

IDENTIFICATION

PRODUCT CODE: DEC-Ø8-LBASA-A-LA
PRODUCT NAME: LISTING OF BASIC-8
DATE: FEBRUARY 10, 1972

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SIC.LBE

PALB-V7

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JMP I .+1
START

INTHLT, HLT
INTPLC, 7700

/BASIC4,52

0000

FIELD 0

/TO HELP BINARY LOADER IN CASE HE BLOWS IT.

```

/00000 +-----+
/      | SYSTEM |
/11000 +-----+
/      | ARRAY  |
/      | SPACE  |
/      +-----+
/      | FREE   |
/      +-----+
/      | CODIFIED|
/      | BASIC  |
/      +-----+
/      | SYMBOL  |
/      | TABLE |
/      +-----+
/      | LINEBUF |
/      +-----+
/      | STACK  |
/      +-----+
/      | FORLIST|
/      +-----+
/      | GOLIST |
/17756 +-----+
/      | RIM    |
/      | LOADER |
/17777 +-----+

```

```

/4200 +
/4201 -
/4302 *
/4303 /
/4404 =
/4105 #
/4106 <
/4107 >
/4110 <#

```

```
/4110  =<
/4111  >=
/4111  =>
/4112  <=
/4213  (UMINUS)
/4014  (DONE)
/4015  ,
/4016  /
/4017  )
/4021  TO
/4022  STEP
/4023  (
/4024  FN
/4025  COS
/4026  TAN
/4027  ATN
/4030  LOG
/4031  EXP
/4032  SQR
/4033  ABS
/4034  SIN
/4035  INT
/4036  RND
/4037  SIN
/6000  (CRLF)
/6000  \
/6001  END
/6002  FOR
/6003  GOSUB
/6004  GOTO
/6004  THEN
/6005  IF
/6006  INPUT
/6007  LET
/6010  NEXT
/6011  PRINT
/6012  RETURN
/6013  STOP
/6014  DIM
/6015  RESTORE
/6017  DEF
/6020  READ
/6021  DATA
/6022  (EXIT)
/6023  (EOF)
```

```
0000  FEXIT=0000
0040  FSNE=0040
0050  FSEQ=0050
0100  FSQE=0100
0110  FSLE=0110
0140  FSGT=0140
0150  FSLE=0150
```

1000 FJMP=1000
1400 FJMPI=1400
2000 FST=2000
2400 FSTI=2400
3000 FLD=3000
3400 FLDI=3400
4000 FA0=4000
4400 FADI=4400
5000 FSB=5000
5400 FSBI=5400
6000 FMP=6000
6400 FMPI=6400
7000 F0V=7000
7400 F0VI=7400
8200 FWD=200
8600 BKWD=600

6530 ADCL=6530
6531 ADLM=6531
6532 ADST=6532
6533 ADRB=6533
6534 ADSK=6534
6535 ADSE=6535
6536 ADLE=6536
6537 ADR8=6537
6050 DILC=6050
6051 DICO=6051
6052 DI80=6052
6053 DILX=6053
6054 DILY=6054
6055 DIXY=6055
6056 DILE=6056
6057 DIRE=6057
6134 CLEN=6134
6133 CLAB=6133
6132 CLOE=6132
6130 CLZE=6130
6131 CLSK=6131
6137 CLCA=6137
6135 CLSA=6135
6136 CLBA=6136

```

00000 2000      0
00001 5400     JMP I   .+1
00002 6600     INTER
    
```

/INTERUPT ROUTINES.
/UP, UP AND AWAY.

```

00003 2000     ARRLOC, 0
00004 0000     CODELOC,0
00005 3000     PSYMTAB,0
00006 0000     NSYMTAB,0
00007 0215     O215,  215
00010 0212     O212,  212
00011 0260     O260,  260
00012 2000     OV,    0
00013 0000     INDEX1, 0
00014 0000     INDEX2, 0
00015 3000     DISAUTO,0
00016 0000     AC3,   0
00017 0000     AC2,   0
00020 0000     AC1,   0
00021 0000     OP3,   0
00022 0000     OP2,   7
00023 0000     OP1,   L
00024 0000     ACS,   0
00025 0000     ACE,   0
00026 0000     OPS,   0
00027 0177     O177,  177
00030 0000     OPE,   0
00031 0000     TMP,   0
00032 7201     PGETCH, GETCH
00033 0741     PPUTCH, PUTCH
00034 0000     DIMFLAG,0
          4435     FENTER=JMS I .JFPT
00035 4200
00036 0000     PDL,    0
00037 7512     PLINBUF,LINBUF
00040 0266     MLINBUF,-LINBUF
00041 0135     MENLIN,-ENDLIN
00042 0000     PRTEMP, 0
00043 0000     DECEXP, 0
00044 5335     PNUMBUF,NUMBUF
00045 0000     LOCCTR, 0
00046 0000     READLOC,0
00047 7363     PARGERR,ARGERR
00050 0000     WORD,   0
00051 0240     O240,  240
00052 0000     LINENO, 0
00053 0000     GOTEMP, 0
00054 7740     O7740,  7740
00055 7770     O7770,  7770
00056 0000     EPTR,   0
00057 0000     FPTR,   0
00060 0000     GPTR,   0
00061 0000     HPTR,   0
00062 0002     O2,    2
00063 0000     FORCT, 0
    
```

00064	0000	SNUMFLG,0
00065	0012	C12, 12
00066	0000	OLOOP, 0
00067	0000	ADDRESS,0
00070	0077	O77, 77
00071	0377	O377, 377
00072	0007	O7, 7
00073	0000	OPERAND,01010
00074	0000	
00075	0000	
00076	7501	PTEXT, XXTEXT
00077	4142	PERROR, ERROR
00100	6441	PSXERR, SXERR
00101	1004	PEVAL, EVAL
00102	1400	PGETADD,GETADDR
00103	0213	PEXECUT,EXECUTE
00104	2364	PPUSH, PUSH
00105	3551	PPOP, POP
00106	4744	PFIX, FIX
00107	1202	PGOTOPR,GJTOPR
00110	0472	PPASSCR,FASSCR
00111	1015	PGETOPR,GETOPR
00112	0341	PSTOVAR,STOVAR
00113	0311	PGETVAR,GETVAR
00114	3702	PPRINTX,PRINTXT
00115	1674	PGETBLK,GETBLK
00116	2707	PSLOOP, SLOOP
00117	5000	POUTNUM,OUTNUM
00120	2405	PEDIT, EDIT
00121	6430	PSTICKI,STICKIT
00122	3110	PNONBLN,NONBLNK
00123	3747	PPRINUM,PRINUM
00124	2603	PGETLIN,GETLIN
00125	7644	PPDLIST,PDLIST
00126	0000	COLUMN, 0
00127	0000	INDEV, 0
00130	0000	OUTD2, 0
00131	0000	OUTDEV, 0
00132	0000	ODEV, 0
00133	0000	CNTLO, 0
00134	0000	NOINT, 0
00135	0000	RBSWCH, 0
00136	0000	DISB, 0
00137	7116	PRESET, RESETI
00140	7465	SPECINT,CCINTK
00141	7326	PCOWT, COWT
00142	7146	DELOUT, OUTDEL
00143	0360	CNCLR, CLRCNT
00144	6413	SPLEFT, RMLEFT
00145	0000	PTEN, TEN
00146	4600	PANORM, ANORM
00147	4402	PARI, ARI
00150	4654	PALI, ALI
00151	2014	ONE, 2014
00152	0000	ZERO, 01010

/THIS PREVENTS INTERRUPTS DURING CRITICAL TIMES.


```

00153 0000
00154 0000
00155 0200 0200, 200
00156 0000 FPFLAG, 0
00157 4035 POADD, OADD
00160 0004 04, 4
00161 2330 PLINFIX,LINFIX
00162 7745 07745, 7745
00163 6400 PCHKFIT,CHKFIT
00164 7725 PGOLIST,GOLIST
00165 0000 GSBPTR, 0
0001 GET=1
4566 ISIT=JMS I ,)XISIT;XGISIT
00166 4073
00167 4066
4570 MUSTBE=JMS I ,)XMUST;XGMUST
00170 7352
00171 7345
00172 7563 PLBEGIN,LBEGIN
00173 0214 MLBEGIN,-LBEGIN-1
00174 0074 MLEND, -ENDPOL
00175 4104 PISITLI,)SITLIT
    
```

```

0200 PAGE
0177 *-1
    
```

```

00177 0000 GETWD, 0
00200 1405 TAD I LOCCTR
00201 3050 DCA WORD
00202 2045 ISZ LOCCTR
00203 5577 JMP I GETWD
00204 0205 PLETD0, LETD0
00205 4570 LETD0, MUSTBE /'0'
00206 3673 3673
00207 4501 JMS I PEVAL
00210 4570 MUSTBE /((CR) OR '\
00211 2000 2000
00212 4341 JMS STOVAR
00213 4177 EXECUTE,JMS GETWD
00214 1204 TAD PLETD0
00215 3311 DCA GETVAR
00216 1450 TAD I WORD
00217 7510 SPA
00220 5231 JMP KEYWD
00221 7640 SZA CLA /IS IT A LINEND
00222 5313 JMP NOTKWD /NO
00223 1050 TAD WORD
    
```

00224	3052		DCA	LINENO	
00225	4177		JMS	GETWD	
00226	1450		TAD I	WORD	
00227	7722		SMA CLA		
00230	5313		JMP	NOTKWD	
00231	7332	KEYWD,	CLA CLL	CML RTR	
00232	1450		TAD I	WORD	
00233	7420		SNL		/IS IT A STATEMENT WORD
00234	5500		JMP I	PSXERR	/NO
00235	1240		TAD	SJUMP	
00236	3237		DCA	.*1	
00237	7402		HLT		
00240	5641	SJUMP,	JMP I	.*1	
00241	0213		EXECUTE		
00242	2567		END		
00243	0413		FOR		
00244	0505		GOSUB		
00245	0517		GOTO		
00246	0375		IF		
00247	4007		INPUT		
00250	0312		LET		

00251	0600	NEXT
00252	2173	PRINT
00253	0677	RETURN
00254	2570	STOP
00255	6472	DIM
00256	3773	RESTORE
00257	0467	SKIPIT
00260	1576	DEF
00261	1623	READ
00262	0467	SKIPIT
00263	2402	EXIT
00264	2570	STOP
00265	7173	TTYIN
00266	7165	TTYOUT
00267	7163	LPTOUT
00270	7164	PTPOUT
00271	7172	PTRIN
00272	6441	SXERR
00273	5573	RUBO
00274	5574	NORUBO
		IFNZRO MACHINE<

/THIS SLOT IS NOW FREE, (6031)

CLEAR
 DELAY
 USE
 PLOT
 REALTIME
 SETRATE
 SETCLOCK
 WAITC
 WAIT
 SXERR
 ACCEPT
 REJECT>

/"UCOM" --- USER COMMAND.

IFZERO MACHINE<

00275	6441	SXERR
00276	6441	SXERR
00277	6441	SXERR
00300	6441	SXERR
00301	6441	SXERR
00302	6441	SXERR
00303	6441	SXERR
00304	6441	SXERR
00305	6441	SXERR
00306	6441	SXERR
00307	6441	SXERR
00310	6441	SXERR

```

00311 0000 GETVAR, 0
00312 4177 LET, JMS GETWD
00313 4572 NOTKWD, MUSTBE /A VARIABLE
00314 7000 7000
00315 1052 TAD WORD
00316 3343 DCA VAR
00317 3344 DCA SSONE
00320 3345 DCA SSTWO
00321 4567 GET+ISIT /''
00322 3755 3755
00323 5711 JMP I GETVAR /NO
00324 4501 JMS I PEVAL
00325 4506 JMS I PFIX
00326 3344 DCA SSONE
00327 4566 ISIT /'',
00330 3763 3763
00331 5335 JMP NOCOMMA /NO
00332 4501 JMS I PEVAL
00333 4506 JMS I PFIX
00334 3345 DCA SSTWO
00335 4570 NOCOMMA, MUSTBE /''
00336 3761 3761
00337 4177 JMS GETWD
00340 5711 JMP I GETVAR
00341 0000 STOVAR, 0
00342 4502 JMS I PGETADDR
00343 0000 VAR, 0
00344 0000 SSONE, 0
00345 0000 SSTWO, 0
00346 4435 FENTER
00347 2467 FSTI ADDRESS
00350 0000 FEXIT
00351 5741 JMP I STOVAR
00352 4477 FNERR, JMS I PERROR
00353 0625 TEXT 'FUNCTION'
00354 1003
00355 2411
00356 1716
00357 0000
00360 0000 CLRCNT, 0 /ROUTINE WHICH CHECKS STATUS OF CONTROL C FLAG.
00361 7201 CLA IAC
00362 1134 TAD NOINT /WAS IT SET TO -1?
00363 7650 SNA CLA
00364 5767 JMP I PBOMB /YEP, GIVE STOP MESSAGE,
00365 3134 DCA NOINT /NOPE, RESET IT,
00366 5760 JMP I CLRCNT /AND EXIT
00367 6670 PBOMB, CNTLCR

```

```

00370 4477 SPACERR, JMS I PERROR
00371 2417 TEXT 'TOO-BIG'

```

00372 1755
 00373 0211
 00374 2700

```

00375 4501 IF, JMS I PEVAL
00376 4435 FINDER
00377 2073 FJT OPERAND
00400 0000 FEXIT
00401 4570 MUSTBE /'THEN'
00402 1774 1774
00403 1073 TAD OPERAND
00404 7750 SPA SNA CLA
00405 5267 JMP SKIPIT
00406 4567 GET+ISIT /A LINENO
00407 0000 0000
00410 5612 JMP I XEXECU
00411 5320 JMP GOTO+1
00412 0214 XEXECU, EXECUTE+1
00413 4571 FOR, GET+MUSTBE /A VARIABLE
00414 7000 7000
00415 4357 JMS FINDIT
00416 5235 JMP NOTHERE
00417 7201 CLA IAC
00420 1013 TAD INDEX1
00421 3014 DCA INDEX2
00422 7240 CLA CMA
00423 1013 TAD INDEX1
00424 3013 DCA INDEX1
00425 5232 JMP INLUPF
00426 1414 LUPF, TAD I INDEX2
00427 3413 DCA I INDEX1
00430 1414 TAD I INDEX2
00431 3413 DCA I INDEX1
00432 2053 INLUPF, ISZ GOTEMP
00433 5226 JMP LUPF
00434 2063 ISZ FORCT
00435 1063 NOTHERE, TAD FORCT
00436 1304 TAD OII
00437 7750 SPA SNA CLA /CAN'T FIT 9 IN FORLIST
00440 5301 JMP FORERR
    
```

00441	1250	TAD	WORD	
00442	7041	CIA		
00443	3413	DCA I	INDEX1	
00444	1250	TAD	WORD	
00445	3252	DCA	FORVAR	
00446	4571	GET+MUSTBE		/'0'
00447	3673	3673		
00450	4501	JMS I	PEVAL	
00451	4502	JMS I	PGETADDR	
00452	2000	FORVAR, 0		
00453	2000	0		
00454	2000	0		
00455	4435	FENTER		
00456	2467	FSTI	ADDRESS	
00457	0000	FEXIT		
00460	4570	MUSTBE		/'TO'
00461	3757	3757		
00462	1045	TAD	LOCCTR	
00463	3413	DCA I	INDEX1	
00464	7240	CLA CMA		
00465	1063	TAD	FORCT	
00466	3063	DCA	FORCT	
00467	4671	SKIPIT, JMS I	PIGNORE	/LOOK FOR "\" OR C.R.
00470	5503	JMP I	PEXECUTE	/AND EXECUTE THE NEXT STATEMENT.
00471	2115	PIGNORE, IGNORE		
00472	2000	PASSCR, 0		/THIS LOOKS FOR A REAL C.R.
00473	4671	JMS I	PIGNORE	/LOOK FOR "\" OR C.R.
00474	2050	ISZ	WORD	
00475	4566	ISIT		
00476	4100	4100		/A REAL C.R. ?
00477	5273	JMP	,=4	/NOPE, A SLASH.
00500	5672	JMP I	PASSCR	/AND RETURN TO CALLER.

```

00501 4477 FORERR, JMS I  PERROR
00502 0617          TEXT 'FOR'
00503 2200
00504 0011 011,    11
00505 4177 GOSUB,  JMS      GETWD
00506 4332          JMS      GOBOTH
00507 1165          TAD      GSBPTR
00510 1325          TAD      MGSBEND
00511 7650          SNA  CLA
00512 5326          JMP      DEEPERR
00513 1045          TAD      LOCCTR
00514 3565          DCA  I   GSBPTR
00515 2165          ISZ      GSBPTR
00516 5321          JMP      GOTO+2
00517 4177 GOTO,   JMS      GETWD
00520 4332          JMS      GOBOTH
00521 2053          ISZ      GOTEMP
00522 1453          TAD  I   GOTEMP
00523 3045          DCA      LOCCTR
00524 5503          JMP  I   PEXECUTE
00525 0023 MGSBEND, -GSBEND
00526 4477 DEEPERR, JMS I  PERROR
00527 0717          TEXT 'GOSUB'
00530 2325
00531 0200
00532 0000 GOBOTH, 0
00533 4570          MUSTBE          /A LINENO
00534 0000          0000
00535 1050          TAD      WORD
00536 3053          DCA      GOTEMP
00537 2050          ISZ      WORD
00540 4566          ISIT          /DEFINED
00541 0000          0000
00542 5350          JMP      ISITDF
00543 4477          JMS  I   PERROR
00544 1411          TEXT 'LINENO'
00545 1605
00546 1617
00547 0000
00550 4571 ISITDF, GET+MUSTBE  /(CR) OR '\
00551 2000          2000
00552 5732          JMP  I   GOBOTH
00553 0000 VARTEMP, 01010
00554 0000
00555 0000
00556 7704 PXFORLI, FORLIST-1
00557 0000 FINDIT, 0
00560 1063          TAD      FORCT
00561 3053          DCA      GOTEMP
00562 1356          TAD      PXFORLIST
00563 3013          DCA      INDEX1
00564 5372          JMP      INLOOP
00565 1413 FINDLUP, TAD I  INDEX1
00566 1050          TAD      WORD

```

```

00567 7650      SMA CLA
00570 5375      JMP      FOUND
00571 2013      ISZ      INDEX1
00572 2053      INLOOP, ISZ      GOTEMP
00573 5365      JMP      FINDLUP
00574 5757      JMP I    FINDIT
00575 2357      FOUND,  ISZ      FINDIT
00576 5757      JMP I    FINDIT
    
```

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00600 4571      NEXT,  GET+MUSTBE  /A VARIABLE
00601 7000
00602 4672      JMS I    PFINDIT
00603 5273      JMP      NEXTERR
00604 1050      TAD      WORD
00605 3237      DCA      NEXTVAR
00606 4571      GET+MUSTBE  /(CR) OR '\
00607 2000
00610 1045      TAD      LOCCTR
00611 3271      DCA      LOCTEMP
00612 1413      TAD I    INDEX1
00613 3045      DCA I    LOCCTR
00614 4501      JMS I    PEVAL
00615 4435      FENTER
00616 2303      FST+FWD+FORLIM=.
00617 0000      FEXIT
00620 4566      ISIT      /(CR) OR '\
00621 2000
00622 5226      JMP      TRYSTP /NO
00623 4435      FENTER
00624 3151      FLD      ONE
00625 1207      FJMP+FWD+GOTSTEP=.
00626 4570      TRYSTP, MUSTBE  /'STEP'
00627 3756
00630 4501      JMS I    PEVAL
00631 4570      MUSTBE  /(CR) OR '\
00632 2000
00633 4435      FENTER
00634 2270      GOTSTEP, FST+FWD+FORSTEP=.
00635 0000      FEXIT
00636 4502      JMS I    PGETADDR
00637 0000      NEXTVAR, 0
00640 0000      0
00641 0000      0
00642 4435      FENTER
00643 3467      FLDI     ADDRESS
00644 4260      FAD+FWD+FORSTEP=.
00645 2672      FST+BKWD+. =VARTEMP
00646 5253      FSB+FWD+FORLIM=.
00647 0000      FEXIT
00650 1024      TAD      ACS
00651 1324      TAD      FORSTEP
00652 7700      SMA CLA
00653 1020      TAD      AC1
    
```



```

00650 7640      SZA CLA
00655 5263      JMP      FORDONE
00656 4435      FENTER
00657 3704      FLD+BKW0+,-VARTEMP
00662 2467      FSTI   ADDRESS
00661 2000      FEXIT
00662 5503      JMP I   PEXECUTE
00663 1271      FORDONE,TAD  LOCTEMP
00664 3045      DCA    LOCCTR
00665 2063      ISZ   FORCT
00666 2053      ISZ   GOTEMP
00667 5265      JMP      .-2
00670 5503      JMP I   PEXECUTE
00671 0000      LOCTEMP,0
00672 0557      PFINDIT,FINDIT
00673 4477      NEXTERR,JMS I  PERROR
00674 1605      TEXT 'NEXT'
00675 3024
00676 0000
00677 4571      RETURN, GET+MUSTBE / (CR) OR '\
00700 2000
00701 1165      TAD    GSBPTR
00702 1320      TAD    MGOLIST
00703 7650      SNA CLA
00704 5313      JMP    RETNERR
00705 7240      CLA CMA
00706 1165      TAD    GSBPTR
00707 3165      DCA    GSBPTR
00710 1565      TAD I  GSBPTR
00711 3045      DCA    LOCCTR
00712 5503      JMP I  PEXECUTE
00713 4477      RETNERR,JMS I  PERROR
00714 2205      TEXT 'RETURN'
00715 2425
00716 2216
00717 0000
00720 0053      MGOLIST,-GOLIST
00721 0000      FORLIM, 01010
00722 0000
00723 0000
00724 0000      FORSTEP,010
00725 0000
00726 0000      SGN,    0
00727 4435      FENTER
00730 0100      FSQE
00731 3205      FLD+FWD+MNSONE-,
00732 0150      FSLE
00733 3151      FLD    ONE
00734 0000      FEXIT
00735 5726      JMP I  SGN
00736 6014      MNSONE, 60141010
00737 0000
00740 0000
00741 0000      PUTCH, 0
00742 3326      DCA    SGN

```

22743	1326		TAD	SGN
22744	2027	PCCUNT,	AND	0177
22745	1374		TAD	07763A
22746	7640		SZA	CLA
22747	5357		JMP	PNOCR
22750	1344		TAD	PCCUNT
22751	1126		TAD	COLUMN
22752	3237		DCA	NEXTVAR
22753	3126		DCA	COLUMN

/IS IT A C.R.
 /NOPE.
 /ADD IN EXTRA PLACES FOR GOOD LUCK.
 /SAVE COLUMN POSITION

```

00754 1237 TAD NEXTVAR
00755 0376 AND PUTXRA
00756 7110 CLL RAR
00757 7170 PNOCR, CLL CML CMA RAR
00760 3237 DCA NEXTVAR
00761 1326 TAD SGN
00762 0375 AND 0140A
00763 7440 SZA
00764 1365 TAD 07640A
00765 7640 07640A, SZA CLA
00766 2126 ISZ COLUMN
00767 1326 TAD SGN
00770 4777 JMS I JPUTCH
00771 2237 ISZ NEXTVAR
00772 5370 JMP .+2
00773 5741 JMP I PUTCH
    
```

```

/REGET WHERE WE WERE.
/ARE WE INSERTING NULL CHARACTERS?
/NOW DIVIDE BY 2.
/AND NOW INVERT AND DIVIDE BY 2 AGAIN.
/SAVE FOR LATER USE, THIS IS NULL COUNTER.
/RECALL THE CHARACTER.
    
```

```

00774 7763 07763A, 7763
00775 0140 0140A, 140
00776 0000 PUTXRA, 1
00777 7000 JPUTCH, PUTER
    
```

```

/INCREMENT THE COUNTER
/GIVE NULLS UNTIL IT'S SATISFIED.
    
```

```

/NULL AFTER C,R, WORD.
    
```

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```

01000 4603 START, JMS I XRESTA
01001 5602 JMP I .+1
01002 2440 SCRATCH
01003 7407 XRESTA, ISET

01004 0000 EVAL, 0
01005 4177 JMS GETWD
01006 1204 TAD EVAL
01007 4504 EVALGO, JMS I PPUSH
01010 1363 TAD 04014
01011 4504 JMS I PPUSH
01012 5216 JMP GETOPR+1
01013 1364 ISUMIN, TAD 04213
01014 4504 JMS I PPUSH
01015 4177 GETOPR, JMS GETWD
01016 4566 ISIT
01017 3577 3577
01020 7410 SKP
01021 5213 JMP ISUMIN
01022 4566 ISIT
01023 3600 3600
01024 7410 SKP
01025 5215 JMP GETOPR
    
```

```

/REST FLAGS AND DEVICES.
    
```

01026	4566	ISIT	/'('	
01027	3755	3755		
01030	5235	JMP	NOPAREN	/NO
01031	4224	JMS	EVAL	
01032	4572	MUSTBE	/'')'	
01033	3761	3761		
01034	5527	JMP I	PGOTOPR	
01035	4566	NOPAREN, ISIT		/A VARIABLE
01036	7000	7000		
01037	5305	JMP	NOTVAR	/NO
01040	3276	DCA	ONESS	
01041	3277	DCA	TWOSS	
01042	1050	TAD	WORD	
01043	3275	DCA	WDTEMP	
01044	4567	GET+ISIT	/'('	
01045	3755	3755		
01046	5274	JMP	GOTSS	/NO
01047	1275	TAD	WDTEMP	
01050	4504	JMS I	PPUSH	
01051	4204	JMS	EVAL	
01052	4566	ISIT	/'')'	
01053	3763	3763		
01054	5264	JMP	ONEDIM	
01055	4506	JMS I	PFIX	
01056	4504	JMS I	PPUSH	
01057	4204	JMS	EVAL	
01060	4506	JMS I	PFIX	
01061	3277	DCA	TWOSS	
01062	4505	JMS I	PPOP	
01063	5266	JMP	.+3	
01064	3277	ONEDIM, DCA	TWOSS	
01065	4506	JMS I	PFIX	
01066	3276	DCA	ONESS	
01067	4570	MUSTBE	/'')'	
01070	3761	3761		
01071	4505	JMS I	PPOP	
01072	3275	DCA	WDTEMP	
01073	4177	JMS	GETWD	
01074	4502	GOTSS, JMS I	PGETADDR	
01075	0000	WDTEMP, 0		
01076	0000	ONESS, 0		
01077	0000	TWOSS, 0		
01100	4435	FENTER		
01101	3467	FLOI	ADDRESS	
01102	0000	FEXIT		
01103	5704	JMP I	.+1	
01104	1203	OPDONE		
01105	4575	NOTVAR, JMS I	PISITLIT	/ISIT A LITERAL
01106	5310	JMP	ISITFUN	/NO
01107	5507	JMP I	PGOTOPR	/IT IS IN THE AC NOW
01110	1450	ISITFUN, TAD I	WORD	
01111	1362	TAD	03754	/-4024, WHICH IS BEGINNING OF FUNCTIONS.
01112	7510	SPA		/IS IT A LEGAL FUNCTION?
01113	5500	JMP I	PSXERR	/NO. EXIT WITH MESSAGE.
01114	7450	SNA		/WAS IT 'FN'

01115	4177	JMS	GETWD	/YES, SKIP OVER LETTER
01116	4504	JMS I	PPUSH	
01117	4571	GET+MUSTBE		/'('
01122	3755	3755		
01121	4204	JMS	EVAL	
01122	4505	JMS I	PPOP	
01123	1330	TAD	FJUMP	
01124	3325	DCA	.*1	
01125	7402	HLT		
01126	5727	JMP I	.*1	
01127	1200	FNEXIT		
01130	4731	FJUMP,	JMS I FUNTAB	
01131	5453	FUNTAB,	FN	
01132	5616	COS		
01133	5600	TAN		
01134	6200	ATN		
01135	6114	LOG		
01136	6000	EXP		
01137	5412	SQR		
01140	6425	ABS		
01141	0726	SN		
01142	6434	INT		
01143	5353	RND		
01144	5624	SIN		
01145	1761	PUTJ		/POINTER TO PUT CHAR ROUTINE,
01146	6441	SXERR		/FOR THE MISC. FUNCTIONS.
01147	6441	SXERR		
01150	6441	SXERR		
01151	1770	GETJ		/GET A CHAR FROM THE TTY.
		IFNZRO	MACHINE<	
		ADC		/"NORMAL" A-D CONVERSION RETURN.
		TST		/"TEST CHARACTER BUFFER".
		TIM		/TIME (# OF CLOCK TICKS).
		IFZERO	MACHINE<	
01152	6441	SXERR		
01153	7421	TST		
01154	6441	SXERR		
01155	5547	TAB		/TAB FUNCTION IS IMPLEMENTED.
01156	6441	SXERR		/UNIMPLEMENTED USER FUNCTION.
		IFNZRO	MACHINE<	
		CLS		/GET STATUS OF LAST TICK.

01115	4177	JMS	GETWD	/YES,SKIP OVER LETTER
01116	4504	JMS I	PPUSH	
01117	4571	GET+MUSTBE		/'('
01122	3755	3755		
01121	4204	JMS	EVAL	
01122	4505	JMS I	PPOP	
01123	1330	TAD	FJUMP	
01124	3325	DCA	.+1	
01125	7402	HLT		
01126	5727	JMP I	.+1	
01127	1200	FNEXIT		
01130	4731	FJUMP,	JMS I	FUNTAB
01131	5453	FUNTAB,	FN	
01132	5616		COS	
01133	5600		TAN	
01134	6200		ATN	
01135	6114		LOG	
01136	6000		EXP	
01137	5412		SQR	
01140	6425		ABS	
01141	0726		STN	
01142	6434		INT	
01143	5353		RND	
01144	5624		SIN	
01145	1761		PUTJ	/POINTER TO PUT CHAR ROUTINE.
01146	6441		SXERR	/FOR THE MISC. FUNCTIONS.
01147	6441		SXERR	
01150	6441		SXERR	
01151	1770		GETJ	/GET A CHAR FROM THE TTY.
		IFNZRO	MACHINE<	
		ADC		/"NORMAL" A-D CONVERSION RETURN.
		TST		/"TEST CHARACTER BUFFER".
		TIM		/TIME (# OF CLOCK TICKS).
		IFZERO	MACHINE<	
01152	6441		SXERR	
01153	7421		TST	
01154	6441		SXERR	
01155	5547		TAB	/TAB FUNCTION IS IMPLEMENTED.
01156	6441		SXERR	/UNIMPLEMENTED USER FUNCTION.
		IFNZRO	MACHINE<	
		CLS		/GET STATUS OF LAST TICK.

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01200 4570 FNEXIT, MUSTBE      /'')
01201 3761                      3761
01202 4177 GOTOPR, JMS      GETWD
01203 4505 OPDONE, JMS I    PPOP
01204 3066                      DCA      OLDOP
01205 1450                      TAD I   WORD
01206 0272                      AND    0700
01207 7650                      SNA CLA
01210 5220                      JMP    ITSOP
01211 1450                      TAD I   WORD
01212 0275                      AND    07077
01213 1273                      TAD    03755
01214 7100                      CLL
01215 1366                      TAD    023
01216 7620                      SNL CLA
01217 5500                      JMP I   PSXERR
01220 1066 ITSOP,          TAD    OLDOP
01221 0272                      AND    0700
01222 3271                      DCA    OTEMP
01223 1450                      TAD I   WORD
01224 0272                      AND    0700
01225 7041                      CIA
01226 1271                      TAD    OTEMP
01227 7700                      SMA CLA
01230 5247                      JMP    DOITNOW
01231 1066                      TAD    OLDOP
01232 4504                      JMS I   PPUSH
01233 4435                      FENTER
01234 2073                      FST    OPERAND
01235 0000                      FEXIT
01236 1073                      TAD    OPERAND
01237 4504                      JMS I   PPUSH
01240 1074                      TAD    OPERAND+1
01241 4504                      JMS I   PPUSH
01242 1075                      TAD    OPERAND+2
01243 4504                      JMS I   PPUSH
01244 1450                      TAD I   WORD
01245 4504                      JMS I   PPUSH
01246 5511                      JMP I   PGETOPR
01247 1066 DOITNOW, TAD    OLDOP
01250 0070                      AND    077
01251 1274                      TAD    07764A
01252 7450                      SNA
01253 5363                      JMP    UDOPER
    
```

01254	7021	IAC	
01255	7650	SNA CLA	
01256	5321	JMP	UMOPER
01257	1266	TAD	OLDOP
01262	2270	AND	077
01261	1276	TAD	OJUMP
01262	3271	DCA	OTEMP
01263	4505	JMS I	PPOP
01264	3075	DCA	OPERAND+2
01265	4505	JMS I	PPOP
01266	3074	DCA	OPERAND+1
01267	4505	JMS I	PPOP
01270	3073	DCA	OPERAND
01271	7402	OTEMP, HLT	
01272	0700	0700, 700	
01273	3755	03755, 3755	
01274	7764	07764A, 7764	
01275	7077	07077, 7077	
01276	5677	OJUMP, JMP I	.+1
01277	1312	PLUS	
01300	1316	M'NUS	
01301	1327	STAR	
01302	1332	SLASH	
01303	5740	UPARRX	/OR 'UPARROW' IF NO EXTENDED FNS
01304	1342	RELATE	
01305	1342	RELATE	
01306	1342	RELATE	
01307	1342	RELATE	
01310	1342	RELATE	
01311	1342	RELATE	
01312	4435	PLUS, FENTER	
01313	4073	FAD	OPERAND
01314	0000	FADEXT, FEXIT	
01315	5203	JMP	OPDONE
01316	4435	MINUS, FENTER	
01317	5073	FSB	OPERAND
01320	0000	FEXIT	
01321	1020	UMOPER, TAD	AC1
01322	7640	SZA CLA	
01323	7330	CLA CLL	CML RAR
01324	1024	TAD	ACS
01325	3024	DCA	ACS /DIRECT REF TO FLOATING AC
01326	5203	JMP	OPDONE
01327	4435	STAR, FENTER	
01330	6073	FMP	OPERAND
01331	1615	FJMP+BKWD+,-FADEXT	
01332	4435	SLASH, FENTER	
01333	2204	FST+FWD+SLSHTMP=.	
01334	3073	FLD	OPERAND
01335	7202	FDV+FWD+SLSHTMP=.	
01336	1622	FJMP+BKWD+,-FADEXT	
01337	0000	SLSHTMP, 0/0/0	
01340	0000		
01341	0000		
01342	1066	RELATE, TAD	OLDOP

01343	1367	TAD	CONST	
01344	3353	DCA	THESKIP	
01345	6201	CDF	0	/***** 8 K INSERT.
01346	1753	TAD I	THESKIP	
01347	6211	CDF	10	/***** 8 K INSERT.
01350	3353	DCA	THESKIP	
01351	4435	FENTER		
01352	5073	FS0	OPERAND	
01353	7402	THESKIP,HLT		
01354	1204	FJMP+FWD+4		
01355	3151	FLD	ONE	
01356	0000	FEXIT		
01357	5203	JMP	OPDONE	
01360	3152	FLD	ZERO	
01361	0000	FEXIT		
01362	5203	JMP	OPDONE	
01363	4505	UDOPER, JMS I	PPOP	
01364	3066	DCA	OLLOOP	
01365	5466	JMP I	OLDOP	
01366	0023	023,	23	
01367	5263	CONST,	,-4104	
01370	0050	FSEQ	/	0
01371	0140	FSGT	/	<
01372	0110	FSLT	/	>
01373	0100	FSGE	/	<0
01374	0150	FSLE	/	>0
01375	0040	FSNE	/	<>

1400 PAGE

01400	0000	GETADDR,0		
01401	6201	CDF	0	/***** 8 K INSERT.
01402	1600	TAD I	GETADDR	
01403	3014	DCA	INDEX2	
01404	2200	ISZ	GETADDR	
01405	1600	TAD I	GETADDR	
01406	3362	DCA	GSS1	
01407	2200	ISZ	GETADDR	
01410	1600	TAD I	GETADDR	

01411	3363	DCA	GSS2
01412	2200	ISZ	GETADOR
01413	0211	CDF	10
01414	1414	TAD I	INDEX2
01415	3067	DCA	ADDRESS
01416	2067	ISZ	ADDRESS
01417	1362	TAD	GSS1
01420	7650	SNA CLA	
01421	5260	JMP	NOSS1
01422	1414	TAD I	INDEX2
01423	7450	SNA	
01424	5261	JMP	ALLOC
01425	7140	CLL CMA	
01426	1362	TAD	GSS1
01427	7630	SZL CLA	
01430	5370	JMP	SSERR
01431	1414	TAD I	INDEX2
01432	3364	DCA	GDIM2
01433	1363	TAD	GSS2
01434	7450	SNA	
01435	5253	JMP	NOSS2
01436	7141	CLL CIA	
01437	1364	TAD	GDIM2
01440	7620	SNL CLA	
01441	5370	JMP	SSERR
01442	1362	TAD	GSS1
01443	7041	CIA	
01444	3362	DCA	GSS1
01445	7410	SKP	
01446	1364	TAD	GDIM2
01447	2362	ISZ	GSS1
01450	5246	JMP	,=2
01451	1363	TAD	GSS2
01452	3362	DCA	GSS1
01453	1362	TAD	GSS1
01454	7104	CLL RAL	
01455	1362	TAD	GSS1
01456	1067	TAD	ADDRESS
01457	3067	DCA	ADDRESS
01460	5600	JMP I	GETADDR
01461	2034	ISZ	DIMFLAG
01462	7410	SKP	
01463	5273	JMP	ISDIM
01464	3034	DCA	DIMFLAG
01465	1363	TAD	GSS2
01466	7640	SZA CLA	
01467	1367	TAD	013
01470	3363	DCA	GSS2
01471	1367	TAD	013
01472	3362	DCA	GSS1
01473	1363	TAD	GSS2
01474	7450	SNA	
01475	7201	CLA IAC	
01476	7041	CIA	
01477	3364	DCA	GDIM2

..... 0 K INSERT.

NOSS2,

NOSS1,
ALLOC,

ISDIM,

01500	2134	ISZ	NOINT
01501	7301	CLA CLL	IAC
01502	1362	TAD	GSS1
01503	7430	SZL	
01504	5765	JMP I	PSPACERR
01505	2364	ISZ	GDIM2
01506	5302	JMP	.-4
01507	3364	DCA	GDIM2
01510	1364	TAD	GDIM2
01511	7124	CLL CML	RAL
01512	7420	SNL	
01513	1364	TAD	GDIM2
01514	3364	DCA	GDIM2
01515	1364	TAD	GDIM2
01516	7430	SZL	
01517	5765	JMP I	PSPACERR
01520	4544	JMS I	SPLEFT
01521	7410	SKP	
01522	5765	JMP I	PSPACERR
01523	7344	CLA CLL	CMA RAL
01524	1014	TAD	INDEX2
01525	3014	DCA	INDEX2
01526	1003	TAD	ARRLOC
01527	3414	DCA I	INDEX2
01530	1362	TAD	GSS1
01531	3414	DCA I	INDEX2
01532	1363	TAD	GSS2
01533	3414	DCA I	INDEX2
01534	7240	CLA CMA	
01535	1067	TAD	ADDRESS
01536	3067	DCA	ADDRESS
01537	1366	TAD	07774
01540	3363	DCA	GSS2
01541	1467	TAD I	ADDRESS
01542	2067	ISZ	ADDRESS
01543	4521	JMS I	PSTICKIT
01544	2363	ISZ	GSS2
01545	5341	JMP	.-4
01546	1364	TAD	GDIM2
01547	7041	CIA	
01550	1160	TAD	04
01551	3364	DCA	GDIM2
01552	4521	JMS I	PSTICKIT
01553	2364	ISZ	GDIM2
01554	5352	JMP	.-2
01555	7346	CLA CLL	CMA RTL
01556	1200	TAD	GETADDR
01557	3200	DCA	GETADDR
01560	4543	JMS I	CNCLR
01561	5201	JMP	GETADDR+1
01562	0000	GSS1,	0
01563	0000	GSS2,	0
01564	0000	GDIM2,	0
01565	0370	PSPACER,	SPACERR
01566	7774	07774,	7774

/FORBID INTERRUPTS NOW.

/CHECK FOR CONTROL C.

```

01567 0013 013, 13 / (12) IF 1 ORG INDEXING
01570 0477 SSERR, JMS I PERROR
01571 2325 TEXT 'SUBSCRIPT'
01572 0223
01573 0322
01574 1120
01575 2400
    
```

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01576 1052 DEF, TAD LINENO
01577 3013 DCA INDEX1
01600 1413 TAD I INDEX1
01601 3220 DCA USERFN
01602 4571 GET+MUSTBE /'FN'
01603 3754 3754
01604 4571 GET+MUSTBE /A VARIABLE
01605 7000 7000
01606 4571 GET+MUSTBE /'('
01607 3755 3755
01610 4571 GET+MUSTBE /A VARIABLE
01611 7000 7000
01612 4571 GET+MUSTBE /')'
01613 3761 3761
01614 4571 GET+MUSTBE /''
01615 3673 3673
01616 5617 JMP I PSKIPIT
01617 0467 PSKIPIT, SKIPIT
01620 0000 USERFN, 0
01621 4570 MORERD, MUSTBE /', '
01622 3763 3763
01623 4513 READ, JMS I PGETVAR
01624 7240 CLA CMA
01625 1045 TAD LOCCTR
01626 3273 DCA LOCTMP
01627 1046 TAD READLOC
01630 3045 DCA LOCCTR
01631 4567 GET+ISIT / (CR) OR '\ '
01632 2000 2000
01633 7410 SKP
01634 5260 JMP SEARCH
01635 4566 ISIT /A LINENO
01636 0000 0000
01637 7410 SKP
01640 5260 JMP SEARCH
01641 4566 ISIT /', '
01642 3763 3763
01643 5267 JMP DATAERR
01644 4501 ISSOME, JMS I PEVAL
01645 7240 CLA CMA
01646 1045 TAD LOCCTR
01647 3046 DCA READLOC
01650 1273 TAD LOCTMP
    
```

01651	3045	DCA	LOCCTR	
01652	4512	JMS I	PSTOVAR	
01653	4567	GET+ISIT		/(CR) OR '\'
01654	2000	2000		
01655	5221	JMP	MORERD	
01656	5503	JMP I	PEXECUTE	
01657	4177	SCHMOR, JMS	GETWD	
01660	4566	SEARCH, ISIT		/'DATA'
01661	1757	1757		
01662	7410	SKP		
01663	5244	JMP	ISSOME	
01664	4566	ISIT		/(EOF)
01665	1755	1755		
01666	5257	JMP	SCHMOR	
01667	4477	DATAERR, JMS I	PERROR	
01670	0401	TEXT	'DATA'	
01671	2401			
01672	0000			
01673	0000	LOCTMP, 0		
01674	0000	GETBLK, 0		
01675	4563	JMS I	PCHKFIT	
01676	1004	TAD	CODELOC	
01677	3045	DCA	LOCCTR	
01700	1004	TAD	CODELOC	
01701	1356	TAD	ABCDEF	
01702	3004	DCA	CODELOC	
01703	1004	TAD	CODELOC	
01704	3357	DCA	BCDEFG	
01705	1005	TAD	PSYMTAB	/UPDATE SYMBOL TABLE NOW.
01706	1356	TAD	ABCDEF	/BY ADDING IN CORRECTION FACTOR.
01707	3005	DCA	PSYMTAB	
01710	1445	GTBKLP, TAD I	LOCCTR	/MOVE TEXT NOW.
01711	2045	ISZ	LOCCTR	
01712	3757	DCA I	BCDEFG	
01713	2357	ISZ	BCDEFG	
01714	1357	TAD	BCDEFG	/NOW CHECK FOR END.
01715	7041	CIA		
01716	1005	TAD	PSYMTAB	
01717	7640	SZA CLA		
01720	5310	JMP	GTBKLP	
01721	7240	CLA CMA		
01722	1006	TAD	NSYMTAB	
01723	3006	DCA	NSYMTAB	
01724	1165	TAD	GSBPTR	
01725	7040	CMA		
01726	1164	TAD	PGOLIST	
01727	3357	DCA	BCDEFG	
01730	1164	TAD	PGOLIST	
01731	3050	DCA	WORD	
01732	1356	TAD	ABCDEF	
01733	1450	TAD I	WORD	
01734	3450	DCA I	WORD	
01735	2050	ISZ	WORD	

01736	2357	ISZ	BCDEFG
01737	5332	JMP	,=5
01740	1263	TAD	FORCT
01741	3357	DCA	BCDEFG
01742	1360	TAD	PPFORLI
01743	3050	DCA	WORD
01744	5352	JMP	,+6
01745	1356	TAD	ABCDEF
01746	1450	TAD I	WORD
01747	3450	DCA I	WORD
01750	2050	ISZ	WORD
01751	2050	ISZ	WORD
01752	2357	ISZ	BCDEFG
01753	5345	JMP	,=6
01754	1005	TAD	PSYMTAB
01755	5674	JMP I	GETBLK
01756	7774	ABCDEF,	=4
01757	0000	BCDEFG,	0
01760	7706	PPFORLI,	FORLIST+1
01761	0000	PUTJ,	0
01762	4506	JMS I	PFIX
01763	7200	CLA	
01764	1016	TAD	AC3
01765	4433	JMS I	PPUTCH
01766	4546	JMS I	PANORM
01767	5761	JMP I	PUTJ

01770	0000	GETJ,	0	/GETS A CHARACTER FROM THE TTY.
01771	4776	JMS I	PBEGFIX	/CLEAN UP THE FAC
01772	4432	JMS I	PGETCH	/FECTH A CHAR,
01773	3016	DCA	AC3	/SAVE IT, BABY!
01774	4546	JMS I	PANORM	/AND NORMALIZE AC.
01775	5770	JMP I	GETJ	/AND RETURN NOW.
01776	3762	PBEGFIX,	BEGFIX	

2000

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02000	2134	NOTNOW,	ISZ	NOINT	/RESET *C SWITCH SO NO INTERUPT NOW.
02001	2050		ISZ	WORD	
02002	1450		TAD I	WORD	
02003	7450		SNA		
02004	5232		JMP	INSERT	

22225	3371		DCA	LOWLOC
22226	3450		OCA I	WORD
22227	1371		TAD	LOWLOC
22212	3045		OCA	LOCCTR
22211	4510		JMS I	PPASSCR
22212	1371	MOVE,	TAD	LOWLOC
22213	7041		CIA	
22214	1004		TAD	CODELOC
22215	7650		SNA CLA	
22216	5230		JMP	INSRTS
22217	7340		CLA CLL	CMA
22220	1371		TAD	LOWLOC
22021	3371		OCA	LOWLOC
22022	7340		CLA CLL	CMA
22023	1045		TAD	LOCCTR
22024	3045		DCA	LOCCTR
22025	1771		TAD I	LOWLOC
22026	3445		OCA I	LOCCTR
22027	5212		JMP	MOVE
22030	1045	INSRTS,	TAD	LOCCTR
22031	3004		OCA	CODELOC
22032	1057	INSERT,	TAD	FPTR
22033	1040		TAD	MLINBUF
22034	7040		CMA	
22035	3057		DCA	FPTR
22036	7326		CLA CLL	CML RTL
22037	1057		TAD	FPTR
22040	7450		SNA	
22041	5313		JMP	FIXLIN
22042	7040		CMA	
22043	4563		JMS I	PCHKFIT
22044	1004		TAD	CODELOC
22045	3045		DCA	LOCCTR
22046	1437		TAD I	PLINBUF
22047	7001		IAC	
22050	3013		DCA	INDEX1
22051	1413		TAD I	INDEX1
22052	3073		OCA	OPERAND
22053	1413		TAD I	INDEX1
22054	3074		DCA	OPERAND+1
22055	4336		JMS	COMPARE
22056	5261		JMP	NOTFRST
22057	4361		JMS	SUBRA
22060	5303		JMP	TRANSF
22061	4510	NOTFRST,	JMS I	PPASSCR
22062	4336		JMS	COMPAR
22063	5261		JMP	NOTFRST
22064	1045		TAD	LOCCTR
22065	3360		OCA	LSTLOC
22066	1004		TAD	CODELOC
22067	3045		DCA	LOCCTR
22070	4361		JMS	SUBRA
22071	4177		JMS	GETWD
22072	1050	MOVLUP,	TAD	WORD
22073	3772		OCA I	PUTLOC

02074	2372		ISZ	PUTLOC
02075	4177		JMS	GETWO
02076	1360		TAD	LSTLOC
02077	7041		CIA	
02100	1045		TAD	LOCCTR
02101	7640		SZA	CLA
02102	5272		JMP	MOVLUP
02103	1037	TRANSF,	TAD	PLINBUF
02104	3060		DCA	GPTR
02105	1460	TRALUP,	TAD I	GPTR
02106	2060		ISZ	GPTR
02107	3772		DCA I	PUTLOC
02110	2372		ISZ	PUTLOC
02111	2057		ISZ	FPTR
02112	5305		JMP	TRALUP
02113	4561	FIXLIN,	JMS I	PLINFIX
02114	5520		JMP I	PEDIT

02115 0000 IGNORE, 0

/THIS ROUTINE LOOKS FOR A "\ " OR A C.R.

02116	4567		GET+ISIT	
02117	5000		5000	/TEXT?
02120	5327		JMP	NOTBAD /NOPE.
02121	4177		JMS	GETWD
02122	1050		TAD	WORD
02123	0070		AND	077
02124	7640		SZA CLA	/END OF TEXT?
02125	5321		JMP	,=4 /NOPE.
02126	5316		JMP	IGNORE+1 /YEP, GET NEXT ITEM.
02127	4575	NOTBAD,	JMS I	PISITLIT /IS IT A LITERAL?
02130	7410		SKP	
02131	5316		JMP	IGNORE+1 /YES.
02132	4566		ISIT	
02133	2000		2000	/"\" OR C.R.
02134	5316		JMP	IGNORE+1 / N O
02135	5715		JMP I	IGNORE /YES, RETURN TO CALLER.

02136	0000	COMPARE, 0		
02137	4567		GET+ISIT	/A LINENO
02140	0000		0000	
02141	5356		JMP	IAMLESS
02142	1050		TAD	WORD
02143	7001		IAC	
02144	3013		DCA	INDEX1
02145	1413		TAD I	INDEX1
02146	7141		CLL CIA	
02147	1073		TAD	OPERAND
02150	7640		SZA CLA	
02151	5355		JMP	FRSTNE
02152	1413		TAD I	INDEX1
02153	7141		CLL CIA	
02154	1074		TAD	OPERAND+1
02155	7620	FRSTNE, SNL CLA		/IS OPERAND<THIS LINENO
02156	2336	IAMLESS, ISZ	COMPARE	/YES
02157	5736		JMP I	COMPARE
02160	0000	LSTLOC, 0		
02161	0000	SUBRA, 0		
02162	1057		TAD	FPTR
02163	7100		CLL	
02164	1004		TAD	CODELOC
02165	3004		DCA	CODELOC
02166	1004		TAD	CODELOC
02167	3372		DCA	PUTLOC
02170	5761		JMP I	SUBRA
02171	0000	LOWLOC, 0		
02172	0000	PUTLOC, 0		

02173	4177	PRINT,	JMS	GETWD	/THIS INSTRUCTION MAY BE COMBINED WITH THE GET INSTRUCTION BEL
02174	7346		CLA CLL	CMA RTL	/7775==3 FOR DEVICE CHECK.
02175	1131		TAD	OUTDEV	/MULTIPLY DEVICE BY 3.
02176	1131		TAD	OUTDEV	
02177	1131		TAD	OUTDEV	/SO THAT LPT=6, PTP=3, AND TTY=0.
02200	1361		TAD	0110	/NOW ADD IN 72. THUS TTY=72,LPT=00.
02201	3357		OCA	TWIDTH	/AND SAVE FOR FUTURE USE.
02202	4566		ISIT		/CHECK FOR FIRST COMMA, ONCE ONLY CHECK.
02203	3763		3763		
02204	5207		JMP	PRINTC	/NO. CONTINUE CHECKING.
02205	5277		JMP	PRINBLK	/YEP. GIVE BLANK, THEN TAB OVER.
02206	4177	PRINTG,	JMS	GETWD	/GET NEXT ELEMENT AFTER A TEXT ELEMENT.
02207	3345	PRINTC,	OCA	TABFLG	/RESET TAB INDICATER.
02210	4566		ISIT		/CHECK TO SEE IF CARRIAGE RETURN.
02211	2000		2000		
02212	5216		JMP	NOPCR	/NOT A CARRIAGE RETURN. CONTINUE CHECKING.
02213	4514		JMS I	PPRINTXT	
02214	6931		CRLF		
02215	5503		JMP I	PEXECUTE	
02216	4566	NOPCR,	ISIT		/IS IT A COMMA (" , ")
02217	3763		3763		
02220	5316		JMP	PRENT	/NO. FINISH CHECKING BELOW.
02221	5303		JMP	PRINCOM	/IT IS. PROCESS THE COMMA NOW.
02222	4566	PRINTHS,	ISIT		/TEXT
02223	5000		5000		
02224	5236		JMP	NOTTXT	
02225	4177	PRINGUO,	JMS	GETWD	
02226	1050		TAD	WORD	
02227	7012		RTR		
02230	7012		RTR		
02231	7012		RTR		
02232	4260		JMS	PRINHAJ	
02233	1050		TAD	WORD	
02234	4260		JMS	PRINHAJ	
02235	5225		JMP	PRINGUO	
02236	1241	NOTTXT,	TAD	PPRINRET	
02237	5600		JMP I	PEVALGO	
02240	1007	PEVALGO,	EVALGO		
02241	2242	PPRINRE,	PRINRET		
02242	1345	PRINRET,	TAD	TABFLG	/WAS THERE A TAB PRESENT?

02243	7640	SZA	CLA		
02244	5762	JMP	I	TABTHR	/YEP, EXECUTE TAB CORRECTOR.
02245	1360	TAD		014	/SEE IF ROOM FOR 13 PLACES(1+12).
02246	4346	JMS		CHECKW	
02247	1024	TAD		ACS	
02250	7710	SPA	CLA		
02251	5254	JMP		.+3	
02252	1051	TAD		0240	
02253	4433	JMS	I	PPUTCH	
02254	4517	JMS	I	POUTNUM	
02255	1051	TAD		0240	
02256	4433	JMS	I	PPUTCH	
02257	5207	JMP		PRINTC	/GO BACK AND GET NEXT.
02260	0000	PRINHAF,	0		
02261	0070	AND		077	
02262	7450	SNA			
02263	5206	JMP		PRINTG	/GO SKIP PAST TEXT ELEMENT AND CHECK NEXT.
02264	1326	TAD		007736	
02265	7450	SNA			
02266	5660	JMP	I	PRINHAF	
02267	1062	TAD		02	
02270	0070	AND		077	
02271	1051	TAD		0240	
02272	3024	DCA		ACS	/SAVE CHARACTER FOR A SECOND.
02273	4346	JMS		CHECKW	/CHECK TO SEE IF IT'LL FIT ON THE LINE.
02274	1024	TAD		ACS	/RESTORE THE CHARACTER.
02275	4433	JMS	I	PPUTCH	
02276	5660	JMP	I	PRINHAF	
02277	7200	PRINBLK,	CLA		/MAKE SURE AC IS ZERO.
02300	1051	TAD		0240	
02301	4433	JMS	I	PPUTCH	
02302	4346	JMS		CHECKW	/CHECK TO SEE IF ROOM FOR ONE MORE.
02303	1126	PRINCOM,	TAD	COLUMN	/SEE IF COLUMN ON COMMA BOUNDRY.
02304	7450	SNA			
02305	5312	JMP		PRINSEM	/YEP.
02306	1327	TAD		07762	/SUBTRACT A LITTLE AN CHECK AGAIN.
02307	7500	SMA			/TOO FAR?
02310	5304	JMP		.-4	/NOPE.
02311	5277	JMP		PRINBLK	/YEP, GIVE BLANK AND LOOP AGAIN.
02312	4567	PRINSEM,	GET+ISIT		/(CR) OR '\'
02313	2000		2000		
02314	7410		SKP		
02315	5503	JMP	I	PEXECUTE/YES	
02316	4566	PRENT,	ISIT		/' '
02317	3762		3762		
02320	7410		SKP		
02321	5312	JMP		PRINSEM /YES	
02322	4566		ISIT		/' '
02323	3763		3763		
02324	5222	JMP		PRINTHS	
02325	5277	JMP		PRINBLK	
02326	7736	007736,	7736		
02327	7762	07762,	7762		

02330	0000	LINFIX, 0			
02331	1004		TAD	CODELOC	
02332	3045		DCA	LOCCTR	
02333	4177	LFXLUP, JMS		GETWD	
02334	1450		TAD I	WORD	
02335	7640		SZA CLA		/IS IT A LINENO
02336	5730		JMP I	LINFIX	/NO
02337	2050		ISZ	WORD	
02340	7240		CLA CMA		
02341	1045		TAD	LOCCTR	
02342	3450		DCA I	WORD	
02343	4510		JMS I	PPASSCR	
02344	5333		JMP	LFXLUP	
02345	0000	TABFLG, 0			/TAB FOUND FLAG.
02346	0000	CHECKW, 0			/THIS ROUTINE CHECKS FOR LINE TOO LONG.
02347	1126		TAD	COLUMN	/GET WHERE AT NOW.
02350	7040		CMA		/=WHEREAT=#OF PLACES IN OUT CHAR.
02351	1357		TAD	TWIDTH	/ADD IN WIDTH OF DEVICE.
02352	7700		SMA CLA		/TOO BIG.
02353	5746		JMP I	CHECKW	/NAH, RETURN TO SENDER.
02354	4514		JMS I	PPRINTXT	/YEP, GIVE C.R.L.F.
02355	6531		CRLF		
02356	5746		JMP I	CHECKW	/AND RETURN TO SENDER.
02357	0000	TWIDTH, 0			/0 IS OK SINCE IT'LL BE SET UP CORRECTLY.
02360	0014	014, 14			/MAGIC CONSTANT.
02361	0110	0110, 110			/WDTH OF TTY PAPER.
02362	6350	TABTHR, TABDO			/ROUTINE WHICH PROCESS TAB CHARACTER.
02363	0073	MENDPDL, -ENDPOL=1			
02364	0000	PUSH, 0			
02365	3436		DCA I	PDL	
02366	2036		ISZ	PDL	
02367	1036		TAD	PDL	
02370	1363		TAD	MENDPDL	
02371	7640		SZA CLA		
02372	5764		JMP I	PUSH	
02373	4477		JMS I	PERROR	
02374	0530		TEXT	'EXPRESSION'	
02375	2022				
02376	0523				
02377	2311				
02400	1716				
02401	0000				

02402	4541	EXIT,	JMS I	PCOWT	/WAIT FOR BUFFER TO EMPTY AND THEN CONTINUE.
02403	1007		TAD	0215	
02404	4433		JMS I	PPUTCH	
02405	1010	EDIT,	TAD	0212	
02406	4433		JMS I	PPUTCH	
02407	1130		TAD	OUTD2	/RESET DEVICE
02410	3131		DCA	OUTDEV	
02411	4543		JMS I	CNCLR	/CHECK TO SEE IF *C WAS TYPED.
02412	1362		TAD	PXXTHEN	
02413	4524		JMS I	PGETLIN	
02414	1437		TAD I	PLINBUF	
02415	3050		DCA	WORD	
02416	1450		TAD I	WORD	
02417	7650		SNA CLA		
02420	5766		JMP I	PNOTNOW	
02421	1010		TAD	0212	
02422	4433		JMS I	PPUTCH	
02423	1130		TAD	OUTD2	/RESET I/O DEVICE.
02424	3131		DCA	OUTDEV	
02425	4566		ISIT		/'RUN'
02426	3736		SKP		
02427	7410		SKP		
02430	5252		JMP	RUN	
02431	4566		ISIT		/'LIS'
02432	3737		SKP		
02433	7410		SKP		
02434	5763		JMP I	PLIST	
02435	4566		ISIT		/'SCR'
02436	3735		SKP		
02437	5254		JMP	IMMED	
02440	1365	SCRATCH,	TAD	PPERMSYM	
02441	3004		DCA	CODELOC	
02442	1364		TAD	PXXEOF	
02443	3765		DCA I	PPERMSYM	
02444	1365		TAD	PPERMSYM	
02445	7001		IAC		
02446	3005		DCA	PSYMTAB	
02447	7240		CLA CMA		
02450	3006		DCA	NSYMTAB	
02451	4537		JMS I	PRESET	/RESET DEVICES AFTER SCRATCH.
02452	4262	RUN,	JMS	CLEARV	
02453	5503		JMP I	PEXECUTE	
02454	1037	IMMED,	TAD	PLINBUF	

02455	3045		DCA	LOCCTR	
02456	1364		TAD	PXXEOP	
02457	3052		DCA	LINENO	
02460	5503		JMP I	PEXECUTE	
02461	7400	PJSET,	SETUP		
02462	0000	CLEARV,	0		
02463	4661		JMS I	PJSET	
02464	5303		JMP	RUNIN	
02465	1456	RUNLUP,	TAD I	EPTR	
02466	1360		TAD	07000A	
02467	7640		SZA	CLA	/IS IT A VARIABLE
02470	5277		JMP	RUNNOT	/NO
02471	2056		ISZ	EPTR	
02472	1456		TAD I	EPTR	
02473	3060		DCA	GPTR	

02474	1460	TAD I	GPTR	
02475	3456	DCA I	EPTR	
02476	7410	SKP		
02477	2056	RUNNOT, ISZ	EPTR	
02500	2056	ISZ	EPTR	
02501	2056	ISZ	EPTR	
02502	2056	ISZ	EPTR	
02503	2057	RUNIN, ISZ	FPTR	
02504	5265	JMP	RUNLUP	
02505	1361	TAD	PLIMIT	
02506	3003	DCA	ARRLOC	
02507	1005	TAD	PSYMTAB	
02510	3056	DCA	EPTR	
02511	1006	TAD	NSYMTAB	
02512	3057	DCA	FPTR	
02513	5343	JMP	RUN2IN	
02514	1456	RUN2LUP, TAD I	EPTR	
02515	1360	TAD	07000A	
02516	7640	SZA CLA		/IS IT A VARIABLE
02517	5337	JMP	RUN2NOT	/NO
02520	2056	ISZ	EPTR	
02521	1456	TAD I	EPTR	
02522	3031	DCA	TMP	
02523	1003	TAD	ARRLOC	
02524	3456	DCA I	EPTR	
02525	1031	TAD	TMP	
02526	4521	JMS I	PSTICKIT	
02527	4521	JMS I	PSTICKIT	
02530	4521	JMS I	PSTICKIT	
02531	4521	JMS I	PSTICKIT	
02532	2056	ISZ	EPTR	
02533	3456	DCA I	EPTR	
02534	2056	ISZ	EPTR	
02535	3456	DCA I	EPTR	
02536	5342	JMP	.+4	
02537	2056	RUN2NOT, ISZ	EPTR	
02540	2056	ISZ	EPTR	
02541	2056	ISZ	EPTR	
02542	2056	ISZ	EPTR	
02543	2057	RUN2IN, ISZ	FPTR	
02544	5314	JMP	RUN2LUP	
02545	1004	TAD	CODELOC	
02546	3045	DCA	LOCCTR	
02547	1125	TAD	PPDLIST	
02550	3036	DCA	PDL	
02551	1004	TAD	CODELOC	
02552	3046	DCA	READLOC	
02553	7240	CLA CMA		
02554	3063	DCA	FORCT	
02555	1164	TAD	PGOLIST	
02556	3165	DCA	GSBPTR	
02557	5662	JMP I	CLEARV	
02560	7000	07000A, 7000		
02561	0003	PLIMIT, LIMIT		/FIRST WORD OF USER AREA
02562	7253	PXXTHEN, XXTHEN		

02563	3630	PLIST,	LIST	
02564	7502	PXXEOF,	XXEOF	
02565	7222	PPERMSY,	PERMSY	
02566	2202	PNOTNOW,	NOTNOW	
02567	4262	END,	JMS	CLEARV
02570	4537	STOP,	JMS I	PRESET
02571	4541		JMS I	PCOWT
02572	4514		JMS I	PPRINTXT
02573	6525		READY	
02574	5520		JMP I	PEDIT

/RESET ALL DEVICES NOW,
/AND WAIT FOR I/O TO FINISH UP.
/AND GIVE THE STOP MESSAGE

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02600	4561	GETLRET,	JMS I	PLINFX
02601	4543		JMS I	CNCLR
02602	5683		JMP I	GETLIN
02603	8000	GETLIN,	0	
02604	3064		DCA	SNUMFLG
02605	1131		TAD	OUTDEV
02606	3130		DCA	OUTOZ
02607	3131		DCA	OUTDEV
02610	1172	NEWLIN,	TAD	PLBEGIN
02611	3056		DCA	EPTR
02612	1370		TAD	O40
02613	3456		DCA I	EPTR
02614	2056		ISZ	EPTR
02615	4432	NEWCHAR,	JMS I	PGETCH
02616	3456		DCA I	EPTR
02617	7240		CLA CMA	
02620	1127		TAD	INDEV
02621	7640		SZA CLA	
02622	5226		JMP	.+4
02623	3133		DCA	CNTLO
02624	7201		CLA IAC	
02625	3131		DCA	OUTDEV

/CHECK TO SEE IF "C WAS TYPED WHILE HERE.

/GET THE OUTPUT DEVICE.
/SAVE FOR A SECOND.
/TURN OFF THE OUTPUT DEVICE.

/CHECK THE INPUT DEVICE NOW.
/GET IT, BABY.
/IS IT THE TTY?
/NOPE.
/IT IS, RESET CONTROL 0,
/AND TEMPORARILY SET THE OUTPUT TO THE TTY.


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02626 1456      TAD I  EPTR
02627 1374      TAD   07603
02630 7450      SNA           /IS IT ALT-MODE (175)
02631 5263      JMP    ALTMODE /YES
02632 1367      TAD   036
02633 7450      SNA           /IS IT '1'
02634 5266      JMP    BARROW  /YES
02635 1371      TAD   0122
02636 7450      SNA           /IS IT (CAR. RET.)
02637 5300      JMP    CARRET  /YES
02640 1375      TAD   07715
02641 7450      SNA           /IS IT '0'
02642 5215      JMP    NEWCHAR /YES
02643 0372      AND   0140B
02644 7440      SZA
02645 1363      TAD   07640B
02646 7640      SZA CLA      /IS IT A PRINTABLE CHARACTER
02647 5215      JMP    NEWCHAR /NO
02650 1456      TAD I  EPTR
02651 4433      JMS I  PPUTCH
02652 1056      TAD   EPTR
02653 2056      ISZ   EPTR
02654 1174      TAD   MLEND
02655 7640      SZA CLA
02656 5215      JMP    NEWCHAR
02657 4537      TUBIG, JMS I  PRESET      /RESET ALL DEVICES NOW,
02660 4514      JMS I  PPRINTXT      /AND GIVE THE ERROR MESSAGES.
02661 5162      TOOLONG
02662 5210      JMP    NEWLIN
02663 4514      ALTMODE, JMS I PPRINTXT
02664 6501      DELETED
02665 5210      JMP    NEWLIN
02666 1056      BARROW, TAD   EPTR
02667 1173      TAD   MLBEGIN
02670 7650      SNA CLA
02671 5215      JMP    NEWCHAR
02672 7240      CLA CMA
02673 1056      TAD   EPTR
02674 3056      DCA   EPTR
02675 1373      TAD   03737B
02676 4433      JMS I  PPUTCH
02677 5215      JMP    NEWCHAR
02700 1007      CARRET, TAD   0215
02701 4433      JMS I  PPUTCH
02702 2134      ISZ   NOINT      /SET FLAG TO PREVENT INTERUPTS AS OF NOW.
02703 1172      TAD   PLBEGIN /EPTR=BEGINNING OF STRING
02704 3056      DCA   EPTR      /FPTR=WHERE TRANSLATED SYMBOL GOES
02705 1037      TAD   PLINBUF /GPTR=CHAR IN STRING(,GE, EPTR)
02706 3057      DCA   FPTR      /HPTR=POSITION IN TABLE
02707 1377      SLOOP, TAD   PTABLE
02710 3061      DCA   HPTR
02711 1056      GLOOP, TAD   EPTR
02712 3060      DCA   GPTR
02713 1461      TAD I  HPTR
02714 7650      SNA CLA

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02715	5776		JMP I	POTHER
02716	1261		TAD	HPTR
02717	3250		DCA	WORD
02722	2261		ISZ	HPTR
02721	3024		DCA	ACS
02722	1460	HLOOP,	TAD I	GPTR
02723	1054		TAD	07740
02724	7640		SZA	CLA
02725	5330		JMP	BSKIP
02726	2260		ISZ	GPTR
02727	5322		JMP	HLOOP
02730	7330	BSKIP,	CLA CLL	CML RAR
02731	1024		TAD	ACS
02732	3024		DCA	ACS
02733	1461		TAD I	HPTR
02734	7430		SZL	
02735	2061		ISZ	HPTR
02736	7430		SZL	
02737	5343		JMP	.+4
02740	7012		RTR	
02741	7012		RTR	
02742	7012		RTR	
02743	0070		AND	077
02744	7450		SNA	
02745	5766		JMP I	JMATCH
02746	1054		TAD	07740
02747	7450		SNA	
02750	5330		JMP	BSKIP
02751	0070		AND	077
02752	1370		TAD	040
02753	7041		CIA	
02754	1460		TAD I	GPTR
02755	2060		ISZ	GPTR
02756	7650		SNA	CLA
02757	5322		JMP	HLOOP
02760	1461		TAD I	HPTR
02761	0070		AND	077
02762	2061		ISZ	HPTR
02763	7640	07640B,	SZA	CLA
02764	5360		JMP	.-4
02765	5311		JMP	GLOOP
02766	6506	JMATCH,	AMATCH	
02767	0036	036,	36	
02770	0040	040,	40	
02771	0122	0122,	122	
02772	0140	0140B,	140	
02773	3737	03737B,	3737	
02774	7603	07603,	7603	
02775	7715	07715,	7715	
02776	3000	POTHER,	OTHER	
02777	7023	PTABLE,	XXPLUS	

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03000	4310	OTHER,	JMS	NONBLNK	
03001	1321		TAD	07763B	
03002	7440		SZA		
03003	5223		JMP	NOTCR	
03004	1325		TAD	PXXCRLF	
03005	3457		DCA I	FPTR	
03006	1257		TAD	FPTR	
03007	3013		DCA	INDEX1	
03010	1326		TAD	PXXEXIT	
03011	3013		DCA I	INDEX1	
03012	1013		TAD	INDEX1	
03013	1041		TAD	MENDLIN	
03014	7450		SNA		
03015	5622		JMP I	PGETLRET	
03016	7710		SPA CLA		
03017	5210		JMP	.-7	
03020	5621		JMP I	PTUBIG	
03021	2657	PTUBIG,	TUBIG		
03022	2600	PGETLRE,	GETLRET		
03023	1322	NOTCR,	TAD	07737	
03024	7450		SNA		
03025	5724		JMP I	JDIGIT	
03026	1302		TAD	07764B	
03027	7100		CLL		
03030	1065		TAD	012	
03031	7430		SZL		
03032	5724		JMP I	JDIGIT	
03033	1300		TAD	07725A	
03034	7100		CLL		
03035	1321		TAD	032	
03036	7430		SZL		
03037	5703		JMP I	PLETTER	
03040	7330		CLA CLL	CML RAR	
03041	1456		TAD I	EPTR	
03042	3456		DCA I	EPTR	
03043	1076	REMPACK,	TAD	PTEXT	
03044	3457		DCA I	FPTR	
03045	2057		ISZ	FPTR	
03046	3307	TXTPAK,	DCA	THISTXT	
03047	1456		TAD I	EPTR	
03050	1301		TAD	07763B	
03051	7450		SNA		
03052	5276		JMP	CRINTXT	
03053	1304		TAD	07753	
03054	7650		SNA CLA		
03055	5370		JMP	DQINTXT	
03056	1456		TAD I	EPTR	
03057	0070		AND	077	

03060	3456	DCA I	EPTR
03061	1307	TAD	THISTXT
03062	7450	SNA	
03063	5270	JMP	LHALF
03064	1456	TAD I	EPTR
03065	3457	DCA I	FPTR
03066	2057	ISZ	FPTR
03067	5274	JMP	RHALF
03070	1456	LHALF, TAD I	EPTR
03071	7106	CLL	RTL
03072	7006	RTL	
03073	7006	RTL	
03074	2056	RHALF, ISZ	EPTR
03075	5246	JMP	TXTPAK
03076	1307	CRINTXT, TAD	THISTXT
03077	5723	JMP I	JTXXIT
03100	7725	07725A, 7725	
03101	7763	07763B, 7763	
03102	7764	07764B, 7764	
03103	3446	PLETTER, LETTER	
03104	7753	07753, 7753	
03105	4200	04200, 4200	
03106	0042	042, 42	
03107	0000	THISTXT, 0	
03110	0000	NONBLNK, 0	
03111	1456	TAD I	EPTR
03112	1054	TAD	07740
03113	7640	SZA CLA	
03114	5317	JMP	,+3
03115	2056	ISZ	EPTR
03116	5311	JMP	NONBLNK+1
03117	1456	TAD I	EPTR
03120	5710	JMP I	NONBLNK
03121	0032	032, 32	
03122	7737	07737, 7737	
03123	3201	JTXXIT, MTXXIT	
03124	3204	JDIGIT, DIGIT	
03125	7226	PXXCRLF, XXCRLF	
03126	7505	PXXEXIT, XXEXIT	
03127	0072	POPERA, OPERAND-1	
03130	7506	PXXLIT0, XXLIT0	
03131	4435	LITRAL, FENTER	
03132	2073	FST	OPERAND
03133	0000	FEXIT	
03134	1075	TAD	OPERAND+2
03135	7640	SZA CLA	
03136	5346	JMP	ALL3
03137	1074	TAD	OPERAND+1
03140	7640	SZA CLA	
03141	5347	JMP	JUST2
03142	1073	TAD	OPERAND
03143	7650	SNA CLA	

03144	5350		JMP	JUST0
03145	7344	JUST1,	CLA CLL	CMA RAL
03146	7001	ALL3,	IAC	
03147	1062	JUST2,	TAD	02
03150	7040	JUST0,	CMA	
03151	3031		DCA	TMP

03152	1327	TAD	POPERA	
03153	3013	DCA	INDEX1	
03154	1231	TAD	TMP	
03155	7240	CMA		
03156	1330	TAD	PXXLIT0	
03157	5363	JMP	JUSTOP	
03160	6201	JUSTOP, CDF	0	/***** 8 K INSERT.
03161	1413	TAD I	INDEX1	
03162	6211	CDF	10	/***** 8 K INSERT.
03163	3457	JUSTOP, DCA I	FPTR	
03164	2057	ISZ	FPTR	
03165	2031	ISZ	TMP	
03166	5360	JMP	JUSTOP	
03167	5516	JMP I	PSLOOP	
03170	1307	DQINTXT, TAD	THISTXT	
03171	2056	ISZ	EPTR	
03172	7440	SZA		
03173	5376	JMP	,+3	
03174	1305	TAD	04200	
03175	5723	JMP I	JTXXIT	
03176	1306	TAD	042	
03177	3457	DCA I	FPTR	
03200	2057	ISZ	FPTR	
03201	3457	MTXXIT, DCA I	FPTR	
03202	2057	ISZ	FPTR	
03203	5516	JMP I	PSLOOP	
03204	7200	DIGIT, CLA		
03205	1464	TAD I	SNUMFLG	
03206	1376	TAD	01774	
03207	7440	SZA		/IS IT 'GOTO' OR 'THEN'
03210	7001	IAC		
03211	7440	SZA		/OR 'GOSUB'
03212	1375	TAD	01742	
03213	7650	SNA CLA		/OR 'LIST'
03214	7240	CLA CMA		/YES
03215	3064	DCA	SNUMFLG	
03216	4435	FENTER		
03217	3152	FLD	ZERO	
03220	0000	FEXIT		
03221	3365	DCA	DPFLAG	
03222	3366	DCA	DECFRAC	
03223	7410	SKP		
03224	2056	DIGIN, ISZ	EPTR	
03225	4522	JMS I	PNONBLNK	
03226	1316	TAD	07673	
03227	7450	SNA		
03230	5263	JMP	ITSE	
03231	1370	TAD	027	
03232	7450	SNA		
03233	5256	JMP	ITSDP	

03234	1374		TAD	07764C
03235	7100		CLL	
03236	1065		TAD	012
03237	7420		SNL	
03240	5331		JMP	ENDNUM
03241	7110		CLL RAR	
03242	1373		TAD	02040A
03243	3360		DCA	FDIGIT
03244	7010		RAR	
03245	3361		DCA	FDIGIT+1
03246	4435		FENTER	
03247	6545		FMPI	PTEN
03250	4310		FAD+FWD+FDIGIT=.	
03251	0000		FEXIT	
03252	1365		TAD	DPFLAG
03253	7640		SZA CLA	
03254	2366		ISZ	DECFRAC
03255	5224		JMP	DIGIN
03256	1365	ITSDP,	TAD	DPFLAG
03257	7640		SZA CLA	
03260	5331		JMP	ENDNUM
03261	2365		ISZ	DPFLAG
03262	5224		JMP	DIGIN
03263	3360	ITSE,	DCA	FDIGIT
03264	1064		TAD	SNUMFLG
03265	7640		SZA CLA	
03266	5331		JMP	ENDNUM
03267	2056		ISZ	EPTR
03270	4522		JMS I	PNONBLNK
03271	1371		TAD	077250
03272	7450		SNA	
03273	5300		JMP	ITSP
03274	1372		TAD	07776
03275	7640		SZA CLA	
03276	5301		JMP	NOTSGN
03277	2360		ISZ	FDIGIT
03300	2056	ITSP,	ISZ	EPTR
03301	4767	NOTSGN,	JMS I	JISDIG
03302	5331		JMP	ENDNUM
03303	2056		ISZ	EPTR
03304	3361		DCA	FDIGIT+1
03305	4767		JMS I	JISDIG
03306	5322		JMP	ONLY1
03307	7200		CLA	
03310	1361		TAD	FDIGIT+1
03311	7106		CLL RTL	
03312	1361		TAD	FDIGIT+1
03313	7104		CLL RAL	
03314	3361		DCA	FDIGIT+1
03315	4767		JMS I	JISDIG
03316	7673	07673,	7673	
03317	1361		TAD	FDIGIT+1
03320	3361		DCA	FDIGIT+1
03321	2056		ISZ	EPTR
03322	1360	ONLY1,	TAD	FDIGIT

03323	7110	CLL RAR	
03324	1361	TAD	FOIGIT+1
03325	7422	SNL	
03326	7241	CIA	
03327	1366	TAD	DECFRAC
03330	3366	DCA	DECFRAC
03331	7200	ENDNUM, CLA	
03332	1366	TAD	DECFRAC
03333	7700	SMA CLA	
03334	1364	TAD	DIVXTEN
03335	1363	TAD	MULXTEN
03336	3346	DCA	MULEXP
03337	1366	TAD	DECFRAC
03340	7510	SPA	
03341	7041	CIA	
03342	7040	CMA	
03343	3366	DCA	DECFRAC
03344	5350	JMP	.+4
03345	4435	FENTER	
03346	7402	MULEXP, HLT	
03347	0000	EXIT	
03350	2366	ISZ	DECFRAC
03351	5345	JMP	.-4
03352	2064	ISZ	SNIMFLG
03353	5777	JMP I	PLITRAL
03354	4506	JMS I	PFIX
03355	7200	CLA	
03356	5757	JMP I	PCOMMON
03357	3400	PCOMMON,COMMON	
03360	0000	FOIGIT, 01010	
03361	0000		
03362	0000		
03363	6545	MULXTEN,FMPI	PTEN
03364	1000	DIVXTEN,FDV=FMP	
03365	0000	DPFLAG, 0	
03366	0000	DECFRAC, 0	
03367	6532	JISDIG, ISDIG	
03370	0027	027, 27	
03371	7725	07725B, 7725	
03372	7776	07776, 7776	
03373	2040	02040A, 2040	
03374	7764	07764C, 7764	
03375	1742	01742, 1742	
03376	1774	01774, 1774	
03377	3131	PLITRAL,LITRAL	

03400	1005	COMMON,	TAD	PSYMTAB	
03401	3060		DCA	GPTR	
03402	1206		TAD	NSYMTAB	
03403	3261		DCA	HPTR	
03404	5231		JMP	IN	
03405	1460	LUP,	TAD I	GPTR	
03406	2060		ISZ	GPTR	
03407	2060		ISZ	GPTR	
03410	7640		SZA CLA		/IS IT A LINENO
03411	5227		JMP	NOT	/NO
03412	1460		TAD I	GPTR	
03413	2060		ISZ	GPTR	
03414	7041		CIA		
03415	1017		TAD	AC2	
03416	7640		SZA CLA		
03417	5230		JMP	NOT+1	
03420	1460		TAD I	GPTR	
03421	7041		CIA		
03422	1016		TAD	AC3	
03423	7640		SZA CLA		
03424	5230		JMP	NOT+1	
03425	7346		CLA CLL	CMA RTL	
03426	5312		JMP	ISOEP2	
03427	2060	NOT,	ISZ	GPTR	
03430	2060		ISZ	GPTR	
03431	2061	IN,	ISZ	HPTR	
03432	5205		JMP	LUP	
03433	4515		JMS I	PGETBLK	
03434	3064		DCA	SNUMFLG	
03435	3464		DCA I	SNUMFLG	
03436	1064		TAD	SNUMFLG	
03437	3013		DCA	INDEX1	
03440	3413		DCA I	INDEX1	
03441	1017		TAD	AC2	
03442	3413		DCA I	INDEX1	
03443	1016		TAD	AC3	
03444	3413		DCA I	INDEX1	
03445	5314		JMP	IT8DEF	
03446	7001	LETTER,	IAC		
03447	7106		CLL RTL		
03450	7006		RTL		
03451	7006		RTL		
03452	3031		DCA	TMP	
03453	2056		ISZ	EPTR	
03454	4522		JMS I	PNONBLNK	
03455	1273		TAD	07706C	
03456	7100		CLL		
03457	1065		TAD	012	
03460	7620		SNL CLA		
03461	5266		JMP	SIMPLY	
03462	1456		TAD I	EPTR	
03463	1031		TAD	TMP	
03464	3031		DCA	TMP	
03465	2056		ISZ	EPTR	
03466	1005	SIMPLV,	TAD	PSYMTAB	

03467	3060	DCA	GPTR
03470	1006	TAD	NSYMTAB
03471	3261	DCA	HPTR
03472	5324	JMP	VSCHIN
03473	7706	07706C, 7706	
03474	7000	07000B, 7000	
03475	1460	VSCHLUP, TAD I	GPTR
03476	1274	TAD	07000B
03477	7640	SZA CLA	
03500	5320	JMP	VSCHNOT
03501	2060	ISZ	GPTR
03502	1460	TAD I	GPTR
03503	3064	DCA	SNUMFLG
03504	1464	TAD I	SNUMFLG
03505	7041	CIA	
03506	1031	TAD	TMP
03507	7640	SZA CLA	
03510	5321	JMP	VSCHNOT+1
03511	7240	CLA CMA	
03512	1060	ISDEF2, TAD	GPTR
03513	3064	DCA	SNUMFLG
03514	1064	ITSDEF, TAD	SNUMFLG
03515	3457	DCA I	FPTR
03516	2057	ISZ	FPTR
03517	5516	JMP I	PSLOOP
03520	2060	VSCHNOT, ISZ	GPTR
03521	2060	ISZ	GPTR
03522	2060	ISZ	GPTR
03523	2060	ISZ	GPTR
03524	2061	VSCHIN, ISZ	HPTR
03525	5275	JMP	VSCHLUP
03526	4515	JMS I	PGETBLK
03527	3064	DCA	SNUMFLG
03530	7240	CLA CMA	
03531	1064	TAD	SNUMFLG
03532	3013	DCA	INDEX1
03533	1350	TAD	01000
03534	3413	DCA I	INDEX1
03535	1003	TAD	ARRLOC
03536	3413	DCA I	INDEX1
03537	3413	DCA I	INDEX1
03540	3413	DCA I	INDEX1
03541	4563	JMS I	PCHKFIT
03542	1031	TAD	TMP
03543	4521	JMS I	PSTICKIT
03544	4521	JMS I	PSTICKIT
03545	4521	JMS I	PSTICKIT
03546	4521	JMS I	PSTICKIT
03547	5314	JMP	ITSDEF
03550	1000	01000, 1000	
03551	0000	POP, 0	
03552	7240	CLA CMA	
03553	1036	TAD	PDL
03554	3036	DCA	PDL
03555	1436	TAD I	PDL

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03556 5751      JMP I   POP
03557 3737      FOURLF, TEXT '####'
03560 3737
03561 0400
03562 3724      UGH1,   TEXT 'TOO BIG, LINE IGNORED.'
03563 1717
03564 4002
03565 1107
03566 5640
03567 1411
03570 1605
03571 4011
03572 0716
03573 1722
03574 0504
03575 3700
    
```

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03600 1746      LIST,   YAD I   PXLINBUF
03601 3050      DCA     WORD
03602 4566      ISIT
03603 3476      3476      /CHECK FOR A "##"
03604 5210      JMP     .+4      /NOPE.
03605 7240      CLA CMA      /YEP. SET UP PUTXRA BY GIVING A PHOONEY
03606 4541      JMS I   PCOWT      /CALL TO THE WAIT ROUTINE.
03607 4177      JMS     GETWD      /AND GET ANOTHER WORD NOW.
03610 4566      ISIT
03611 0000      0000      /LINENO
03612 5216      JMP     LISTALL
03613 2050      ISZ     WORD
03614 1450      YAD I   WORD
03615 7450      SNA
03616 1004      LISTALL, YAD CODELOC
03617 3045      LISTSOM, DCA LOCCTR
03620 4177      LISTLUP, JMS GETWD
03621 4566      ISIT
03622 1755      1755      /(EOF)
03623 5230      JMP     LNOEND      /NOT DUNE YET
03624 4541      JMS I   PCOWT      /WAIT FOR I/O TO FINISH AND CLEAN UP.
03625 4302      JMS     PRINTX
03626 3557      FOURLF
03627 5520      JMP I   PEDIT
03630 4566      LNOEND, ISIT      /A LINENO
03631 0000      0000
03632 5240      JMP     LIST2      /NO
    
```

03633	1250	TAD	WORD	
03634	4523	JMS I	PPRINUM	
03635	1251	TAD	0240	
03636	4433	JMS I	PPUTCH	
03637	5220	JMP	LISTLUP	
03640	4566	LIST2, ISIT		/A VARIABLE
03641	7000	7000		
03642	5255	JMP	LIST3	
03643	2050	ISZ	WORD	
03644	1450	TAD I	WORD	
03645	3050	DCA	WORD	
03646	1450	TAD I	WORD	
03647	3253	DCA	PRINVAR	
03650	4302	JMS	PRINTXT	
03651	3653	PRINVAR		
03652	5220	JMP	LISTLUP	
03653	0000	PRINVAR, 0		
03654	0000	0		
03655	4575	LIST3, JMS I	PISITLIT	/ISIT A LITERAL
03656	5261	JMP	LIST4	/NO
03657	4517	JMS I	POUTNUM	/PRINT IT
03660	5220	JMP	LISTLUP	
03661	4566	LIST4, ISIT		/(TEXT)
03662	5000	5000		
03663	5276	JMP	LIST5	
03664	4177	L4LUP, JMS	GETWD	
03665	1050	TAD	WORD	
03666	3253	DCA	PRINVAR	
03667	4302	JMS	PRINTXT	
03670	3653	PRINVAR		
03671	1050	TAD	WORD	
03672	0070	AND	077	
03673	7640	SZA CLA		
03674	5264	JMP	L4LUP	
03675	5220	JMP	LISTLUP	
03676	1050	LIST5, TAD	WORD	/ITS A SYSTEM SYMBOL
03677	7001	IAC		
03700	4302	JMS	PRINTXT	

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03721 5220      JMP      LISTLUP
03722 2200 PRINTXT,0
03723 7440      SZA
03724 5310      JMP      JBPENT+1
03725 6201      COF      0
03726 1702      TAD I   PRINTXT
03727 2302 JBPENT, ISZ   PRINTXT
03728 3042      DCA     PRTEMP
03711 1442 PRLOOP, TAD I PRTEMP
03712 7012      RTR
03713 7012      RTR
03714 7012      RTR
03715 4320      JMS     PRSUBR
03716 1442      TAD I   PRTEMP
03717 4320      JMS     PRSUBR
03720 2042      ISZ     PRTEMP
03721 5311      JMP      PRLOOP
03722 6211 PRTXRET,COF  10
03723 5702      JMP I   PRINTXT
03724 0000 PRSUBR, 0
03725 0070      AND     077
03726 7450      SNA
03727 5322      JMP     PRTXRET
03730 1345      TAD     07741
03731 7450      SNA
03732 5340      JMP     CRLFPR
03733 1070      TAD     077
03734 0070      AND     077
03735 1051      TAD     0240
03736 4433      JMS I   PPUTCH
03737 5724      JMP I   PRSUBR
03740 1007 CRLFPR, TAD  0215
03741 4433      JMS I   PPUTCH
03742 1010      TAD     0212
03743 4433      JMS I   PPUTCH
03744 5724      JMP I   PRSUBR
03745 7741      07741, 7741
03746 7513 PXLINBU,LINBUF+1
03747 0000 PRINUM, 0
03750 7001      IAC
03751 3013      DCA     INDEX1
03752 4362      JMS     BEGFIX
03753 1413      TAD I   INDEX1
03754 3017      DCA     AC2
03755 1413      TAD I   INDEX1
03756 3016      DCA     AC3
03757 4546      JMS I   PANORM
03760 4517      JMS I   POUTNUM
03761 5747      JMP I   PRINUM
    
```

/***** 8 K INSERT.
 /***** 8 K INSERT.

/***** 8 K INSERT.

/SET UP FAC TO RECEIVE INTEGER DATA.

```

23762 0000 BEGFIX, 0
23763 3017 DCA     AC2
    
```

/SETS UP FOR INTEGER TO AC MODE.
 /CLEAR THEM ALL, EXCEPT FOR LOW WORD.

03764	3020	DCA	AC1
03765	3012	DCA	DV
03766	3024	DCA	ACS
03767	1372	TAD	0233
03770	3025	DCA	ACE
03771	5762	JMP I	BEGFIX

03772	0233	0233,	233
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03773	4571	RESTORE,GET+MUSTBE	/(CR) OR '\'
03774	2000	2000	
03775	1004	TAD	CODELOC
03776	3046	DCA	READLOC
03777	5503	JMP I	PEXECUTE

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04000	4566	MOREIN, ISIT	/(CR) OR '\'
04001	2000	2000	
04002	5234	JMP	INPLUP
04003	1010	TAD	0212
04004	4433	JMS I	PPUTCH
04005	1130	TAD	OUTD2
04006	3131	DCA	OUTDEV
04007	7240	INPUT, CLA CMA	
04010	1127	TAD	INDEV
04011	7640	SZA CLA	
04012	5224	JMP	IPNOPE
04013	1131	TAD	OUTDEV
04014	4504	JMS I	PPUSH
04015	7201	CLA IAC	
04016	3131	DCA	OUTDEV
04017	4541	JMS I	PCONT

/GET THE OLD OUTPUT DEVICE.
/AND RESET IT.
/CHECK THE INPUT DEVICE NOW.
/ARE WE INPUT FROM THE TELETYPE.

/NOPE.
/GET THE OUTPUT DEVICE.
/SAVE IT FOR A SECOND.
/SET OUTPUT DEVICE TO TTY FOR "?"

/WAIT FOR OUTPUT TO FINISH, THEN CONTINUE.

```

24020 1070 TAD 077
24021 4433 JMS I PPUTCH
24022 4505 JMS I PPOP
24023 3131 DCA OUTDEV
04024 1045 IPNOPE, TAD LOCCTR
04025 3565 DCA I GSBPTR
04026 1076 TAD PTEXT
04027 4524 JMS I PGETLIN
04030 1565 TAD I GSBPTR
04031 3045 DCA LOCCTR
04032 1037 TAD PLINBUF
04033 3263 DCA INPPTR
04034 4513 INPLUP, JMS I PGETVAR
04035 1050 TAD WORD
04036 3264 DCA INWDTMP
04037 1045 TAD LOCCTR
04040 3265 DCA INLCTMP
04041 1263 TAD INPPTR
04042 3045 DCA LOCCTR
04043 4501 JMS I PEVAL
04044 1045 TAD LOCCTR
04045 3263 DCA INPPTR
04046 1265 TAD INLCTMP
04047 3045 DCA LOCCTR
04050 4512 JMS I P8TOVAR
04051 7332 CLA CLL CML RTR
04052 1664 TAD I INWDTMP
04053 7640 SZA CLA
04054 5200 JMP MOREIN
04055 1010 TAD 0212
04056 4433 JMS I PPUTCH
04057 1130 TAD OUTD2
04060 3131 DCA OUTDEV
04061 3126 DCA COLUMN
04062 5503 JMP I PEXECUTE
04063 0000 INPPTR, 0
04064 0000 INWDTMP, 0
04065 0000 INLCTMP, 0
04066 0000 XGISIT, 0
04067 4177 JMS GETWD
04070 1266 TAD XGISIT
04071 3273 DCA XISIT
04072 5274 JMP XISIT+1
04073 0000 XISIT, 0
04074 1450 TAD I WORD
04075 6201 CDF 0
04076 1673 TAD I XISIT
04077 6211 CDF 10
04100 2273 ISZ XISIT
04101 7650 SNA CLA
04102 2273 ISZ XISIT
04103 5673 JMP I XISIT
04104 0000 ISITLIT, 0
04105 1450 TAD I WORD
04106 7146 CLL CMA RTL

```

/RESET OUTPUT DEVICE NOW.

/RESET THE DEV, BABY

/***** 8 K INSERT.

/***** 8 K INSERT.

04107	7032	CML RTR	
04110	3024	DCA	ACS
04111	1024	TAD	ACS
04112	1160	TAD	04
04113	7620	SNL CLA	
04114	5704	JMP I	ISITLIT
04115	2304	ISZ	ISITLIT
04116	3020	DCA	AC1
04117	3017	DCA	AC2
04120	3016	DCA	AC3
04121	4333	JMS	ISLIT
04122	3016	DCA	AC3
04123	4333	JMS	ISLIT
04124	3017	DCA	AC2
04125	4333	JMS	ISLIT
04126	3020	DCA	AC1
04127	4435	LOADED, FENTER	
04130	3016	FLD	AC3
04131	0000	PEXIT	
04132	5704	JMP I	ISITLIT
04133	0000	ISLIT, 0	
04134	2024	I JZ	ACS
04135	7410	SKP	
04136	5327	JMP	LOADED
04137	4177	JMS	GETWD
04140	1050	TAD	WORD
04141	5733	JMP I	ISLIT
04142	0000	ERROR, 0	
04143	4537	JMS I	PRESET
04144	4514	JMS I	PPRINTXT
04145	6531	CRLF	
04146	1342	TAD	ERROR
04147	3351	DCA	.*2
04150	4514	JMS I	PPRINTXT
04151	7402	HLT	
04152	4514	JMS I	PPRINTXT
04153	4170	QERROR	
04154	1452	TAD I	LINENO
04155	7710	SPA CLA	
04156	5363	JMP	.*5
04157	4514	JMS I	PPRINTXT
04160	6451	ATLINE	
04161	1052	TAD	LINENO
04162	4523	JMS I	PPRINUM
04163	4514	JMS I	PPRINTXT
04164	6531	CRLF	
04165	1125	TAD	PPDLIST
04166	3036	DCA	PDL
04167	5520	JMP I	PEDIT
04170	4005	QERROR, TEXT ' ERROR'	
04171	2222		
04172	1722		
04173	0000		

/RESET ALL I/O DEVICES.

4200

PAGE

```

/      JMS      FPT      /ENTER FLOATING POINT PACK
/      0000     /FEXIT
/      0040     /FSNE
/      0050     /FSEQ
/      0100     /FSGE
/      0110     /FSLT
/      0140     /FSGT
/      0150     /FSLE
/
/      IF BIT 4 OFF THEN SAME AS PDP-8
/      IF BIT 4 ON THEN IF BIT 3 OFF THEN RELATIVE PLUS
/                      IF BIT 3 ON THEN RELATIVE MINUS
/
/      1XXX     /FJMP
/      2XXX     /FST
/      3XXX     /FLD
/      4XXX     /FAD
/      5XXX     /FSB
/      6XXX     /FMP
/      7XXX     /FDV
    
```

```

04200 0000  FPT,  0
04201 5204          JMP      ,+3
04202 4546  FPLOOP, JMS I  PANORM
04203 2200          ISZ     FPT
04204 6201          CDF     0
04205 1600          TAD I  FPT
04206 7006          RTL
04207 7006          RTL
04210 0072          AND     07
04211 7450          SNA
04212 5305          JMP     FPROPER
04213 3273          DCA     FPGOTO
04214 1600          TAD I  FPT
04215 0155          AND     0200
04216 7650          SNA  CLA
04217 5227          JMP     FPPGZ
04220 1600          TAD I  FPT
04221 0027          AND     0177
04222 7430          SZL
04223 7041          CIA
04224 1200          TAD     FPT
04225 3304          DCA     FPADDR
04226 5237          JMP     FPDOIT
04227 1600  FPPGZ, TAD I  FPT
04230 0027          AND     0177
04231 3304          DCA     FPADDR
04232 7420          SNL
04233 5237          JMP     FPDOIT
04234 1704          TAD I  FPADDR
    
```

////////// 8 K INSERT.

24235	3304		DCA	FPADDR
24236	6211		COF	10
24237	7346	FPDDIT,	CLA CLL	CMA RTL
24240	1273		TAD	FPGOTO
24241	7710		SPA CLA	
24242	5270		JMP	FPNOADR
24243	7330		CLA CLL	CML RAR
24244	0704		AND I	FPADDR
24245	3026		DCA	OPS
24246	1704		TAD I	FPADDR
24247	7640		SZA CLA	
24250	7040		CMA	
24251	3156		DCA	FPFLAG
24252	1704		TAD I	FPADDR
24253	7012		RTR	
24254	7010		RAR	
24255	0071		AND	0377
24256	3030		DCA	OPE
24257	1704		TAD I	FPADDR
24260	0072		AND	07
24261	3023		DCA	OP1
24262	2304		ISZ	FPADDR
24263	1704		TAD I	FPADDR
24264	3022		DCA	OP2
24265	2304		ISZ	FPADDR
24266	1704		TAD I	FPADDR
24267	3021		DCA	OP3
24270	1273	FPNOADR,	TAD	FPGOTO
24271	1274		TAD	FPJUMP
24272	3273		DCA	.+1
24273	7402	FPGOTO,	HLT	
24274	5674	FPJUMP,	JMP I	.
24275	4317		FPJMP	
24276	4322		FPSTO	
24277	4351		FPLAC	
24300	4456		FPADD	
24301	4453		FPSUB	
24302	4530		FPMUL	
24303	4667		FPDIV	
24304	0000	FPADDR,	0	
24305	1600	FPOPER,	TAD I	FPT
24306	6211		COF	10
24307	7450		SNA	
24310	5600		JMP I	FPT
24311	1345		TAD	07600
24312	3314		DCA	FPSKIP
24313	4333		JMS	HIGHNO
24314	7402	FPSKIP,	HLT	
24315	2200		ISZ	FPT
24316	5203		JMP	FPLOOP+1
24317	1304	FPJMP,	TAD	FPADDR
24320	3200		DCA	FPT
24321	5204		JMP	FPLOOP+2
24322	4333	FPSTO,	JMS	HIGHNO
24323	3704		DCA I	FPADDR

***** 8 K INSERT.

***** 8 K INSERT.

04324	2304	ISZ	FPADDR
04325	1017	TAD	AC2
04326	3704	DCA I	FPADDR
04327	2304	ISZ	FPADDR
04330	1016	TAD	AC3
04331	3704	DCA I	FPADDR
04332	5203	JMP	FPLOOP+1
04333	0000	HIGHWD, 0	
04334	1025	TAD	ACE
04335	7104	CLL RAL	
04336	7500	SMA	

04337	7106		CLL	RTL
04340	7530		SPA	SZL
04341	5345		JMP	07600
04342	1024		TAD	ACS
04343	1220		TAD	AC1
04344	5733		JMP I	HIGHWD
04345	7600	07600,		7600
04346	1071		TAD	0377
04347	3025		DCA	ACE
04350	5334		JMP	HIGHWD+1
04351	1026	FPLAC,	TAD	OPS
04352	3024		DCA	ACS
04353	1030		TAD	OPE
04354	3025		DCA	ACE
04355	1023		TAD	OP1
04356	3020		DCA	AC1
04357	1022		TAD	OP2
04360	3017		DCA	AC2
04361	1021		TAD	OP3
04362	3016		DCA	AC3
04363	3012		DC	OV
04364	5202		JM/	FPLOOP
04365	7041	UPARR2,	CIA	/(CMA) IF 1 ORG INDEXING
04366	3013		DCA	INDEX1
04367	4435		FENTER	
04370	3151		FLO	ONE
04371	0000		PEXIT	
04372	5376		JMP	.+4
04373	4435		FENTER	
04374	6073		FMP	OPERAND
04375	0000		PEXIT	
04376	2013		ISZ	INDEX1
04377	5373		JMP	.+4
04400	5601		JMP I	.+1
04401	1203		OPDONE	

04402	0000	AR1,	0	
04403	1020		TAD	AC1
04404	7110		CLL	RAR
04405	3020		DCA	AC1
04406	1017		TAD	AC2
04407	7010		RAR	
04410	3017		DCA	AC2
04411	1016		TAD	AC3
04412	7010		RAR	
04413	3016		DCA	AC3
04414	7010		RAR	
04415	3012		DCA	OV
04416	5602		JMP I	AR1
04417	0000	ACN,	0	
04420	1234		TAD	POP3

24421	3235		DCA	OADD
24422	7346		CLA CLL	CMA RTL
24423	3202		DCA	AR1
24424	7024		CML RAL	
24425	1635		TAD I	OADD
24426	7041		CIA	
24427	3635		OCA I	OADD
24430	2235		ISZ	OADD
24431	2202		ISZ	AR1
24432	5224		JMP	.-6
24433	5617		JMP I	ACN
24434	0021	POP3,	OP3	
24435	0000	OADD,	0	
24436	7100		CLL	
24437	1016		TAD	AC3
24440	1021		TAD	OP3
24441	3016		DCA	AC3
24442	7004		RAL	
24443	1017		TAD	AC2
24444	1022		TAD	OP2
24445	3017		DCA	AC2
24446	7004		RAL	
24447	1020		TAD	AC1
24450	1023		TAD	OP1
24451	3020		DCA	AC1
24452	5635		JMP I	OADD
24453	7330	FPSUB,	CLA CLL	CML RAR
24454	1026		TAD	OP8
24455	3026		DCA	OP8
24456	2156	FPADD,	ISZ	FPFLAG
24457	5326		JMP	EOFAD
24460	1023		TAD	ACE
24461	7141		CLL CIA	
24462	1030		TAD	OPE
24463	7430		SZL	
24464	5302		JMP	BCKWDS
24465	3235		DCA	OADD
24466	1023	ALGNLP,	TAD	OP1
24467	7110		CLL RAR	
24470	3023		DCA	OP1
24471	1022		TAD	OP2
24472	7010		RAR	
24473	3022		DCA	OP2
24474	1021		TAD	OP3
24475	7010		RAR	
24476	3021		DCA	OP3
24477	2235		ISZ	OADD
24500	5266		JMP	ALGNLP
24501	5312		JMP	SETSGN
24502	7040	BCKWDS,	CMA	
24503	3235		DCA	OADD
24504	1030		TAD	OPE
24505	3025		DCA	ACE
24506	7410		SKP	
24507	4202		JMS	AR1

04510	2235		ISZ	OADD
04511	5387		JMP	=2
04512	1024	SETSGN,	TAD	ACB
04513	1026		TAD	OPS
04514	7710		SPA	CLA
04515	4217		JMS	ACN
04516	4235		JMS	OADD
04517	1020		TAD	AC1
04520	7700		SMA	CLA
04521	5326		JMP	EOFAD
04522	7346		CLA	CLL CMA RTL
04523	4217		JMS	ACN
04524	1026		TAD	OPS
04525	3024		DCA	ACS
04526	3012	EOFAD,	DCA	OV
04527	5775		JMP I	PPFLOOP
04530	2156	FPMUL,	ISZ	FPFLAG
04531	5371		JMP	MULCLR
04532	1024		TAD	ACB
04533	1026		TAD	OPS
04534	3024		DCA	ACS
04535	1025		TAD	ACE
04536	1030		TAD	OPE
04537	1377		TAD	07577
04540	3025		DCA	ACE
04541	1020		TAD	AC1
04542	3026		DCA	OPS
04543	1017		TAD	AC2
04544	3030		DCA	OPE
04545	1016		TAD	AC3
04546	3031		DCA	TMP
04547	3020		DCA	AC1
04550	1162		TAD	07745
04551	3376		DCA	FPTEMP
04552	4202	MPYLUP,	JMS	AR1
04553	1026		TAD	OPS
04554	7010		RAR	
04555	3026		DCA	OPS
04556	1030		TAD	OPE
04557	7010		RAR	
04560	3030		DCA	OPE
04561	1031		TAD	TMP
04562	7010		RAR	
04563	3031		DCA	TMP
04564	7430		SZL	
04565	4235		JMS	OADD
04566	2376		ISZ	FPTEMP
04567	5352		JMP	MPYLUP
04570	5775		JMP I	PPFLOOP
04571	7346	MULCLR,	CLA	CLL CMA RTL
04572	3025		DCA	ACE
04573	3020		DCA	AC1
04574	5775		JMP I	PPFLOOP
04575	4202	PPFLOOP,	FPLOOP	
04576	0000	FPTEMP,	0	

04577 7577 07577, 7577

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04600	0000	ANORM,	0		
04601	1020		TAD	AC1	
04602	7450		SNA		/IS HIGH WORD ZERO?
04603	5212		JMP	MAYZERO	/YEP, ENTIRE NUMBER MAY BE ZERO.
04604	1055		TAD	07770	
04605	7710		SPA	CLA	
04606	5220		JMP	NOTBIG	
04607	4547		JM3	I	PAR1
04610	2025		IS	ACE	
04611	5201		JMP	ANORM+1	
04612	1017	MAYZERO,	TAD	AC2	/IS SECOND WORD ZERO?
04613	7640		SZA	CLA	
04614	5220		JMP	NOTBIG	/NOPE, NORMAL NORMALIZE.
04615	1016		TAD	AC3	/1 & 2 ARE ZERO, IS THIRD WORD?
04616	7650		SNA	CLA	
04617	5245		JMP	UNDERF	/YEP, CLEAR AC, ALL ZERO.
04620	1012	NOTBIG,	TAD	OV	
04621	7650		SNA	CLA	
04622	5233		JMP	NOBUMP	
04623	2016		ISZ	AC3	
04624	5233		JMP	NOBUMP	
04625	2017		ISZ	AC2	
04626	5233		JMP	NOBUMP	
04627	2020		ISZ	AC1	
04630	3012		DCA	OV	
04631	5201		JMP	ANORM+1	
04632	7240		CLA	CMA	
04633	1025	NOBUMP,	TAD	ACE	
04634	7510		SPA		
04635	5245		JMP	UNDERF	
04636	3025		DCA	ACE	
04637	7346		CLA	CLL	CMA RTL
04640	1020		TAD	AC1	
04641	7740		SMA	SZA	CLA
04642	5600		JMP	I	ANORM
04643	4254		JMS	AL1	
04644	5232		JMP	NOBUMP-1	
04645	7200	UNDERF,	CLA		
04646	3024		DCA	AC8	
04647	3025		DCA	ACE	
04650	3020		DCA	AC1	

04651	3017		DCA	AC2
04652	3016		DCA	AC3
04653	5620		JMP I	ANORM
04654	2020	ALI,	0	
04655	1016		TAD	AC3
04656	7124		CLL RAL	
04657	3016		DCA	AC3
04660	1017		TAD	AC2
04661	7004		RAL	
04662	3017		DCA	AC2
04663	1020		TAD	AC1
04664	7004		RAL	
04665	3020		DCA	AC1
04666	5654		JMP I	ALI
04667	6201	FPDIV,	CDF	0
04670	2156		ISZ	FPFLAG
04671	5336		JMP	FPZDIV
04672	1024		TAD	ACS
04673	1026		TAD	OPS
04674	3024		DCA	ACS
04675	1030		TAD	OPE
04676	7041		CLA	
04677	1025		TAD	ACE
04700	1027		TAD	0177
04701	3025		DCA	ACE
04702	3031		DCA	TMP
04703	1343		TAD	07743
04704	3200		DCA	ANORM
04705	7330	DIVLP,	CLA CLL	CML RAR
04706	0023		AND	OP1
04707	1020		TAD	AC1
04710	7700		SMA CLA	
04711	4742		JMS I	PACN
04712	4557		JMS I	POADD
04713	1031		TAD	TMP
04714	7004		RAL	
04715	3031		DCA	TMP
04716	1030		TAD	OPE
04717	7004		RAL	
04720	3030		DCA	OPE
04721	1026		TAD	OPS
04722	7004		RAL	
04723	3026		DCA	OPS
04724	4550		JMS I	PAL1
04725	2200		ISZ	ANORM
04726	5305		JMP	DIVLP
04727	1026		TAD	OPS
04730	3020		DCA	AC1
04731	1030		TAD	OPE
04732	3017		DCA	AC2
04733	1031		TAD	TMP
04734	3016		DCA	AC3
04735	5741		JMP I	PPFLOOP
04736	1071	FPZDIV,	TAD	0377
04737	3025		DCA	ACE

***** 8 K INSERT.

04740	5741	JMP I	PPFLOOP	
04741	4202	PPFLOOP, FPLOOP		
04742	4417	PACN,	ACN	
04743	7743	07743,	7743	
04744	0000	FIX,	0	
04745	1020	TAD	AC1	
04746	7650	SNA CLA		
04747	5367	JMP	ZFIXEX	
04750	1025	FIXLUP, TAD	ACE	
04751	1377	TAD	07545	
04752	7700	SMA CLA		
04753	5373	JMP	FIXEXIT	
04754	4547	JMS I	PAR1	
04755	1024	TAD	ACS	
04756	0012	AND	OV	
04757	7640	SZA CLA		
04760	2016	ISZ	AC3	
04761	5365	JMP	+.4	
04762	2017	ISZ	AC2	
04763	5365	JMP	+.2	
04764	2020	ISZ	AC1	
04765	2025	ISZ	ACE	
04766	5350	JMP	FIXLUP	
04767	3025	ZFIXEX, DCA	ACE	
04770	3020	DCA	AC1	
04771	3017	DCA	AC2	
04772	3016	DCA	AC3	
04773	3012	FIXEXIT, DCA	OV	
04774	1016	TAD	AC3	
04775	7001	SSFIX, IAC		/(NOP) IF 1 ORG INDEXING
04776	5744	JMP I	FIX	
04777	7545	07545, 7545		

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05000	0000	OUTNUM, 0		
05001	6201	COF	0	////////// 8 K INSERT.
05002	1024	TAD	AC0	
05003	7700	SMA CLA		
05004	5207	JMP	+.3	
05005	1351	TAD	0255	
05006	4433	JMS I	PPUTCH	
05007	1020	TAD	AC1	
05010	7640	SZA CLA		
05011	5216	JMP	NONZERO	
05012	1011	TAD	0260	
05013	4433	JMS I	PPUTCH	

/***** 8 K INSERT.

05014	6211		CDF	10	
05015	5600		JMP I	OUTNUM	
05016	4746	NONZERO,	JMS I	FIXUP	
05017	1355		TAD	07771	
05020	3042		DCA	PRTEMP	
05021	1044		TAD	PNUMBUF	
05022	3025		DCA	ACE	
05023	5230		JMP	.*5	
05024	1020	CVTLOOP,	TAD	AC1	
05025	0027		AND	0177	
05026	3020		DCA	AC1	
05027	4760		JMS I	PMPY	
05030	1020		TAD	AC1	
05031	7006		RTL		
05032	7006		RTL		
05033	7006		RTL		
05034	0347		AND	017	
05035	1011		TAD	0260	
05036	3425		DCA I	ACE	
05037	2025		ISZ	ACE	
05040	2042		ISZ	PRTEMP	
05041	5224		JMP	CVTLOOP	
05042	7326		CLA CLL	CML RTL	
05043	1043		TAD	DECEXP	
05044	7450		SNA		
05045	5325		JMP	FMT1	/,0NNNNNNN
05046	7510		SPA		
05047	5253		JMP	FMT2	/N,NNNNNE=NN
05050	1055		TAD	07770	
05051	7710		SPA CLA		
05052	5330		JMP	FMT3	/OTHER THAN N,NNNNNE+NN
05053	7200	FMT2,	CLA		/N,NNNNNE+NN
05054	1044		TAD	PNUMBUF	
05055	3025		DCA	ACE	
05056	1357		TAD	07772	
05057	3042		DCA	PRTEMP	
05060	1425		TAD I	ACE	
05061	4433		JMS I	PPUTCH	
05062	1356		TAD	0256A	
05063	4433		JMS I	PPUTCH	
05064	2025		ISZ	ACE	
05065	1425		TAD I	ACE	
05066	4433		JMS I	PPUTCH	
05067	2042		ISZ	PRTEMP	
05070	5264		JMP	.-4	
05071	1352		TAD	0305	
05072	4433		JMS I	PPUTCH	
05073	1043		TAD	DECEXP	
05074	7710		SPA CLA		
05075	7326		CLA CLL	CML RTL	
05076	1350		TAD	0253	
05077	4433		JMS I	PPUTCH	
05100	3025		DCA	ACE	
05101	1043		TAD	DECEXP	
05102	7510		SPA		

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05103 7241
05104 3243
05105 1243

CIA
DCA DECEXP
TAD DECEXP

05106	1354	TAD	07766	
05107	7510	SPA		
05110	5314	JMP	.+4	
05111	3043	DCA	DECEXP	
05112	2025	ISZ	ACE	
05113	5305	JMP	.-6	
05114	7200	CLA		
05115	1025	TAD	ACE	
05116	1011	TAD	0260	
05117	4433	JMS I	PPUTCH	
05120	1043	TAD	DECEXP	
05121	1011	TAD	0260	
05122	4433	JMS I	PPUTCH	
05123	6211	FMTENF, CDF	10	/***** 8 K INSERT.
05124	5600	JMP I	OUTNUM	
05125	4514	FMT1, JMS I	PPRINTXT	
05126	7371		DOTZERO	
05127	6201		0	/***** 8 K INSERT.
05130	1355	FMT3, TAD	07771	
05131	3042	DCA	PRTEMP	
05132	1361	TAD	PNBF6	
05133	3025	TRYAGIN, DCA	ACE	
05134	1425	TAD I	ACE	
05135	1353	TAD	07520	
05136	7640	SZA CLA		
05137	5344	JMP	ZERDONE	
05140	2042	ISZ	PRTEMP	
05141	7240	CLA CMA		
05142	1025	TAD	ACE	
05143	5333	JMP	TRYAGIN	
05144	5745	ZERDONE, JMP I	.+1	/***** 8 K INSERT.
05145	6545		PZERDONE	/***** 8 K INSERT.
05146	5200	FIXUP, FIXITUP		
05147	0017	017,	17	
05150	0253	0253,	253	
05151	0255	0255,	255	
05152	0305	0305,	305	
05153	7520	07520,	7520	
05154	7766	07766,	7766	
05155	7771	07771,	7771	
05156	0256	0256A,	256	
05157	7772	07772,	7772	
05160	5321	PMPY,	MPY	
05161	5343	PNBF6,	NUMBUF+6	
05162	3714	TOOLONG, TEXT '_LINE TOO LONG_'		
05163	1116			
05164	0540			
05165	2417			
05166	1740			
05167	1417			
05170	1607			
05171	3700			

	5200	PAGE		
05200	0000		FIXITUP,0	
05201	1025		TAD	ACE
05202	1345		TAD	07610
05203	3025		DCA	ACE
05204	7410		SKP	
05205	1043	OCC,	TAD	DECEXP
05206	3043		DCA	DECEXP
05207	1020	NORMIT,	TAD	AC1
05210	7006		RTL	
05211	7630		SZL CLA	
05212	5220		JMP	NORMED
05213	4550		JMS I	PAL1
05214	7240		CLA CMA	
05215	1025		TAD	ACE
05216	3025		DCA	ACE
05217	5207		JMP	NORMIT
05220	1025	NORMED,	TAD	ACE
05221	7540		SMA SZA	
05222	5236		JMP	NOTX10
05223	7200		CLA	
05224	4547		JMS I	PAR1
05225	4547		JMS I	PAR1
05226	4547		JMS I	PAR1
05227	4547		JMS I	PAR1
05230	4321		JMS	MPY
05231	1025		TAD	ACE
05232	1160		TAD	04
05233	3025		DCA	ACE
05234	7240		CLA CMA	
05235	5205		JMP	OCC
05236	1346	NOTX10,	TAD	07773
05237	7510		SPA	
05240	5265		JMP	EXPOK
05241	7200		CLA	
05242	1054	EXPGOOD,	TAD	07740
05243	3321		DCA	MPY
05244	7100		CLL	
05245	1020	DVLOOP,	TAD	AC1
05246	1347		TAD	05400
05247	7500		SMA	
05250	3020		DCA	AC1
05251	7204		CLA CML CMA RAL	
05252	3023		DCA	OP1
05253	4550		JMS I	PAL1
05254	2023		ISZ	OP1
05255	2010		ISZ	AC3

05256	2321	ISZ	MPY
05257	5245	JMP	DVLOOP
05260	1020	TAD	AC1
05261	0071	AND	0377
05262	3020	DCA	AC1
05263	7201	CLA	IAC
05264	5205	JMP	OCC
05265	3042	EXPOK, DCA	PRTEMP
05266	7410	SKP	
05267	4947	JMS I	PAR1
05270	2042	ISZ	PRTEMP
05271	5267	JMP	.-2
05272	1020	TAD	AC1
05273	1347	TAD	05400
05274	7700	SMA	CLA
05275	5242	JMP	EXPGOOD
05276	7300	CLA	CLL
05277	1016	TAD	AC3
05300	1344	TAD	02062
05301	3016	DCA	AC3
05302	7430	SIL	
05303	2017	ISZ	AC2
05304	7410	SKP	
05305	2020	ISZ	AC1
05306	1020	TAD	AC1
05307	1347	TAD	05400
05310	7640	SZA	CLA
05311	5600	JMP I	FIXITUP
05312	1155	TAD	0200
05313	3020	DCA	AC1
05314	3017	DCA	AC2
05315	3016	DCA	AC3
05316	2043	ISZ	DECEXP
05317	7000	NOP	
05320	5600	JMP I	FIXITUP
05321	0000	MPY, 0	
05322	4550	JMS I	PAL1
05323	1020	TAD	AC1
05324	3023	DCA	OP1
05325	1017	TAD	AC2
05326	3022	DCA	OP2
05327	1016	TAD	AC3
05330	3021	DCA	OP3
05331	4550	JMS I	PAL1
05332	4550	JMS I	PAL1
05333	4557	JMS I	POADD
05334	5721	JMP I	MPY
05335	0000	NUMBUF, 01010101010	
05336	0000		
05337	0000		
05340	0000		
05341	0000		
05342	0000		
05343	0000		
05344	2062	02062, 2062	

05345 7610 07610, 7610
 05346 7773 07773, 7773
 05347 5400 05400, 5400

05350 0000 RNDJMP, FEXIT
 05351 4546 JMS I PANORM
 05352 5753 JMP I RND

 05353 0000 RND, 0
 05354 4435 FENTER
 05355 3227 FLD+FWD+FRNDX=.
 05356 0000 FEXIT
 05357 1021 TAD OP3
 05360 7006 RTL
 05361 7006 RTL
 05362 7006 R'L
 05363 3020 DCA AC1
 05364 1020 TAD AC1
 05365 7010 RAR
 05366 0054 AND 07740
 05367 3017 DCA AC2
 05370 3016 DCA AC3
 05371 4557 JMS I POADD
 05372 4557 JMS I POADD
 05373 4557 JMS I POADD
 05374 1030 TAD OPE
 05375 3025 DCA ACE
 05376 1020 TAD AC1
 05377 0072 AND 07
 05400 3020 DCA AC1
 05401 4435 FENTER
 05402 2202 FST+FWD+FRNDX=.
 05403 1633 FJMP+BKWD+,-RNDJMP

05404 2004 FRNDX, 2004,4173,1231
 05405 4173
 05406 1231

05407 0000 FSQRX, 01010
 05410 0000
 05411 0000
 05412 0000 SQR, 0
 05413 4435 FENTER
 05414 2073 FST OPERAND
 05415 0040 FSNE
 05416 1232 FJMP+FWD+SQEXIT=.

25417	0000	FEXIT	
25420	1024	TAD	ACS
25421	7710	SPA	CLA
25422	5447	JMP I	PARGERR
25423	1025	TAD	ACE
25424	1252	TAD	007600
25425	7100	CLL	
25426	7510	SPA	
25427	7020	CML	
25430	7010	RAR	
25431	1155	TAD	0200
25432	3025	DCA	ACE
25433	1055	TAD	07770
25434	3013	DCA	INDEX1
25435	4435	SQLLOOP, FENTER	
25436	2627	FST+BKWD+,-FSQRX	
25437	3073	FLD	OPERAND
25440	7631	FDV+BKWD+,-FSQRX	
25441	4632	FAD+BKWD+,-FSQRX	
25442	0000	FEXIT	
25443	7240	CI & CMA	
25444	1025	TAD	ACE
25445	3025	DCA	ACE
25446	2013	ISZ	INDEX1
25447	5235	JMP	SQLLOOP
25450	0000	SGEXIT, FEXIT	
25451	5612	JMP I	SQR
25452	7600	007600, 7600	
25453	0000	FN, 0	
25454	1045	TAD	LOCCTR
25455	4504	JMS I	PPUSH
25456	1050	TAD	WORD
25457	4504	JMS I	PPUSH
25460	6201	CDF	0
25461	1745	TAD I	PUSERFN
25462	6211	CDF	10
25463	7001	IAC	
25464	3045	DCA	LOCCTR
25465	4567	GET+ISIT	/'DEF'
25466	1761	1761	
25467	5746	JMP I	PFNERR /NO
25470	4177	JMS	GETWD /SKIP 'FN'
25471	4177	JMS	GETWD /SKIP LETTER
25472	4177	JMS	GETWD /SKIP '('
25473	4567	GET+ISIT	/'A VARIABLE
25474	7000	7000	
25475	5746	JMP I	PFNERR /NO
25476	2050	ISZ	WORD
25477	1450	TAD I	WORD
25500	3013	DCA	INDEX1
25501	1413	TAD I	INDEX1
25502	4504	JMS I	PPUSH
25503	1413	TAD I	INDEX1
25504	4504	JMS I	PPUSH
25505	1413	TAD I	INDEX1

////////// 8 K INSERT

////////// 8 K INSERT.

05506	4504	JMS I	PPUSH	
05507	1013	TAD	INDEX1	
05510	4504	JMS I	PPUSH	
05511	7304	CLA CLL	CMA RAL	
05512	1013	TAD	INDEX1	
05513	3013	DCA	INDEX1	
05514	4035	FENTER		
05515	2413	FSTI	INDEX1	
05516	0000	FEXIT		
05517	4177	JMS	GETWD	/SKIP ')'
05520	4177	JMS	GETWD	/SKIP ' #'
05521	4501	JMS I	PEVAL	
05522	4505	JMS I	PPOP	
05523	3050	DCA	WORD	
05524	4505	JMS I	PPOP	
05525	3450	DCA I	WORD	
05526	7240	CLA CMA		
05527	1050	TAD	WORD	
05530	3050	DCA	WORD	
05531	4505	JMS I	PPOP	
05532	3450	DC \ I	WORD	
05533	7240	CLA CMA		
05534	1050	TAD	WORD	
05535	3050	DCA	WORD	
05536	4505	JMS I	PPOP	
05537	3450	DCA I	WORD	
05540	4505	JMS I	PPOP	
05541	3050	DCA	WORD	
05542	4505	JMS I	PPOP	
05543	3045	DCA	LOCCTR	
05544	5653	JMP I	FN	
05545	1620	PUSERFN, USERFN		

05546 0352 PFNERR, FNERR

05547	0000	TAB,	0	/FUNCTION "TAB" IN PRINT STATEMENT.
05550	4506	JMS I	PFIX	/FIX THE FAC NOW.
05551	6201	GDF	0	/SET DATA FIELD TO FIELD ZERO.
05552	7201	CLA IAC		/SET FLAG TO INDICATE WE'VE DONE THIS FUNCTION.
05553	3771	DCA I	PTABFLG	/AND STORE AWAY.
05554	1024	TAD	ACS	/GET SIGN OF FAC
05555	7650	SNA CLA		/WAS IT A POSITIVE NUMBER?
05556	1016	TAD	AC3	/YEP, PICK UP DESIRED POSITION.
05557	0071	AND	0377	/MAXIMUM OF 256 COLUMNS.
05560	3770	DCA I	PTABDES	/SAVE AWAY FOR ACTUAL SPACER TO USE.
05561	4772	JMS I	TBEGFIX	/PREPARE TO RETURN PRESENT COLUMN NUMBER.

05562	7201		CLA IAC		
05563	1126		TAD	COLUMN	/INCREMENT TO ACCOUNT FOR DIFFERENCES.
05564	3016		DCA	AC3	/AND STORE AWAY.
05565	6211		COF	10	/RESET DATA FIELD NOW.
05566	4546		JMS I	PANORM	/NORMALIZE AC NOW.
05567	5747		JMP I	TAB	/AND RETURN NOW.

05570	6367	PTABDES, TABDES			/POINTER TO DESIRED LOCATION OF PRINT HEAD.
05571	2345	PTABFLG, TABFLG			/POINTER TO TAB IN PRINT FLAG.
05572	3762	TBEGFIX, BEGFIX			/POINTER TO MINI-FIX-SET-UP ROUTINE.

05573	7201	RUBO,	CLA IAC		/SET RUBOUT SWITCH.
05574	3135	NORUBO,	DC	RBSWCH	
05575	5776		JMP I	.+1	/AND CLEAN IT UP.
05576	7175		DEVCOM		/CLEAN-UP POINTER.

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05600	0000	TAN,	0		
05601	4435		FENTER		
05602	2275		FST+FWD+PTANT1=.		
05603	0000		FEXIT		
05604	4216		JMS	COS	
05605	4435		FENTER		
05606	2274		FST+FWD+PTANT2=.		
05607	3270		FLD+FWD+PTANT1=.		
05610	0000		FEXIT		
05611	4224		JMS	SIN	
05612	4435		FENTER		

05613	7267		FDV+FWD+FTANT2=.
05614	2000		FEXIT
05615	5600		JMP I TAN
05616	2000	COS,	0
05617	4435		FENTER
05620	4312		FAD+FWD+FSINC7=.
05621	0000		FEXIT
05622	4224		JMS SIN
05623	5616		JMP I COS
05624	0000	SIN,	0
05625	4435		FENTER
05626	7265		FDV+FWD+FSINC1=.
05627	2256		FST+FWD+FSINZ=.
05630	0000		FEXIT
05631	3024		DCA ACS
05632	4676		JMS I PINT
05633	7330		CLA CLL CML RAR
05634	0305		AND FSINZ
05635	3024		DCA ACS
05636	4435		FENTER
05637	5246		FS3+FWD+FSINZ=.
05640	6275		FIP+FWD+FSINM4=.
05641	2244	FSIN10,	FST+FWD+FSINZ=.
05642	0000		FEXIT
05643	3024		DCA ACS
05644	4435		FENTER
05645	5151		FSB ONE
05646	0140		FSGT
05647	1210		FJMP+FWD+FSINOK=.
05650	3235		FLD+FWD+FSINZ=.
05651	0000		FEXIT
05652	4675		JMS I PSGN
05653	2025		ISZ ACE
05654	4435		FENTER
05655	5230		FSB+FWD+FSINZ=.
05656	1615		FJMP+BKWD+FSIN10
05657	3226	FSINOK,	FLD+FWD+FSINZ=.
05660	6225		FMP+FWD+FSINZ=.
05661	2227		FST+FWD+FSINZZ=.
05662	6234		FMP+FWD+FSINC3=.
05663	4236		FAD+FWD+FSINC4=.
05664	6224		FMP+FWD+FSINZZ=.
05665	4237		FAD+FWD+FSINC5=.
05666	6222		FMP+FWD+FSINZZ=.
05667	4240		FAD+FWD+FSINC6=.
05670	6220		FMP+FWD+FSINZZ=.
05671	4241		FAD+FWD+FSINC7=.
05672	6213		FMP+FWD+FSINZ=.
05673	0000		FEXIT
05674	5624		JMP I SIN
05675	0726	PSGN,	SGN
05676	6434	PINT,	INT
05677	0000	FTANT1,	01010
05700	0000		
05701	0000		

05702	2200	FTANT2, 01010
05703	2000	
05704	0000	
05705	2222	FSINZ, 01010
05706	0000	
05707	0000	
05710	0000	FSINZZ, 01010
05711	0000	
05712	0000	
05713	2036	FSINC1, 20361220717325
05714	2207	
05715	7325	
05716	1644	FSINC3, 16441755316722
05717	7553	
05720	6722	
05721	5714	FSINC4, 57141622311432
05722	6223	
05723	1432	
05724	1755	FSINC5, 17551063211276
05725	0632	
05726	1276	
05727	6005	FSINC6, 61051125617406
05730	1256	
05731	7406	
05732	2016	FSINC7, 20161220717325
05733	2207	
05734	7325	
05735	6034	FSINM4, 60341000010000
05736	0000	
05737	0000	
05740	4435	UPARRX, FENTER
05741	2634	FST+BKWD+.=FSINZ
05742	0100	FSGE
05743	1221	FJMP+FWD+EXPLONG=.
05744	0000	FEXIT
05745	4676	JMS I PINT
05746	4435	FENTER
05747	5642	FSB+BKWD+.=FSINZ
05750	0050	FSEQ
05751	1213	FJMP+FWD+EXPLONG=.
05752	3645	FLD+BKWD+.=FSINZ
05753	5207	FSB+FWD+FUPRC1=.
05754	0150	FSLE
05755	1207	FJMP+FWD+EXPLONG=.
05756	3651	FLD+BKWD+.=FSINZ
05757	0000	FEXIT
05760	5761	JMP I ,+1
05761	6457	UPARROW
05762	2077	FUPRC1, 207717700
05763	7700	
05764	3073	EXPLONG,FLD OPERAND
05765	0000	FEXIT
05766	0775	JMS I PLOG
05767	4435	FENTER
05770	6663	FMP+BKWD+.=FSINZ

05771	0000		FEXIT
05772	4776		JMS I PEXP
05773	5774		JMP I .+1
05774	1203		OPDNE
05775	6114	PLOG,	LOG
05776	6000	PEXP,	EXP

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06000	0000	EXP,	0	
06001	4435		FENTER	
06002	7270		FDV+FWD+FEXPC1=.	
06003	2261		FST+FWD+FEXPU=.	
06004	0000		FEXIT	
06005	4660		JMS I PPINT	
06006	7330		CLA CLL CML RAR	
06007	1024		TAD ACS	
06010	3024		DCA ACS	
06011	4435		FENTER	
06012	2247		FST+FWD+FEXPI=.	
06013	4251		FAD+FWD+FEXPU=.	
06014	2253		FST+FWD+FEXPF=.	
06015	6252		FMP+FWD+FEXPF=.	
06016	4257		FAD+FWD+FEXPC2=.	
06017	2245		FST+FWD+FEXPU=.	
06020	3241		FLD+FWD+FEXPI=.	
06021	0000		FEXIT	
06022	4506		JMS I PPIX	
06023	7000	FXXPFX,	NOP	/(IAC IF 1 ORG INDEXING)
06024	3261		DCA FEXPI	
06025	1024		TAD ACS	
06026	7164		CMA CLL CML RAL	
06027	1261		TAD FEXPI	
06030	7420		SNL	
06031	7041		CIA	
06032	7001		IAC	
06033	3261		DCA FEXPI	
06034	4435		FENTER	
06035	3243		FLD+FWD+FEXPC3=.	
06036	7226		FDV+FWD+FEXPU=.	
06037	4244		FAD+FWD+FEXPC4=.	
06040	5227		FSS+FWD+FEXPF=.	
06041	2223		FST+FWD+FEXPU=.	
06042	3225		FLD+FWD+FEXPF=.	
06043	6224		FMP+FWD+FEXPF=.	
06044	6242		FMP+FWD+FEXPC5=.	
06045	4217		FAD+FWD+FEXPU=.	

06046	2216		FST+FWD+FEXPU=.
06047	3220		FLD+FWD+FEXPF=.
06050	7214		FDV+FWD+FEXPU=.
06051	4240		FAD+FWD+FEXPC6=.
06052	2215		FST+FWD+FEXPF=.
06053	0000		FEXIT
06054	1025		TAD ACE
06055	1261		TAD FEXPI
06056	3025		DCA ACE
06057	5600		JMP I EXP
06060	6434	PPINT,	INT
06061	0000	FEXPI,	01010
06062	0000		
06063	0000		
06064	0000	FEXPU,	01010
06065	0000		
06066	0000		
06067	0000	FEXPF,	01010
06070	0000		
06071	0000		
06072	2005	FEXPC1,	20051427110300
06073	4271		
06074	0300		
06075	2075	FEXPC2,	20751355217022
06076	3552		
06077	7022		
06100	6124	FEXPC3,	61241647710715
06101	6477		
06102	0715		
06103	2044	FEXPC4,	20441764310062
06104	7643		
06105	0062		
06106	1744	FEXPC5,	17441337213400
06107	3372		
06110	3400		
06111	2004	FEXPC6,	20041000010000
06112	0000		
06113	0000		
06114	0000	LOG,	0
06115	1024	TAD	ACS
06116	7710	SPA	CLA
06117	5447	JMP I	PARGERR
06120	1025	TAD	ACE
06121	3365	DCA	LOGACE
06122	1155	TAD	0200
06123	3025	DCA	ACE
06124	4435	FENTER	
06125	2641	FST+BKWD+.	-FEXPU
06126	4244	FAD+FWD+FLOGC1=.	
06127	2640	FST+BKWD+.	-FEXPF
06130	3644	FLD+BKWD+.	-FEXPU
06131	5241	F8B+FWD+FLOGC1=.	
06132	7643	FDV+BKWD+.	-FEXPF
06133	2644	FST+BKWD+.	-FEXPF
06134	6645	FMP+BKWD+.	-FEXPF

06135	6216	FMP+FWD+FLOGC2=.
06136	4220	FAD+FWD+FLOGC3=.
06137	6650	FMP+BKWD+.-FEXPF
06142	6651	FMP+BKWD+.-FEXPF
06141	4220	FAD+FWD+FLOGC4=.
06142	6653	FMP+BKWD+.-FEXPF
06143	5632	FSB+BKWD+.-FEXPC6
06144	2655	FST+BKWD+.-FEXPF
06145	3217	FLD+FWD+LOGFWD=.
06146	5221	FSB+FWD+LOGOKW=.
06147	4660	FAD+BKWD+.-FEXPF
06150	6656	FMP+BKWD+.-FEXPC1
06151	0000	FEXIT
06152	5714	JMP I LOG
06153	2004	FLOGC2, 2004/6253/2521
06154	6253	
06155	2521	
06156	2007	FLOGC3, 2007/5421/3604
06157	5421	
06160	3604	
06161	2025	FLOGC4, 2025/6125/1007
06162	6125	
06163	1007	
06164	2174	LOGFWD, 2174
06165	0000	LOGACE, 0
06166	0000	0
06167	2174	LOGOKW, 2174/0200/0
06170	0200	
06171	0000	
06172	2005	FLOGC1, 2005/5202/3632
06173	5202	
06174	3632	

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06200	0000	ATN, 0
06201	1024	TAD ACS
06202	3272	DCA FATNSX
06203	3024	DCA ACS
06204	4435	FENTER
06205	2271	FST+FWD+FATNT=.
06206	2265	FST+FWD+FATNAX=.
06207	5275	FSB+FWD+FATNC1=.
06210	0140	FSGT
06211	1254	FJMP+FWD+ATNBIG=.

06212	5275		FSB+FWD+FATNC2=.
06213	0140		FSGT
06214	1204		FJMP+FWD+ATNLOW=.
06215	3151		FLD ONE
06216	7260		FDV+FWD+FATNT=.
06217	2257		FST+FWD+FATNT=.
06220	3152	ATNLOW,	FLD ZERO
06221	2316		FST+FWD+FATNC=.
06222	3254		FLD+FWD+FATNT=.
06223	5267		FSB+FWD+FATNC3=.
06224	0100		FSGE
06225	1212		FJMP+FWD+ATNNOT=.
06226	3250		FLD+FWD+FATNT=.
06227	4266		FAD+FWD+FATNC4=.
06230	2246		FST+FWD+FATNT=.
06231	3314		FLD+FWD+FATNCJ=.
06232	7244		FDV+FWD+FATNT=.
06233	4262		FAD+FWD+FATNC4=.
06234	2242		FST+FWD+FATNT=.
06235	3263		FLD+FWD+FATNC5=.
06236	2301		FST+FWD+FATNC=.
06237	3237	ATNNOT,	FLD+FWD+FATNT=.
06240	6236		FMP+FWD+FATNT=.
06241	2240		FST+FWD+FATNTT=.
06242	3261		FLD+FWD+FATNC6=.
06243	6236		FMP+FWD+FATNTT=.
06244	4262		FAD+FWD+FATNC7=.
06245	6234		FMP+FWD+FATNTT=.
06246	4263		FAD+FWD+FATNC8=.
06247	6232		FMP+FWD+FATNTT=.
06250	4264		FAD+FWD+FATNC9=.
06251	6230		FMP+FWD+FATNTT=.
06252	4151		FAD ONE
06253	6223		FMP+FWD+FATNT=.
06254	4263		FAD+FWD+FATNC=.
06255	2221		FST+FWD+FATNT=.
06256	3215		FLD+FWD+FATNAX=.
06257	5151		FSB ONE
06260	0140		FSGT
06261	1204		FJMP+FWD+ATNBIG=.
06262	3260		FLD+FWD+FATNCH=.
06263	5213		FSB+FWD+FATNT=.
06264	2212		FST+FWD+FATNT=.
06265	3211	ATNBIG,	FLD+FWD+FATNT=.
06266	0000		FEXIT
06267	1272		TAD FATNSX
06270	3024		DCA ACS
06271	5600		JMP I ATN
06272	0000	FATNSX,	0
06273	0000	FATNAX,	01010
06274	0000		
06275	0000		
06276	0000	FATNT,	01010
06277	0000		
06300	0000		

06301	0000	FATNTT, 01010
06302	0000	
06303	0000	
06304	1634	FATNC1, 16341000010000
06305	0000	
06306	0000	
06307	2007	FATNC2, 20071777610000
06310	7776	
06311	0000	
06312	1774	FATNC3, 17741223012427
06313	2230	
06314	2427	
06315	2016	FATNC4, 20161733117272
06316	7331	
06317	7272	
06320	2004	FATNC5, 20041140512216
06321	1405	
06322	2216	
06323	1756	FATNC6, 17561046214562
06324	0462	
06325	4562	
06326	5764	FATNC7, 57641422113403
06327	4221	
06330	3403	
06331	1766	FATNC8, 17661314116672
06332	3141	
06333	6672	
06334	5775	FATNC9, 57751252512337
06335	2525	
06336	2337	
06337	0000	FATNC, 01010
06340	0000	
06341	0000	
06342	2016	FATNCM, 20161220717325
06343	2207	
06344	7325	
06345	6034	FATNCJ, 60341000010000
06346	0000	
06347	0000	

06350	1126	TABDO,	TAD	COLUMN
06351	7041		CIA	
06352	1367		TAD	TABDES
06353	7740		SMA SZA	CLA
06354	5360		JMP	TABOK

/GET WHERE WE ARE NOW.

/COMPARE AGAINST WHERE WE WANT TO BE.
/DO WE HAVE TO BACK UP?
/NOPE.

06355	1007		TAD	0215	/YEP, GIVE C.R.
06356	4433		JMS I	PPUTCH	/SEND IT
06357	4433		JMS I	PPUTCH	/ALSO SEND A NULL CHARACTER TO ALL TTY TO RETURN.
06360	1126	TABOK,	TAD	COLUMN	/GET WHERE WE ARE.
06361	7040		CMA		/NEGATE-1
06362	1367		TAD	TABDES	/WHERE DO WE WANT TO BE?
06363	7750		SNA SPA	CLA	/?
06364	5770		JMP I	TPRINT	/HERE, EXIT.
06365	1051		TAD	0240	/FARTHER UP.
06366	5357		JMP	TABOK-1	/GIVE SPACE AND LOOP AGAIN.
06367	0000	TABDES, 0			
06370	2207	TPRINT, PRINTC			/NORMAL EXIT LOCATION.

6400 PAGE

```

06400 0000  CHKFIT, 0
06401 1160          TAD      04
06402 4544          JMS I   SPLEFT
06403 5600          JMP I   CHKFIT
06404 4561          JMS I   PLINFX
06405 4537          JMS I   PRESET      /RESET ALL I/O DEVICES,
06406 4514          JMS I   PPRINTXT
06407 3562          UCHI
06410 3064          DCA      SNUMFLG      /RESET THIS FLAG NOW
06411 5612          JMP I   .+1
06412 2610          NEWLIN      /THIS MAY BE RIGHT.
    
```

```

06413 0000  RMLEFT, 0
06414 7100          CLL
06415 1003          TAD      ARRLOC
06416 7430          SZL
06417 5223          JMP      NORLFT
06420 7041          CIA
06421 1004          TAD      CODELOC
06422 7620          SNL  CLA
06423 2213  NORLFT, ISZ  RMLEFT
06424 5613          JMP I   RMLEFT
    
```

```

06425 0000  ABS, 0
06426 3024          DCA      ACS
06427 5625          JMP I   ABS
    
```

26430	2200	STICKIT,0		
26431	3403		DCA I	ARRLOC
26432	2003		ISZ	ARRLOC
26433	5630		JMP I	STICKIT

26434	0000	INT,	0	
26435	4506		JMS I	PPIX
26436	7200		CLA	
26437	4546		JMS I	PANORM
26440	5634		JMP I	INT

26441	0000	2XERR,	0		
26442	7200		C_A		/INCASE THIS IS JMS'D TO,
26443	3241		DCA	2XERR	
26444	4477		JMS I	PERROR	/AND REMAKE INTO AN "AND"
26445	2331		TEXT	'SYNTAX'	
26446	1624				
26447	0130				
26450	0000				
26451	4001	ATLINE,	TEXT	' AT LINE '	
26452	2440				
26453	1411				
26454	1605				
26455	4000				

06456	7570	07570,	7570	
06457	1024	UPARROW,	TAD	ACS
06460	7700		SMA CLA	
06461	1256		TAD	07570
06462	1025		TAD	ACE
06463	7700		SMA CLA	
06464	5447		JMP I	PARGERR
06465	4506		JMS I	PPIX
06466	5667		JMP I	.+1
06467	4365		UPARR2	

```

06472 4570 MOREDIM, MUSTBE      /', '
06471 3763                   3763
06472 7240 DIM,              CLA CMA
06473 3034                   DCA      DIMFLAG
06474 4501                   JMS I   PEVAL
06475 4566                   ISIT      / (CR) OR '\ '
06476 2000                   2000
06477 5270                   JMP     MOREDIM
06500 5503                   JMP I   PEXECUTE/YES

```

```

06501 4004 DELETED, TEXT ' DELETED_1 '
06502 0514
06503 0524
06504 0504
06505 3700

```

```

06506 1050 AMATCH, TAD      WORD
06507 3064                   DCA      SNUMFLG
06510 1064                   TAD      SNUMFLG
06511 3457                   DCA I   FPTR
06512 2037                   ISZ     FPTR
06513 1060                   TAD      GPTR
06514 3056                   DCA      EPTR
06515 4566                   ISIT      /'REM'
06516 1762                   1762
06517 5316                   JMP I   PSLOOP
06520 5721                   JMP I   .+1
06521 3043                   REMPACK

```

```

06522 3723 BREAK, 3723/2417/2056
06523 2417
06524 2056
06525 3722 READY, TEXT '_READY_...'
06526 0501
06527 0431
06530 5637
06531 3700

```

6531 CRLF=-1

06532	0000	ISDIG,	0	
06533	4522		JMS I	PNONBLNK
06534	1344		TAD	07706A
06535	7100		CLL	
06536	1065		TAD	012
06537	7420		SNL	
06540	7200		CLA	
06541	7430		SZL	
06542	2332		ISZ	ISDIG
06543	5732		JMP I	ISDIG
06544	7706	07706A,	7706	

06545	1042	PZERDON,	TAD	PRTEMP
06546	1043		TAD	DECEXP
06547	7710		SPA CLA	
06550	5354		JMP	+.4
06551	1043		TAD	DECEXP
06552	7040		CMA	
06553	3042		DCA	PRTEMP
06554	1044		TAD	PNUMBUF
06555	3025		DCA	ACE
06556	7344		CLA CLL	CMA RAL
06557	7040	DIGLUP,	CMA	
06560	1043		TAD	DECEXP
06561	7440		SZA	
06562	5365		JMP	+.3
06563	1375		TAD	0256B
06564	4433		JMS I	PPUTCH
06565	3043		DCA	DECEXP
06566	1425		TAD I	ACE
06567	4433		JMS I	PPUTCH
06570	2025		ISZ	ACE
06571	2042		ISZ	PRTEMP
06572	5357		JMP	DIGLUP
06573	5774		JMP I	+.1
06574	5123		PMTENF	

***** 8 K INSERT RETURN.

06575 0256 0256B, 256

6600 PAGE

6661 LSP=6661
6662 LCF=6662
6666 LLS=6666

06600	3334	INTER,	DCA	INTAC	/SAVE ALL IMPORTANT STUFF ON INTERUPT.
06601	7010		RAR		
06602	3335		DCA	INTL	
06603	6234		RIB		
06604	0374		AND	070	
06605	1375		TAD	06202	
06606	3371		DCA	INTCIF	/SAVE INSTRUCTION FIELD
06607	6234		RIB		
06610	0072		AND	07	
06611	7106		CLL	RTL	/SHIFT IT OVER

26612	7004	RAL			
26613	1215	TAD	06201A		/AND THE INSTUCTION FIELD
26614	3370	DCA	INTCDF		
26615	6201	06201A, CDF	0		/JUST IN CASE.
06616	7000	IFZERO	MACHINE<		
		NOP			/TO KEEP PAGE SAME SIZE.
		IFNZRO	MACHINE<		
		JMS I	SPECINT		/CHECK FOR SPECIAL INTERUPT DEVICE.
06617	6041	TSF			/IS IT THE TELEPRINTER.
06620	5223	JMP	.+3		/NO
06621	6042	TCF			
06622	5310	JMP	INODUN		/YEP, CLEAN IT UP,
06623	6661	LSF			/PRINTER?
06624	5227	JMP	.+3		
06625	6662	LCP			/YEP.
06626	5310	JMP	INODUN		
06627	6021	PCF			/PUNCH?
06630	5233	JMP	.+3		
06631	6022	PCF			
06632	5310	JMP	INODUN		
06633	6011	RSP			/READER?
06634	5241	JMP	INOPPP		/NOPE.
06635	7330	CLA CLL	CML RAR		/4000 TO AC
06636	6012	RRB			/READ IN THE CHARACTER.
06637	3740	DCA I	PHRCHAR		
06640	5344	JMP	INTEXT		/EXIT FROM THE INTERUPT.
06641	6663	INOPPP, 6663			/LINE PRINTER ERROR?
06642	5245	JMP	INOTTT		/NOPE.
06643	6667	6667			/YEP, INGORE THE LINE PRINTER NOW.
06644	5344	JMP	INTEXT		/AND EXIT.
06645	6031	INOTTT, KSF			/IS IT THE KEYBOARD.
06646	7402	HLT			/NOPE. A BADDY. WE'RE F--KED.
06647	6036	KRB			/READ IN THE CHARACTER.
06650	0027	AND	0177		/CHOP OFF THE CRAP.
06651	3336	DCA	INTEMP		/SAVE IN THE INTERUPT TEMPORARY.
06652	1336	TAD	INTEMP		/RECALL IT NOW, BUBBY.
06653	1376	TAD	07775		/IS IT A "C
06654	7450	SNA			/?
06655	5265	JMP	FCNTLC		/YES!
06656	1377	TAD	077640		/"0?
06657	7650	SNA CLA			
06660	5303	JMP	FCNTLO		
06661	7330	CLA CLL	CML RAR		
06662	1336	TAD	INTEMP		/SET HIGH ORDER BIT ON FOR SAFETY.
06663	3741	DCA I	PINCHAR		/PUT IT AWAY
06664	5344	JMP	INTEXT		/AND EXIT FROM INTERUPT.
06665	1134	FCNTLC, TAD	NOINT		/CHECK IF OK TO INTERUPT.

26666	7640		SZA	CLA		
26667	5300		JMP	CNTLCF		/NOT OK.
26670	6002	CNTLCR,	IOF			/TURN OFF INTERRUPTS TO BE SURE.
26671	4542		JMS I	DELOUT		/DELETE OUTPUT BUFFERS.
26672	4537		JMS I	PRESET		/RESET ALL I/O DEVICES.
26673	4514		JMS I	PPRINTXT		/GIVE THE STOP MESSAGE
26674	6522		BREAK			/I DON'T LIKE "THOSE PEOPLE" LOOKING OVER MY SHOULDER WHILE I TYPE.
26675	1125		TAD	PPDLIST		/RESET PUSH DOWN POINTER
26676	3036		DCA	PDL		
26677	5520		JMP I	PEDIT		/AND RESTART CISAB
06700	7040	CNTLCF,	CMA			/RESET "C FOUND SWITCH.
06701	3134		DCA	NOINT		
06702	5344		JMP	INTEXT		
06703	4542	FCNTLO,	JMS I	DELOUT		/DELETE THE OUTPUT NOW, BABY.
06704	1133		TAD	CNTLO		/NEGATE CNTLO SWITCH.
06705	7040		CMA			
06706	3133		DCA	CNTLO		
06707	5344		JMP	INTEXT		
06710	3742	INODUN,	DCA I	POFLAG		/RESET OUTPUT FLAG.
06711	4743		JMS I	POUIT		/PERFORM THE NEXT OPERATION.
06712	5344		JMP	INTEXT		
06713	0000	BIDLE,	0			/THE IDLE ROUTINE
06714	6002		IOF			
06715	7201		CLA	IAC		
06716	3337		DCA	BUSY		/RESET THE IDLE TASK FLAG.
06717	6214		RDF			/SAVE THE DATA FIELD NOW.
06720	1215		TAD	06201A		
06721	3362		DCA	INTECDP		/AND PLACE IN WHERE TO GO ON IDLE EXIT.
06722	1331		TAD	IDLELK		/RESTORE THE IDLE ROUTINES PARAMETERS.
06723	7104		CLL	RAL		
06724	1332		TAD	IDLEAC		
06725	6211	IDLECD,	CDP	10		
06726	6202	IDLECI,	CIF	0		
06727	6001		ION			
06730	5733		JMP I	IDLEPC		/AND DO THE IDLE STUFF
06731	0000	IDLELK,	0			
06732	0000	IDLEAC,	0			
06733	7415	IDLEPC,	NULJOB			
06734	0000	INTAC,	0			
06735	0000	INTL,	0			
06736	0000	INTEMP,	0			
06737	0000	BUSY,	0			
06740	7256	PHRCHAR,	HRCHAR			
06741	7255	PINCHAR,	INCHAR			

26742 7100 POFLAG, OFLAG
 26743 7043 POUTIT, OUTIT

06744	1337	INTEXT, TAD	BUSY
06745	7650	SNA CLA	
06746	5365	JMP	INTOU
06747	3337	DCA	BUSY
06750	1000	TAD	0
06751	3333	DCA	IDLEPC
06752	1334	TAD	INTAC
06753	3332	DCA	IDLEAC
06754	1335	TAD	INTL
06755	3331	DCA	IDLELK
06756	1371	TAD	INTCIF

/GET STATUS.
 /WE WERE NOT IDLE. EXIT NOW.
 /RESET BUSY FLAG,

/SAVE SH-T.

06757	3326		DCA	IDLECIF	
06760	1370		TAD	INTCDF	
06761	3325		DCA	IDLECOF	
06762	7402	INTECO,	HLT		/IDLE ROUTINES CALLING CDF.
06763	6001		ION		
06764	5713		JMP I	BIDLE	/AND GO BACK NOW.

06765	1335	INTOU,	TAD	INTL	
06766	7104		CLL RAL		
06767	1334		TAD	INTAC	
06770	7402	INTCDF,	HLT		
06771	7402	INTCIF,	HLT		
06772	6001		ION		
06773	5400		JMP I	0	

06774	0070	070,	70		
06775	6202	06202,	6202		
06776	7775	07775,	7775		
06777	7764	077640,	7764		

7000

PAGE

07000	0000	PUTER,	0		
07001	3241		DCA	OPUTC	

/THE CHARACTER PUTTER.
/SAVE THE CHARACTER NOW.

27202	6214		RDF		/READ THE DATA FIELD NOW.
27203	1205		TAD	062018	/CREATE PROPER CDF INSTRUCTION.
27224	3237		DCA	PUTCDF	/SAVE CDF INSTRUCTION.
27225	6201	062018,	COF	0	/RESET CDF TO THIS DATA FIELD.
27206	7410		SKP		
27227	4761	PUTLP,	JMS I	PBIDLE	/CALL IN THE IDLE ROUTINE NOW.
27210	1242		TAD	OCOUNT	/GET NUMBER OF CHARACTERS IN THE BUFFER.
27211	7450		SNA		
27212	5223		JMP	PUTCIN	/PUT IT IN NOW, BABY.
27213	1315		TAD	OCMLIM	/TEST FOR TOO MANY IN BUFFER.
27214	7650		SNA	CLA	
27215	5207		JMP	PUTLP	/YEP, WAIT AWHILE.
27216	1131		TAD	OUTDEV	
27217	7041		CIA		
27220	1132		TAD	ODEV	/CHECK FOR A MATCH.
27221	7640		SZA	CLA	
27222	5207		JMP	PUTLP	/NOPE, WAIT FOR BUFFER TO BECOME EMTPY.
27223	6002	PUTCIN,	IOF		/TURN THEM OFF, BABY.
27224	1133		TAD	CNTLO	/CHECK FOR CONTROL "O" ACTIVE.
27225	7650		SNA	CLA	
27226	1131		TAD	OUTDEV	/MOVE OVER OUTPUT DEVICE.
27227	3132		DCA	ODEV	
27230	2242		ISZ	OCOUNT	
27231	1241		TAD	OPUTC	/STICK A CHARACTER IN THE BUFFER.
27232	3634		DCA I	IPOINT	
27233	4301		JMS	OBOP	/BOP UP THE POINTER NOW.
27234	1165	IPOINT,	OBLW		
27235	4243		JMS	OUTIT	/SEND IT OUT
27236	6001		ION		/RESTORE INTERRUPTS.
27237	7402	PUTCDF,	HLT		/USER'S CORRECT CDF
27240	5600		JMP I	PUTER	
27241	0000	OPUTC,	0		
27242	0000	OCOUNT,	0		
27243	0000	OUTIT,	0		
27244	1300		TAD	OFLAG	
27245	7640		SZA	CLA	
27246	5643		JMP I	OUTIT	/FLAG STILL UP, EXIT.
27247	1242		TAD	OCOUNT	
27250	7450		SNA		
27251	5643		JMP I	OUTIT	/NO CHARS TO GO, SO WE WILL.
27252	1314		TAD	07777	/PLEASE IGNORE THE COMMENTS OF A DERANGED MIND.
27253	3242		DCA	OCOUNT	
27254	1132		TAD	ODEV	
27255	1273		TAD	OPOTAB	/MAP DEVICE INTO TABEL TOO ET WHAT TO DO.
27256	3300		DCA	OFLAG	/AND ALSO RESET FLAG AT THE SAME TIME.
27257	1700		TAD I	OFLAG	/GET THE MAGIC INSTUCTION.
27260	3262		DCA	.+2	/AND PLACE IT HERE.
27261	1665		TAD I	OPOINT	/GET THE CHARACTER.
27262	7402		HLT		/AND HALT.
27263	7200		CLA		/AFTER PRINTING THE CHARACTER,

27264	4321	JMS	OBOP	/WE SHALL INCREMENT THE POINTER.
27265	1165	OPOINT,	OBLOW	
27266	5643	JMP I	OUTIT	/AND EXIT.
27267	7220	OPNUL,	CLA	/RESET OFLAG
27270	3300		DCA	/SO DEVICES INACTIVE.
27271	4542	JMS I	OFLAG	/DELETE ANY STRAY CHARACTERS IN THE BUFFER.
27272	5643	JMP I	OUTIT	/AND RETURN NOW.
27273	7074	OPOTAB,	,+1	
27274	5267	JMP	OPNUL	/NUL DEVICE (NO ECHOING)
27275	6046		TLS	
27276	6026		PLS	
27277	6666		LLS	
27100	0000	OFLAG,	0	
07101	0000	OBOP,	0	
07102	1701	TAD I	OBOP	
07103	1312	TAD	OTST1	
07104	7450		SNA	
07105	1315	TAD	OFLOW	
07106	1313	TAD	OCOR	
07107	3701	DCA I	OBOP	
07110	2301	ISZ	OBOP	
07111	5701	JMP I	OBOP	
07112	6601	OTST1,	=OBHIGH	
07113	1200	OCOR,	OBHIGH+1	
07114	7777	07777,	7777	
07115	7765	OFLOW,	=OBHIGH-1+OBLOW	
	7115	OCMLIM=	OFLOW	
07116	0000	RESET1,	0	
07117	7201	CLA	IAC	
07120	3131	DCA	OUTDEV	
07121	7201	CLA	IAC	
07122	3130	DCA	OUTD2	
07123	7201	CLA	IAC	
07124	3127	DCA	INDEV	
07125	3133	DCA	CNTLO	
07126	3134	DCA	NOINT	/CLEAR NO-INTERUPT FLAG.
07127	6201	ODF	0	/RESET DATA FIELD TO HERE.
07130	3756	DCA I	QHRCHAR	/CLEAR ALL INPUT FLAGS.
07131	3762	DCA I	SINCHAR	
07132	3757	DCA I	PBUSY	/AND ALSO THE BUSY FLAG.
07133	3760	DCA I	PPXRA	/RESET NULL AFTER C.R. FLAG.

		IFNZRO MACHINE<		
		CIF CDF 10		/PREPARE TO RESET CLOCK,
		JMS I LLLUUU		/RESET CLOCK NOW (OR RATHER A-D BUFFER).
		>		
		IFZERO MACHINE<		
27134	6211	CDF 10		
27135	6221	ION		
		>		
27136	6665	6665		/TELL LPT IT'S OK TO INTERUPT NOW.
27137	5716	JMP I RESET1		
27140	2352	LLLUUU, UUULLL		/POINTER TO UPPER CORE RESETER.
27141	0000	RESET2, 0		
27142	4537	JMS I PRESET		
27143	4542	JMS I DELOUT		
27144	3300	DCA OFLAG		
27145	5741	JMP I RESET2		
27146	0000	OUTOEL, 0		
27147	3242	DCA OCOUNT		
27150	1355	TAD OPRST		
27151	3263	DCA OPOINT		
27152	1355	TAD OPRST		
27153	3234	DCA IPOINT		
27154	5746	JMP I OUTOEL		
27155	1165	OPRST, OBLow		
27156	7256	QHRCHAR, HRCHAR		
27157	6737	PBUSY, BUSY		
27160	2776	PPXRA, PUTXRA		
27161	6713	PBIDLE, BIDLE		
27162	7255	SINCHAR, INCHAR		

07163	7201	LPTOUT,	CLA	IAC	/LINE PRINTER OUTPUT
07164	7001	PTPOUT,	IAC		/PUNCH OUT
07165	7001	TTYOUT,	IAC		/TTY OUT
07166	3131		DCA	OUTDEV	/AND SET IT UP
07167	1131		TAD	OUTDEV	/ALSO MOVE OVER TO SECONDARY DEVICE.
07170	3130		DCA	OUTD2	
07171	5375		JMP	DEVCOM	/AND CHECK FOR END.
07172	7201	PTRIN,	CLA	IAC	
07173	7001	TTYIN,	IAC		
07174	3127		DCA	INDEV	
07175	4177	DEVCOM,	JMS	GETWD	
07176	4570	DEVCON,	MUSTE		
07177	2000		2000		/C.R. OR \
07200	5503		JMP I	PEXECUTE	

07221	0000	GETCH,	0		
07222	4270		JMS	GWHERE	
07223	4657		JMS I	QBIDLE	
07224	1255		TAD	INCHAR	

07205	7450		SNA	
07206	5203		JMP	GETCH+2
07207	2227		AND	0177
07210	3254		DCA	GTEMP
07211	3255		DCA	INCHAR
07212	3256		DCA	HRCHAR
07213	1135		TAD	RBSWCH
07214	7650		SNA	CLA
07215	5224		JMP	GRB
07216	1254		TAD	GTEMP
07217	1260		TAD	07601
07220	7640		SZA	CLA
07221	5224		JMP	GRB
07222	1261	GRDELA,	TAD	0137
07223	5601		JMP I	GETCH
07224	1254	GRB,	TAD	GTEMP
07225	1055		TAD	07770
07226	7450		SNA	
07227	5222		JMP	GRDELA
07230	1262		TAD	07612
07231	7450		SNA	
07232	5247		JMP	GALT
07233	1266		TAD	0143
07234	7650		SNA	CLA
07235	5247		JMP	GALT
07236	1254		TAD	GTEMP
07237	1263		TAD	07640C
07240	7510		SPA	
07241	5251		JMP	GOUT
07242	1264		TAD	07746
07243	7500		SMA	
07244	5251		JMP	GOUT
07245	1265		TAD	0132
07246	5601		JMP I	GETCH
07247	1267	GALT,	TAD	0175
07250	5601		JMP I	GETCH
07251	7200	GOUT,	CLA	
07252	1254		TAD	GTEMP
07253	5601		JMP I	GETCH
07254	0000	GTEMP,	0	
07255	0000	INCHAR,	0	
07256	0000	HRCHAR,	0	
07257	6713	QBIDLE,	BIDLE	
07260	7601	07601,	7601	
07261	0137	0137,	137	
07262	7612	07612,	7612	
07263	7640	07640C,	7640	
07264	7746	07746,	7746	

07265	0132	0132,	132
07266	0143	0143,	143
07267	0175	0175,	175

07270	0000	GWHERE,	0	
07271	7240		CLA	CMA
07272	1127		TAD	INDEV
07273	2270		ISZ	GWHERE
07274	7750		SPA	SNA CLA
07275	5670		JMP	I GWHERE
				/INPUT=TTY
07276	1264		TAD	07746
07277	3254		DCA	GTEMP
07300	3256		DCA	HRCHAR
07301	6014		RFC	
07302	1256	HRLOP,	TAD	HRCHAR
07303	7440		SZA	
07304	5321		JMP	HFOUND
07305	2255		ISZ	INCHAR
07306	5302		JMP	HRLOP
07307	2254		ISZ	GTEMP
07310	5302		JMP	HRLOP
07311	7201		CLA	IAC
07312	3131		DCA	OUTDEV
07313	3133		DCA	CNTLO
07314	4514		JMS	I PPRINTXT
				/RESET OUTPUT DEVICE FOR A SECOND.
				/RESET THE CONTROL "O" SWITCH ALSO.
				/GIVE THE MESSAGE.

```

07315 7323 HRMES
07316 7281 CLA IAC
07317 3127 DCA INDEV
07320 5670 JMP I GWHERE

```

```

07321 2270 MFOUND, ISZ GWHERE
07322 5670 JMP I GWHERE

```

```

07323 3724 HRMES, TEXT '_TTY_'
07324 2431
07325 3700

```

```

07326 0000 COWT, 0 /THIS ROUTINE WAITS FOR OUTPUT TO STOP.
07327 6201 CDF 0 /SET D.F. TO THIS FIELD.
07330 3742 DCA I CCXRA /SET OR RESET NULL AFTER C.R. FLAG.
07331 1743 COWTLP, TAD I COWTFP /GET OUTPUT FLAG STATUS.
07332 6211 CDF 10 /RESET D.F.
07333 7650 SNA CLA /IS OUTPUT DONE?
07334 5340 JMP COWTO /YEP, EXIT.
07335 4744 JMS I COWTW /NOPE, IDLE LOOP TILL INTERRUPT.
07336 6201 CDF 0 /RESET D.F. TO ZERO.
07337 5331 JMP COWTLP /AND LOOP.
07340 3133 COWTO, DCA CNTLO /CLEAR CONTROL 0 STATE.
07341 5726 JMP I COWT

```

```

07342 0776 CCXRA, PUTXRA
07343 7100 COWTFP, OFLAG
07344 6713 COWTW, BIDL

```

07345	0000	XGMUST,	0		
07346	4177		JMS	GETWD	
07347	1345		TAD	XGMUST	
07350	3352		OCA	XMUST	
07351	5353		JMP	XMUST+1	
07352	0000	XMUST,	0		
07353	1450		TAD I	WORD	
07354	6201		COF	0	/***** 8 K INSERT.
07355	1752		TAD I	XMUST	
07356	6211		COF	10	/***** 8 K INSERT.
07357	2352		ISZ	XMUST	
07360	7650		SNA	CLA	
07361	5752		JMP I	XMUST	
07362	5500		JMP I	PSXERR	

07363	4477	ARGERR,	JMS I	PERROR	
07364	0122		TEXT	'ARGUMENT'	
07365	0725				
07366	1505				
07367	1624				
07370	0000				
07371	5660	DOTZERO,	TEXT	'0'	
07372	0000				

07373	4477	RTERR,	JMS I	PERROR	/GIVE RATE ERROR FOR CLOCK.
07374	2201		TEXT	'RATE'	
07375	2405				
07376	0000				

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PAGE

IFZERO MACHINE<
NOPUNCH>

07400	1136	PLOT,	TAD	DISB	/GET BUFFER ADDRESS.
07401	7640		SZA	CLA	/IS THERE ONE?
07402	5220		JMP	DBGOT	
07403	1240		TAD	PASSUME	/GET ASSUMED LENGTH.
07404	4544		JMS I	SPLEFT	/ROOM LEFT TO FIT IT IN.
07405	7410		SKP		
07406	5755		JMP I	NPSERR	/NO.
07407	1003		TAD	ARRLOC	/GET A USABLE ADDRESS.
07410	3311		DCA	DLAST	/SAVE AWAY.
07411	1003		TAD	ARRLOC	/NOW UPDATE OUR ARRAY.
07412	1240		TAD	PASSUME	
07413	3003		DCA	ARRLOC	
07414	7240		CLA	CMA	
07415	1003		TAD	ARRLOC	/GET LAST WORD OF OUR BUFFER NOW.
07416	3312		DCA	DDLAST	/AND GO.
07417	4314		JMS	PLOTB	/FIGURE OUT OUR CRAP NOW.
07420	3313	DBGOT,	DCA	DBAD	/TELL IT POINT IS ON SCREEN
07421	4177		JMS	GETWD	/GET NEXT SYNTATICAL ELEMENT.
07422	4641		JMS I	PMEVAL	/EVALUATE OUR EXPRESSION.
07423	4435		FENTER		
07424	6217		FMP+FSHIFT+FWD=.		/CORRECT NUMBER FOR SYMETRICAL SCREEN.

```

07425 0000 FEXIT
07426 4326 JMS DBLIT /PUT IT IN THE BUFFER,
07427 4641 JMS I PMEVAL /GET Y COORDINATE,
07430 4326 JMS DBLIT /PUT IT IN THE BUFFER,
07431 1313 TAD DBAD /IS IT A BAD ONE? <OFF SCREEN?>
07432 7041 CIA
07433 1311 TAD DINP
07434 3311 DCA DINP
07435 7330 CLA CLL CML RAR /4000=END OF BUFFER CHARACTER.
07436 3711 DCA I DINP
07437 5642 JMP I PDEVCON

```

```

07440 1750 PASSUME,1750
07441 7415 PMEVAL, MEVAL
07442 7176 PDEVCON,DEVCON
07443 2007 FSHIFT, 2007/1600/0000 /MAGIC CONSTANT FOR SYMETRICAL SCREEN.
07444 1600
07445 0000

```

```

07446 1136 USE, TAD DISB /IS DISPLAY BUFFER ASSIGNED.
07447 7640 SZA CLA
07450 5661 JMP I USKIPIT /YES, EXIT.
07451 4262 JMS GETARY /GET THE ARRAY DATA
07452 1020 TAD AC1 /GET FIRST FREE LOCATION
07453 3311 DCA DLAST
07454 1017 TAD AC2 /GET SECOND FREE LOCATION
07455 3312 DCA DDLAST /SAVE AWAY.
07456 4314 JMS PLOTB /SET UP STUFF.
07457 4177 JMS GETWD /GET NEXT ELIMAENT AFTER VARIABLE.
07460 5642 JMP I PDEVCON
07461 0467 USKIPIT,SKIPIT

```

```

07462 0000 GETARY, 0 /THIS ROUTINE GETS THE FIRST AND LAST LOCATIONS OF AN ARRAY.
07463 4571 GET+MUSTBE /MUST BE A VARIABLE.
07464 7000 7000
07465 1050 TAD WORD /GET POINTER TO VARIABLE.
07466 3302 DCA UVP
07467 2050 ISZ WORD
07470 1450 TAD I WORD /GET POINTER NOW.
07471 7001 IAC
07472 3020 DCA AC1 /SAVE AWAY.
07473 2050 ISZ WORD
07474 1450 TAD I WORD
07475 3303 DCA UIP
07476 2050 ISZ WORD
07477 1450 TAD I WORD
07500 3304 DCA UZF
07501 4502 JMS I PGETADD
07502 0000 UVP, 0
07503 0000 UIP, 0

```

07504	0000	U2P,	0			
07505	7326		CLA	CLL	CML	RTL
07526	1067		TAD		ADDRESS	
07527	3017		DCA		AC2	
07510	5662		JMP	I	GETARY	

07511	0000	DLAST,	0			
	7511	DINP=DLAST				
07512	0000	DDLAST,	0			
07513	0000	DBAD,	0			

07514	0000	PLOTB,	0			
07515	7240		CLA	CMA		
07516	1311		TAD		DLAST	
07517	3136		DCA		DISB	
07520	1325		TAD		04001	
07521	3712		DCA	I	DDLAST	
07522	7330		CLA	CLL	CML	RAR
07523	3711		DCA	I	DLAST	
07524	5714		JMP	I	PLOTB	
07525	4001	04001,	4001			

07526	0000	DBLIT,	0			
07527	1024		TAD		AC8	
07530	7700		SMA	CLA		
07531	5335		JMP		,+4	
07532	7326	DBBAD,	CLA	CLL	CML	RTL
07533	3313		DCA		DBAD	
07534	5347		JMP		DBISRT	

27535	1025	TAD	ACE
27536	1354	TAD	07577B
27537	7700	SMA CLA	
27540	5332	JMP	0BBAD
27541	1225	TAD	ACE
27542	1065	TAD	012
27543	3025	DCA	ACE
27544	4506	JMS I	PPIX
27545	7200	CLA	
27546	1016	TAD	AC3
27547	4356	DBISRT, JMS	DBPUT
27550	7330	CLA CLL	CML RAR
27551	2311	ISZ	DINP
27552	4356	JMS	DBPUT
27553	5726	JMP I	OBLIT

27554	7577	07577B, 7577	
27555	0370	NPSERR, SPACERR	

27556	2000	DBPUT, 0	
27557	3017	DCA	AC2
27560	7350	CLA CLL	CMA RAR
27561	1711	TAD I	DINP
27562	7650	SMA CLA	
27563	5755	JMP I	NPSERR
27564	1017	TAD	AC2
27565	3711	DCA I	DINP
27566	5756	JMP I	DBPUT

/4001=3777

/NO ROOM IN BUFFER, BOMB HIM.

27567	4477	UUDATA, JMS I	PERROR
27570	0155	TEXT	'A-D FULL'
27571	0440		
27572	0625		
27573	1414		
27574	0000		

ENPUNCH

IFNZRO MACHINE4

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>

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IFZERO MACHINE<
+PLOT>

07400	0000	SETUP,	0	
07401	1005	TAD	PSYMTAB	
07402	3056	DCA	EPTR	
07403	1006	TAD	NSYMTAB	
07404	3057	DCA	FPTR	
07405	3136	DCA	DISB	
07406	5600	JMP I	SETUP	

IFNZRO MACHINE<
CDEVCOM,DEVCOM
>

0000

IFZERO MACHINE<
CDEVCOM=0
>

07407	0000	ISET,	0	
07410	6050		DILC	
07411	6055		DIXY	

27412	4614	JMS I	IIXR
27413	5627	JMP I	ISET
27414	7141	IIXR,	RESET2

IFZERO MACHINE<

NOPUNCH>

27415	0000	MEVAL,	0	
27416	4566		ISIT	/IS IT A C.R.
27417	2000		2000	
27420	7410		SKP	
27421	5500		JMP I	PSXERR
27422	4566		ISIT	
27423	3763		3763	/,
27424	5227		JMP	.+3
27425	4177		JMS	GETND
27426	5216		JMP	MEVAL+1
27427	1215		TAD	MEVAL
27430	5631		JMP I	MEVALGO
27431	1007	MEVALGO,	EVALGO	

27432	1136	CLEAR,	TAD	DISB	
27433	7450		SNA		/IS IT THERE?
27434	5400		JMP I	CDEVCOM	/NOPE.
27435	3013		DCA	INDEX1	
27436	7330		CLA CLL	CML RAR	/4000
27437	3413		DCA I	INDEX1	
27440	6201		CDP	0	/RESET INPUT POINTER ALSO.
27441	1013		TAD	INDEX1	
27442	3645		DCA I	COINP	
27443	6211		CDP	10	
27444	5400		JMP I	CDEVCOM	

/E IC.LOE

PALB-V7

PALB-14-8

07445 7511 CDINP, DINP

07446	2220	LLLJMS, 0	
07447	1946	TAD I	LLLJMS
07450	2246	ISZ	LLLJMS
07451	3257	DCA	LLLJMP
07452	4657	JMS I	LLLJMP
07453	7410	SKP	

/IN CASE OF SKIPPING RETURN.

07454	2246		ISZ	LLLJMS	
07455	6213		CIF CDF	10	
07456	5646		JMP I	LLLJMS	

07457	0800	LLLJMP,	0		
07460	1657		TAD I	LLLJMP	
07461	3257		DCA	LLLJMP	
07462	5657		JMP I	LLLJMP	

07463	7326	DELAY,	CL\ CLL	CML RTL	/+2
07464	3220		DCA	NDELAY	/SET UP DEALY TIME (ONE TIME THROUGH).

			IFNZRO	MACHINE<	
		NULJOB,	TAD	DISB	/SET UP AUTO INDEX REGISTER NOW.

			IFZERO	MACHINE<	
			ENPUNCH		
			*MEVAL		
	7415				
07415	7001	NULJOB,	IAC		
07416	5215		JMP	NULJOB	

NOPUNCH>

07417	3015		DCA	DISAUTO	/WITH POINTER TO OUR BUFFER.
07420	1220		TAD	NDELAY	/UPDATE DELAY WORD.
07421	7110		CLL RAR		
07422	3220		DCA	NDELAY	
07423	7430		SZL		/ARE WE FINISHED WITH DELAY COMMAND?
07424	5400		JMP I	COEVCOM	/YEP, EXIT NOW.
07425	1136		TAD	DISB	/GET OUR WORD NOW.
07426	7650		SNA CLA		/ZERO?
07427	5215		JMP	NULJOB	/YEP. WAIT AWHILE.

07430	1415	NULLOP,	TAD I	DISAUTO	
07431	7510		SPA		
07432	5254		JMP	NULCMD	
07433	1256		TAD	07000C	/BRING DOWN INTO RANGE OF SCREEN.
07434	6052		DISD		
07435	5234		JMP	,=1	

07436	6053	DILX	
07437	7200	CLA	
07440	1415	YAD I	DISAUTO
07441	7510	SPA	
07442	5254	JMP	NULCMD
07443	1256	TAO	07000C
07444	6052	DISD	
07445	5244	JMP	.-1
07446	6054	DILY	
07447	7200	CLA	
07450	6052	DISD	
07451	5250	JMP	.-1
07452	6055	DIXY	
07453	5230	JMP	NULLOP
07454	7200	NULCMD, CLA	
07455	5215	JMP	NULJOB
07456	7000	07000C, 7000	
07457	6762	NINTECDF, INTECOP	

/CENTER AGAIN,

07460	4477	UUNOAD, JMS I	PERROR
07461	1617	TEXT	'NO A=D'
07462	4001		
07463	5504		
07464	0000		

07465	0000	CCINTK, 0	
07466	6131	6131	
07467	5665	JMP I	CCINTK
07470	6213	CIF CDF	10
07471	5672	JMP I	.+1
07472	0175	CLOCKI	

7473
7473REALTI=,
SETRAT=,

7473	SETCLO=.
7473	WAITC=.
7473	WAIT=.
7473	REJECT=.
7473	ACCEPT=.

07473	1450	TAD I	WORD
07474	6213	COF CIF	10
07475	5676	JMP I	.+1
07476	0731	UPCOM00	

7477	TIM=.
7477	CLC=.
7477	CLD=.
7477	ADC=.
7477	ADB=.

07477	0000	0	
07500	1436	TAD I	PDL
07501	6213	CIF COF	10
07502	4704	JMS I	.+2
07503	5677	JMP I	ADB
07504	0747	UPFUN	

/RECALL CORRECT FUNCTION NUMBER (IT'S ON THE STACK)

ENPUNCH
IFZERO MACHINE<

7417 *NULJOB+2>

07417 3762 T8TFX, BEGFIX

07420 0000 NDELAY, 0

07421	0000	TST,	0	
07422	4617		JMS I	TSTFX
07423	6201		ODF	0
07424	1631		YAD I	TSTP
07425	6211		ODF	10
07426	3016		OCA	AC3
07427	4546		JMS I	PANORM
07430	5621		JMP I	TST
07431	7255	TSTP,	INCHAR	

0001

FIELD 1

0000 *0

12000 2045 TEN, 2045;0000;0000
 12001 0000
 12002 0000

/INSERTED IN UPPER CORE BECAUSE OF FEEDIBILITY.

10003 0000 CLKSTS, 0
 10004 0000 TIM1, 0
 10005 0000 TIM2, 0
 10006 0000 ABDGET, 0
 10007 0000 ADACPT, 0
 10010 0000 ADCUNT, 0
 10011 0000 CLTEMP, 0
 10012 0000 ADCX, 0
 10013 0100 U100, 100
 10014 0000 CT3, 0
 10015 0000 CT2, 0
 10016 0000 CT1, 0
 10017 0177 U177, 177
 10020 4707 U4707, 4707
 10021 7775 U7775, 7775
 10022 0000 ACOUNT, 0
 10023 0000 APUT1, 0
 10024 0000 APUT2, 0
 10025 0000 ADA1, 0
 10026 0000 ADA2, 0
 10027 0000 ADA3, 0
 10030 0550 UUSETF, USETF
 10031 0673 UMEVAL, UUMEVAL
 10032 0677 UPPFIX, UUPFIX
 10033 0007 U7, 7
 10034 5010 U5010, 5010
 10035 7767 U7767, 7767
 10036 0010 U10, 10
 10037 0654 UAC1, UUAC1
 10040 0661 UAC2, UUAC2
 10041 0666 UAC3, UUAC3
 10042 0020 PPAC1, AC1
 10043 0017 PPAC2, AC2
 10044 0016 PPAC3, AC3
 10045 0025 PPACE, ACE
 10046 0024 PPAC8, ACS
 10047 0017 U17, 17
 12250 7777 U7777, 7777
 12051 0362 U00AD, D0AD
 12052 7760 U7760, 7760
 12053 0000 UTEMP, 0

10054 0722 UJMP, UJMP
 10055 0707 UJMS, UJMS
 10056 0705 UDEVCON, UDEVCON
 10057 6000 UGETWD, 6000
 10060 0455 JMS I UJMS
 10061 0177 GETWD
 10062 5457 JMP I UGETWD
 10063 0000 AUTEMP, 0
 10064 7767 ADCCOR, -11

/ABOUT 512 FOR FUDGE.

0200 PAGE

0175 +,-3

10175 6135 CLOCKI, 6135
 10176 3003 OCA CLKSTS
 10177 2005 ISZ TIM2
 10200 5203 JMP ,+3
 10201 2004 ISZ TIM1
 10202 7000 NOP
 10203 1006 TAD ABDGET
 10204 7750 SPA SNA CLA

/CLEAR CLOCK FLAG.
 /AND SAVE STATUS.
 /INCREMENT CLOCK.

/IS REAL TIME OPTION RUNNING?

10205	5234	JMP	UIEXT	/NOPE.	
10206	1007	TAD	ADACPT	/IT SO, ARE WE NOW ACCEPTING DATA?	
10207	7650	SNA	CLA		
10210	5234	JMP	UIEXT	/NOPE.	
10211	1010	TAD	ADCUNT	/YEP, GET NUMBER OF CHANNELS TO DO.	
10212	3011	DCA	CLTEMP	/SET UP OUR COUNTER.	
10213	1012	TAD	ADCX	/GET STARTING CHANNEL NUMBER.	
10214	6531	6531		/SEND TO TO CONTROLLER.	
10215	1013	TAD	U100	/TELL IT TO INCREMENT MULTIPLEXOR WHEN DONE.	
10216	6536	6536			
10217	4451	UCLOOP,	JMS I	UDDAD	/PERFORM A=D INSTRUCTION.
10220	4263		JMS	APUT	/STORE IN USERS BUFFER.
10221	2011		ISZ	CLTEMP	/ALL DONE?
10222	5217		JMP	UCLOOP	/NOPE. WAIT.
10223	2014		ISZ	CT3	/DONE, INCREMENT TOTAL NUMBER OF SAMPLES.
10224	5234		JMP	UIEXT	
10225	2015		ISZ	CT2	
10226	5234		JMP	UIEXT	
10227	2016		ISZ	CT1	
10230	5234		JMP	UIEXT	
10231	7240	CLA	CMA		/ALL DONE, STOP SAMPLING.
10232	3006	DCA	ABDGET		
10233	3007	DCA	ADACPT		/AND GO INTO "REJECT" MODE.
10234	6031	UIEXT,	6031		/HAS HE TYPED A CONTROL CT?
10235	5243		JMP	UIEXT2	/NO.
10236	6034		6034		
10237	0017		AND	U177	
10240	1021		TAD	U7775	/^CT?
10241	7650		SNA	CLA	
10242	5245		JMP	UIEXT3	/YES! BOMB HIM.
10243	6131	UIEXT2,	6131		
10244	5260		JMP	UIEXT4	/CLOCK HAS NOT COME UP AGAIN, ALL IS WELL.
10245	1020	UIEXT3,	TAD	U4707	/STOP CLOCK IMMEDIATELY.
10246	6132		6132		
10247	6135		6135		
10250	6130		6130		
10251	7240		CLA	CMA	
10252	6130		6130		/CLEAR ALL AFTER PARTIAL ENABLE.
10253	6032		6032		/CLEAT TTY FLAG.
10254	3006		DCA	ABDGET	/FREE BUFFER AND ACCEPT MODE.
10255	3007		DCA	ADACPT	
10256	4454		JMS I	UJMP	
10257	7373		RTERR		
10260	6203	UIEXT4,	CIF CDF 0		/INTERUPT EXIT.
10261	5662		JMP I	.+1	
10262	6744		INTEXT		/AND DO WHATEVER GOD INTENDED.

10263	0000	APUT,	0		/THIS ROUTINE PUTS A SAMPLE IN THE BUFFER.
10264	3423		DCA I	APUT1	/PLACE IN BUFFER.
10265	2022		ISZ	ACOUNT	/INCREMENT COUNTER.
10266	4325		JMS	ABOP	/BOP UP POINTER.
10267	0023			APUT1	
10270	1023		TAD	APUT1	/GET INPUT POINTER.
10271	7041		CIA		
10272	1024		TAD	APUT2	/DOES IT MATCH OUTPUT POINTER?
10273	7640		SZA	CLA	
10274	5663		JMP I	APUT	/NOPE, ALL IS WELL.
10275	3006		DCA	ABOGET	/FREE BUFFER.
10276	3007		DCA	ADACPT	/AND ACCEPT.
10277	4454		JMS I	UJMP	/GIVE ERROR.
10300	7567			UUDATA	/A-D ERROR.
10301	0000	AGET,	0		/THIS GETS A DATA ITEM FROM BUFFER.
10302	7240		CLA	CMA	/DECREMENT COUNTER.
10303	1022		TAD	ACOUNT	
10304	7500		SIX		/OR SHOULD WE?
10305	5312		JIP	.+5	/YEP, STILL ITEMS LEFT.
10306	7200		CLA		
10307	4455		JMS I	UJMS	/PUT TO SLEEP
10310	6713		BIDLE		
10311	5302		JMP	AGET+1	/AND CHECK AGAIN WHEN AWAKE.
10312	3022		DCA	ACOUNT	/SAVE COUNTER.
10313	1424		TAD I	APUT2	/GET THE SAMPLE.
10314	3323		DCA	ATEMP	/SAVE WHILE UPDATE TAKES PLACE.
10315	6002		IOF		

10316	4325		JMS	ABOP	
10317	2024		APUT2		
10320	6001		ION		/ABOP WILL F--K YOU UP IF CALLED RE-ENTRENTLY.
10321	1323		TAD	ATEMP	
10322	5701		JMP I	AGET	
10323	0000	ATEMP,	0		
10324	0000	ATEMP2,	0		
10325	0000	ABOP,	0		
10326	1725		TAD I	ABOP	
10327	3324		DCA	ATEMP2	/SAVE POINTER NOW.
10330	1724		TAD I	ATEMP2	
10331	2325		ISZ	ABOP	/GET VALUE AND SKIP PAST POINTER #1.
10332	1025		TAD	ADA1	/TEST AGAINST UPPER.
10333	7450		SNA		
10334	1026		TAD	ADA2	/CORRECT TO LOWER.
10335	1027		TAD	ADA3	/AND ADD IN UPPER.
10336	3724		DCA I	ATEMP2	/AND THEN SAVE AWAY.
10337	5725		JMP I	ABOP	/AND THEN EXIT.
10340	0000	UCLS,	0		/GETS STATUS AFTER LAST CLOCK INTERRUPT.
10341	1003		TAD	CLKSTS	
10342	4430		JMS I	UUSETF	
10343	0000		0		
10344	5740		JMP I	UCLS	/RETURN WHEN DONE.
10345	0000	UCLC,	0		/READS IN AS A CLCA
10346	6137		6137		/GET COUNT REGISTER.
10347	4430		JMS I	UUSETF	
10350	0000		0		/FIX IT UP.
10351	5745		JMP I	UCLC	/AND RETURN NOW.
10352	0000	UUULLL,	0		
10353	7200		CLA		

10354	3022		DCA	ACOUNT	
10355	3006		DCA	ABOGET	
10356	3007		DCA	ADACPT	
10357	6001		ION		
10360	6202		CIF	0	
10361	5752		JMP I	UUULLL	
10362	0000	DOAD,	0		
10363	1052		TAD	U7760	/PLENTY OF DELAY
10364	3375		DCA	DSCREW	/SAVE IN A COUNTER WORD.
10365	6532		6532		/START CONVERSION.
10366	6534	DOADLP,	6534		/WAIT UNTIL DONE.
10367	7410		SKP		/IF NOT DONE, WAIT SOME.
10370	5373		JMP	.+3	/IF DONE, READ IT IN.
10371	2375		ISZ	DSCREW	
10372	5366		JMP	DOADLP	/WAIT UNTIL DONE OR TOO LONG.
10373	6533		6533		/THEN READ IN THE CONVERTED NUMBER.
10374	5762		JMP I	DOAD	/AND RETURN.
10375	0000	DSCREW,	0		

10400	4057	USETR,	JMS	UGETWD	/BOP PAST CHAR,
10401	4431		JMS I	UMEVAL	/THIS ROUTINE SETS UP CLOCK TO A GIVEN TIME,
10402	4432		JMS I	UPFIX	/FIX UP AC,
10403	0033		AND	U7	/JUST GET SIGNIFICANT BITS (0-7),
10404	7106		CLL RTL		/NOW MOVE TO TIME PORTION (3-5)
10405	7006		RTL		
10406	7006		RTL		
10407	1034		TAD	U5010	/SET OTHER CORRECT BITS NOW,
10410	5216		JMP	USETM	
10411	4057	USETC,	JMS	UGETWD	/BOP PAST BAD POINTER,
10412	4431		JMS I	UMEVAL	/THIS ROUTINE LOADS CLOCK WITH USERS COMMAND REGISTER,
10413	4432		JMS I	UPFIX	
10414	0035		AND	U7767	/MAKE SURE TO TURN INTERRUPTS ON,
10415	1036		T.D	U10	
10416	3053	USETM,	DCA	UTEMP	/SAVE ENABLE REGISTER FOR A SECOND,
10417	7240		CLA CMA		/CLEAR CLOCK NOW,
10420	6130		6130		
10421	7200		CLA		/SO WE CAN LOAD IN CORRECT STUFF,
10422	4431		JMS I	UMEVAL	/EVALUATE HIS TIME SETTING,
10423	4432		JMS I	UPFIX	
10424	7041		CIA		
10425	6002		IOF		/MAKE SURE INTERRUPTS ARE OFF,
10426	6133		6133		
10427	7200		CLA		
10430	3004		DCA	TIM1	/CLEAR OUT THE TIM NOW,
10431	3005		DCA	TIM2	
10432	1053		TAD	UTEMP	/RECALL DESIRED ENABLE REGISTER,
10433	6132		6132		/SEND IT OUT,
10434	6001		ION		/TURN ON INTERRUPTS NOW,
10435	7200		CLA		
10436	5456		JMP I	UDEVCON	/AND EXIT NOW,
10437	7240	UWAIT,	CLA CMA		/WAITS FOR AN INTERRUPT, SET TO LOOK LIKE CLOCK DID IT,
10440	1005	UWAITC,	TAD	TIM2	/GET LOW ORDER WORD,
10441	3053		DCA	UTEMP	/SAVE FOR AWHILE,
10442	4455		JMS I	UJMS	
10443	6713		BIDLE		/PUT TO SLEEP,
10444	1053		TAD	UTEMP	/WAS IT CLOCK (OR OTHER IF CLOCK FUDGED?)
10445	7041		CIA		
10446	1005		TAD	TIM2	/COMPARE AGAINST PRESENT CLOCK,
10447	7050		SNA CLA		
10450	5242		JMP	UWAITC+2	/NOT CORRECT, WAIT SOME MORE,
10451	4454	RANDAE,	JMS I	UJMP	

12452 7175

DEVCOM

12453 1026 UACCPT, TAD ABDGET
 12454 7740 SZA SMA CLA
 12455 7201 CLA IAC

12456 3007 UREJT, DCA ADACPT
 12457 5251 JMP RANDAE

/IS BUFFER ASSIGNED?

/YEP, WE CAN ACCEPT NOW.

/OR REJECT,

/AND THEN EXIT.

/REAL TIME DECODING FUNCTION.

12460 1007 UREAL, TAD ADACPT
 12461 7650 SNA CLA
 12462 5265 JMP ,+3
 12463 4454 JMS I UJMP
 12464 0467 SYTPT
 12465 4455 J I I UJMS
 12466 7462 GETARY
 12467 4437 JMS I UAC1
 12470 3023 DCA APUT1
 12471 1023 TAD APUT1
 12472 3024 DCA APUT2
 12473 4440 JMS I UAC2
 12474 7041 CIA
 12475 3025 DCA ADA1
 12476 4440 JMS I UAC2
 12477 7001 IAC
 12500 3027 DCA ADA3
 12501 1027 TAD ADA3
 12502 7041 CIA
 12503 1023 TAD APUT1
 12504 3026 DCA ADA2
 12505 4057 JMS UGETWD
 12506 4431 JMS I UMEVAL
 12507 4432 JMS I UPPFIX
 12510 0047 AND U17
 12511 3012 DCA ADCX
 12512 4431 JMS I UMEVAL
 12513 4432 JMS I UPPFIX
 12514 7440 SZA
 12515 1050 TAD U7777
 12516 0047 AND U17
 12517 7040 CMA
 12520 3010 DCA ADCUNT
 12521 4431 JMS I UMEVAL
 12522 4432 JMS I UPPFIX
 12523 7161 CLL CML CIA
 12524 3014 DCA CT3
 12525 7004 RAL
 12526 4440 JMS I UAC2

/ARE WE ACCEPTING NOW?

/PICK UP BUFFER ITEMS.

/GET WE FIRST WORD OF ARRAY.

/SAVE AWAY NOW.

/ALSO SET UP OUTPUT POINTER.

/GET LAST WORD OF ARRAY.

/SAVE IN UPPER LIMIT TESTER.

/GET AGAIN.

/ADD ONE.

/AND SAVE AWAY IN BOPPER WORD.

/FINALLY GET THE RESET WORD.

/AND SAVE AWAY FOR WRAP AROUND CONDITION.

/BYPASS REAL TIME STATEMENT.

/EVALUATE AN EXPRESSION

/FIX THE AC NOW.

/JUST GET CHANNEL NUMBER.

/SAVE AWAY.

/EVALUATE ANOTHER ITEM.

/FIX IT UP.

/IF ZERO, DO NOT SUBTRACT ONE.

/SUBTRACT ONE TO BRING INTO 0-17 RANGE.

/MAKE INTO 0-17.

/NOW NEGATE AND SUBTRACT ONE.

/AND SAVE AWAY CORRECT ISZ COUNTER.

/NOW GET NUMBER OF SAMPLES (CLOCK TICKS)

/SET UP LOW ORDER WORD OF COUNTER.

/AND PRESERVE CARRY.

10527	7161	CLL CML CIA	
10530	3015	DCA CT2	
10531	7004	RAL	
10532	4437	JMS I UAC1	
10533	7161	CLL CML CIA	
10534	3016	DCA CT1	
10535	3022	DCA ACCOUNT	/CLEAR PRESENT BUFFER COUNTER.
10536	7201	CLA IAC	
10537	3006	DCA ABDGET	/SET UP BUFFER.
10540	5456	JMP I UDEVCON	

10541	0000	UTIM, 0	/RETURNS CLOCK TICK.
10542	1004	TAD TIM1	
10543	3346	DCA .+3	
10544	1005	TAD TIM2	
10545	4430	JMS I UUSETF	
10546	0000	0	
10547	5741	JMF I UTIM	

10550	0000	USETF, 0	
10551	3053	DCA UTEMP	/SAVE LOW ORDER WORD OF FAC.
10552	4455	JMS I UJMS	
10553	3762	BEGFIX	/PREPARE TO INTERGIZE IT.
10554	1750	TAD I USETF	/GET MIDDLE WORD.
10555	6201	0	
10556	3443	DCA I PPAC2	/PLACE IN FAC.
10557	1053	TAD UTEMP	/GET LOW WORD.
10560	3444	DCA I PPAC3	/PLACE IN FAC.
10561	6211	0	
10562	4455	JMS I UJMS	
10563	4600	ANORM	
10564	2350	ISZ USETF	/BYPASS VALUE
10565	5750	JMP I USETF	/RETURN NOW.

10600	0000	UADCB,	0		/THIS RETURNS A VALUE FROM THE A-D.
10601	7710		SPA	CLA	/BUFFERED OR DIRECT?
10602	5222		JMP	UADCN	/DIRECT,
10603	1006		TAD	ABDGET	/CHECK TO SEE WHETHER BUFFER ASSIGNED.
10604	7450		SNA		
10605	5220		JMP	UABAD	/NO BUFFER ASSIGNED.
10606	7710		SPA	CLA	/IS BUFFER ACTIVE?
10607	5215		JMP	UADCHY	/NO, GET COUNT.
10610	1007		TAD	ADACPT	/ACTIVE, ARE WE ACCEPTING DATA?

10611	7650		SNA CLA			
10612	5215		JMP	UADCMY		/NO. CHECK COUNT IN BUFFER.
10613	4653	UADCIN,	JMS I	UPAGET		/GET VALUE FROM A-D BUFFER.
10614	5231		JMP	UINAC		/AND FIX IT UP.
10615	1022	UADCMY,	TAD	ACOUNT		/GET BUFFER COUNTER NOW.
10616	7640		SZA CLA			/#0?
10617	5213		JMP	UADCIN		/NOPE. WE CAN RETURN SOME DATA.
10620	4454	UABAD,	JMS I	UJMP		
10621	7460		UUNOAD			/NO A-D DATA IN BUFFER. HE'S F--KED.
10622	4432	UADCN,	JMS I	UPFIX		/NON-REAL TIME.
10623	0047		AND	UI7		/JUST GET CHANNEL NUMBER.
10624	6002		IOF			/WE CANNOT BE INTERRUPTED HERE.
10625	6531		6531			
10626	6536		6536			
10627	4451		JMS I	UOAD		/PERFORM THE CONVERSION NOW.
10630	6001		ION			/RESTORE INTERRUPTS.
10631	3063	UINAC,	DLA	AUTEMP		/SAVE FOR A SECOND.
10632	1063		TAD	AUTEMP		/PLACE ABSOLUTE VALUE IN FAC.
10633	7510		SPA			
10634	7041		CIA			
10635	4430		JMS I	UUSETF		
10636	0000		0			
10637	1063		TAD	AUTEMP		/NOW SET SIGN OF FAC.
10640	6201		CDF	0		/SET TO PICK UP FIELD 0, NO COOLNESS LEFT, DESPITE COMMENTS.
10641	7710		SPA CLA			/IF POSITIVE LEAVE ALONE.
10642	7330		CLA CLL	CML RAR		/SET LEFT MOST BIT ON TO INDICATE NEGATIVE.
10643	3446		DCA I	PPAC3		
10644	1445		TAD I	PPACE		/GET EXPONENT NOW.
10645	1064		TAD	ADCCOR		/BRING INTO CORRECT RANGE NOW.
10646	7500		SMA			/IF TOO FAR,
10647	3445		DCA I	PPACE		/DON'T CORRECT.
10650	7200		CLA			
10651	6211		CDF	10		/RESET CDF.
10652	5600		JMP I	UADCB		/RETURN TO FIELD ONE (COOL ,UGH!)
10653	0301	UPAGET,	AGET			
10654	0000	UUAC1,	0			
10655	6201		CDF	0		
10656	1442		TAD I	PPAC1		
10657	6211		CDF	10		
10660	5654		JMP I	UUAC1		
10661	0000	UUAC2,	0			
10662	6201		CDF	0		

10663	1443		TAD I	PPAC2
10664	6211		CDP	10
10665	5661		JMP I	UUAC2
10666	0000	UUAC3,	0	
10667	6201		CDP	0
10670	1444		TAD I	PPAC3
10671	6211		CDP	10
10672	5666		JMP I	UUAC3
10673	0000	UUMEVAL,	0	
10674	4455		JMS I	UJMS
10675	7415		MEVAL	
10676	5673		JMP I	UUMEVAL
10677	0000	UUPFIX,	0	
10700	4455		JMS I	UJMS
10701	4744		FIX	
10702	7200		CLA	
10703	4441		JMS I	UAC3
10704	5677		JMP I	UUPFIX
10705	4454	UUDEVY,	JMS I	UJMP
10706	7176		DEVCON	
10707	0000	UUJMS,	0	
10710	6202		CIF	0
10711	1707		TAD I	UUJMS
10712	3314		DCA	.+2
10713	4721		JMS I	UUUJMS
10714	0000		0	
10715	7410		SKP	
10716	2307		ISZ	UUJMS
10717	2307		ISZ	UUJMS
10720	5707		JMP I	UUJMS
10721	7446	UUUJMS,	LLLJMS	

/IN CASE OF SKIPPING RETURN

10722	0000	UUJMP,	0	
10723	6202		CIF	0
10724	1722		TAD I	UUJMP
10725	3327		OCA	.+2
10726	4730		JMS I	UUUJMP
10727	0000		0	

10730	7457	UUUJMP,	LLLJMP	
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10731	1335	UPCOMDO,	TAD	UUFUDGE
10732	1336		TAD	UPJMP
10733	3334		DCA	.+1
10734	7402		HLT	
10735	1740	UUFUDGE,	-6040	
10736	5737	UPJMP,	JMP I	.+1
10737	0460		UREAL	
10740	0400		USETR	
10741	0411		USETC	
10742	0440		UWAITC	
10743	0437		UWAIT	
10744	0000		0000	
10745	0453		UACCPT	
10746	0456		UREJT	

/NOT USED NOW.

10747	0000	UPFUN,	0	
10750	1356		TAD	UFFUD
10751	1357		TAD	UFJMP
10752	3353		DCA	.+1
10753	7402		HLT	
10754	6202		CIF	0
10755	5747		JMP I	UPFUN

10756	7757	UFFUD,	-21	
10757	4760	UFJMP,	JMS I	.+1
10760	0770		ZZADC	
10761	0000		0000	
10762	0541		UTIM	

2763	2200		0000
2764	2200		0000
2765	2340		UCL8
2766	2345		UCLC
2767	2775		ZZADB

2770	0000	ZZADC,	0
2771	7240		CLA CMA
2772	4774		JMS I .+2
2773	5770		JMP I ZZADC
2774	2600		UADCB

2775	0000	ZZADB,	0
2776	4774		JMS I ZZADB-1
2777	5775		JMP I ZZADB

```

IFZERO MACHINE<
0003   LIMIT=TEN+3
      >
IFNZRO MACHINE<
LIMIT, 0
      >

```

7022 *7022

```

17022 0000 PERMSYM,0
17023 4200 XXPLUS, 4200)TEXT '+0'
17024 5300
17025 4201 XXMINUS,4201)TEXT '-0'
17026 5500
17027 4302 XXSTAR, 4302)TEXT '*0'
17030 5200
17031 4303 XXSLASH,4303)TEXT '/0'
17032 5700
17033 4404 XXUPARR,4404)TEXT '^0'
17034 3600
17035 4110 XXLE, 4110)TEXT '<00'
17036 7475
17037 0000
17040 4111 XXGE, 4111)TEXT '>00'
17041 7675
17042 0000
17043 4112 XXNE, 4112)TEXT '<>0'
17044 7476
17045 0000
17046 4111 XXEG, 4111)TEXT '>>0'

```

17047	7576		
17050	0000		
17251	4110	XXEL,	4110)TEXT 'e'
17252	7574		
17253	0000		
17254	4105	XXEQ,	4105)TEXT 'e'
17255	7500		
17056	4106	XXLT,	4106)TEXT 'e'
17057	7400		
17060	4107	XXGT,	4107)TEXT 'e'
17061	7600		
17062	4015	XXCOMMA,	4015)TEXT ','
17063	5400		
17064	4016	XXSEMI,	4016)TEXT ';''
17065	7300		
17066	4017	XXCLOSE,	4017)TEXT ')''
17067	5100		
17070	4017	XXRBRAK,	4017)TEXT ')''
17071	3500		
17072	4021	XXTO,	4021)TEXT ' TO '
17073	4024		
17074	1740		
17075	0000		
17076	4022	XXSTEP,	4022)TEXT ' STEP '
17077	4023		
17100	2405		
17101	2040		
17102	0000		
17103	4023	XXOPEN,	4023)TEXT '(''
17104	5000		
17105	4023	XXLBRAK,	4023)TEXT '[''
17106	3300		
17107	4024	XXFN,	4024)TEXT 'FN'
17110	0616		
17111	0000		
17112	4025	XXCOS,	4025)TEXT 'COS'
17113	0317		
17114	2300		
17115	4026	XXTAN,	4026)TEXT 'TAN'
17116	2401		
17117	1600		
17120	4027	XXATN,	4027)TEXT 'ATN'
17121	0124		
17122	1600		
17123	4030	XXLOG,	4030)TEXT 'LOG'
17124	1417		
17125	0700		
17126	4031	XXEXP,	4031)TEXT 'EXP'
17127	0530		
17130	2000		
17131	4032	XXSQR,	4032)TEXT 'SQR'
17132	2321		
17133	2200		
17134	4033	XXABS,	4033)TEXT 'ABS'
17135	0102		

17136	2300		
17137	4034	XXSGN,	4034)TEXT 'SGN'
17140	2307		
17141	1620		
17142	4035	XXINT,	4035)TEXT 'INT'
17143	1116		
17144	2400		
17145	4036	XXRND,	4036)TEXT 'RND'
17146	2216		
17147	0400		
17150	4037	XXSIN,	4037)TEXT 'SIN'
17151	2311		
17152	1600		
17153	4040	XXPUT,	4040)TEXT 'PUT'
17154	2025		
17155	2400		
17156	4041	XXLIST,	4041)TEXT 'LIST'
17157	1411		
17160	2324		
17161	0000		
17162	4041	XXLIS,	4041)TEXT 'LIS'
17163	1411		
17164	2300		
17165	4042	XXRUN,	4042)TEXT 'RUN'
17166	2225		
17167	1600		
17170	4043	XXSCR,	4043)TEXT 'SCR'
17171	2303		
17172	2200		
17173	4044	XXGET,	4044)TEXT 'GET'
17174	0705		
17175	2400		
17176	4045	XXADC,	4045)TEXT 'ADC'
17177	0104		
17200	0300		
17201	4046	XXTTY,	4046)TEXT 'TST'
17202	2423		
17203	2400		
17204	4047	XXTIME,	4047)TEXT 'TIM'
17205	2411		
17206	1500		
17207	4050	XXTAB,	4050)TEXT 'TAB'
17210	2401		
17211	0200		
17212	4051	XXUUF,	4051)TEXT 'UUF'
17213	2525		
17214	0600		
17215	4052	XXCLS,	4052)TEXT 'CLS'
17216	0314		
17217	2300		
17220	4053	XXCLC,	4053)TEXT 'CLC'
17221	0314		
17222	0300		
17223	4054	XXADB,	4054)TEXT 'ADB'
17224	0104		

17225	0200	
17226	6000	XXCRLF, 6000;TEXT '␣'
17227	3700	
17230	6000	XXBSLSM,6000;TEXT '␣'
17231	3400	
17232	6001	XXEND, 6001;TEXT 'END'
17233	0516	
17234	0400	
17235	6002	XXFOR, 6002;TEXT 'FOR '
17236	0617	
17237	2240	
17240	0000	
17241	6003	XXGOSUB,6003;TEXT 'GOSUB '
17242	0717	
17243	2325	
17244	0240	
17245	0000	
17246	6004	XXGOTO, 6004;TEXT 'GO TO '
17247	0717	
17250	4024	
17251	1740	
17252	0000	
17253	6004	XXTHEN, 6004;TEXT ' THEN '
17254	4024	
17255	1005	
17256	1640	
17257	0000	
17260	6005	XXIF, 6005;TEXT 'IF '
17261	1106	
17262	4000	
17263	6006	XXINPUT,6006;TEXT 'INPUT '
17264	1116	
17265	2025	
17266	2440	
17267	0000	
17270	6007	XXLET, 6007;TEXT 'LET '
17271	1405	
17272	2440	
17273	0000	
17274	6010	XXNEXT, 6010;TEXT 'NEXT '
17275	1605	
17276	3024	
17277	4000	
17300	6011	XXPRINT,6011;TEXT 'PRINT '
17301	2022	
17302	1116	
17303	2440	
17304	0000	
17305	6012	XXRETRN,6012;TEXT 'RETURN'
17306	2205	
17307	2425	
17310	2216	
17311	0000	
17312	6013	XXSTOP, 6013;TEXT 'STOP'
17313	2324	

17314	1720	
17315	2020	
17316	6214	XXDIM, 6014)TEXT 'DIM '
17317	2411	
17322	1540	
17321	0200	
17322	6015	XXRSTOR,6015)TEXT 'RESTORE'
17323	2205	
17324	2324	
17325	1722	
17326	0500	
17327	6016	XXREM, 6016)TEXT 'REM '
17330	2205	
17331	1540	
17332	0000	
17333	6017	XXDEF, 6017)TEXT 'DEF '
17334	0405	
17335	0640	
17336	0000	
17337	6020	XXREAD, 6020)TEXT 'READ '
17340	2205	
17341	0104	
17342	4000	
17343	6021	XXDATA, 6021)TEXT 'DATA '
17344	0401	
17345	2401	
17346	4000	
17347	6024	XTTYI, 6024)TEXT 'TTY IN'
17350	2424	
17351	3140	
17352	1116	
17353	0000	
17354	6025	XTTYO, 6025)TEXT 'TTY OUT'
17355	2424	
17356	3140	
17357	1725	
17360	2400	
17361	6026	XXLPT, 6026)TEXT 'LPT'
17362	1420	
17363	2400	
17364	6027	XXPTP, 6027)TEXT 'PTP'
17365	2024	
17366	2000	
17367	6030	XXPTR, 6030)TEXT 'PTR'
17370	2024	
17371	2200	
17372	6032	XXRUB, 6032)TEXT 'RUBOUTS'
17373	2225	
17374	0217	
17375	2524	
17376	2300	
17377	6033	XXNRUB, 6033)TEXT 'NO RUBOUTS'
17400	1617	

/6031 HAS BEEN REMOVED.

17401	4022	
17402	2502	
17403	1725	
17404	2423	
17405	0000	
17406	6034	XXCLEAR,6034)TEXT 'CLEAR'
17407	0314	
17410	0501	
17411	2200	
17412	6035	XXDELAY,6035)TEXT 'DELAY'
17413	0405	
17414	1401	
17415	3100	
17416	6036	XXUSE, 6036)TEXT 'USE '
17417	2523	
17420	0540	
17421	0000	
17422	6037	XXPLOT, 6037)TEXT 'PLOT '
17423	2014	
17424	1724	
17425	4000	
17426	6040	XXREAL, 6040)TEXT 'REAL TIME '
17427	2205	
17430	0114	
17431	4024	
17432	1115	
17433	0540	
17434	0000	
17435	6041	XXSETR, 6041)TEXT 'SET RATE '
17436	2305	
17437	2440	
17440	2201	
17441	2405	
17442	4000	
17443	6042	XXSETC, 6042)TEXT 'SET CLOCK '
17444	2305	
17445	2440	
17446	0314	
17447	1703	
17450	1340	
17451	0000	
17452	6043	XXWAITC,6043)TEXT 'WAITC'
17453	2701	
17454	1124	
17455	0300	
17456	6044	YYWAIT, 6044)TEXT 'WAIT'
17457	2701	
17460	1124	
17461	0000	
17462	6045	XXUCOM, 6045)TEXT 'UCOM '
17463	2503	
17464	1715	
17465	4000	
17466	6046	XXACPT, 6046)TEXT 'ACCEPT'
17467	0103	

17470 0305
17471 2024
17472 0P00
17473 6247 XXREJT, 6047;TEXT 'REJECT'
17474 2205
17475 1205
17476 0324
17477 0000

17500 0000 0

17501 3000 XXTEXT, 3000
17502 6023 XXEOF, 6023
17503 4113 XXUNARY, 4113
17504 4014 XXFINI, 4014
17505 6022 XXEXIT, 6022
17506 2000 XXLIT0, 2000;2001;2002;2003
17507 2001
17510 2002
17511 2003

NOPUNCH

17512 0000 LINBUF, ZBLOCK 51
17563 0000 LBEGIN, ZBLOCK 60
17643 0000 ENDLIN, 0
17644 0000 PDLIST, ZBLOCK 40
17704 0000 ENOPDL, 0
17705 0000 FORLIST, ZBLOCK 20
17725 0000 GOLIST, ZBLOCK 30
17755 0000 GSBEND, 0

ENPUNCH

S

ABCDEF	1756	BEGFIX	3762	DBISRT	7547	EXPOK	5265
ABDGET	8886	BIDLE	6713	DBLIT	7526	FAD	4000
ABOP	8325	BKWD	0600	DBPUT	7556	FADEXT	1314
ABS	6425	BREAK	6522	DDLAST	7512	FADI	4400
ACCEPT	7473	BSKIP	2730	DECEXP	0043	FATNAX	6273
ACE	2825	BUSY	6737	DECFRA	3366	FATNC	6337
ACN	4417	CARRET	2700	DEEPR	0526	FATNCH	6342
ACCOUNT	8822	CCINTK	7465	DEF	1576	FATNCJ	6345
ACS	8824	CCXRA	7342	DELAY	7463	FATNC1	6304
AC1	8820	COEVCO	0000	DELETE	6501	FATNC2	6307
AC2	2817	CDINP	7445	DELOUT	0142	FATNC3	6312
AC3	8816	CHECKW	2346	DEVCOM	7175	FATNC4	6315
ADACPT	2887	CHKFIT	6400	DEVCON	7176	FATNC5	6320
ADA1	8825	CLAB	6133	DICO	6051	FATNC6	6323
ADA2	2826	CLBA	6136	DIGIN	3224	FATNC7	6326
ADA3	8827	CLC	7477	DIGIT	3204	FATNC8	6331
ADB	7477	CLCA	6137	DIGLUP	6557	FATNC9	6334
ADC	7477	CLEAR	7432	DILC	6050	FATNSX	6272
ADCCOR	8864	CLEARV	2462	DILE	6056	FATNT	6276
ADCL	6538	CLEN	6134	DILX	6053	FATNTT	6301
ADCUNT	8818	CLKSTF	0003	DILY	6054	FCNTLC	6665
ADCX	8812	CLOCK	0175	DIM	6472	FCNTLO	6703
ADDRES	8867	CLOE	6132	DIMFLA	8034	FDIGIT	3360
ADLE	6536	CLRCNT	0360	DINP	7511	FDV	7000
ADLM	6531	CLS	7477	DIRE	6057	FDVI	7400
ADRB	6533	CLSA	6135	DISAUT	8815	FENTER	4435
ADRS	6537	CLSK	6131	DISB	0136	FEXIT	0000
ADSE	6535	CLTEMP	0011	DISD	6052	FEXPC1	6072
ADSK	6534	CLZE	6130	DIVLP	4705	FEXPC2	6075
ADST	6532	CNCLR	0143	DIVXTE	3364	FEXPC3	6100
AGET	8381	CNTLCP	6700	DIXY	6055	FEXPC4	6103
ALGNLP	4466	CNTLCR	6670	DLAST	7511	FEXPC5	6106
ALLC	1461	CNTLO	0133	DOAD	8362	FEXPC6	6111
ALLS	3146	CODELO	0004	DOADLP	8366	FEXPF	6067
ALTMOD	2663	COLUMN	0126	DOITNO	1247	FEXPI	6061
ALI	4654	COMMON	3400	DOTZER	7371	FEXPU	6064
AMATCH	6586	COMPAR	2136	DPFLAG	3365	FINDIT	8557
ANORM	4600	CONST	1367	DQINTX	3170	FINDLU	8565
APUT	8263	COS	5616	DSCREW	8375	FIX	4744
APUT1	8823	COWT	7326	OVLOOP	5245	FIXEXI	4773
APUT2	8824	COWTFP	7343	EDIT	2485	FIXITU	5200
ARGERR	7363	COWTLP	7331	END	2567	FIXLIN	2113
ARRLOC	8803	COWTO	7340	ENDLIN	7643	FIXLUP	4750
ARI	4482	COWTW	7344	ENDNUM	3331	FIXUP	5146
ATEMP	8323	CRINTX	3876	ENDPDL	7704	FJMP	1000
ATEMP2	8324	CRLF	6531	EOFAD	4526	FJMPI	1400
ATLINE	6451	CRLFPR	3740	EPTR	8856	FJUMP	1130
ATN	6208	CT1	8816	ERROR	4142	FLD	3000
ATNBIG	6265	CT2	8815	EVAL	1804	FLOI	3400
ATNLOW	6220	CT3	8814	EVALGO	1807	FLOGC1	6172
ATNNOT	6237	CVTLOO	5824	EXECUT	8213	FLOGC2	6153
AUTEMP	8863	DATAER	1667	EXIT	2482	FLOGC3	6156
BARROW	2666	DBAD	7513	EXP	6000	FLOGC4	6161
BCDEF6	1757	DBBAD	7532	EXPGOO	5242	FMP	6000
BCKWDS	4382	DBGOT	7420	EXPLON	5764	FMPI	6400

FMTENF	5123	FBINZZ	5710	IOLEAC	6732	JOIGIT	3124
FMT1	5125	FSIN10	5641	IOLECO	6725	JISDIG	3367
FMT2	5053	FSLE	0150	IDLECI	6726	JMATCH	2766
FMT3	5130	FSLT	0110	IDLELK	6731	JPUTCH	0777
FN	5453	FSNE	0040	IDLEPC	6733	JTXXIT	3123
FNERR	0352	FSQRX	5407	IF	0375	JUST0	3150
FNEXIT	1200	FST	2000	IGNORE	2115	JUST0F	3160
FOR	0413	FSTI	2400	IIXR	7414	JUST0P	3163
FORCT	0063	FTANT1	5677	IMMED	2454	JUST1	3145
FORDON	0663	FTANT2	5702	IN	3431	JUST2	3147
FORERR	0501	FUNTAB	1131	INCHAR	7255	KEYWD	0231
FORLIM	0721	FUPRC1	5762	INDEX	0127	LBEGIN	7563
FORLIS	7705	FWD	0200	INDEX1	0013	LCF	6662
FORSTE	0724	FXXPFX	6023	INDEX2	0014	LET	0312
FORVAR	0452	GALT	7247	INLCTM	4065	LETD0	0205
FOUND	0575	GDIM2	1564	INLOOP	0572	LETTER	3446
FOURLF	3557	GET	0001	INLUPP	0432	LFXLUP	2333
FPADD	4456	GETADD	1400	INODUN	6710	LHALF	3070
FPADDR	4304	GETARY	7462	INOPPP	6641	LIMIT	0003
FPDIV	4667	GETBLK	1674	INOTYT	6645	LINBUF	7512
FPDOIT	4237	GETCH	7201	INPLUP	4034	LINENO	0052
FPFLAG	0156	GETJ	1770	INPPTR	4063	LINFIX	2330
FPGOTO	4273	GETLIN	2603	INPUT	4007	LIST	3600
FPJMP	4317	GETLRE	2600	INSERT	2032	LISTAL	3616
FPJUMP	4274	GETOPR	1015	INSRT5	2030	LISTLU	3620
FPLAC	4351	GETVAR	0311	INT	6434	LISTS0	3617
FPLOOP	4202	GETWD	0177	INTAC	6734	LIST2	3640
FPHUL	4530	GLOOP	2711	INTCDF	6770	LIST3	3655
FPNOAD	4270	GOBOTH	0532	INTCIF	6771	LIST4	3661
FPPER	4305	GOLIST	7725	INTECO	6762	LIST5	3676
FPPGZ	4227	GOSUB	0505	INTEMP	6736	LITRAL	3131
FPSKIP	4314	GOTEMP	0053	INTER	6600	LLLJMP	7457
FPSTO	4322	GOTO	0517	INTEXT	6744	LLLJMS	7446
FPSUB	4453	GOTOPR	1202	INTL	6735	LLLUUU	7140
FPT	4200	GOTSS	1074	INTOU	6765	LLS	6666
FPTEMP	4576	GOTSTE	0634	INWDTM	4064	LNOEND	3630
FPTR	0057	GOUT	7251	IPNOPE	4024	LOADED	4127
FPZDIV	4736	GPTR	0060	IPOINT	7034	LOCCTR	0045
FRNDX	5404	GRB	7224	ISDEF2	3512	LOCTEM	0671
FRSTNE	2155	GRDELA	7222	ISDIG	6532	LOCTMP	1673
FSD	5000	GSEBND	7755	ISDIM	1473	LOG	6114
FSDI	5400	GSPPTR	0165	ISBT	7407	LOGACE	6165
FSEQ	0050	GSS1	1562	ISIT	4566	LOGFWD	6164
FSGE	0100	GSS2	1563	ISITDF	0550	LOGOKW	6167
FSGT	0140	GTOKLP	1710	ISITFU	1110	LOWLOC	2171
FSHIFT	7443	GTEMP	7254	ISITLI	4104	LPTOUT	7163
FSINC1	5713	GWHERE	7270	ISLIT	4133	LSF	6661
FSINC3	5716	HFOUND	7321	ISSOME	1644	LSTLOC	2160
FSINC4	5721	HIGHWD	4333	ISUMIN	1013	LUP	3405
FSINC5	5724	HLOOP	2722	ITSDEF	3514	LUPP	0426
FSINC6	5727	HPTR	0061	ITSDP	3256	L4LUP	3664
FSINC7	5732	HRCHAR	7256	ITSE	3263	MACHIN	0000
FSINM4	5735	HRLOP	7302	ITSOP	1220	MAYZER	4612
FSINOK	5657	HRMES	7323	ITSP	3300	MENDLI	0041
FSINZ	5705	IAMLES	2156	JBPENT	3707	MENOPD	2363

MEVAL 7415	NULCMD 7454	0143 7266	07612 7262
MEVALG 7431	NULJOB 7415	017 5147	07640A 0765
MGOLIS 0720	NULLOP 7430	01742 3375	07640B 2763
MGSEEN 0525	NUMBUF 5335	0175 7267	07640C 7263
MINUS 1316	OADD 4435	0177 0027	07673 3316
MLBEGI 0173	OBHIGH 1177	01774 3376	077 0070
MLEND 0174	OBLOW 1165	02 0062	07706A 6544
MLINBU 0040	OBOP 7101	0200 0155	07706C 3473
MNSONE 0736	OCC 5205	02040A 3373	07715 2775
MOREDI 6470	OCMLIM 7115	02062 5344	07725A 3100
MOREIN 4000	OCOR 7113	0212 0010	07725B 3371
MORERD 1621	OCOUNT 7042	0215 0007	07737 3122
MOVE 2012	ODEV 0132	023 1366	07740 0054
MOVLUP 2072	OFLAG 7100	0233 3772	07741 3745
MPY 5321	OFLOW 7115	0240 0051	07743 4743
MPYLUP 4552	OJUMP 1276	0253 5150	07745 0162
MTXXIT 3201	OLOOP 0066	0255 5151	07746 7264
MULCLR 4571	ONE 0151	0256A 5156	07753 3104
MULEXP 3346	ONEDIM 1064	0256B 6575	07762 2327
MULXTE 3363	ONESS 1076	0260 0011	07763A 0774
MUSTBE 4570	ONLY1 3322	027 3370	07763B 3101
NDELAY 7420	007600 5452	0305 5152	07764A 1274
NEWCHA 2615	007736 2326	032 3121	07764B 3102
NEWLIN 2610	OPDONE 1203	036 2767	07764C 3374
NEXT 0600	OPE 0030	03737B 2773	07764D 6777
NEXTER 0673	OPERAN 0073	03754 1162	07766 5154
NEXTVA 0637	OPNUL 7067	03755 1273	07770 0055
NINTEC 7457	OPOINT 7065	0377 0071	07771 5155
NOBUMP 4633	OPOTAB 7073	04 0160	07772 5157
NOCOMM 0335	OPRST 7155	040 2770	07773 5346
NOINT 0134	OPS 0026	04001 7525	07774 1566
NONBLN 3110	OPUTC 7041	04014 1163	07775 6776
NONZER 5016	OP1 0023	042 3106	07776 3372
NOPARE 1035	OP2 0022	04200 3105	07777 7114
NOPCR 2216	OP3 0021	04213 1164	PACN 4742
NORLFT 6423	OTEMP 1271	05400 5347	PAL1 0150
NORMED 5220	OTHER 3000	06201A 6615	PANORM 0146
NORMIT 5207	OTST1 7112	06201B 7005	PARGER 0047
NORUBO 5574	OUTDEL 7146	06202 6775	PAR1 0147
NOSS1 1460	OUTDEV 0131	07 0072	PASSCR 0472
NOSS2 1453	OUTO2 0130	070 6774	PASSUM 7440
NOT 3427	OUTIT 7043	0700 1272	PBEGFI 1776
NOTBAD 2127	OUTNUM 5000	07000A 2560	PBIDLE 7161
NOTBIG 4620	OV 0012	07000B 3474	PBOMB 0367
NOTCR 3023	01000 3550	07000C 7456	PBUSY 7157
NOTFRS 2061	011 0504	07077 1275	PCCUNT 0744
NOTHER 0435	0110 2361	07520 5153	PCHKFI 0163
NOTKWD 0313	012 0065	07545 4777	PCOMMO 3357
NOTNOW 2000	0122 2771	07570 6456	PCOWT 0141
NOTSGN 3301	013 1567	07577 4577	PDEVCO 7442
NOTTXT 2236	0132 7265	07577B 7554	PDL 0036
NOTVAR 1105	0137 7261	07600 4345	POLIST 7644
NOTX10 5236	014 2360	07601 7260	PEDIT 0120
NPSPER 7555	0140A 0775	07603 2774	PERMSY 7022
NSYMTA 0006	0140B 2772	07610 5345	PERROR 0077

PEVAL	0101	PPASSC	0110	PUTLOC	2172	SLOOP	2707
PEVALG	2240	PPOLIS	0125	PUTLP	7007	SLSHTM	1337
PEXECU	0103	PPERMS	2565	PUTXRA	0776	SNUMFL	0064
PEXP	5776	PPFLOO	4741	PXFORL	0556	SPACER	0370
PFINDI	0672	PPFORL	1760	PXLINB	3746	SPECIN	0140
PPFIX	0106	PPINT	6060	PXXCRL	3125	SPLEFT	0144
PPNERR	5546	PPOP	0105	PXXEOF	2564	SQEXIT	5450
PPFLOO	4575	PPRINR	2241	PXXEXI	3126	SQLOOP	5435
PGETAD	0102	PPRINT	0114	PXXLIT	3130	SQR	5412
PGETBL	0115	PPRINU	0123	PXXTHE	2562	SSERR	1570
PGETCH	0032	PPUSH	0104	PZERDO	6545	SSFIX	4775
PGETLI	0124	PPUTCH	0033	QBIDLE	7257	SSONE	0344
PGETLR	3022	PPXRA	7160	QERROR	4170	SSTWO	0345
PGETOP	0111	PRENT	2316	QHRCHA	7156	STAR	1327
PGETVA	0113	PRESET	0137	RANDAE	0451	START	1000
PGOLIS	0164	PRINBL	2277	RBSWCH	0135	STICKI	6430
PGOTOP	0107	PRINCO	2303	READ	1623	STOP	2570
PHRCHA	6740	PRINHA	2260	READLO	0046	STOVAR	0341
PIGNOR	0471	PRINQU	2225	READY	6525	SUBRA	2161
PINCHA	6741	PRINRE	2242	REALTI	7473	SXERR	6441
PINT	5676	PRINSE	2312	REJECT	7473	TAB	5547
PISITL	0175	PRINT	2173	RELATE	1342	TABDES	6367
PJSET	2461	PRINTC	2207	REMPAC	3043	TABDO	6350
PLBEGI	0172	PRINTG	2206	RESET1	7116	TABFLG	2345
PLETDO	0204	PRINTM	2222	RESET2	7141	TABOK	6360
PLETTE	3103	PRINTX	3702	RESTOR	3773	TABTHR	2362
PLIMIT	2561	PRINUM	3747	RETNER	0713	TAN	5600
PLINBU	0037	PRINVA	3653	RETURN	0677	TBEGFI	5572
PLINPI	0161	PRLOOP	3711	RHALF	3074	TEN	0000
PLIST	2563	PRSUBR	3724	RMLEFT	6413	THESKI	1353
PLITRA	3377	PRTEMP	0042	RND	5353	THISTX	3107
PLOG	5775	PRTXRE	3722	RNDJMP	5350	TIM	7477
PLOT	7400	PSGN	5675	RTERR	7373	TIM1	0004
PLOTB	7514	PSKIPI	1617	RUBO	5573	TIM2	0005
PLUS	1312	PSLOOP	0116	RUN	2452	TMP	0031
PMEVAL	7441	PSPACE	1565	RUNIN	2503	TOOLON	5162
PMPY	5160	PSTICK	0121	RUNLUP	2465	TPRINT	6370
PNBF6	5161	PSTOVA	0112	RUNNOT	2477	TRALUP	2105
PNOCR	0757	PSXERR	0100	RUN2IN	2543	TRANSF	2103
PNONBL	0122	PSYMTA	0005	RUN2LU	2514	TRYAGI	5133
PNOTNO	2566	PTABDE	5570	RUN2NO	2537	TRYSTE	0626
PNUMBU	0044	PTABFL	5571	SCHMOR	1657	TST	7421
POADD	0157	PTABLE	2777	SCRATC	2440	TSTFX	7417
POFLAG	6742	PTEN	0145	SEARCH	1660	TSTP	7431
POP	3551	PTEXT	0076	SETCLO	7473	TTYIN	7173
POPERA	3127	PTPOUT	7164	SETRAT	7473	TTYOUT	7165
POP3	4434	PTRIN	7172	SETSGN	4512	TUBIG	2657
POTHER	2776	PTUBIG	3021	SETUP	7400	TWIDTH	2357
POUIT	6743	PUSERF	5545	SGN	0726	TWOSS	1077
POUTNU	0117	PUSH	2364	SIMPLV	3466	TXTPAK	3046
PPACE	0045	PUTCDF	7037	SIN	5624	UABAD	0620
PPACS	0046	PUTCH	0741	SINCHA	7162	UACCP	0453
PPAC1	0042	PUTCIN	7023	SJUMP	0240	UAC1	0037
PPAC2	0043	PUTER	7000	SKIPIT	0467	UAC2	0040
PPAC3	0044	PUTJ	1761	SLASH	1332	UAC3	0041

UAOCB	0622	UUUJMP	0730	XXEQ	7054	XXTAB	7207
UADCIN	0613	UUUJMS	0721	XXEXIT	7505	XXTAN	7115
UADCMY	0615	UUULLL	0352	XXEXP	7126	XXTEXT	7501
UADCN	0522	UVP	7502	XXFINI	7504	XXTHEN	7253
UCLC	0345	UWAIT	0437	XXFN	7107	XXTIME	7204
UCLoop	0217	UWAITC	0440	XXFOR	7235	XXTO	7072
UCLS	0340	U1P	7503	XXGE	7040	XXTTY	7201
UDEVCO	0256	U10	0036	XXGET	7173	XXTTYI	7347
UDDAD	0351	U100	0013	XXGOSU	7241	XXTTYO	7354
UDOPER	1363	U17	0047	XXGOTO	7246	XXUCOM	7462
UFFUD	0756	U177	0017	XXGT	7060	XXUNAR	7503
UFJMP	0757	U2P	7504	XXIF	7260	XXUPAR	7033
UGETHD	0257	U4707	0020	XXINPU	7263	XXUSE	7416
UGH1	3562	U5010	0034	XXINT	7142	XXUUF	7212
UIEXT	0234	U7	0033	XXLBR	7105	XXWAIT	7452
UIEXT2	0243	U7760	0052	XXLE	7035	YYWAIT	7456
UIEXT3	0245	U7767	0035	XXLET	7270	ZERDON	5144
UIEXT4	0260	U7775	0021	XXLIS	7162	ZERO	0152
UINAC	0631	U7777	0050	XXLIST	7156	ZFIXEX	4767
UJMP	0254	VAR	0343	XXLIT0	7506	ZZADB	0775
UJMS	0255	VARTEM	0553	XXLOG	7123	ZZADC	0770
UMEVAL	0031	VSCHII	3524	XXLPT	7361		
UMOPER	1321	VSCHLU	3475	XXLT	7056		
UNDERF	4645	VSCHNO	3520	XXMINU	7025		
UPAGET	0653	WAIT	7473	XXNE	7043		
UPARRO	6457	WAITC	7473	XXNEXT	7274		
UPARRX	5740	WOTEMP	1075	XXNRUB	7377		
UPARR2	4365	WORD	0050	XXOPEN	7103		
UPCOMO	0731	XEXECU	0412	XXPLOT	7422		
UPFIX	0032	XGISIT	4066	XXPLUS	7023		
UPFJN	0747	XGMUST	7345	XXPRIN	7300		
UPJMP	0736	XISIT	4073	XXPTP	7364		
UREAL	0460	XMUST	7352	XXPTR	7367		
UREJT	0456	XRESTA	1003	XXPUT	7153		
USE	7446	XXABS	7134	XXRBR	7070		
USERFN	1620	XXACPT	7466	XXREAD	7337		
USETC	0411	XXADB	7223	XXREAL	7426		
USETF	0550	XXADC	7176	XXREJT	7473		
USETM	0416	XXATN	7120	XXREM	7327		
USETR	0400	XXBSLS	7230	XXRETR	7305		
USKIPI	7461	XXCLC	7220	XXRND	7145		
UTEMP	0053	XXCLEA	7406	XXRSTO	7322		
UTIM	0541	XXCLOS	7066	XXRUB	7372		
UUAC1	0654	XXCLS	7215	XXRUN	7165		
UUAC2	0661	XXCOMM	7062	XXSCR	7170		
UUAC3	0666	XXCOS	7112	XXSEMI	7064		
UUATA	7567	XXCRLF	7226	XXSETC	7443		
UUDEVC	0705	XXDATA	7343	XXSETR	7435		
UUFUDG	0735	XXDEF	7333	XXSGN	7137		
UUJMP	0722	XXDELA	7412	XXSIN	7150		
UUJMS	0707	XXDIM	7316	XXSLAS	7031		
UUMEVA	0673	XXEG	7046	XXSQR	7131		
UUNOAD	7460	XXEL	7051	XXSTAR	7027		
UUPFIX	0677	XXEND	7232	XXSTEP	7076		
UUSETF	0030	XXEOF	7502	XXSTOP	7312		