

IDENTIFICATION

PRODUCT CODE: DEC-12-AJAA-LA
PRODUCT NAME: FOCAL-12 LISTING
DATE CREATED: JANUARY 11, 1971
MAINTAINER: SOFTWARE SERVICES

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1 /FOCL12.37
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3 PMODE /*****
4 FIXMRI FPOW=5000/PSEUDOC-FLOATING POINT INSTRUCTIONS.
5 FIXMRI FADD=1000
6 FIXMRI FSUB=2000
7 FIXMRI FMUL=4000
8 FIXMRI FDIV=3000
9 FIXMRI FGET=0000
10 FIXMRI FPUT=6000
11 7000 FNOR=7000
12 0000 FEXT=0
13 0000 FXIT=0
14 4407 FINT=JMS I 7
15 6101 SMP=6101
16 /MISCELLANEOUS ITEMS
17 0001 *1
18 0021 5403 JMP I ,*2 /INTERRUPT PROCESSOR ENTRY .
19 0000 LWETMP; 0 /*****
20 0003 2603 INTRPT
21 0004 0004 DDTJR, DDTJR /USED FOR DEBUGGING
22 0013 0013 P13, 13 /CONSTANT
23 0000 0100 C100, 100 /CONSTANT
24 0000 T#00 /TEXT FIELD NO.
25 0000 P#00 /PROGRAM FIELD NO.
26 7000 CDF=7000 /((X=MEM) - OPR
27 0007 6400 FPNT /ADDRESS OF FLOATING POINT INTERPRETER, (LOC *7)
28 /AUTO-INDEX REGISTERS = (START OF SAVE BY QUAD)
29 0010 0000 AXIN, 0 /STORAGE INDEX (LOC *10)
30 0011 0000 XRT, 0 /EXTRA XR
31 0012 0000 XRT2, 0 /EXTRA XR
32 0013 3600 PDLXR, BEGIN=1 /PUSHDOWN LIST INDEX REGISTER.
33 0014 3117 FLTXR, IOBUF=1 /XR FOR FLOATING POINT
34 0015 0000 FLTXR2, 0 /EXTRA FOR F.P.
35 0016 7402 TELSW, HLT /TELETYPE IN PROGRESS SWITCH
36 0017 0017 TEXTP#, /TEXT POINTERS (LOC *17)
37 0017 3214 AXOUT, FRSTX /OUTPUT INDEX
38 0020 0000 XCT, 0 /UNPACK SWITCH
39 0021 0000 GTEM, 0 /UNPACK STORAGE
40 0022 2407 PC, FLTZER /PROGRAM COUNTER
41 0023 0000 THISLN, 0 /LINE POINTER FROM 'FINDLN'
42 0024 0000 THISOP, 0 /CURRENT 'EVAL' OPERATION
43 0025 0000 LASTLN, 0 /BACK POINTER FROM 'FINDLN'
44 0026 0001 DEBGSW, 1 /DEBUG SWITCH ; NON-ZERO FOR LITERAL.
45 0027 0000 PACKST, 0 /RUBOUT PROTECTION
46 0030 0000 PT1, 0 /VARIABLE POINTER
47 0031 3216 LASTV, RUFBEQ /ADDRESS OF LAST VARIABLE
48 0032 0000 T1, 0 /TEMPORARY REGISTER - MAIN
49 0033 0000 T3, 0 /TEMP REGISTER FOR OUTPUT
50 0034 0000 INBUF, 0 /KEYBOARD INPUT BUFFER
51 0035 4617 BOTTOM, FEXP=1 /*****/LAST LOCATION CURRENTLY AVAILABLE IN FIELD ZERO **
52 0036 0000 INSUB, 0 /0= GETCI #0 = READC
53 0037 0000 HINBUF, 0 /HIGH SPEED INPUT BUFFER
54 /PAGE ZERO OF THE
55 /FLOATING POINT ARITHMETIC INTERPRETER FOR FOCAL

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56      0242      *40
57      0147      0000      EX1,      1      /OPERAND STORAGE
58      0041      0000      AC1H,      3
59      0042      0000      AC1L,      3
60      0143      0000      OVER1,      2
61      0144      0000      FLAC=,      /FLOATING ACCUMULATOR
62      0144      0000      EXP,      0      /F.A.
63      0045      0000      WORD,      0
64      0046      0000      LORD,      0
65      0047      0000      OVER2,      3
66      0050      0000      SIGNF,      0      /FLOATIN SIGN
67      0051      6605      MINSKI, ACINS      /NEGATE FLAC SUBROUTINE
68      0052      2004      FISW,      2004      /OUTPUT FORMAT
69      0053      6724      INTEGER, FIX      /FIX FLAC
70      1345      GETSGN=TAD FLAC*1
71      5536      RETURN=JMP I EFUN3I
72      0054      *54
73      /VARIABLES = INITIALIZED FOR THE DIALOGUE
74      SORTCN, 0      /NUMBER IN TABLE FROM SORTC
75      LASTOP, 0      /LAST OPERATION FOR EVAL
76      EFOP=,      /FUNCTION CODE,
77      ATSW, 0      /ASK-TYPE SWITCH
78      CNTR, =20      /DELETE AND ERROR COUNTER(USED BY F.P. ALSO)
79      STARTV=,      /END FOR BK
80      BUFR, 3216      /NEXT LOCATION IN BUFFER = LAST LOCATION OF TEXT:
81      GADD, 0      /*****
82      XCTIN, 133      /PACK SWITCH
83      OUTDEV, XOUTL      /POINTER TO OUT, SUB. (OUTL)=FOR DEBUGGING
84      INDEV, XI33      /POINTER TO IN, SUB. (I33)=FOR DEBUGGING
85      NAGSW, 0001      /NOT ALL AND/OR GROUP SWITCH(4000=ONE;1=ALL;0=GROUP);(0000)=FOR TSS=8
86      CHAR, 215      /THE MOST IMPORTANT REGISTER
87      LINENO, 0000      /LINE NUMBER READ BY GETLN;(0400)=FOR TSS=8
88      GINC, WORDS*2      /#6 FOR 4=WORD = CONSTANT
89      T2, 0      /TEMP REGISTER = FOR NEW INST, ROUTINES.
90      /FOR DEBUGGING, SET OUTL AND I33 INTO OUTDEV AND INDEV;
91      /ALSO PATCH THE ERROR ROUTINE = FOUR
92      /PATCHES PLUS TWO FOR THE HIGH SPEED READER.
93      LIST6=, /INPUT LIST FOR "SFOUND".
94      0072      0214      214      /F,F.
95      0073      0207      207      /BELL
96      0074
97      0074      0203      203      /CONTROL=C FOR DEBUGGING AND TSS8
98      0075      0337      337      /LEFT ARR
99      0076      0212      212      /L.F.
100     0077
101     0077      0215      215      /EXCRETION LIST
102     0100      7482      7482      /LIST BRANCHER,
103     0100      7482      7482      /SEARCH CHARACTER)-VARIABLE
104     0100      7482      7482      /#0000 FOR TRACE ON,
105     0100      7482      7482      /THE REST OF PAGE ZERO IS PURE TO THE MULTI-USER SYSTEM
106     0101      7700      7700      M100=,
107     0102      256      256      P7700, 7700      /LEFT MASK
108     0103      7701      7701      PER, 256      /PERIOD
109     0104      7600      7600      M77, =77      /EXTEND CODE TEST
110     0105      7760      7760      P7600, 7600      /GROUP MASK
111     0105      7760      7760      M20, =20      /CONSTANT

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|-----|------|------|-------------------|--------|---|
| 111 | 0106 | 177 | P177, | 177 | /STEP MASK |
| 112 | 0107 | 317 | P17, | 17 | /BCD MASK |
| 113 | 0110 | 277 | P277, | 277 | /"?" |
| 114 | 0111 | 7776 | M2, | -2 | /CONSTANT |
| 115 | 0112 | 7477 | MINUSA, | -301 | /CONSTANT |
| 116 | 0113 | 260 | C260, | 260 | /ASCII FOR ZERO |
| 117 | 0114 | 7540 | M240, | -240 | /SPACE TEST |
| 118 | 0115 | 7522 | MPER, | -256 | /PERIOD TEST |
| 119 | 0116 | 7563 | MCR, | -215 | /C.R. TEST |
| 120 | 0117 | 7775 | MFLT, | =WORDS | /# -4 FOR 4-WORD |
| 121 | 0120 | 7773 | M5, | =5 | /PAREN TEST |
| 122 | 0121 | 7767 | M11, | =11 | /PAREN TEST |
| 123 | 0122 | 0077 | P77, | 77 | /RIGHT MASK |
| 124 | 0123 | 0200 | C200, | 200 | /CONSTANTS |
| 125 | 0124 | 4000 | P4000, | 4000 | /NAGSW TEST CONSTANT (FOR PDP-5) |
| 126 | 0125 | 2032 | FLARGP, | FLARG | /DATA ADDRESS |
| 127 | 0126 | 2157 | PTCH, | CHIN | /GENERAL CHARACTER INPUT ROUTINE. |
| 128 | 0127 | 5715 | DOUBLE, | MULT2 | /MULTIPLY FLAG BY 2 |
| 129 | 0130 | 6000 | FOUTPUT, | FLOUTP | /FLOATING OUTPUT |
| 130 | 0131 | 6200 | FINPUT, | FLINTP | /FLOATING INPUT |
| 131 | 0132 | 3140 | COMBUF, | COMEIN | /COMMAND BUFFER START |
| 132 | 0133 | 3206 | CFRS, | FRST | /ADDRESS OF DUMMY LINE. |
| 133 | 0134 | 3140 | END, | COMEIN | /FIRST LOCATION USED IN 8K. |
| 134 | 0135 | 3216 | ENDT, | BUFBEG | /START OF STORAGE AREA ** |
| 135 | 0136 | 2021 | EFUN3I, | EFUN3 | /FUNCTION RETURN |
| 136 | 0137 | 2407 | CFRSX, | FLTZER | /POINTER TO ZERO DATA |
| 137 | | | | | |
| 138 | | | | | |
| 139 | | | | | /FINPUT! USES CHAR AND GETC OR READC TO DEVELOP |
| 140 | | | | | /A NUMBER WHICH IS THEN STORED VIA PT1. |
| 141 | | 0003 | | | WORDS=3 /OR 4 |
| 142 | | | | | /NEW INSTRUCTIONS! |
| 143 | | 4540 | PUSHJ=JMS I, | | /RECURSIVE SUBROUTINE CALL |
| 144 | 0140 | 0521 | XPIUSHJ | | |
| 145 | | 1413 | POPA=TAD I PDLXR, | | /RESTORE AC |
| 146 | | 5541 | POPJ=JMP I, | | /SUBROUTINE RETURN |
| 147 | 0141 | 1565 | XPOPJ | | |
| 148 | | 4542 | PUSHA=JMS I, | | /SAVE AC |
| 149 | 0142 | 0477 | XPUSHA | | |
| 150 | | 4543 | PUSHF=JMS I, | | /SAVE GROUP OF DATA |
| 151 | 0143 | 0534 | PD2 | | |
| 152 | | 4544 | POPF=JMS I, | | /RESTORE GROUP |
| 153 | 0144 | 0554 | PD3 | | |
| 154 | | 4545 | GETC=JMS I, | | /UNPACK A CHARACTER |
| 155 | 0145 | 2274 | UTRA | | |
| 156 | | 4546 | PACKC=JMS I, | | /PACK A CHARACTER |
| 157 | 0146 | 2502 | PACBUF | | |
| 158 | | 4547 | SORTJ=JMS I, | | /SORT AND BRANCH ON AC OR CHAR |
| 159 | 0147 | 1312 | SORTB | | |
| 160 | | 4550 | SORTC=JMS I, | | /SORT CHAR |
| 161 | 0150 | 0721 | XSORTC | | |
| 162 | | 4551 | PRINTC=JMS I, | | /PRINT AC OR CHAR |
| 163 | 0151 | 2465 | OUT | | |
| 164 | | 4552 | READC=JMS I, | | /READ DATA INTO CHAR AND PRINT IT |
| 165 | 0152 | 2157 | RDIV, | CHIN | |


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166          4553  PRNTLN=JMS I , /PRINT c(LINENO)
167          0153  2425  XPRNT
168          4554  GETLN=JMS I , /UNPACK AND FORM A LINENUMBER
169          0154  302   XGETLN
170          4555  FINDLN=JMS I , /SEARCH FOR A GIVEN LINE
171          0155  2244  XFIND
172          4556  ENDLN=JMS I , /INSERT LINE POINTERS
173          0156  2360  XENDLN
174          4557  RTL6=JMS I , /ROTATE LEFT SIX
175          0157  413   XRTL6
176          4560  SPNOR=JMS I , /IGNORE SPACES AND LEADING ZEROS
177          0160  1535  XSPNOR
178          4561  TESTN=JMS I , /PERIOD; OTHER; NUMBER
179          0161  1546  XTESTN
180          4562  TSTLPR=JMS I , /SKIP IF 5<SORTCN<= 11 (I.E. AN L=PAR)
181          0162  2037  LPRTST
182          4563  TSTGRP=JMS I , /SKIP IF G(AC) = G(LINENO)
183          0163  744   GRPTST
184          4564  TESTC=JMS I , /TERM; NUMBER; FUNCTION; LETTER- AND IGNORE SPACES;
185          0164  1700  XTESTC
186          4565  DELETE=JMS I , /REMOVE OLD TEXT LINE
187          0165  2064  PSIN, XDELETE
188          4566  ERROR2=JMS I , /EXCESS SOMETHING ERROR
189          4566  ERROR3=JMS I , /MISCELLANEOUS ERROR
190          4566  ERROR4=JMS I , /FORMAT ERROR
191          0166  2726  ERR2
192          /USED BY 8K
193          /FOCAL'S COMMAND/INPUT DRIVER
194          0167  *167  /*****
195          0167  0000  SUBS2; 0 /*****
196          0170  0000  LESUB2; 0 /*****
197          0171  0000  SUBS; 0 /*****
198          0172  6163  LEFPUT; LEPUT /*****
199          0173  0000  LESUBS; 0 /*****
200          0174  7657  PWAIT; WAIT /*****
201          0175  7672  PCLEAR; CLEAR /*****
202          0176  3601  BEGIN /BECOMES (RECOVR+1) **
203          0177  7610  START; SKP CLA /PROGRAM START FROM SELF
204          0200  5576  JMP I ,=2 /CONSOLE START; SW=200,
205          0201  1137  TAD CFRSX /(PC) => 0
206          0202  3022  DCA PC /FOR COMMAND MODE
207          0203  7001  IAC /USE ONE IN THE AC TO
208          0204  3120  DCA DMPSW /INIT UNPACK AND TRACE SWITCH,
209          0205  3026  DCA DEBGSW /ENABLE TRACE FOR INPUT OF (?),
210          0206  1226  TAD COMBOT /PROTECT COMMAND BUFFER,
211          0207  3013  DCA POLXR /NO PATCH TEST,
212          0210  1225  TAD CSTAR /ANNOUNCE PRESENCE
213          0211  4551  PRINTC /BY TYPING THE LEAD-IN CHARACTER
214          0212  1132  IBAR, TAD COMBUF /INITIALIZE COMMAND BUFFER
215          0213  3010  DCA AXIN /FOR UNPACKING,
216          0214  3062  DCA XCTIN
217          0215  1132  TAD COMBUF /RUBOUT PROTECTION
218          0216  3027  DCA PACKST
219          0217  4552  IGNOR, READC /READ COMMAND STRING
220          0220  4547  SORTJ

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221 0221 0073          LIST7=1
222 0222 0474          INLIST=LIST7
223 0223 4546          PACKC          /SAVE STRING CHARACTER,
224 0224 5217          JMP IGNOR
225 0225 0252          CSTAR, 252          /ACKNOWLEDGE CHARACTER
226 0226 0220          COMBUT, COMEOUT+12      /END OF COMMAND BUFFER, LESS PROTECTION COUNT.
227                    /COMMAND/INPUT PROCESSOR
228 0227 4546          IRETN, PACKC          /START TO PACK C.R.
229 0230 4546          PACKC          /FINISH C.R.
230 0231 1132          TAD COMBUF          /INITIALIZE "TEXTP"
231 0232 3017          GONE, DCA AXOUT          /SETUP CURRENT LINE
232 0233 3020          DCA XCT
233 0234 4545          GETC          /READ FIRST CHARACTER,
234 0235 1035          TAD BOTTOM          /INIT PUSH=DOWN=LIST
235 0236 3013          DCA PDLXR
236 0237 4560          SPNOR          /IGNORE LEADING BLANKS
237 0240 4561          TESTN          /DOES THE LINE BEGIN WITH 1-9?
238 0241 5362          JMP GZERR          /PERIOD =ILLEGAL GROUP ZERO USAGE
239 0242 5271          JMP INPUTX          /NO
240 0243 0226          ISZ DEBGSW          /YES, DISABLE TRACE FOR REPACKING
241 0244 4554          GETLN          /READ THIS LINE NUMBER
242 0245 1124          TAD P4000          /TEST FOR SINGLE LINE.
243 0246 1065          TAD NAGSW
244 0247 7640          SZA CLA
245 0250 4566          ERROR3          /ILLEGAL LINE NUMBER ON INPUT
246 0251 1060          TAD BUFR          /SET POINTERS
247 0252 3010          DCA AXIN
248 0253 3062          DCA XCTIN
249 0254 1067          TAD LINENO          /SAVE LINE #
250 0255 3410          DCA I AXIN          / (X=MEM)
251 0256 4560          SPNOR          /IGNORE SPACES AFTER LINE NUMBER
252 0257 7410          SKP
253 0260 4545          GETC          /READ 1ST AFTER LINENO TERMINATOR,
254 0261 4546          SRETN, PACKC          /SAVE TEXT AND RESTORE DATA FIELD
255 0262 1066          TAD CHAR          /TEST FOR END OF INPUT STRING
256 0263 1116          TAD MCR
257 0264 7640          SZA CLA
258 0265 5260          JMP ,=5
259 0266 4565          DELETE          /REMOVE OLD LINE, IF ANY,
260 0267 4556          ENDLN          /INSERT NEW LINE
261 0270 5177          JMP START          /POINTERS MUST BE REINITIALIZED
262 0271 4540          INPUTX, PUSHJ          /PROCESS IMMEDIATE COMMAND,
263 0272 0611          PROC
264 0273 1422          TAD I PC          /CHECK NEXT LINE (X=MEM)
265 0274 7450          SNA          /END OF PROGRAM?
266 0275 5177          JMP START          /YES
267 0276 3022          DCA PC          /SAVE NEW LINE NO.
268 0277 1022          TAD PC          /START NEW LINE
269 0300 7401          IAC
270 0301 5232          JMP GONE          /PROCESS OTHER COMMANDS
271                    /TEXT LINE BUFFER FORMAT*
272                    /#1 : POINTER OR ZERO IN LAST
273                    /#2 : LINENO
274                    /#3 - #N+1 : TEXT
275                    /#N : C.R.

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/LINE NUMBER FORMATION
 XGETLN, 0
 SPNOR
 TAD CHAR
 TAD MINUSA
 SNA CLA
 JMP TESTA
 DCA INSUB
 JMS I LCON
 TAD FLAC*3
 AND P7740
 TAD FLAC*2
 SZA CLA
 ERROR2
 TAD FLAC*3
 RTL6
 RAL
 TESTA, DCA LINENO
 TESTN
 GETC
 TESTN
 JMP GERR
 JMP GEXIT
 TAD SORTCN
 RTL CLL
 TAD SORTCN
 RAL
 TAD LINENO
 DCA LINENO
 GETC
 TESTN
 GERR, ERROR4
 JMP GEXIT
 TAD SORTCN
 TAD LINENO
 DCA LINENO
 GETC
 TESTN
 JMP GERR
 SKP
 ERROR2
 GEXIT, CLL
 TAD LINENO
 AND P7600
 SZA CLA
 CML
 TAD LINENO
 AND P177
 SNL SZA
 GZERR, ERROR2
 SZA CLA
 TAD P2020
 CML
 RAL
 DCA NAGSW

/DEVELOP I.D. = "GETLN"
 /IGNORE LEADING SPACES,
 /"ALL" IS A SPECIAL ARGUMENT.
 /CALL 'GETC' FROM 'INPUT' VIA 'DECON'
 /((DECONV - IN FLOAT.)
 /GROUP TOO LARGE?
 /GROUP NUMBER TOO LARGE
 /TEST3
 /READ STEP NUMBER,
 /TEST4, OTHER
 /DOUBLE PERIODS
 /OTHER
 /NUMBER
 /READ SECOND STEP NUMBER.
 /TEST4, OTHER
 /DOUBLE PERIODS
 /OTHER
 /NUMBER
 /TEST FOR CORRECT TERMINATOR
 /CHECK SIZE
 /.
 /TOO LARGE A LINE NUMBER.
 /CLEAR LINK BIT
 /TEST FOR GROUP NUMBER,
 /REPAIR "NAGSW"
 /0,X = ERROR:ILLEGAL LINE NUMBER.

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331 0370 5702          JMP I XGETLN
332 0371 5600          LCON, DECONV
333 0372 7740          P7740, 7740
334 0373 2000          P2000, 2000
335                    /RANGE OF ACCEPTIBLE LINE NUMBERS = 1,21 TO 31,99
336                    /NAGSW:
337                    /GROUP=2000
338                    /LINE=4000
339                    /ALL=0001
340                    /LIST OF FUNCTION ADDRESSES. (NAMES ARE IN "FNTABL")
341                    FNTABF=.
342 0374 2016          XABS /ABS =ABSOLUTE VALUE
343 0375 2012          XSGN /SGN =SIGN PART
344 0376 1156          XINT /ITR =INTEGER PART
345 0377 7602          XDISP /DIS /*****
346 0400 1145          XRN /RAN =RANDOM NUMBER
347 0401 1341          XADC /ADC =READ ANALOG TO DIGITAL CONVERTER
348 0402 5000          ARTN /ATN =
349 0403 4620          FEYP /EXP =EXPONENTIAL FUNCTIONS
350 0404 5040          FLOG /LOG =
351 0405 5204          FSIN /SIN =TRIG FUNCTIONS
352 0406 5177          FCOS /COS =
353 0407 7400          XSQRT /SQT =SQUARE ROOT
354 0410 2725          PFNEW, ERRORS /NEW =USER DEFINED FUNCTIONS
355 0411 2725          PFX, ERRORS /FX /*****
356 0412 2725          PFZ, ERRORS /FZ /*****
357 0413 0000          XRTL6, 0 /ROTATE AC LEFT SIX = "RTL6"
358 0414 7106          CLL RTL
359 0415 7006          RTL
360 0416 7006          RTL
361 0417 5613          JMP I XRTL6
362                    /RECURSIVE OPERATE, EXECUTE, OR CALL
363 0420 4554          DO, GETLN /EXECUTE ONE LINE, A GROUP, OR ALL
364 0421 1022          TAD PC /SAVE ADDRESS
365 0422 4542          PUSHA /OF CURRENT LINE
366 0423 4543          PUSHF /SAVE REST OF THIS LINE
367 0424 0017          TEXTP /ADDRESS OF TEXT POINTERS
368 0425 4543          DGRP, PUSHF /SAVE NAGSW; CHAR; AND LINENO.
369 0426 0065          NAGSW
370 0427 1065          TAD NAGSW /CHECK DATA FROM GETLN.
371 0430 7710          SPA CLA /SKIP IF GROUP OR ALL
372 0431 5263          JMP DOONE /DO ONE LINE
373 0432 4555          FINDLN /INIT FOR GROUP AND SET THISLN
374 0433 7000          NOP
375 0434 1023          TAD THISLN /TEST FOR GOOD GROUP NUMBER.
376 0435 3011          DCA XRT
377 0436 1411          TAD I XRT /(X=MEM)
378 0437 4563          TSTGRP
379 0440 4566          ERROR2 /NO SUCH GROUP NUMBER
380 0441 4543          DGRP1, PUSHJ /EXECUTE OBJECT LINE AND SET PC.
381 0442 1026          PROCESS-2
382 0443 4544          POPF /RESTORE THE DATA
383 0444 0065          NAGSW
384 0445 1422          TAD I PC /CHECK FOR END OF TEXT (X=MEM)
385 0446 7450          SNA

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|-----|------|------|-------------------------|---|
| 386 | 0447 | 5271 | JMP DCONT | /ALL DONE |
| 387 | 0450 | 7001 | IAC | |
| 388 | 0451 | 3030 | DCA PT1 | /SAVE POINTER TO LINENO |
| 389 | 0452 | 1365 | TAD NAGSW | /CHECK FOR GROUP |
| 390 | 0453 | 7740 | SMA SZA CLA | |
| 391 | 0454 | 5260 | JMP ,+4 | /DO ALL |
| 392 | 0455 | 1430 | TAD I PT1 | /TEST GROUP (X=MEM) |
| 393 | 0456 | 4563 | TSTGRP | |
| 394 | 0457 | 5271 | JMP DCONT | /NOT IN GROUP |
| 395 | 0460 | 1430 | TAD I PT1 | /READ NEXT LINE NO. (X=MEM) |
| 396 | 0461 | 3067 | DCA LINENO | |
| 397 | 0462 | 5225 | JMP DGRP | /CONTINUE THE SUBROUTINE |
| 398 | 0463 | 4555 | DOONE, FINDLN | /FIND THE LINE |
| 399 | 0464 | 4566 | ERROR2 | /NO SUCH LINE NUMBER |
| 400 | 0465 | 4540 | PUSHJ | /EXECUTE IT |
| 401 | 0466 | 1610 | | |
| 402 | 0467 | 4544 | POPF | PROCESS /RESTORE CHAR |
| 403 | 0470 | 0065 | | |
| 404 | 0471 | 4544 | DCONT, POPF | NAGSW /RESTORE TEXT POINTERS |
| 405 | 0472 | 0017 | | |
| 406 | 0473 | 1413 | POPA | TEXTP /RESTORE ADDRESS OF CURRENT LINE. |
| 407 | 0474 | 3022 | DCA PC | |
| 408 | 0475 | 5676 | JMP I ,+1 | /CONTINUE PROCESSING THIS LINE. |
| 409 | 0476 | 0611 | | |
| 410 | | | PROC | |
| 411 | 0477 | 0000 | /PUSHDOWN LIST CONTROLS | |
| 412 | 0500 | 3071 | XPUSHA, 0 | /PUSHDOWN THE AC = "PUSHA" |
| 413 | 0501 | 7040 | DCA T2 | /BACKUP POINTER |
| 414 | 0502 | 4310 | CMA | /AND THEN |
| 415 | 0503 | 1071 | JMS PCHK | /CHECK CORE USAGE |
| 416 | 0504 | 3413 | TAD T2 | /OK |
| 417 | 0505 | 7040 | DCA I PDLXR | /PUSH DOWN LIST POINTER |
| 418 | 0506 | 4310 | CMA | /BACKUP AGAIN |
| 419 | 0507 | 5677 | JMS PCHK | |
| 420 | 0510 | 0000 | JMP I XPUSHA | |
| 421 | 0511 | 1013 | PCHK, 0 | |
| 422 | 0512 | 3013 | TAD PDLXR | /INC IN AC |
| 423 | 0513 | 1013 | DCA PDLXR | |
| 424 | 0514 | 7141 | TAD PDLXR | |
| 425 | 0515 | 1031 | CIA CLL | |
| 426 | 0516 | 7630 | TAD LASTV | |
| 427 | 0517 | 4566 | SZL CLA | |
| 428 | 0520 | 5710 | ERROR3 | /STORAGE FILLED BY PUSH-DOWN LIST |
| 429 | 0521 | 0000 | JMP I PCHK | |
| 430 | 0522 | 1721 | XPUSHJ, 0 | /RECURSIVE SUBROUTINE CALL = "PUSHJ" |
| 431 | 0523 | 3071 | TAD I XPUSHJ | |
| 432 | 0524 | 7040 | DCA T2 | /SAVE SUBR. ADDR. |
| 433 | 0525 | 4310 | CMA | |
| 434 | 0526 | 1321 | JMS PCHK | |
| 435 | 0527 | 7001 | TAD XPUSHJ | |
| 436 | 0530 | 1413 | IAC | |
| 437 | 0531 | 7340 | DCA I PDLXR | /SAVE RETURN |
| 438 | 0532 | 4310 | CMA | |
| 439 | 0533 | 5471 | JMS PCHK | |
| 440 | 0534 | 0000 | JMP I T2 | /TRANSFER CONTROL |
| | | | PD2, 0 | /SAVE A FLOATING POINT NUMBER = "PUSHF" |

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|-----|------|------|-------------------------------|---|
| 441 | 0535 | 7240 | CLA CMA | /COMPUTE VARIABLE ADDR |
| 442 | 0536 | 1734 | TAD I ,=2 | |
| 443 | 0537 | 3011 | DCA XRT | |
| 444 | 0540 | 2334 | ISZ PD2 | /FIX RETURN |
| 445 | 0541 | 1117 | TAD MFLT | /COMPUTE PUSH. POINTER |
| 446 | 0542 | 4310 | JMS PCHK | |
| 447 | 0543 | 1117 | TAD MFLT | |
| 448 | 0544 | 3071 | DCA T2 | |
| 449 | 0545 | 1411 | TAD I XRT | |
| 450 | 0546 | 3413 | DCA I PDLXR | |
| 451 | 0547 | 2071 | ISZ T2 | |
| 452 | 0550 | 5345 | JMP ,=3 | |
| 453 | 0551 | 1117 | TAD MFLT | /RESET POINTER |
| 454 | 0552 | 4310 | JMS PCHK | |
| 455 | 0553 | 5734 | JMP I PD2 | |
| 456 | | | | |
| 457 | | | | |
| 458 | 0554 | 0000 | PD3, Z | /RESTORE A FLOATING POINT NUMBER = "POPF" |
| 459 | 0555 | 7240 | CLA CMA | /GET VAR. ADDR. |
| 460 | 0556 | 1754 | TAD I PD3 | |
| 461 | 0557 | 2354 | ISZ PD3 | |
| 462 | 0560 | 3011 | DCA XRT | |
| 463 | 0561 | 1117 | TAD MFLT | |
| 464 | 0562 | 3071 | DCA T2 | |
| 465 | 0563 | 1413 | TAD I PDLXR | /MOVE |
| 466 | 0564 | 3411 | DCA I XRT | |
| 467 | 0565 | 2071 | ISZ T2 | |
| 468 | 0566 | 5363 | JMP ,=3 | |
| 469 | 0567 | 5754 | JMP I PD3 | /EXIT |
| 470 | | 0570 | INLIST=. | /INPUT CONTROL CHARACTERS |
| 471 | 0570 | 2740 | RECOVR | /C.C. = BREAK |
| 472 | 0571 | 0212 | IBAR | /B.A. = RESTART |
| 473 | 0572 | 0217 | IGNOR | /L.F. = IGNORE |
| 474 | 0573 | 0227 | IRETN | /C.R. = TERMINATE STRING |
| 475 | 0574 | 1075 | FLIST2, FLIMIT | /,=STANDARD |
| 476 | 0575 | 1137 | FINFIN | /I=SHORT |
| 477 | 0576 | 2725 | ERROR5 | /CR=DUMB |
| 478 | 0577 | 1065 | FLIST1, FINCR | /,=STANDARD FORMAT |
| 479 | 0600 | 0610 | PROCESS | /I=SETIPLUS ,,, |
| 480 | 0601 | 0614 | PC1 | /C.R.=SET COMMAND. |
| 481 | 0602 | 7472 | MF, =306 | /USED BY TESTC |
| 482 | | | /PRIMARY CONTROL AND TRANSFER | |
| 483 | 0603 | 4554 | GOTO, GETLN | /READ THE LINE NUMBER REQUESTED |
| 484 | 0604 | 4555 | FINDLN | /LOCATE IT AND RESET TEXTP |
| 485 | 0605 | 4566 | ERROR2 | /NOT THERE |
| 486 | 0606 | 1023 | TAD THISLN | /SET PC |
| 487 | 0607 | 3022 | DCA PC | |
| 488 | 0610 | 4545 | PROCESS, GETC | /TEST FOR END OF LINE |
| 489 | 0611 | 1066 | PROC, TAD CHAR | /FIRST CHARACTER READY = USE PROC |
| 490 | 0612 | 1116 | TAD MCR | |
| 491 | 0613 | 7650 | SNA CLA | |
| 492 | 0614 | 5541 | PC1, POPJ | /EXIT "PROCESS" |
| 493 | 0615 | 4550 | SORTC | /IGNORE "SPACE", ",", AND "I". |
| 494 | 0616 | 1374 | | |
| 495 | 0617 | 5210 | JMP PROCESS | |

| | | | | |
|-----|------|------|----------------------|--|
| 496 | 2622 | 1266 | TAD CHAR | /SAVE COMMAND CHARACTER |
| 497 | 2621 | 1375 | AND P337 | /EXECUTE LOWER CASE ALSO |
| 498 | 2622 | 4542 | PUSHA | |
| 499 | 2623 | 4545 | GETC | /GO TO TERMINATOR |
| 500 | 2624 | 4552 | SORTC | |
| 501 | 2625 | 1374 | | GLIST=1 |
| 502 | 2626 | 7410 | SKP | |
| 503 | 2627 | 5223 | JMP ,=4 | |
| 504 | 2630 | 1413 | POPA | |
| 505 | 2631 | 4547 | SORTJ | /GO TO COMMAND |
| 506 | 2632 | 773 | | COMLST=1 |
| 507 | 2633 | 1165 | | COMGO=COMLST |
| 508 | 2634 | 4566 | ERROR2 | /ILLEGAL COMMAND |
| 509 | | 614 | COMMENTS=PC1 | /ALSO IS CONTINUE |
| 510 | | | | |
| 511 | | | | |
| 512 | | | /OUTPUT COMMAND TEXT | |
| 513 | 2635 | 4554 | WRITE: GETLN | /SET LINENO |
| 514 | 2636 | 2826 | ISE DEBGSW | /DISABLE TRACE |
| 515 | 2637 | 4555 | FINDLN | /SEARCH FOR LINE NUMBER |
| 516 | 2640 | 5267 | JMP WTESTG | /NOT THERE OR GROUP |
| 517 | 2641 | 1067 | TAD LINENO | |
| 518 | 2642 | 7640 | SZA CLA | |
| 519 | 2643 | 4553 | PRNTLN | /PRINT LINE NUMBER AND A SPACE. |
| 520 | 2644 | 4545 | GETC | |
| 521 | 2645 | 4551 | PRINTC | /PRINT TEXT OF A LINE. |
| 522 | 2646 | 1066 | TAD CHAR | |
| 523 | 2647 | 1116 | TAD MCR | |
| 524 | 2650 | 7640 | SZA CLA | /SKIP IF END OF LINE |
| 525 | 2651 | 5244 | JMP ,=5 | |
| 526 | 2652 | 1423 | TAD I THISLN | /TEST FOR END OF TEXT (X=MEM) |
| 527 | 2653 | 7450 | WTEST2: SNA | |
| 528 | 2654 | 5271 | JMP WX=2 | /EXIT/DO NEXT INDIRECT LINE. |
| 529 | 2655 | 7001 | IAC | |
| 530 | 2656 | 3030 | DCA PT1 | /SAVE POINTER TO LINENO OF NEXT |
| 531 | 2657 | 1265 | TAD NAGSW | |
| 532 | 2660 | 7700 | SMA CLA | |
| 533 | 2661 | 1430 | TAD I PT1 | /(X=MEM) |
| 534 | 2662 | 4563 | TSTGRP | /TRY NEXT LINENO FOR GROUP. |
| 535 | 2663 | 5273 | JMP WX | |
| 536 | 2664 | 1430 | WALL: TAD I PT1 | /SET LINENO (X=MEM) |
| 537 | 2665 | 3067 | DCA LINENO | |
| 538 | 2666 | 5237 | JMP WRITE+2 | |
| 539 | 2667 | 1023 | WTESTG: TAD THISLN | /INIT GROUP PRINTOUT |
| 540 | 2670 | 5253 | JMP WTEST2 | |
| 541 | 2671 | 3026 | DCA DEBGSW | |
| 542 | 2672 | 5541 | POPJ | |
| 543 | 2673 | 1065 | WX: TAD NAGSW | |
| 544 | 2674 | 7750 | SPA SNA CLA | /SKIP IF ALL |
| 545 | 2675 | 5271 | JMP WX=2 | |
| 546 | 2676 | 4551 | PRINTC | /PRINT C.R. AGAIN |
| 547 | 2677 | 5264 | JMP WALL | |
| 548 | 2700 | 0000 | XTESTC: 0 | /TEST THE NATURE OF THE NEXT ALPHANUMERIC IS "TESTC" |
| 549 | 2701 | 4560 | SPNOR | /IGNORE SPACES |
| 550 | 2702 | 4552 | SORTC | /TEST THE VARIABLE TERMINATORS |

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551 0703 1771          TERMS=1
552 0704 5700          JMP I XTESTC /YES = SORTCN IS SET
553 0705 1066          TAD CHAR /NO
554 0706 2300          ISZ XTESTC
555 0707 1202          TAD MF
556 0710 7650          SNA CLA /TEST FOR "F"
557 0711 5317          JMP XT3
558 0712 4561          TESTN
559 0713 5700          JMP I XTESTC /
560 0714 7410          SKP /OTHER
561 0715 5700          JMP I XTESTC /NUMBER
562 0716 2300          ISZ XTESTC
563 0717 2300          XT3, ISZ XTESTC /RETURNS:ITIN;FJA
564 0720 5700          JMP I XTESTC
565 0721 0000          XSORTC, 0 /SORT CHAR AGAINST TABLE = "SORTCN"
566 0722 1721          TAD I XSORTC
567 0723 3012          DCA XRT2 /1ST ARG IS LIST=1
568 0724 1412          TAD I XRT2
569 0725 7510          SPA /LIST IS ENDED BY A NEGATIVE NUMBER
570 0726 5340          JMP SEXC /2ND EXIT = NOT IN LIST
571 0727 7041          CIA
572 0730 1066          TAD CHAR
573 0731 7640          SZA CLA /COMPARE
574 0732 5324          JMP ,=6
575 0733 1721          TAD I XSORTC /COMPUTE INCREMENT I 0 = N
576 0734 7040          CMA
577 0735 1012          TAD XRT2
578 0736 3054          DCA SORTCN
579 0737 7410          SKP /1ST EXIT = YES
580 0740 2321          SEXC, ISZ XSORTC
581 0741 2321          ISZ XSORTC
582 0742 7300          CLA CLL
583 0743 5721          JMP I XSORTC
584 0744 0000          GRPTST, 0 /AC VS LINENO = "TSTGRP"
585 0745 0104          AND P7600
586 0746 7041          CIA
587 0747 3071          DCA T2
588 0750 1067          TAD LINENO
589 0751 0104          AND P7600
590 0752 1071          TAD T2
591 0753 7650          SNA CLA
592 0754 2344          ISZ GRPTST
593 0755 5744          JMP I GRPTST
594
595 /INPUT FROM TEXT OR KEYBOARD;
596 /IF BACK-ARROW, RESTART INPUT
596 0756 0000          INPUT, 0 /INPUT A CHARACTER
597 0757 1036          TAD INSUB /NON-ZERO FOR KEYBOARD
598 0760 7640          SZA CLA
599 0761 5364          JMP ,+3
600 0762 4545          GETC
601 0763 5756          JMP I INPUT
602 0764 4552          READC
603 0765 4547          SORTJ
604 0766 6776          SPECIAL=1
605 0767 3402          INFIX=SPECIAL

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606 0770 5756
607 0771 1435
608 0772 610
609 0773 614
610
611 774
612 0774 323
613 0775 306
614 0776 311
615 0777 304
616 1222 307
617 1221 303
618 1222 301
619 1223 324
620 1224 317
621 1225 305
622 1226 327
623 1227 315
624 1210 321
625 1211 322
626 1212 314
627
628
629
630
631 1213 4564
632 1214 4637
633 1215 2013
634 1216 4640
635 1217 1111
636 1220 3032
637 1221 1045
638 1222 7510
639 1223 2032
640 1224 7750
641 1225 2032
642 1226 7410
643 1227 5765
644 1230 4547
645 1231 1375
646 1232 7373
647 1233 4545
648 1234 5230
649 1235 4545
650 1236 5225
651 1237 1601
652 1240 2051
653
654 1241
655 1241 4540
656 1242 1401
657 1243 4560
658 1244 1066
659 1245 1335
660 1246 7442

JMP I INPUT
ILIST, IF1 /,
PROCESS /I
PC1 /CR
COMLST=, /ENGLISH=FRENCH
/COMMAND DECODING LIST
323 /SET = ORGANIZE
306 /FOR = QUAND
311 /IF = SI
304 /DO = FAIZ
307 /GOTO = VA
303 /COMMENT= COMMENTE
301 /ASK = DEMANDE
324 /TYPE = TAPE
317 /OUTPUT /*****
305 /ERASE = BIFFE
327 /WRITE = INSCRIS
315 /MODIFY = MODIFIE
321 /QUIT = ARRETE
322 /RETURN = RETOURNE
314 /LIBR****
/THIS COMMAND LIST IS SPEED OPTIMIZED.
/CONDITIONAL TRANSFER PROCESS,
IF, TESTC /IGNORE SPACES AND TEST
JMS I IECALL /T
ISZ PDLXR /N=DUMP THE (EPOP)
JMS I IPART /F=CHECK FOR PAREN MATCH
TAD M2 /A
DCA T1
TAD FLAC*1 /TEST =,0,*
SPA
ISZ T1 /N=TO -1,-2,-3
SPA SNA CLA
IF3, ISZ T1 /COUNT COMMAS
SKP
JMP I COMGO+4 /TRANSFER
SORTJ /SEARCH TEXT UNTILL ,I.C.R.
TLIST=1
ILIST=TLIST
GETC
JMP ,=4
IF1, GETC /MOVE PAST COMMA
JMP IF3
IECALL, ECALL
IPART, PARTEST
/LOOP CONTROL STATEMENT
SETT=, /SUBSET OF "FOR".
FOR, PUSHJ /LOOPS, ETC.
GETARG /LOOK FOR "=" NEXT
SPNOR /IGNORE SPACES
TAD CHAR
TAD MEQ
SZA

| | | | | |
|-----|------|------|----------------|--|
| 661 | 1047 | 4566 | ERROR4 | /LEFT OF "=" IN ERROR: 'FOR' OR 'SET' |
| 662 | 1050 | 1730 | TAD PT1 | |
| 663 | 1051 | 4542 | PUSHA | /SAVE POINTER TO VARIABLE |
| 664 | 1052 | 4540 | PUSHJ | |
| 665 | 1053 | 1612 | EVAL=1 | /GET INITIAL VALUE EXPRESSION |
| 666 | 1054 | 1413 | POPA | |
| 667 | 1055 | 3030 | DCA PT1 | |
| 668 | 1056 | 4407 | FINT | /INITIALIZE NOV. |
| 669 | 1057 | 6430 | FPUT I PT1 | |
| 670 | 1060 | 0000 | FXIT | |
| 671 | 1061 | 4547 | SORTJ | /TEST LAST CHAR FROM "EVAL" |
| 672 | 1062 | 1375 | TLIST=1 | |
| 673 | 1063 | 7201 | FLIST1=TLIST | |
| 674 | 1064 | 4566 | ERROR4 | /EXCESS R=PAR |
| 675 | 1065 | 1030 | FINCR, TAD PT1 | /SAVE VARIABLE ADDRESS * |
| 676 | 1066 | 4542 | PUSHA | |
| 677 | 1067 | 4540 | PUSHJ | /EVALUATE THE INCREMENT, IF ANY. |
| 678 | 1070 | 1612 | EVAL=1 | |
| 679 | 1071 | 4547 | SORTJ | /TEST TERMINATORS |
| 680 | 1072 | 1375 | TLIST=1 | |
| 681 | 1073 | 7176 | FLIST2=TLIST | |
| 682 | 1074 | 4566 | ERROR4 | /ILLEGAL TERMINATOR IN 'FOR' |
| 683 | 1075 | 4543 | FLIMIT, PUSHF | /SAVE THE INCREMENT. * |
| 684 | 1076 | 2032 | FLARG | |
| 685 | 1077 | 4540 | PUSHJ | /GET THE LIMIT(NO ERROR DETECTION AFTER LIMIT) |
| 686 | 1100 | 1612 | EVAL=1 | |
| 687 | 1101 | 4543 | FCONT, PUSHF | /SAVE THE LIMIT * |
| 688 | 1102 | 2032 | FLARG | |
| 689 | 1103 | 4543 | PUSHF | /SAVE TEXT OF OBJECT STATEMENTS |
| 690 | 1104 | 0017 | TEXTP | |
| 691 | 1105 | 4540 | PUSHJ | /DO THE OBJECT STATEMENTS |
| 692 | 1106 | 0610 | PROCESS | |
| 693 | 1107 | 4544 | POPF | /RESTORE REMAINING TEXT. |
| 694 | 1110 | 0017 | TEXTP | |
| 695 | 1111 | 4544 | POPF | /GET LIMIT |
| 696 | 1112 | 2032 | FLARG | |
| 697 | 1113 | 4544 | POPF | /GET INCREMENT |
| 698 | 1114 | 7470 | ITER1 | |
| 699 | 1115 | 1413 | POPA | /GET VARIABLE ADDRESS |
| 700 | 1116 | 3030 | DCA PT1 | |
| 701 | 1117 | 4407 | FINT | /INCREMENT AND TEST |
| 702 | 1120 | 1430 | FGET I PT1 | /LOAD THE VARIABLE |
| 703 | 1121 | 1733 | FADD I FINKP | /INCREMENT IT |
| 704 | 1122 | 6430 | FPUT I PT1 | /CHANGE IT |
| 705 | 1123 | 2525 | FSUB I FLARGP | /TEST IT |
| 706 | 1124 | 0000 | FXIT | |
| 707 | 1125 | 1045 | TAD FLAC*1 | |
| 708 | 1126 | 7740 | SMA SEA CLA | |
| 709 | 1127 | 5541 | POPU | /END OF LOOP |
| 710 | 1130 | 1030 | TAD PT1 | |
| 711 | 1131 | 4542 | PUSHA | /SAVE ADDRESS * |
| 712 | 1132 | 4543 | PUSHF | /SAVE INCREMENT AGAIN * |
| 713 | 1133 | 7470 | FINKP, ITER1 | |
| 714 | 1134 | 5301 | JMP FCONT | |
| 715 | 1135 | 7503 | MEQ, -275 | |

716 1135 7524
 717 1137 4543
 718 1143 2405
 719 1141 5301
 720
 721
 722
 723 1142 0000
 724 1143 2000
 725 1144 0000
 726 1145 4407
 727 1146 1342
 728 1147 4755
 729 1150 6342
 730 1151 0000
 731 1152 3342
 732 1153 3044
 733 1154 5536
 734 1155 6160
 735
 736 1156 4453
 737 1157 7200
 738 1160 5536
 739
 740 1161 1041
 741 1162 1041
 742 1163 1013
 743 1164 0420
 744 1165 0603
 745 1166 0614
 746 1167 1200
 747 1170 1201
 748 1171 7706
 749 1172 2206
 750 1173 0635
 751 1174 1254
 752 1175 0177
 753 1176 1563
 754 1177 6346
 755
 756 1200 7240
 757 1201 3056
 758 1202 4547
 759 1203 1367
 760 1204 0200
 761 1205 2056
 762 1206 5223
 763 1207 4540
 764 1210 1401
 765 1211 1066
 766 1212 4542
 767 1213 1253
 768 1214 4551
 769 1215 2036
 770 1216 7001

RCOM, -254
 FINFIN; PUSHF /SET INCREMENT TO ONE.
 FLTONE
 JMP FCONT
 /
 /SAME PRAN = JUST MOVED
 /
 RANO, 0000 /*****
 2000 /*****
 0000 /*****
 XRAN, FINT /*****
 FADD RANO /*****
 FMUL I CRUDDY /*****
 FPUT RANO /*****
 FXIT /*****
 DCA RANO /*****
 DCA FLAG /*****
 JMP I EFUN3I /*****
 CRUDDY, RANMUL /*****
 /TAKE THE INTEGER PART
 XINT, JMS I INTEGER /(FIX)
 CLA
 JMP I EFUN3I
 COMGO: /COMMAND ROUTINE ADDRESSES
 SETT
 FOR
 IF
 DO
 GOTO /((REFERENCED))
 COMMENT
 ASK
 TYPE
 OUTPUT /*****
 ERASE
 WRITE
 MODIFY
 START /RETURN TO COMMAND MODE VIA 'QUIT'
 RETRN
 LTAPE /*****
 /INPUT-OUTPUT STATEMENTS
 ASK, CLA CMA /REMEMBER WHICH CALL.
 TYPE, DCA ATSW
 TASK, SORTJ /SPECIAL CHAR? *****
 ALIST=1
 ATLIST=ALIST
 ISZ ATSW /TEST QUOTE SWITCH
 JMP TYPE2
 PUSHJ /DO ASK; SETUP PT1
 GETARG
 TAD CHAR /SAVE IN-LINE CHARACTER.
 PUSHA
 TAD COL /TYPE COLON
 PRINTC /((CLA)= TO SUPRESS "I"
 ISZ INSUB /INDICATE 'READC'
 IAC /POINT PAST CHAR

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771 1217 4531 JMS I FINPUT /READ DATA AND SAVE
772 1220 1413 POPA /RE-TEST LAST TERMINATOR
773 1221 3066 DCA CHAR
774 1222 5230 JMP ASK /CONTINUE PROCESSING
775 1223 4542 TYPE2, PUSHJ /DO TYPE
776 1224 1613 EVAL
777 1225 4530 JMS I FOUTPUT /PRINT
778 1226 5201 JMP TYPE
779 1227 2026 TQUOT, ISZ DEBSW /DISABLE TRACE
780 1232 4545 GETC /TYPE LITERALS
781 1231 4547 SORTJ
782 1232 1531
783 1233 1645 TLIST2=1
784 1234 4551 TLIST3=TLIST2
785 1235 5230 PRINTC
786 1236 4545 JMP TQUOT+1
787 1237 4554 TINTR, GETC /PASS PERCENT SIGN
788 1240 1067 GETLN /READ FORMAT CONTROL "X7,03"
789 1241 3052 TAD LINENO
790 1242 5202 DCA FISW /SAVE FORMAT CODE
791 1243 1077 JMP TASK
792 1244 4463 TCRLF2, TAD CCR /SPLAT=CR ALONE
793 1245 7001 JMS I OUTDEV
794 1246 1077 IAC /NON-PRINTING DELAY FOR C.R, *****
795 1247 4551 TCRLF, TAD CCR /EXCLAMATION POINT=CR,LF,
796 1250 3026 PRINTC
797 1251 4545 TASK4, DCA DEBSW /*
798 1252 5202 GETC /*
799 1253 0272 JMP TASK
800 COL, 272 /"I"
801 /IF DEBSW=0 I ENABLE FLIP=FLOP "DMPSW"
802 / #0I DISABLE AND RETURN ALL?" I S.
803 /IF DMPSW = 0I TRACE ON, IF ENABLED
804 / #0I TRACE OFF
805 /IF BOTH = 0 I PRINT TRACE.
806 /SEARCH ROUTINES
807 MODIFY, GETLN /READ LINE NO,
808 1254 4554 FINDLN /LOOK IT UP NOW,
809 1255 4555 ERROR2 /NOT THERE = BAD COMMAND UNLESS ZERO,
810 1256 4566 TAD BUFR /SET POINTERS
811 1257 1060 DCA AXIN /FOR INPUT
812 1260 3010 DCA XCTIN
813 1261 3062 TAD LINENO /COPY THE SAME LINE NUMBER,
814 1262 1067 DCA I AXIN /(X=MEM)
815 1263 3410 TAD AXIN /SAVE START OF NEW LINE
816 1264 1010 DCA PACKST
817 1265 3027 JMS I INDEV /READ THE TELETYPE INPUT SILENTLY,
818 1266 4464 DCA LIST3+1 /SAVE SEARCH CHARACTER
819 1267 3100 ISZ DEBSW /NO BREAKS,
820 1270 2026 SCHAR, GETC /TYPE+TEST=F,F,
821 1271 4545 PRINTC /PLAYBACK THE TEXT
822 1272 4551 SORTJ /LOOK FOR MATCH
823 1273 4547
824 1274 0076 LIST3=1
825 1275 1267 LISTGO=LIST3
PACKC /SAVE NEW LINE,
JMP SCHAR

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826 1300 1060
827 1301 7001
828 1302 3012
829 1303 3062
830 1304 4552
831 1305 4547
832 1306 0271
833 1307 1267
834 1310 4546
835 1311 5304
836 1312 0000
837 1313 7450
838 1314 1066
839 1315 7041
840 1316 3071
841 1317 1712
842 1320 2312
843 1321 3012
844 1322 1412
845 1323 7510
846 1324 5336
847 1325 1071
848 1326 7640
849 1327 5322
850 1330 1012
851 1331 1712
852 1332 3071
853 1333 1471
854 1334 3071
855 1335 5471
856 1336 2312
857 1337 7300
858 1340 5712
859
860 1341 4453
861 1342 0360
862 1343 1357
863 1344 3347
864 1345 6002
865 1346 6141
866 1347 0100
867 1350 0002
868 1351 6001
869 1352 3045
870 1353 3046
871 1354 7326
872 1355 3044
873 1356 5536
874 1357 0100
875 1360 0037
876 1361
877 1361 1271
878 1362 1266
879 1363 2740
880 1364 1300

SBAR, TAD BUFR /RESTART=B,A.
IAC
DCA AXIN /SET POINTERS
DCA XCTIN
SFOUND, READC /READ FROM KEYBOARD
SORTJ /TEST
LIST6=1
SRNLST=LIST6
SGOT, PACKC /PACK CHAR,
JMP SFOUND /MORE
SORTB, 0 /SORT AND BRANCH ROUTINE, = "SORTJ"
SNA
TAD CHAR /ASSUME CHAR IF AC=0
CIA
DCA T2 /SAVE SORT ITEM
TAD I SORTB /FIRST ARG IS LIST LESS ONE
ISZ SORTB /2AND IS INTRA-LIST LENGTH
DCA XRT2
TAD I XRT2
SPA /**LISTS ENDED BY NEGATIVE NUMBERS**
JMP SEX /READ EXIT
TAD T2 /FIND ADDRESS
SEA CLA
JMP ,=5
TAD XRT2 /MATCH FOUND.
TAD I SORTB
DCA T2
TAD I T2
DCA T2 /DEBUG I AC = ADDRESS
JMP I T2
SEX, ISZ SORTB /MATCH NOT FOUND.
CLA CLL
JMP I SORTB /RETURN TO CALLING SEQUENCE.
/ANALOGUE TO DIGITAL CONVERSION FOR PDP-12
XADC, JMS I INTEGER
AND 037 /*****
TAD OSAMP /*****
DCA ,*3 /*****
IOF /*****
6141 /LINC /*****
0100 /SAM ? /*****
0002 /PDP /*****
ION /*****
DCA FLAC+1 /*****
DCA FLAC+2 /*****
CLA CLL CML RTL /*****
DCA FLAC /*****
JMP I EFUN3I /*****
OSAMP, 0100 /SAM 0 /*****
037, 37 /*****
SRNLST=, /'MODIFY' CONTROL CHARACTER TABLE
SCHAR /F,F. = CONTINUE
SCONT /BELL = CHANGE SEARCH CHARACTER
RECOVR /C.C. = BREAK
SBAR /B.A. = RESTART

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881 1365 1267 SCONT*1 /L.F. = FINISH THE LINE AS BEFORE,
882 1366 LISTGO=,
883 1366 261 GETN /C.R. = END THE LINE HERE AS IS,
884 1367 1312 SGOI /CHAR = SEARCH CHARACTER
885 1370 ALIST=, /ASK/TYPE LIST OF CONTROLS,
886 1370 245 245 /%
887 1371 242 242 /"
888 1372 241 241 /|
889 1373 243 243 /#
890 1374 244 244 /S///
891 1375 GLIST=,
892 1375 240 240 /SPACE
893 1376 TLIST=,
894 1376 254 254 /;
895 1377 273 273 /|
896 1400 215 215 /C.R.
897
898 /THIS LIST IS ENDED BY 'TESTC',
899 1401 4564 GETARG, TESTC /FIRST LETTER OF ARG
900 1402 7200 P7200, 7200 /***** LETS F THRU
901 1403 4566 ERROR4 /*****
902 1404 7000 NOP /*****
903 1405 3062 GETVAR, DCA XCTIN /PACK INTO ADD,
904 1406 4546 PACKC
905 1407 4545 GETC /SECOND LETTER
906 1410 4550 SORTC /TERMINATOR?
907 1411 1771 TERMS=1
908 1412 5224 JMP GSERCH /YES
909 1413 1066 TAD CHAR /NO
910 1414 0122 AND P77 /SAVE 2ND LETTER OF NAME
911 1415 1061 TAD QADD
912 1416 3061 DCA QADD
913 1417 4545 GETC /IGNORE THE REST
914 1420 4550 SORTC
915 1421 1771 TERMS=1
916 1422 5224 JMP GSERCH
917 1423 5217 JMP ,=4
918 1424 4562 GSERCH, TSTLPR /LOOK FOR SUBSCRIPT VIA SORTCN
919 1425 5235 JMP GS1 /NOT SUBSCRIBED BY L=PAR,
920 1426 1061 TAD QADD /SAVE NAME
921 1427 3056 DCA EFOP /FOR RECURSIVE AND ERROR CHECK
922 1430 4663 JMS I GECALL /TO EVAL
923 1431 1413 POPA
924 1432 3061 DCA QADD /RESTORE NAME
925 1433 4662 JMS I PTEST /TEST PAREN MATCH, ETC,
926 1434 1453 JMS I INTEGER /CONVERT TO 12-BIT NUMBER,
927 1435 3171 GS1, DCA SUBS /SAVE SUBSCRIPT
928 1436 1061 TAD QADD /***** LETS F THRU
929 1437 1061 AND P7700 /*****
930 1440 1202 TAD P7200 /*****
931 1441 7050 SNA CLA /*****
932 1442 5322 JMP FFF /*****
933 1443 1060 TAD STARTV /SEARCH FOR VARIABLE(CHANGE FOR X=MEM)
934 1444 3030 GS3, DCA PT1
935 1445 1030 TAD PT1

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| | | | | | |
|-----|------|------|-------------|-----------------------|-----------------------------|
| 936 | 1446 | 7841 | CIA | | |
| 937 | 1447 | 1031 | TAD LASTV | /TEST FOR END OF LIST | |
| 938 | 1450 | 7750 | SPA SNA CLA | | |
| 939 | 1451 | 5264 | JMP GS2 | /END SEARCH | |
| 940 | 1452 | 1430 | TAD I PT1 | /GET TABLE ENTRY | |
| 941 | 1453 | 7841 | CIA | | |
| 942 | 1454 | 1061 | TAD QADD | | |
| 943 | 1455 | 7650 | SNA CLA | | |
| 944 | 1456 | 5310 | JMP GFND1 | /FOUND XX | |
| 945 | 1457 | 1030 | TAD PT1 | /TRY NEXT ONE | |
| 946 | 1460 | 1072 | TAD GINC | | |
| 947 | 1461 | 5244 | JMP GS3 | | |
| 948 | 1462 | 2051 | PTEST, | PARTEST | |
| 949 | 1463 | 1601 | GECALL, | ECALL | |
| 950 | 1464 | 1031 | GS2, | TAC LASTV | /ADD THE VARIABLE |
| 951 | 1465 | 1005 | | TAD P13 | /TEST STORAGE LIMITS |
| 952 | 1466 | 7141 | | CIA CLL | |
| 953 | 1467 | 1013 | | TAD POLXR | |
| 954 | 1470 | 7620 | | SNL CLA | |
| 955 | 1471 | 4566 | | ERROR3 | |
| 956 | 1472 | 1031 | | TAD LASTV | /UPDATE THE LIST. |
| 957 | 1473 | 1070 | | TAD GINC | |
| 958 | 1474 | 3031 | | DCA LASTV | |
| 959 | 1475 | 1061 | | TAD QADD | /SAVE NAME |
| 960 | 1476 | 3430 | | DCA I PT1 | |
| 961 | 1477 | 2030 | | ISZ PT1 | /SAVE SUBSCRIPT |
| 962 | 1500 | 1171 | | TAD SUBS | |
| 963 | 1501 | 3430 | | DCA I PT1 | |
| 964 | 1502 | 2030 | | ISZ PT1 | /SET PT1 |
| 965 | 1503 | 4407 | | FINY | |
| 966 | 1504 | 1537 | | FGET I CFRSX | |
| 967 | 1505 | 6430 | | FPUT I PT1 | |
| 968 | 1506 | 6000 | | EXIT | |
| 969 | 1507 | 5541 | | POPJ | /EXIT |
| 970 | 1510 | 1030 | GFND1, | TAD PT1 | /FOUND SAME |
| 971 | 1511 | 3011 | | DCA XRT | /TEST SUBSCRIPTS |
| 972 | 1512 | 1411 | | TAD I XRT | |
| 973 | 1513 | 7041 | | CIA | |
| 974 | 1514 | 1171 | | TAD SUBS | |
| 975 | 1515 | 7640 | | SZA CLA | |
| 976 | 1516 | 5257 | | JMP GS4 | /WRONG SUBSCRIPT |
| 977 | 1517 | 2030 | | ISZ PT1 | /SET POINTER TO DATA |
| 978 | 1520 | 2030 | | ISZ PT1 | |
| 979 | 1521 | 5541 | | POPJ | |
| 980 | 1522 | 3030 | FFF, | DCA PT1 | /***** SAVES SUBSCRIPT ON F |
| 981 | 1523 | 1061 | | TAD QADD | /***** |
| 982 | 1524 | 3002 | | DCA LWETMP | /***** |
| 983 | 1525 | 1045 | | TAD WORD | /***** |
| 984 | 1526 | 3170 | | DCA LESUB2 | /***** |
| 985 | 1527 | 1171 | | TAD SUBS | /***** |
| 986 | 1530 | 3167 | | DCA SUBS2 | /***** |
| 987 | 1531 | 5541 | | POPJ | /***** |
| 988 | 1532 | 242 | TLIST2, | 242 | /***** |
| 989 | 1533 | 215 | | 215 | /***** |
| 990 | 1534 | 7520 | M260, | *260 | /***** |

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991
992 1535 1000 XSPNOR, 0 /*****
993 1536 1066 TAD CHAR /IGNORE LEADING SPACES = "SPNOR"
994 1537 1114 TAD M242
995 1540 7640 SZÄ CLA
996 1541 5735 JMP I XSPNOR
997 1542 4545 GETC
998 1543 5336 JMP XSPNOR+1
999
1000 1544 7506 M272, -272 /***** RECODING FOR SPACE
1001 1545 0012 012, 12 /*****
1002
1003
1004 1546 0000 XTESTN, 0 /*****
1005 1547 1066 TAD CHAR /RETURNS: ; OTHER: NUMBER = "TESTN"
1006 1550 1115 TAD MPER
1007 1551 7640 SZÄ CLA
1008 1552 2346 ISZ XTESTN
1009 1553 1066 TAD CHAR /***** RECODING FOR SPACE
1010 1554 1344 TAD M272 /*****
1011 1555 7100 CLL /*****
1012 1556 1345 TAD 012 /*****
1013 1557 3054 DCÄ SORTCN /*****
1014 1560 7430 SZL /*****
1015 1561 2346 ISZ XTESTN /*****
1016 1562 5746 JMP I XTESTN /*****
1017
1018 /EXIT FROM A "DO" SUBROUTINE
1019 1563 1137 RETRN, TAD CFRSX /(PC) => 0
1020 1564 3022 DCÄ PC
1021 1565 1413 XPOPJ, TAD I PDLXR /RECURSIVE EXIT = "POPJ"
1022 1566 3071 DCÄ T2
1023 1567 5471 JMP I T2
1024
1025 1570 1570 ATLIST=, /ASK-TYPE CONTROL CHARACTER TABLE
1026 1571 1236 TINTR /X = FORMAT DELIMITER
1027 1572 1227 TQUOT /" = LITERAL DELIMITER
1028 1573 1246 TCRLF /I = CARRIAGE RETURN AND LINE FEED
1029 1574 1243 TCRLF2 /# = CARRIAGE RETURN ONLY
1030 1574 3052 TDUMP /S/ = DUMP THE SYMBOL TABLE CONTENTS
1031 1575 1250 TASK4 /SP = TERMINATOR FOR NAMES
1032 1576 1250 TASK4 /, = TERMINATOR FOR EXPRESSIONS
1033 1577 0610 PROCESS /| = TERMINATOR FOR COMMANDS
1034 1600 0614 PC1 /C.R. = TERMINATOR FOR STRINGS
1035
1036 /S = FOR TDUMP: TERMINATES THE COMMAND.
1037 /EVALUATE AN EXPRESSION WHICH
1038 /TERMINATES WITH AN R-PAR, | OR C.R. AND
1039 /LEAVE THE RESULT IN FLAG AND IN FLAG.
1040 ECALL, 0 /RECURSIVE CALL TO "EVAL"
1041 TAD SORTCN /SAVE 'SORTCN', 'LASTOP', AND 'EFOP'
1042 PUSHA
1043 TAD LASTOP
1044 PUSHA
1045 TAD EFOP /SAVE FUNCTION CODE.
1046 PUSHA
1047 TAD ECALL /RETURN TO CALLING

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| | | | | |
|------|------|------|--------------------|---|
| 1046 | 1611 | 4542 | PUSHA | /ADDRESS AFTER NEXT POPJ |
| 1047 | 1612 | 4545 | GETC | /MOVE PAST EXTRA CHARACTER |
| 1048 | 1613 | 3755 | EVAL. DCA LASTOP | /EVALUATION CONTROLLER (CHECKPOINT ?) |
| 1049 | 1614 | 4564 | TESTC | /TEST CHARACTER AND IGNORE SPACES |
| 1050 | 1615 | 5227 | JMP ETERM1 | /TERMINATOR |
| 1051 | 1616 | 5332 | JMP ENUM | /NUMBER |
| 1052 | 1617 | 5343 | JMP EFUN | /FUNCTION |
| 1053 | 1620 | 4540 | PUSHJ | /LETTER OF VARIABLE |
| 1054 | 1621 | 1405 | GETVAR | /FIND OR CREATE VARIABLE; ALSO SET PT1. |
| 1055 | 1622 | 4564 | OPNEXT; TESTC | /PT1=>ARG |
| 1056 | 1623 | 5244 | JMP ETERMN | /T |
| 1057 | 1624 | 212 | ECHOLST; 0212 | /N=ERROR IN FORMAT |
| 1058 | 1625 | 377 | 0377 | /F |
| 1059 | 1626 | 4566 | ERROR4 | /L = MISSING OPERATOR |
| 1060 | 1627 | 1137 | ETERM1; TAD CFRSX | /SET PT1. |
| 1061 | 1630 | 3030 | DCA PT1 | /TO POINT TO ZERO |
| 1062 | 1631 | 1111 | TAD M2 | /TEST FOR UNARY OPERATIONS |
| 1063 | 1632 | 1054 | TAD SORTCN | |
| 1064 | 1633 | 7450 | SNA | |
| 1065 | 1634 | 5247 | JMP ETERM | /CREATE DUMMY FOR UNARY MINUS |
| 1066 | 1635 | 7001 | IAC | |
| 1067 | 1636 | 7650 | SNA CLA | |
| 1068 | 1637 | 5323 | JMP ARGNXT | /IGNORE UNARY PLUS |
| 1069 | 1640 | 1054 | TAD SORTCN | /TEST FOR NULL PARENS. |
| 1070 | 1641 | 1121 | TAD M11 | |
| 1071 | 1642 | 7710 | SPA CLA | |
| 1072 | 1643 | 5364 | JMP ELPAR | /MIGHT BE AN L-PAR. |
| 1073 | 1644 | 4562 | ETERMN; TSTLPR | |
| 1074 | 1645 | 7410 | SKP | |
| 1075 | 1646 | 4566 | ERROR4 | /OPERATOR MISSING BEFORE PAREN |
| 1076 | 1647 | 1054 | ETERM; TAD SORTCN | /SET FROM "TESTC"="SORTC" |
| 1077 | 1650 | 3024 | DCA THISOP | |
| 1078 | 1651 | 1024 | TAD THISOP | |
| 1079 | 1652 | 1121 | TAD M11 | |
| 1080 | 1653 | 7700 | SMA CLA | /END? |
| 1081 | 1654 | 3024 | DCA THISOP | / "THISOP" EQUIV. TO END OF EXP. |
| 1082 | 1655 | 1024 | ETERM2; TAD THISOP | /COMPARE PRIORITIES |
| 1083 | 1656 | 7041 | CIA | |
| 1084 | 1657 | 1055 | TAD LASTOP | |
| 1085 | 1660 | 7710 | SPA CLA | |
| 1086 | 1661 | 5310 | JMP EPAR | /CONTINUE |
| 1087 | 1662 | 1055 | TAD LASTOP | /FIND OPERATION |
| 1088 | 1663 | 7112 | CLL RTR | |
| 1089 | 1664 | 7012 | RTR | |
| 1090 | 1665 | 1331 | TAD OPTABL | |
| 1091 | 1666 | 3274 | DCA FLOP | |
| 1092 | 1667 | 1055 | TAD LASTOP | |
| 1093 | 1670 | 7640 | SZA CLA | /TEST FOR END OF DATA INTO FLOATING AC. |
| 1094 | 1671 | 4544 | POPF | /GET LAST DATA |
| 1095 | 1672 | 0044 | FLAC | |
| 1096 | 1673 | 4407 | FINT | |
| 1097 | 1674 | 0000 | FLOP; 00 | /((FLOPR I PT1)*=0/ |
| 1098 | 1675 | 6525 | FPUT I FLARGP | /SAVE RESULT |
| 1099 | 1676 | 0000 | FXIT | |
| 1100 | 1677 | 1125 | TAD FLARGP | |

| | | | | | |
|------|------|------|---------|--------------|---|
| 1101 | 1720 | 3030 | | DCA PT1 | |
| 1102 | 1721 | 1224 | | TAD THISOP | |
| 1103 | 1722 | 1055 | | TAD LASTOP | /=0? |
| 1104 | 1723 | 7657 | | SNA CLA | |
| 1105 | 1724 | 5541 | | POPJ | /EXIT "EVAL" |
| 1106 | 1725 | 1413 | | POPA | /GET PRIOR OP |
| 1107 | 1726 | 3055 | | DCA LASTOP | |
| 1108 | 1727 | 5255 | | JMP ETERM2 | /COMPARE THIS OP |
| 1109 | 1710 | 4562 | EPAR, | TSTLPR | /TEST FOR SUB-EXPRESSION |
| 1110 | 1711 | 7410 | | SKP | |
| 1111 | 1712 | 5366 | | JMP EPAR2 | /GO EVALUATE EXPRESSION |
| 1112 | 1713 | 1055 | | TAD LASTOP | /CONTINUE READING THE EXPRESSION |
| 1113 | 1714 | 4542 | | PUSHA | /SAVE "LASTOP", |
| 1114 | 1715 | 1030 | | TAD PT1 | |
| 1115 | 1716 | 3320 | | DCA ,*2 | |
| 1116 | 1717 | 4543 | | PUSHF | /SAVE LAST ARGUMENT |
| 1117 | 1727 | 1000 | | | |
| 1118 | 1721 | 1024 | | TAD THISOP | /MORE TO COME |
| 1119 | 1722 | 3055 | | DCA LASTOP | |
| 1120 | 1723 | 4545 | ARGNXT, | GETC | /READ 1ST CHAR OF AN ARG. |
| 1121 | 1724 | 4564 | | TESTC | /DO SPECIAL CHECK |
| 1122 | 1725 | 5364 | | JMP ELPAR | /COULD BE LEFT PAREN |
| 1123 | 1726 | 5332 | | JMP ENUM | /N |
| 1124 | 1727 | 5343 | | JMP EFUN | /F |
| 1125 | 1730 | 5220 | | JMP OPNEXT*2 | /L |
| 1126 | 1731 | 1430 | OPTABL, | FGET I PT1 | /BASE FOR OPERATION COMPUTATION |
| 1127 | 1732 | 4543 | ENUM, | PUSHF | /TO PROCESS A NUMBER,SAVE AC |
| 1128 | 1733 | 2044 | | FLAC | |
| 1129 | 1734 | 1125 | | TAD FLARGP | /SET POINTER AS FOR A VARIABLE, |
| 1130 | 1735 | 3030 | | DCA PT1 | |
| 1131 | 1736 | 3036 | | DCA INSUB | /POINT TO 'GETC' AND USE CHAR |
| 1132 | 1737 | 4531 | | JMS I FINPUT | /READ TEXT NUMBER => (PT1) |
| 1133 | 1740 | 4544 | | POPF | /RESTORE THE AC |
| 1134 | 1741 | 2044 | | FLAC | |
| 1135 | 1742 | 5222 | | JMP OPNEXT | /CONTINUE |
| 1136 | 1743 | 3056 | EFUN, | DCA EFOP | /SET CODE |
| 1137 | 1744 | 4545 | | GETC | /READ FUNCTION NAME.(1,2,OR 3 LETTERS) |
| 1138 | 1745 | 4564 | | TESTC | /***** SEPARATES FILE BECAUSE F DIGIT |
| 1139 | 1746 | 5355 | | JMP EFUN2 | /***** |
| 1140 | 1747 | 5771 | | JMP I PFNUM | /***** |
| 1141 | 1750 | 7000 | | NOP | /***** |
| 1142 | 1751 | 1056 | | TAD EFOP | /***** |
| 1143 | 1752 | 7104 | | CLL RAL | /MISH=MASH HASH CODE |
| 1144 | 1753 | 1066 | | TAD CHAR | |
| 1145 | 1754 | 5343 | | JMP EFUN | |
| 1146 | 1755 | 4562 | EFUN2, | TSTLPR | |
| 1147 | 1756 | 4566 | | ERROR4 | /MUST BE FOLLOWED BY PARENS TO SET ARGUMENT |
| 1148 | 1757 | 4201 | | JMS ECALL | /CALL "EVAL" TO COMPUTE ARGUMENT |
| 1149 | 1760 | 1413 | | POPA | /BRANCH ON FUNCTION CODE;RETURN VIA EFUN3; |
| 1150 | 1761 | 4547 | | SORTJ | |
| 1151 | 1762 | 2166 | | | |
| 1152 | 1763 | 6205 | | | |
| 1153 | 1764 | 4562 | ELPAR, | TSTLPR | /LEFT PAREN OR FELL THROUGH FUNCTION TABLE |
| 1154 | 1765 | 4566 | | ERROR4 | /DOUBLE OPERATORS OR ILLEGAL FUNCTION NAME; |
| 1155 | 1766 | 4201 | EPAR2, | JMS ECALL | /EVALUATE NESTED EXPRESSION |

FNTABL=1

FNTABF=FNTABL

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1156 1757 2213      ISE PDLXR          /DUMP EXTRA ARG.
1157 1772 5536      JMP I EFUN3I
1158 1771 6311      PFNUM, FNUM          /*****
1159 1772 1772      TERMS:  /TERMINATOR TABLE FOR 'EVAL' AND 'GETVAR'
1160 1772 2240      240          /SPACE 0
1161 1773 2253      253          /* 1
1162 1774 2255      255          /- 2
1163 1775 2257      257          // 3
1164 1776 2252      252          /* 4
1165 1777 2336      336          /UP ARR 5
1166 2200 2250      250          /( 6 L=PARS
1167 2201 2333      333          /E 7
1168 2222 2274      274          /< 10
1169 2203 2251      251          /) 11 R=PARS
1170 2224 2335      335          /J 12
1171 2225 2276      276          /> 13
1172 2206 2254      254          /, 14
1173 2207 2273      273          /! 15
1174 2210 2215      215          /C.R. 16
1175 2211 2275      275          /* TO END GETARG FROM 'SET'
1176
1177 2212 4543      /TWO MINOR FUNCTIONS
1178 2213 2405      XSGN, PUSHF          /TAKE SIGN#1 OF FLARG
1179 2214 4544      PPF          FLTONE
1180 2215 2244      POPF          FLAG
1181 2216 1233      XABS, TAD FLARG*1      /TAKE ABSOLUTE VALUE OF FLAG
1182 2217 7710      SPA CLA          /SKIP TO CONTINUE
1183 2220 4451      JMS I MINSKI      /NEGATE THE FLOATING AC
1184
1185 2221 4407      /CONTINUATION OF FUNCTION CALLS.
1186 2222 7000      EFUN3, FINT
1187 2223 6232      FNOR          /NORMALIZE FUNCTION RETURN
1188 2224 2000      FPUT FLARG      /SAVE FUNCTION VALUE
1189 2225 1125      EXIT
1190 2226 3230      TAD FLARGP      /SET POINTER
1191 2227 4251      DCA PT1
1192 2230 5631      JMS PARTEST
1193 2231 1622      JMP I ,+1          /FUNCTION RETURN IS OK
1194
1195 2232 2000      FLAG, 0          /DATA TEMPORARY STORAGE
1196 2233 2000      0
1197 2234 2000      0
1198 2235 2000      0
1199 2236 2003      PS, 3
1200 2237 2202      LPRST, 0          /SKIP IF LEFT PAREN. = 'YSTLPR'
1201 2240 1054      TAD SORTCN
1202 2241 1121      TAD M11
1203 2242 7722      SMA CLA
1204 2243 5637      JMP I LPRST
1205 2244 1054      TAD SORTCN
1206 2245 1120      TAD M5
1207 2246 7740      SMA SZA CLA
1208 2247 2237      ISE LPRST
1209 2250 5637      JMP I LPRST
1210 2251 2000      PARTEST,C          /TEST THE PAREN MATCHINGS

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| | | | | |
|------|------|------|----------------------------|---|
| 1211 | 2052 | 1413 | POPA | /RESTORE LAST OPERATION |
| 1212 | 2053 | 3255 | CALL LASTOP | |
| 1213 | 2054 | 1236 | TAD P3 | /+3 TO COMPARE CODES |
| 1214 | 2055 | 1413 | POPA | /GET LAST PAREN CODE, |
| 1215 | 2056 | 7041 | CIA | /CHECK FOR PAREN MATCH, |
| 1216 | 2057 | 1254 | TAD SORTCN | /(STILL GET FROM THE LAST "EVAL") |
| 1217 | 2060 | 7640 | SZA CLA | /SKIP IF MATCH |
| 1218 | 2061 | 4566 | ERROR4 | /PAREN ERROR |
| 1219 | 2062 | 4545 | GETC | /MOVE PAST R=PAR |
| 1220 | 2063 | 5651 | JMP I PARTEST | |
| 1221 | | | /THE DELETE A LINE ROUTINE | |
| 1222 | 2064 | 1020 | XDELETE,0 | /UNCHAIN A LINE AND RECOVER THE SPACE, |
| 1223 | 2065 | 6002 | IOF | /PROTECT POINTER CHANGES FROM INTERRUPTIONS |
| 1224 | 2066 | 4555 | FINDLN | /SETS "THISLN" AND "LASTLN", |
| 1225 | 2067 | 5664 | JMP I XDELETE | /ALREADY GONE |
| 1226 | 2070 | 2026 | ISE DEBSW | /DISABLE TRACE |
| 1227 | 2071 | 4545 | GETC | /MEASURE LENGTH |
| 1228 | 2072 | 1066 | TAD CHAR | |
| 1229 | 2073 | 1116 | TAD MCR | |
| 1230 | 2074 | 7640 | SZA CLA | |
| 1231 | 2075 | 5271 | JMP ,=4 | |
| 1232 | 2076 | 1017 | TAD AXOUT | /SAVE LAST ADDRESS |
| 1233 | 2077 | 7040 | CMA | |
| 1234 | 2100 | 1023 | TAD THISLN | |
| 1235 | 2101 | 3057 | DCA CNTR | /LENGTH < 0 |
| 1236 | 2102 | 1133 | TAD CFRS | /IT IS ILLEGAL TO DELETE THE FIRST LINE |
| 1237 | 2103 | 7041 | CIA | |
| 1238 | 2104 | 1023 | TAD THISLN | |
| 1239 | 2105 | 7650 | SNA CLA | |
| 1240 | 2106 | 5177 | JMP START | /JUST IGNORE SUCH COMMANDS |
| 1241 | 2107 | 7000 | CDP T | /CHANGE DATA FIELD TO TEXT,(X=MEM) |
| 1242 | 2110 | 1423 | TAD I THISLN | /DISCONNECT |
| 1243 | 2111 | 3425 | DCA I LASTLN | |
| 1244 | 2112 | 1133 | TAD CFRS | /START LIST AT TOP |
| 1245 | 2113 | 3071 | DCA T2 | /EXAMINATION ADDRESS |
| 1246 | 2114 | 1471 | TAD I T2 | /GET THE NEXT ADDR, |
| 1247 | 2115 | 7450 | SNA | /TEST FOR END |
| 1248 | 2116 | 5331 | JMP DONE | /YES=WRAP UP ALL, |
| 1249 | 2117 | 3032 | DCA T1 | /SAVE NEXT ADDRESS, |
| 1250 | 2120 | 1023 | TAD THISLN | /COMPARE LINE POSITIONS |
| 1251 | 2121 | 7141 | CIA CLL | |
| 1252 | 2122 | 1032 | TAD T1 | |
| 1253 | 2123 | 7630 | SZL CLA | /SKIP IF THISLN > X |
| 1254 | 2124 | 1057 | TAD CNTR | /CHANGE (X) TO ACCOUNT FOR |
| 1255 | 2125 | 1032 | TAD T1 | /GARBAGE COLLECTION, |
| 1256 | 2126 | 3471 | DCA I T2 | |
| 1257 | 2127 | 1032 | TAD T1 | /GET NEXT |
| 1258 | 2130 | 5313 | JMP DOK | |
| 1259 | | | /GARBAGE COLLECTION | |
| 1260 | 2131 | 7040 | DONE, CMA | /BACKUP L FOR XR |
| 1261 | 2132 | 1023 | TAD THISLN | |
| 1262 | 2133 | 3011 | DCA XRT | |
| 1263 | 2134 | 1057 | TAD CNTR | /SETUP END OF HOSE |
| 1264 | 2135 | 7040 | CMA | |
| 1265 | 2136 | 1023 | TAD THISLN | |

| | | | | |
|------|------|------|---|--|
| 1266 | 37 | 3012 | DCA XRT2 | |
| 1267 | 2147 | 1057 | TAD CNTR | /CORRECT END OF BUFFER POINTER, |
| 1268 | 2141 | 1060 | TAD BUFR | |
| 1269 | 2142 | 1060 | DCA BUFR | |
| 1270 | 2143 | 1010 | TAD AXIN | /COMPUTE COUNT |
| 1271 | 2144 | 7040 | CMA | |
| 1272 | 2145 | 1012 | TAD XRT2 | |
| 1273 | 2146 | 3032 | DCA T1 | |
| 1274 | 2147 | 1010 | TAD AXIN | |
| 1275 | 2150 | 1057 | TAD CNTR | |
| 1276 | 2151 | 3010 | DCA AXIN | |
| 1277 | 2152 | 1412 | TAD I XRT2 | /SIPHON LOWER PART, |
| 1278 | 2153 | 3411 | DCA I XRT | |
| 1279 | 2154 | 2032 | ISZ T1 | |
| 1280 | 2155 | 5352 | JMP ,=3 | |
| 1281 | 2156 | 5265 | JMP XDELETE+1 | /RESET 'LASTLN', 'THISLN', AND DATA FIELD" |
| 1282 | 2157 | 0000 | 0 | /READ IN A CHARACTER SUBR. = "READC" |
| 1283 | 2160 | 4464 | JMS I INDEV | |
| 1284 | 2161 | 3066 | DCA CHAR | |
| 1285 | 2162 | 4550 | SORTC | /LINEFEED OR RUBOUT? |
| 1286 | 2163 | 1623 | ECHOLST=1 | |
| 1287 | 2164 | 5757 | JMP I CHIN | /YES |
| 1288 | 2165 | 4551 | PRINTC | /ECHO THE INPUT |
| 1289 | 2166 | 5757 | JMP I CHIN | |
| 1290 | | 2167 | FNTABL=. | |
| 1291 | 2167 | 2533 | 2533 | /ABS |
| 1292 | 2170 | 2650 | 2650 | /SGN |
| 1293 | 2171 | 2636 | 2636 | /ITR |
| 1294 | 2172 | 2565 | 2565 | /DIS |
| 1295 | 2173 | 2630 | 2630 | /RAN |
| 1296 | 2174 | 2517 | 2517 | /ADC |
| 1297 | 2175 | 2572 | 2572 | /ATN |
| 1298 | 2176 | 2624 | 2624 | /EXP |
| 1299 | 2177 | 2625 | 2625 | /LOG |
| 1300 | 2200 | 2654 | 2654 | /SIN |
| 1301 | 2201 | 2575 | 2575 | /COS |
| 1302 | 2202 | 2702 | 2702 | /SQT |
| 1303 | 2203 | 2631 | 2631 | /NEW |
| 1304 | 2204 | 0330 | 0330 | /FX |
| 1305 | 2205 | 0332 | 0332 | /FZ |
| 1306 | | | | /***** |
| 1307 | 2206 | 4564 | /ERASE SINGLE LINES, GROUPS, OR VARIABLES | |
| 1308 | 2207 | 5241 | ERASE: TESTC | /TEST THE SECOND WORD, IF ANY. |
| 1309 | 2210 | 5224 | JMP ERVX | /ERASE VARIABLES |
| 1310 | 2211 | 5215 | JMP ERL | /LINES OR GROUPS |
| 1311 | 2212 | 1066 | JMP ,+4 | /ERROR |
| 1312 | 2213 | 1112 | TAD CHAR | /ALL TEXT |
| 1313 | 2214 | 7440 | TAD MINUSA | |
| 1314 | 2215 | 4566 | SZA | |
| 1315 | 2216 | 1135 | ERROR3 | /BAD ARG FOR ERASE; |
| 1316 | 2217 | 3060 | TAD ENDT | /ERASE ALL TEXT ** |
| 1317 | 2220 | 3533 | DCA BUFR | |
| 1318 | 2221 | 1060 | DCA I CFRS | /(X=MEM) |
| 1319 | 2222 | 3031 | TAD STARTV | /ERASE VARIABLES ** |
| 1320 | 2223 | 5177 | DCA LASTV | |
| | | | JMP START | /POINTERS MAY BE DIFFERENT NOW. |

| | | | | | |
|------|------|------|--------|--|---|
| 1321 | 2224 | 4554 | ERL, | GETLN | /ERASE LINES. |
| 1322 | 2225 | 1060 | | TAD BUFR | /PROTECT REST OF TEXT. |
| 1323 | 2226 | 3317 | | DCA AXIN | |
| 1324 | 2227 | 4565 | ERG, | DELETE | /EXTRACT ONE LINE |
| 1325 | 2232 | 2023 | | ISE THISLN | |
| 1326 | 2231 | 1065 | | TAD NAGSW | |
| 1327 | 2232 | 7700 | | SMA CLA | |
| 1328 | 2233 | 1423 | | TAD I THISLN | /(X=MEM) |
| 1329 | 2234 | 4563 | | TSTGRP | /SKIP IF G(AC) = G(LINENO) |
| 1330 | 2235 | 5221 | | JMP ERV | |
| 1331 | 2236 | 1423 | | TAD I THISLN | /(X=MEM) |
| 1332 | 2237 | 3067 | | DCA LINENO | |
| 1333 | 2240 | 5227 | | JMP ERG | |
| 1334 | 2241 | 1060 | ERVX, | TAD STARTV | /INIT VARIABLES MAY BE INDIRECT COMMAND |
| 1335 | 2242 | 3031 | | DCA LASTV | |
| 1336 | 2243 | 5541 | | POPJ | |
| 1337 | | | | /ROUTINE CALLED VIA "FINDLN": | |
| 1338 | | | | /SEARCH FOR A GIVEN LINE I.D. = ["LINENO"] | |
| 1339 | | | | /1ST RETURN IF NOT FOUND, | |
| 1340 | | | | /2ND IF FOUND, | |
| 1341 | | | | /"THISLN" = FOUND LINE OR NEXT LARGER, | |
| 1342 | | | | /"LASTLN" = LESSER AND/OR LAST, | |
| 1343 | | | | /"TEXTP" IS SET | |
| 1344 | 2244 | 0000 | XFIND, | 0 | |
| 1345 | 2245 | 1133 | | TAD CFRS | /INITIALIZE POINTERS TO FIRST LINE |
| 1346 | 2246 | 3025 | | DCA LASTLN | |
| 1347 | 2247 | 1133 | | TAD CFRS | |
| 1348 | 2250 | 3023 | FINDN, | DCA THISLN | /SAVE THIS ONE |
| 1349 | 2251 | 1023 | | TAD THISLN | |
| 1350 | 2252 | 3011 | | DCA XRT | |
| 1351 | 2253 | 1067 | | TAD LINENO | |
| 1352 | 2254 | 7141 | | CLL CMA IAC | /CLEAR LINK AND NEGATE LINENO, |
| 1353 | 2255 | 1411 | | TAD I XRT | /LINENO=0 WILL ALSO BE FOUND(X=MEM) |
| 1354 | 2256 | 7450 | | SNA | |
| 1355 | 2257 | 2244 | | ISE XFIND | /***** |
| 1356 | 2260 | 7630 | | SZL CLA | |
| 1357 | 2261 | 5267 | | JMP FEND3 | /PAST IT. |
| 1358 | 2262 | 1023 | | TAD THISLN | /MOVE POINTERS |
| 1359 | 2263 | 3025 | | DCA LASTLN | |
| 1360 | 2264 | 1423 | | TAD I THISLN | /END OF TEXT? (X=MEM) |
| 1361 | 2265 | 7440 | | SZA | |
| 1362 | 2266 | 5250 | | JMP FINDN | /NOT YET |
| 1363 | | | | | /***** |
| 1364 | | | | | /***** |
| 1365 | 2267 | 1023 | FEND3, | TAD THISLN | /1ST RETURN = NOT FOUND |
| 1366 | 2270 | 7001 | | IAC | |
| 1367 | 2271 | 3017 | | DCA AXOUT | /SET "TEXTP". |
| 1368 | 2272 | 3020 | | DCA XCT | |
| 1369 | 2273 | 5644 | | JMP I XFIND | |
| 1370 | 2274 | 1000 | UTRA, | 0 | /UNPACK CHARACTER, = "GETC" |
| 1371 | 2275 | 4330 | | JMS GET1 | |
| 1372 | 2276 | 7710 | UTE, | SPA CLA | /NORM & EXTEND |
| 1373 | 2277 | 1006 | | TAD C100 | /300=337 & 340=376 |
| 1374 | 2300 | 1357 | | TAD M137 | /240=276 & 200=236 |
| 1375 | 2301 | 1066 | | TAD CHAR | |

| | | | | |
|------|------|------|-------------------|--|
| 1376 | 2322 | 745J | SNÄ | |
| 1377 | 2323 | 5316 | JMP UTX | /?" FOUND |
| 1378 | 2324 | 1275 | TAD P337 | |
| 1379 | 2325 | 3366 | UTQ, DCA CHAR | |
| 1380 | 2326 | 1226 | TAD DEBGSW | |
| 1381 | 2327 | 1120 | TAD DMPSW | |
| 1382 | 2310 | 7650 | SNÄ CLA | /PRINT ONLY IF BOTH ARE ZERO. |
| 1383 | 2311 | 4551 | PRINTC | |
| 1384 | 2312 | 5674 | JMP I UTRA | |
| 1385 | 2313 | 4330 | EXTR, JMS GET1 | |
| 1386 | 2314 | 7040 | CMA | |
| 1387 | 2315 | 5276 | JMP UTE | |
| 1388 | 2316 | 1226 | UTX, TAD DEBGSW | /TEST FOR TRACE=ENABLED |
| 1389 | 2317 | 7640 | SZÄ CLA | |
| 1390 | 2320 | 5326 | JMP ,+6 | |
| 1391 | 2321 | 1100 | TAD DMPSW | /FLIP THE TRACE FLOP |
| 1392 | 2322 | 7650 | SNÄ CLA | |
| 1393 | 2323 | 7001 | IAC | |
| 1394 | 2324 | 3100 | DCA DMPSW | |
| 1395 | 2325 | 5275 | JMP UTRA+1 | /GET NEXT CHARACTER INSTEAD. |
| 1396 | 2326 | 1110 | TAD P277 | /TRACE DISABLED = RETURN "?" |
| 1397 | 2327 | 5305 | JMP UTO | |
| 1398 | 2330 | 0000 | GET1, 0 | /UNPACK 6=BITS |
| 1399 | 2331 | 2020 | ISZ XCT | /STARTS=0 |
| 1400 | 2332 | 5345 | JMP GET3 | |
| 1401 | 2333 | 1021 | TAD GTEM | |
| 1402 | 2334 | 1122 | GEND, AND P77 | |
| 1403 | 2335 | 3066 | DCA CHAR | /SAVE |
| 1404 | 2336 | 1066 | TAD CHAR | |
| 1405 | 2337 | 1103 | TAD M77 | |
| 1406 | 2340 | 7650 | SNÄ CLA | |
| 1407 | 2341 | 5313 | JMP EXTR | /EXTENDED |
| 1408 | 2342 | 1066 | TAD CHAR | |
| 1409 | 2343 | 1356 | TAD M40 | |
| 1410 | 2344 | 5730 | JMP I GET1 | |
| 1411 | 2345 | 1417 | GET3, TAD I AXOUT | /(X=MEM) |
| 1412 | 2346 | 3021 | DCA GTEM | |
| 1413 | 2347 | 7040 | CMA | |
| 1414 | 2350 | 3020 | DCA XCT | |
| 1415 | 2351 | 1021 | TAD GTEM | |
| 1416 | 2352 | 7112 | RTR CLL | |
| 1417 | 2353 | 7012 | RTR | |
| 1418 | 2354 | 7012 | RTR | |
| 1419 | 2355 | 5334 | JMP GEND | |
| 1420 | 2356 | 7740 | M40, =40 | |
| 1421 | 2357 | 7641 | M137, =137 | |
| 1422 | 2360 | 0000 | XENDLN, 0 | /TERMINATE THE BUFFERED LINE = "ENDLN" |
| 1423 | 2361 | 7000 | ODF T | /(X=MEM) |
| 1424 | 2362 | 1425 | TAD I LASTLN | /SAVE OLD POINTER |
| 1425 | 2363 | 3460 | DCA I BUFR | |
| 1426 | 2364 | 1060 | TAD BUFR | /POINT TO NEW LAST LINE |
| 1427 | 2365 | 3425 | DCA I LASTLN | |
| 1428 | 2366 | 1061 | TAD QADD | /CHECK FOR EXTRA INFO |
| 1429 | 2367 | 7440 | SZÄ | |
| 1430 | 2370 | 3410 | DCA I AXIN | |

| | | | | |
|------|------|------|--------------|---|
| 1431 | 2371 | 1210 | TAD AXIN | /COMPUTE NEW END OF BUFFER |
| 1432 | 2372 | 7301 | I/O | |
| 1433 | 2373 | 3060 | DCA BUFR | |
| 1434 | 2374 | 1060 | TAD STARTV | /RESET VARIABLE LIST (X-MEM) |
| 1435 | 2375 | 3031 | DCA LASTV | |
| 1436 | 2376 | 5760 | JMP I XENDLN | |
| 1437 | | 2377 | TLIST3= | /LITERAL TERMINATORS |
| 1438 | 2377 | 1251 | TASK4 | /" |
| 1439 | 2400 | 614 | PCI | /C.R. = AUTOMATIC QUOTE MATCH |
| 1440 | | 2401 | INFIX= | /DATA CONTROL CHARACTERS |
| 1441 | 2401 | 6202 | FLINTP*2 | /LEFT ARROW = KILL |
| 1442 | 2402 | 757 | INPUT+1 | /RUBOUT = IGNORE |
| 1443 | 2403 | 757 | INPUT+1 | /L.F. = IGNORE |
| 1444 | 2404 | 6250 | ENDFI*5 | /ALT MODE = EXIT |
| 1445 | 2405 | 0001 | FLTONE: | /(NO RELATIVE REFERENCES) |
| 1446 | 2406 | 0000 | | |
| 1447 | 2407 | 0000 | FLTZER: | |
| 1448 | 2410 | 0000 | | |
| 1449 | 2411 | 0000 | | |
| 1450 | 2412 | 0000 | | |
| 1451 | 2413 | 7766 | M12, | =12 /DECIMAL CONVERSION FACTOR FOR "PRNT" |
| 1452 | 2414 | 0000 | I33, | 0 /NO=INTERRUPT INPUT ROUTINE |
| 1453 | 2415 | 6031 | KSP | |
| 1454 | 2416 | 5215 | JMP ,=1 | |
| 1455 | 2417 | 6036 | KR9 | |
| 1456 | 2420 | 0106 | AND P177 | /IGNORE PARITY BIT |
| 1457 | 2421 | 7450 | SNA | |
| 1458 | 2422 | 5215 | JMP ,=5 | |
| 1459 | 2423 | 1123 | TAD C200 | |
| 1460 | 2424 | 5614 | JMP I I33 | |
| 1461 | 2425 | 0000 | XPRNT, | 0 /PRINT A LINE NUMBER = "PRNTLN" |
| 1462 | 2426 | 1067 | TAD LINENO | |
| 1463 | 2427 | 4557 | RTL6 | |
| 1464 | 2430 | 0122 | AND P77 | |
| 1465 | 2431 | 4242 | JMS PRNT | /TWO DIGIT "PART" NUMBER |
| 1466 | 2432 | 1102 | TAD PER | |
| 1467 | 2433 | 4551 | PRINTC | /PERIOD FOR SEPARATION |
| 1468 | 2434 | 1067 | TAD LINENO | |
| 1469 | 2435 | 4242 | JMS PRNT | /TWO DIGIT "STEP" NUMBER. |
| 1470 | 2436 | 1356 | TAD M140 | |
| 1471 | 2437 | 3066 | DCA CHAR | /SAVE SPACE IN CHAR, |
| 1472 | 2440 | 4551 | PRINTC | /PRINT TRAILING SPACE |
| 1473 | 2441 | 5625 | JMP I XPRNT | |
| 1474 | | 0032 | VAL=T1 | |
| 1475 | 2442 | 0000 | PRNT, | 0 /PRINT TWO DECIMAL DIGITS |
| 1476 | 2443 | 0106 | AND P177 | |
| 1477 | 2444 | 3032 | DCA VAL | |
| 1478 | 2445 | 1113 | TAD C260 | |
| 1479 | 2446 | 3033 | DCA T3 | |
| 1480 | 2447 | 5252 | JMP ,+3 | |
| 1481 | 2450 | 2033 | ISZ T3 | |
| 1482 | 2451 | 3032 | XYZ, | DCA VAL |
| 1483 | 2452 | 1032 | TAD VAL | |
| 1484 | 2453 | 1213 | TAD M12 | |
| 1485 | 2454 | 7500 | SMA | |

1486 55 5253
 1487 2456 7240
 1488 2457 1233
 1489 2460 4551
 1490 2461 1232
 1491 2462 1113
 1492 2463 4551
 1493 2464 5642
 1494 2465 7222
 1495 2466 7450
 1496 2467 1266
 1497 2470 1116
 1498 2471 7450
 1499 2472 5276
 1500 2473 1277
 1501 2474 4463
 1502 2475 5665
 1503 2476 1277
 1504 2477 4463
 1505 2520 1276
 1506 2521 5274
 1507 2522 2000
 1508 2523 1110
 1509 2524 7241
 1510 2525 1266
 1511 2526 7450
 1512 2527 1352
 1513 2510 1101
 1514 2511 7450
 1515 2512 5755
 1516 2513 1353
 1517 2514 3271
 1518 2515 1271
 1519 2516 2354
 1520 2517 1356
 1521 2520 7440
 1522 2521 1354
 1523 2522 7650
 1524 2523 5332
 1525 2524 1271
 1526 2525 1122
 1527 2526 7440
 1528 2527 4335
 1529 2530 7200
 1530 2531 5702
 1531 2532 1122
 1532 2533 4335
 1533 2534 5324
 1534 2535 2000
 1535 2536 2062
 1536 2537 5357
 1537 2540 1261
 1538 2541 3410
 1539 2542 3261
 1540 2543 1213

OUT.
 OUTX.
 OUTCR.
 PACBUF.
 PA1.
 PACX.
 ESCA.
 PCK1.

JMP XYZ-1
 CLÄ
 TAD T3
 PRINTC
 TAD VAL
 TAD C260
 PRINTC
 JMP I PRNT
 0
 SNÄ
 TAD CHAR
 TAD MCR
 SNÄ
 JMP OUTCR
 TAD CCR
 JMS I OUTDEV
 JMP I OUT
 TAD CCR
 JMS I OUTDEV
 TAD CLF
 JMP OUTX-1
 0
 TAD P277
 CIÄ
 TAD CHAR
 SNÄ
 TAD P40
 TAD M100
 SNÄ
 JMP I RUBIT
 TAD P377
 DCA T2
 TAD T2
 AND C140
 TAD M140
 SZÄ
 TAD C140
 SNÄ CLA
 JMP ESCA
 TAD T2
 AND P77
 SZÄ
 JMS PCK1
 CDF P
 JMP I PACBUF
 TAD P77
 JMS PCK1
 JMP PA1
 0
 ISÄ XCTIN
 JMP ROT
 TAD QADD
 DCÄ I AXIN
 DCÄ QADD
 TAD PDLXR

/OUTPUT A CHARACTER = "PRINTC"
 /USE (AC) OR (CHAR)
 /PACK A CHARACTER = "PACKC"
 /CHANGE 277 TO 337
 /TEST FOR RUBOUT.
 /SAVE INPUT ITEM
 /SO THAT QUESTION DOESN'T MAKE
 /CHAR LOOK LIKE A LEFT-ARROW
 /DATA WORD.
 /340-377 AND 200-237
 /240-337
 /IGNORE 300
 /(X-MEM)
 /#0 TO START
 /(X-MEM)
 /CLEAR PACKING WORD
 /CHECK FOR OVERFLOW

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1541 2544 7141 CMA IAC CLL
1542 2545 1005 TAD P13 /RESERVATIONS FOR PUSH-DOWN LIST
1543 2546 1010 TAD AXIN
1544 2547 7620 SNL CLA
1545 2550 5735 JMP I PCK1
1546 2551 4566 ERROR2 /FULL BUFFER
1547 2552 1040 P40, 40
1548 2553 1377 P377, 377
1549 2554 140 C140, 140
1550 2555 3004 RUBIT, RUB1
1551 2556 7640 M140, =140
1552 2557 4557 ROT, RTL6 /(EAE)
1553 2560 3161 DCA QADD
1554 2561 7040 CMA
1555 2562 3062 DCA XCTIN
1556 2563 5735 JMP I PCK1
1557 /
1558 /PART OF INTERFACE TO FLD1 TO ALLOW
1559 /GETTING OF CHARS FROM TEXT
1560 /
1561 2564 4545 CGETX, GETC /*****
1562 2565 1066 TAD CHAR /*****
1563 2566 6213 6213 /CIF CDF 10/*****
1564 2567 5770 JMP I ,+1 /*****
1565 2570 1137 CGETRET /*****
1566 2571 4566 ERRFIL, ERROR4 /*****
1567 2572 4540 LM, PUSHJ /*
1568 2573 1612 EVAL=1 /*
1569 2574 4453 JMS I INTEGER /*
1570 2575 6212 6212 /*
1571 2576 5777 JMP I ,+1 /*
1572 2577 1402 LMAKE /*
1573 /USED BY BK
1574 2600 *2600
1575 /INTERRUPT PROCESSOR,
1576 2600 0 SAVAC, 0 /CONTENTS OF AC
1577 2601 0000 SAVLK, 0 /CONTENTS OF LINK
1578 2602 7575 MBREAK, =203 /CONTROL=C
1579 2603 3200 INTRPT, DCA SAVAC /SAVE WORKING DATA
1580 2604 7010 RAR
1581 2605 3201 DCA SAVLK
1582 2606 6041 TSP /GIVE OUTPUT PRIORITY
1583 2607 5225 JMP KINT
1584 2610 6042 TCF
1585 2611 3016 DCA TELS# /TURN OFF THE IN-PROGRESS FLAG,
1586 2612 1665 TAD I OPTRI
1587 2613 7450 SNA
1588 2614 5225 JMP KINT /DONE
1589 2615 6044 TPC /TYPE NEXT,
1590 2616 3016 DCA TELS# /CLEAR AC AND TURN ON THE FLAG,
1591 2617 3665 DCA I OPTRI /ZERO OUT THE DATA AREA
1592 2620 1265 TAD OPTRI
1593 2621 7001 IAC
1594 2622 107 AND P17
1595 2623 1263 TAD OPTR0

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1596 4 3265
 1597 2625 6031
 1598 2626 5246
 1599 2627 6036
 1600 2630 126
 1601 2631 7450
 1602 2632 5246
 1603 2633 1123
 1604 2634 3262
 1605 2635 1262
 1606 2636 1202
 1607 2637 7650
 1608 2640 5340
 1609 2641 1034
 1610 2642 7640
 1611 2643 4566
 1612 2644 1262
 1613 2645 3034
 1614 2646 6131
 1615 2647 5253
 1616 2650 6135
 1617 2651 7200
 1618 2652 3261
 1619
 1620
 1621
 1622 2653 6244
 1623 2654 1201
 1624 2655 7104
 1625 2656 1200
 1626 2657 6001
 1627 2660 5400
 1628 2661 0000
 1629 2662 0000
 1630 2663 3120
 1631 2664 3120
 1632 2665 3120
 1633 2666 0000
 1634 2667 1034
 1635 2670 7450
 1636 2671 4574
 1637 2672 3276
 1638 2673 3034
 1639 2674 1276
 1640 2675 5666
 1641 2676 0000
 1642 2677 3266
 1643 2700 6001
 1644 2701 1664
 1645 2702 7640
 1646 2703 4574
 1647 2704 6002
 1648 2705 1016
 1649 2706 7640
 1650 2707 5314

DCA OPTRI
 KINT. KSF /CHECK FOR KEYBOARD FIRST
 JMP EXIT
 KR9 /READ BUFFER AND CLEAR FLAG TO FETCH NEXT
 AND P177 /IGNORE BLANK AND L-T AND PARITY BIT.
 SNA
 JMP EXIT
 TAD C200
 DCA SIN
 TAD SIN
 TAD MBREAK /MANUAL STOP?
 SNA CLA
 JMP RECOVR
 TAD INBUF /ANY SPACE?
 SZA CLA
 ERROR2 /WILL WAIT FOR OUTPUT BUFFER
 TAD SIN
 DCA INBUF /SAVE INPUT
 CLSK /*****
 JMP NOCLK /*****
 CLSA /*****
 CLA /*****
 DCA CLKFLG /*****
 /
 /KW12 CLOCK INTERRUPT ROUTINE
 /
 NOCLK: RMP
 TAD SAVLK
 RAL CLL
 TAD SAVAC
 ION
 EXITJ: JMP I 0 /MODIFIED FOR PDP-5
 CLKFLG: 0 /***** SET TO 0 EVERY INTERRUPT
 SIN, 0
 OPTRO: IOBUF /OUTPUT POINTERS
 OPTRO: IOBUF /VARS
 OPTRI: IOBUF
 X133: 0 /VIA (INDEV)
 TAD INBUF /ANY INPUT?
 SNA /***** REFRESH SCOPE WHILE WAITING
 JMS I PWAIT /***** FOR INPUT
 DCA XOUTL
 DCA INBUF /CLEAR INPUT BUFFER
 TAD XOUTL
 JMP I X133
 XOUTL: 0 /VIA (OUTDEV)
 DCA X133 /SAVE CURRENT CHARACTER,
 ION /BE SURE INTERRUPT IS ON,
 TAD I OPTRO /ANY ROOM?
 SZA CLA /A CHARACTER IS NON-ZERO
 JMS I PWAIT /***** REFRESH SCOPE
 IOF
 TAD TELS W /IN PROGRESS?
 SZA CLA
 JMP ,*5

1651 2710 1266
 1652 2711 6146
 1653 2712 3316
 1654 2713 5323
 1655 2714 1266
 1656 2715 3664
 1657 2716 1264
 1658 2717 7001
 1659 2720 1107
 1660 2721 1263
 1661 2722 3264
 1662 2723 6001
 1663 2724 5676
 1664
 1665 2725 3326
 1666 2726 1000
 1667 2727 7240
 1668 2730 1326
 1669 2731 3067
 1670 2732 6001
 1671 2733 1016
 1672 2734 7640
 1673 2735 5333
 1674 2736 6002
 1675 2737 5342
 1676 2740 1123
 1677 2741 3067
 1678
 1679 2742 1105
 1680 2743 3057
 1681 2744 7040
 1682 2745 1263
 1683 2746 3010
 1684 2747 2016
 1685 2750 7000
 1686 2751 3410
 1687 2752 2057
 1688 2753 5351
 1689 2754 3034
 1690 2755 1263
 1691 2756 3265
 1692 2757 1263
 1693 2760 3264
 1694 2761 7040
 1695 2762 6046
 1696 2763 1101
 1697 2764 4551
 1698 2765 4553
 1699 2766 2022
 1700 2767 1422
 1701 2770 7450
 1702 2771 5377
 1703 2772 3067
 1704 2773 1101
 1705 2774 4551

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TA X133 /NO
TLS /TYPE CHARACTER,
DCA TELS /SET IN-PROGRESS FLAG,
JMP ,+12 /RETURN
TAD X133 /SEND DATA
DCA I OPTRO
TAD OPTRO /SET POINTERS
IAC
AND P17
TAD OPTRO
DCA OPTRO
ION
JMP I XOUTL

/ERROR RECOVERY PROCEEDURE
ERROR5; DCA ,+1 /ERROR CALLED FROM A TABLE
ERR2, 0 /LIMIT EXCEEDED
CLA CMA /COMPUTE CALLING ADDRESS (ALSO "SPACE")
TAD ERR2 /AND USE IT AS ERROR NUMBER.
DCA LINENO /SAVE ERROR CODE.
ION / (JMP,+4) = FOR DEBUGGING
TAD TELS /WAIT FOR OUTPUT TO FINISH
SZC CLA
JMP ,+2
IOF /DISABLE INTERRUPT FOR INITIALIZATIONS
JMP ,+3
RECOVR; TAD C200 /SAVE ERROR NUMBER
DCA LINENO

/****
TAD M20 /SETUP INIT COUNT
DCA CNTR
CMA
TAD OPTRO
DCA AXIN /INIT I/O BUFFERS.
ISZ TELS /*
CDF / (X=MEM RESET)
DCA I AXIN
ISZ CNTR
JMP ,+2
DCA INBUF /INIT KEY=BUFR.
TAD OPTRO /INIT TTY POINTERS.
DCA OPTRI
TAD OPTRO
DCA OPTRO
RECOVX; CMA /PREPARE A STOP BIT FOR TTY
TLD /AND RAISE FLAG, (NOP) = FOR DEBUGGING
TAD P7700 /MAKE A "?",
PRINTC /AND TURN ON THE INTERRUPT
PRNTLN /PRINT ERROR NUMBER AND,
ISZ PC
TAD I PC /UNLESS IT IS ZERO; (X=MEM)
SNA
JMP ,+6
DCA LINENO
TAD P7700
PRINTC /PRINT ATSIGN

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| | | | | | |
|------|------|------|-------------------------------|---------------------------------------|--------|
| 1706 | 3075 | 4551 | PRINTC | /PRINT SPACE | IN AND |
| 1707 | 3076 | 4553 | PRNTLN | /PRINT LINE OF ERROR. | |
| 1708 | 3077 | 4577 | TAD CCR | | |
| 1709 | 3078 | 4551 | PRINTC | | |
| 1710 | 3079 | 1126 | TAD PTCH | /RESET "READC" | |
| 1711 | 3080 | 3152 | DCA RDIV | /IF AN ERROR OCCURS. | |
| 1712 | 3083 | 5177 | JMP START | /INTERRUPT WILL BE RE-ENABLED SOON. | |
| 1713 | | | /CHARACTER REMOVAL ROUTINE | | |
| 1714 | 3084 | 1062 | RUB1, TAD XCTIN | /RUBOUT ONE LETTER | |
| 1715 | 3085 | 7640 | SZA CLA | | |
| 1716 | 3086 | 5214 | JMP ,+6 | | |
| 1717 | 3087 | 1010 | TAD AXIN | | |
| 1718 | 3088 | 7041 | CIA | | |
| 1719 | 3089 | 1027 | TAD PACKST | | |
| 1720 | 3090 | 9700 | SMA CLA | /TEST NULL LINE | |
| 1721 | 3091 | 5641 | JMP I RUB5 | | |
| 1722 | 3092 | 1251 | TAD SPLAT | /FOR A RUBOUT ACKNOWLEDGEMENT | |
| 1723 | 3093 | 4551 | PRINTC | | |
| 1724 | 3094 | 1010 | TAD AXIN | | |
| 1725 | 3095 | 3071 | DCA T2 | | |
| 1726 | 3096 | 7000 | ODF T | /(X=MEM) | |
| 1727 | 3097 | 2062 | ISZ XCTIN | /TEST HALF | |
| 1728 | 3098 | 5242 | JMP RUB2 | | |
| 1729 | 3099 | 1471 | TAD I T2 | /"ADD" IS FULL. | |
| 1730 | 3100 | 2122 | AND P77 | | |
| 1731 | 3101 | 1103 | TAD M77 | | |
| 1732 | 3102 | 7640 | SZA CLA | /TEST FOR EXTEND | |
| 1733 | 3103 | 5237 | JMP RUB4 | | |
| 1734 | 3104 | 7040 | RUB3, CMA | /SET SWITCH | |
| 1735 | 3105 | 3062 | DCA XCTIN | | |
| 1736 | 3106 | 7040 | CMA | /BACKUP POINTER | |
| 1737 | 3107 | 1010 | TAD AXIN | | |
| 1738 | 3108 | 3010 | DCA AXIN | | |
| 1739 | 3109 | 1471 | TAD I T2 | /RESET ADD | |
| 1740 | 3110 | 3101 | AND P7700 | | |
| 1741 | 3111 | 3061 | RUB4, DCA QADD | | |
| 1742 | 3112 | 5641 | JMP I RUB5 | | |
| 1743 | 3113 | 2530 | RUB5, PACX | | |
| 1744 | 3114 | 1471 | RUB2, TAD I T2 | /CHECK FOR EXTENDED | |
| 1745 | 3115 | 1101 | AND P7700 | | |
| 1746 | 3116 | 1006 | TAD C100 | | |
| 1747 | 3117 | 7640 | SZA CLA | | |
| 1748 | 3118 | 5230 | JMP RUB3 | | |
| 1749 | 3119 | 3471 | DCA I T2 | /SAVE CORRECTION | |
| 1750 | 3120 | 5231 | JMP RUB3+1 | | |
| 1751 | 3121 | 334 | SPLAT, 334 | | |
| 1752 | | | /SYMBOL TABLE TYPEOUT ROUTINE | | |
| 1753 | 3122 | 1060 | TDUMP, TAD STARTV | /INIT POINTER FOR SYMBOL DUMP,(X=MEM) | |
| 1754 | 3123 | 3030 | DCA PT1 | | |
| 1755 | 3124 | 1031 | TAD LASTV | /TEST FOR END OF LIST | |
| 1756 | 3125 | 7041 | CIA | | |
| 1757 | 3126 | 1030 | TAD PT1 | | |
| 1758 | 3127 | 7650 | SNA CLA | | |
| 1759 | 3128 | 5541 | POPJ | | |
| 1760 | 3129 | 1430 | TAD I PT1 | /GET THE VARIABLE | |

```

1761 3262 3316 DCA OP*1 / (DCA I (4)=FOR(X=MEM)) I SAVE NAME
1762 3263 3315 TAD OP / SETUP UNPACK POINTERS
1763 3264 3317 DCA AXOUT
1764 3265 3323 DCA XCT
1765 3266 4545 GETC / READ AND PRINT "XX("
1766 3267 4551 PRINTC
1767 3270 4545 GETC
1768 3271 4551 PRINTC
1769 3272 4545 GETC
1770 3273 4551 PRINTC
1771 3274 2030 ISZ PT1
1772 3275 1430 TAD I PT1 / PRINT SUBSCRIPT TO 99
1773 3276 4714 JMS I PRNT2
1774 3277 4545 GETC / PRINT ")"
1775 3100 4551 PRINTC
1776 3101 2030 ISZ PT1
1777 3102 4407 FINT / PICK UP VALUE
1778 3103 4430 FGET I PT1
1779 3104 4020 FXIT
1780 3105 4530 JMS I FOUTPUT / PRINT VALUE
1781 3106 1077 TAD CCR
1782 3107 4551 PRINTC
1783 3110 1070 TAD GINC
1784 3111 1111 TAD M2
1785 3112 1030 TAD PT1
1786 3113 5253 JMP TDUMP*1
1787 3114 2442 PRNT2, PRNT
1788 3115 3415 OP, / (X=MEM)
1789 3116 0000 / (X=MEM)
1790 3117 5051 / (THESE GO IN 10005 FOR X=MEM)
1791 / OUTPUT CHARACTER BUFFER (ADDRESS IS A MULTIPLE OF 20)
1792 3120 IOBUF=3120
1793 3140 COMEIN=IOBUF*20 / COMMAND = INPUT BUFFER
1794 3206 COMEOUT=COMEIN*46
1795 3206 *COMEOUT
1796 3206 0000 FRST, 0 / TEXT POINTER
1797 3207 0000 0000 / DUMMY LINE NO.
1798 3210 0340 0340 /*****
1799 3211 0617 0617 /FO
1800 3212 0301 0301 /CA
1801 3213 1455 1455 /*****
1802 3214 6162 FRSTX, 6162 /*****
1803 3215 7715 7715 / DUMMY C.R.
1804 / TO SAVE TEXT, SAVE C(BUFR), C(LASTV), AND C( FRST TO C(BUFR))
1805 / WITH ODT=JR46, THE TAPES MAY BE TOGETHER WITH
1806 / THE SYMBOLIC DUMP LAST I FOCAL * FLOAT * DIALOG.
1807 / LOADING THE LAST SECTION MAY BE CONSIDERED OPTIONAL.
1808 3216 BUFREG=, / TEXT BUFFER STARTS HERE.
1809 3600 *3600
1810 3600 2741 01, RECOVR*1/STARTING ADDRESS
1811 3601 1200 BEGIN, TAD 01 / INITIALIZE ANY B=FAMILY COMPUTER.
1812 3602 3176 DCA START=1
1813 3603 7000 NOP/(IOPRESET) /*****
1814 3604 4575 JMS I PCLEAR /***** INITIALIZE POINT DISPLAY
1815 3605 7300 CLA CLL

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1816 361 3414
 1817 362 3057
 1818 3617 5206
 1819 3611 7200
 1820 3612 6213
 1821 3613 3667
 1822 3614 1262
 1823 3615 3670
 1824 3616 1263
 1825 3617 3671
 1826 3620 6201
 1827 3621 4666
 1828 3622 3655
 1829 3623 6212
 1830 3624 4664
 1831 3625 6211
 1832 3626 2400
 1833 3627 6211
 1834 3632 7400
 1835 3631 400
 1836 3632 6212
 1837 3633 4667
 1838 3634 3651
 1839 3635 6132
 1840 3636 6134
 1841 3637 7240
 1842 3640 6133
 1843 3641 1261
 1844 3642 6132
 1845 3643 6135
 1846 3644 7200
 1847 3645 6046
 1848 3646 6001
 1849 3647 5650
 1850 3650 2216
 1851 3651 0110
 1852 3652 0030
 1853 3653 0076
 1854 3654 0002
 1855 3655 0100
 1856 3656 0025
 1857 3657 0023
 1858 3660 0001
 1859 3661 0101
 1860 3662 5772
 1861 3663 5773
 1862 3664 7200
 1863 3665 7773
 1864 3666 7774
 1865 3667 7775
 1866 3670 7776
 1867 3671 7777
 1868 4620
 1869 4620 1045
 1870 4621 7710

T12,

DCA I FLTXR
 ISZ CNTR/INITIALIZED BY LOAD.
 JMP ,=2 /CLEAR INPUT BUFFER
 CLA /***** FIX UP DIAL I/O ROUTINES
 6213 /CIF CDF 10/*****
 DCA I G7775 /*****
 TAD G5772 /*****
 DCA I G7776 /*****
 TAD G5773 /*****
 DCA I G7777 /*****
 6201 /CDF 0 /*****
 JMS I G7774 /*****
 GBLOK /*****
 6212 /CIF 10 /*****
 JMS I G7200 /*****
 6211 /CDF 10 /*****
 2400 /*****
 6211 /CDF 10 /*****
 7400 /*****
 400 /*****
 6212 /CIF 10 /*****
 JMS I G7775 /***** WRITE MILDRED INTO UPPER
 RITEOU /***** SOURCE WORKING AREA
 CLLR /***** INITIALIZE CLOCK
 CLEN /*****
 CLA CMA /*****
 CLAB /*****
 TAD G101 /*****
 CLLR /*****
 CLSA /*****
 CLA /*****
 TIS /*****
 ION /*****
 JMP I ,+1 /*****
 ERT /***** ERASE ALL
 RITEOU: 110 /*****
 30 /*****
 76 /*****
 2 /*****
 GBLOK: 100 /*****
 25 /*****
 23 /*****
 1 /*****
 G101: 101 /*****
 G5772: 5772 /*****
 G5773: 5773 /*****
 G7200: 7200 /*****
 G7773: 7773 /*****
 G7774: 7774 /*****
 G7775: 7775 /*****
 G7776: 7776 /*****
 G7777: 7777 /*****
 *4600*20
 FEXP, GETSGN /TAKE ABSOLUTE VALUE
 SPA CLA

| | | | |
|------|------|------|----------------------------------|
| 1871 | 4622 | 4724 | JMS I NEGP |
| 1872 | 4623 | 3033 | DCA T3 /C(SIGN)=-1 IF I X2<0 |
| 1873 | 4624 | 4407 | FINT |
| 1874 | 4625 | 4313 | FMUL LG2E |
| 1875 | 4626 | 4675 | FPUT I X2 |
| 1876 | 4627 | 3000 | FEXT |
| 1877 | 4632 | 4453 | JMS I INTEGER /TAKE INTEGER PART |
| 1878 | 4631 | 3325 | DCA FLAG2 /SAVE LOW ORDER DATA |
| 1879 | 4632 | 4407 | FINT |
| 1880 | 4633 | 7300 | FNOR |
| 1881 | 4634 | 6676 | FPUT I XSQ2 |
| 1882 | 4635 | 2675 | FGET I X2 |
| 1883 | 4636 | 2676 | FSUB I XSQ2 |
| 1884 | 4637 | 6675 | FPUT I X2 |
| 1885 | 4640 | 4675 | FMUL I X2 |
| 1886 | 4641 | 6676 | FPUT I XSQ2 |
| 1887 | 4642 | 1310 | FADD DF |
| 1888 | 4643 | 6326 | FPUT TEMP |
| 1889 | 4644 | 3025 | FGET CF |
| 1890 | 4645 | 3326 | FDIV TEMP |
| 1891 | 4646 | 2675 | FSUB I X2 |
| 1892 | 4647 | 1277 | FADD AF |
| 1893 | 4650 | 6326 | FPUT TEMP |
| 1894 | 4651 | 302 | FGET BF |
| 1895 | 4652 | 4676 | FMUL I XSQ2 |
| 1896 | 4653 | 1326 | FADD TEMP |
| 1897 | 4654 | 6326 | FPUT TEMP |
| 1898 | 4655 | 2675 | FGET I X2 |
| 1899 | 4656 | 3326 | FDIV TEMP |
| 1900 | 4657 | 4321 | FMUL TWO |
| 1901 | 4660 | 1316 | FADD ONE |
| 1902 | 4661 | 0000 | FEXT |
| 1903 | 4662 | 1325 | TAD FLAG2 |
| 1904 | 4663 | 1044 | TAD FLAC |
| 1905 | 4664 | 3044 | DCA FLAC |
| 1906 | 4665 | 2033 | ISE T3 |
| 1907 | 4666 | 5536 | RETURN |
| 1908 | 4667 | 4407 | FINT |
| 1909 | 4670 | 6675 | FPUT I X2 |
| 1910 | 4671 | 1316 | FGET ONE |
| 1911 | 4672 | 3675 | FDIV I X2 |
| 1912 | 4673 | 0000 | FEXT |
| 1913 | 4674 | 5536 | RETURN |
| 1914 | | | /CONSTANTS FOR FEXP |
| 1915 | 4675 | 5321 | X2, X |
| 1916 | 4676 | 5325 | XSQ2, XSQR |
| 1917 | 4677 | 0004 | AF, 0004 |
| 1918 | 4700 | 2372 | 2372 |
| 1919 | 4701 | 1402 | 1402 |
| 1920 | 4702 | 7774 | BF, 7774 |
| 1921 | 4703 | 2157 | 2157 |
| 1922 | 4704 | 5157 | 5157 |
| 1923 | 4705 | 0012 | CF, 0012 |
| 1924 | 4706 | 5454 | 5454 |
| 1925 | 4707 | 343 | 0343 |

| | | | | |
|------|------|------|--------|------|
| 1926 | 4710 | 007 | DF, | 0007 |
| 1927 | 4711 | 2566 | | 2566 |
| 1928 | 4712 | 5341 | | 5341 |
| 1929 | 4713 | 001 | LG2E, | 0001 |
| 1930 | 4714 | 2705 | | 2705 |
| 1931 | 4715 | 2435 | | 2435 |
| 1932 | 4716 | 001 | ONE, | 0001 |
| 1933 | 4717 | 2000 | | 2000 |
| 1934 | 4720 | 000 | | 0000 |
| 1935 | 4721 | 002 | TWO, | 0002 |
| 1936 | 4722 | 2000 | | 2000 |
| 1937 | 4723 | 000 | | 0000 |
| 1938 | 4724 | 5163 | NEGP, | FNEG |
| 1939 | 4725 | 000 | FLAG2, | 0 |
| 1940 | 4726 | 000 | TEMP, | 0 |
| 1941 | 4727 | 000 | | 0 |
| 1942 | 4730 | 000 | | 0 |
| 1943 | 4731 | 000 | | 0 |

/MAIN ALGORITHM FOR ARCTANGENT

| | | | | |
|------|------|------|---------|-------------|
| 1945 | 4732 | 4407 | ARCALG, | FINT |
| 1946 | 4733 | 3675 | | FGET I X2 |
| 1947 | 4734 | 4675 | | FMUL I X2 |
| 1948 | 4735 | 6676 | | FPUT I XSQ2 |
| 1949 | 4736 | 4374 | | FMUL BET2 |
| 1950 | 4737 | 1371 | | FADD BET1 |
| 1951 | 4740 | 4676 | | FMUL I XSQ2 |
| 1952 | 4741 | 1366 | | FADD BET2 |
| 1953 | 4742 | 6326 | | FPUT TEMP |
| 1954 | 4743 | 4363 | | FGET ALF2 |
| 1955 | 4744 | 4676 | | FMUL I XSQ2 |
| 1956 | 4745 | 1366 | | FADD ALF1 |
| 1957 | 4746 | 4676 | | FMUL I XSQ2 |
| 1958 | 4747 | 1355 | | FADD ALF2 |
| 1959 | 4750 | 4675 | | FMUL I X2 |
| 1960 | 4751 | 3326 | | FDIV TEMP |
| 1961 | 4752 | 000 | | FEXT |
| 1962 | 4753 | 5754 | | JMP I ,+1 |
| 1963 | 4754 | 5024 | | ARCRTN |

/CONSTANTS = FLOATING ARC TANGENT

| | | | | |
|------|------|------|-------|------|
| 1964 | 4755 | 000 | ALF2, | 0000 |
| 1965 | 4756 | 2437 | | 2437 |
| 1966 | 4757 | 1643 | | 1643 |
| 1967 | 4760 | 7777 | ALF1, | 7777 |
| 1968 | 4761 | 3304 | | 3304 |
| 1969 | 4762 | 4434 | | 4434 |
| 1970 | 4763 | 7773 | ALF2, | 7773 |
| 1971 | 4764 | 3306 | | 3306 |
| 1972 | 4765 | 5454 | | 5454 |
| 1973 | 4766 | 000 | BET2, | 0000 |
| 1974 | 4767 | 2437 | | 2437 |
| 1975 | 4770 | 1646 | | 1646 |
| 1976 | 4771 | 000 | BET1, | 0000 |
| 1977 | 4772 | 2427 | | 2427 |
| 1978 | 4773 | 2323 | | 2323 |
| 1979 | 4774 | 7775 | BET2, | 7775 |

| | | |
|------|------|------|
| 1981 | 4775 | 3427 |
| 1982 | 4776 | 7452 |
| 1983 | | |
| 1984 | 5230 | 5230 |
| 1985 | 5231 | 1245 |
| 1986 | 5071 | 7710 |
| 1987 | 5002 | 4363 |
| 1988 | 5003 | 3033 |
| 1989 | 5004 | 4407 |
| 1990 | 5005 | 6635 |
| 1991 | 5006 | 2637 |
| 1992 | 5007 | 0000 |
| 1993 | 5210 | 1045 |
| 1994 | 5011 | 7710 |
| 1995 | 5012 | 5221 |
| 1996 | 5013 | 4407 |
| 1997 | 5014 | 2637 |
| 1998 | 5015 | 3635 |
| 1999 | 5016 | 6635 |
| 2000 | 5017 | 0000 |
| 2001 | 5020 | 7240 |
| 2002 | 5021 | 3362 |
| 2003 | 5022 | 5623 |
| 2004 | 5023 | 4732 |
| 2005 | 5024 | 2362 |
| 2006 | 5025 | 5634 |
| 2007 | 5026 | 4407 |
| 2008 | 5027 | 6635 |
| 2009 | 5030 | 4636 |
| 2010 | 5031 | 2635 |
| 2011 | 5032 | 0000 |
| 2012 | 5033 | 5634 |
| 2013 | 5034 | 5301 |
| 2014 | | |
| 2015 | 5035 | 5321 |
| 2016 | 5036 | 5315 |
| 2017 | 5037 | 4716 |
| 2018 | 5040 | 1045 |
| 2019 | 5041 | 7450 |
| 2020 | 5042 | 4566 |
| 2021 | 5043 | 7710 |
| 2022 | 5044 | 4566 |
| 2023 | 5045 | 4407 |
| 2024 | 5046 | 6756 |
| 2025 | 5047 | 2637 |
| 2026 | 5050 | 0000 |
| 2027 | 5051 | 1045 |
| 2028 | 5052 | 7450 |
| 2029 | 5053 | 5536 |
| 2030 | 5054 | 7710 |
| 2031 | 5055 | 5264 |
| 2032 | 5056 | 4407 |
| 2033 | 5057 | 637 |
| 2034 | 5060 | 3756 |
| 2035 | 5061 | 6756 |

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/FLOATING POINT ARC TANGENT
*5000
ARCTN, GETSGN /TAKE ABSOLUTE VALUE
SPA CLA
JMS FNEG
DCA T3
FINT
FPUT I X1
FSUB I CON1
FEXT
GETSGN
SPA CLA
JMP GO /LESS THAN ONE
FINT
FGET I CON1
FDIV I X1
FPUT I X1
FEXT
CLA CMA
DCA FLAG1 /SIGN FLAG OF RESULT
JMP I ,+1 /CALL ALGORITHM
ARCALG
ARCRN, IS2 FLAG1 /RETURN HERE
JMP I EXIT1
FINT
FPUT I X1
FGET I PI2
FSUB I X1
FEXT
JMP I ,+1
EXIT1, EXIT2
/CONSTANTS FOR ARCTANGENT
X1, X
PI2, PI0T
CON1, ONE
FLOG, GETSGN /FLOATING LOGARITHM
SNÄ
ERROR3 /ZERO ARGUMENT FOR LOG
SPA CLA
ERROR4 /*
FINT
FPUT I TEM
FSUB I CON1
FEXT
GETSGN
SNÄ
RETURN
SMÄ CLA
JMP STARTL
FINT
FGET I CON1
FDIV I TEM
FPUT I TEM

```

| | | | |
|------|------|------|----------------------|
| 2036 | 5062 | 7240 | FEXT |
| 2037 | 5063 | 7240 | CLÄ CMA |
| 2038 | 5064 | 3233 | STARTL; DCÄ T3 |
| 2039 | 5065 | 1205 | TAD P13 |
| 2040 | 5066 | 3044 | DCA FLAC |
| 2041 | 5067 | 7040 | CMA |
| 2042 | 5070 | 1756 | TAD I TEM |
| 2043 | 5071 | 3045 | DCA FLAC+1 |
| 2044 | 5072 | 3046 | DCA FLAC+2 |
| 2045 | 5073 | 3047 | DCA FLAC+3 |
| 2046 | 5074 | 7001 | IAC |
| 2047 | 5075 | 3756 | DCA I TEM |
| 2048 | 5076 | 4407 | FINT |
| 2049 | 5077 | 4357 | FMUL LOG2 |
| 2050 | 5100 | 6635 | FPUT I X1 |
| 2051 | 5101 | 756 | FGET I TEM |
| 2052 | 5102 | 2637 | FSUB I CON1 |
| 2053 | 5103 | 6756 | FPUT I TEM |
| 2054 | 5124 | 4353 | FMUL LOG8 |
| 2055 | 5105 | 1350 | FADD LOG7 |
| 2056 | 5106 | 4756 | FMUL I TEM |
| 2057 | 5107 | 1345 | FADD LOG6 |
| 2058 | 5110 | 4756 | FMUL I TEM |
| 2059 | 5111 | 1342 | FADD LOG5 |
| 2060 | 5112 | 4756 | FMUL I TEM |
| 2061 | 5113 | 1337 | FADD L4 |
| 2062 | 5114 | 4756 | FMUL I TEM |
| 2063 | 5115 | 3334 | FADD L3 |
| 2064 | 5116 | 4756 | FMUL I TEM |
| 2065 | 5117 | 1331 | FADD L2 |
| 2066 | 5120 | 4756 | FMUL I TEM |
| 2067 | 5121 | 1326 | FADD L1 |
| 2068 | 5122 | 4756 | FMUL I TEM |
| 2069 | 5123 | 1635 | FADD I X1 |
| 2070 | 5124 | 0000 | FEXT |
| 2071 | 5125 | 5634 | JMP I EXIT1 |
| 2072 | 5126 | 0000 | L1, 0000 |
| 2073 | 5127 | 3777 | 3777 |
| 2074 | 5130 | 7742 | 7742 |
| 2075 | 5131 | 7777 | L2, 7777 |
| 2076 | 5132 | 4000 | 4000 |
| 2077 | 5133 | 4100 | 4100 |
| 2078 | 5134 | 7777 | L3, 7777 |
| 2079 | 5135 | 2517 | 2517 |
| 2080 | 5136 | 0310 | 0310 |
| 2081 | 5137 | 7776 | L4, 7776 |
| 2082 | 5140 | 4113 | 4113 |
| 2083 | 5141 | 7211 | 7211 |
| 2084 | | | /LOGARITHM CONSTANTS |
| 2085 | 5142 | 7776 | LOG5, 7776 |
| 2086 | 5143 | 2535 | 2535 |
| 2087 | 5144 | 3301 | 3301 |
| 2088 | 5145 | 7775 | LOG6, 7775 |
| 2089 | 5146 | 0746 | 0746 |
| 2090 | 5147 | 0771 | 0771 |

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2091 5150 7774 LOG7, 7774
2092 5151 2236 2236
2093 5152 4334 4334
2094 5153 7771 LOG8, 7771
2095 5154 4544 4544
2096 5155 1735 1735
2097 5156 4726 TEM, TEMP
2098 5157 0000 LOG2, 0
2099 5160 2613 2613
2100 5161 4414 4414
2101 5162 0000 FLAG1, 0
2102 5163 0000 FNEG, 0
2103 5164 4451 JMS I MINSKI
2104 5165 7240 CLA CMA
2105 5166 5763 JMP I FNEG
2106 5167 6213 LO, 6213 /CIF CDF 10/*****
2107 5170 5126 JMP XLO /*****
2108 5171 6213 LC, 6213 /CIF CDF 10/*****
2109 5172 5130 JMP XLC /*****
2110 5173 6213 LL, 6213 /CIF CDF 10/*****
2111 5174 5132 JMP XLL /*****
2112 /FLOATING POINT SINE AND COSINE
2113
2114
2115
2116 5177 5177 *5177
2117 5177 4407 FCOS, FINT /COS(X)=SIN(PI/2-X)
2118 5200 6321 FPUT X
2119 5201 0315 FGET PIOT
2120 5202 2321 FSUB X
2121 5203 0000 FEXT
2122 5204 1045 FSIN, GETSGN
2123 5205 7740 SMA SZA CLA
2124 5206 5214 JMP MOD
2125 5207 1045 GETSGN
2126 5210 7700 SMA CLA
2127 5211 5536 RETURN /YES SIN(0)=0
2128 5212 4451 JMS I MINSKI
2129 5213 7040 CMA /NO: SIN(-X)=-SIN(X)
2130 5214 3033 MOD, DCA T3
2131 /REDUCE X MODULO 2 PI
2132 5215 4407 FINT
2133 5216 3305 FDIV TWOPI
2134 5217 6325 FPUT XSOR
2135 5220 0000 FEXT
2136 5221 4453 JMS I INTEGER
2137 5222 4407 FINT
2138 5223 7000 FNOR
2139 5224 6321 FPUT X
2140 5225 0325 FGET XSOR
2141 5226 2321 FSUB X
2142 5227 4305 FMUL TWOPI
2143 5230 6321 FPUT X
2144 5231 2311 FSUB PI /X<PI?
2145 5232 0000 FEXT

```

| | | | | |
|------|------|------|-------------------------|--------------------------|
| 2146 | 5233 | 1045 | GETSGN | |
| 2147 | 5234 | 7710 | SPA CLA | |
| 2148 | 5235 | 5244 | JMP PCHECK | /YES |
| 2149 | 5236 | 4427 | FINT | /NO, SIN(X-PI)=-SIN(X) |
| 2150 | 5237 | 6321 | FPUT X | |
| 2151 | 5240 | 0000 | FEXT | |
| 2152 | 5241 | 1033 | TAD T3 | /INVERT THE SIGN |
| 2153 | 5242 | 7040 | CMA | |
| 2154 | 5243 | 3033 | DCA T3 | |
| 2155 | 5244 | 4407 | PCHECK, FINT | /X<PI/? |
| 2156 | 5245 | 1321 | FGET X | |
| 2157 | 5246 | 2315 | FSUB PIOT | |
| 2158 | 5247 | 0002 | FEXT | |
| 2159 | 5250 | 1045 | GETSGN | |
| 2160 | 5251 | 7710 | SPA CLA | |
| 2161 | 5252 | 5260 | JMP PALG | /YES |
| 2162 | 5253 | 4407 | FINT | /NO |
| 2163 | 5254 | 0311 | FGET PI | /SIN(X)=SIN(PI-X) |
| 2164 | 5255 | 2321 | FSUB X | |
| 2165 | 5256 | 6321 | FPUT X | |
| 2166 | 5257 | 0000 | FEXT | |
| 2167 | 5260 | 4407 | PALG, FINT | |
| 2168 | 5261 | 0321 | FGET X | |
| 2169 | 5262 | 3315 | FDIV PIOT | |
| 2170 | 5263 | 6321 | FPUT X | |
| 2171 | 5264 | 4321 | FMUL X | |
| 2172 | 5265 | 6325 | FPUT XSQR | |
| 2173 | 5266 | 0331 | FGET C9 | |
| 2174 | 5267 | 4325 | FMUL XSQR | |
| 2175 | 5270 | 1335 | FADD C7 | |
| 2176 | 5271 | 4325 | FMUL XSQR | |
| 2177 | 5272 | 1341 | FADD C5 | |
| 2178 | 5273 | 4325 | FMUL XSQR | |
| 2179 | 5274 | 1345 | FADD C3 | |
| 2180 | 5275 | 4325 | FMUL XSQR | |
| 2181 | 5276 | 1315 | FADD PIOT | |
| 2182 | 5277 | 4321 | FMUL X | |
| 2183 | 5300 | 0000 | FEXT | |
| 2184 | 5301 | 2033 | EXIT2, ISZ T3 | |
| 2185 | 5302 | 5536 | RETURN | |
| 2186 | 5303 | 4451 | JMS I MINSKI | |
| 2187 | 5304 | 5536 | RETURN | |
| 2188 | | | /CONSTANTS AND POINTERS | |
| 2189 | 5305 | 0003 | TWOPI, 0003 | |
| 2190 | 5306 | 3110 | 3110 | |
| 2191 | 5307 | 3756 | 3756 | /(3755) = FOR 4-WORD |
| 2192 | 5310 | 3235 | 3235 | |
| 2193 | 5311 | 0002 | PI, 0002 | |
| 2194 | 5312 | 3110 | 3110 | |
| 2195 | 5313 | 3756 | 3756 | |
| 2196 | 5314 | 3235 | 3235 | |
| 2197 | 5315 | 0001 | PIOT, 0001 | /USED BY SINE AND COSINE |
| 2198 | 5316 | 3110 | 3110 | |
| 2199 | 5317 | 3756 | 3756 | |
| 2200 | 5320 | 3235 | 3235 | |

| | | | | |
|------|------|------|-------------------------------------|--------|
| 2201 | 5321 | 000 | X, | 0000 |
| 2202 | 5322 | 000 | | 0000 |
| 2203 | 5323 | 000 | | 0000 |
| 2204 | 5324 | 000 | | 0000 |
| 2205 | 5325 | 000 | XSGR, | 0000 |
| 2206 | 5326 | 000 | | 0000 |
| 2207 | 5327 | 000 | | 0000 |
| 2208 | 5332 | 000 | | 0000 |
| 2209 | | | /SINE CONSTANTS | |
| 2210 | 5331 | 7764 | C9, | 7764 |
| 2211 | 5332 | 2501 | | 2501 |
| 2212 | 5333 | 7015 | | 7015 |
| 2213 | 5334 | 1042 | | 1042 |
| 2214 | 5335 | 7771 | C7, | 7771 |
| 2215 | 5336 | 5464 | | 5464 |
| 2216 | 5337 | 5514 | | 5514 |
| 2217 | 5340 | 6150 | | 6150 |
| 2218 | 5341 | 7775 | C5, | 7775 |
| 2219 | 5342 | 2431 | | 2431 |
| 2220 | 5343 | 5361 | | 5361 |
| 2221 | 5344 | 4736 | | 4736 |
| 2222 | 5345 | 0000 | C3, | 0000 |
| 2223 | 5346 | 5325 | | 5325 |
| 2224 | 5347 | 0414 | | 0414 |
| 2225 | 5350 | 3167 | | 3167 |
| 2226 | | | /END OF EXTENDED FUNCTIONS. | |
| 2227 | | | / | |
| 2228 | | | /HANDLES 0 I, EXPRESSION | |
| 2229 | | | /SETS CLOCK ACCORDING TO EXPRESSION | |
| 2230 | | | / | |
| 2231 | 5351 | 4540 | SETCLK; PUSHJ | /***** |
| 2232 | 5352 | 1612 | EVAL=1 | /***** |
| 2233 | 5353 | 4407 | FINT | /***** |
| 2234 | 5354 | 4375 | FMUL MHUNDRO | /***** |
| 2235 | 5355 | 0000 | FEXT | /***** |
| 2236 | 5356 | 6132 | CLLR | /***** |
| 2237 | 5357 | 6134 | CLEN | /***** |
| 2238 | 5360 | 4453 | JMS I INTEGER | /***** |
| 2239 | 5361 | 6133 | CLAB | /***** |
| 2240 | 5362 | 7200 | CLA | /***** |
| 2241 | 5363 | 1006 | TAD C100 | /***** |
| 2242 | 5364 | 6132 | CLLR | /***** |
| 2243 | 5365 | 1123 | TAD C200 | /***** |
| 2244 | 5366 | 6134 | CLEN | /***** |
| 2245 | 5367 | 1374 | TAD 04600 | /***** |
| 2246 | 5370 | 6132 | CLLR | /***** |
| 2247 | 5371 | 7200 | CLA | /***** |
| 2248 | 5372 | 5773 | JMP I ,+1 | /***** |
| 2249 | 5373 | 0611 | PROC | /***** |
| 2250 | 5374 | 4600 | 04600, 4600 | /***** |
| 2251 | 5375 | 0007 | MHUNDRO,71470010 | /***** |
| | 5376 | 4700 | | |
| | 5377 | 1000 | | |

2252
2253/PAGE 1 - INPUT/OUTPUT ROUTINES FOR THE FOCAL
/FLOATING POINT PACKAGE.

2254
 2255
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/IN THE COMMENTS BELOW:-
 / F = NUMBER OF DIGITS TO BE OUTPUT #FISW
 / D = NUMBER OF DECIMAL PLACES #DECP
 / E = DECIMAL EXPONENT #BEXP
 / P = NUMBER OF PLACES REMAINING TO BE
 / PRINTED BEFORE DECIMAL POINT
 *5400
 DIGITS=6 /NUMBER OF DECIMAL DIGITS OUT
 TGO, 0
 DCA SCOUNT /SAVE MAX. NUMBER OF DIGITS AVAILABLE = *SET COUNTS*
 TAD FISW
 RTL6
 AND P77
 DCA T1
 TAD T1
 CIA /NO, COMPUTE FIELD SIZES
 SNA
 TAD MD
 DCA FCOUNT
 TAD FISW /(JMP FPRNT) = FOR NO ROUNDING,
 SNA /-floating output?
 JMP R6 /YES, ROUND OFF TO MAX.NO. PLACES
 AND P77
 DCA DECP
 TAD FCOUNT
 TAD DECP
 SPA / F=D > 0 ?
 JMP ,+5 /YES
 CLA CMA /NO,
 TAD T1
 DCA DECP /MAKE 0 = F=1
 CMA
 TAD T3 /COMPARE DECIMAL EXPONENT
 SMA / F=D > E?
 CLA /NO, ROUND OFF TO D PLACES
 TAD T1 /YES
 SPA / D+E < 0 ?
 JMP FPRNT=2 /YES, NO ROUNDING NEEDED, GO TO PRINT
 TAD MD /NO, ROUND TO D+E PLACES,
 SMA /TO A MAXIMUM OF D PLACES
 CLA
 R6, TAD RND2 / *ROUND UP *
 DCA T2 /SAVE NUMBER+1 OF PLACES TO ROUND TO.
 TAD I BUFST
 TAD T2 /SET UP BUFFER ADDRESS AT WHICH
 DCA PLCE /ROUNDING OFF SHOULD START
 TAD T2
 CIA /SET UP COUNT OF MAXIMUM NUMBER
 DCA T2 /OF CARRIES ALLOWABLE
 TAD K5 /LITTLE EXTRA ON FIRST DIGIT,
 RET, ISE I PLCE /ADD 1 TO DIGIT AT CURRENT POSITION
 TAD I PLCE
 TAD OM12
 SPA CLA / CARRY REQUIRED?
 JMP FPRNT /NO, GO TO OUTPUT

| | | | | |
|------|------|------|-----------------|---|
| 2309 | 5457 | 3736 | DCA I PLCE | /YES, MAKE CURRENT DIGIT ZERO |
| 2310 | 5460 | 2771 | ISZ T2 | /BEGINNING OF BUFFER REACHED? |
| 2311 | 5461 | 5321 | JMP DECR | /NO, DECREMENT BUFFER ADDRESS AND REPEAT |
| 2312 | 5462 | 2736 | ISZ I PLCE | /YES, SET MANTISSA TO 0.1 |
| 2313 | 5463 | 2833 | ISZ T3 | /COMPENSATE BY INCREMENTING EXPONENT |
| 2314 | 5464 | 7200 | CLA | |
| 2315 | 5465 | 1952 | FPRNT, TAD FISW | /AUTO-INDEX REGISTER ALREADY SET, = *PRINT* |
| 2316 | 5466 | 7650 | SNA CLA | / F = 0 ? |
| 2317 | 5467 | 5356 | JMP FLOUT | /YES, OUTPUT AS FLOATING NUMBER |
| 2318 | 5470 | 1335 | TAD FCOUNT | |
| 2319 | 5471 | 1033 | TAD T3 | |
| 2320 | 5472 | 7540 | SMA SEA | / E > F ? |
| 2321 | 5473 | 5355 | JMP FLOUT=1 | /YES, CONVERT TO E FORMAT |
| 2322 | 5474 | 1333 | TAD DECP | |
| 2323 | 5475 | 7500 | SMA | / E < F=D ? |
| 2324 | 5476 | 7200 | CLA | /NO, TAKE P = E |
| 2325 | 5477 | 7041 | CIA | /YES, TAKE P = F=D |
| 2326 | 5520 | 1033 | TAD T3 | |
| 2327 | 5521 | 7041 | CIA | |
| 2328 | 5522 | 3232 | DCA T1 | /SET UP MINUS P |
| 2329 | 5523 | 1033 | TAD T3 | /PRINT DD,DDD |
| 2330 | 5524 | 1032 | TAD T1 | |
| 2331 | 5525 | 7650 | SNA CLA | / P = E ? |
| 2332 | 5526 | 5343 | JMP DIG | /YES, PRINT DIGIT |
| 2333 | 5527 | 1032 | TAD T1 | /NO, |
| 2334 | 5510 | 7001 | IAC | |
| 2335 | 5511 | 7710 | SPA CLA | / P > 1 ? |
| 2336 | 5512 | 1105 | TAD M20 | /YES, TAKE SPACE (240=260); OTHERWISE ZERO |
| 2337 | 5513 | 4336 | IN, JMS OUTA | /PRINT CHARACTER |
| 2338 | 5514 | 2032 | ISZ T1 | /P CHARACTERS PRINTED? |
| 2339 | 5515 | 5303 | JMP BACK | /NO |
| 2340 | 5516 | 1102 | TAD PER | /YES, |
| 2341 | 5517 | 4551 | PRINTC | /PRINT DECIMAL POINT |
| 2342 | 5520 | 5303 | JMP BACK | |
| 2343 | 5521 | 7040 | DECR, CMA | /BACKUP TO TOP OF BUFFER. |
| 2344 | 5522 | 1336 | TAD PLCE | |
| 2345 | 5523 | 3336 | DCA PLCE | |
| 2346 | 5524 | 5252 | JMP RET | |
| 2347 | 5525 | 0004 | K5, 4 | |
| 2348 | 5526 | 7772 | MD, =DIGITS | |
| 2349 | 5527 | 0007 | RND2, DIGITS+1 | |
| 2350 | 5530 | 7766 | OM12, =12 | |
| 2351 | 5531 | 6150 | BUFST, SADR | |
| 2352 | 5532 | 6154 | OPUT, OUTDG | |
| 2353 | 5533 | 0000 | DECP, 0 | /MODIFIABLE LOCATIONS |
| 2354 | 5534 | 0000 | SCOUNT, 0 | |
| 2355 | 5535 | 0000 | FCOUNT, 0 | |
| 2356 | 5536 | 5536 | PLCE=, | |
| 2357 | 5536 | 0000 | OUTA, 0 | /MODIFIED REGISTERS. |
| 2358 | 5537 | 4732 | JMS I OPUT | /PRINT CHARACTER |
| 2359 | 5540 | 2335 | ISZ FCOUNT | /F CHARACTERS PRINTED? |
| 2360 | 5541 | 5736 | JMP I OUTA | /NO, RETURN |
| 2361 | 5542 | 5620 | JMP I TGO | /YES, NUMBER FINISHED |
| 2362 | 5543 | 7040 | DIG, CMA | |
| 2363 | 5544 | 1033 | TAD T3 | /REDUCE E, BY 1 |

| | | | | |
|------|------|------|---|------------------------------|
| 2364 | 545 | 3033 | DCA T3 | |
| 2365 | 5546 | 2334 | ISZ SCOUNT | /ARE ALL SIG. FIGS. USED? |
| 2366 | 5547 | 5353 | JMP ,*4 | /NO |
| 2367 | 5550 | 7040 | CMA | /YES, |
| 2368 | 5551 | 3334 | DCA SCOUNT | /RESET COUNT TO -1 |
| 2369 | 5552 | 5313 | JMP IN | /AND LEAVE C(AC) = 0 |
| 2370 | 5553 | 1414 | TAD I FLTXR | /TAKE NEXT DIGIT FROM BUFFER |
| 2371 | 5554 | 5313 | JMP IN | |
| 2372 | | | /DO FLOATING OUTPUT | |
| 2373 | 5555 | 7200 | CLA | /IF OUTPUT TOO LARGE, |
| 2374 | 5556 | 4732 | FLOUT, JMS I OPUT | /PRINT "0" |
| 2375 | 5557 | 1102 | TAD PER | |
| 2376 | 5560 | 4551 | PRINTC | /PRINT " , " |
| 2377 | 5561 | 2200 | ISZ TGO | /SECOND RETURN |
| 2378 | 5562 | 1414 | TAD I FLTXR | /TAKE NEXT DIGIT FROM BUFFER |
| 2379 | 5563 | 4336 | JMS OUTA | /PRINT IT |
| 2380 | 5564 | 2334 | ISZ SCOUNT | /TEST FOR END OF INPUT |
| 2381 | 5565 | 5362 | JMP ,*3 | /AND REPEAT |
| 2382 | 5566 | 7040 | CMA | |
| 2383 | 5567 | 3334 | DCA SCOUNT | /OUTPUT EXTRA ZEROS. |
| 2384 | 5570 | 5363 | JMP ,*5 | |
| 2385 | 5571 | 0000 | ABSOLV, 0 | |
| 2386 | 5572 | 1045 | TAD WORD | |
| 2387 | 5573 | 3050 | DCA SIGNF | |
| 2388 | 5574 | 1045 | TAD WORD | |
| 2389 | 5575 | 7710 | SPA CLA | |
| 2390 | 5576 | 4451 | JMS I MINSKI | |
| 2391 | 5577 | 5771 | JMP I ABSOLV | |
| 2392 | | | /DOUBLE PRECISION DECIMAL-BINARY | |
| 2393 | | | /INPUT AND CONVERSION FOR + OR = XXX... | |
| 2394 | | 5600 | *5600 | |
| 2395 | 5600 | 0000 | DECONV, 0 | |
| 2396 | 5601 | 3046 | DCA LORD | |
| 2397 | 5602 | 3044 | DCA EXP | /ZERO THE EXPONENT AND |
| 2398 | 5603 | 3045 | DCA WORD | /INITIALIZE FLOATING AC. |
| 2399 | 5604 | 3047 | DCA OVER2 | |
| 2400 | 5605 | 3314 | DCA DNUMBR | |
| 2401 | 5606 | 3050 | DCA SIGNF | |
| 2402 | 5607 | 1066 | TAD CHAR | /ALLOW KEYBOARD SIGN CHECKS. |
| 2403 | 5610 | 1264 | TAD MPLUS | |
| 2404 | 5611 | 7450 | SNA | |
| 2405 | 5612 | 5220 | JMP ,*6 | /*SIGN) GET NEXT |
| 2406 | 5613 | 1111 | TAD M2 | /CHECK = SIGN |
| 2407 | 5614 | 7640 | SZA CLA | |
| 2408 | 5615 | 5221 | JMP ,*4 | |
| 2409 | 5616 | 7040 | CMA | /INIT SIGN CHECK TO POS. |
| 2410 | 5617 | 3050 | DCA SIGNF | |
| 2411 | 5620 | 4666 | JMS I XINPUT | /GET NEXT |
| 2412 | 5621 | 1066 | TAD CHAR | /A SPACE PERHAPS? |
| 2413 | 5622 | 1265 | TAD MSPACE | |
| 2414 | 5623 | 7650 | SNA CLA | |
| 2415 | 5624 | 5220 | JMP ,*4 | |
| 2416 | 5625 | 4227 | JMS DECON | |
| 2417 | 5626 | 5600 | JMP I DECONV | |
| 2418 | 5627 | 0000 | DECON, 0 | |

2419 5630 1066
 2420 5631 1262
 2421 5632 7653
 2422 5633 5627
 2423 5634 4561
 2424 5635 5627
 2425 5636 5247
 2426 5637 1054
 2427 5640 3313
 2428 5641 4267
 2429 5642 2314
 2430 5643 7640
 2431 5644 4566
 2432 5645 4666
 2433 5646 5230
 2434 5647 1066
 2435 5650 1112
 2436 5651 7710
 2437 5652 5627
 2438 5653 1066
 2439 5654 1263
 2440 5655 7740
 2441 5656 5627
 2442 5657 1066
 2443 5660 1122
 2444 5661 5240
 2445 5662 7473
 2446 5663 7446
 2447 5664 7525
 2448 5665 7540
 2449 5666 0756
 2450 5667 0000
 2451 5670 1047
 2452 5671 3043
 2453 5672 1046
 2454 5673 3042
 2455 5674 1045
 2456 5675 3041
 2457 5676 3312
 2458 5677 4315
 2459 5700 4315
 2460 5701 4333
 2461 5702 4315
 2462 5703 1313
 2463 5704 3043
 2464 5705 3042
 2465 5706 3041
 2466 5707 4333
 2467 5710 1312
 2468 5711 5667
 2469 5712 0000
 2470 5713 0000
 2471 5714 0000
 2472 5715 0000
 2473 5716 1047

TAD CHAR /TEST LEAD CHARACTER FOR TERMINATOR
 TAD MINE
 SNA CLA
 JMP I DECON /E
 TESTN
 JMP I DECON /.
 JMP DTST /OTHER
 TAD SORTCN /N
 DCA DIGIT /YES
 DSAVE, JMS MULT10 /REMAIN MUST BE SINCE OVERFLOW IS CHECKED
 ISZ DNUMBR /COUNT DIGITS
 SZA CLA
 ERROR2 /INPUT=OVERFLOW ERROR
 JMS I XINPUT
 DTST, JMP DECON*1 /CONTINUE
 TAD CHAR /ALLOW A-Z
 TAD MINUSA
 SPA CLA
 JMP I DECON
 TAD CHAR
 TAD MINUSZ
 SZA SMA CLA
 JMP I DECON /USE SIX BITS OF ASCII
 TAD CHAR
 AND P77
 MINE, JMP DSAVE
 =305 / (7532) FOR AMPERSAND
 MINUSZ, =332
 MPLUS, =253
 MSPACE, =240
 XINPUT, INPUT
 MULT10, 0 /ROUTINE TO MULTIPLY FLAG BY TEN (10)
 TAD OVER2
 DCA OVER1
 TAD LORD /DOUBLE PRECISION WORD
 DCA AC1L /BY TEN (DECIMAL)
 TAD HORD /REMAIN=REMAINDER
 DCA AC1H
 DCA REMAIN /CLEAR OVERFLOW WORD
 JMS MULT2 /CALL SUBROUTINE TO
 JMS MULT2 /MULTIPLY BY TWO
 JMS DUBLAD /CALL DOUBLE ADD
 JMS MULT2
 TAD DIGIT /ADD LAST DIGIT RECEIVED
 DCA OVER1
 DCA AC1L
 DCA AC1H
 JMS DUBLAD
 TAD REMAIN /EXIT WITH REMAINDER
 JMP I MULT10 /IN AC
 REMAIN, 0
 DIGIT, 0 /STORAGE FOR DIGIT
 DNUMBR, 0 /NUMBER OF DIGITS
 MULT2, 0 /MULTIPLY OVER2, LORD, HORD BY 2
 TAD OVER2

| | | | |
|------|------|------|--|
| 2474 | 5717 | 7104 | CLL RAL /CARRY INSERT BIT IS IN LINK |
| 2475 | 5720 | 3047 | DCA OVER2 |
| 2476 | 5721 | 1046 | TAD LORD |
| 2477 | 5722 | 7004 | RAL |
| 2478 | 5723 | 3046 | DCA LORD |
| 2479 | 5724 | 1045 | TAD HORD |
| 2480 | 5725 | 7004 | RAL |
| 2481 | 5726 | 3045 | DCA HORD |
| 2482 | 5727 | 1312 | TAD REMAIN |
| 2483 | 5730 | 7004 | RAL |
| 2484 | 5731 | 3312 | DCA REMAIN |
| 2485 | 5732 | 5715 | JMP I MULT2 |
| 2486 | 5733 | 7000 | DUBLAD, 0 /TRIPLE PRECISION ADDITION |
| 2487 | 5734 | 7300 | CLA CLL |
| 2488 | 5735 | 1047 | TAD OVER2 |
| 2489 | 5736 | 1043 | TAD OVER1 |
| 2490 | 5737 | 3047 | DCA OVER2 |
| 2491 | 5740 | 7004 | RAL |
| 2492 | 5741 | 1046 | TAD LORD |
| 2493 | 5742 | 1042 | TAD AC1L |
| 2494 | 5743 | 3046 | DCA LORD |
| 2495 | 5744 | 7004 | RAL |
| 2496 | 5745 | 1045 | TAD HORD |
| 2497 | 5746 | 1041 | TAD AC1H |
| 2498 | 5747 | 3045 | DCA HORD |
| 2499 | 5750 | 7004 | RAL |
| 2500 | 5751 | 1312 | TAD REMAIN /WITH OVERFLOW |
| 2501 | 5752 | 3312 | DCA REMAIN |
| 2502 | 5753 | 5733 | JMP I DUBLAD |
| 2503 | 5754 | 7000 | DIV1, 0 /SHIFT OPERAND RIGHT |
| 2504 | 5755 | 7300 | CLA CLL /TRIPLE PRECISION |
| 2505 | 5756 | 1041 | TAD AC1H |
| 2506 | 5757 | 7510 | SPA |
| 2507 | 5760 | 7120 | CLL CML |
| 2508 | 5761 | 7010 | RAR |
| 2509 | 5762 | 3041 | DCA AC1H |
| 2510 | 5763 | 1042 | TAD AC1L |
| 2511 | 5764 | 7010 | RAR |
| 2512 | 5765 | 3042 | DCA AC1L |
| 2513 | 5766 | 1043 | TAD OVER1 |
| 2514 | 5767 | 7010 | RAR |
| 2515 | 5770 | 3043 | DCA OVER1 |
| 2516 | 5771 | 2040 | ISE EX1 |
| 2517 | 5772 | 5754 | JMP I DIV1 |
| 2518 | 5773 | 5754 | JMP I DIV1 |
| 2519 | 5774 | 4566 | FSSERR, ERROR4 /***** (SUBSCRIPT ERROR FOR FILE VARIABLE-OR NOT DEFINED) |
| 2520 | | 6000 | *6000 |
| 2521 | | | /FLOATING OUTPUT CONVERSION ROUTINE |
| 2522 | 6000 | 6000 | FLOUTP, 0 |
| 2523 | 6001 | 7610 | SKP CLA /***** /GETS RID OF # IN PRINTOUT |
| 2524 | | | LMODE |
| 2525 | 6002 | 6377 | OPTR, 6377 /***** |
| 2526 | | | PHODE |
| 2527 | 6003 | 1045 | TAD HORD /NUMBER>0?? |
| 2528 | 6004 | 7700 | SMA CLA |

2529 6005 1334
 2530 6006 1336
 2531 6007 4551
 2532 6010 4753
 2533 6011 3033
 2534 6012 1344
 2535 6013 7510
 2536 6014 5227
 2537 6015 7440
 2538 6016 1341
 2539 6017 7750
 2540 6020 5234
 2541 6021 4407
 2542 6022 4744
 2543 6023 0000
 2544 6024 7001
 2545 6025 1033
 2546 6026 5211
 2547 6027 4407
 2548 6030 4752
 2549 6031 0000
 2550 6032 7040
 2551 6033 5225
 2552 6034 3745
 2553 6035 3746
 2554 6036 1350
 2555 6037 3014
 2556 6040 1044
 2557 6041 7140
 2558 6042 3354
 2559 6043 1343
 2560 6044 3044
 2561 6045 4527
 2562 6046 2354
 2563 6047 5245
 2564 6050 1746
 2565 6051 7450
 2566 6052 5270
 2567 6053 1342
 2568 6054 7710
 2569 6055 5264
 2570 6056 7001
 2571 6057 3414
 2572 6060 2044
 2573 6061 1342
 2574 6062 2033
 2575 6063 7000
 2576 6064 1746
 2577 6065 2033
 2578 6066 7000
 2579 6067 7410
 2580 6070 4747
 2581 6071 3414
 2582 6072 2044
 2583 6073 5270

FG02.

FG03.

FG04.

FG05.

TAD SMSP
 TAD SMIN
 PRINTC
 JMS I ABSOL2
 DCA T3
 TAD EXP
 SPA
 JMP FG03
 SZA
 TAD M4
 SPA SNA CLA
 JMP FG04
 FINT
 FMUL I PPTEN
 FEXT
 IAC
 TAD T3
 JMP FG02
 FINT
 FMUL I TENPT
 FEXT
 CMA
 JMP ,=6
 DCA I DPT
 DCA I REPT
 TAD SADR
 DCA FLT XR
 TAD EXP
 CMA CLL
 DCA OUTDG
 TAD DCOUNT
 DCA EXP
 JMS I DOUBLE.
 ISZ OUTDG
 JMP ,=2
 TAD I REPT
 SNA
 JMP FG05
 TAD FM12
 SPA CLA
 JMP ,=7
 IAC
 DCA I FLT XR
 ISZ EXP
 TAD FM12
 ISZ T3
 NOP
 TAD I REPT
 ISZ T3
 NOP
 SKP
 JMS I MI0PT
 DCA I FLT XR
 ISZ EXP
 JMP ,=3

/PRINT "=" OR A SPACE.

/INITIALIZE DECIMAL EXPONENT
/IS EXP 0 TO 47

/TOO LARGE!MULTIPLY BY 1/10.

/MULTIPLY BY TWO TO POSITION BIT0
/CLEAR OVERFLOW WORD
/INIT BUFFER POINTER

/COMPUTE BITS IN 1ST DIGIT

/TEMP COUNT
/SETUP COUNT OF TOTAL OUTPUT

/ROTATE OUT THE 1ST 4 BITS

/TEST FOR 10-15,0,1-9

/IGNORE 1ST ZERO

/0=9

/OUTPUT A 1
/COUNT THE DIGIT
/CORRECT REMAINDER
/BUMP DECIMAL EXPONENT

/COMPUTE RESULTANT OR SECOND DIGIT

/IE. .672X10=6+.72.. ETC

/ALL DIGITS OUTPUT??
/NO! CONTINUE

| | | | | |
|------|------|------|------------------------|----------------------------------|
| 2584 | 6074 | 1352 | TAD SADR | /INIT BUFFER POINTER |
| 2585 | 6075 | 3014 | DCA FLT XR | |
| 2586 | 6076 | 1343 | TAD DCOUNT | |
| 2587 | 6077 | 4751 | JMS I ROUND | /OUTPUT MANTISSA |
| 2588 | 6100 | 5600 | JMP I FLOUTP | /FIXED POINT DONE |
| 2589 | 6101 | 1333 | TAD CHRT | /PRINT "E" |
| 2590 | 6102 | 4551 | PRINTC | |
| 2591 | | | /OUTPUT THE EXPONENT | |
| 2592 | 6103 | 1033 | TAD T3 | /TAKE ABSOLUTE VALUE OF EXPONENT |
| 2593 | 6104 | 7510 | SPA | |
| 2594 | 6105 | 7041 | CIA | |
| 2595 | 6106 | 3045 | DCA HORD | /SAVE + POWER |
| 2596 | 6107 | 1033 | TAD T3 | /PRINT SIGN |
| 2597 | 6110 | 7700 | SMA CLA | |
| 2598 | 6111 | 1111 | TAD M2 | |
| 2599 | 6112 | 1336 | TAD SMIN | |
| 2600 | 6113 | 4551 | PRINTC | |
| 2601 | 6114 | 1045 | TAD HORD | |
| 2602 | 6115 | 2044 | ISZ EXP | |
| 2603 | 6116 | 1337 | TAD M144 | |
| 2604 | 6117 | 7500 | SMA | |
| 2605 | 6120 | 5315 | JMP .-3 | |
| 2606 | 6121 | 1340 | TAD C144 | |
| 2607 | 6122 | 3045 | DCA HORD | /SAVE TENS AND UNITS |
| 2608 | 6123 | 7040 | CM4 | /OUTPUT HUNDREDS |
| 2609 | 6124 | 1044 | TAD EXP | |
| 2610 | 6125 | 7440 | SZA | /UNLESS ZERO |
| 2611 | 6126 | 4354 | JMS OUTDG | |
| 2612 | 6127 | 1045 | TAD HORD | /PRINT TWO DIGITS |
| 2613 | 6130 | 4732 | JMS I PRNTI | |
| 2614 | 6131 | 5600 | JMP I FLOUTP | |
| 2615 | 6132 | 2442 | PRNTI, PRNT | |
| 2616 | 6133 | 0305 | CHRT, 305 | /E (0246) - FOR AMPERSAND |
| 2617 | 6134 | 7763 | SMSP, 240=255 | / |
| 2618 | 6135 | 0275 | PEQ, 275 | |
| 2619 | 6136 | 0255 | SMIN, 255 | |
| 2620 | 6137 | 7634 | M144, =144 | /-100 |
| 2621 | 6140 | 0144 | C144, 0144 | /+100 |
| 2622 | 6141 | 7774 | M4, =4 | |
| 2623 | 6142 | 7766 | FM12, =12 | |
| 2624 | 6143 | 7771 | DCOUNT, =DIGITS=1 | /NUMBER OF DIGITS OUTPUT |
| 2625 | 6144 | 6275 | PPTEN, PTEN | /IEI |
| 2626 | 6145 | 5713 | DPT, DIGIT | |
| 2627 | 6146 | 5712 | REPT, REMAIN | /OVERFLOW FROM INTEGER MULTIPLY |
| 2628 | 6147 | 5667 | M10PT, MULT10 | |
| 2629 | 6150 | 7467 | SADR, BUFFER=1 | |
| 2630 | 6151 | 5400 | ROUND, TGO | /ACTUAL OUTPUT ROUTINE |
| 2631 | 6152 | 6271 | TENPT, TEN | |
| 2632 | 6153 | 5571 | ABSOL2, ABSOLV | |
| 2633 | 6154 | 0000 | OUTDG, 0 | /OUTPUT ONE DIGIT |
| 2634 | 6155 | 1113 | TAD C260 | |
| 2635 | 6156 | 4551 | PRINTC | |
| 2636 | 6157 | 5754 | JMP I OUTDG | |
| 2637 | 6160 | 7750 | RANMUL, 77501233315733 | /***** |
| | 6161 | 2333 | | |

| | | | | | |
|------|------|------|---------|--------------|-----------------------------------|
| 2638 | 6162 | 5733 | | | |
| 2639 | 6163 | 1167 | LEPUT: | TAD | SUBS2 |
| 2640 | 6164 | 3171 | | DCA | SUBS |
| 2641 | 6165 | 1170 | | TAD | LESUB2 |
| 2642 | 6166 | 3173 | | DCA | LESUBS |
| 2643 | 6167 | 1002 | | TAD | LWEIMP |
| 2644 | 6170 | 6212 | | 6212 | |
| 2645 | 6171 | 4775 | | JMS I | STORIT |
| 2646 | 6172 | 2407 | | ISE I | 7 |
| 2647 | 6173 | 5774 | | JMP I | .*1 |
| 2648 | 6174 | 6401 | | FPNT*1 | |
| 2649 | 6175 | 2000 | STORIT: | ITSTOR | |
| 2650 | 6176 | 6213 | LS: | 6213 | /CIF CDF 10/***** LIBRARY SAVE |
| 2651 | 6177 | 5134 | | JMP | XLS |
| 2652 | | | | | /***** |
| 2653 | | | | | /USED BY 8K |
| 2654 | 6200 | 6200 | | | /FLOATING POINT INPUT |
| 2655 | 6201 | 7640 | | | *6200 |
| 2656 | 6202 | 4706 | FLINTP: | 0 | |
| 2657 | 6203 | 1066 | | SZA CLA | /IF C(AC) = 0, USE CHAR |
| 2658 | 6204 | 1114 | | JMS I XIN | /IF C(AC) NON=ZERO, GET NEXT |
| 2659 | 6205 | 7650 | | TAD CHAR | /GET FIRST CHAR |
| 2660 | 6206 | 5202 | | TAD M240 | /IGNORE LEADING SPACES |
| 2661 | 6207 | 4702 | | SNA CLA | |
| 2662 | 6210 | 1066 | | JMP ,=4 | |
| 2663 | 6211 | 1115 | | JMS I DPCVPT | /READ FIRST DIGIT GROUP |
| 2664 | 6212 | 7640 | | TAD CHAR | /AND SET "SIGNF" |
| 2665 | 6213 | 5221 | | TAD MPER | |
| 2666 | 6214 | 4706 | | SZA CLA | /ENDED BY PERIOD? |
| 2667 | 6215 | 3705 | | JMP FIG01 | |
| 2668 | 6216 | 4703 | | JMS I XIN | /YES, READ 2AND GROUP |
| 2669 | 6217 | 1705 | | DCA I DPN | |
| 2670 | 6220 | 7041 | | JMS I DCONP | |
| 2671 | 6221 | 3033 | FIG01: | TAD I DPN | /SAVE NUMBER OF DIGITS IN T3 |
| 2672 | 6222 | 1310 | | CMA IAC | |
| 2673 | 6223 | 3044 | | DCA T3 | /NO, |
| 2674 | 6224 | 4704 | | TAD P43 | |
| 2675 | 6225 | 4707 | | DCA EXP | |
| 2676 | 6226 | 4407 | | JMS I RESOL5 | |
| 2677 | 6227 | 6430 | | JMS I INORM | /NORMALIZE FIRST, THEN |
| 2678 | 6230 | 2000 | | FINT | |
| 2679 | 6231 | 1066 | | FPUT I PT1 | /SAVE NUMBER |
| 2680 | 6232 | 1301 | | FEXT | |
| 2681 | 6233 | 7640 | | TAD CHAR | |
| 2682 | 6234 | 5246 | | TAD MINUSE | |
| 2683 | 6235 | 4706 | | SZA CLA | /N" READ IN? |
| 2684 | 6236 | 4702 | | JMP ENDFI+3 | /NO |
| 2685 | 6237 | 4704 | | JMS I XIN | /YES, READ 3RD DIGIT GROUP |
| 2686 | 6240 | 1047 | | JMS I DPCVPT | /I.E. CONVERT DECIMAL EXPONENT |
| 2687 | 6241 | 1033 | | JMS I RESOL5 | |
| 2688 | 6242 | 3033 | | TAD OVER2 | |
| 2689 | | | | TAD T3 | /C(SEXP)PLACES TO RIGHT |
| 2690 | 6243 | 4407 | | DCA T3 | /OF LAST DIGIT |
| 2691 | 6244 | 4430 | | | /COMPENSATE FOR DECIMAL EXPONENTS |
| | | | ENDFI: | FINT | /RESTORE MANTISSA |
| | | | | FGET I PT1 | |

2692 45 000
 2693 6246 1033
 2694 6247 7450
 2695 6250 5600
 2696 6251 7700
 2697 6252 5261
 2698 6253 4407
 2699 6254 4275
 2700 6255 6430
 2701 6256 0000
 2702 6257 7001
 2703 6260 5266
 2704 6261 4407
 2705 6262 4271
 2706 6263 6430
 2707 6264 0000
 2708 6265 7040
 2709 6266 1033
 2710 6267 3033
 2711 6270 5246
 2712 6271 0004
 2713 6272 2400
 2714 6273 0000
 2715 6274 0000
 2716 6275 7775
 2717 6276 3146
 2718 6277 3147
 2719 6300 3150
 2720 6301 7473
 2721 6302 5600
 2722 6303 5627
 2723 6304 7173
 2724 6305 5714
 2725 6306 0756
 2726 6307 7335
 2727 6310 0043
 2728
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 2731
 2732
 2733
 2734
 2735
 2736
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 2738
 2739 6311 1066
 2740 6312 3756
 2741 6313 4545
 2742 6314 4550
 2743 6315 1771
 2744 6316 7410
 2745 6317 5313
 2746 6320 4562

FEXT
 TAD T3 /TEST DECIMAL EXPONENT
 SNA
 JMP I FLINTP /FINISHED
 SMA CLA
 JMP FIG04
 FINT /, IS TO THE LEFT
 FMUL PTEN /TIMES ,1000
 FPUT I PT1
 FEXT
 IAC
 JMP ,+6
 FIG04, FINT /, IS TO THE RIGHT
 FMUL TEN /MULTIPLY BY 10
 FPUT I PT1
 FEXT
 CMA
 TAD T3
 DCA T3
 JMP ENDFI+3
 TEN, 0004
 2400
 0000
 0000
 PTEN, 7775
 3146
 3147 /((3146) = FOR 4-WORD
 3150
 MINUSE, -305 /((7532) = FOR AMPERSAND
 DPCVPT, DECONV
 DCONP, DECON
 RESOL5, RESOLV
 DPN, DNUMBR
 XIN, INPUT
 INORM, DNORM
 P43, 43
 /END OF FLOATING POINT INPUT
 /7 FREE
 /USED BY H.S. READER
 /
 /CALLS LOADING ROUTINE FOR FILE
 /VARIABLES IN EXPRESSIONS; CALLED BY EFUN3;
 /
 *6311
 FNUM. TAD CHAR /*****
 DCA EFOP /*****
 GETC /*****
 SORTC /*****
 TERMS=1 /*****
 SKP /*****
 JMP ,=4 /*****
 TSTLPR /*****

2747 6321 4566
 2748 6322 4734
 2749 6323 4453
 2750 6324 3171
 2751 6325 1045
 2752 6326 3173
 2753 6327 1413
 2754 6330 6212
 2755 6331 4733
 2756 6332 5536
 2757 6333 1533
 2758 6334 1601
 2759 6335 0000
 2760 6336 4545
 2761 6337 1066
 2762 6340 4542
 2763 6341 4545
 2764 6342 4550
 2765 6343 1374
 2766 6344 5735
 2767 6345 5341
 2768 6346 4335
 2769 6347 1066
 2770 6350 1374
 2771 6351 7640
 2772 6352 5357
 2773 6353 1413
 2774 6354 4547
 2775 6355 6365
 2776 6356 7772
 2777 6357 4566
 2778 6360 5167
 2779 6361 5171
 2780 6362 2572
 2781 6363 5173
 2782 6364 6176
 2783 6365 6375
 2784 6366 0317
 2785 6367 0303
 2786 6370 0315
 2787 6371 0314
 2788 6372 0323
 2789 6373 0307
 2790 6374 7524
 2791 6375 6213
 2792 6376 5136
 2793 6400 6400
 2794
 2795 6400 0000
 2796 6401 7300
 2797 6402 3047
 2798 6403 3043
 2799 6404 1600
 2800 6405 7450
 2801 6406 5600

LOADIT;
 PECALL;
 PASS,

LTAPE,

LERR,
 LGO,

LLIST,

MINCOM;
 LG,

*6400

FPNT,

ERROR4 /*****
 JMS I PECALL /*****
 JMS I INTEGER /*****
 DCA SUBS /*****
 TAD HORD /*****
 DCA LESUBS /*****
 POPA /*****
 6212 /***** FILE NO.
 JMS I LOADIT /*****
 JMP I EFUN3I /*****
 ITLOAD /*****
 ECALL /*****
 GETC /*****
 TAD CHAR /*****
 PUSHA /*****
 GETC /*****
 SORTC /*****
 GLIST=1 /*****
 JMP I PASS /*****
 JMP I =4 /*****
 JMS PASS /*****
 TAD CHAR /*****
 TAD MINCOM /*****
 SZA CLA /*****
 JMP LERR /*****
 POPA /*****
 SORTJ /***** JMPS ON SUBCOMMAND OF LIBR XXXX
 LLIST=1 /*****
 LGO=LLIST /*****
 ERROR4 /*****
 LO /*****
 LC /*****
 LM /*****
 LL /*****
 LS /*****
 LG /*****
 317 /*****
 303 /*****
 315 /*****
 314 /*****
 323 /*****
 307 /*****
 =254 /*****
 6213 /*****
 JMP XLG /*****
 / FLOATING-POINT INTERPRETER FOR FOCAL.
 CLA CLL /*****
 DCA OVER2 /((NOP) = FOR 4-WORD
 DCA OVER1 /((NOP) = FOR 4-WORD.
 TAD I FPNT /GET NEXT INSTRUCTION
 SNA /*****
 JMP I FPNT /FAST EXIT

| | | | | |
|------|------|------|----------------|--|
| 2802 | 6407 | 3264 | DCA JUMP | |
| 2803 | 6410 | 1264 | TAD JUMP | |
| 2804 | 6411 | 123 | AND C202 | /GET PAGE BIT |
| 2805 | 6412 | 7650 | SNA CLA | /PAGE ZERO? |
| 2806 | 6413 | 5216 | JMP ,+3 | /YES |
| 2807 | 6414 | 1134 | TAD P7600 | /NO |
| 2808 | 6415 | 200 | AND FPNT | /C(FPNT)0=4 CONTAINS PAGE BITS |
| 2809 | 6416 | 3040 | DCA ADDR | |
| 2810 | 6417 | 1106 | TAD P177 | /GET 7 BIT ADDRESS |
| 2811 | 6420 | 1264 | AND JUMP | |
| 2812 | 6421 | 1040 | TAD ADDR | |
| 2813 | 6422 | 3040 | DCA ADDR | |
| 2814 | 6423 | 1265 | TAD INDRCT | /INDIRECT BIT=1? |
| 2815 | 6424 | 1264 | AND JUMP | |
| 2816 | 6425 | 7650 | SNA CLA | |
| 2817 | 6426 | 5233 | JMP LOOP01 | /NO-GO ON |
| 2818 | 6427 | 1440 | TAD I ADDR | /YES ,DEFER ,W/O AUTO=INDEX |
| 2819 | 6430 | 7450 | SNA | /***** IF PT1 WAS ZERO, IT IS A |
| 2820 | 6431 | 5572 | JMP I LEFPUT | /***** FILE VARIABLE |
| 2821 | 6432 | 3040 | DCA ADDR | |
| 2822 | 6433 | 2200 | ISZ FPNT | |
| 2823 | 6434 | 7040 | CMA | |
| 2824 | 6435 | 1040 | TAD ADDR | |
| 2825 | 6436 | 3015 | DCA FLT XR2 | |
| 2826 | 6437 | 1264 | TAD JUMP | /GET COMMAND |
| 2827 | 6440 | 7106 | CLL RTL | |
| 2828 | 6441 | 7006 | RTL | |
| 2829 | 6442 | 1107 | AND P17 | /GET BITS 0=2:IE OPCODE |
| 2830 | 6443 | 7450 | SNA | |
| 2831 | 6444 | 5271 | JMP FLGT | |
| 2832 | 6445 | 1266 | TAD TABLE | /LOOKUP IN TABLE |
| 2833 | 6446 | 3264 | DCA JUMP | |
| 2834 | 6447 | 1664 | TAD I JUMP | |
| 2835 | 6450 | 7450 | SNA | |
| 2836 | 6451 | 5267 | JMP FLPT | |
| 2837 | 6452 | 3264 | DCA JUMP | |
| 2838 | 6453 | 1306 | TAD CEX1 | /SAVE FLOATING ARGUMENT, UNLESS 'GET' OR 'PUT' |
| 2839 | 6454 | 3014 | DCA FLT XR | |
| 2840 | 6455 | 1117 | TAD MFLT | |
| 2841 | 6456 | 3057 | DCA CNTR | |
| 2842 | 6457 | 1415 | TAD I FLT XR2 | |
| 2843 | 6460 | 3414 | DCA I FLT XR | |
| 2844 | 6461 | 2057 | ISZ CNTR | |
| 2845 | 6462 | 5257 | JMP ,=3 | |
| 2846 | 6463 | 5664 | JMP I JUMP | /GO THERE |
| 2847 | 6464 | 0000 | JUMP, 0 | |
| 2848 | | 0040 | ADDR=EX1 | |
| 2849 | 6465 | 1400 | INDRCT, 0400 | |
| 2850 | 6466 | 6575 | TABLE, ITABLE | |
| 2851 | 6467 | 1305 | FLPT, TAD CEXP | /EXP TO (ADDR) |
| 2852 | 6470 | 5275 | JMP ,+5 | |
| 2853 | 6471 | 1305 | FLGT, TAD CEXP | /(ADDR) TO EXP |
| 2854 | 6472 | 3015 | DCA FLT XR2 | |
| 2855 | 6473 | 7040 | CMA | |
| 2856 | 6474 | 1040 | TAD ADDR | |

LOOP01:

| | | | | |
|------|------|------|---------------------|-------------------------------------|
| 2857 | 6475 | 3014 | DCI FLT XR | /SAVE 'FROM' ADDRESS |
| 2858 | 6476 | 1117 | TAD MFLT | /3 OR 4 WORDS |
| 2859 | 6477 | 3057 | DCA CNTR | |
| 2860 | 6500 | 1414 | TAD I FLT XR | |
| 2861 | 6501 | 3415 | DCA I FLT XR2 | |
| 2862 | 6502 | 2057 | ISZ CNTR | |
| 2863 | 6503 | 5300 | JMP ,=3 | |
| 2864 | 6504 | 5201 | JMP FPNT+1 | |
| 2865 | 6505 | 1043 | CEXP, EXP=1 | |
| 2866 | 6506 | 1037 | CX1, EX1=1 | |
| 2867 | 6507 | 4767 | FLSU, JMS I OPMINS | /FSUP=2 - NEGATE THE OPERAND |
| 2868 | 6510 | 4772 | FLAD, JMS I ALGN | /FLAD=1 - FIRST ALIGN EXPONENTS |
| 2869 | 6511 | 5201 | JMP FPNT+1 | /RETURN IF NO ALIGNMENT IS POSSIBLE |
| 2870 | 6512 | 4774 | JMS I RAR2 | /TRIPLE PRECISION ADDITION |
| 2871 | 6513 | 4773 | JMS I RAR1 | /SINCE BITS ARE SHIFTED |
| 2872 | 6514 | 4775 | JMS I TRAD | /RIGHT |
| 2873 | 6515 | 4771 | NORF, JMS I NORM | /NORMALIZE THE RESULT |
| 2874 | 6516 | 5201 | JMP FPNT+1 | /HINTIUSE 700X FOR FUNCTIONS. |
| 2875 | | | /INTERPRETIVE POWER | |
| 2876 | 6517 | 1045 | FLEX, TAD HORD | /ZERO? |
| 2877 | 6520 | 7200 | CLA | /CROCK**** |
| 2878 | 6521 | 5327 | JMP ,+6 | |
| 2879 | 6522 | 3044 | ZERO, DCA EXP | /YES |
| 2880 | 6523 | 3045 | DCA HORD | |
| 2881 | 6524 | 3046 | DCA LORD | |
| 2882 | 6525 | 3047 | DCA OVER2 | |
| 2883 | 6526 | 5201 | JMP FPNT+1 | |
| 2884 | 6527 | 4543 | PUSHF | /AC TO A + POWER |
| 2885 | 6530 | 1044 | FLAC | |
| 2886 | 6531 | 4543 | PUSHF | /SETUP ARGUMENT (THE EXPONENT) |
| 2887 | 6532 | 1040 | EX1 | |
| 2888 | 6533 | 4544 | POPF | |
| 2889 | 6534 | 1044 | FLAC | |
| 2890 | 6535 | 4453 | JMS I INTEGER | /ONLY POSITIVE, INTEGER EXPONENTS |
| 2891 | 6536 | 7510 | SPA | |
| 2892 | 6537 | 5344 | JMP ,+5 | /(COULD DIVIDE) |
| 2893 | 6540 | 7040 | CMA | |
| 2894 | 6541 | 3264 | DCA JUMP | /TEMP STORAGE |
| 2895 | 6542 | 3043 | DCA OVER1 | /(NOP) = FOR 4-WORD |
| 2896 | 6543 | 1045 | TAD HORD | |
| 2897 | 6544 | 7640 | SZA CLA | |
| 2898 | 6545 | 4566 | ERROR2 | /TOO LARGE OR NEGATIVE EXPONENT |
| 2899 | 6546 | 4543 | PUSHF | /INITIALIZE TO ONE. |
| 2900 | 6547 | 2405 | FLTONE | |
| 2901 | 6550 | 4544 | POPF | |
| 2902 | 6551 | 1044 | FLAC | |
| 2903 | 6552 | 4544 | POPF | |
| 2904 | 6553 | 7470 | ITER1 | |
| 2905 | 6554 | 5362 | JMP ,+6 | |
| 2906 | 6555 | 4543 | PUSHF | |
| 2907 | 6556 | 7470 | ITER1 | |
| 2908 | 6557 | 4544 | POPF | |
| 2909 | 6560 | 1040 | EX1 | |
| 2910 | 6561 | 4770 | JMS I MULT | /"MULT" |
| 2911 | 6562 | 2264 | ISZ JUMP | |

| | | | | |
|------|------|------|------------------|--|
| 2912 | 6563 | 5355 | JMP ,=6 | |
| 2913 | 6564 | 5221 | JMP FPNT+1 | |
| 2914 | 6565 | 4772 | FLMY, JMS I MULT | /MULTIPLY |
| 2915 | 6566 | 5201 | JMP FPNT+1 | |
| 2916 | 6567 | 7153 | OPMINS; MINUS2 | |
| 2917 | 6570 | 7004 | MULT, DMULT | |
| 2918 | 6571 | 7335 | NORM, DNORM | |
| 2919 | 6572 | 6623 | ALGN, ALIGN | |
| 2920 | 6573 | 5754 | RAR1, DIV1 | |
| 2921 | 6574 | 6757 | RAR2, DIV2 | |
| 2922 | 6575 | 5733 | TRAD, DUBLAD | |
| 2923 | | 6575 | ITABLE, =1 | |
| 2924 | 6576 | 6510 | FLAD | |
| 2925 | 6577 | 6507 | FLSU | |
| 2926 | 6600 | 7107 | FLDV | |
| 2927 | 6601 | 6565 | FLMY | |
| 2928 | 6602 | 6517 | FLEX | |
| 2929 | 6603 | 0000 | 0000 | |
| 2930 | 6604 | 6515 | NORF | |
| 2931 | 6605 | 0000 | ACMINS; 0 | /ROUTINE TO COMPLEMENT FLAG - VIA "MINSKI" |
| 2932 | 6606 | 7200 | CLA | /***** (IS THIS CLA NECESSARY) |
| 2933 | 6607 | 1047 | TAD OVER2 | /***** RECODING FOR SPACE |
| 2934 | 6610 | 7161 | CLL CML CIA | /***** |
| 2935 | 6611 | 3047 | DCA OVER2 | /***** |
| 2936 | 6612 | 7004 | RAL | /***** |
| 2937 | 6613 | 1046 | TAD LORD | /***** |
| 2938 | 6614 | 7061 | CML CIA | /***** |
| 2939 | 6615 | 3046 | DCA LORD | /***** |
| 2940 | 6616 | 7004 | RAL | /***** |
| 2941 | 6617 | 1045 | TAD HORD | /***** |
| 2942 | 6620 | 7061 | CML CIA | /***** |
| 2943 | 6621 | 3045 | DCA HORD | /***** |
| 2944 | 6622 | 5605 | JMP I ACMINS | |
| 2945 | 6623 | 0000 | ALIGN; 0 | /SUBROUTINE TO ALIGN |
| 2946 | 6624 | 1045 | TAD HORD | /BINARY POINTS |
| 2947 | 6625 | 7450 | SNA | |
| 2948 | 6626 | 1046 | TAD LORD | /IS MANTISSA ZERO? |
| 2949 | 6627 | 7650 | SNA CLA | |
| 2950 | 6630 | 5311 | JMP NOX1 | /YES, RESULT=OPERAND |
| 2951 | 6631 | 1041 | TAD AC1H | /NO, IS OPERAND ZERO? |
| 2952 | 6632 | 7450 | SNA | |
| 2953 | 6633 | 1042 | TAD AC1L | |
| 2954 | 6634 | 7450 | SNA | |
| 2955 | 6635 | 1043 | TAD OVER1 | |
| 2956 | 6636 | 7650 | SNA CLA | |
| 2957 | 6637 | 5623 | JMP I ALIGN | /YES, EXIT; |
| 2958 | 6640 | 1040 | TAD EX1 | |
| 2959 | 6641 | 7041 | CMÄ IAC | |
| 2960 | 6642 | 1044 | TAD EXP | |
| 2961 | 6643 | 7450 | SNA | /ARE EXPONENTS EQUAL? |
| 2962 | 6644 | 5273 | JMP ADONE | /YES |
| 2963 | 6645 | 3205 | DCA ACMINS | |
| 2964 | 6646 | 1205 | TAD ACMINS | |
| 2965 | 6647 | 7500 | SMA | /NO |
| 2966 | 6650 | 7041 | CIA | /NEGATE AND |

| | | | | | |
|------|------|------|--|-----------|--|
| 2967 | 6651 | 3322 | DCA | AMOUNT | /SAVE THE DIFFERENCE |
| 2968 | 6652 | 1322 | TAD | AMOUNT | |
| 2969 | 6653 | 1336 | TAD | TEST2 | |
| 2970 | 6654 | 7710 | SPA | CLA | /CAN THE EXPONENTS BE ALIGNED? |
| 2971 | 6655 | 5275 | JMP | NOX | /NO, USE LARGER OF THE TWO. |
| 2972 | 6656 | 1235 | TAD | ACMINS | /YES, SHIFT THE SMALLER |
| 2973 | 6657 | 7700 | SMA | CLA | |
| 2974 | 6660 | 5265 | JMP | ASHFT | |
| 2975 | 6661 | 4357 | JMS | DIV2 | |
| 2976 | 6662 | 2322 | ISZ | AMOUNT | |
| 2977 | 6663 | 5261 | JMP | ,=2 | |
| 2978 | 6664 | 5273 | JMP | ADONE | |
| 2979 | 6665 | 7040 | ASHFT, | CMA | |
| 2980 | 6666 | 1040 | TAD | EX1 | |
| 2981 | 6667 | 3040 | DCA | EX1 | |
| 2982 | 6670 | 4723 | JMS | I TAG1 | |
| 2983 | 6671 | 2322 | ISZ | AMOUNT | |
| 2984 | 6672 | 5270 | JMP | ,=2 | |
| 2985 | 6673 | 2223 | ADONE, | ISZ ALIGN | |
| 2986 | 6674 | 5623 | JMP | I ALIGN | |
| 2987 | 6675 | 1040 | NOX, | TAD EX1 | /MISSION IMPOSSIBLE! |
| 2988 | 6676 | 7700 | SMA | CLA | /CHECK FOR SIGN DIFFERENCE |
| 2989 | 6677 | 5304 | JMP | NOX2 | |
| 2990 | 6700 | 1044 | TAD | EXP | |
| 2991 | 6701 | 7700 | SMA | CLA | |
| 2992 | 6702 | 5623 | JMP | I ALIGN | /== |
| 2993 | 6703 | 5306 | JMP | ,+3 | /== |
| 2994 | 6704 | 1044 | NOX2, | TAD EXP | |
| 2995 | 6705 | 7700 | SMA | CLA | |
| 2996 | 6706 | 1205 | TAD | ACMINS | /TEMP STORAGE OF DIFFERENCE, BOTH POS EXP OR BOTH NEG; |
| 2997 | 6707 | 7740 | SMA | SZA CLA | |
| 2998 | 6710 | 5623 | JMP | I ALIGN | /OK (+=) |
| 2999 | 6711 | 1040 | NOX1, | TAD EX1 | /USE LARGER |
| 3000 | 6712 | 3044 | DCA | EXP | |
| 3001 | 6713 | 1041 | TAD | AC1H | |
| 3002 | 6714 | 3045 | DCA | HORD | |
| 3003 | 6715 | 1042 | TAD | AC1L | |
| 3004 | 6716 | 3046 | DCA | LORD | |
| 3005 | 6717 | 1043 | TAD | OVER1 | |
| 3006 | 6720 | 3047 | DCA | OVER2 | |
| 3007 | 6721 | 5623 | JMP | I ALIGN | |
| 3008 | 6722 | 0000 | AMOUNT; | 0 | |
| 3009 | 6723 | 5754 | TAG1, | DIV1 | |
| 3010 | | | /LEAVE 12 BIT ANSWER IN AC UPON RETURN | | |
| 3011 | | | /LEAVE FLAC AS AN INTEGER, | | |
| 3012 | 6724 | 0000 | FIX, | 0 | /VIA (INTEGER) |
| 3013 | 6725 | 4751 | JMS | I ABSOL | |
| 3014 | 6726 | 1044 | TAD | EXP | /TEST FOR FRACTION |
| 3015 | 6727 | 7750 | SPA | SNA CLA | |
| 3016 | 6730 | 5353 | JMP | FIXM | /DOUBLE CHECK FOR MINUS ONE. |
| 3017 | 6731 | 7701 | IAC | | |
| 3018 | 6732 | 3043 | DCA | OVER1 | |
| 3019 | 6733 | 1350 | TAD | P27 | /INIT ALIGNMENT |
| 3020 | 6734 | 3040 | DCA | EX1 | |
| 3021 | 6735 | 4223 | JMS | ALIGN | /DO THE ALIGNMENT TO AN INTEGER |

| | | | | | |
|------|------|------|----------|-------------|------------------------------------|
| 3022 | 6736 | 0027 | TEST2, | 0027 | /ALREADY DONE/ (43)=FOR 4=WORD |
| 3023 | 6737 | 2047 | | ISZ OVER2 | |
| 3024 | 6740 | 5344 | | JMP ,+4 | |
| 3025 | 6741 | 2046 | | ISZ LORD | |
| 3026 | 6742 | 7410 | | SKP | |
| 3027 | 6743 | 2045 | | ISZ HORD | |
| 3028 | 6744 | 3047 | | DCA OVER2 | /CLEAR THE FRACTION |
| 3029 | 6745 | 4752 | | JMS I RESOL | |
| 3030 | 6746 | 1046 | | TAD LORD | /EXIT WITH LOW ORDER RESULT IN AC. |
| 3031 | 6747 | 5724 | | JMP I FIX | |
| 3032 | 6750 | 0027 | P27, | 27 | |
| 3033 | 6751 | 5571 | ABSOL, | ABSOLV | |
| 3034 | 6752 | 7173 | RESOL, | RESOLV | |
| 3035 | 6753 | 3044 | FIXM, | DCA EXP | /CLEAR EXPONENT |
| 3036 | 6754 | 3045 | | DCA HORD | |
| 3037 | 6755 | 3046 | | DCA LORD | |
| 3038 | 6756 | 5344 | | JMP TEST2+6 | |
| 3039 | 6757 | 0000 | DIV2, | 0 | /SHIFT FLAG RIGHT |
| 3040 | 6760 | 7300 | | CLA CLL | |
| 3041 | 6761 | 1045 | | TAD HORD | |
| 3042 | 6762 | 7510 | | SPA | |
| 3043 | 6763 | 7020 | | CML | |
| 3044 | 6764 | 7010 | | RAR | |
| 3045 | 6765 | 3045 | | DCA HORD | |
| 3046 | 6766 | 1046 | | TAD LORD | |
| 3047 | 6767 | 7010 | | RAR | |
| 3048 | 6770 | 3046 | | DCA LORD | |
| 3049 | 6771 | 1047 | | TAD OVER2 | |
| 3050 | 6772 | 7010 | | RAR | |
| 3051 | 6773 | 3047 | | DCA OVER2 | |
| 3052 | 6774 | 2044 | | ISZ EXP | |
| 3053 | 6775 | 5757 | | JMP I DIV2 | |
| 3054 | 6776 | 5757 | | JMP I DIV2 | |
| 3055 | 6777 | 6777 | SPECIAL, | | /INPUT CHARACTERS |
| 3056 | 6777 | 0337 | | 337 | /LEFT ARROW |
| 3057 | 7000 | 0377 | | 377 | /RUBOUT |
| 3058 | 7001 | 0212 | | 212 | /L.F. |
| 3059 | 7002 | 0375 | | 375 | /ALT MODE |
| 3060 | 7003 | 7777 | | =1 | |
| 3061 | | | | | /(A+B*C)*(D+E+F)=A*D,A*E,B*D,B*E |
| 3062 | 7004 | 0000 | DMULT, | 0 | /N= PRECISION MULTIPLY WITH |
| 3063 | 7005 | 7001 | | IAC | /PRODUCT IN TRIPLE PRECISION |
| 3064 | 7006 | 1040 | | TAD EX1 | /ADD EXPONENTS+1 |
| 3065 | 7007 | 4324 | | JMS SIGN | /AND DETERMINE SIGN OF RESULT |
| 3066 | 7010 | 7710 | | SPA CLA | |
| 3067 | 7011 | 4353 | | JMS MINUS2 | |
| 3068 | 7012 | 3301 | | DCA DATUM=1 | /INITIALIZE RESULT |
| 3069 | 7013 | 3300 | | DCA DATUM=2 | |
| 3070 | 7014 | 3277 | | DCA DATUM=3 | |
| 3071 | 7015 | 3276 | | DCA DATUM=4 | |
| 3072 | 7016 | 1045 | | TAD A | /A*D |
| 3073 | 7017 | 3751 | | SAVE | /STORE IN MP2 |
| 3074 | 7020 | 1041 | | TAD D | /SINGLE PRECISION MULTIPLY |
| 3075 | 7021 | 4752 | | MULTY | |
| 3076 | 7022 | 0002 | | 2 | /ACCUMULATE START IN #2 DATA WORD |

| | | | | |
|------|------|------|---|---------------------------|
| 3077 | 7023 | 1042 | TAD E | /A*E |
| 3078 | 7024 | 4752 | MULTY | |
| 3079 | 7025 | 003 | 3 | |
| 3080 | 7026 | 1046 | TAD B | /B*0 |
| 3081 | 7027 | 3751 | SAVE | |
| 3082 | 7030 | 1241 | TAD D | |
| 3083 | 7031 | 4752 | MULTY | |
| 3084 | 7032 | 003 | 3 | |
| 3085 | 7033 | 1042 | TAD E | /B*E |
| 3086 | 7034 | 4752 | MULTY | |
| 3087 | 7035 | 1004 | 4 | |
| 3088 | 7036 | 5263 | DMULT4, JMP DMDONE | /(DCA DATUM=5)-FOR 4-WORD |
| 3089 | 7037 | 3274 | DCA DATUM=6 | |
| 3090 | 7040 | 1043 | TAD F | /A*F |
| 3091 | 7041 | 3751 | SAVE | |
| 3092 | 7042 | 1045 | TAD A | |
| 3093 | 7043 | 4752 | MULTY | |
| 3094 | 7044 | 004 | 4 | |
| 3095 | 7045 | 1046 | TAD B | /B*F |
| 3096 | 7046 | 4752 | MULTY | |
| 3097 | 7047 | 005 | 5 | |
| 3098 | 7050 | 1047 | TAD C | /C*0 |
| 3099 | 7051 | 3751 | SAVE | |
| 3100 | 7052 | 1041 | TAD D | |
| 3101 | 7053 | 4752 | MULTY | |
| 3102 | 7054 | 004 | 4 | |
| 3103 | 7055 | 1042 | TAD E | /C*E |
| 3104 | 7056 | 4752 | MULTY | |
| 3105 | 7057 | 005 | 5 | |
| 3106 | 7060 | 1043 | TAD F | /C*F |
| 3107 | 7061 | 4752 | MULTY | |
| 3108 | 7062 | 1006 | 6 | |
| 3109 | 7063 | 1301 | DMDONE, TAD DATUM=1 | /COPY RESULT |
| 3110 | 7064 | 3045 | DCA HORO | |
| 3111 | 7065 | 1300 | TAD DATUM=2 | |
| 3112 | 7066 | 3046 | DCA LORD | |
| 3113 | 7067 | 1277 | TAD DATUM=3 | |
| 3114 | 7070 | 3047 | DCA OVER2 | |
| 3115 | 7071 | 4301 | JMS MULDIV | |
| 3116 | 7072 | 3047 | DCA OVER2 | /(NOP) - FOR 4-WORD |
| 3117 | 7073 | 5604 | JMP I DMULT | |
| 3118 | 7102 | | DATUM=+6 /INTERMEDIATE STORAGE | |
| 3119 | 7074 | 000 | 0/#6=LOW ORDER RESULT | |
| 3120 | 7075 | 000 | 0/#5 | |
| 3121 | 7076 | 000 | 0/#4 | |
| 3122 | 7077 | 000 | 0/#3 | |
| 3123 | 7100 | 000 | 0/#2 | |
| 3124 | | | /#1=HIGH ORDER RESULT | |
| 3125 | 7101 | 000 | MULDIV, 0 /TERMINATE MULTIPLY AND DIVIDE, | |
| 3126 | 7102 | 2050 | ISE SIGNF /CORRECT FOR SIGN | |
| 3127 | 7103 | 4451 | JMS I MINSKI | |
| 3128 | 7104 | 4747 | JMS I NORMF | /SHIFT LEFT |
| 3129 | 7105 | 7000 | NOP | /0 |
| 3130 | 7106 | 5701 | JMP I MULDIV | |
| 3131 | 7107 | 1041 | FLDV, TAD AC1H | /4IDIVIDE |

| | | | | |
|------|------|------|--|------------------------------------|
| 3132 | 7110 | 7657 | SNA CLA | |
| 3133 | 7111 | 4566 | ERROR2 | /DIVISION BY ZERO |
| 3134 | 7112 | 1040 | TAD EX1 | /SUBTRACT EXPONENTS+1 |
| 3135 | 7113 | 7041 | CMA IAC | |
| 3136 | 7114 | 7001 | IAC | |
| 3137 | 7115 | 4324 | JMS SIGN | /SET UP SIGNS |
| 3138 | 7116 | 7700 | SMA CLA | |
| 3139 | 7117 | 4353 | JMS MINUS2 | /NEGATE DIVISOR |
| 3140 | 7120 | 4750 | JMS I DIVIDE | /DIVIDE |
| 3141 | 7121 | 4301 | JMS MULDIV | |
| 3142 | 7122 | 5723 | JMP I .+1 | |
| 3143 | 7123 | 6401 | | |
| 3144 | | | FPNT+1 | |
| 3145 | | | /THIS SUBROUTINE PREPARES MULTIPLY AND DIVIDE | |
| 3146 | | | /FOR ANY COMBINATION OF SIGNED ARGUMENTS AND FOR ZERO, | |
| 3147 | | | /THE RESULT OF EITHER IS ZERO IF FLAG = 0, | |
| 3148 | | | /RESULT OF MULTIPLY IS ZERO IF EITHER IS ZERO; | |
| 3149 | | | /DIVISION BY ZERO IS CHECKED BEFORE THIS | |
| 3150 | | | /ROUTINE IS CALLED. | |
| 3151 | | | /THE CALLING AC CONTAINS AN UPDATE VALUE FOR THE | |
| 3152 | | | /EXPONENT, THE RETURNING AC CONTAINS THE SIGN OF | |
| 3153 | | | /THE ARGUMENT FOR FURTHER TESTING BY EACH ROUTINE, | |
| 3153 | 7124 | 0000 | SIGN, 0 | /TEST AND SAVE SIGN OF RESULT |
| 3154 | 7125 | 1044 | TAD EXP | /COMPUTE NEW EXPONENT FOR MUL=DIV. |
| 3155 | 7126 | 3044 | DCA EXP | |
| 3156 | 7127 | 1124 | TAD P4000 | /LOAD 4000 TO XOR THE SIGN BITS. |
| 3157 | 7130 | 0045 | AND HORD | |
| 3158 | 7131 | 1041 | TAD AC1H | |
| 3159 | 7132 | 7700 | SMA CLA | /RESULT MAY BE ZERO |
| 3160 | 7133 | 7040 | CMA | |
| 3161 | 7134 | 3050 | DCA SIGNF | |
| 3162 | 7135 | 1045 | TAD HORD | |
| 3163 | 7136 | 7450 | SNA | |
| 3164 | 7137 | 5746 | JMP I REVIT | /ANSWER IS ZERO. |
| 3165 | 7140 | 7710 | SPI CLA | /TAKE ABSOLUTE VALUE OF FLAG |
| 3166 | 7141 | 4451 | JMS I MINSKI | |
| 3167 | 7142 | 1041 | TAD AC1H | |
| 3168 | 7143 | 7450 | SNA | /RESULT OF EITHER MAY BE ZERO |
| 3169 | 7144 | 5746 | JMP I REVIT | |
| 3170 | 7145 | 5724 | JMP I SIGN | |
| 3171 | | | /SIGN OF RESULT = SIGNF | |
| 3172 | | | /==1 | |
| 3173 | | | /==2 | |
| 3174 | 7146 | 6522 | REVIT, ZERO | |
| 3175 | 7147 | 7335 | NORMF, DNORM | |
| 3176 | 7150 | 7261 | DIVIDE, OURDIV | |
| 3177 | | 3751 | SAVE=DCA I . | |
| 3178 | 7151 | 7256 | MP2 | |
| 3179 | | 4752 | MULTY=JMS I . | |
| 3180 | 7152 | 7200 | MP4 | |
| 3181 | | 0045 | A=FLAC+1 | |
| 3182 | | 0046 | B=FLAC+2 | |
| 3183 | | 0047 | C=FLAC+3 | |
| 3184 | | 0041 | D=AC1H | |
| 3185 | | 0042 | E=AC1L | |
| 3186 | | 0043 | F=OVER1 | |

| | | | | | |
|------|------|------|---------|--------------|--|
| 3187 | 7153 | 000 | MINUS2, | | /NEGATE OPERAND |
| 3188 | 7154 | 7302 | | CLA CLL | /TRIPLE PRECISION |
| 3189 | 7155 | 1043 | | TAD OVER1 | |
| 3190 | 7156 | 7041 | | CMA IAC | |
| 3191 | 7157 | 3043 | | DCA OVER1 | |
| 3192 | 7160 | 1042 | | TAD AC1L | |
| 3193 | 7161 | 7240 | | CMA | |
| 3194 | 7162 | 7430 | | SZL | |
| 3195 | 7163 | 7101 | | IAC CLL | |
| 3196 | 7164 | 3042 | | DCA AC1L | |
| 3197 | 7165 | 1041 | | TAD AC1H | |
| 3198 | 7166 | 7240 | | CMA | |
| 3199 | 7167 | 7430 | | SZL | |
| 3200 | 7170 | 7101 | | IAC CLL | |
| 3201 | 7171 | 3041 | | DCA AC1H | |
| 3202 | 7172 | 5753 | | JMP I MINUS2 | |
| 3203 | 7173 | 0000 | RESOLV, | 0 | |
| 3204 | 7174 | 1050 | | TAD SIGNF | |
| 3205 | 7175 | 7710 | | SPA CLA | |
| 3206 | 7176 | 4451 | | JMS I MINSKI | |
| 3207 | 7177 | 5773 | | JMP I RESOLV | |
| 3208 | | 7200 | *7200 | | |
| 3209 | 7200 | 0000 | MP4, | 0 | /SINGLE PRECISION, UNSIGNED MULTIPLY = "MULTY" |
| 3210 | 7201 | 7450 | | SNA | /NO RESULT ADDED IF ZERO |
| 3211 | 7202 | 5600 | | JMP I MP4 | |
| 3212 | | | | | /FOR EAE INSERT THE FOLLOWING: |
| 3213 | | | /7203 | 3206 | DCA ,+3 |
| 3214 | | | /7204 | 1256 | TAD MP2 |
| 3215 | | | /7205 | 7425 | MQL MUY |
| 3216 | | | /7206 | 0000 | 0 |
| 3217 | | | /7207 | 3253 | DCA MP5 |
| 3218 | | | /7210 | 7501 | MQA |
| 3219 | | | /7211 | 3255 | DCA MP3 |
| 3220 | | | /7212 | 5227 | JMP ,+15 |
| 3221 | 7203 | 3254 | | DCA MP1 | /12 BITS BY 12 BITS |
| 3222 | 7204 | 3253 | | DCA MP5 | |
| 3223 | 7205 | 1257 | | TAD THIR | |
| 3224 | 7206 | 3255 | | DCA MP3 | |
| 3225 | 7207 | 7100 | | CLL | |
| 3226 | 7210 | 1254 | MP6, | TAD MP1 | |
| 3227 | 7211 | 7010 | | RAR | |
| 3228 | 7212 | 3254 | | DCA MP1 | |
| 3229 | 7213 | 1253 | | TAD MP5 | |
| 3230 | 7214 | 7420 | | SNL | |
| 3231 | 7215 | 5220 | | JMP ,+3 | |
| 3232 | 7216 | 7100 | | CLL | |
| 3233 | 7217 | 1256 | | TAD MP2 | |
| 3234 | 7220 | 7010 | | RAR | |
| 3235 | 7221 | 3253 | | DCA MP5 | /SAVE HIGH ORDER RESULT |
| 3236 | 7222 | 2255 | | ISZ MP3 | |
| 3237 | 7223 | 5210 | | JMP MP6 | |
| 3238 | 7224 | 1254 | | TAD MP1 | /CORRECT LOW ORDER RESULT |
| 3239 | 7225 | 7010 | | RAR | |
| 3240 | 7226 | 3255 | | DCA MP3 | |
| 3241 | 7227 | 1600 | | TAD I MP4 | /PICKUP SCALE FACTOR |

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|------|------|------|-------------------|------------------------------------|
| 3242 | 7237 | 7141 | CIÄ | |
| 3243 | 7231 | 1252 | TAD DATUMA | /COMPUTE ADDRESS |
| 3244 | 7232 | 3254 | DCÄ MP1 | /TEMP |
| 3245 | 7233 | 1255 | TAD MP3 | /LOW ORDER PART |
| 3246 | 7234 | 7100 | CLL | |
| 3247 | 7235 | 1654 | TAD I MP1 | /ACCUMULATE |
| 3248 | 7236 | 3654 | DCÄ I MP1 | |
| 3249 | 7237 | 2254 | ISZ MP1 | |
| 3250 | 7242 | 7004 | RAL | |
| 3251 | 7241 | 1253 | TAD MP5 | |
| 3252 | 7242 | 1654 | TAD I MP1 | |
| 3253 | 7243 | 3654 | DCÄ I MP1 | |
| 3254 | 7244 | 7420 | SNL | |
| 3255 | 7245 | 5600 | JMP I MP4 | /NO CARRY |
| 3256 | 7246 | 2254 | ISZ MP1 | |
| 3257 | 7247 | 2654 | ISZ I MP1 | |
| 3258 | 7250 | 5600 | JMP I MP4 | /EXIT |
| 3259 | 7251 | 5246 | JMP ,=3 | /CARRY AGAIN |
| 3260 | | | ///// | |
| 3261 | 7252 | 7102 | DATUMA; DATUM | |
| 3262 | 7253 | 0000 | MP5, 0 | /PRODUCT |
| 3263 | 7254 | 0000 | MP1, 0 | /MULTIPLIER |
| 3264 | 7255 | 0000 | MP3, 0 | |
| 3265 | 7256 | 0000 | MP2, 0 | /MULTIPLICAND |
| 3266 | 7257 | 7764 | THIR, -14 | /12 BITS |
| 3267 | 7260 | 7751 | MIF, -27 | /(-43) - FOR 4=WORD(=7735) |
| 3268 | 7261 | 0000 | DUBDIV, 0 | /2 OR 3 PRECISION DIVIDE |
| 3269 | 7262 | 3200 | DCÄ MP4 | |
| 3270 | 7263 | 3254 | DCÄ MP1 | |
| 3271 | 7264 | 1260 | TAD MIF | /INIT BIT COUNTER |
| 3272 | 7265 | 3255 | DCÄ MP3 | |
| 3273 | 7266 | 7410 | SKP | |
| 3274 | 7267 | 4527 | DV3, JMS I DOUBLE | /SHIFT FLAG LEFT |
| 3275 | 7270 | 7100 | CLL | |
| 3276 | 7271 | 1042 | TAD AC1L | /COMBINE ONE POSITION AND (4=WORD) |
| 3277 | 7272 | 1046 | TAD LORD | |
| 3278 | 7273 | 3256 | DCÄ MP2 | /SAVE RESULT |
| 3279 | 7274 | 7004 | RAL | |
| 3280 | 7275 | 1045 | TAD HORD | /ADD OVERFLOW |
| 3281 | 7276 | 1041 | TAD AC1H | |
| 3282 | 7277 | 7420 | SNL | /SKIP IF OVERFLOW |
| 3283 | 7300 | 5304 | JMP ,+4 | |
| 3284 | 7301 | 3045 | DCÄ HORD | /UPDATE FLAG |
| 3285 | 7302 | 1256 | TAD MP2 | |
| 3286 | 7303 | 3046 | DCÄ LORD | |
| 3287 | 7304 | 7200 | CLÄ | /CLEAR ACCUMULATOR |
| 3288 | 7305 | 1254 | TAD MP1 | /SAVE OVERFLOW BITS CIRCULARLY |
| 3289 | 7306 | 7004 | RAL | |
| 3290 | 7307 | 3254 | DCÄ MP1 | |
| 3291 | 7310 | 1200 | TAD MP4 | |
| 3292 | 7311 | 7004 | RAL | |
| 3293 | 7312 | 3200 | DCÄ MP4 | |
| 3294 | 7313 | 2255 | ISZ MP3 | /TEST FOR END OF DIVIDE |
| 3295 | 7314 | 5267 | JMP DV3 | |
| 3296 | 7315 | 1254 | TAD MP1 | /LOAD RESULTS |

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|------|------|------|--------------------------------|-------------------------------|
| 3297 | 7316 | 3046 | DCA LORD | |
| 3298 | 7317 | 1200 | TAD MP4 | |
| 3299 | 7320 | 3045 | DCA HORD | |
| 3300 | 7321 | 5661 | JMP I DUBDIV | /(NOP) |
| 3301 | 7322 | 7004 | RAL | /EXTRA FOR 4-WORD |
| 3302 | 7323 | 3335 | DCA DNORM | |
| 3303 | 7324 | 2255 | ISE MP3 | /TEST FOR END OF DIVIDE |
| 3304 | 7325 | 5267 | JMP DV3 | |
| 3305 | 7326 | 1335 | TAD DNORM | |
| 3306 | 7327 | 3045 | DCA HORD | |
| 3307 | 7330 | 1200 | TAD MP4 | |
| 3308 | 7331 | 3046 | DCA LORD | |
| 3309 | 7332 | 1254 | TAD MP1 | |
| 3310 | 7333 | 3047 | DCA OVER2 | |
| 3311 | 7334 | 5661 | JMP I DUBDIV | |
| 3312 | 7335 | 0000 | DNORM, 0 | /SUBROUTINE TO NORMALIZE FLAG |
| 3313 | 7336 | 4775 | JMS I ABSOL3 | |
| 3314 | 7337 | 4366 | JMS TEST4 | |
| 3315 | 7340 | 1045 | TAD HORD | |
| 3316 | 7341 | 7450 | SNA | /IS MANTISSA=0? |
| 3317 | 7342 | 1047 | TAD OVER2 | |
| 3318 | 7343 | 7450 | SNA | |
| 3319 | 7344 | 1046 | TAD LORD | |
| 3320 | 7345 | 7650 | SNA CLA | |
| 3321 | 7346 | 5363 | JMP EXIT3 | /YES |
| 3322 | 7347 | 1045 | TAD HORD | |
| 3323 | 7350 | 7104 | RAL CLL | |
| 3324 | 7351 | 7710 | SPA CLA | /WILL SHIFT BE TOO FAR? |
| 3325 | 7352 | 5360 | JMP ,+6 | |
| 3326 | 7353 | 4527 | JMS I DOUBLE | |
| 3327 | 7354 | 7140 | CMA CLL | |
| 3328 | 7355 | 1044 | TAD EXP | |
| 3329 | 7356 | 3044 | DCA EXP | |
| 3330 | 7357 | 5347 | JMP ,=10 | |
| 3331 | 7360 | 4776 | JMS I RESOL3 | |
| 3332 | 7361 | 4366 | JMS TEST4 | /DON'T LEAVE 4000 |
| 3333 | 7362 | 5735 | JMP I DNORM | |
| 3334 | 7363 | 3044 | EXIT3, DCA EXP | /SET TO ZERO |
| 3335 | 7364 | 5735 | JMP I DNORM | /RETURN |
| 3336 | 7365 | 6757 | XRAR2, DIV2 | |
| 3337 | 7366 | 0000 | TEST4, 0 | |
| 3338 | 7367 | 1045 | TAD HORD | /TEST FOR 4000 |
| 3339 | 7370 | 7510 | SPA | |
| 3340 | 7371 | 7041 | CIA | |
| 3341 | 7372 | 7710 | SPA CLA | |
| 3342 | 7373 | 4765 | JMS I XRAR2 | /SHIFT BACK |
| 3343 | 7374 | 5766 | JMP I TEST4 | |
| 3344 | 7375 | 5571 | ABSOL3, ABSOLV | |
| 3345 | 7376 | 7173 | RESOL3, RESOLV | |
| 3346 | | 7400 | *7400 | |
| 3347 | | | /PAGE 18 | |
| 3348 | | | /FLOATING SQUARE ROOT FUNCTION | |
| 3349 | 7400 | 4437 | XSORT, FINT | |
| 3350 | 7401 | 6274 | FPUT FPAC1 | /VALUE |
| 3351 | 7402 | 0000 | FEXT | /NEWTON'S METHOD IS USED |

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|------|------|------|----------------|-------------------------------------|
| 3352 | 7403 | 4345 | GETSGN | |
| 3353 | 7404 | 7710 | SPÄ CLA | |
| 3354 | 7405 | 4566 | ERROR2 | /NUMBER IS NEGATIVE=IMAGINARY ROOTS |
| 3355 | 7406 | 1044 | TAD EXP | /LINK IS =0 FROM FINT |
| 3356 | 7407 | 7510 | SPA | /MATCH THE SIGN WITH LINK BIT |
| 3357 | 7410 | 7020 | CML | |
| 3358 | 7411 | 7010 | RAR | |
| 3359 | 7412 | 3270 | DCÄ ITER1 | /MAKE FIRST APPROXIMATION |
| 3360 | 7413 | 7430 | SZL | /TEST LSB OF EXP |
| 3361 | 7414 | 2270 | ISZ ITER1 | |
| 3362 | 7415 | 7000 | 07000, NOP | /***** |
| 3363 | 7416 | 1267 | TAD SQCON1 | |
| 3364 | 7417 | 3271 | DCÄ ITER1+1 | |
| 3365 | 7420 | 3272 | DCÄ ITER1+2 | |
| 3366 | 7421 | 3273 | DCÄ ITER1+3 | |
| 3367 | 7422 | 1275 | TAD FPAC1+1 | |
| 3368 | 7423 | 7450 | SNÄ | |
| 3369 | 7424 | 1276 | TAD FPAC1+2 | |
| 3370 | 7425 | 7650 | SNÄ CLA | |
| 3371 | 7426 | 5265 | JMP SQEND | /NUMBER=0 |
| 3372 | 7427 | 4407 | CLCU, FINT | |
| 3373 | 7430 | 3274 | FGET FPAC1 | |
| 3374 | 7431 | 3270 | FDIV ITER1 | |
| 3375 | 7432 | 1270 | FADD ITER1 | |
| 3376 | 7433 | 0000 | FEXT | |
| 3377 | 7434 | 7240 | CLÄ CMA | |
| 3378 | 7435 | 1044 | TAD EXP | |
| 3379 | 7436 | 3044 | DCÄ EXP | |
| 3380 | 7437 | 1044 | TAD EXP | |
| 3381 | 7440 | 7041 | CMA IAC | |
| 3382 | 7441 | 1270 | TAD ITER1 | |
| 3383 | 7442 | 7640 | SZÄ CLA | /ARE EXPONENTS EQUAL? |
| 3384 | 7443 | 5261 | JMP ROOTGO | /NO |
| 3385 | 7444 | 1045 | TAD HORD | /ARE HIGH-ORDER MANTISSAS EQUAL? |
| 3386 | 7445 | 7041 | CMA IAC | |
| 3387 | 7446 | 1271 | TAD ITER1+1 | |
| 3388 | 7447 | 7640 | SZÄ CLA | |
| 3389 | 7450 | 5261 | JMP ROOTGO | /NO |
| 3390 | 7451 | 1046 | TAD LORD | |
| 3391 | 7452 | 7041 | CMA IAC | |
| 3392 | 7453 | 1272 | TAD ITER1+2 | /DO LOW-ORDER MANTISSAS AGREE |
| 3393 | 7454 | 7500 | SMÄ | |
| 3394 | 7455 | 7041 | CMA IAC | /WITHIN ONE BIT? |
| 3395 | 7456 | 7001 | IAC | |
| 3396 | 7457 | 7700 | SMÄ CLA | |
| 3397 | 7460 | 5536 | RETURN | |
| 3398 | 7461 | 4407 | ROOTGO, FINT | |
| 3399 | 7462 | 6270 | FPUT ITER1 | |
| 3400 | 7463 | 1000 | FEXT | |
| 3401 | 7464 | 5227 | JMP CLCU | |
| 3402 | 7465 | 3044 | SQEND, DCÄ EXP | |
| 3403 | 7466 | 5536 | RETURN | |
| 3404 | 7467 | 3015 | SQCON1, 3015 | |
| 3405 | 7470 | 7470 | BUFFER, 0 | |
| 3406 | 7470 | 0000 | ITER1, 0 | |

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|------|------|------|---------|--------------|---|
| 3407 | 7471 | 0000 | | | |
| 3408 | 7472 | 0000 | | | |
| 3409 | 7473 | 0000 | | | |
| 3410 | 7474 | 0020 | FDAL1, | 0 | |
| 3411 | 7475 | 0000 | | 0 | |
| 3412 | 7476 | 0000 | | 0 | |
| 3413 | 7477 | 7503 | | | |
| 3414 | | | | | |
| 3415 | 7520 | 0000 | SCOPOU; | 0 | BUFFER*13 /ADDRESS OF NEXT FREE LOCATION IN 10-DIGIT VERSION, |
| 3416 | 7501 | 106 | | AND P177 | /****** |
| 3417 | 7502 | 1367 | | TAD 07763 | /****** OUTPUT ROUTINE FOR SCOPE |
| 3418 | 7503 | 7440 | | SZA | /****** STORES CHARS IN FLD1, LOCS 400-777 |
| 3419 | 7504 | 5310 | | JMP NOCRLF | /****** |
| 3420 | 7505 | 3364 | CRLF, | DCA NCOLS | /****** |
| 3421 | 7506 | 2365 | | ISZ NFEEDS | /****** |
| 3422 | 7507 | 5321 | | JMP ITSOK | /****** |
| 3423 | 7510 | 1371 | NOCRLF; | TAD 07655 | /****** |
| 3424 | 7511 | 7100 | | CLL | /****** |
| 3425 | 7512 | 1006 | | TAD C100 | /****** |
| 3426 | 7513 | 7420 | | SNL | /****** |
| 3427 | 7514 | 7610 | | SKP CLA | /****** |
| 3428 | 7515 | 1361 | | TAD NLINES | /****** |
| 3429 | 7516 | 7450 | | SNA | /****** |
| 3430 | 7517 | 5700 | | JMP I SCOPOU | /****** |
| 3431 | 7520 | 2364 | | ISZ NCOLS | /****** |
| 3432 | 7521 | 6002 | ITSOK; | IOF | /****** |
| 3433 | 7522 | 6141 | | LINC | /****** |
| 3434 | | | | | /****** |
| 3435 | 7523 | 1644 | LMODE | LDF 4 | /****** |
| 3436 | 7524 | 1362 | | STH I OPTR | /****** |
| 3437 | 7525 | 0011 | | CLR | /****** |
| 3438 | 7526 | 0002 | | PDP | /****** |
| 3439 | | | | | /****** |
| 3440 | 7527 | 6201 | PMODE | 6201 | /****** |
| 3441 | 7530 | 2366 | | ISZ NCHARS | /****** |
| 3442 | 7531 | 1366 | | TAD NCHARS | /****** |
| 3443 | 7532 | 1215 | | TAD 07000 | /****** |
| 3444 | 7533 | 7710 | | SPA CLA | /****** |
| 3445 | 7534 | 1361 | | TAD NLINES | /****** |
| 3446 | 7535 | 1365 | | TAD NFEEDS | /****** |
| 3447 | 7536 | 7710 | | SPA CLA | /****** |
| 3448 | 7537 | 5356 | | JMP NOHANG | /****** |
| 3449 | 7540 | 1366 | | TAD NCHARS | /****** |
| 3450 | 7541 | 6213 | | 6213 | /****** TOO MANY LINES/CHARS DISPLAYED |
| 3451 | 7542 | 4020 | | JMS WAITER | /****** HANG ON DISPLAY UNTIL SOMETHING IS TYPED |
| 3452 | 7543 | 6031 | | KSF | /****** |
| 3453 | 7544 | 5340 | | JMP .04 | /****** |
| 3454 | 7545 | 6034 | | KRS | /****** |
| 3455 | 7546 | 1372 | | TAD 07566 | /****** |
| 3456 | 7547 | 7650 | | SNA CLA | /****** |
| 3457 | 7550 | 6032 | | KCC | /****** IGNORE LINE FEED |
| 3458 | 7551 | 1370 | | TAD 06377 | /****** |
| 3459 | 7552 | 3774 | | DCA I PPTR | /****** CLEAR |
| 3460 | 7553 | 3366 | | DCA NCHARS | /****** THE |
| 3461 | 7554 | 3365 | | DCA NFEEDS | /****** CHARACTER |

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3462 7555 3364          DCA      NCOLS  /***** DISPLAY
3463 7556 6001  NOHANG; ION      /*****
3464 7557 1364          TAD      NCOLS  /*****
3465 7560 1373          TAD      07716 /*****
3466 7561 7740  NLINES; SMA SZA CLA  /*****
3467 7562 5305          JMP      CRLF  /*****
3468 7563 5700          JMP I   SCOPOU /*****
3469 7564 0000  NCOLS; 0      /*****
3470 7565 0000  NFEEDS; 0     /*****
3471 7566 0000  NCHARS; 0     /*****
3472 7567 7763  07763; 7763
3473 7570 6377  06377; 6377
3474 7571 7655  07655; 7655  /*****
3475 7572 7566  07566; 7566  /*****
3476 7573 7716  07716; 7716  /*****
3477 7574 6002  PPTR;  OPTR  /*****
3478          *7576  /*****
3479          /
3480          /FDIS FUNCTION - STORES 2 WORDS
3481          /PER CALL IN 2200 THRU 5777 IN FLD1
3482          /
3483 7576 4453  CALLIN; JMS I  INTEGER /*****
3484 7577 6213          6213  /*****
3485 7600 5601          JMP I   .01  /*****
3486 7601 2071          INCALL /*****
3487 7602 4407  XDISP; FINT  /*****
3488 7603 4251          FMUL   FORHUN /*****
3489 7604 0000  FEXT  /*****
3490 7605 4453  JMS I  INTEGER /*****
3491 7606 7510  SPA  /*****
3492 7607 7041  CIA  /*****
3493 7610 3350  DCA  STAMP /*****
3494 7611 1066  TAD  CHAR  /*****
3495 7612 1256  TAD  MMCOM  /*****
3496 7613 7640  SZA CLA /*****
3497 7614 4566  ERROR3 /*****
3498 7615 4540  PUSHJ  /*****
3499 7616 1612  EVAL=1 /*****
3500 7617 4407  FINT  /*****
3501 7620 4253  FMUL   FIVHUN /*****
3502 7621 0000  FEXT  /*****
3503 7622 4453  JMS I  INTEGER /*****
3504 7623 3351  DCA  STAMP2 /*****
3505 7624 1271  TAD  SPTR  /*****
3506 7625 1247  TAD  MLIMIT /*****
3507 7626 7650  SNA CLA /*****
3508 7627 4566  ERROR3 /*****
3509 7630 6002  IOF  /*****
3510 7631 6211  6211 /CDF 10 /*****
3511 7632 7350  CLA CLL CMA RAR /*****
3512 7633 0350  AND  STAMP /*****
3513 7634 3671  DCA I  SPTR  /*****
3514 7635 2271  ISZ  SPTR  /*****
3515 7636 1351  TAD  STAMP2 /*****
3516 7637 1250  TAD  07400 /*****

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|------|------|------|--|--|------------------------------------|
| 3517 | 7642 | 3671 | DCA I | SPTR | /***** |
| 3518 | 7641 | 2271 | ISE | SPTR | /***** |
| 3519 | 7642 | 7240 | CLA CMA | | /***** |
| 3520 | 7643 | 3671 | DCA I | SPTR | /***** |
| 3521 | 7644 | 6201 | 6201 | /CDF 0 | /***** |
| 3522 | 7645 | 6001 | ION | | /***** |
| 3523 | 7646 | 5536 | JMP I | EFUN3I | /***** |
| 3524 | 7647 | 2202 | MLIMIT; -5776 /(-LAST LOC OF DISP POINTS=1) | | |
| 3525 | 7650 | 7400 | 07400; | 7400 | /***** |
| 3526 | 7651 | 011 | FORHUN; | 1112700 | /***** |
| | 7652 | 2700 | | | |
| 3527 | 7653 | 011 | FIVHUN; | 111377010 | /***** |
| | 7654 | 3770 | | | |
| | 7655 | 0000 | | | |
| 3528 | 7656 | 7524 | MMCOM; | -254 | /***** |
| 3529 | | | / | | |
| 3530 | | | /JMS WAIT IS EQUIVALENT | | |
| 3531 | | | /TO JMP .=2 WITH A REFRESH OF | | |
| 3532 | | | /THE DISPLAY ON THE WAY | | |
| 3533 | | | / | | |
| 3534 | 7657 | 0000 | WAIT; | 0 | /***** |
| 3535 | 7660 | 7346 | CLA CLL | CMA RTL | /***** |
| 3536 | 7661 | 1257 | TAD | WAIT | /***** |
| 3537 | 7662 | 3257 | DCA | WAIT | /***** |
| 3538 | 7663 | 6002 | IOF | | /***** |
| 3539 | 7664 | 1732 | TAD I | PNCHARS | /***** |
| 3540 | 7665 | 6213 | 6213 | /CIF CDF 10 | /***** |
| 3541 | 7666 | 4020 | JMS | WAITER | /***** |
| 3542 | 7667 | 6001 | ION | | /***** |
| 3543 | 7670 | 5657 | JMP I | WAIT | /***** |
| 3544 | 7671 | 1000 | SPTR; | 1000 | /***** |
| 3545 | 7672 | 0000 | CLEAR; | 0 | /***** CLEAR POINTS FROM THE SCOPE |
| 3546 | 7673 | 1304 | TAD | ODISSP | /***** |
| 3547 | 7674 | 3271 | DCA | SPTR | /***** |
| 3548 | 7675 | 6002 | IOF | | /***** |
| 3549 | 7676 | 6211 | 6211 | /CDF 10 | /***** |
| 3550 | 7677 | 7240 | CLA CMA | | /***** |
| 3551 | 7700 | 3671 | DCA I | SPTR | /***** |
| 3552 | 7701 | 6201 | 6201 | /CDF 0 | /***** |
| 3553 | 7702 | 6001 | ION | | /***** |
| 3554 | 7703 | 5672 | JMP I | CLEAR | /***** |
| 3555 | 7704 | 2200 | ODISSP; | 2200 | /***** (FORST LOC OF DISP POINTS) |
| 3556 | 7705 | 6335 | PPASS; | PPASS | |
| 3557 | 7706 | 4705 | OUTPUT; | JMS I | PPASS |
| 3558 | 7707 | 1413 | POPA | /***** JUMPS ON SUBCOMMAND OF OUTPUT XXX | |
| 3559 | 7710 | 4547 | SORTJ | /***** | |
| 3560 | 7711 | 7721 | OLIST=1 | /***** | |
| 3561 | 7712 | 7772 | OGO=OLIST | /***** | |
| 3562 | 7713 | 4566 | OERROR; | ERROR3 | /***** |
| 3563 | 7714 | 7752 | OGO, | OC | /***** |
| 3564 | 7715 | 7761 | | OD | /***** |
| 3565 | 7716 | 7753 | | OE | /***** |
| 3566 | 7717 | 7763 | | OS | /***** |
| 3567 | 7720 | 7771 | | OT | /***** |
| 3568 | 7721 | 7734 | | OI | /***** |

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|------|------|------|----------|--------------|---------|---------|----------------------|-----------------|
| 3569 | 7722 | 303 | CLIST, | 303 | /***** | | | |
| 3570 | 7723 | 304 | | 304 | /***** | | | |
| 3571 | 7724 | 305 | | 305 | /***** | | | |
| 3572 | 7725 | 323 | | 323 | /***** | | | |
| 3573 | 7726 | 324 | | 324 | /***** | | | |
| 3574 | 7727 | 311 | | 311 | /***** | | | |
| 3575 | 7730 | 6377 | 006377, | 6377 | /***** | | | |
| 3576 | 7731 | 611 | OEXIT, | PROG | /***** | | | |
| 3577 | 7732 | 7566 | PNCHARS, | NCHARS | /***** | | | |
| 3578 | 7733 | 6002 | POPTR, | OPTR | /***** | | | |
| 3579 | 7734 | 1066 | OI, | TAD | CHAR | /***** | | |
| 3580 | 7735 | 1256 | | TAD | MMCOM | /***** | | |
| 3581 | 7736 | 7650 | | SNA | CLA | /***** | | |
| 3582 | 7737 | 5746 | | JMP | I | PSETCLK | /***** | O I, EXPRESSION |
| 3583 | 7740 | 2745 | | ISZ | I | PCLKFLG | /***** | |
| 3584 | 7741 | 1745 | | TAD | I | PCLKFLG | /***** | |
| 3585 | 7742 | 7640 | | SEZ | CLA | /***** | | |
| 3586 | 7743 | 4257 | | JMS | | WAIT | /***** | |
| 3587 | 7744 | 5731 | | JMP | I | OEXIT | /***** | |
| 3588 | 7745 | 2661 | PCLKFLG, | CLKFLG | /***** | | | |
| 3589 | 7746 | 5351 | PSETCLK, | SETCLK | /***** | | | |
| 3590 | | 7750 | *7750 | | /***** | | | |
| 3591 | 7750 | 0000 | STEMP, | 0 | /***** | | | |
| 3592 | 7751 | 0000 | STEMP2, | 0 | /***** | | | |
| 3593 | 7752 | 4575 | OC, | JMS | I | PCLEAR | /***** | |
| 3594 | 7753 | 3732 | OE, | DCA | I | PNCHARS | /***** | |
| 3595 | 7754 | 1330 | | TAD | | 006377 | /***** | |
| 3596 | 7755 | 3733 | | DCA | I | POPTR | /***** | |
| 3597 | 7756 | 3777 | | DCA | I | PNFEEDS | /***** | |
| 3598 | 7757 | 3776 | | DCA | I | PNCOLS | /***** | |
| 3599 | 7760 | 5731 | | JMP | I | OEXIT | /***** | |
| 3600 | 7761 | 7000 | OD, | NOP | /***** | | | |
| 3601 | 7762 | 4257 | | JMS | | WAIT | /***** | |
| 3602 | 7763 | 6002 | OS, | IOF | /***** | | | |
| 3603 | 7764 | 6141 | | | 6141 | /LINC | /***** | |
| 3604 | 7765 | 0004 | | | 0004 | /ESF | /***** | |
| 3605 | 7766 | 0002 | | | 0002 | /PDP | /***** | |
| 3606 | 7767 | 6001 | | ION | /***** | | | |
| 3607 | 7770 | 1375 | | TAD | PSCOPOU | /***** | SET OUTDEV TO SCOPOU | |
| 3608 | 7771 | 1374 | OT, | TAD | PXOUTL | /***** | SET OUTDEV TO XOUTL | |
| 3609 | 7772 | 3063 | | DCA | OUTDEV | /***** | | |
| 3610 | 7773 | 5731 | | JMP | I | OEXIT | /***** | |
| 3611 | 7774 | 2676 | PXOUTL, | XOUTL | /***** | | | |
| 3612 | 7775 | 4632 | PSCOPOU, | SCOPOU=XOUTL | /***** | | | |
| 3613 | 7776 | 7564 | PNCOLS, | NCOLS | /***** | | | |
| 3614 | 7777 | 7565 | PNFEEDS, | NFEEDS | /***** | | | |
| 3615 | | 0001 | FIELD | 1 | /***** | | | |

4000
4100
4200
4300
4400
4500

4600 00000000 00000000 11111111 11111111 11111111 11111111 11111111 11111111
4700 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111110

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7700 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11111111

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|------|------|------|--|--------------------------|
| 3616 | | 001 | *1 | /***** |
| 3617 | 0001 | 000 | XQ, | /***** |
| 3618 | 0002 | 400 | O256, 400 | /(REFERENCED AS LOC 2) |
| 3619 | 0003 | 200 | O200, 200 | /(REFERENCED AS LOC 3) |
| 3620 | 0004 | 125 | O85, 125 | /(REFERENCED AS LOC 4) |
| 3621 | 0005 | 000 | GAMMA, 0 | /***** |
| 3622 | 0006 | 000 | CHRCNT, 0 | /***** |
| 3623 | 0007 | 360 | O360, 360 | /***** |
| 3624 | | 0010 | *10 | /***** |
| 3625 | 0010 | 000 | XR1, 0 | /***** |
| 3626 | 0011 | 000 | BLK2, 0 | /UNIT |
| 3627 | 0012 | 000 | 0 | /ADDRESS |
| 3628 | 0013 | 000 | 0 | /BLOCK NUMBER |
| 3629 | 0014 | 001 | 1 | /NUMBER OF BLOCKS |
| 3630 | 0015 | 760 | O760, 760 | /***** |
| 3631 | 0016 | 000 | ALPHA, 0 | /***** |
| 3632 | 0017 | 000 | BETA, 0 | /***** |
| 3633 | | 0020 | *20 | /***** |
| 3634 | | | / | |
| 3635 | | | /ENTERED WITH NO. CHARS IN ACJ REFRESH | |
| 3636 | | | /FOR CHARS AND POINTS | |
| 3637 | | | / | |
| 3638 | 0020 | 000 | WAITER, 0 | /***** |
| 3639 | 0021 | 7450 | SNÄ | /***** |
| 3640 | 0022 | 5061 | JMP NOASCII | /***** |
| 3641 | 0023 | 7040 | CMÄ | /***** |
| 3642 | 0024 | 3006 | DCÄ CHRCNT | /***** |
| 3643 | 0025 | 1076 | TÄD O4377 | /***** |
| 3644 | 0026 | 3005 | DCÄ GAMMA | /***** |
| 3645 | 0027 | 1007 | TÄD O360 | /***** |
| 3646 | 0030 | 3077 | DCÄ Y | /***** |
| 3647 | 0031 | 3001 | DCÄ XQ | /***** |
| 3648 | 0032 | 6141 | LINC | /***** |
| 3649 | | | LMODE | |
| 3650 | 0033 | 1325 | CHRLUP; LDH I GAMMA | /***** |
| 3651 | 0034 | 1450 | AZE | /***** |
| 3652 | 0035 | 6045 | JMP GOODY | /***** |
| 3653 | 0036 | 2077 | ADD Y | /***** |
| 3654 | 0037 | 2015 | ADD O760 | /***** |
| 3655 | 0040 | 1560 | BCL I | /***** |
| 3656 | 0041 | 7000 | 7000 | /***** |
| 3657 | 0042 | 4077 | STC Y | /***** |
| 3658 | 0043 | 4001 | STC XQ | /***** |
| 3659 | 0044 | 6056 | JMP CHREND | /***** |
| 3660 | 0045 | 241 | GOODY; ROL 1 | /***** |
| 3661 | 0046 | 2003 | ADD O200 | /***** |
| 3662 | 0047 | 4016 | STC ALPHA | /***** |
| 3663 | 0050 | 2077 | ADD Y | /***** |
| 3664 | 0051 | 1756 | DSC ALPHA | /***** |
| 3665 | 0052 | 1776 | DSC I ALPHA | /***** |
| 3666 | 0053 | 221 | XSK I XQ | /***** |
| 3667 | 0054 | 221 | XSK I XQ | /***** |
| 3668 | 0055 | 011 | CLR | /***** |
| 3669 | 0056 | 226 | CHREND; XSK I CHRCNT | /***** |
| 3670 | 0057 | 6033 | JMP CHRLUP | /***** ONE TIME PER CHAR |

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|------|------|------|--------------------|--------|-----------------|
| 3671 | 0060 | 467 | SKP | /***** | |
| 3672 | 0061 | 6141 | NOASCII, LINC | /***** | |
| 3673 | 0062 | 077 | SET I BETA | /***** | |
| 3674 | 0063 | 2200 | 2200 | /***** | |
| 3675 | 0064 | 645 | LDF 5 | /***** | |
| 3676 | 0065 | 6102 | JMP SUBR | /***** | |
| 3677 | 0066 | 077 | SET I BETA | /***** | |
| 3678 | 0067 | 2000 | 2000 | /***** | |
| 3679 | 0070 | 0646 | LDF 6 | /***** | |
| 3680 | 0071 | 6102 | JMP SUBR | /***** | |
| 3681 | 0072 | 0002 | WEXIT, PDP | /***** | |
| 3682 | | | PNODE | | |
| 3683 | 0073 | 6203 | 6203 /CIF CDF 0 | /***** | |
| 3684 | 0074 | 7200 | CLA | /***** | |
| 3685 | 0075 | 5420 | JMP I WAITER | /***** | |
| 3686 | 0076 | 4377 | 04377, 4377 | /***** | |
| 3687 | 0077 | 0000 | Y, 0 | /***** | |
| 3688 | 0100 | 171 | PSUBS, SUBS | /***** | |
| 3689 | 0101 | 0173 | PLESUBS, LESUBS | /***** | |
| 3690 | | | LNODE | /***** | |
| 3691 | 0102 | 0056 | SUBR, SET ALPHA | /***** | DISPLAYS POINTS |
| 3692 | 0103 | 0000 | 0000 | /***** | |
| 3693 | 0104 | 0415 | KST | /***** | |
| 3694 | 0105 | 0467 | SKP | /***** | |
| 3695 | 0106 | 6072 | JMP WEXIT | /***** | |
| 3696 | 0107 | 0500 | IOB | /***** | |
| 3697 | 0110 | 6041 | TSF | /***** | |
| 3698 | 0111 | 0467 | SKP | /***** | |
| 3699 | 0112 | 6072 | JMP WEXIT | /***** | |
| 3700 | 0113 | 1017 | LDA BETA | /***** | |
| 3701 | 0114 | 0467 | SKP | /***** | |
| 3702 | 0115 | 1037 | WAITLP, LDA I BETA | /***** | |
| 3703 | 0116 | 0451 | AP0 | /***** | |
| 3704 | 0117 | 6072 | JMP WEXIT | /***** | |
| 3705 | 0120 | 4005 | STC GAMMA | /***** | |
| 3706 | 0121 | 1037 | LDA I BETA | /***** | |
| 3707 | 0122 | 0145 | DIS GAMMA | /***** | |
| 3708 | 0123 | 0217 | XSK BETA | /***** | |
| 3709 | 0124 | 6115 | JMP WAITLP | /***** | |
| 3710 | 0125 | 6016 | JMP ALPHA | /***** | |
| 3711 | | | PNODE | /***** | |
| 3712 | 0126 | 5527 | XLO, JMP I ,+1 | /***** | |
| 3713 | 0127 | 1431 | LOPEN | /***** | |
| 3714 | 0130 | 5531 | XLG, JMP I ,+1 | /***** | |
| 3715 | 0131 | 1520 | LCLOSE | /***** | |
| 3716 | 0132 | 5533 | XLL, JMP I ,+1 | /***** | |
| 3717 | 0133 | 1203 | LLOAD | /***** | |
| 3718 | 0134 | 5535 | XLS, JMP I ,+1 | /***** | |
| 3719 | 0135 | 1233 | LSAVE | /***** | |
| 3720 | 0136 | 5537 | XLG, JMP I ,+1 | /***** | |
| 3721 | 0137 | 1202 | LCHAIN | /***** | |
| 3722 | 0140 | 7774 | X7774, 7774 | | |
| 3723 | 0141 | 7775 | X7775, 7775 | | |
| 3724 | 0142 | 1171 | PLNUM, LNUM | | |
| 3725 | 0143 | 1000 | PGETRHS, GETRHS | | |

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|------|------|------|------------------|
| 3726 | 0144 | 1160 | PLOMILD, LOMILD |
| 3727 | 0145 | 1177 | P5LNAM, LNAME*5 |
| 3728 | 0146 | 1230 | P6LNAM, LNAME*6 |
| 3729 | 0147 | 0000 | CHFLAG, 0 |
| 3730 | 0150 | 0000 | HISS, 0 |
| 3731 | 0151 | 0000 | LOSS, 0 |
| 3732 | 0152 | 2135 | PFILTAB, FILTAB |
| 3733 | 0153 | 1342 | PLOOKUP, LUKUP |
| 3734 | 0154 | 1600 | PCOMMON, COMMON |
| 3735 | 0155 | 1361 | PREPLAC, REPLACE |
| 3736 | 0156 | 0000 | MYTE*P, 0 |
| 3737 | 0157 | 0000 | MYTMP2, 0 |
| 3738 | 0160 | 2076 | PFINISH, FINISH |
| 3739 | 0161 | 0000 | SWITCH, 0 |
| 3740 | 0162 | 0000 | SWTMP, 0 |
| 3741 | 0163 | 2124 | PB1FLG, B1FLG=1 |
| 3742 | 0164 | 0000 | MYAC1, 0 |
| 3743 | 0165 | 0000 | MYAC2, 0 |
| 3744 | 0166 | 0000 | MYAC3, 0 |
| 3745 | 0167 | 0044 | P1FLAC, FLAC |
| 3746 | 0170 | 0045 | P2FLAC, FLAC+1 |
| 3747 | 0171 | 0046 | P3FLAC, FLAC+2 |
| 3748 | 0172 | 7764 | 07764, 7764 |
| 3749 | 0173 | 6000 | 06000, 6000 |
| 3750 | 0174 | 7420 | 07420, 7420 |
| 3751 | 0177 | 0177 | *177 |
| 3752 | 0177 | 6203 | FERROR, 6203 |
| 3753 | 0200 | 5601 | JMP I ,+1 |
| 3754 | 0201 | 5774 | FSSERR |
| 3755 | 0202 | 0202 | *202 |
| 3756 | 0200 | 0200 | CHARTAB=,=2 |
| 3757 | 0202 | 4477 | 4477,7744 |
| | 0203 | 7744 | |
| 3758 | 0204 | 5177 | 5177,2651 |
| | 0205 | 2651 | |
| 3759 | 0206 | 4136 | 4136,2241 |
| | 0207 | 2241 | |
| 3760 | 0210 | 4177 | 4177,3641 |
| | 0211 | 3641 | |
| 3761 | 0212 | 4577 | 4577,4145 |
| | 0213 | 4145 | |
| 3762 | 0214 | 4477 | 4477,4044 |
| | 0215 | 4044 | |
| 3763 | 0216 | 4136 | 4136,2645 |
| | 0217 | 2645 | |
| 3764 | 0220 | 1077 | 1077,7710 |
| | 0221 | 7710 | |
| 3765 | 0222 | 7741 | 7741,0041 |
| | 0223 | 0041 | |
| 3766 | 0224 | 4142 | 4142,4076 |
| | 0225 | 4076 | |
| 3767 | 0226 | 1077 | 1077,4324 |
| | 0227 | 4324 | |
| 3768 | 0230 | 0177 | 0177,0301 |
| | 0231 | 0301 | |

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|------|------|------|-----------|
| 3769 | 0232 | 3077 | 307717730 |
| | 0233 | 7732 | |
| 3770 | 0234 | 3077 | 307717706 |
| | 0235 | 7706 | |
| 3771 | 0236 | 4177 | 417717741 |
| | 0237 | 7741 | |
| 3772 | 0240 | 4477 | 447713044 |
| | 0241 | 3044 | |
| 3773 | 0242 | 4276 | 427610376 |
| | 0243 | 1376 | |
| 3774 | 0244 | 4477 | 447713146 |
| | 0245 | 3146 | |
| 3775 | 0246 | 5121 | 512114651 |
| | 0247 | 4651 | |
| 3776 | 0250 | 4040 | 404014077 |
| | 0251 | 4077 | |
| 3777 | 0252 | 0177 | 017717701 |
| | 0253 | 7701 | |
| 3778 | 0254 | 0176 | 017617402 |
| | 0255 | 7402 | |
| 3779 | 0256 | 0677 | 067717701 |
| | 0257 | 7701 | |
| 3780 | 0260 | 1463 | 146316314 |
| | 0261 | 6314 | |
| 3781 | 0262 | 0770 | 077017007 |
| | 0263 | 7007 | |
| 3782 | 0264 | 4543 | 454316151 |
| | 0265 | 6151 | |
| 3783 | 0266 | 4177 | 417710000 |
| | 0267 | 0000 | |
| 3784 | 0270 | 1020 | 102010204 |
| | 0271 | 0204 | |
| 3785 | 0272 | 0000 | 000017741 |
| | 0273 | 7741 | |
| 3786 | 0274 | 2000 | 200012076 |
| | 0275 | 2076 | |
| 3787 | 0276 | 1604 | 160410404 |
| | 0277 | 0404 | |
| 3788 | 0300 | 0000 | 000010000 |
| | 0301 | 1000 | |
| 3789 | 0302 | 7500 | 750010000 |
| | 0303 | 0000 | |
| 3790 | 0304 | 7000 | 700010070 |
| | 0305 | 0070 | |
| 3791 | 0306 | 7624 | 762412476 |
| | 0307 | 2476 | |
| 3792 | 0310 | 5721 | 572114671 |
| | 0311 | 4671 | |
| 3793 | 0312 | 6661 | 666114333 |
| | 0313 | 4333 | |
| 3794 | 0314 | 5166 | 516610526 |
| | 0315 | 1526 | |
| 3795 | 0316 | 7000 | 700010000 |
| | 0317 | 0000 | |
| 3796 | 0320 | 3600 | 360010041 |

| | | | |
|------|------|------|-----------|
| 3797 | 0321 | 041 | |
| | 0322 | 4100 | 4100;0036 |
| | 0323 | 036 | |
| 3798 | 0324 | 2050 | 2050;0050 |
| | 0325 | 050 | |
| 3799 | 0326 | 404 | 0404;0437 |
| | 0327 | 437 | |
| 3800 | 0330 | 0500 | 0500;0006 |
| | 0331 | 006 | |
| 3801 | 0332 | 404 | 0404;0404 |
| | 0333 | 404 | |
| 3802 | 0334 | 0001 | 0001;0000 |
| | 0335 | 000 | |
| 3803 | 0336 | 0601 | 0601;4030 |
| | 0337 | 4030 | |
| 3804 | 0340 | 4536 | 4536;3651 |
| | 0341 | 3651 | |
| 3805 | 0342 | 2101 | 2101;0177 |
| | 0343 | 0177 | |
| 3806 | 0344 | 4523 | 4523;2151 |
| | 0345 | 2151 | |
| 3807 | 0346 | 4122 | 4122;2651 |
| | 0347 | 2651 | |
| 3808 | 0350 | 2414 | 2414;0477 |
| | 0351 | 0477 | |
| 3809 | 0352 | 5172 | 5172;0651 |
| | 0353 | 0651 | |
| 3810 | 0354 | 1506 | 1506;4225 |
| | 0355 | 4225 | |
| 3811 | 0356 | 4443 | 4443;6050 |
| | 0357 | 6050 | |
| 3812 | 0360 | 5126 | 5126;2651 |
| | 0361 | 2651 | |
| 3813 | 0362 | 5122 | 5122;3651 |
| | 0363 | 3651 | |
| 3814 | 0364 | 2200 | 2200;0000 |
| | 0365 | 0000 | |
| 3815 | 0366 | 4601 | 4601;0000 |
| | 0367 | 0000 | |
| 3816 | 0370 | 1000 | 1000;4224 |
| | 0371 | 4224 | |
| 3817 | 0372 | 1212 | 1212;1212 |
| | 0373 | 1212 | |
| 3818 | 0374 | 2442 | 2442;0010 |
| | 0375 | 0010 | |
| 3819 | 0376 | 4020 | 4020;2055 |
| | 0377 | 2055 | |

| | | | |
|------|------|------|--|
| 3820 | | | |
| 3821 | 1000 | | |
| 3822 | | | |
| 3823 | | | |
| 3824 | | | |
| 3825 | | | |
| 3826 | | | |
| 3827 | 1000 | 0000 | |

/4000-777 ARE CHARACTER DISPLAY AREA
 *1000
 /
 /GET RIGHT HAND SIDE - USED IN
 /PROCESSING OF COMMANDS (LIBR) WHICH NEED
 /A FILE NAME; EXPECTS THE FORM FILE, UNIT
 /
 GETRMS; 0

| | | | | |
|------|------|------|-------------------------------------|---------|
| 3828 | 1031 | 3675 | DCA I | PLEFLAG |
| 3829 | 1022 | 1322 | TAD | PLNAME |
| 3830 | 1003 | 3011 | DCA | BLK2 |
| 3831 | 1004 | 1326 | TAD | 07770 |
| 3832 | 1005 | 3012 | DCA | BLK2+1 |
| 3833 | 1006 | 1324 | PLL1, TAD | 077 |
| 3834 | 1027 | 3411 | DCA I | BLK2 |
| 3835 | 1010 | 2012 | ISE | BLK2+1 |
| 3836 | 1011 | 5206 | JMP | PLL1 |
| 3837 | 1012 | 1322 | TAD | PLNAME |
| 3838 | 1013 | 3011 | DCA | BLK2 |
| 3839 | 1014 | 1326 | TAD | 07770 |
| 3840 | 1015 | 3012 | DCA | BLK2+1 |
| 3841 | 1016 | 4333 | PLL2, JMS | CGET |
| 3842 | 1017 | 5236 | JMP | IGOTIT |
| 3843 | 1020 | 5330 | JMP | RHSERR |
| 3844 | 1021 | 1324 | AND | 077 |
| 3845 | 1022 | 1277 | TAD | M43 |
| 3846 | 1023 | 7450 | SNA | |
| 3847 | 1024 | 5261 | JMP | NUMSGN |
| 3848 | 1025 | 1300 | TAD | PP43 |
| 3849 | 1026 | 3411 | DCA I | BLK2 |
| 3850 | 1027 | 2012 | ISE | BLK2+1 |
| 3851 | 1030 | 5216 | JMP | PLL2 |
| 3852 | 1031 | 4333 | JMS | CGET |
| 3853 | 1032 | 5236 | JMP | IGOTIT |
| 3854 | 1033 | 5330 | JMP | RHSERR |
| 3855 | 1034 | 7200 | CLA | |
| 3856 | 1035 | 5231 | JMP | =4 |
| 3857 | 1036 | 1322 | IGOTIT, TAD | PLNAME |
| 3858 | 1037 | 3011 | DCA | BLK2 |
| 3859 | 1040 | 1327 | TAD | 07774 |
| 3860 | 1041 | 3012 | DCA | BLK2+1 |
| 3861 | 1042 | 1322 | TAD | PLNAME |
| 3862 | 1043 | 3013 | DCA | BLK2+2 |
| 3863 | 1044 | 1411 | PLL3, TAD I | BLK2 |
| 3864 | 1045 | 7106 | CLL | RTL |
| 3865 | 1046 | 7006 | RTL | |
| 3866 | 1047 | 7006 | RTL | |
| 3867 | 1050 | 1411 | TAD I | BLK2 |
| 3868 | 1051 | 3413 | DCA I | BLK2+2 |
| 3869 | 1052 | 2012 | ISE | BLK2+1 |
| 3870 | 1053 | 5244 | JMP | PLL3 |
| 3871 | 1054 | 7326 | CLA CLL | CML RTL |
| 3872 | 1055 | 3376 | DCA | LNAME+4 |
| 3873 | 1056 | 4301 | MORNUM, JMS | OCTNUM |
| 3874 | 1057 | 5000 | JMP I | GETRHS |
| 3875 | 1060 | 5330 | JMP | RHSERR |
| 3876 | | | / | |
| 3877 | | | /SCAN OFF THE NUMBER = SET THE FLAG | |
| 3878 | | | /WHICH SAYS IT WAS A NUMBER | |
| 3879 | | | / | |
| 3880 | 1061 | 1012 | NUMSGN, TAD | BLK2+1 |
| 3881 | 1062 | 1323 | TAD | 010 |
| 3882 | 1063 | 7650 | SNA CLA | |

| | | | | |
|------|------|------|------------------------------|------------------------------------|
| 3883 | 1064 | 4301 | JMS | OCTNUM |
| 3884 | 1065 | 5330 | JMP | RHSERR |
| 3885 | 1066 | 1371 | TAD | LNUM |
| 3886 | 1067 | 3545 | DCA I | P5LNAM |
| 3887 | 1070 | 1276 | TAD | FLAGJ |
| 3888 | 1071 | 3675 | DCA I | PLEFLAG |
| 3889 | 1072 | 7240 | CLA CMA | |
| 3890 | 1073 | 3546 | DCA I | P6LNAM |
| 3891 | 1074 | 5256 | JMP | MORNUM |
| 3892 | 1075 | 1462 | PLEFLAG, LEFLAG | |
| 3893 | 1076 | 5265 | FLAGJ, LEFLAG+3&177+5200 | |
| 3894 | 1077 | 7735 | M43, =43 | |
| 3895 | 1100 | 0043 | PP43, 43 | |
| 3896 | 1101 | 0000 | OCTNUM, 0 | |
| 3897 | | | / | |
| 3898 | | | /SUBR TO GEN AN OCTAL NUMBER | |
| 3899 | | | / | |
| 3900 | 1102 | 3371 | PLLP4, DCA | LNUM |
| 3901 | 1103 | 4333 | JMS | CGET |
| 3902 | 1104 | 2301 | ISE | OCTNUM |
| 3903 | 1105 | 5701 | JMP I | OCTNUM |
| 3904 | 1106 | 1324 | AND | 077 |
| 3905 | 1107 | 1325 | TAD | 07710 |
| 3906 | 1110 | 7100 | CLL | |
| 3907 | 1111 | 1323 | TAD | 010 |
| 3908 | 1112 | 3333 | DCA | CGET |
| 3909 | 1113 | 7420 | SNL | |
| 3910 | 1114 | 5330 | JMP | RHSERR |
| 3911 | 1115 | 1371 | TAD | LNUM |
| 3912 | 1116 | 7106 | CLL RTL | |
| 3913 | 1117 | 7104 | CLL RAL | |
| 3914 | 1120 | 1333 | TAD | CGET |
| 3915 | 1121 | 5302 | JMP | PLLP4 |
| 3916 | 1122 | 1171 | PLNAME, LNAME=1 | |
| 3917 | 1123 | 0010 | 010, 10 | |
| 3918 | 1124 | 0077 | 077, 77 | |
| 3919 | 1125 | 7710 | 07710, 7710 | |
| 3920 | 1126 | 7770 | 07770, 7770 | |
| 3921 | 1127 | 7774 | 07774, 7774 | |
| 3922 | 1130 | 6203 | RHSERR, 6203 | /RIGHT HAND SIDE ERROR |
| 3923 | 1131 | 5732 | JMP I | ,+1 |
| 3924 | 1132 | 6357 | LERR | |
| 3925 | 1133 | 0000 | CGET, 0 | /INTERFACE WITH FIELD ZERO |
| 3926 | 1134 | 6203 | 6203 | / JMS CGET |
| 3927 | 1135 | 5736 | JMP I | ,+1 / JMP <COMMA> |
| 3928 | 1136 | 2564 | CGETX | / JMP <CARRET OR SEMICOLON> |
| 3929 | 1137 | 1354 | CGETRET, TAD | 07524 / JMP <OTHER(CHAR IS IN AC)> |
| 3930 | 1140 | 7450 | SNA | |
| 3931 | 1141 | 5733 | JMP I | CGET |
| 3932 | 1142 | 2333 | ISE | CGET |
| 3933 | 1143 | 1355 | TAD | 07761 |
| 3934 | 1144 | 7450 | SNA | |
| 3935 | 1145 | 5733 | JMP I | CGET |
| 3936 | 1146 | 1356 | TAD | 056 |
| 3937 | 1147 | 7450 | SNA | |

| | | | | |
|------|------|------|---------------|-------------------|
| 3938 | 1150 | 5733 | JMP I | CGET |
| 3939 | 1151 | 1357 | TAD | 0215 |
| 3940 | 1152 | 2333 | ISE | CGET |
| 3941 | 1153 | 5733 | JMP I | CGET |
| 3942 | 1154 | 7524 | 07524, | 7524 |
| 3943 | 1155 | 7761 | 07761, | 7761 |
| 3944 | 1156 | 0056 | 056, | 56 |
| 3945 | 1157 | 0215 | 0215, | 215 |
| 3946 | | | / | |
| 3947 | | | /BRINGS | MILDRED INTO CORE |
| 3948 | | | / | |
| 3949 | 1160 | 0000 | LDMILD; | 0 |
| 3950 | 1161 | 6002 | IOF | |
| 3951 | 1162 | 4540 | JMS I | X7774 |
| 3952 | 1163 | 1165 | MLOBLK | |
| 3953 | 1164 | 5760 | JMP I | LDMILD |
| 3954 | 1165 | 0110 | MLOBLK; | 110 |
| 3955 | 1166 | 0030 | | 30 |
| 3956 | 1167 | 0076 | | 76 |
| 3957 | 1170 | 0002 | | 2 |
| 3958 | | 1171 | *1171 | |
| 3959 | 1171 | 0000 | LNUM, | 0 |
| 3960 | 1172 | 0000 | LNAME, | 01010101010 |
| | 1173 | 0000 | | |
| | 1174 | 0000 | | |
| | 1175 | 0000 | | |
| | 1176 | 0000 | | |
| | 1177 | 0000 | | |
| 3961 | 1200 | 0000 | MVCTR; | 0 |
| 3962 | 1201 | 0000 | MVPTR; | 0 |
| 3963 | 1202 | 7240 | LCHAIN; | CLÄ CMA |
| 3964 | | | / | |
| 3965 | | | /LIBRARY LOAD | |
| 3966 | | | / | |
| 3967 | 1203 | 3147 | LLOAD; | DCÄ CHFLAG |
| 3968 | 1204 | 4543 | JMS I | PGETRHS |
| 3969 | 1205 | 4544 | JMS I | PLOMILD |
| 3970 | 1206 | 4342 | JMS | LUKUP |
| 3971 | 1207 | 1546 | TAD I | PÖLNAM |
| 3972 | 1210 | 7241 | CIÄ | |
| 3973 | 1211 | 1327 | TAD | LLENGTH |
| 3974 | 1212 | 7640 | SEÄ | CLÄ |
| 3975 | 1213 | 5356 | JMP | FILERR*2 |
| 3976 | 1214 | 1542 | TAD I | PLNUM |
| 3977 | 1215 | 3324 | DCÄ | LSBLK |
| 3978 | 1216 | 1545 | TAD I | PÖLNAM |
| 3979 | 1217 | 3326 | DCÄ | FILSTRY |
| 3980 | 1220 | 4540 | JMS I | X7774 |
| 3981 | 1221 | 1324 | LSBLK | |
| 3982 | 1222 | 7350 | CLÄ | CLL CMA RAR |
| 3983 | 1223 | 3010 | DCÄ | XR1 |
| 3984 | 1224 | 1410 | TAD I | XR1 |
| 3985 | 1225 | 1174 | TAD | 07420 |
| 3986 | 1226 | 7640 | SEÄ | CLÄ |
| 3987 | 1227 | 5356 | JMP | FILERR*2 |

----- (REFERENCED AS A BLOCK)

/FIRST WD MUST BE 0360

3988 1230 1304
 3989 1231 4262
 3990 1232 5254
 3991
 3992
 3993
 3994 1233 3147
 3995 1234 4543
 3996 1235 4544
 3997 1236 1327
 3998 1237 3546
 3999 1240 4361
 4000 1241 1542
 4001 1242 3324
 4002 1243 1545
 4003 1244 3326
 4004 1245 7350
 4005 1246 3010
 4006 1247 1007
 4007 1250 3410
 4008 1251 4262
 4009 1252 4541
 4010 1253 1324
 4011 1254 6203
 4012 1255 6001
 4013 1256 2147
 4014 1257 5722
 4015 1260 5661
 4016 1261 6603
 4017
 4018
 4019
 4020
 4021 1262 0000
 4022 1263 3306
 4023 1264 1330
 4024 1265 3200
 4025 1266 1600
 4026 1267 2200
 4027 1270 7450
 4028 1271 5275
 4029 1272 3201
 4030 1273 4305
 4031 1274 5266
 4032 1275 1323
 4033 1276 3200
 4034 1277 2201
 4035 1300 4305
 4036 1301 2200
 4037 1302 5277
 4038 1323 5662
 4039 1304 5314
 4040 1305 0000
 4041 1306 7402

TAD LOADJ
 JMS MOO
 JMP XGETOUT
 /
 /LIBRARY SAVE
 /
 LSAVE, DCA CHFLAG
 JMS I PGETRHS
 JMS I PLDMILD
 TAD LLENGTH
 DCA I P6LNAM
 JMS REPLACE
 TAD I PLNUM
 DCA LSBLK
 TAD I P5LNAM
 DCA FILSTRT
 CLA CLL CMA RAR
 DCA XR1
 TAD 0300
 DCA I XR1
 JMS MOO
 JMS I X7775
 LSBLK
 XGETOUT, 6203
 ION
 ISZ CHFLAG
 JMP I PSTART
 JMP I ,+1
 GOTO

/THE WORDS ARE READ/WRITTEN FROM LOC 4000
 /OF FLD1; THIS ROUTINE MOVES THEM THERE
 /

MOO, 0
 DCA DEJUMP
 TAD PTBL
 DCA MVCTR
 MOOLUP, TAD I MVCTR
 ISZ MVCTR
 SNA
 JMP MOOEND
 DCA MVPTR
 JMS MOVMOV
 JMP MOOLUP
 MOOEND, TAD MVCNT
 DCA MVCTR
 ISZ MVPTR
 JMS MOVMOV
 ISZ MVCTR
 JMP ,+3
 JMP I MOO
 LOADJ, JMP NOTSAV
 MOVMOV, 0
 DEJUMP, HIT

4043 1310 1601
 4044 1311 6211
 4045 1312 3410
 4046 1313 5705
 4047 1314 6211
 4048 1315 1410
 4049 1316 6201
 4050 1317 3601
 4051 1320 6211
 4052 1321 5705
 4053 1322 1177
 4054 1323 6366
 4055 1324 0000
 4056 1325 0030
 4057 1326 0000
 4058 1327 0004
 4059 1330 1331
 4060 1331 0035
 4061 1332 0410
 4062 1333 0411
 4063 1334 0412
 4064 1335 0060
 4065 1336 0031
 4066 1337 0013
 4067 1340 3206
 4068 1341 0000
 4069
 4070
 4071
 4072 1342 0000
 4073 1343 6141
 4074 1344 0606
 4075 1345 1020
 4076 1346 1171
 4077 1347 6020
 4078 1350 7354
 4079 1351 0002
 4080 1352 7200
 4081 1353 5742
 4082 1354 0002
 4083 1355 7200
 4084 1356 6203
 4085 1357 5760
 4086 1360 2571
 4087
 4088
 4089
 4090 1361 0000
 4091 1362 6141
 4092
 4093 1363 0606
 4094 1364 1020
 4095 1365 1171
 4096 1366 6022
 4097 1367 7372

TAD I MVPTR
 6211
 DCA I XR1
 JMP I MOVMOV
 VOTSAV, 6211
 TAD I XR1
 6201
 DCA I MVPTR
 6211
 JMP I MOVMOV
 PSTART, START
 MVCNT, FRST=FEXP
 LSBLK, 0
 30 /*14000
 FILSTR, 0
 LLENGTH, 4
 PTBL, .+1
 BOTTOM
 PFNEW
 PFX
 PF2
 BUFR
 LASTV
 PDLXR
 FRST
 0
 /USES MILDREDS LOOKUP
 /
 LUKUP, 0
 6141 /LINC
 0606 /LIF 6
 1020 /LDA I
 LNUM
 6020 /JMP 20
 FILERR&1777+6000
 0002 /POP
 CLA
 JMP I LUKUP
 FILERR, 0002 /POP
 CLA
 6203 /CIF CDF 0
 JMP I .+1
 ERRFIL
 /
 /USES MILDREDS REPLACE
 /
 REPLACE, 0
 LINC
 LMODE
 LIF 6
 LOA I
 LNUM
 JMP 22
 JMP SAMEN /ALREADY THERE

| | | | | | |
|------|------|------|-----------------|-------------|-----------------------------------|
| 4098 | 1372 | 7354 | JMP | FILERR | /NOT ENUF ROOM |
| 4099 | 1371 | 7375 | JMP | ENREPL | |
| 4100 | 1372 | 6826 | SAMEN, LIF | 6 | |
| 4101 | 1373 | 6824 | JMP | 24 | |
| 4102 | 1374 | 7354 | JMP | FILERR | /NOT ENUF ROOM; SHOULD NOT HAPPEN |
| 4103 | 1375 | 6802 | ENREPL, POP | | |
| 4104 | | | PMODE | | |
| 4105 | 1376 | 7200 | CLA | | |
| 4106 | 1377 | 5761 | JMP I | REPLACE | |
| 4107 | | 1400 | *1400 | | |
| 4108 | 1400 | 7524 | MINCMA, =254 | | |
| 4109 | 1401 | 7066 | PCHAR, CHAR | | |
| 4110 | 1402 | 3157 | LMAKE, DCA | MYTMP2 | /LIBRARY MAKE |
| 4111 | 1403 | 6201 | | 6201 | |
| 4112 | 1404 | 1601 | TAD I | PCHAR | |
| 4113 | 1405 | 6211 | | 6211 | |
| 4114 | 1406 | 1200 | TAD | MINCMA | |
| 4115 | 1407 | 7640 | SZA CLA | | |
| 4116 | 1410 | 5623 | JMP I | PRHSERR | |
| 4117 | 1411 | 4543 | JMS I | PGETRHS | |
| 4118 | 1412 | 4544 | JMS I | PLDMILD | |
| 4119 | 1413 | 1157 | TAD | MYTMP2 | |
| 4120 | 1414 | 3546 | DCA I | P6LNAM | |
| 4121 | 1415 | 4555 | JMS I | PREPLAC | |
| 4122 | 1416 | 6203 | LXIT, 6203 | | |
| 4123 | 1417 | 6001 | ION | | |
| 4124 | 1420 | 5621 | JMP I | PPROC | |
| 4125 | 1421 | 0611 | PPROC, PROC | | |
| 4126 | 1422 | 1133 | PGETC, CGET | | |
| 4127 | 1423 | 1130 | PRHSERR, RHSERR | | |
| 4128 | 1424 | 7510 | 07510, 7510 | | |
| 4129 | 1425 | 0010 | 0010, 10 | | |
| 4130 | 1426 | 7455 | MCS, =323 | | |
| 4131 | 1427 | 0012 | CSMCI, 323-311 | | |
| 4132 | 1430 | 0003 | CIMCF, 311-306 | | |
| 4133 | | | /FILTAB ENTRY | TYPE | |
| 4134 | | | / | LENGTH | |
| 4135 | | | / | UNIT | |
| 4136 | | | / | FIRST BLOCK | |
| 4137 | | | /WHERE TYPE | 0 | UNDEFINED |
| 4138 | | | / | 1 | UNSIGNED(1 WD) |
| 4139 | | | / | 2 | SIGNED(2 WD) |
| 4140 | | | / | 3 | FLOATING POINT(3 WD) |
| 4141 | 1431 | 4302 | LOPEN, JMS | COMSUB | /LIBRARY OPEN |
| 4142 | 1432 | 4022 | JMS I | PGETC | |
| 4143 | 1433 | 5236 | JMP | ,+3 | |
| 4144 | 1434 | 7000 | NOP | | |
| 4145 | 1435 | 5257 | JMP | ERXIT | |
| 4146 | 1436 | 4306 | JMS | GETCX | |
| 4147 | 1437 | 1226 | TAD | MCS | |
| 4148 | 1440 | 7450 | SNA | | |
| 4149 | 1441 | 5251 | JMP | ITSSS | |
| 4150 | 1442 | 1227 | TAD | CSMCI | |
| 4151 | 1443 | 7450 | SNA | | |
| 4152 | 1444 | 7450 | SNA | | |

| | | | | |
|------|------|------|--|------------------------------------|
| 4153 | 1445 | 1230 | TAD | CIMCF |
| 4154 | 1446 | 7640 | SZA | CLA |
| 4155 | 1447 | 5623 | JMP | I PRHSERR |
| 4156 | 1450 | 7001 | ITSFF, | IAC |
| 4157 | 1451 | 7001 | ITSSS, | IAC |
| 4158 | 1452 | 7001 | ITSII, | IAC |
| 4159 | 1453 | 3157 | DCA | MYTMP2 |
| 4160 | 1454 | 4622 | JMS | I PGETC |
| 4161 | 1455 | 5261 | JMP | ,+4 |
| 4162 | 1456 | 7000 | NOP | |
| 4163 | 1457 | 7200 | ERXIT, | CLA |
| 4164 | 1460 | 5623 | JMP | I PRHSERR |
| 4165 | 1461 | 4543 | JMS | I PGETRHS |
| 4166 | 1462 | 0000 | LEFLAG; | 0 / (OR JMP ,+3 IF GETRHS GOT A #) |
| 4167 | 1463 | 4544 | JMS | I PLOMID |
| 4168 | 1464 | 4553 | JMS | I PLOOKUP |
| 4169 | 1465 | 1157 | TAD | MYTMP2 |
| 4170 | 1466 | 3556 | DCA | I MYTEMP |
| 4171 | 1467 | 2156 | ISZ | MYTEMP |
| 4172 | 1470 | 1546 | TAD | I P6LNAM |
| 4173 | 1471 | 3556 | DCA | I MYTEMP |
| 4174 | 1472 | 2156 | ISZ | MYTEMP |
| 4175 | 1473 | 1542 | TAD | I PLNUM |
| 4176 | 1474 | 3556 | DCA | I MYTEMP |
| 4177 | 1475 | 2156 | ISZ | MYTEMP |
| 4178 | 1476 | 1545 | TAD | I P6LNAM |
| 4179 | 1477 | 3556 | DCA | I MYTEMP |
| 4180 | 1500 | 5216 | JMP | LXIT |
| 4181 | 1501 | 7472 | 07472, | 7472 |
| 4182 | | | / | |
| 4183 | | | /SCANS OFF FN AND LEAVES POINTER IN MYTEMP | |
| 4184 | | | / | |
| 4185 | 1502 | 0000 | COMSUB; | 0 |
| 4186 | 1503 | 4366 | JMS | GETCX |
| 4187 | 1504 | 1301 | TAD | 07472 |
| 4188 | 1505 | 7650 | SNA | CLA /F |
| 4189 | 1506 | 4366 | JMS | GETCX |
| 4190 | 1507 | 1224 | TAD | 07510 |
| 4191 | 1510 | 7100 | CLL | |
| 4192 | 1511 | 1225 | TAD | 0010 |
| 4193 | 1512 | 7420 | SNL | |
| 4194 | 1513 | 5257 | JMP | ERXIT |
| 4195 | 1514 | 7106 | CLL | RTL |
| 4196 | 1515 | 1152 | TAD | PFILTAB |
| 4197 | 1516 | 3156 | DCA | MYTEMP |
| 4198 | 1517 | 5702 | JMP | I COMSUB |
| 4199 | | | / | |
| 4200 | | | /LIBRARY CLOSE | |
| 4201 | | | / | |
| 4202 | 1520 | 4302 | LCLOSE; | JMS COMSUB |
| 4203 | 1521 | 4622 | JMS | I PGETC |
| 4204 | 1522 | 5623 | JMP | I PRHSERR |
| 4205 | 1523 | 7410 | SKP | |
| 4206 | 1524 | 5257 | JMP | ERXIT |
| 4207 | 1525 | 3556 | DCA | I MYTEMP |

| | | | | | |
|------|------|------|---|---------|---------|
| 4208 | 1526 | 6002 | | IOF | |
| 4209 | 1527 | 4560 | | JMS I | PFINISH |
| 4210 | 1530 | 7307 | | CLA CLL | IAC RTL |
| 4211 | 1531 | 4560 | | JMS I | PFINISH |
| 4212 | 1532 | 5216 | | JMP | LXIT |
| 4213 | | | / | | |
| 4214 | | | /FILE VARIABLE LOADER | | |
| 4215 | | | / | | |
| 4216 | 1533 | 0000 | ITLOAD; 0 | | |
| 4217 | 1534 | 4554 | | JMS I | PCOMMON |
| 4218 | | | / | | |
| 4219 | | | /VARIABLE IS NOW IN MEMORY; LOSS | | |
| 4220 | | | /POINT AT IT; ONE OF THE FOLLOWING 3 CHOICES WILL BE TAKEN; ACCORDING | | |
| 4221 | | | /TO TYPE | | |
| 4222 | | | / | | |
| 4223 | 1535 | 5346 | | JMP | IRETLD |
| 4224 | 1536 | 5341 | | JMP | SRETLD |
| 4225 | 1537 | 1551 | FRETLD; TAD I | LOSS | |
| 4226 | 1540 | 2151 | | ISE | LOSS |
| 4227 | 1541 | 3164 | SRETLD; DCA | MYAC1 | |
| 4228 | 1542 | 1551 | | TAD I | LOSS |
| 4229 | 1543 | 3165 | | DCA | MYAC2 |
| 4230 | 1544 | 2151 | | ISE | LOSS |
| 4231 | 1545 | 5354 | | JMP | CRETLD |
| 4232 | 1546 | 1370 | IRETLD; TAD | 027 | |
| 4233 | 1547 | 3164 | | DCA | MYAC1 |
| 4234 | 1550 | 1551 | | TAD I | LOSS |
| 4235 | 1551 | 7710 | | SPA | CLA |
| 4236 | 1552 | 7040 | | CMR | |
| 4237 | 1553 | 3165 | | DCA | MYAC2 |
| 4238 | 1554 | 1551 | CRETLO; TAD I | LOSS | |
| 4239 | 1555 | 3166 | | DCA | MYAC3 |
| 4240 | 1556 | 6203 | | 6203 | |
| 4241 | 1557 | 1164 | | TAD | MYAC1 |
| 4242 | 1560 | 3567 | | DCA I | P1FLAC |
| 4243 | 1561 | 1165 | | TAD | MYAC2 |
| 4244 | 1562 | 3570 | | DCA I | P2FLAC |
| 4245 | 1563 | 1166 | | TAD | MYAC3 |
| 4246 | 1564 | 3571 | | DCA I | P3FLAC |
| 4247 | 1565 | 5733 | | JMP I | ITLOAD |
| 4248 | 1566 | 0000 | GETCX; 0 | | |
| 4249 | 1567 | 4622 | | JMS I | PGETC |
| 4250 | 1570 | 0027 | 027; 27 | | |
| 4251 | 1571 | 5623 | | JMP I | PRHSERR |
| 4252 | 1572 | 5766 | | JMP I | GETCX |
| 4253 | | 1600 | *1600 | | |
| 4254 | | | / | | |
| 4255 | | | /SUBSCRIBING FOR FILE VARIABLES | | |
| 4256 | | | /ENTER WITH FILE NO. IN AC | | |
| 4257 | 1600 | 0000 | COMMON; 0 | | |
| 4258 | 1601 | 0376 | | AND | 07 |
| 4259 | 1602 | 7106 | | CLL | RTL |
| 4260 | 1603 | 1152 | | TAD | PFILTAR |
| 4261 | 1604 | 1156 | | DCA | |

| | | | | | |
|------|------|------|-------------|--------|--|
| 4263 | 1606 | 3150 | DCA | HISS | |
| 4264 | 1607 | 1500 | TAD I | PSURS | /SUBSCRIPTS |
| 4265 | 1610 | 3151 | DCA | LOSS | |
| 4266 | 1611 | 6211 | 6211 | | |
| 4267 | 1612 | 1556 | TAD I | MYTEMP | |
| 4268 | 1613 | 7650 | SNÄ CLA | | |
| 4269 | 1614 | 5177 | JMP | FERROR | |
| 4270 | 1615 | 1556 | TAD I | MYTEMP | |
| 4271 | 1616 | 3011 | DCA | BLK2 | |
| 4272 | 1617 | 1411 | TAD I | BLK2 | /(REFERENCES LOCS 2,3,4) |
| 4273 | 1620 | 3011 | DCA | BLK2 | |
| 4274 | 1621 | 3013 | DCA | BLK2+2 | |
| 4275 | 1622 | 1011 | PREDIV; TAD | BLK2 | /DIVIDES BY NO. ENTRIES/BLOCK |
| 4276 | 1623 | 7141 | CLL CIA | | |
| 4277 | 1624 | 1150 | TAD | HISS | |
| 4278 | 1625 | 7420 | SNL | | |
| 4279 | 1626 | 5232 | JMP | DIVDIV | |
| 4280 | 1627 | 3150 | DCA | HISS | |
| 4281 | 1630 | 2013 | ISZ | BLK2+2 | |
| 4282 | 1631 | 5222 | JMP | PREDIV | |
| 4283 | 1632 | 7200 | DIVDIV; CLA | | |
| 4284 | 1633 | 1172 | TAD | 07764 | |
| 4285 | 1634 | 3012 | DCA | BLK2+1 | /LOW ORDER SUBSCRIPT, THEN POINTER |
| 4286 | 1635 | 1151 | DIVLUP; TAD | LOSS | |
| 4287 | 1636 | 7104 | CLL RAL | | |
| 4288 | 1637 | 3151 | DCA | LOSS | |
| 4289 | 1640 | 1150 | TAD | HISS | |
| 4290 | 1641 | 7004 | RAL | | |
| 4291 | 1642 | 3150 | DCA | HISS | |
| 4292 | 1643 | 1011 | TAD | BLK2 | |
| 4293 | 1644 | 7141 | CLL CIA | | |
| 4294 | 1645 | 1150 | TAD | HISS | |
| 4295 | 1646 | 7430 | SZL | | |
| 4296 | 1647 | 3150 | DCA | HISS | |
| 4297 | 1650 | 7200 | CLA | | |
| 4298 | 1651 | 1013 | TAD | BLK2+2 | |
| 4299 | 1652 | 7004 | RAL | | |
| 4300 | 1653 | 3013 | DCA | BLK2+2 | |
| 4301 | 1654 | 7430 | SZL | | |
| 4302 | 1655 | 5177 | JMP | FERROR | |
| 4303 | 1656 | 2012 | ISZ | BLK2+1 | |
| 4304 | 1657 | 5235 | JMP | DIVLUP | |
| 4305 | 1660 | 1556 | TAD I | MYTEMP | |
| 4306 | 1661 | 2156 | ISZ | MYTEMP | |
| 4307 | 1662 | 7041 | CIA | | |
| 4308 | 1663 | 3012 | DCA | BLK2+1 | |
| 4309 | 1664 | 7410 | SKP | | |
| 4310 | 1665 | 2200 | ISZ | COMMON | /SETS UP COMMON XIT ACCORDING TO FILE TYPE |
| 4311 | 1666 | 1150 | TAD | HISS | |
| 4312 | 1667 | 2012 | ISZ | BLK2+1 | /TBLK (RELATIVE) IS IN BLK2+2 |
| 4313 | 1670 | 5265 | JMP | =3 | |
| 4314 | 1671 | 3151 | DCA | LOSS | |
| 4315 | 1672 | 1013 | TAD | BLK2+2 | |
| 4316 | 1673 | 7140 | CLL CMA | | |
| 4317 | 1674 | 1556 | TAD I | MYTEMP | /(THE LENGTH) |

| | | | |
|------|------|------|---------------------------------------|
| 4318 | 1675 | 762A | SN CLA /SUBSCRIPT IS TOO LONG |
| 4319 | 1676 | 5177 | JMP FERROR |
| 4320 | 1677 | 2156 | ISZ MYTEMP |
| 4321 | 1700 | 1556 | TAD I MYTEMP |
| 4322 | 1701 | 3011 | DCA BLK2 |
| 4323 | 1702 | 2156 | ISZ MYTEMP |
| 4324 | 1703 | 1556 | TAD I MYTEMP /STARTING TBLK |
| 4325 | 1704 | 1013 | TAD BLK2*2 |
| 4326 | 1705 | 3013 | DCA BLK2*2 /ABSOLUTE TBLK |
| 4327 | 1706 | 4351 | JMS CHECK |
| 4328 | 1707 | 7307 | CLA CLL IAC RTL |
| 4329 | 1710 | 4351 | JMS CHECK |
| 4330 | 1711 | 1161 | TAD SWITCH /ALTERNATE THE BUFFERS |
| 4331 | 1712 | 7650 | SN CLA |
| 4332 | 1713 | 7307 | CLA CLL IAC RTL |
| 4333 | 1714 | 3161 | DCA SWITCH |
| 4334 | 1715 | 6002 | IOP |
| 4335 | 1716 | 1161 | TAD SWITCH |
| 4336 | 1717 | 4560 | JMS I PFINISH |
| 4337 | 1720 | 1161 | TAD SWITCH |
| 4338 | 1721 | 1163 | TAD PB1FLG |
| 4339 | 1722 | 3010 | DCA XR1 |
| 4340 | 1723 | 7201 | CLA IAC |
| 4341 | 1724 | 3410 | DCA I XR1 |
| 4342 | 1725 | 1011 | TAD BLK2 |
| 4343 | 1726 | 3410 | DCA I XR1 |
| 4344 | 1727 | 1410 | TAD I XR1 |
| 4345 | 1730 | 3012 | DCA BLK2*1 |
| 4346 | 1731 | 1013 | TAD BLK2*2 |
| 4347 | 1732 | 3410 | DCA I XR1 |
| 4348 | 1733 | 4540 | JMS I X7774 /READ IT IN |
| 4349 | 1734 | 0011 | BLK2 |
| 4350 | 1735 | 1161 | TAD SWITCH /THE VARIABLE IS IN MEMORY |
| 4351 | 1736 | 7106 | ITSAGO: CLL RTL |
| 4352 | 1737 | 7006 | RTL |
| 4353 | 1740 | 7006 | RTL |
| 4354 | 1741 | 1173 | TAD 06000 |
| 4355 | 1742 | 1151 | TAD LOSS |
| 4356 | 1743 | 3151 | DCA LOSS |
| 4357 | 1744 | 7346 | CLA CLL CMA RTL |
| 4358 | 1745 | 1010 | TAD XR1 |
| 4359 | 1746 | 3150 | DCA HISS |
| 4360 | 1747 | 6001 | ION |
| 4361 | 1750 | 5600 | JMP I COMMON |
| 4362 | 1751 | 0000 | CHECK: 0 |
| 4363 | 1752 | 3162 | DCA SWTMP |
| 4364 | 1753 | 1162 | TAD SWTMP |
| 4365 | 1754 | 1163 | TAD PB1FLG |
| 4366 | 1755 | 3010 | DCA XR1 |
| 4367 | 1756 | 1410 | TAD I XR1 |
| 4368 | 1757 | 7650 | SN CLA |
| 4369 | 1760 | 5751 | JMP I CHECK |
| 4370 | 1761 | 1410 | TAD I XR1 |
| 4371 | 1762 | 7041 | CLA |
| 4372 | 1763 | 1011 | TAD BLK2 |

4373 1764 7640
 4374 1765 5751
 4375 1766 2010
 4376 1767 1410
 4377 1770 7041
 4378 1771 1013
 4379 1772 7640
 4380 1773 5751
 4381 1774 1162
 4382 1775 5336
 4383 1776 2007
 4384 2000 2000
 4385
 4386
 4387
 4388 2000 2000
 4389 2001 3010
 4390 2002 1567
 4391 2003 3164
 4392 2004 1570
 4393 2005 3165
 4394 2006 1571
 4395 2007 3166
 4396 2010 1010
 4397 2011 4554
 4398 2012 5266
 4399 2013 5224
 4400 2014 1164
 4401 2015 3551
 4402 2016 2151
 4403 2017 1165
 4404 2020 3551
 4405 2021 2151
 4406 2022 1166
 4407 2023 5271
 4408 2024 1164
 4409 2025 7450
 4410 2026 5244
 4411 2027 7700
 4412 2030 5251
 4413 2031 7100
 4414 2032 1165
 4415 2033 7510
 4416 2034 7020
 4417 2035 7010
 4418 2036 3165
 4419 2037 1166
 4420 2040 7010
 4421 2041 3166
 4422 2042 2164
 4423 2043 5231
 4424 2044 1165
 4425 2045 3551
 4426 2046 2151
 4427 2047 1166

SZĀ CLA

JMP I CHECK

ISZ XR1

TAD I XR1

CIA

TAD BLK2+2

SZĀ CLA

JMP I CHECK

TAD SWTMP

JMP ITSAGO /BLK IS IN MEMORY ALREADY

07, 7

*2000

/FILE VARIABLE STORER

/ITSTOR; 0

DCĀ XR1

TAD I P1FLAC

DCĀ MYAC1

TAD I P2FLAC

DCĀ MYAC2

TAD I P3FLAC

DCĀ MYAC3

TAD XR1

JMS I PCOMMON /BLK IS IN MEMORY! LOSS POINTS AT IT

JMP URETST

JMP SRETST

FRETST; TAD MYAC1

DCĀ I LOSS

ISZ LOSS

TAD MYAC2

DCĀ I LOSS

ISZ LOSS

TAD MYAC3

JMP INCALL

SRETST; TAD MYAC1

SNĀ

JMP STOKOK

SMĀ CLA

NORMLE; JMP STO0BG /MUST BE LESS THAN MAGN. 1

CLL

TAD MYAC2

SPĀ

CML

RAR

DCĀ MYAC2

TAD MYAC3

RAR

DCĀ MYAC3

ISZ MYAC1

JMP NORMLE

STOKOK; TAD MYAC2

DCĀ I LOSS

ISZ LOSS

TAD MYAC3

| | | | | |
|------|------|------|-----------------|--------------|
| 4428 | 2050 | 5271 | STP | INCALL |
| 4429 | 2051 | 1165 | STOORG, TAD | MYAC2 |
| 4430 | 2052 | 7120 | CLL CML | |
| 4431 | 2053 | 7700 | SMA CLA | |
| 4432 | 2054 | 7360 | CMA CML | |
| 4433 | 2055 | 7010 | RAR | |
| 4434 | 2056 | 3551 | DCA I | LOSS |
| 4435 | 2057 | 2151 | ISZ | LOSS |
| 4436 | 2060 | 1165 | TAD | MYAC2 |
| 4437 | 2061 | 7700 | SMA CLA | |
| 4438 | 2062 | 7344 | CLA CLL CMA RAL | |
| 4439 | 2063 | 7001 | IAC | |
| 4440 | 2064 | 3551 | UZERST, DCA I | LOSS |
| 4441 | 2065 | 5272 | JMP | CRETST |
| 4442 | 2066 | 6203 | URETST, 6203 | |
| 4443 | 2067 | 5670 | JMP I | .+1 |
| 4444 | 2070 | 7576 | CALLIN | |
| 4445 | 2071 | 3551 | INCALL, DCA I | LOSS |
| 4446 | 2072 | 7240 | CRETST, CLA CMA | |
| 4447 | 2073 | 3550 | DCA I | HISS |
| 4448 | 2074 | 6203 | 6203 | |
| 4449 | 2075 | 5620 | JMP I | ITSTOR |
| 4450 | 2076 | 7030 | FINISH, 0 | |
| 4451 | 2077 | 1163 | TAD | PB1FLG |
| 4452 | 2100 | 3010 | DCA | XR1 |
| 4453 | 2101 | 1410 | TAD I | XR1 |
| 4454 | 2102 | 7700 | SMA CLA | |
| 4455 | 2103 | 5676 | JMP I | FINISH |
| 4456 | 2104 | 1010 | TAD | XR1 |
| 4457 | 2105 | 3321 | DCA | BLOCK |
| 4458 | 2106 | 7201 | CLA IAC | |
| 4459 | 2107 | 3721 | DCA I | BLOCK |
| 4460 | 2110 | 1410 | TAD I | XR1 |
| 4461 | 2111 | 3321 | DCA | BLOCK |
| 4462 | 2112 | 1410 | TAD I | XR1 |
| 4463 | 2113 | 3322 | DCA | BLOCK+1 |
| 4464 | 2114 | 1410 | TAD I | XR1 |
| 4465 | 2115 | 3323 | DCA | BLOCK+2 |
| 4466 | 2116 | 4541 | JMS I | X7775 |
| 4467 | 2117 | 2121 | BLOCK | |
| 4468 | 2120 | 5676 | JMP I | FINISH |
| 4469 | 2121 | 0000 | BLOCK, 0 | /UNIT |
| 4470 | 2122 | 0000 | 0 | /ADDRESS/256 |
| 4471 | 2123 | 0000 | 0 | /BLOCKNUM |
| 4472 | 2124 | 0001 | 1 | /BLOCKCOUNT |

```

/
/BXFLG=0 IF THE BUFFER IS FREE
/
  += IF THE BUFFER IS OCCUPIED
/
  -= IF OCCUPIED AND SOMETHING HAS
/
  CHANGED) IE MUST BE WRITTEN OUT
/BXBLK CONTAINS THE TBLK WHICH IS IN THE BUFFER
/PB1FLG POINTS TO B1FLG; ADDIGNS SWITCH MAKES
/IT POINT AT B2FLG

```

4483 2126 0000
 4484 2127 0034
 4485 2130 0000
 4486 2131 0000
 4487 2132 0000
 4488 2133 0035
 4489 2134 0000
 4490
 4491
 4492
 4493
 4494
 4495
 4496
 4497
 4498 2135 0000
 2136 0000
 2137 0000
 2140 0000
 2141 0000
 2142 0000
 2143 0000
 2144 0000
 4499 2145 0000
 2146 0000
 2147 0000
 2150 0000
 2151 0000
 2152 0000
 2153 0000
 2154 0000
 4500 2155 0000
 2156 0000
 2157 0000
 2160 0000
 2161 0000
 2162 0000
 2163 0000
 2164 0000
 4501 2165 0000
 2166 0000
 2167 0000
 2170 0000
 2171 0000
 2172 0000
 2173 0000
 2174 0000
 4502

B1UNIT; 0
 B1BLK; 0
 B2FLG; 0
 B2UNIT; 0
 B2BLK; 0
 /
 /FILE DEFINITIONS = 4 WORDS A PIECE
 /-TYPE (1,2,3=U,S,F) 0 FOR UNDEFINED)
 /-LENGTH (7777 IF #)
 /-UNIT
 /-FIRST BLOCK
 /

FILTAB; 0101010101010

0101010101010

0101010101010

0101010101010

| | | | | | | | | | |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2000 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 2100 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111001 |
| 2200 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 2300 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |

2400
2500
2600
2700

| | | | | | | | | | |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1000 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 1100 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 1200 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 1300 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 1400 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 1500 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11100000 |
| 1600 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 1700 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111110 |

| | | | | | | | | | |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2000 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 |
| 2100 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111111 | 11111000 |

2200
2300
2400
2500
2600
2700

3000
3100
3200
3300
3400
3500
3600
3700

4000
4100

4200
4300

4400
4500

4600
4700

5000
5100

5200
5300

5400
5500

5600
5700

6000
6100

6200
6300

6400
6500

6600
6700

7000
7100

7200
7300

7400
7500

7600
7700

| | | | | | | | |
|--------|------|--------|------|--------|------|--------|------|
| A | 345 | C140 | 2554 | D256 | 0002 | EFUN31 | 2136 |
| ABSOL | 6751 | C144 | 6140 | D85 | 0004 | ELPAP | 1764 |
| ABSOL2 | 6153 | D220 | 2123 | DATUM | 7102 | END | 2134 |
| ABSOL3 | 7375 | D250 | 0113 | DATUMA | 7252 | ENDFI | 6243 |
| ABSOLV | 5571 | C3 | 5345 | DCONP | 6303 | ENDLN | 4556 |
| AC1H | 0041 | C5 | 5341 | DCONT | 2471 | ENDT | 2135 |
| AC1L | 0042 | C7 | 5335 | DCOUNT | 6143 | ENREPL | 1375 |
| ACMINS | 6605 | C9 | 5331 | DDTJR | 0004 | ENUM | 1732 |
| ADDR | 0340 | CALLIN | 7576 | DEBGSW | 0026 | EPAR | 1710 |
| ADONE | 6673 | CCR | 0077 | DECON | 5627 | EPAR2 | 1766 |
| AF | 4677 | CDF | 7000 | DECONV | 5600 | ERASE | 2226 |
| ALF1 | 4760 | CEX1 | 6506 | DECP | 5533 | ERG | 2227 |
| ALF2 | 4763 | CEXP | 6505 | DECR | 5521 | ERL | 2224 |
| ALFZ | 4755 | CF | 4705 | DEJUMP | 1306 | ERR2 | 2726 |
| ALGN | 6572 | CFRS | 0133 | DELETE | 4565 | ERRFIL | 2571 |
| ALIGN | 6623 | CFRSX | 0137 | DF | 4710 | ERROR2 | 4566 |
| ALIST | 1370 | CGET | 1133 | DGRP | 0425 | ERROR3 | 4566 |
| ALPHA | 0316 | CGETRE | 1137 | DGRP1 | 0441 | ERROR4 | 4566 |
| AMOUNT | 6722 | CGETX | 2564 | DIG | 5543 | ERROR5 | 2725 |
| ARCALG | 4732 | CHAR | 0066 | DIGIT | 5713 | ERT | 2216 |
| ARCRTN | 5024 | CHARTA | 0200 | DIGITS | 0006 | ERV | 2221 |
| ARGNXT | 1723 | CHECK | 1751 | DIV1 | 5754 | ERVX | 2241 |
| ARTN | 5000 | CHFLAG | 0147 | DIV2 | 6757 | ERXIT | 1457 |
| ASHFT | 6665 | CHIN | 2157 | DIVDIV | 1632 | ESCA | 2532 |
| ASK | 1200 | CHRCNT | 0006 | DIVIDE | 7150 | ETERM | 1647 |
| ATLIST | 1570 | CHREND | 0056 | DIVLUP | 1635 | ETERM1 | 1627 |
| ATSW | 0056 | CHRLUP | 0033 | DMDONE | 7063 | ETERM2 | 1655 |
| AXIN | 0010 | CHRT | 6133 | DMP5W | 0100 | ETERMN | 1644 |
| AXOUT | 0017 | CIMCF | 1430 | DMULT | 7004 | EVAL | 1613 |
| B | 0046 | CLCU | 7427 | DMULT4 | 7036 | EX1 | 2040 |
| B1BLK | 2130 | CLEAR | 7672 | DNORM | 7335 | EXIT | 2646 |
| B1FLG | 2125 | CLF | 0076 | DNUMBR | 5714 | EXIT1 | 5034 |
| B1UNIT | 2126 | CLKFLG | 2661 | DO | 0420 | EXIT2 | 5301 |
| B2BLK | 2134 | CNTR | 0057 | DOK | 2113 | EXIT3 | 7363 |
| B2FLG | 2131 | COL | 1253 | DOONE | 2131 | EXITJ | 2660 |
| B2UNIT | 2132 | COMBOT | 0226 | DOONE | 0463 | EXP | 0044 |
| BACK | 5503 | COMBUF | 0132 | DOUBLE | 0127 | EXTR | 2313 |
| BEGIN | 3601 | COMEIN | 3140 | DPCVPT | 6302 | F | 0043 |
| BET1 | 4771 | COMEDU | 3206 | DPN | 6305 | FCONT | 1101 |
| BET2 | 4774 | COMGO | 1161 | DPT | 6145 | FCOS | 5177 |
| BETA | 0017 | COMLST | 0774 | DSAVE | 5640 | FCOUNT | 5535 |
| BETZ | 4766 | COMMEN | 0614 | DTST | 5647 | FEND3 | 2267 |
| BF | 4702 | COMMON | 1600 | DUBDIV | 7261 | FERROR | 0177 |
| BLK2 | 0011 | COMSUB | 1502 | DUBLAD | 5733 | FEXP | 4620 |
| BLOCK | 2121 | CON1 | 5037 | DV3 | 7267 | FEXT | 0020 |
| BOTTOM | 0335 | CRETLD | 1554 | E | 0042 | FFF | 1522 |
| BUFFEG | 3216 | CRETST | 2072 | ECALL | 1601 | FG02 | 6011 |
| BUFFER | 7470 | CRLF | 7505 | ECHOLS | 1624 | FG03 | 6027 |
| BUER | 0060 | CRUDDY | 1155 | EFOP | 0056 | FG04 | 6034 |
| BUFST | 5531 | CSMCI | 1427 | EFUN | 1743 | FG05 | 6070 |
| C | 0047 | CSTAR | 0225 | EFUN2 | 1755 | FIG01 | 6221 |
| C100 | 0006 | D | 0041 | EFUN3 | 2021 | FIG04 | 6261 |

FI 1354
FI1STR 1326
FIITAB 2135
FINCR 1365
FINDLN 4555
FINDV 2250
FINFIN 1137
FINISH 2076
FINKP 1133
FINPUT 1131
FINT 4407
FISW 052
FIVHUN 7653
FIX 6724
FIXM 6753
FLAC 2044
FLAD 6510
FLAG1 5162
FLAG2 4725
FLAGJ 1076
FLARG 2032
FLARGP 125
FLOV 7107
FLEX 6517
FLGT 6471
FLIMIT 1075
FLINTP 6200
FLIST1 0577
FLIST2 0574
FLMY 6565
FLOG 5040
FLOP 1674
FLOUT 5556
FLOUTP 6000
FLPT 6467
FLSU 6507
FLTONE 2405
FLTXR 014
FLTXR2 015
FLTZER 2407
FM12 6142
FNFG 5163
FNOR 7000
FNTABF 374
FNTABL 2167
FNHM 6311
FOR 1041
FORHUN 7651
FOUTPU 1133
FPAC1 7474
FPNT 6400
FPRNT 5465

FRETLD 1537
FRETST 2014
FRST 3206
FRSTX 3214
FSIN 5204
FSSERR 5774
FXIT 0000
G101 3661
G5772 3662
G5773 3663
G7200 3664
G7773 3665
G7774 3666
G7775 3667
G7776 3670
G7777 3671
GAMMA 0005
GBLOK 3655
GECALL 1463
GEND 2334
GERR 0340
GET1 2330
GET3 2345
GETARG 1401
GETC 4545
GETCX 1566
GETLN 4554
GETRHS 1000
GETSGN 1045
GETVAR 1405
GEXIT 0352
GFND1 1510
GINC 0070
GLIST 1375
GO 5021
GONE 0232
GOODY 0045
GOTO 0603
GRPTST 0744
GS1 1435
GS2 1464
GS3 1444
GS4 1457
GSERCH 1424
GTEM 0021
GZERR 0362
HINBUF 0037
HISS 0150
HORD 0045
I33 2414
IBAR 0212
IECALL 1037

IF 13
IF1 1035
IF3 1025
IGNOR 0217
IGOTIT 1036
ILIST 0771
IN 5513
INBUF 0034
INCALL 2071
INDEV 0064
INDRCT 6465
INFIX 2401
INLIST 0570
INORM 6307
INPUT 0756
INPUTX 0271
INSUR 0036
INTEGE 0053
INTRPT 2603
IOBUF 3120
IPART 1040
IRETLD 1546
IRETN 0227
ITABLE 6575
ITER1 7470
ITLOAD 1533
ITSAGO 1736
ITSFF 1450
ITSII 1452
ITSOK 7521
ITSSS 1451
ITSTOR 2000
JUMP 6464
K5 5525
KINT 2625
L1 5126
L2 5131
L3 5134
L4 5137
LASTLN 0025
LASTOP 0055
LASTV 0031
LC 5171
LCHAIN 1202
LCLOSE 1520
LCON 0371
LDMILD 1160
LEFLAG 1462
LEFPUT 0172
LEPUT 6163
LERR 6357
LESUR2 0170

LESURS 2173
LG 6375
LG2E 4713
LGO 6360
LINENO 0067
LIST3 0077
LIST6 0072
LIST7 0074
LISTGO 1366
LL 5173
LLENGT 1327
LLIST 6366
LLOAD 1203
LM 2572
LMAKE 1402
LNAME 1172
LNUM 1171
LO 5167
LOADIT 6333
LOADJ 1304
LOG2 5157
LOG5 5142
LOG6 5145
LOG7 5150
LOG8 5153
LOOP01 6433
LOPEN 1431
LORD 0046
LOSS 0151
LPRTST 2037
LS 6176
LSAVE 1233
LSBLK 1324
LTAPE 6346
LUXUP 1342
LWETMP 0002
LXIT 1416
M100 0101
M10PT 6147
M11 0121
M12 2413
M137 2357
M140 2556
M144 6137
M2 0111
M22 0105
M240 0114
M260 1534
M272 1544
M4 5141
M40 2356
M43 1077

| | |
|---------|------|
| MS | 120 |
| M77 | 103 |
| MBREAK | 2642 |
| MCAM | 1136 |
| MCR | 116 |
| MCS | 1426 |
| MD | 5526 |
| MEQ | 1135 |
| MF | 1632 |
| MFIT | 117 |
| MHUNDR | 5375 |
| MIF | 7260 |
| MINCMA | 1420 |
| MINCOM | 6374 |
| MINE | 5662 |
| MINSKI | 2051 |
| MINUS2 | 7153 |
| MINUSA | 1112 |
| MINUSE | 6301 |
| MINUSE2 | 5663 |
| MLDRLK | 1165 |
| MLIMIT | 7647 |
| MMCOM | 7656 |
| MOO | 5214 |
| MODIFY | 1254 |
| MOO | 1262 |
| MOOEND | 1275 |
| MOOLUP | 1266 |
| MORNUM | 1056 |
| MOVMOV | 1305 |
| MP1 | 7254 |
| MP2 | 7256 |
| MP3 | 7255 |
| MP4 | 7200 |
| MP5 | 7253 |
| MP6 | 7210 |
| MPPR | 1115 |
| MPIUS | 5664 |
| MSPACE | 5665 |
| MUIDIV | 7101 |
| MUIT | 6570 |
| MULT10 | 5667 |
| MUIT2 | 5715 |
| MUITV | 4752 |
| MVCNT | 1323 |
| MVCTR | 1200 |
| MVPTR | 1201 |
| MYAC1 | 1164 |
| MYAC2 | 1165 |
| MYAC3 | 1166 |
| MYTFMP | 1156 |
| MYTFMP2 | 1157 |

| | |
|---------|------|
| MAGSW | 2065 |
| MCHARS | 7566 |
| MCOLS | 7564 |
| MEGP | 4724 |
| MFEEDS | 7565 |
| MNLINES | 7561 |
| NOASCI | 0061 |
| NOCLK | 2653 |
| NOCRLF | 7510 |
| NOHANG | 7556 |
| NORF | 6515 |
| NORM | 6571 |
| NORMF | 7147 |
| NORMLE | 2031 |
| NOTSAV | 1314 |
| NOX | 6675 |
| NOX1 | 6711 |
| NOX2 | 6704 |
| NUMSGN | 1061 |
| O1 | 3600 |
| O10 | 1123 |
| O12 | 1545 |
| O200 | 0003 |
| O215 | 1157 |
| O27 | 1570 |
| O360 | 0007 |
| O37 | 1360 |
| O4377 | 0076 |
| O4600 | 5374 |
| O56 | 1156 |
| O6000 | 0173 |
| O6377 | 7570 |
| O7 | 1776 |
| O7000 | 7415 |
| O7400 | 7650 |
| O7420 | 0174 |
| O7472 | 1501 |
| O7510 | 1424 |
| O7524 | 1154 |
| O7566 | 7572 |
| O760 | 0015 |
| O7655 | 7571 |
| O77 | 1124 |
| O7710 | 1125 |
| O7716 | 7573 |
| O7761 | 1155 |
| O7763 | 7567 |
| O7764 | 0172 |
| O7770 | 1126 |
| O7774 | 1127 |
| OC | 7752 |
| OCTNUM | 1101 |

| | |
|--------|------|
| OD | 7761 |
| ODISSP | 7704 |
| OE | 7753 |
| OERROR | 7713 |
| OEXIT | 7731 |
| OGO | 7714 |
| OI | 7734 |
| OLIST | 7722 |
| OM12 | 5330 |
| ONE | 4716 |
| OO10 | 1425 |
| OO6377 | 7730 |
| OP | 3115 |
| OPMINS | 6567 |
| OPNEXT | 1622 |
| OPTABL | 1731 |
| OPTR | 6002 |
| OPTRY | 2663 |
| OPTRI | 2665 |
| OPTRO | 2664 |
| OPUT | 5532 |
| OS | 7763 |
| OSAMP | 1357 |
| OT | 7771 |
| OUT | 2465 |
| OUTA | 5536 |
| OUTCR | 2476 |
| OUTDEV | 0063 |
| OUTDG | 6154 |
| OUTPUT | 7706 |
| OUTX | 2475 |
| OVER1 | 0043 |
| OVER2 | 0047 |
| P | 0000 |
| P13 | 0005 |
| P17 | 0107 |
| P177 | 0106 |
| P1FLAC | 0167 |
| P2000 | 0373 |
| P27 | 6750 |
| P277 | 0110 |
| P2FLAC | 0170 |
| P3 | 2036 |
| P337 | 0075 |
| P377 | 2553 |
| P3FLAC | 0171 |
| P40 | 2552 |
| P4000 | 0124 |
| P43 | 6310 |
| P5LNAM | 0145 |
| P6LNAM | 0146 |
| P7200 | 1402 |

| | |
|--------|------|
| P7600 | 0104 |
| P77 | 0122 |
| P7700 | 0121 |
| P7740 | 0372 |
| PA1 | 2524 |
| PACBUF | 2502 |
| PACKC | 4546 |
| PACKST | 2027 |
| PACX | 2530 |
| PALG | 5260 |
| PARTES | 2051 |
| PASS | 6335 |
| PB1FLG | 0163 |
| PC | 0022 |
| PC1 | 0614 |
| PCHAR | 1401 |
| PCHECK | 5244 |
| PCHK | 0510 |
| PCK1 | 2535 |
| PCLEAR | 0175 |
| PCLKFL | 7745 |
| PCOMMO | 0154 |
| PD2 | 0534 |
| PD3 | 0554 |
| PULXR | 0013 |
| PECALL | 6334 |
| PEO | 6135 |
| PER | 0102 |
| PFILTA | 0152 |
| PFINIS | 0160 |
| PFNEW | 0410 |
| PFNUM | 1771 |
| PFX | 0411 |
| PFZ | 0412 |
| PGETC | 1422 |
| PGETRH | 0143 |
| PI | 5311 |
| PI2 | 5036 |
| PIOT | 5315 |
| PLCE | 5536 |
| PLOMIL | 0144 |
| PLEFLA | 1075 |
| PLESUB | 0101 |
| PLLP1 | 1006 |
| PLLP2 | 1016 |
| PLLP3 | 1044 |
| PLLP4 | 1102 |
| PLNAME | 1122 |
| PLNUM | 0142 |
| PLOOKU | 0153 |
| PNCHAR | 7732 |
| PNCOLS | 7776 |

7777
1413
4544
5541
7733
1100
7705
1421
6144
7574
1622
1155
1423
4551
2442
3114
6132
4553
611
610
7775
7746
1165
1322
1100
1030
1330
1126
6275
1462
4542
4543
4540
1174
7774
1061
5441
6160
1142
6573
6574
1152
4552
2740
2761
5712
1361
6146
6752
7376
6304
7173

RET 5452
RETRN 1563
RETURN 5536
REVIT 7146
RHSERR 1132
RITEOU 3651
RND2 5527
ROOTGO 7461
ROT 2557
ROUND 6151
RTL6 4557
RUB1 3004
RUB2 3042
RUB3 3030
RUB4 3037
RUB5 3041
RUBIT 2555
SADR 6150
SAMEN 1372
SAVAC 2600
SAVE 3751
SAVLK 2601
SBAR 1300
SCHAR 1271
SCONT 1266
SCOPOU 7500
SCOUNT 5534
SETCLK 5351
SETT 1041
SEX 1336
SEXC 0740
SFOUND 1304
SGOT 1310
SIGN 7124
SIGNF 0050
SIN 2662
SMIN 6136
SMP 6101
SMSP 6134
SORTB 1312
SORTC 4550
SORTCN 0054
SORTJ 4547
SPECIA 6777
SPLAT 3051
SPNOR 4560
SPTR 7671
SQCON1 7467
SQEND 7465
SRETLO 1541
SRETN 0261
SRETST 2024

SRNLST 61
START 0177
STARTL 5064
STARTV 0060
STEMP 7750
STEMP2 7751
STOKOK 2044
STOORG 2051
STORIT 6175
SUBR 0102
SUBS 0171
SUBS2 0167
SWITCH 0161
SWTMP 0162
T 0000
T1 0032
T12 3611
T2 0071
T3 0033
TABLE 6466
TAG1 6723
TASK 1202
TASK4 1250
TCRLF 1246
TCRLF2 1243
TOUMP 3052
TELSW 0016
TEM 5156
TEMP 4726
TEN 6271
TENPT 6152
TERMS 1772
TEST2 6736
TEST4 7366
TESTA 0322
TESTC 4564
TESTN 4561
TEXTP 0017
TGO 5400
THIR 7257
THISLN 0023
THISOP 0024
TINTR 1236
TLIST 1376
TLIST2 1532
TLIST3 2377
TQUOT 1227
TRAD 6575
TSTGRP 4563
TSTLPR 4562
TWO 4721
TWOPI 5305

TYPE 1271
TYPE2 1223
URETST 2066
UTE 2276
UTC 2305
UTRA 2274
UTX 2316
UZERST 2064
VAL 0032
WAIT 7657
WAITER 0020
WAITLP 0115
WALL 0664
WEXIT 0072
WORDS 0003
WRITE 0635
WTEST2 0653
WTESTG 0667
WX 0673
X 5321
X1 5035
X2 4675
X7774 0140
X7775 0141
XABS 2016
XADC 1341
XCT 0020
XCTIN 0062
XDELET 2064
XDISP 7602
XENDLN 2360
XFIND 2244
XGETLN 0302
XGETOU 1254
XIS3 2666
XIN 6306
XINPUT 5666
XINT 1156
XLC 0130
XLG 0136
XLL 0132
XLO 0126
XLS 0134
XOUTL 2676
XPOPJ 1565
XPRNT 2425
XPUSHA 0477
XPUSHJ 0521
XQ 0001
XR1 0010
XRAW 1145
XRAR2 7365

| | |
|--------|------|
| YR4 | 311 |
| YR2 | 312 |
| YR5 | 413 |
| YSG1 | 312 |
| XSORTC | 721 |
| XSPADR | 1535 |
| XSC2 | 4676 |
| XSC9 | 5325 |
| XSCRT | 7432 |
| XT3 | 717 |
| XTFSTC | 700 |
| YFSTN | 1546 |
| YF | 2451 |
| Y | 377 |
| ZERO | 6522 |

ERRORS DETECTED: 3

LINKS GENERATED: 3

RUNTIME: 40 SECONDS

4K CORE USED

| | | | | | | | | | | | | | | | | | | |
|--------|-------|-------|-------|-------|-------|------|-------|------|------|------|------|------|------|------|--|--|--|--|
| A | 12 | 3292 | 3181# | | | | | | | | | | | | | | | |
| ABSOL | 3 | 3233# | | | | | | | | | | | | | | | | |
| ABSOL2 | 2532 | 2632# | | | | | | | | | | | | | | | | |
| ABSOL3 | 3313 | 3344# | | | | | | | | | | | | | | | | |
| ABSOLV | 2385# | 2391 | 2632 | 3033 | 3344 | | | | | | | | | | | | | |
| AC1H | 58# | 2456 | 2465 | 2497 | 2525 | 2579 | 2951 | 3001 | 3131 | 3158 | 3167 | 3184 | 3197 | 3201 | | | | |
| | 3281 | | | | | | | | | | | | | | | | | |
| AC1L | 59# | 2454 | 2464 | 2493 | 2510 | 2512 | 2953 | 3003 | 3185 | 3192 | 3196 | 3276 | | | | | | |
| ACMINS | 67 | 2931# | 2944 | 2963 | 2964 | 2972 | 2996 | | | | | | | | | | | |
| ADDR | 2879 | 2812 | 2813 | 2818 | 2821 | 2824 | 2848# | 2856 | | | | | | | | | | |
| ADONE | 2962 | 2978 | 2985# | | | | | | | | | | | | | | | |
| AF | 1892 | 1917# | | | | | | | | | | | | | | | | |
| ALF1 | 1956 | 1968# | | | | | | | | | | | | | | | | |
| ALF2 | 1954 | 1971# | | | | | | | | | | | | | | | | |
| ALFZ | 1958 | 1965# | | | | | | | | | | | | | | | | |
| ALGN | 2868 | 2919# | | | | | | | | | | | | | | | | |
| ALIGN | 2919 | 2945# | 2957 | 2985 | 2986 | 2992 | 2998 | 3007 | 3021 | | | | | | | | | |
| ALIST | 759 | 760 | 885# | | | | | | | | | | | | | | | |
| ALPHA | 3631# | 3662 | 3664 | 3665 | 3691 | 3710 | | | | | | | | | | | | |
| AMOUNT | 2967 | 2968 | 2976 | 2983 | 3008# | | | | | | | | | | | | | |
| ARCALG | 1945# | 2004 | | | | | | | | | | | | | | | | |
| ARCRTN | 1963 | 2005# | | | | | | | | | | | | | | | | |
| ARGNXT | 1068 | 1120# | | | | | | | | | | | | | | | | |
| ARTN | 348 | 1985# | | | | | | | | | | | | | | | | |
| ASHFT | 2974 | 2979# | | | | | | | | | | | | | | | | |
| ASK | 746 | 756# | 774 | | | | | | | | | | | | | | | |
| ATLIST | 760 | 1024# | | | | | | | | | | | | | | | | |
| ATSW | 77# | 757 | 761 | | | | | | | | | | | | | | | |
| AXIN | 29# | 215 | 247 | 250 | 810 | 813 | 814 | 828 | 1270 | 1274 | 1276 | 1323 | 1430 | 1431 | | | | |
| | 1538 | 1543 | 1683 | 1686 | 1717 | 1724 | 1737 | 1738 | | | | | | | | | | |
| AXOUT | 37# | 231 | 1232 | 1367 | 1411 | 1763 | | | | | | | | | | | | |
| B | 3080 | 3095 | 3182# | | | | | | | | | | | | | | | |
| R1BLK | 4485# | | | | | | | | | | | | | | | | | |
| R1FLG | 3741 | 4482# | | | | | | | | | | | | | | | | |
| R1UNIT | 4483# | | | | | | | | | | | | | | | | | |
| R2BLK | 4489# | | | | | | | | | | | | | | | | | |
| R2FLG | 4486# | | | | | | | | | | | | | | | | | |
| R2UNIT | 4487# | | | | | | | | | | | | | | | | | |
| BACK | 2329# | 2339 | 2342 | | | | | | | | | | | | | | | |
| REGIN | 32 | 202 | 1811# | | | | | | | | | | | | | | | |
| RET1 | 1950 | 1977# | | | | | | | | | | | | | | | | |
| RET2 | 1949 | 1980# | | | | | | | | | | | | | | | | |
| BETA | 3632# | 3673 | 3677 | 3700 | 3702 | 3706 | 3708 | | | | | | | | | | | |
| RETZ | 1952 | 1974# | | | | | | | | | | | | | | | | |
| RF | 1894 | 1920# | | | | | | | | | | | | | | | | |
| RLK2 | 3626# | 3830 | 3832 | 3834 | 3835 | 3838 | 3840 | 3849 | 3850 | 3858 | 3860 | 3862 | 3863 | 3867 | | | | |
| | 3868 | 3869 | 3880 | 4271 | 4272 | 4273 | 4274 | 4275 | 4281 | 4285 | 4292 | 4298 | 4300 | 4303 | | | | |
| | 4308 | 4312 | 4315 | 4322 | 4325 | 4326 | 4342 | 4345 | 4346 | 4349 | 4372 | 4378 | | | | | | |
| | 4457 | 4459 | 4461 | 4463 | 4465 | 4467 | 4469# | | | | | | | | | | | |
| PLOCK | | | | | | | | | | | | | | | | | | |
| POTTOM | 51# | 234 | 4060 | | | | | | | | | | | | | | | |
| PUFBEG | 47 | 80 | 134 | 1808# | | | | | | | | | | | | | | |
| HUFFER | 2629 | 3405# | 3413 | | | | | | | | | | | | | | | |
| PUFR | 80# | 246 | 809 | 826 | 1268 | 1269 | 1316 | 1322 | 1425 | 1426 | 1433 | 4064 | | | | | | |

