = NOT DEBUGGING                                                  44180099 T  0274:3
                STREAM(A:=[PUNTER[3]]);                                     44181000 T  0274:3
                BEGIN DS:=13 LIT"INVALID LINK←"; DI:=DI+3;        %  3      44181100 T  0275:3
                      DS:=16 LIT"INVALID ADDRESS←";               %  5      44181200 T  0278:0
                      DS:=16 LIT"SLATE OVERFLOW←";                %  7      44181300 T  0280:1
                      DS:=13 LIT"BED OVERFLOW←"; DI:=DI+3;        %  9      44181400 T  0282:2
$ SET OMIT = NOT SHAREDISK                                                  44181450 T  0284:3
                END;                                                        44182100 T  0284:3
                HALTSET:=1;                                                 44182200 T  0285:0
PSEUDOCOPY ← 0;                                                             44186005 T  0286:3
        JOBNUM ← -2;%                                                       44187000 T  0287:2
                PRYOR[0] ← -1;                                              44187200 T  0288:2
$ SET OMIT = NOT(DATACOM AND DCSPO )                                        44187299 T  0290:0
                NUMESS := NUMAINTMESS := -100;                              44188000 T  0290:0
              LOGHOLDER:=LOGENTRY:=MDELTA:=MLOG:=MAINTLOGARRAY:=NXDISK:=0;  44188200 T  0291:2
              MROW:=100;                                                    44188300 T  0291:3
                KEYBOARDCOUNTER:=1;        % KEEPS KEYIN FROM RUNNING.     44188500 T  0295:2
$ SET OMIT = NOT DEBUGGING                                                  44188999 T  0296:1
                M[SPACESTACK]:=WORDOFEASE;                                  44189500 T  0296:1
                MOVE(SPACESTACKSIZE-1,I:=SPACESTACK.[CF],I+1);              44189550 T  0297:3
                MOVE(48,1,ISTACK.[CF]);                                     44189600 T  0301:1
                MOVE(@60,I,@160);                                           44189800 T  0303:2
                NT1:=0; MOVE(14,@160,@161);          % NT1 = @160           44189900 T  0305:0
$ SET OMIT = NOT SHAREDISK                                                  44189995 T  0307:1
                IOMASK ← @2000000000;%                                      44191000 T  0307:1
                UNIT[0]:=@0400007777777777;                                 44191005 T  0308:0
                MOVE(15,UNIT INX 0,P(DUP)+1);                               44191010 T  0309:1
                MOVE(16,[UNITL],UNIT INX 16);                               44191015 T  0312:0
$SET OMIT=SHAREDISK                                                         44191020 T  0314:1
                MOVE(65,P([TINUL]),TINU INX 0);                             44191025 T  0314:1
$SET OMIT=NOT OMIT                                                          44191030 T  0316:2
$SET OMIT=NOT DFX                                                           44191125 T  0316:2
                GO TO MISSL;                                                44191145 T  0316:2
UNITL:::                                                                    44191150 T  0319:0
                @0600007777777777,%DRA = 16                                 44191155 T  0319:0
                @0600007777777777,%DRB = 17                                 44191160 T  0320:0
                @1000007777777777,%DKA = 18                                 44191165 T  0321:0
                @1000007777777777,%DKB = 19                                 44191170 T  0322:0
                @0200007777777777,%LPA = 20                                 44191175 T  0323:0
                @0200007777777777,%LPB = 21                                 44191180 T  0324:0
                @1400007777777777,%CPA = 22                                 44191185 T  0325:0
                @0000007777777777,%CRA = 23                                 44191190 T  0326:0
                @0000007777777777,%CRB = 24                                 44191195 T  0327:0
                @1200007777777777,%SPO = 25                                 44191200 T  0328:0
                @2000007777777777,%PPA = 26                                 44191205 T  0329:0
                @2200007777777777,%PRA = 27                                 44191210 T  0330:0
                @2200007777777777,%PRB = 28                                 44191215 T  0331:0
                @2000007777777777,%PPB = 29                                 44191220 T  0332:0
                @2400007777777777,%DCA = 30                                 44191225 T  0333:0
                @3600007777777777 %    = 31                                 44191230 T  0334:0
TINUL:::                                                                    44191235 T  0335:0
                @ 020010040446321,  COMMENT MTA;                            44191240 T  0335:0
                @ 060020040446322,  COMMENT MTB;%                           44191245 T  0336:0
                @ 120040040446323,  COMMENT MTC;%                           44191250 T  0337:0
                @ 160110040446324,  COMMENT MTD;%                           44191255 T  0338:0
                @ 220120040446325,  COMMENT MTE;%                           44191260 T  0339:0
```

```
@ 260140040446326,  COMMENT MTF;%                                  44191265 T  0340:0
@ 320210040446330,  COMMENT MTH;%                                  44191270 T  0341:0
@ 360220040446341,  COMMENT MTJ;%                                  44191275 T  0342:0
@ 420240040446342,  COMMENT MTK;%                                  44191280 T  0343:0
@ 460310040446343,  COMMENT MTL;%                                  44191285 T  0344:0
@ 520320040446344,  COMMENT MTM;%                                  44191290 T  0345:0
@ 560340040446345,  COMMENT MTN;%                                  44191295 T  0346:0
@ 620410040446347,  COMMENT MTP;%                                  44191300 T  0347:0
@ 660420040446351,  COMMENT MTR;%                                  44191305 T  0348:0
@ 720440040446362,  COMMENT MTS;%                                  44191310 T  0349:0
@ 760510040446363,  COMMENT MTT;%                                  44191315 T  0350:0
@ 100520040245121,  COMMENT DRA;%                                  44191320 T  0351:0
@ 200540040245122,  COMMENT DRB;%                                  44191325 T  0352:0
@ 140610040244221,  COMMENT DKA;%                                  44191330 T  0353:0
@ 300620040244222,  COMMENT DKB;%                                  44191335 T  0354:0
@ 540640000434721,  COMMENT LPA;%                                  44191340 T  0355:0
@ 640710000434722,  COMMENT LPB;%                                  44191345 T  0356:0
@ 240720000234721,  COMMENT CPA;%                                  44191350 T  0357:0
@ 240740040235121,  COMMENT CRA;%                                  44191355 T  0358:0
@ 341010040235122,  COMMENT CRB;%                                  44191360 T  0359:0
@ 741020000624746,  COMMENT SPO;%                                  44191365 T  0360:0
@ 441040000474721,  COMMENT PPA;%                                  44191370 T  0361:0
@ 441110000475121,  COMMENT PRA;%                                  44191375 T  0362:0
@ 501120000475122,  COMMENT PRB;%                                  44191380 T  0363:0
@ 501140000474722,  COMMENT PPB;%                                  44191385 T  0364:0
@ 401210000242321,  COMMENT DCA;%                                  44191390 T  0365:0
@ 001220000713147,  COMMENT ZIP;%                                  44191395 T  0366:0
@ 001240000232421,  COMMENT CDA;%                                  44191400 T  0367:0
@ 001310000232422,  COMMENT CDB;%                                  44191405 T  0368:0
@ 001320000232423,  COMMENT CDC;%                                  44191410 T  0369:0
@ 001340000232424,  COMMENT CDD;                                   44191415 T  0370:0
@ 001410000232425,  COMMENT CDE;                                   44191420 T  0371:0
@ 001420000232426,  COMMENT CDF;                                   44191425 T  0372:0
@ 001440000232427,  COMMENT CDG;                                   44191430 T  0373:0
@ 001510000232430,  COMMENT CDH;                                   44191435 T  0374:0
@ 001520000232441,  COMMENT CDJ;                                   44191440 T  0375:0
@ 001540000232442,  COMMENT CDK;                                   44191445 T  0376:0
@ 001610000232443,  COMMENT CDL;                                   44191450 T  0377:0
@ 001620000232444,  COMMENT CDM;                                   44191455 T  0378:0
@ 001640000232445,  COMMENT CDN;                                   44191460 T  0379:0
@ 001710000232447,  COMMENT CDP;                                   44191465 T  0380:0
@ 001720000232450,  COMMENT CDQ;                                   44191470 T  0381:0
@ 001740000232451,  COMMENT CDR;                                   44191475 T  0382:0
@ 002010000232462,  COMMENT CDS;                                   44191480 T  0383:0
@ 002020000232463,  COMMENT CDT;                                   44191485 T  0384:0
@ 002040000232464,  COMMENT CDU;                                   44191490 T  0385:0
@ 002110000232465,  COMMENT CDV;                                   44191495 T  0386:0
@ 002120000232466,  COMMENT CDW;                                   44191500 T  0387:0
@ 002140000232467,  COMMENT CDX;                                   44191505 T  0388:0
@ 002210000232470,  COMMENT CDY;                                   44191510 T  0389:0
@ 002220000232471,  COMMENT CDZ;                                   44191515 T  0390:0
@ 002240000232402,  COMMENT CD2;                                   44191520 T  0391:0
@ 002310000232403,  COMMENT CD3;                                   44191525 T  0392:0
@ 002320000232404,  COMMENT CD4;                                   44191530 T  0393:0
@ 002340000232405,  COMMENT CD5;                                   44191535 T  0394:0
@ 002410000232406,  COMMENT CD6;                                   44191540 T  0395:0
@ 002420000232407,  COMMENT CD7;                                   44191545 T  0396:0
@ 002440000232410,  COMMENT CD8;                                   44191550 T  0397:0
@ 002510000232411,  COMMENT CD9;                                   44191555 T  0398:0
$SET OMIT=NOT SHAREDISK                                            44191560 T  0399:0
```

hardware codes

```
                    @ 00000000446367  COMMENT MTX, ALL SCRATCH TAPES;                44191590 T  0399:0
MISSL:                                                                               44191595 T  0400:0
                    FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                44192000 T  0400:0
 $ SET OMIT = NOT DATACOM                                                            44192490 T  0401:0
                         PROCTIME[I] ← IOTIME[I] ← @20037777777777777;%              44193000 T  0401:0
                    FOR I:=0 STEP 1 UNTIL 31 DO                                      44193200 T  0405:2
                    BEGIN IOQUE[I]:=I-1;                                             44193400 T  0408:0
                         TINU[I].[18:12]:=0;                                         44193600 T  0409:3
                    END;                                                             44193800 T  0412:1
                    FOR I:=0 STEP 1 UNTIL PSEUDOMAXT DO                              44194000 T  0414:2
                         LABELTABLE[I] ← @114;%                                      44195000 T  0416:0
                    LABELTABLE[25] ← 0;%                                             44196000 T  0419:2
 $ SET OMIT = NOT DEBUGGING                                                          44196999 T  0420:3
                    FOR I ← 0 STEP 1 UNTIL PSEUDOMAX + 9 DO                          44201110 T  0420:3
                         UNITCODE[I] := -0; UNITCODE[7] := 0;                        44201120 T  0425:0
                % FIND INITIAL VALUE FOR CORE                                        44201200 T  0428:1
CORE:=P(,,COREND,LOD).[CF]-P(,,INITIALIZE,LOD).[CF];                                 44201300 T  0428:1
                    I ← M[M[AVAIL]];                                                 44201400 T  0431:0
                    WHILE I.[FF] ≠ @77777 DO                                         44201500 T  0433:1
                         BEGIN CORE ← CORE + I.[FF];  I ← M[I] END;                  44201600 T  0435:0
                    CORE ← CORE DIV 64;                                              44202000 T  0440:0
 $ SET OMIT = NOT(DATACOM )                                                          44202004 T  0441:1
 $ SET OMIT = NOT(DEBUGGING)                                                         44202105 T  0441:1
                   I←P(,OLAY); MAKESAVE;                                             44202119 T  0441:1
                    SHLM←SPACE(10);                                                  44202120 T  0443:0
                    DDD:=[M[A:=SPACE(483)]]&483[8:38:10];                            44202500 T  0445:1
                    DISKWAIT(-A,-30,0);                                              44202600 T  0449:2
                    DISKWAIT(-31-A,-30,MCPNAMESEG);                                  44202700 T  0451:1
                    MOVE(2,A+10+5×SYSNO,A+51+2×SYSNO);                               44202800 T  0454:0
                    DISKWAIT(A+31,-30,MCPNAMESEG);                                   44202900 T  0458:2
                    STREAM(ML:=MARKLEVEL,PL:=M[3]:=PATCHLEVEL,LL:=LOCALEVEL          44203000 T  0461:0
                         ,MEMASK,N:=A+10+5×SYSNO                                     44203150 T  0463:1
 $ SET OMIT = NOT(SHAREDISK)                                                         44203179 T  0464:3
                              ,T←NT1←GETSPACE(10,0,0)+2);                            44203200 T  0464:3
                    BEGIN DS←5 LIT "-H/L ";                                          44204000 T  0467:3
 $ SET OMIT = NOT(SHAREDISK)                                                         44204099 T  0468:3
                         DS←6 LIT" WITH ";SI←N;SI←SI+1;DS←7 CHR;                     44204200 T  0468:3
                    DS:=LIT"/";SI:=SI+1;DS:=7 CHR;DS:=6 LIT" MARK ";                 44204500 T  0470:2
                    SI:=LOC ML; IF SC GEQ " " THEN;                                  44204600 T  0472:2
                    8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR            44204650 T  0473:1
                      ELSE DS:=CHR); DS:=LIT".";                                     44204700 T  0475:0
                    SI:=LOC PL; IF SC GEQ " " THEN;                                  44204750 T  0476:1
                    6(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR            44204800 T  0477:0
                      ELSE DS:=CHR); DS:=2CHR;                                       44204850 T  0478:3
                    SI:=LOC LL; IF SC GEQ " " THEN;                                  44205000 T  0479:3
                    8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR            44205050 T  0480:2
                      ELSE DS:=CHR);                                                 44205100 T  0482:1
                    DS:=17LIT" MODS          =←";                                    44205220 T  0483:0
                    SI:=LOC MEMASK; SI:=SI+6; SKIP 4 SB; DI:=DI-2;                   44205300 T  0485:2
                    8(DI:=DI-2;IF SB THEN DS:=LIT"@" ELSE DS:=LIT"R";SKIP SB);       44205600 T  0486:2
                    END;                                                             44206100 T  0489:1
                    MOVE(10,NT1,SHLM);                                               44206200 T  0489:2
                    SPOUT(NT1);                                                      44206300 T  0491:0
                    MOREINITIALIZE;                                                  44206350 T  0491:3
END OF INITIALIZE;                                                                   44206400 T  0492:1
                                                                                                SIZE= 0494 WORDS
SAVE PROCEDURE MOREINITIALIZE;                                                       44206450 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 01465
BEGIN                                                                                44206500 T  0000:0
    REAL                                                                             44206550 T  0000:0
```

```
      A=+1,B=+2,C=+3,I=+4,J=+5,T=+6,W=+7,Y=+8,Z=+9;                    44206700 T  0000:0
    REAL
      INTS=+10,INTSS=+11,LASTL=+12,LDATE=+13,LOC=+14,MEND=+15;         44206750 T  0000:0
    REAL                                                               44206800 T  0000:0
      IRPB=+16,IRPTB=+17,IRPDBS=+18,IRPTU=+19,IRPBUF=+20;              44206850 T  0000:0
    REAL                                                               44206900 T  0000:0
       T1=LASTL,SHLM=MEND;                                             44206950 T  0000:0
    INTEGER                                                            44207000 T  0000:0
      IRPBTS=+21,IRPWRS=+22,XCLICK=XCLOCK;                             44207050 T  0000:0
    ARRAY DDD=+23[*],GI=+24[*];                                        44207100 T  0000:0
    ARRAY X  =W[*];                                                    44207150 T  0000:0
  $ SET OMIT = NOT SHAREDISK                                           44207200 T  0000:0
    LABEL NULLINT,CONTINUE,BOMBOUT;                                    44207218 T  0000:0
              P(DEL,STF);                                              44207250 T  0000:0
  $ SET OMIT = NOT(SHAREDISK)                                          44207300 T  0000:0
              DISKWAIT(-A,30,DIRECTORYTOP-SYSNO);                      44207899 T  0000:3
              CORE.[4:14]:=IF DDD[9]=0 THEN 100 ELSE DDD[9].[4:14];    44213000 T  0000:3
              OPTION ← DDD[0];%                                        44213500 T  0002:3
              T ← 0;%                                                  44214000 T  0007:2
  $ SET OMIT = NOT SHAREDISK                                           44215000 T  0008:2
              XCLICK:=(@777777777700 AND DDD[18]) MOD 5184000;         44216690 T  0009:1
              NEUP:=DDD[2] MOD 100 ;                                   44216900 T  0009:1
              NEUP:=NEUP&(NEUP+DDD[2] DIV 100)[CTF]&NEUP[3:33:15];     44216910 T  0011:1
              DATE:=DDD[1];                                            44216940 T  0012:3
  $ SET OMIT = NOT(SHAREDISK)                                          44216950 T  0016:1
%                                                                      44216959 T  0017:1
%   SET UP DISK POINTERS AND BUILD OR CLEANOUT DIRECTORY.              44239500 T  0017:1
%                                                                      44239600 T  0017:1
%   ESPDISK MAY NOT BE USED ABOVE THIS POINT SO THAT THE SHAREDISK     44239700 T  0017:1
%   SCRATCHDIRECTORY, WHICH IS UNPROTECTED, CAN BE RECOVERED.          44239800 T  0017:1
%                                                                      44239900 T  0017:1
              STREAM(B:=0:A:=BYPASS:=DDD[4],D:=P(.DIRDSK));            44240000 T  0017:1
              BEGIN SI:=LOC A; DS:=8 DEC; DI:=LOC B;                   44240500 T  0017:1
                    SI:=LOC D; SI:=SI+8; DS:=WDS;                      44240520 T  0019:2
              END; I:=P INX 0;  % GET LOCATION IN INITIALIZE           44240540 T  0020:1
              DISKBOTTOM:=BYPASS-2;                                    44240560 T  0021:0
              M[INTS-2]:=(J:=*P(DUP))&I[CTC];                          44240580 T  0022:1
              M[J].[FF]:=I;                                            44240600 T  0023:2
              M[I]:=J&(INTS-2)[CTF];                                   44240620 T  0026:3
              FORGETSPACE(INTS);  % RETURN PART OF INITIALIZE          44240640 T  0029:0
              INTS:=I + 2;                                             44240660 T  0031:2
              IF (T←NEUP.[FF]-NEUP.[CF])>0 THEN                        44240680 T  0032:1
              NEUP←NEUP&10[CTC]&(10+T)[CTF];%SAVE # OF EUS ON DKA,     44240690 T  0033:2
              I:=NEUP.NEUF;                                            44240695 T  0036:1
              Z:=(Y:=I + EUIOFFSET) + I                                44240700 T  0039:0
  $ SET OMIT = SHAREDISK                                               44240800 T  0040:1
                 + (B:=(I+1) DIV 2 + I + 2)                            44240819 T  0041:2
  $ POP OMIT                                                           44240820 T  0041:2
              ;J:=GETSPACE(Z,0,1) + 2;                                 44240821 T  0044:0
              MOVE(Z,J-1,J);                                           44240840 T  0044:0
              EUIO:=(J INX M)&Y[8:38:10];                              44240860 T  0047:3
              PEUIO:=((J:=J+Y) INX M)&I[8:38:10];                      44240880 T  0049:3
  $ SET OMIT = SHAREDISK                                               44240900 T  0052:0
              AVTABLE:=((J+I) INX M)&B[8:38:10];                       44240919 T  0055:1
  $ POP OMIT                                                           44240920 T  0055:1
              T1:=GETSPACE(200,0,1)+2;            % SPACE FOR INTRNSC 44240921 T  0058:0
              ACTDATE:=WEEKDAY:=0;                                     44241000 T  0058:0
  $ SET OMIT = NOT(SHAREDISK)                                          44241150 T  0060:1
              DIRECTORYBUILDER(A,DDD);                                 44241179 T  0061:2
              FORGETSPACE(P(.,DIRECTORYBUILDER,LOD) INX 0);            44242000 T  0061:2
                                                                       44242010 T  0062:3
```

```
 $ SET OMIT = NOT(SHAREDISK)                                          44242049 T  0064:1
%                                                                     44242700 T  0064:1
%   SET UP INTRINSICS TABLES AND LOCK MCP.                            44242800 T  0064:1
%                                                                     44242900 T  0064:1
    DISKWAIT(-A,-30,0);                                               44243000 T  0064:1
    IF (T:=DIRECTORYSEARCH(DDD[I:=13+5×SYSNO],DDD[I+1],17))≠0 THEN    44243500 T  0066:0
    IF (NT1:=M[T+4],[36:6])≠0 AND NT1≠DCINTYPE THEN                   44244000 T  0070:3
    BEGIN FORGETSPACE(T);                                             44244500 T  0075:1
        P(DIRECTORYSEARCH(NABS(DDD[I]),DDD[I+1],16),DEL);             44245000 T  0076:2
        DDD[I]:=DDD[I+1]:=0;                    % REMOVE INTRINSICS   44245500 T  0079:1
        DISKWAIT(A,-30,0);                                            44246000 T  0082:0
NULLINT: FORGETSPACE(T1);                                             44246500 T  0083:2
        T1:=0;                                                        44247000 T  0084:1
    END ELSE                                                          44247500 T  0085:0
    BEGIN INTRINSICTABLEBUILDER(T&T1[CTF]);;                          44248000 T  0085:0
        FORGETSPACE(T);                                               44248500 T  0089:1
    END ELSE GO TO NULLINT;                                           44249000 T  0090:0
 $ SET OMIT = NOT SHAREDISK                                           44249495 T  0090:0
    INTFREE:=1;                                                       44250000 T  0090:0
    IF (T:=DIRECTORYSEARCH(DDD[I-3],DDD[I-2],17))≠0 THEN              44250500 T  0091:3
    BEGIN                                                             44251000 T  0095:2
 $ SET OMIT = NOT STATISTICS                                          44251495 T  0096:0
        FORGETSPACE(T);                                               44252000 T  0096:0
    END ELSE                                                          44252500 T  0096:3
            LBMESS(DDD[I-3],DDD[I-2],-15,0,0,0,1);                    44253000 T  0096:3
 $ SET OMIT = SHAREDISK                                               44253495 T  0101:1
    MCPFREE:=1;                                                       44253500 T  0101:1
 $ POP OMIT                                                           44253505 T  0103:0
%                                                                     44253700 T  0103:0
%   ABORT LOGGING.                                                    44253800 T  0103:0
%                                                                     44253900 T  0103:0
    DISKWAIT(-A,210,ESPDISKTOP+1);                                    44254000 T  0103:0
    FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                 44254500 T  0105:0
    BEGIN USERCODE[I] := 0;                                           44255000 T  0106:0
        T ← DDD[3×I+92].[24:24] OR T;                                 44255500 T  0107:1
    END;                                                              44256000 T  0110:1
    IF T ≠ 0 AND DDD[2] = "ABORT" THEN%                               44256500 T  0112:2
    BEGIN GI←[M[SPACE(210)]]&210[8:38:10];                            44257000 T  0114:2
        MOVE(210,A,GI);                                               44257500 T  0118:3
        DDD[3] ← 0;%                                                  44258000 T  0120:2
        MOVE(206,A+3,A+4);                                            44258500 T  0121:3
        DISKWAIT(A,210,ESPDISKTOP+1);                                 44259000 T  0124:1
        FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                             44259500 T  0126:0
        IF (B←GI[3×I+92].[CF])≠0 THEN                                 44260000 T  0128:0
        IF B DIV 1000000+1 LEQ NEUP.[CF] THEN                         44260500 T  0131:0
        BEGIN                                                         44261000 T  0133:3
            DISKWAIT(-A,30,B);                                        44261500 T  0134:1
            IF (T:=DDD[1] DIV 5×6) GTR 999 OR T LSS 0 THEN GO BOMBOUT; 44262000 T  0135:3
            USERCODE[I]←SPACE(T);                                     44262500 T  0139:1
            FOR J←0 STEP 1 UNTIL (T-1) DIV 30 DO                      44263000 T  0142:3
            BEGIN                                                     44263500 T  0147:2
                MOVE(IF (C←T-30×J)>30 THEN 30 ELSE C,                 44264000 T  0147:2
                    A,USERCODE[I]+J×30);                              44264500 T  0151:3
                IF (C←DDD[0])≠0 THEN                                  44265000 T  0153:3
                IF C DIV 1000000≥NEUP.[CF] OR C<0 THEN                44265500 T  0155:1
                    GO BOMBOUT ELSE                                   44266000 T  0158:2
                    DISKWAIT(-A,30,C);                                44266500 T  0158:2
            END;                                                      44267000 T  0160:3
        END ELSE GO BOMBOUT;                                          44267500 T  0163:0
        FOR I←1 STEP 1 UNTIL MIXMAX DO                                44268000 T  0165:1
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                IF (C←USERCODE[I])≠0 THEN                                   44268500 T  0166:0
                BEGIN                                                       44269000 T  0167:2
                    GI[3×I+92].[24:24]←B←GETESPDISK;                        44269500 T  0168:0
                    T←(USERCODE[I]←M[C+1]) DIV 5×6;                         44270000 T  0172:1
                    FOR J←0 STEP 1 UNTIL (T-1) DIV 30-1 DO                  44270500 T  0176:1
                        M[C+J×30]←GETESPDISK;                               44271000 T  0181:2
                    DISKWAIT(C,T,B);                                        44271500 T  0184:3
                    FORGETSPACE(C);                                         44272000 T  0186:0
                END;                                                        44272500 T  0186:3
            END;                                                            44273000 T  0189:0
            GO CONTINUE;                                                    44273500 T  0189:0
        BOMBOUT:                                                            44274000 T  0189:2
            STREAM(D←T←SPACE(3));                                           44274500 T  0189:2
                DS←22 LIT"**ABORT LOG DESTROYED←";                          44275000 T  0192:1
            SPOUT(T);                                                       44275500 T  0195:2
            FOR I←1 STEP 1 UNTIL MIXMAX DO USERCODE[I]←0;                   44276000 T  0196:1
        CONTINUE:                                                           44276500 T  0200:2
            INTFINISH(A);                                                   44280000 T  0200:2
            FORGETSPACE(INTS);  FORGETSPACE(INTSS);                         44281000 T  0201:1
            GO TO NOTHINGTODO;                                              44282000 T  0202:3
        END;                                                                44440000 T  0203:1
                                                                                     SIZE= 0204 WORDS
         SAVE REAL PROCEDURE COREND;%                                       44441000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 01669
        BEGIN REAL T; P(INI); END;%                                         44442000 T  0000:0
                                                                                     SIZE= 0002 WORDS
        PROCEDURE INTFINISH(AA);VALUE AA;REAL AA;                           45000000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00938
        BEGIN REAL RCW=+0,MSCW=-2;                                          45001000 T  0000:0
            REAL A=+1,B=A+1,C=B+1,I=C+1,J=I+1,T=J+1,W=T+1,Y=W+1,Z=Y+1;      45002000 T  0000:0
            REAL INTS=Z+1,INTSS=INTS+1,LASTL=INTSS+1,LDATE=LASTL+1,LOC=LDATE+1,  45002100 T  0000:0
                MEND=LOC+1;                                                 45002200 T  0000:0
            REAL IRPB=MEND+1,IRPTB=IRPB+1,IRPDBS=IRPTB+1,IRPTU=IRPDBS+1,    45002300 T  0000:0
                IRPBUF=IRPTU+1;                                             45002400 T  0000:0
            INTEGER IRPBTS=IRPBUF+1,IRPWRS=IRPBTS+1;                        45002500 T  0000:0
            REAL T1=LASTL,SHLM=MEND;                                        45002600 T  0000:0
            ARRAY DDD=IRPWRS+1[*],GI=DDD+1[*];                              45002700 T  0000:0
            ARRAY X=W[*];                                                   45002800 T  0000:0
            LABEL NOGOOD,LOOP;                                              45003000 T  0000:0
        $ SET OMIT = NOT(STATISTICS)                                        45003199 T  0000:0
        $ SET OMIT = NOT(AUXMEM)                                            45003299 T  0000:0
        $ SET OMIT = NOT(DATACOM)                                           45003999 T  0000:0
            P(RCW,MSCW,STF); RCW←RCW&P(XCH)[CTC];                           45075590 T  0000:0
                TIMEOUT(SPACE(10));DATEOUT(SPACE(10));                      45075600 T  0002:1
        $ SET OMIT = NOT SEPTICTANK                                         45088990 T  0007:0
        $ SET OMIT = NOT(DCSPO AND DATACOM )                                45090000 T  0007:0
            WHILE FALSE DO; %FIX FOR C-RELATIVE CONSTANT ERRORS             45092105 T  0007:0
            IF(I:=DIRECTORYSEARCH("SYSTEM ","LOG    ",5))≠0 THEN            45092110 T  0008:1
                BEGIN IF(J:=M[I+10])=0 THEN                                 45092120 T  0010:2
                    BEGIN M[I+10]:=J:=GETUSERDISK(M[I+8]);                  45092130 T  0013:2
                    STREAM(DATE,A:=0,B:=I INX 1);                           45092140 T  0018:2
                    BEGIN SI:=LOC DATE;DI:=LOC A;DS:=8 OCT;                 45092150 T  0020:1
                        DI:=LOC A;DI:=B;DI:=DI+1;DS:=3 CHR;                 45092160 T  0021:0
                    END;                                                    45092170 T  0022:0
                    M[I INX 1].[25:23]:=XCLOCK+P(RTR);                      45092180 T  0022:1
                    DISKWAIT(I INX 0,30,I,[FF]);                            45092190 T  0026:0
                    END;                                                    45092200 T  0028:1
                DISKWAIT(-A,30,J);                                          45092210 T  0028:1
                IF DDD[0] LSS DDD[1] AND                                    45092220 T  0029:3
                    DDD[1]=M[I+8]×6 AND                                     45092230 T  0031:0
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                    DDD[4]="DISKLOG" THEN                                   45092240 T  0034:0
                    BEGIN DISKWAIT(-A-60,30,J+DDD[2] DIV 6);                45092250 T  0035:1
                    IF DDD[(DDD[2] MOD 6)×5+60]=4 THEN                      45092260 T  0039:0
                       BEGIN DDD[0]:=DDD[2]-1;                              45092270 T  0041:3
                             DISKWAIT(A,30,J);                              45092280 T  0044:1
                       END;                                                 45092290 T  0045:2
                    END ELSE                                                45092300 T  0045:2
                    BEGIN DDD[0]:=0;DDD[1]:=M[I+8]×6;                       45092310 T  0045:2
                          DDD[2]:=DDD[3]:=0;                                45092320 T  0053:1
                          DDD[4]:="DISKLOG";DDD[5]:=4;                      45092330 T  0055:2
                          DISKWAIT(A,30,J);                                 45092340 T  0058:0
                    END;                                                    45092350 T  0059:1
                 FORGETSPACE(I);                                            45092360 T  0059:1
                 LOGFREE:=NABS(J);                                          45092370 T  0060:0
                 END ELSE J←0;                                              45092380 T  0061:0
          $ SET OMIT = NOT(SHAREDISK)                                       45092390 T  0063:3
                 IF (I:=DIRECTORYSEARCH("REMOTE ","USERS  ",5))≠0 THEN      45093000 T  0063:3
                    BEGIN IF (J:=M[I+10])≠0 THEN                            45094000 T  0066:0
                          BEGIN DISKWAIT(-A,30,J);                          45094200 T  0069:0
                                MCP:=NFLAG(M[A]);                           45094400 T  0071:0
                                X:=M[I].[1:14] - 1;                         45094600 T  0073:2
                                T:=0;                                       45094800 T  0076:0
          LOOP:                                                             45095000 T  0076:3
          $ SET OMIT = NOT(DATACOM AND RJE )                                45095199 T  0076:3
                          END;                                              45099400 T  0076:3
                          FORGETSPACE(I);                                   45099600 T  0076:3
                    END ELSE MCP←NOT(-0);                                   45099800 T  0077:2
                 ENTERSYSFILE(1); % "LIBMAIN"                               45099900 T  0082:0
                 ENTERSYSFILE(2); % "LDCNTRL"                               45099910 T  0082:3
                 ENTERSYSFILE(3); % "PRNPBT "                               45099920 T  0083:2
                 X:=[M[GETSPACE(30,0,0)+2]]&30[8:38:10];                    45101000 T  0084:1
              TOGLE←TOGLE OR ABORTMASK OR USERDISKMASK ;                    45102000 T  0088:0
                 IF GI≠0 THEN%                                              45103000 T  0089:3
                 BEGIN%                                                     45104000 T  0090:3
                 FOR I←20 STEP 1 UNTIL 21 DO                                45104100 T  0091:1
                  P(WAITIO(@4000100000,@777,I),DEL);                        45104200 T  0092:0
                 LDATE:=GI[1];                                              45105000 T  0095:3
                 FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                          45106000 T  0096:3
                 IF USERCODE[I]≠0 THEN                                      45107000 T  0099:0
                 BEGIN                                                      45108000 T  0100:0
                      J ← 3×I;                                              45109000 T  0100:2
                      JARROW[I]:=X;                                         45111000 T  0101:3
                      PROCTIME[I] ← -CLOCK-P(RTR);%                         45112000 T  0103:1
                      P1MIX ← I;%                                           45113000 T  0105:1
                      X[0] ← GI[J+90];                                      45114000 T  0106:0
                      X[1] ← NABS(GI[J+91]);                                45115000 T  0108:0
                      STREAM(A←[LDATE],B←[X[5]]);                           45116000 T  0110:1
                      BEGIN SI←A; DS←8 OCT END;                             45117000 T  0111:2
                      IF GI[J+92].[1:23] GTR XCLOCK THEN                    45118000 T  0112:1
                      IF X[5] MOD 1000 GTR 1 THEN X[5]:=*P(DUP)-1 ELSE      45119000 T  0114:1
                      X[5]:=(X[5]-1001)+365+((X[5] DIV 1000)MOD 4=0);       45120000 T  0118:3
                      X[5]←GI[J+92].[ 1:23]&X[5][1:25:23];                  45121000 T  0124:0
                      X[6]←GI[J+92].[24:24]&USERCODE[I][CTF];               45122000 T  0127:3
                      USERCODE[I]←GI[I+180];P1MIX←I;                        45123000 T  0131:0
                      X[3] ← GI[J];%                                        45124000 T  0133:3
                      X[4] ← GI[J+1];%                                      45125000 T  0135:1
                      X[7] ← GI[J+2];%                                      45126000 T  0137:1
                      IOTIME[I] ← 0;%                                       45127000 T  0139:1
                      OLDIDLETIME ← (CLOCK+P(RTR))×2-X[3];%                 45128000 T  0140:2
                      X[2].[8:10] ← 99;%                                    45129000 T  0143:0
```

```
$ SET OMIT = NOT(STATISTICS)                                          45129099 T  0145:2
                SIGNOFF(X,[M[SPACE(5)]],0);                           45130000 T  0145:2
                P1MIX←0;                                              45130100 T  0149:0
                JARROW[I]←0; % IN CASE LOG IS NOT ON DISK,            45131000 T  0149:3
                STREAM(I,X,J:=J:=SPACE(10));%                         45131100 T  0151:0
                BEGIN S1:=X1DS:=2WDS;DI:=J;%                          45131200 T  0154:2
                     DS:=LIT"*";DI:=DI+7;DS:=LIT"/";                  45131300 T  0155:1
                     DI:=DI+7;DS:=LIT"=";S1:=LOC I;                   45131400 T  0156:2
                     DS:=2DEC;DS:=9LIT"!ABORTED←";%                   45131500 T  0157:2
                END;%                                                 45131600 T  0159:1
                SPOUT(J);%                                            45131700 T  0159:2
        NOGOOD:%                                                      45132000 T  0160:1
            END;%                                                     45133000 T  0160:1
$ SET OMIT = NOT(STATISTICS)                                          45133099 T  0162:2
            FORGETSPACE(GI);%                                         45134000 T  0162:2
            END;                                                      45134100 T  0163:2
            FORGETSPACE(X);                                           45135010 T  0163:2
            IF CLOCK=0 THEN          % CC103F IS INHIBITED           45135030 T  0164:2
            BEGIN STREAM(T:=T:=SPACE(10));                            45135040 T  0165:1
                BEGIN DS:=19 LIT"#TIMER NOT RUNNING,";                45135050 T  0168:2
                     DS:=22 LIT" RESET CC103F INHIBIT←";              45135060 T  0171:1
                END;                                                  45135070 T  0174:1
                SPOUT(T);                                             45135080 T  0174:2
            END;                                                      45135090 T  0175:1
            IF GIVEDATE THEN                                          45135100 T  0175:1
            BEGIN; STREAM(B←I←SPACE(2));                              45135110 T  0176:0
                DS←11 LIT "#DT PLEASE←";                              45135120 T  0179:1
                SPOUT(I);                                             45135130 T  0181:1
                DATE←-1;                                              45135140 T  0182:0
            END;                                                      45135150 T  0183:0
            IF GIVETIME THEN                                          45135160 T  0183:0
            BEGIN; STREAM(B←I←SPACE(2));                              45135170 T  0183:3
                DS←11 LIT "#TR PLEASE←";                              45135180 T  0187:0
                SPOUT(I);                                             45135190 T  0189:0
                XCLOCK←-5184000;                                      45135200 T  0189:3
            END;                                                      45135210 T  0190:3
            KEYBOARDCOUNTER:=0;                                       45135215 T  0190:3
            TOGLE←TOGLE OR HOLDMASK OR KEYBOARDMASK;                  45135220 T  0191:2
            COMPLEXSLEEP(CLOCK>0 AND XCLOCK≥0 AND DATE≥0);            45135230 T  0193:1
37324000    ACCIDENTAL ENTRY AT 0
        $ SET OMIT = NOT(AUXMEM)                                      45135299 T  0200:3
            LOGOUTMAINT(SHLM);                                        45135600 T  0200:3
            MR@W:=NABS(MROW);                                         45135700 T  0201:2
            FORGETSPACE(SHLM);                                        45135800 T  0202:2
        $ SET OMIT = SHAREDISK                                        45136000 T  0203:1
            DISKWAIT(-KLUMP,3,DIRECTORYTOP+3);                        45137000 T  0203:1
        $ POP OMIT                                                    45137001 T  0205:1
            TOGLE:=TOGLE OR COMASK;                          %RHR     45138000 T  0205:1
        $ SET OMIT = NOT(DATACOM  AND DCLOG)                          45141000 T  0206:2
            FORGETSPACE(A);                                           45143000 T  0206:2
        $ SET OMIT = NOT DEBUGGING                                    45144000 T  0207:1
                TOGLE ← TOGLE OR SHEETMASK OR STATUSMASK              45150000 T  0207:1
                OR NSECONDMASK;                                       45151000 T  0208:1
            READY ← @341600000;%                                      45152000 T  0209:2
            TERMIX←STOPJOB←@1777;                            %ST      45153000 T  0210:1
            IF T1=0 THEN                                              45154000 T  0211:2
            BEGIN STREAM(D:=I:=SPACE(4));                             45155000 T  0212:1
                DS:=27 LIT"** LOAD INTRINSICS NOW....←";              45156000 T  0215:2
                SPOUT(I);                                             45157000 T  0219:2
            END;                                                      45158000 T  0220:1
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$ SET OMIT = NOT(STATISTICS)                                                    45178000 T  0220:1
             RRRMECH ← RRRMECH AND @7637777777;%                                45229000 T  0220:1
             READY ← READY AND @7637777777;%                                    45230000 T  0221:2
$ SET OMIT = NOT(DCSPO AND DATACOM )                                            45231000 T  0222:3
$ SET OMIT = NOT(BREAKOUT)                                                      45247099 T  0222:3
        P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                                 45248000 T  0222:3
        END;%                                                                   45249000 T  0225:1
                                                                                          SIZE= 0231 WORDS
             :16: P(,,COREND,LOD,4,INX,STS); INITIALIZE; % 20-1ST CODE          46000000 T  0000:0
%            :17:                            % 21 - RES FOR NO MEM MSG          46000500 T  0018:0
             :18: GO TO TIMER;               % 22 - TIME INTERVAL%              46001000 T  0018:0
             :19: GO TO IOBUSY;              % 23 - I-O BUSY%                   46002000 T  0018:2
             :20: GO TO KEYBOARDREQUEST;     % 24 - KEYBOARD REQUEST%           46003000 T  0019:2
             :21: PRINTERFINISH(20);         % 25 - PRINTER 1 FINISH%           46004000 T  0020:2
             :22: PRINTERFINISH(21);         % 26 - PRINTER 2 FINISH%           46005000 T  0021:3
             :23: IOFINISH(RESULT1,1);       % 27 - CHANNEL 1 COMPLETE          46006000 T  0022:3
             :24: IOFINISH(RESULT2,2);       % 30 - CHANNEL 2 COMPLETE          46007000 T  0024:0
             :25: IOFINISH(RESULT3,3);       % 31 - CHANNEL 3 COMPLETE          46008000 T  0025:0
             :26: IOFINISH(RESULT4,4);       % 32 - CHANNEL 4 COMPLETE          46009000 T  0026:0
             :27: GO TO P2BUSY;              % 33 - P2 BUSY%                    46010000 T  0027:0
             :28: GO TO INQUEST;             % 34 - DATACOM INQUIRY             46011000 T  0027:2
             :29: DO UNTIL FALSE;            % 35 - SPECIAL INTERRUPT           46011500 T  0028:2
$ SET OMIT = SHAREDISK                                                          46011990 T  0029:3
             :30: DO UNTIL FALSE;            % 36 - DKA READ CHECK              46012000 T  0029:3
             :31: DO UNTIL FALSE;            % 37 - DKB READ CHECK              46012500 T  0030:3
$ SET OMIT = NOT SHAREDISK                                                      46012750 T  0031:3
             :32: P(0);      GO TO P2PROCESS; % 40 - P2 MEMORY PARITY%          46014000 T  0031:3
             :33: P(4,17);   GO TO P2PROCESS; % 41 - P2 INVALID ADDRESS         46015000 T  0032:3
             :34: P(4,1);    GO TO P2PROCESS; % 42 - P2 STACK OVERFLOW          46016000 T  0034:0
             :36: P(6);      GO TO P2PROCESS; % 44 - P2 COMMUNICATE%            46017000 T  0035:0
             :37: P(8);      GO TO P2PROCESS; % 45 - P2 PROGRAM RELEASE         46018000 T  0036:3
             :38: P(10);     GO TO P2PROCESS; % 46 - P2 CONTINUITY BIT          46019000 T  0037:3
             :39: P(18);     GO TO P2PROCESS; % 47 - P2 PRESENCE BIT            46020000 T  0038:3
             :40: P(12,0);   GO TO P2PROCESS; % 50 - P2 FLAG BIT               46021000 T  0039:3
             :41: P(12,1);   GO TO P2PROCESS; % 51 - P2 INVALID INDEX           46022000 T  0041:0
             :42: P(12,2);   GO TO P2PROCESS; % 52 - P2 EXP UNDERFLOW           46023000 T  0042:0
             :43: P(4,9);    GO TO P2PROCESS; % 53 - P2 EXP OVERFLOW%           46024000 T  0043:0
             :44: P(4,11);   GO TO P2PROCESS; % 54 - P2 KINT OVERFLOW%          46025000 T  0044:0
             :45: P(12,3);   GO TO P2PROCESS; % 55 - P2 DIVIDE BY ZERO          46026000 T  0045:0
             :48: P(0);      GO TO P1PROCESS; % 60 - P1 MEMORY PARITY%          46027000 T  0046:0
             :49: P(4,17);   GO TO P1PROCESS; % 61 - P1 INVALID ADDRESS         46028000 T  0048:3
STACKOVERFLOW :50: P(4,1);   GO TO P1PROCESS; % 62 - P1 STACK OVERFLOW          46029000 T  0050:0
             :52: P(6);      GO TO P1PROCESS; % 64 - P1 COMMUNICATE%            46030000 T  0051:0
             :53: P(8);      GO TO P1PROCESS; % 65 - P1 PROGRAM RELEASE         46031000 T  0052:3
             :54: P(10);     GO TO P1PROCESS; % 66 - P1 CONTINUITY BIT          46032000 T  0053:3
             :55: P(18);     GO TO P1PROCESS; % 67 - P1 PRESENCE BIT            46033000 T  0054:3
             :56: P(12,0);   GO TO P1PROCESS; % 70 - P1 FLAG BIT               46034000 T  0055:3
             :57: P(12,1);   GO TO P1PROCESS; % 71 - P1 INVALID INDEX           46035000 T  0057:0
             :58: P(12,2);   GO TO P1PROCESS; % 72 - P1 EXP UNDERFLOW           46036000 T  0058:0
             :59: P(4,9);    GO TO P1PROCESS; % 73 - P1 EXP OVERFLOW%           46037000 T  0059:0
             :60: P(4,11);   GO TO P1PROCESS; % 74 - P1 INT OVERFLOW%          46038000 T  0060:0
             :61: P(12,3);   GO TO P1PROCESS; % 75 - P1 DIVIDE BY ZERO          46039000 T  0061:0
START:*:                                                                        46040000 T  0062:0
 TIMER::     CLOCK ← CLOCK+64; XCLOCK ← XCLOCK+64;                              48000000 T  0438:0
$ SET OMIT = NOT(NEWLOGGING)                                                    48000099 T  0440:2
             IF CLOCK.[37:5] = 0 OR                                             48000500 T  0440:2
                 (SECONDCTR ← (P2MIX≤0)+SECONDCTR)≥ 4 OR%                       48001000 T  0441:3
                 XCLOCK GEQ WITCHINGHOUR THEN                                   48002000 T  0444:1
                 BEGIN IF P(TIO) ≠ 0 THEN%                                      48003000 T  0445:1
                     IF FIRSTWAIT ≠ NEXTWAIT THEN%                              48004000 T  0446:2
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                                    NEWIO;%                                                  48005000 T  0447:3
                                SECONDCTR ← 3;%                                              48006000 T  0448:3
                                IF NSECONDREADY THEN%                                        48007000 T  0449:2
                                    BEGIN TOGLE←TOGLE AND NOT NSECONDMASK;                   48008000 T  0450:1
                                        INDEPENDENTRUNNER(P(.NSECOND),0,100);                48009000 T  0452:1
                            END         END;%                                                48010000 T  0453:2
                $ SET OMIT = NOT(STATISTICS)                                                 48010004 T  0453:2
                $ SET OMIT = NOT(WORKSET)                                                    48010070 T  0453:2
                $ SET OMIT = NOT(DATACOM AND DCSPO )                                         48010099 T  0453:2
                            IF (P(RRR) OR RRRMECH)≠READY THEN                                48012000 T  0453:2
                            IF STATUSBIT THEN                                                48012500 T  0454:3
                                BEGIN TOGLE←TOGLE AND NOT STATUSMASK;                        48013000 T  0456:0
                                    INDEPENDENTRUNNER(P(.STATUS),0,100);                     48014000 T  0458:0
                                END;%                                                        48015000 T  0459:1
                            IF P2MIX>0 THEN                                                  48015100 T  0459:1
                            IF NSLATE≠LSLATE THEN                                            48015200 T  0460:0
                            IF JOBNUM≥0 THEN                                                 48015300 T  0461:1
                            IF (PRYOR[P2MIX] INX 0)≥(PRYOR[BED[0].[3:5]].[FF]) THEN          48015400 T  0462:2
                                GO TO P2FAKE;                                                48015500 T  0466:1
                EXTERNAL::%                                                                  48016000 T  0466:3
                        IF P1MIX = 0 THEN GO TO NOTHINGTODO;%                                48017000 T  0467:0
                INITIATE::%                                                                  48018000 T  0468:1
                        NT1 ← PRT[P1MIX,8];%                                                 48019000 T  0469:0
                        IF P2MIX=0 THEN GO TO COMINIT;                                       48019500 T  0470:2
                        IF NSLATE = LSLATE THEN%                                             48020000 T  0471:3
                        IF JOBNUM < 0 THEN%                                                  48021000 T  0472:2
                COMINIT:%                                                                    48022000 T  0473:3
                $ SET OMIT = NOT(DATACOM )                                                   48022099 T  0474:1
                        IF NOPROCESSTOG < 0 THEN%                                            48023000 T  0474:1
                GOGOGO:         BEGIN IF PRT[P1MIX,0] ≠ WORDOFEASE THEN                      48024000 T  0475:0
                                    BEGIN P(64,STS);                                         48025000 T  0477:0
                $ SET OMIT = NOT(NEWLOGGING)                                                 48025099 T  0478:1
                                        GO TO STACKOVERFLOW;                                 48025200 T  0478:1
                                END;                                                         48025300 T  0478:3
                                P(INI);%                                                     48026000 T  0478:3
                                IF TERMIX.[33:15] = P1MIX THEN%                              48027000 T  0479:0
                                    BEGIN NT2 ← TERMIX.[18:15];%                             48028000 T  0480:1
                                        P(NT1,STS,0,STF);%                                   48029000 T  0482:0
                                        TERMINALMESSAGE(NT2);%                               48030000 T  0483:2
                                    END;%                                                    48031000 T  0484:1
                                IF STOPJOB=P1MIX THEN                                %ST     48031100 T  0484:1
                                BEGIN P(NT1,STS,0,STF); STOPM(TRUE) END;             %ST     48031200 T  0485:0
                                SECONDCTR ← 0;%                                              48032000 T  0487:3
                                IF SOFTI>0 THEN                                              48032100 T  0488:2
                                IF JAR[P1MIX,2].[5:1] THEN % POSS.SOFTWARE INTERRUPTS        48032150 T  0489:1
                                IF (TSKA ← PRT[P1MIX,TSX]).PBIT THEN                         48032200 T  0491:1
                                    IF TSKA[8].[1:3]=2 THEN                                  48032250 T  0493:3
                                    BEGIN                                                    48032300 T  0495:3
                                        IF NOT PRT[P1MIX,INTRPTX].PBIT THEN                  48032400 T  0496:1
                                          BEGIN                                              48032500 T  0498:0
                                            P(NT1,STS,0,STF);                                48032600 T  0498:2
                                            MAKEPRESENT((PRT[P1MIX,INTRPTX]]INX 0);          48032700 T  0500:0
                                            NT1 ← PRT[P1MIX,8];                              48032800 T  0501:3
                                          END;                                               48032900 T  0503:2
                                        P(NT1,STS,NFLAG(NT1),                   % OLD INCW   48032910 T  0503:2
                                          FLAG(0&PRTROW[P1MIX] [6:33:9]             % ICW   48032920 T  0504:3
                                              &1 [17:47:1]),SSN,                             48032925 T  0505:2
                                          FLAG(0&PRT[P1MIX,INTRPTX][CTC]            %IRCW  48032930 T  0507:3
                                          &(NT1 INX 1)[CTF]),SSN);%F-REG==>OLD INCW          48032935 T  0509:0
                                        P(8 INX PRT[P1MIX,TSX],DUP,LOD,NT1,CFX,              48032940 T  0510:3
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                                XCH,←);                                  48032945 T 0513:1
                              PRT[P1MIX,8] ← NT1 ← ¬FLAG(NT1 INX 3);%INCW  48032950 T 0513:3
                        END ELSE TSKA[8] ← P(DUP,LOD,SSP);               48032960 T 0517:0
$ SET OMIT = NOT(NEWLOGGING)                                             48032979 T 0519:1
                IF P2MIX ≠ 0 THEN P(NT1,IP1);%                           48033000 T 0519:1
                     IF NSLATE=LSLATE THEN%                              48034000 T 0521:0
                IF JOBNUM < 0 THEN P(NT1,IP1);%                          48035000 T 0521:3
                P(NT1,IP2);%                                             48036000 T 0524:0
                     P2MIX ← P1MIX;%                                     48037000 T 0524:2
                GO TO NOTHINGTODO;%                                      48038000 T 0525:1
                END;%                                                    48039000 T 0525:3
            P(INI);%                                                     48040000 T 0525:3
            P(NT1,STS,0,STF);%                                           48041000 T 0526:0
            SLEEP([NOPROCESSTOG],¬0);%                                   48042000 T 0527:2
            NT1 ← PRT[P1MIX,8];%                                         48043000 T 0529:1
            GO GOGOGO;%                                                  48044000 T 0530:3
NOTHINGTODO:P1MIX ← 0;%                                                  48045000 T 0531:1
$ SET OMIT = NOT(STATISTICS)                                             48045899 T 0532:3
                P(INI);%                                                 48046000 T 0532:3
$ SET OMIT = NOT(DATACOM )                                               48046099 T 0533:0
                IF NSLATE ≠ LSLATE THEN%                                 48047000 T 0533:0
                IF STACKUSE THEN%                                        48048000 T 0533:3
                     BEGIN TOGLE:=TOGLE AND NOT STACKMASK;               48049000 T 0535:0
                          % MOVE INTO ISTACK                             48050000 T 0537:0
                          P(ISTACK,STS,SECONDCTR:=0,STF);                48051000 T 0537:0
                          NSLATE:=NSLATE+2 AND SLATEND;                  48052000 T 0539:1
                          % IF "RUN" THEN NO STACK NECESSARY            48053000 T 0541:2
                          IF (NT4:=SLATE[NSLATE+1]),[FF] NEQ 0 THEN      48054000 T 0541:2
                          BEGIN                                          48054200 T 0544:1
                               P(GETSPACE(NT4,[FF],12,NT4 LSS 0)+1,STS);48054400 T 0544:3
                               STACKUSE:=TRUE;                           48054600 T 0548:0
                          END;                                           48054800 T 0549:3
                          P(MKS,NT4:=SLATE[NSLATE+1],DIB 0,LOD,          48055000 T 0549:3
                            SLATE[NSLATE],COC);                          48055200 T 0552:0
                          GO TO NOTHINGTODO;%                            48056000 T 0552:3
                     END;%                                               48057000 T 0553:1
                P( 64,STS);%                                             48058000 T 0553:1
                IF TOGLE THEN GO TO PROCSWIT; COMMENT TEST HP2TOG;       48059000 T 0554:0
                FOR NT1 ← 0 STEP 2 UNTIL JOBNUM DO%                      48060000 T 0555:0
                     BEGIN P(INI);%                                      48061000 T 0556:0
                          NT2 ← BED[NT1];%                               48062000 T 0556:1
                          IF P(NT3 ← BED[NT1+1],TOP,XCH,DEL,NOT) THEN%   48063000 T 0557:1
                               BEGIN P1MIX ← [NT2],MIXF;%                48064000 T 0559:3
                                    P([NT2],[18:15],STS);%               48065000 T 0561:2
                                    NT3 ← NT3;%                          48066000 T 0563:0
                                    P1MIX ← 0;%                          48067000 T 0563:3
                                    P( 64,STS);%                         48068000 T 0564:2
                               END;%                                     48069000 T 0565:1
                          IF NOT(NT2 AND NT3) ≠ NOT 0 THEN%              48070000 T 0565:1
                               BEGIN P1MIX ← [NT2],MIXF;%                48071000 T 0567:0
                                    IF JOBNUM ≠ NT1 THEN%                48074000 T 0568:3
                                    STREAM(N←JOBNUM←NT1,A←[BED[NT1+2]],% 48075000 T 0569:2
                                         B←[BED[NT1]]);%                 48076000 T 0572:0
                                         BEGIN SI←A; DS ← N WDS END;%    48077000 T 0572:3
                                    JOBNUM ← JOBNUM-2;%                  48078000 T 0573:3
                                    SECONDCTR ← 0;%                      48079000 T 0575:0
                                    PRYOR[P1MIX],[FF]← 0;                48079100 T 0575:3
                                   P([NT2],STF);                         48080000 T 0577:3
$ SET OMIT = NOT(NEWLOGGING)                                             48080099 T 0578:2
                                  STARTLOG(P1MIX,0);                     48080200 T 0578:2
```

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                                P(XIT);                                                 48080300 T  0581:0
                              END;%                                                     48081000 T  0581:1
                        END;%                                                           48082000 T  0581:1
$ SET OMIT = NOT(STATISTICS)                                                            48082999 T  0583:2
                  DO DO P(INI) UNTIL (P(RRR) OR RRRMECH)≠READY%                         48084000 T  0583:2
                        UNTIL STATUSBIT;%                                               48084100 T  0584:2
                  TOGLE←TOGLE AND NOT STATUSMASK;                                       48084200 T  0586:3
                  INDEPENDENTRUNNER(P(.STATUS),0,100);                                  48084300 T  0588:1
                  GO TO NOTHINGTODO;%                                                   48084400 T  0589:2
P2FAKE:                   TOGLE←TOGLE OR HP2MASK;                                     48085000 T  0590:0
$ SET OMIT = NOT(NEWLOGGING)                                                            48085099 T  0591:1
                          P(HP2,INI);%                                                  48086000 T  0591:1
$ SET OMIT = NOT(NEWLOGGING)                                                            48086099 T  0591:3
PROCSWIT:                 P(16);                                                        48087000 T  0591:3
P2PROCESS::%                                                                            48095000 T  0592:0
          IF P(P1MIX,P2MIX,.P1MIX,←,.P2MIX,STN) ≠ 0 THEN%                               48096000 T  0592:0
          BEGIN                                                                         48097000 T  0594:0
                P(PRT[P2MIX,8],IP2);                                                    48097200 T  0594:2
          END;                                                                          48097300 T  0595:3
          TOGLE←TOGLE AND NOT HP2MASK;                                                  48098000 T  0595:3
P1PROCESS::%                                                                            48099000 T  0597:1
          P(PRT[P1MIX,8],STS,0,STF);%                                                   48100000 T  0598:0
          GO TO P(ONEOHONE);%                                                           48101000 T  0600:1
          GO TO MEMORYPARITY;       % 0%                          %WF                   48102000 T  0600:3
          P(NOP,NOP);               % 2%                          %WF                   48102100 T  0601:1
          GO TO NORMALERROR;        % 4%                                                48103000 T  0601:3
          SHORTCOMMUNICATE;         % 6%                                                48104000 T  0602:1
          PROGRAMRELEASE;           % 8                                                 48105000 T  0602:3
          CONTINUITYBIT;            % 10                                                48106000 T  0603:1
          INTERRUPT(ONEOHTWO); P(NOP); % 12                                             48107000 T  0603:3
          GO TO INITIATE;           % 16                                                48108000 T  0604:3
          MAKEPRESENT(ANALYSIS);    % 18                                                48109000 T  0605:1
RETURN::        NT1←PRT[P1MIX,8];                                                       48110000 T  0606:1
                GO TO COMINIT;                                                          48111000 T  0608:2
IOBUSY::                                                                                48117000 T  0609:0
$ SET OMIT = NOT(NEWLOGGING)                                                            48117099 T  0609:0
          NT1 ← UNIT[NT2←CHANNEL[0]];                                                   48117200 T  0609:0
          UNIT[NT2] ← NT1&0[13:5:5];%                                                   48118000 T  0610:3
          STARTIO(NT2);%                                                                48119000 T  0613:0
          GO TO EXTERNAL;%                                                              48120000 T  0613:3
P2BUSY::                                                                                48121000 T  0614:1
$ SET OMIT = NOT(NEWLOGGING)                                                            48121099 T  0614:1
          SAVEMIX(P1MIX);                                                               48121200 T  0614:1
          P1MIX ← P2MIX;%                                                               48122000 T  0615:3
          P2MIX ← -1;%                                                                  48123000 T  0616:2
          OLDIDLETIME ← OLDIDLETIME-CLOCK-P(RTR);%                                      48124000 T  0617:2
          GO TO EXTERNAL;%                                                              48125000 T  0619:1
$ SET OMIT = NOT(SHAREDISK)                                                             48125099 T  0619:3
INQUEST::                                                                               48125500 T  0619:3
$ SET OMIT = NOT(NEWLOGGING)                                                            48125509 T  0619:3
$ SET OMIT = NOT DATACOM                                                                48125540 T  0619:3
$ SET OMIT = DATACOM                                                                    48126400 T  0619:3
% USE ACTUALIOERR STACK TO SPOUT "DATACOM/INQUIRY INTERRUPT IGNORED"                    48126429 T  0619:3
          INDEPENDENTRUNNER(P(..ACTUALIOERR),0,100);                                    48126430 T  0620:0
$ POP OMIT                                                                              48126431 T  0621:1
                GO TO EXTERNAL;%                                                        48127000 T  0621:1
KEYBOARDREQUEST::%                                                                      48128000 T  0621:3
$ SET OMIT = NOT(NEWLOGGING)                                                            48128099 T  0622:0
$ SET OMIT = NOT DEBUGGING                                                              48128500 T  0622:0
          IF (KEYBOARDCOUNTER ← KEYBOARDCOUNTER+1) = 1 THEN%                            48131000 T  0622:0
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            INDEPENDENTRUNNER(P(.KEYIN),1,160);                                 48132000 T  0623:3
            GO TO EXTERNAL;%                                                    48133000 T  0625:2
      MEMORYPARITY::%                                                   %WF     48134000 T  0626:0
            TERMINATE(P1MIX);%                                          %WF     48135000 T  0626:0
            TERMINALMESSAGE(32);%                                       %WF     48136000 T  0626:3
      NORMALERROR::%                                                            48137000 T  0627:2
                  IF P1MIX = 0 THEN%                                            48138000 T  0628:0
                        BEGIN P(@100,STS);%                                     48139000 T  0628:3
                              PUNT(5);          % INVALID ADDRESS               48140000 T  0630:0
                        END;%                                                   48141000 T  0630:3
                  IF ONEOHTWO=1 THEN                                            48141100 T  0630:3
                  BEGIN P(NFO[(NT1+(P1MIX-1)XNOX)+2],STS);                      48141200 T  0631:2
                        PRT[P1MIX,15]←M[PRT[P1MIX,8]];                          48141300 T  0635:0
                        PRT[P1MIX,8]←-[PRT[P1MIX,15]];                          48141400 T  0638:1
                        PRT[P1MIX,3]←NFO[NT1];                                  48141500 T  0641:0
                        PRT[P1MIX,4]←NFO[NT1+1];                                48141600 T  0643:0
                  END;                                                          48141700 T  0645:2
                  P(@NEOHTWO);                                                  48142000 T  0645:2
                        IF P(DUP,CUP)=9 OR P(XCH)=11 THEN                       48142100 T  0645:3
                              ERRORFIXER((ONEOHTWO=9)+1);                       48142200 T  0647:3
                  TERMINATE(P1MIX);                                             48142500 T  0650:0
                  NT1 ← P;                                                      48143000 T  0650:3
                  TERMINALMESSAGE(NT1);                                         48143500 T  0651:1
      DIFFCOM::NT4←P;                                                           48144000 T  0652:0
            P(0,STF,PRT[P1MIX,8],STS,MKS,NT4,DIB 0,LOD,XCH,COC);                48145000 T  0652:2
            GO TO INITIATE;                                                     48146000 T  0656:1
      END.%                                                                     48161000 T  0656:3
                                                                                      SIZE= 0657 WORDS

NUMBER OF ACCIDENTAL ENTRIES = 045        45135230
NUMBER OF ERRORS DETECTED = 000.  COMPILATION TIME = 2100 SECONDS.
PRT SIZE=438 BASE ADDRESS=0657 CORE REQ=2328 DISK REQ=30720
```