

| ADDRESS | LENGTH | BINARY CONTROL CARDS. |       |
|---------|--------|-----------------------|-------|
| 0       | 5121   | IDENT                 | CMMDB |
| 5121    |        | END                   |       |

| BLOCKS    | TYPE     | ADDRESS | LENGTH |
|-----------|----------|---------|--------|
| ABSOLUTE* | ABSOLUTE | 0       | 143    |
| PROGRAM** | LOCAL    | 0       | 5121   |

## ENTRY POINTS.

|          |   |      |         |   |      |         |   |      |          |   |      |
|----------|---|------|---------|---|------|---------|---|------|----------|---|------|
| DKBINIT  | - | 65   | ASCPMDE | - | 4627 | E.CMPSW | - | 1356 | F.KILLB  | - | 2354 |
| F.DECML  | - | 3757 | READP   | - | 4633 | E.CPUTI | - | 1401 | F.DLOWN  | - | 2416 |
| F.TBL    | - | 4003 | GETTKN  | - | 300  | E.NEWUS | - | 1063 | F.DLNK   | - | 2446 |
| F.DCTBL  | - | 4032 | GETKYWD | - | 444  | E.KILLU | - | 1327 | F.KLOBJ  | - | 2406 |
| PARSEO   | - | 154  | SUBGRAM | - | 463  | E.OBJ   | - | 2540 | F.NEWKY  | - | 2462 |
| STANDP   | - | 105  | FORDIR  | - | 4537 | E.OBJS  | - | 2546 | F.ADDKY  | - | 2502 |
| STANDPX  | - | 152  | MVCAP   | - | 5101 | E.TEMPO | - | 1471 | F.DELKY  | - | 2523 |
| PARSEP   | - | 224  | SPCCMD  | - | 4700 | E.DCAP  | - | 2037 | F.CHAIN  | - | 3662 |
| RUNFNC   | - | 102  | F.NOACT | - | 760  | E.PWRD  | - | 1700 | F.UNCHN  | - | 3674 |
| SETPARS  | - | 71   | E.ADD   | - | 763  | E.PWRDS | - | 1706 | F.SHAZ   | - | 3572 |
| PMDA     | - | 4722 | E.SUB   | - | 770  | E.NEWV  | - | 1535 | F.SOFTL  | - | 3705 |
| PMDF     | - | 4724 | E.NEG   | - | 775  | E.KILLV | - | 1602 | F.RENM   | - | 3730 |
| PMDI     | - | 4725 | E.MULT  | - | 1003 | E.MVD   | - | 1566 | F.KICK   | - | 3750 |
| INMDOCT  | - | 4726 | F.DIV   | - | 1007 | E.MVC   | - | 1574 | F.LKTY   | - | 4133 |
| INMDDEC  | - | 4730 | F.WP    | - | 1013 | E.VIEW  | - | 2057 | F.FLOUT  | - | 4062 |
| EPRINT   | - | 4731 | E.WWP   | - | 1020 | E.DISP  | - | 1620 | F.SYSDN  | - | 4073 |
| SPCPRNT  | - | 4574 | F.SONLS | - | 1426 | E.SPC   | - | 3521 | F.TTYON  | - | 4144 |
| ETELL    | - | 4765 | E.STSCN | - | 1420 | E.MVSPC | - | 3527 | F.ALLON  | - | 4153 |
| ETELLCL  | - | 5024 | E.DRCTY | - | 1450 | E.MUSR  | - | 3557 | F.TYOFF  | - | 4160 |
| ETELLNM  | - | 5060 | E.DRCTN | - | 1442 | E.MDOLS | - | 3542 | F.NMAST  | - | 4157 |
| ETELLND  | - | 5062 | E.SUBPX | - | 1041 | E.NEWDF | - | 2104 | F.SLTST  | - | 2606 |
| ETELLCL1 | - | 5067 | E.OBJX  | - | 1030 | E.NEWDR | - | 2130 | F.BLTST  | - | 2613 |
| ETELLCL2 | - | 5072 | E.REGL  | - | 1053 | E.KLLDF | - | 2157 | SETTKN   | - | 67   |
| ETELLCL3 | - | 5065 | F.VARL  | - | 1407 | F.KLLDR | - | 2171 | F.LETTST | - | 5074 |
| FWDPMDE  | - | 4632 | E.PARAM | - | 1466 | E.CPYBF | - | 2203 |          |   |      |
| INSPMDE  | - | 4631 | F.CMMDE | - | 1510 | E.NEWB  | - | 2322 |          |   |      |

## EXTERNAL SYMBOLS.

|         |         |         |         |          |         |          |         |
|---------|---------|---------|---------|----------|---------|----------|---------|
| OUTBUF  | SET     | ATCHBLK | T.CLASS | ERCLASS  | V.NAME  | DR:CBLK  | DR:RMOE |
| OUTBFSZ | EEXITSV | DTCHBLK | T.CHMD  | DSKFTYP  | V.DVAL  | DR:IDBLK | DR:RMLK |
| STASCI  | ESAVE   | CLOSDF  | GETSPC  | SHPBLLKD | V.CAP   | DR:CRFI  | DR:ADPR |
| PKASCI  | ERSTR   | BREAK   | SPCLIST | TTYOUT   | NVARS   | DR:DSPN  | DR:DLPK |
| CRASCI  | CRUNXJ  | FXTFLAG | MXSPCLV | XJLOC    | NFIXEDV | DR:CBDR  | DR:CHNM |
| FNASCI  | FEXIT   | OPNFILE | S.CMMD  | DKBDTAN  | NPERMV  | DR:OPRO  | AK:CRAK |
| OCTPK   | EEXIT   | ATCHDBL | S.PARAM | RETLOC   | INLCL   | DR:OPRW  | DA:MVSP |
| DISLINE | EEXITM  | SETPRNT | ASKBDG  | UNEXERR  | CMMDSBK | DR:ICLOS | DA:DSP  |
| DSPLYW  | TRAVEC  | FINPRNT | NAMEVEC | UNEFR    | STNDPFK | DR:READ  | CP:NPSW |

COMMAND PROCESSOR DECK B  
STORAGE ALLOCATION.

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|         |         |         |         |         |          |         |          |
|---------|---------|---------|---------|---------|----------|---------|----------|
| GENASC  | SETXJ7  | DOPRNT  | SERVI   | CAP•BSE | EC:CIN   | DF:WRIT | CP:INUSR |
| BLNPK   | SETRET7 | MINUS0  | DBGBIT  | CAP•LIM | EC:CBLK  | DF:ECLO | CP:MONY  |
| OCTBPK  | SETRET8 | ECN•BDS | SRVBITS | VAL•CAP | EC:DBLK  | DF:SHAZ | CP:DLPF  |
| OCTNPK  | CALLR7  | ECN•TCM | RUN87   | CX•TEMP | EC:COUT  | DE:DSF  | CP:DSPE  |
| DECNPK  | RTNR7   | ECN•BDP | DBGBLK  | CX•SCNL | EC:MCAP  | DF:END  | CP:SONS  |
| LINEPK  | POPR7   | ECN•NOV | DKBDATA | CX•NLKY | EC:READ  | DR:SSUL | CPYBFSH  |
| DCBPK   | POPR    | ECN•NIM | DKBDSZ  | CX•OPRS | EC:WWRIT | DR:CSUL | CPYBFBL  |
| ADDCHAR | SETPI   | ECN•NUS | UCLRA   | CX•SBPD | EC:DSSE  | DR:SFLK | CPYBFBF  |
| CALLR   | CLRPI   | ECN•PQR | UMEMRA  | CX•HOLD | EC:DSUB  | DR:ASCL | BEAD     |
| RTNR    | DIRNAME | ECN•BDV | VIEWX   | CX•LINE | EC:DSCP  | DR:UACC |          |
| CMMDS   | LOGON2  | ECN•TST | DIRTYPE | CX•PRMD | EC:DSAB  | DR:HOLK |          |
| CRASH   | SETRET  | ECN•UXF | TEMPI   | CX•KICK | EC:GEVH  | DR:OPDR |          |
| MSGOUT  | OPENDF  | ECN•UKE | PMODE   | CX•SPCH | EC:SEV   | DR:CLDR |          |

3

**IDENT**      **CMDB**

THIS MACRO CONVERTS ERR TO A CRASH AT RUN TIME

ERR MACRO CALL ENDM

O X ERESTOSE

EXT OUTBU~~E~~, OUTBFSZ  
EXT STASCII, PKASCII, CRASCII, FNASCII  
EXT OCTPK, DISLINE, DSPLYW, GENASC, BLNPK, OCTBPK, OCTNPK  
EXT DECNPK, LINEPK, DCBPK  
EXT ADDCHAR  
EXT CALLR, RTNR, CMMDS, CRASH, MSGOUT, SET, EXITTSV  
EXT ESAVE, ERSTR, CRUNKJ  
EQU ERSTR  
EXT EXIT, EXIT, EXITM, TRAVEC, SETXJ7, SETRET7, SETRET8  
EXT CALLR7, RTNR7, POPR7, POPR  
EXT SETPI, CLRPI  
EXT DIRNAME  
EXT LOGONZ  
EXT SETRET  
EXT OPENDF, ATCHBLK, DTCHBLK, CLOSDF  
EXT BREAK  
EXT EXTFLAG  
EXT OPENFILE, ATCHDBL  
EXT SETPRNT, FINPRNT, DOPRNT  
EXT MINUSQ  
EXT ECN, BDS, ECN, TCM, ECN, RDP, ECN, NOV, ECN, NFM  
EXT ECN, NUS, ECN, PDR, ECN, RDV, ECN, TST  
EXT ECN, UXF, ECN, UXE  
EXT T, CLASS, T, CMMD  
EXT GETSPC, SPCLIST, MAXSPCLV  
EXT S, CMMD, S, PARAM  
EXT ASKBIG, NAMEVEC  
EXT SERVI  
EXT DEBUGBIT, SRVBITS  
EXT SRUNB7  
EXT DEBUGBLK  
EXT DKBDATA, DKBDSZ  
EXT UCLRA, UMEMRA, VIEWX  
EXT DIRTYPE, TEMP1  
EXT MODE  
EXT ERCLASS  
EQU ERCLASS+1  
EXT OSKFTYP, SHPBLKD  
EXT TTYOUT, XJLOC, DKBDTAN, RETLOC  
EXT UNEXERR, UNEXFR  
EXT CAP, BSE, CAP, LIM

EXT VAL•CAP  
 EXT CX•TEMP,CX•SCNL,CX•NICKY,CX•OPRS,CX•SBPD  
 EXT CX•HOLD,CX•LINE  
 EXT CX•PRMD,CX•KICK,CX•SPCH  
 EXT V•NAME,V•DVAL,V•CAP  
 EXT NVARS,NEIXEDV,NPERMV  
 EXT V•CAP  
 EXT TNLCL,CHMDSBK  
 EXT STNDPPK  
 EXT MINUS0

\*  
 \*  
 \*  
 \*  
 \*  
 ENTRY DBINIT  
 ENTRY F•DECML,F•TBL,F•DCTBL  
 ENTRY PARSEQ,STANDP,STANDPX  
 ENTRY PARSER,RUNFNC,SETPARS  
 ENTRY PMDA,PMDF,PMDI  
 ENTRY TNMDOCT,INMDDEC  
 ENTRY EPRINT,SPCPRT,ETELL  
 ENTRY ETELL01,ETELLNM,ETELLMD  
 ENTRY ETELL01,ETELL02,ETELL0E  
 ENTRY PNDPMDE,INSPMDE,ASCPMDE  
 ENTRY READP  
 ENTRY GETTKN,GETKYWD,SUBGRAM  
 ENTRY FORDIR,MVCAP  
 ENTRY SPCCMD  
 ENTRY F•NOACT,F•ADD,F•SUB,F•NEG,F•MULT,F•DIV  
 ENTRY S•WP,F•WWP  
 ENTRY F•SCNLS,F•STSON,F•DRCTY,F•DRCTN  
 ENTRY F•SUBEX,F•OBJX,F•REGL,F•VARL  
 ENTRY S•PARAM,F•CMNDL  
 ENTRY F•CHPSK,F•CPUTI,F•NEWUS,F•KILLU,F•OBJ,F•OJS  
 ENTRY S•ITEMD  
 ENTRY F•DCAP,F•PWRD,F•PWRS  
 ENTRY F•NEWV,F•KILLV,F•MVD,F•MVC,F•VIEW  
 ENTRY F•DISE,F•SPC,F•MVSPC  
 ENTRY F•MUSRS,F•MHOOL  
 ENTRY F•NEWDE,F•NEWDR,F•KLLDE,F•KLLDR  
 ENTRY F•CPYBF  
 ENTRY F•NEWB,F•KILLB  
 ENTRY F•DLWN,F•DLNK,F•KLOKJ  
 ENTRY F•NEWKY,F•ADDKY,F•DELK  
 ENTRY F•CHAIN,F•UNCHN,F•SHZ,F•SOFTL,F•RENM  
 ENTRY F•KICK,F•LKTTC,F•FLOUT,F•SYSDN  
 ENTRY F•TTYON,F•ALLON,F•TYOFF,F•NMAST  
 ENTRY F•SLIST,F•BLIST

\*  
 \*  
 \*  
 100000 IND EQU 100000B INDIRECT REFERENCE FLAG FOR DOXJ

\* PARAMETERS TO CREATE A NEW USER

```

* NU.UNAM EQU
* NU.ACCT EQU
* NU.DSIZ EQU
* NU.PDSK EQU
* NU.GIVS EQU
* NU.SBU EQU
* NU.WRNS EQU
10 NU.FLGS EQU
11 NU.LIMT EQU
12 NU.LMSZ EQU
24 NU.SIZE EQU

```

\* PROFILE INDECES

```

6 P.GIVENS EQU
6 P.SPENTS EQU

```

\* EVENT DATA FOR THE TELETYPE WATCHER

| EVENT   | MACRO   |           |                                       |
|---------|---------|-----------|---------------------------------------|
| EV.L    | EQU     | EVNTSUM   |                                       |
| EVNTSUM | SET     | EVNTSUM*) |                                       |
| 0       | EVNTSUM | ENDM      |                                       |
|         | EVENT   | PANIC     | • PANIC                               |
|         | EVENT   | BIRK      | • BREAK                               |
|         | EVENT   | KICK      | • KICK A PROCESS                      |
|         | EVENT   | ERCLG     | • FORCE LOGOUT                        |
|         | EVENT   | SHTDN     | • SYSTEM SHUTDOWN                     |
|         | EVENT   | TTYON     | • TURN ON A TELETYPE                  |
|         | EVENT   | TALON     | • TURN ON ALL TELETYPES               |
|         | EVENT   | TYOFF     | • TURN OFF A TELETYPE                 |
|         |         | NMAST     | • CHANGE MASTER TTY TO NEW TTY NUMBER |

\*  
\*  
\*  
\*  
\* XJ MACRO LOC,FRTN,ERR,ERRTAG,RTN  
\* IFC VFD EQ,SRTN\$S 12/0130\$,18/LOC,12/0,18/2  
\* ENDIF  
\* IFC VFD NE,SRTN\$S 12/0130\$,18/LOC,12/1,18/3  
\* JP \*\*1  
\* VFD 30/RTN  
\* ENDIF  
\* SB7 \*\*1  
\* IFC JP EQ,SRTN\$S UNEXFRT  
\* ENDIF  
\* IFC JP NE,SRTN\$S FRTN  
\* ENDIF  
\* IFC JP EQ,SERR\$S UNEXERR  
\* ENDIF  
\* IFC JP NE,SERR\$S FRR  
\* ENDIF  
\* IFC VFD EQ,SERTAG\$S 30/0  
\* ENDIF  
\* IFC VFD NE,SERTAG\$S 30/ERRTAG  
\* ENDIF  
\* ENDM  
\* CALL MACRO LOC,A,B,C,D,E  
\* SETBS 5,B,C,D,E  
\* SB7 \*\*1  
\* JP LOC  
\* ENDM  
\* SAVE7 MACRO L

|   |       |                        |
|---|-------|------------------------|
|   | SX6   | B7                     |
|   | SA6   | L                      |
|   | ENDM  |                        |
| * |       |                        |
| * | GET7  | MACRO                  |
|   | SA1   | L                      |
|   | SB7   | L                      |
|   | ENDM  | X1                     |
| * |       |                        |
| * | CALLR | MACRO                  |
|   | SETBS | L,A,B,C,D,E            |
|   | SB7   | A,B,C,D,E              |
| * | SX6   | L                      |
|   | JP    | *+1                    |
|   | ENDM  | CALLR                  |
| * |       |                        |
| * | SETBS | MACRO                  |
|   | IFC   | L,B,C,D,E              |
|   | SB1   | NE,SSAS                |
|   | IFC   | L                      |
|   | SB2   | NE,SSBS                |
|   | IFC   | L                      |
|   | SB3   | NE,SSCS                |
|   | IFC   | L                      |
|   | SB4   | NE,SSDS                |
|   | IFC   | L                      |
|   | SB5   | NE,SSES                |
|   | ENDIF | L                      |
|   | ENDM  | L                      |
| * |       |                        |
| * | RTNR  | MACRO                  |
|   | JP    | RTNR                   |
|   | ENDM  |                        |
| * |       |                        |
| * | POPR  | MACRO                  |
| * | SB7   | *+1                    |
|   | JP    | POPR                   |
|   | ENDM  |                        |
| * |       |                        |
| * | MCAP  | MACRO                  |
|   | EXT   | NAME                   |
|   | BSS   | NAME                   |
|   | EQU   | L                      |
|   | VFD   | *IND                   |
|   | ENDM  | 1/1,29/NAME,30/CX,OPRS |
| * |       |                        |
| * |       |                        |

|       |        |                            |
|-------|--------|----------------------------|
| MXCAP | MACRO  | NAME:                      |
| *     | EXT    | NAME:                      |
| *     | VFD    | 1/1•29/NAME,30/CX,OPRS     |
| *     | ENDM   |                            |
| *     | ITEMS  | MACRO                      |
| *     | VFD    | A•B•C,D•E,F,G,H            |
| *     | IFC    | 60/A                       |
| *     | VFD    | NE,SSBS                    |
| *     | IFC    | 60/B                       |
| *     | VFD    | NE,SSCS                    |
| *     | IFC    | 60/C                       |
| *     | VFD    | NE,SSDS                    |
| *     | IFC    | 60/D                       |
| *     | VFD    | NE,SSES                    |
| *     | IFC    | 60/E                       |
| *     | VFD    | NE,SSFS                    |
| *     | IFC    | 60/F                       |
| *     | VFD    | NE,SSGS                    |
| *     | IFC    | 60/G                       |
| *     | VFD    | NE,SSHHS                   |
| *     | ENDIF  | 60/H                       |
| *     | ENDM   |                            |
| *     | MAP    | MACRO                      |
| *     | VFD    | NAME,X,FLAD,CHAD,LASTP1,R0 |
| *     | VFD    | 60/0L>NAME                 |
| *     | VFD    | 20/X,30?FLAD               |
| *     | ENDM   | 1/R0:29/CHAD,30/LASTP1     |
| *     | RTNCAP | MACRO                      |
| *     | DATA   | NAME:                      |
| *     | RMT    | 6                          |
| *     | DATA   | AL>NAME                    |
| *     | RMT    |                            |
| *     | ENDM   |                            |
| *     | PARCAP | MACRO                      |
| *     | DATA   | NAME:                      |
| *     | ENDM   | 6L>NAME                    |

MACRO FOR CLIST INDEX OF OBJECT TO RETURN TO CALLER

MACRO FOR CLIST INDEX OF OBJECT TO BE OBTAINED  
AT TIME OF THIS SubPROCESS CONSTRUCTION

|       |       |   |
|-------|-------|---|
| L     | MACRO | MICROX,L,NAME<br>1,,/PNAME\$/   |
| *     |       |   |
| *     |       |   |
| EVECN | MACRO | CLASS,NUM,LOC<br>6/0*18/CLASS*18/NUM,18/LOC   |
| *     | VFD   |   |
| *     | ENDM  |   |
| *     |       |   |
| *     |       |   |
| EVECT | MACRO | XFER<br>60/-XFER  |
| *     | VFD   |   |
| *     | ENDM  |   |
| *     |       |   |
| *     |       |   |
| NAMEZ | MACRO | NAME<br>NE,SSNAMES<br>40/0L,PNAME<br>EQ,SSNAMES<br>40/0                                     |
| *     | IFC   |   |
| *     | VFD   |   |
| *     | ENDIF |   |
| *     | IFC   |   |
| *     | VFD   |   |
| *     | ENDIF |   |
| *     | ENDM  |   |
| *     |       |   |
| *     |       |   |
| BDMAP | MACRO | FNAME,UNAME,FLAD,CMAZ,LASTPI,RO<br>FNAME<br>UNAME<br>60/FLAD:60/CMAZ*1/1,20/LASTPI<br>40/RO |
| *     | NAMEZ |   |
| *     | NAMEZ |   |
| *     | VFD   |   |
| *     | VFD   |   |
| *     | ENDM  |   |
| *     |       |   |
| *     |       |   |
| L     | MACRO | CAP,L,FNAME,UNAME<br>CXPNTR<br>CXPNTR+1<br>FNAME<br>UNAME                                   |
| *     | EQU   |   |
| *     | SET   |   |
| *     | NAMEZ |   |
| *     | NAMEZ |   |
| *     | ENDM  |   |
| *     |       |   |
| *     |       |   |
| L     | MACRO | CAPZ,L<br>CXPNTR<br>CXPNTR+1  |
| *     | EQU   |   |
| *     | SET   |   |
| *     | ENDM  |   |
| *     |       |   |
| *     |       |   |
| DEBUG | MACRO |   |

COMMAND PROCESSOR DECK B  
MACROS

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XJ  
SB6  
XJ  
XJ  
ENDM

ESAVE  
CRUNXJ  
ERESTORE

\*

\*

MSGOUT MACRO  
LOCAL  
CALLR  
JP  
DIS  
BSS  
ENDM

MSG  
D.E  
MSGOUT,D  
E  
;S>MSG>S  
0

\*

\*

BREAK MACRO  
LOCAL  
RJ  
JP  
DIS  
BSS  
ENDM

MSG  
X  
BREAK  
X  
;/>MSG>/  
0

```

* *
* *
* *
XSETXJ MACRO    A,B,C,D,E
LOCALPXJ SET      D
                  NE,SSAS
                  SX1
                  SET
                  IFC
                  SX2
                  SET
                  IFC
                  SX3
                  SET
                  IFC
                  SX4
                  SET
                  IFC
                  SX5
                  SET
                  ENDM
*
```

```

* *
* *
* *
* BASIC MACRO
A,B,C,D,E
D
NE,SSAS
SX1
SET
IFC
SX2
SET
IFC
SX3
SET
IFC
SX4
SET
IFC
SX5
SET
ENDM
*
```

```

* *
* *
* *
YSETXJ MACRO    A,B,C,D,E,F,G,H,I,J
XSETXJ
SB2
CALL
XSETXJ
ENOIE
SB2
CALL
ENDH
*
```

```

* *
* *
* *
* FULL 10 PARAM VERSION
A,B,C,D,E,F,G,H,I,J
A,B,C,D,E
SB2
CALL
XSETXJ
ENOIE
SB2
CALL
ENDH
*
```

```

* *
* *
* *
DOXJ  MACRO    A,B,C,D,E,F,G,H,I,J
SB1
YSETXJ
XJ
ENDH
*
```

```

* *
* *
* *
* STANDARD XJ CALL
A,B,C,D,E,F,G,H,I,J
XJLOC
A,B,C,D,E,F,G,H,I,J
XJLOC
*
```

```

* *
* *
* *
* *
SETXJ MACRO    A,B,C,D,E,F,G,H,I,J
SB1
YSETXJ
*
```

```

* *
* *
* *
* *
* MULTI LINE VERSIONS
* *
* *
* *
* *
INITIAL SET UP LINE
A,B,C,D,E,F,G,H,I,J
XJLOC
A,B,C,D,E,F,G,H,I,J
*
```

ENDM

\*  
\*  
\* FINAL CALL ( USE YSETXJ IN BETWEEN)

XDOXJ MACRO A,B,C,D,E,F,G,H,I,J  
YSETXJ A,B,C,D,E,F,G,H,I,J  
XJ LOC  
ENDM

\*  
\* SETRET MACRO BDCONT,BDADR,BCCONT,BCX  
CALL ENDM SETRET,BDCONT,BDADR,BCCONT,BCX

\*  
\* SETXJ7  
\* SETXJ AND PRESERVE REGISTERS USED BY I/O ROUTINES  
\* BETWEEN I/O ROUTINES AND THIS MACRO. ONLY A0,A1,A3,X3  
\* ARE UNTOUCHED.  
\*  
\*

SETXJ7 MACRO A,B,C,D,E,F,G,H,I  
LOCALTXJ SET 0  
BSETXJ A,B,C  
SX0 LOCALPXJ  
CALL SETXJ7  
BSETXJ D,E,F  
SX0 LOCALPXJ  
CALL SETXJ7  
BSETXJ G,H,I  
SX0 LOCALPXJ  
CALL SETXJ7  
ENDIF  
ENDM

\*  
\* BSETXJ

BSETXJ MACRO A,B,C  
LOCALPXJ SET 0  
IFC NE,\$\$AS:3  
SB1 A  
SX1 XJLOC+LOCALTXJ  
LOCALPXJ SET 1  
IFC NE,\$\$BS:2  
SB2 C  
LOCALPXJ SET 2  
IFC NE,\$\$CS:2  
SB3 D  
LOCALTXJ SET 3  
LOCALPXJ SET 4  
ENDM

\*  
\* SETRETT

SETRET7 MACRO BDCNT,BDADR,BCCNT,BCX  
SETBS BDCTR,BDADR  
CALL SETRET7  
SETBS BCCNT,BCX  
CALL SETRETB  
ENDM

\*  
\* CALLR7  
\*  
CALLR7 MACRO L:A,B,C  
SETBS A,B,C  
SB7 L  
+ SX7 \*\*I  
JP CALLR7  
ENDM

\*  
\* RTNR7  
\*  
RTNR7 MACRO RTNR7  
JP  
ENDM

\*  
\* POPR7  
\*  
POPR7 MACRO \*\*I  
+ SB7 POPR7  
JP  
ENDM

\*  
\*  
\* TATTLE MACRO LAB1,VAL1,LAB2,VAL2  
CALL SETPRNT  
SA1 LAB1  
CALL DISLINE\*X1,40  
SA1 VAL1  
SB1 20  
CALL OCTPK  
CALL FINPRNT  
IFC NE,\*\*LAB2\*\*  
CALL SETPRNT  
SA1 LAB2  
CALL DISLINE\*X1,40  
SA1 VAL2  
SB1 20  
CALL OCTPK  
CALL FINPRNT  
ENDIF  
ENDM

\*  
\* SET UP TATTLE MESSAGE  
\*  
MACRO TATLNG,LABL,MSG

|            |  |
|------------|--|
| LOCAL      | A  |
| LABL       | ITEMS                                    |
| A          | DIS                                      |
|            | ENRM                                     |
| *          |  |
| * RNB7CTRL |  |
| *          | SET UP RUNB7 CONTROLS                    |
| *          |  |
|            |  |
| MACRO      | RNB7CTRL, RB7, NRMJP, ERRJP, PRPTCHR, ID |
| ITEMS      | ERRJP                                    |
| RB7        | JP                                       |
|            | NRMJP                                    |
| -          | IFC                                      |
|            | NE, ##PRPTCHR#, I                        |
| -          | VFD                                      |
|            | 30/PRPTCHR                               |
| -          | IFC                                      |
|            | NE, //ID/                                |
| +          | DIS                                      |
|            | ./#ID#/                                  |
|            | ENRIF                                    |
|            | ENDM                                     |
| *          |  |
| * IMPY     |  |
| *          | INTEGER MULTIPLY                         |
| *          |  |
| IMPY       | MACRO RG3, RG1, RG2                      |
|            | P>RG1                                    |
|            | RG1                                      |
|            | P>RG2                                    |
|            | RG2                                      |
|            | D>RG3                                    |
|            | RG1*RG2                                  |
|            | U>RG3                                    |
|            | RG3                                      |
|            | ENDM                                     |
| *          |  |
| * IDIV     |  |
| *          | INTEGER DIVIDE                           |
| *          |  |
| IDIV       | MACRO INT0, FROM1, FROM2, SCR0           |
|            | P>FROM1                                  |
|            | FROM1                                    |
|            | P>FROM2                                  |
|            | FROM2                                    |
|            | N>FROM2                                  |
|            | FROM1/FROM2                              |
|            | U>INT0                                   |
|            | INT0, SCR0                               |
|            | L>INT0                                   |
|            | SCR0, INT0                               |
|            | ENDM                                     |
| *          |  |
| * WORD     |  |
| *          |  |
| WORD       | MACRO DEBUG                              |
|            | NO                                       |
| +          | NO                                       |
|            | NO                                       |
|            | NO                                       |
|            | NO                                       |
|            | ENDM                                     |
| *          |  |
| * BLNLINIE |  |
| *          | OUTPUT A BLANK LINE                      |
| *          |  |

COMMAND PROCESSOR DECK B  
MACROS FOR XJ CALLS

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BLNKLIN MACRO  
CALL SETPRNT  
CALL FINPRNT  
ENDM

## ASCII CHARACTER DEFINITIONS

|     |          |     |      |
|-----|----------|-----|------|
| 41  | ASCIIA   | EQU | 71B  |
| 42  | ASCIIB   | EQU | 42B  |
| 44  | ASCIID   | EQU | 44B  |
| 72  | ASCIIZ   | EQU | 72B  |
| 20  | ASCIIO   | EQU | 20B  |
| 31  | ASCIIE   | EQU | 31B  |
| 0   | ASCIIBUN | EQU | 00B  |
| 16  | ASCIIPD  | EQU | 16B  |
| 156 | ASCIICR  | EQU | 155B |
| 7   | ASCIISGT | EQU | 07B  |
| *   |          |     |      |
| 13  | ASCIIPIS | EQU | 13B  |
| 15  | ASCIIMIN | EQU | 15B  |
| 12  | ASCIITMS | EQU | 12B  |
| 17  | ASCIIDIV | EQU | 17B  |
| 10  | ASCIILBN | EQU | 10B  |
| 11  | ASCIIRBN | EQU | 11B  |
| *   |          |     |      |
| 320 | ASCIINMB | EQU | 030B |
| 321 | ASCIICLN | EQU | 022B |

MACRO                    BSSFAKE\$1,CNT  
BSS                    \$  
L                    \*+DKB\$DATA  
EQU                    CNT  
BSS                    ENTR

ORG

0

## DATA FOR PARSER AND RELATED ROUTINES

|    |          |         |    |                       |
|----|----------|---------|----|-----------------------|
| 0  | VAL•BASE | BSSFAKE | 15 | VALUE AND TOKEN STACK |
| 17 | TKN•BASE | BSSFAKE | 1  |                       |
| *  |          |         |    |                       |
| 20 | VAL•FREE | BSSFAKE | 1  |                       |
| 21 | TKN•TOP  | BSSFAKE | 1  |                       |
| *  |          |         |    |                       |
| 22 | DTM•BASE | BSSFAKE | 10 | DATUM STACK           |

|     |          |         |            |   |
|-----|----------|---------|------------|---|
| 34  | DTM•LIM  | BSSFAKE | 0          |   |
| 34  | DTM•FREE | BSSFAKE | 1          |   |
| 34  | *        |         |            |   |
| 35  | CAP•FREE | BSSFAKE | 1          | CAP STACK FREE POINTER                      |
| 35  | *        |         |            |   |
| 35  | *        |         |            |   |
| 36  | ID•BASE  | BSSFAKE | 10         | IDENTIFIER STACK                            |
| 50  | ID•LIM   | BSSFAKE | 0          |   |
| 50  | *        |         |            |   |
| 50  | ID•FREE  | BSSFAKE | 1          |   |
| 50  | *        |         |            |   |
| 50  | *        |         |            |   |
| 51  | MAXPARS  | EQU     | 6          | .. MAX NUM PARAMS A FUNCTION MAY HAVE       |
|     | ARGL•DTM | BSSFAKE | MAXPARS    | POINTERS TO DTM FOR ARGUMENTS               |
| 57  | *        |         |            |   |
| 57  | ARGL•CAP | BSSFAKE | MAXPARS    | POINTERS TO CAPS FOR ARGUMENTS              |
| 65  | ARGL•TYP | BSSFAKE | MAXPARS    | TYPES OF ARGUMENTS                          |
| 65  | *        |         |            |   |
| 65  | *        |         |            |   |
| 73  | ARG•DTM  | BSSFAKE | 1          | DATUM POINTER FOR CURRENT ARGUMENT          |
| 74  | ARG•CAP  | BSSFAKE | 1          | CAP POINTER FOR CURRENT ARGUMENT            |
| 75  | ARG•TYPE | BSSFAKE | 1          | TYPE OF CURRENT ARGUMENT                    |
| 75  | *        |         |            |   |
| 76  | ARGX     | BSSFAKE | 1          | INDEX OF CURRENT ARGUMENT                   |
| 76  | *        |         |            |   |
| 76  | *        |         |            |   |
| 77  | VAL•DTM  | BSSFAKE | 2          | ACTUAL DATUM RESULTS OF A FUNCTION          |
| 77  | *        |         |            |   |
| 77  | *        |         |            |   |
| 101 | CURNST   | BSSFAKE | 1          | CURRENT KNUTH STATE                         |
| 102 | RULEFCN  | BSSFAKE | 1          | ADDRESS OF FUNCTION ASSOCIATED WITH RULE    |
| 103 | RULETKN  | BSSFAKE | 1          | TOKEN ASSOCIATED WITH RULE                  |
| 104 | STRNGTEN | BSSFAKE | 1          | TOKEN LAST READ FROM INPUT STRING           |
| 105 | SAVESTKN | BSSFAKE | 1          | PUSHED DOWN STRING TOKEN                    |
| 105 | *        |         |            |   |
| 105 | *        |         |            |   |
| 106 | STRNGVSZ | EQU     | 1          |   |
| 106 | *        |         |            |   |
| 106 | STRNGVAL | BSSFAKE | STRNGVSZ+1 | STRING VALUE LAST READ APPEARS HERE         |
| 106 | *        |         |            |   |
| 106 | *        |         |            |   |
| 114 | DTMMDF1G | BSSFAKE | 1          | INTEGER DATUM MODE, 0 = OCTAL, NZ = DECIMAL |
| 115 | GETTKNS7 | BSSFAKE | 1          | SAVE OF BT IN GETTKN                        |
| 115 | *        |         |            |   |
| 115 | *        |         |            |   |
| 116 | PRSFNCST | BSSFAKE | 1          | SAVE OF BT DURING COMPLEX FUNC FOR A RULE   |
| 116 | *        |         |            |   |
| 116 | *        |         |            |   |

|     |   |          |         |   |  |
|-----|---|----------|---------|---|--|
| 117 | * | FNCEVSV7 | BSSFAKE | 1 | B7 SPVED FOR FNC EVAL                            |
| 120 | * | FNCEVSCW | BSSFAKE | 1 | ROTATED CONTROL WORD                             |
| 121 |   | ARGFLAG  | BSSFAKE | 1 | SET TO 1 IF THERE ARE ARGUMENTS                  |
| 122 |   | ARGCNT   | BSSFAKE | 1 | COUNT OF ARGUMENTS LEFT                          |
| 123 | * | ARG+ADR  | BSSFAKE | 1 | ADDRESS OF CURRENT ARGUMENT IN FNC EVAL          |
| 124 | * | STNDPFNC | BSSFAKE | 1 |  |
| 125 | * | STNDPCNT | BSSFAKE | 1 | ADDRESS OF FUNCTION TO BE APPLIED TO STAND PARMS |
| 126 | * | TEMPPWD1 | BSSFAKE | 1 |  |
| 127 | * | TEMPPWD2 | BSSFAKE | 1 |  |
| 128 | * | TEMPPWD3 | BSSFAKE | 1 |  |
| 129 | * | TEMPPWD4 | BSSFAKE | 1 |  |
| 130 | * | TEMPPWD5 | BSSFAKE | 1 |  |
| 131 | * | TEMPPWD6 | BSSFAKE | 1 |  |
| 132 | * | TEMPPWD7 | BSSFAKE | 1 |  |
| 133 | * | DMPX     | BSSFAKE | 1 |  |
| 134 | * | DMPY     | BSSFAKE | 1 |  |
| 135 | * | GETKYWD7 | BSSFAKE | 1 |  |
| 136 | * | SYKYWDL  | BSSFAKE | 1 | ADDRESS OF KEY WORD LIST                         |
| 137 | * | SUBGRMS7 | BSSFAKE | 1 |  |
| 140 | * | SPCPRNTC | BSSFAKE | 1 |  |
| 141 | * | SPCPRNTA | BSSFAKE | 1 | ROTATED CONTROL WD FOR SPECIPL PRINT             |
| 142 | * |          |         |   | ADDRESS NEXT CONTROL WORD                        |
| 143 | * | DSIZE    | BSS     | 1 |  |
|     | * | USE      |         | 1 |  |

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14  
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\*\*\*\*\*

## FIXED DATA

## MISC OPER CL REFS

|      |         |
|------|---------|
| MCAP | EC:ICIN |
| MCAP | EC:CBLK |
| MCAP | EC:DBLK |
| MCAP | EC:COU  |
| MCAP | EC:MCAP |
| MCAP | EC:READ |
| MCAP | EC:WRIT |
| MCAP | EC:DSSE |
| MCAP | EC:DSUB |
| MCAP | EC:DSOP |
| MCAP | EC:DSAB |
| MCAP | EC:GEVH |
| MCAP | EC:SEV  |
| MCAP | DF:CBLK |
| MCAP | DF:DBLK |
| MCAP | DR:CRFI |
| MCAP | DR:DSPN |
| MCAP | DR:CRDR |
| MCAP | DF:OPRO |
| MCAP | DF:OPRW |
| MCAP | DF:CLDS |
| MCAP | DF:READ |
| MCAP | DF:WRIT |
| MCAP | DF:ICLO |
| MCAP | DF:SHAZ |
| MCAP | DF:DSE  |
| MCAP | DF:END  |
| MCAP | DR:SSUL |
| MCAP | DR:CSUL |
| MCAP | DR:SFLK |
| MCAP | DR:ASCL |
| MCAP | DR:UACC |
| MCAP | DR:HOLK |
| MCAP | DR:OPDR |
| MCAP | DR:CLDR |
| MCAP | DR:RMQE |
| MCAP | DR:RMLK |
| MCAP | DR:ADBB |
| MCAP | DR:DLPY |
| MCAP | DR:CHNM |
| MCAP | AK:CRAK |
| MCAP | DA:MVSP |
| MCAP | DA:DSPI |
| MCAP | CP:NPSW |
| MCAP | CP:NUSR |

COMMAND PROCESSOR DECK B  
DATA AREA

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55  
56  
57  
60

MCAP  
MCAP  
MCAP  
MCAP

CP:MONY  
CP:DLPF  
CP:DSPE  
CP:SONS

61

\*  
0 EC.DRCY  
0 EN.NDAR  
ERRNUMS

EQU  
EQU  
XTEXT

\*

THESES SYMBOLS CURRENTLY HAVE NO DEFINITION

61

OBBITS XTEXT

OPTION BIT DEFINITIONS

61 000000000000000000000000  
62 00000000010000000000 x  
63 000000000000000000000000  
64 00000000200000000000 x

RET1CAP VFD  
VFD  
\*  
RET2CAPS VFD  
VFD

SOME RETURN AUTHORIZATIONS

30/0,30/0  
30/1,30/Cx,TEMP  
30/0,30/0  
30/2,30/Cx,TEMP

65 7160004631 ±  
5160000000 X  
66 0270000000

\*  
\*  
\*  
DKBINIT SX6  
SA6  
JP

INSPMODE WET PMODE TO INSTRUCTION WORD MODE  
P MODE  
B7

67 76600  
5160000165 X  
70 5160000104 ±  
0270000000

\*  
\*  
\*  
\*  
\*  
\*  
\*  
SETTKN ENTRY SX6  
SA6  
SA6  
JP

INITIALIZE TOKEN GETTER

SETTKN

B0  
SAVESTKN  
STRNGTKN  
B7

\*  
\*  
\*  
\*  
\*  
\*  
\*  
\*  
\*  
\*  
71 7110000000 x SETPARS SX1 DKBDSZ  
7120000143  
72 37312 IX3 OSIZE  
0333000223 + NG X1-X2  
\*  
73 7160000000 x SX6 VAL.BASE  
5160000020 x SA6 VAL.FBEE  
74 7160000017 x SX6 TKN.BASE  
5160000021 x SA6 TKN.TOP  
75 7160000022 x SX6 DTM.BASE  
5160000034 x SA6 DTM.FREE  
76 7160000000 x SX6 CAP.BSE  
5160000035 x SA6 CAP.FREE  
77 7160000036 x SX6 ID.BASE  
5160000050 x SA6 ID.FREE  
100 6170000101 + CALL SETTKN  
101 0200000000 x RTNR  
\*  
\*  
\*  
\*  
\*  
\*  
\*

INITIALIZE PARSER  
DOES NOT DISTURB SI

SX6  
SA6  
SX6  
SA6  
SX6  
SA6  
SX6  
SA6  
SX6  
SA6  
CALL  
RTNR

DKBDSZ  
OSIZE  
X1-X2  
X3.PARSEF4

VAL.BASE  
VAL.FBEE  
TKN.BASE  
TKN.TOP  
DTM.BASE  
DTM.FREE  
CAP.BSE  
CAP.FREE  
ID.BASE  
ID.FREE  
SETTKN

RUN FUNCTION POINTED TO BY SI

\*  
\*  
\*  
\*  
\*  
\*  
\*  
\*  
\*  
102 76610 RUNFNC SX6 SJ  
5160000102 x SA6 BULEFFON  
103 6170000104 + CALL FNCEVAL  
104 0200000000 x RTNR  
\*

## COLLECT STANDARD PARAMETERS

R1 ADDRESS OF FUNCTION TO APPLY  
 R2 NOMINAL NUMBER OF PARAMS TO COLLECT

-1 FOR ANY NUMBER, ACTUAL NUMBER RETURNED IN PARAMCNT

|     |              |              |         |                          |  |
|-----|--------------|--------------|---------|--------------------------|--|
| 105 | 76610        |              | STANDP  | SX6<br>SA6<br>SX6<br>SA6 | R1<br>STNDPFNC<br>R2<br>STNDPCNT                   |
| 106 | 5160000125 x | 76620        |         |                          |  |
| 110 | 5110000125 x | 6170000071 + | CALLR   | SETPARS<br>SA1           |  |
| 111 | 0301000137 + | 0331000127 + |         | NG<br>ZR                 | X1, STANDP5<br>X1, STANDP8                         |
| 112 | 6170000224 + |              | STANDP1 | CALLR                    | PARSEP<br>STNDPCNT                                 |
| 114 | 5110000125 x | 7261777776   |         | SA1<br>SX6<br>SA6        | X1-1<br>A1<br>STANDP2+BT                           |
| 115 | 54610        | 0210000176 + |         | JP                       |  |
| 116 | 0200000125 + |              | STANDP4 | JP                       | STANDP4 (NOT ENOUGH PARAMS)                        |
| 117 | 0316000125 + |              |         | NZ                       | X6, STANDP4 (NOT ENOUGH PARAMS)                    |
| 120 | 0316000112 + | 0200000121 + |         | JP                       | STANDP3 (OK)                                       |
|     |              | 0200000125 + |         | NZ                       | X6, STANDP1 (GET MORE, OK SO FAR)                  |
|     |              |              |         | JP                       | STANDP4 (TOO MANY PARAMS)                          |
| 121 | 5110000124 x | 10611        | STANDP3 | SA1<br>BX6<br>SA6        | STNDPFNC<br>Y1<br>RULEFCN                          |
| 122 | 5160000102 x |              |         | CALL                     | FNCEVAL  |
| 123 | 6170000124 + |              |         | CALL                     | CRASH  |
| 124 | 6170000125 + |              |         |                          |  |
| 125 | 6110000000 x |              | STANDP4 | CALL                     | BAD SYNTAX   |
| 127 | 76600        | 5160000125 x | STANDP5 | SX6<br>SA6               | EEXIT, ECN, BDS<br>B0 ACCEPTS ANY NUMBER OF PARAMS |
| 130 | 6170000224 + |              | STANDP4 | CALLR                    | PARSEP   |
| 132 | 5110000125 x | 7261000001   |         | SA1<br>SX6               | STNDPCNT<br>X1+1                                   |
| 133 | 0210000134 + |              |         | JP                       | STANDP7+BT   |
| 134 | 0200000142 + |              | STANDP7 | JP                       | STANDP9  |
| 135 | 5160000125 x | 0200000142 + |         | SA6                      | STNDPCNT   |
|     |              |              |         | JP                       | STANDP9  |

COMMAND PROCESSOR DECK B  
PARSER ROUTINES

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|     |              |         |       |   |
|-----|--------------|---------|-------|---|
| 136 | 5160000125 X | *       | SA6   | STNDPCT                                     |
|     | 0200000130 + | *       | JP    | STANDP6                                     |
| 137 | 6170000224 + | STANDP6 | CALLR | PARSEP ACCEPTS NO PARAMS                    |
| 141 | 0401000121 + |         | EQ    | B0,B1,STANDP3                               |
|     | 0200000125 + | *       | JP    | STANDP4                                     |
|     |              | *       |       | ACCEPT NUMBER ACTUALLY RECEIVED             |
| 142 | 5110000125 X | STANDP6 | SA1   | STNDPCT PICK UP NUMBER RECEIVED             |
|     | 20166        |         | LX1   | 60-6  |
|     | 43006        |         | MX0   | 6   |
| 143 | 11101        | *       | BX1   | X0+X1 POSITION COUNT FOR A FNC CONTROL WORD |
|     |              |         |       |   |
|     | 5120000124 X |         | SA2   | STNDPFNC                                    |
|     | 53320        |         | SA3   | X2  |
| 144 | 15330        |         | BX3   | =X0*X3                                      |
|     | 12613        |         | BX6   | X1+X3                                       |
|     | 5160000000 X |         | SA6   | STNDPFK SET UP                              |
| 145 | 5232000001   |         | SA3   | FAKE  |
|     | 10633        |         | BX6   | X2+1  |
| 146 | 5160000001 X |         | SA6   | FUNCTION                                    |
|     | 7160000000 X |         | SX6   | HEADER                                      |
| 147 | 5160000102 X |         | SA6   | BULEFCN                                     |
| 150 | 6170000151 + |         | CALL  | FNCEVAL                                     |
| 151 | 6170000152 + | *       | CALL  | CRASH                                       |
| 152 | 5110000126 X | STANDPX | SA1   | STNDPFNC COMPUTATION OF FAKE FCN COMES HERE |
|     | 6211000002   |         | SB1   | X1+2  |
| 153 | 0210000000   |         | JP    | R1  |

THIS CODE BEGINS A PARSING

ENTER WITH

CALLR INITIAL STATE

SETS ALL STACKS EMPTY

SOME TOKEN AND VALUE TYPES ARE:

|      |          |     |            |
|------|----------|-----|------------|
| 1001 | DTMTKN   | EQU | 10018      |
| 1    | DTHVTYPE | EQU | 1          |
|      | *        |     | DATUM      |
| 1002 | IDTKN    | EQU | 10029      |
| 2    | IDVTYPE  | EQU | 2          |
|      | *        |     | IDENTIFIER |

|    |          |     |    |                                |
|----|----------|-----|----|--------------------------------|
| 3  | OBJVTYPE | EQU | 3  | OBJECT                         |
| 4  | CLCVTYPE | EQU | 4  | CLIST LOC (UNUSED)             |
| 5  | SBCVTYPE | EQU | 5  | SUBPROCESS CLIST LOC (UNUSED)  |
| 6  | SCLVTYPE | EQU | 6  | SCAN LISTLOC                   |
| 7  | DLCVTYPE | EQU | 7  | DIRECTORY LOC                  |
| 10 | FLCVTYPE | EQU | 8  | FILE LOC (UNUSED)              |
| 11 | SBMVTYPE | EQU | 9  | SUBPROCESS MEMORY LOC (UNUSED) |
| 12 | OBXVTYPE | EQU | 10 | INDEXED OBJECT                 |
| 13 | SBXVTYPE | EQU | 11 | INDEXED SUBPROCESS             |
| 14 | RLCVTYPE | EQU | 12 | REGISTER LOC                   |
| 15 | VLCVTYPE | EQU | 13 | VARIABLE LOC                   |

TOKENS FOR SPECIAL CHARS REPRESENTED BY THEIR ROTATED ASCII VALUES

|     |            |   |         |       |                        |
|-----|------------|---|---------|-------|------------------------|
| 154 | 6170000071 | * | PARSE0  | CALLR | SETPARS                |
| 156 | 5110000021 | x |         | SA1   | TKN.TOP                |
|     | 76610      |   |         | SX6   | SP1                    |
|     | 53610      |   |         | SA6   | X1                     |
| 157 | 5160000101 | * |         | SA6   | CURNST                 |
|     | 6116000000 | x |         |       |                        |
| 162 | 0200000166 | * | PARSE0A | CALLR | GENASC, INLCL, PARSE0A |
|     |            |   |         | JP    | PARSE1                 |
| 163 | 7277777777 |   | PARSE0A | SX7   | X7-ASCIIIBLN           |
|     | 0307000165 | * |         | ZR    | X7,PARSE0B             |
| 164 | 6120777776 |   |         | SB2   | -1                     |
| 165 | 0270000000 |   | PARSE0B | JP    | B7                     |

GO ROUTINE TO SKIP ALL INITIAL BLANKS

|     |            |   |
|-----|------------|---|
| 166 | 5110000101 | * |
|     | 53110      |   |
|     | 63210      |   |
| 167 | 20136      |   |
|     | 63110      |   |
|     | 6170000171 | * |
| 170 | 0220000000 | * |
| 171 | 5110000104 | * |
| 172 | 6170000173 | * |
| 173 | 0200000176 | * |
| 174 | 0200000202 | * |
| 175 | 0200000217 | * |
| 176 | 6170000177 | * |
| 177 | 6170000423 | * |
| 201 | 0200000166 | * |
| 202 | 56110      |   |
|     | 73610      |   |
|     | 5160000103 | * |
| 203 | 20152      |   |
|     | 43060      |   |
|     | 15210      |   |
| 204 | 5130000021 | * |
|     | 36632      |   |
|     | 54630      | * |
| 205 | 53260      |   |
|     | 73620      |   |
|     | 5160000101 | * |
| 206 | 20160      |   |
|     | 73610      |   |
|     | 5160000102 | * |
| 207 | 5110000103 | * |
| 210 | 6170000211 | * |
| 211 | 0200000214 | * |

\*\*\*\*\*

THIS IS MAIN PARSING LOOP

GET NEW TOKEN FROM INPUT STRING

|        |       |          |   |
|--------|-------|----------|---|
| PARSE1 | SAL   | CURNST   | USING CURRENT STATE                               |
|        | SAL   | X1       | GET A   |
|        | SB2   | X1       | ( SUB KEY )                                       |
|        | LXI   | 30       |   |
|        | S81   | X1       | TOKEN FROM  |
|        | SB7   | BARSE2   | INPUT STRING                                      |
|        | JP    | B2       |   |
| PARSE2 | SAL   | STRNGTKN | COMPUTE ACTION GIVEN CURRENT STATE                |
|        | CALL  | PARSTP   | STATE AND STRING TOKEN                            |
|        | *     |          |   |
|        | JP    | PARSE3   | NEW STATE   |
|        | JP    | PARSE4   | GENERATE A RULE                                   |
|        | JP    | PARSEF   | FAIL  |
| PARSE3 | CALL  | NWTKN    | ABSORB STRING TOKEN                               |
|        | CALLR | GETSVAL  | AND STRING VALUE, IF ANY                          |
|        | JP    | PARSE1   |   |
| PARSE4 | SAL   |          |   |
|        | SX6   | X1       |   |
|        | SA6   | X1       |   |
|        |       | RULETKN  | SAVE TOKEN ASSOCIATED WITH RULE                   |
|        | *     |          |   |
|        | LXI   | A0-18    |   |
|        | MX0   | 60-12    |   |
|        | BX2   | -X0*X1   | AMOUNT TO REDUCE TOKEN STACK                      |
|        | SA3   | TKN-TOP  |   |
|        | IX6   | X3*X2    |   |
|        | SA6   | A3       | REDUCE TOKEN STACK                                |
|        | *     |          |   |
|        | S42   | X6       |   |
|        | SX6   | X2       |   |
|        | SA6   | CURNST   | RESET CURRENT STATE                               |
|        | *     |          |   |
|        | LXI   | A0-12    |   |
|        | SX6   | X1       |   |
|        | SAS   | RULEFCN  | SAVE ADDRESS OF DEFINITION OF ASSOCIATED FUNCTION |
|        | *     |          |   |
|        | SAL   | RULETKN  | COMPUTE ACTION GIVEN CURRENT STATE                |
|        | CALL  | PARSTP   | AND RULE TOKEN                                    |
|        | *     |          |   |
|        | JP    | PARSE5   | NEW STATE   |

COMMAND PROCESSOR DECK B  
PARSER ROUTINES

212 6170000213 \*

CALL JP CRASH PARSEF GENERATE RULE ( IMPOSSIBLE )  
213 0200000217 \*

214 6170000215 \*

PARSE5 CALL NWTKN ABSORB RULE TOKEN  
215 6170000216 \*

CALL ENCEVAL NOW EVALUATE FUNCTION  
216 0200000171 \*

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217 6110000000 \*

PARSEF CALL EXIT,ECN,BDS

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221 6110000000 \*

PARSEF5 CALL EXIT,ECN,TCM

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## PARSE EXACTLY ONE PARAMETER

PARAMETER MUST START WITH A TOKEN USING GETTKN

ON RETURN B1 = 0 DID NOT GET ONE  
1 GOT ONE, BUT NO MORE  
2 GOT ONE AND THERE IS MORE

|     |              |         |       |                          |
|-----|--------------|---------|-------|--------------------------|
| 224 | 5110000104 x | PARSEP  | S1    | STRNGTKN                 |
|     | 7221777777   |         | SX2   | X1-ASCIIIBL              |
| 225 | 0312000230 * |         | NZ    | X2,PARSEP1               |
| 226 | 6170000227 * |         | CALL  | GETTKN                   |
| 227 | 0200000224 * |         | JP    | PARSEP                   |
| 230 | 7221777622   | PARSEP1 | SX2   | X1-ASCIIICR              |
|     | 0312000232 * |         | NZ    | X2,PARSEP2               |
| 231 | 66100        |         | S1    | RTNR                     |
|     | 0200000000 x |         |       |                          |
| 232 | 5110000021 x | PARSEP2 | S1    | TKN-TOP                  |
|     | 7160000000 x |         | SX6   | S-PARAM                  |
| 233 | 53610        |         | S46   | X1                       |
|     | 5160000161 x |         | S46   | CURNST                   |
| 234 | 6170000171 * |         | CALLR | PARSEP2                  |
| 236 | 6110000061   |         | S1    | 1                        |
|     | 5116000104 x |         | SA1   | STRNGTKN                 |
| 237 | 7221777622   |         | SX2   | X1-ASCIIICR              |
|     | 0302000000 x |         | ZR    | X2,RTNR GOT ONE, NO MORE |
| 240 | 6110000062   |         | S1    | 2                        |
|     | 0206000000 x |         | RTNR  | GOT ONE, AND MORE        |

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241 5120000021 X  
      5130000020 X  
242 37423  
      0304000221 +  
243 0334000221 §  
      7262777776  
244 5160000021 x  
      73110  
      20122  
245 76710  
      5170000161 X  
      12717  
246 53760  
      0270000000  
  
NWTKN      SA2      TKN.TOP  
              SA3      VAL.FREE  
              IX4      X2-X3  
              ZR      X4,PARSEF3  
              NG      X4,PARSEF3  
              SX6      Y2-1  
              SA6      TKN.TOP  
              SX1      X1  
              LX1      I8  
              SX7      B1  
              SA7      CURNST  
              BX7      X1+X7  
              SA7      X6  
              JP      B7  
  
INSTALLED NEW TOKEN AND STATE  
NEW TOKEN IN X1  
NEW STATE IN B1  
TKN.TOP  
VAL.FREE  
X2-X3  
X4,PARSEF3  
X4,PARSEF3  
Y2-1  
TKN.TOP  
X1  
I8  
B1  
CURNST  
X1+X7  
X6  
B7  
TOO COMPLICATED  
TOO COMPLICATED  
REDUCE TOKEN TO 18 BITS  
STATE  
INSTALLED TOKEN AND STATE IN STACK

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\*  
\* EVALUATE A STATE TOKEN PAIR\*  
\* ISTATE IS AT CURNST\*  
\* TOKEN IS IN X1\*  
\* RETURNS TO B7 + 0 IF NEW STATE ( B1 CONTAINS STATE )  
\* + 1 IF GENERATE A RULE ( B1 HAS RULE )  
\* + 2 IF FAIL

|     |              |          |     |                                    |
|-----|--------------|----------|-----|------------------------------------|
| 247 | 5120000101 * | PARSTP   | SA2 | CURNST                             |
|     | 53250        |          | SA2 | x2                                 |
|     | 76300        |          | SX3 | B0                                 |
| 250 | .6110000005  |          | S81 | 5                                  |
|     | *            |          |     | SET SUBLIST STACK EMPTY            |
| 251 | 5022000001   | PARSTP1  | SA2 | X2+1                               |
|     | *            |          |     | GET NEXT ENTRY IN LIST             |
| 252 | 43060        | PARSTP2  | MX0 | 60-12                              |
|     | 15420        |          | BX4 | -X0*X2 GET TYPE                    |
|     | 63240        |          | S82 | X4 OF ENTRY                        |
| 253 | 0720000276 * |          | LT  | B2,B0,PARSTP1 TYPE IS              |
|     | 0712000276 * |          | GT  | B2,B1,PARSTP1 BAD                  |
| 254 | 20260        |          | LX2 | 60-12 OTHER                        |
|     | 73420        |          | SX4 | X2 PARTS                           |
|     | 26252        |          | LX2 | 60-18 OF                           |
|     | 63320        |          | S83 | X2 ENTRY                           |
| 255 | 0220000256 * |          | JP  | PARSTP3+B2                         |
|     | *            |          |     |                                    |
| 256 | 0200000264 * | PARSTP5  | JP  | PARSTP50 NEW STATE IF PROPER TOKEN |
| 257 | 0200000266 * |          | JP  | PARSTP51 GEN RULE IF PROPER TOKEN  |
| 260 | 0200000270 * |          | JP  | PARSTP52 SUBLIST OF ENTRIES        |
| 261 | 0200000265 * |          | JP  | PARSTP53 NEW STATE ON ANY TOKEN    |
| 262 | 0200000267 * |          | JP  | PARSTP54 GEN RULE ON ANY TOKEN     |
| 263 | 0200000273 * |          | JP  | PARSTP55 END OF LIST               |
| 264 | 13414        | PARSTP60 | BX4 | X1-X4 NEW STATE IF PROPER TOKEN    |
|     | 0314000251 * |          | NZ  | X4,PARSTP1                         |
| 265 | 66130        | PARSTP63 | S81 | B3 NEW STATE                       |
|     | 0270000000   |          | JP  | B7                                 |
| 266 | 13414        | PARSTP61 | BX4 | X1-X4 GEN RULE IF PROPER TOKEN     |
|     | 0314000251 * |          | NZ  | X4,PARSTP1                         |
| 267 | 66130        | PARSTP64 | S81 | B3 GEN RULE ON ANY TOKEN           |
|     | 0270000001   |          | JP  | B7+1                               |
| 270 | 20322        | PARSTP62 | LX3 | 18 SUBLIST                         |
|     | 73430        |          | SX4 | X3                                 |

|     |              |          |             |                           |
|-----|--------------|----------|-------------|---------------------------|
|     | 0314000277 + |          | X4,PARSTPE2 | TOO DEEP                  |
| 271 | 74420        | NZ       | A2          |                           |
|     | 12334        | SX4      | X3+X4       |                           |
|     | 56230        | BX3      |             |                           |
| 272 | 0200000251 + | SA2      | B3          |                           |
|     |              | JP       | PARSTPI     |                           |
| 273 | 73430        | *        | PARSTPI5    | SX4                       |
|     | 0304000275 + | ZR       | X3          | END OF LIST               |
|     | 20352        | LX3      | X4,PARSTPB5 | NONE TO POP UP            |
| 274 | 53240        | SA2      | 60-18       |                           |
|     | 0200000251 + | JP       | X4          |                           |
|     |              | *        | PARSTPI     |                           |
| 275 | 0270000002   | PARSTPB5 | JP          | B7+2                      |
|     | *            |          |             |                           |
| 276 | 6170000277 + | PARSTPE1 | CALL        | CRASH                     |
| 277 | 6170000300 + | PARSTPE2 | CALL        | BAD ENTRY TYPE            |
|     |              |          |             | CRASH STATE LIST TOO DEEP |

THIS IS THE STANDARD GET A TOKEN FROM INPUT STRING  
LETTER SIGNALS ID, INCLUDES ALL UP TO 1ST NON LETTER,  
DIGIT OR PERIOD

DIGIT SIGNALS DATUM, INCLUDES ALL UP TO 1ST NON DIGIT,  
INCLUDES 1ST NON DIGIT IF B OR D. B FORCES  
OCTAL, D FORCES DECIMAL, NEITHER FORCES  
CURRENT MODE.

7 OR MORE BLANKS FOLLOWED BY NON CR EQUALS BLANK  
6 OR MORE BLANKS FOLLOWED BY CR EQUALS CR

SPECIAL TOKENS ARE

| ID    | TDTKN  |
|-------|--------|
| DATUM | DTMTKN |

OTHERS ARE ROTATED ASCII

|     |              |          |       |                          |  |
|-----|--------------|----------|-------|--------------------------|--|
| 300 | 5110000105 X | GETTKN   | SA1   | SAVESTKN                 | NONE WAS PUSHED DOWN.                                |
|     | 0301000306 * |          | ZR    | X1,GETTKN1B              | ( NOTE THAT WILL FORGET BLANKS<br>AS THEY ARE ZERO ) |
| 301 | 10611        |          | BX6   | X1                       |  |
|     | 5160000104 X |          | SA6   | STRNGTKN                 |  |
| 302 | 7211777622   |          | SX1   | X1-ASCII(CR)             | SHOULD HAVE BEEN CR                                  |
|     | 0311000305 * |          | NZ    | X1,GETTKN1A              |  |
| 303 | 76600        |          | SX6   | BO                       |  |
|     | 5160000106 X |          | SA2   | STRNGVAL                 |  |
| 304 | 5160000105 X |          | SA2   | SAVESTKN                 |  |
|     | 02760000000  |          | JP    | B7                       |  |
| 305 | 6170000306 * | GETTKN1A | CALL  | CRASH                    | SHOULD HAVE BEEN CR                                  |
|     |              | *        |       |                          |  |
| 306 | 76670        | GETTKN1B | SAVE7 | GETTKNS7                 |  |
| 307 | 6110000000 X |          | CALLR | GENASC, IN(LCL), GETTKN1 |  |
| 312 | 5110000115 X |          | GET7  | GETTKNS7                 |  |
| 313 | 0270000000   |          | JP    | B7                       |  |
| 314 | 6120000315 * | GETTKN1  | SB2   | *+1                      |  |
|     | 0200000405 * | *        | JP    | GETTKNT                  |  |
| 315 | 0200000355 * |          | JP    | GETTKN6                  | LETTER   |
| 316 | 0200000334 * |          | JP    | GETTKN5                  | DIGIT  |
| 317 | 0200000330 * |          | JP    | GETTKN4                  | BLANK  |
| 320 | 0200000325 * |          | JP    | GETTKN3                  | CR   |
| 321 | 0200000355 * |          | JP    | GETTKN6                  | SINGLE QUOTE   |
| 322 | 5170000104 X | GETTKN2  | SA7   | STRNGTKN                 | OTHER  |
|     | 76600        |          | SX6   | BO                       |  |
| 323 | 5160000106 X |          | SA6   | STRNGVAL                 |  |

|     |              |              |          |     |              |   |
|-----|--------------|--------------|----------|-----|--------------|---|
| 324 | 0270000000   | 66260        |          | SB2 | R0           |   |
|     |              |              | *        | JP  | B7           |   |
| 325 | 5170000104 X | 76660        | GETTKN3  | SA7 | STRNGTKN     | CR, OR FINAL FOR BLANK                      |
| 326 | 5160000106 X | 6126777776   |          | SX6 | R0           |   |
| 327 | 0270000000   |              |          | SA6 | STRNGVAL     |   |
| 330 | 6120000331 * | 0270000000   | GETTKN4  | SB2 | -1           |   |
|     |              |              |          | JP  | B7           |   |
| 331 | 7267777777   | 0306000330 * | GETTKN4A | SX6 | GETTKN4A     | BLANK                                       |
|     |              |              |          | ZR  | B7           |   |
| 332 | 7267777622   | 0306000325 * |          | SX6 | X7-ASCIIIBLN |   |
|     |              |              |          | ZR  | X6, GETTKN4  |   |
| 333 | 7170000000   | 0266000325 * |          | SX7 | X7-ASCIIICR  |   |
|     |              |              |          | JP  | X6, GETTKN3  |   |
| 334 | 76400        | 76500        | GETTKN5  | SX4 | ASCIIBLN     |   |
|     |              |              |          | SX5 | GETTKN3      |   |
| 335 | 7267777757   | 26463        | GETTKN5A | SX6 | R0           | DIGIT, INITIALIZE OCTAL AND DECIMAL TO ZERO |
|     |              | 36446        |          | LX4 | R0           |   |
| 336 | 10755        | 20701        |          | IX4 |              |   |
|     |              | 26563        |          | BX7 |              |   |
|     |              | 36557        |          | LX7 |              |   |
| 337 | 36556        | 6120000351 * |          | IX5 |              |   |
|     |              |              |          | IX5 | X6+X6        | INCREMENT OCTAL                             |
| 340 | 0270000000   |              |          | SB2 |              |   |
|     |              |              |          | JP  | X5           |   |
| 341 | 7267777757   | 0336000343 * | GETTKN5B | SX6 |              |   |
|     |              |              |          | NG  | X7-ASCII10   |   |
| 342 | 7267777745   | 0336000335 * |          | SX6 | X6, GETTKN5C |   |
|     |              |              |          | NG  | X7-ASCII19-1 |   |
|     |              |              |          |     | X6, GETTKN5A |   |
| 343 | 7267777733   | 0306000350 * | GETTKN5C | SX6 | X7-ASCII1D   |   |
|     |              |              |          | ZR  | X6, GETTKN5D |   |
| 344 | 7267777735   | 0306000351 * |          | SX6 | X7-ASCII1B   |   |
|     |              |              |          | ZR  | X6, GETTKN5E |   |
| 345 | 6120777776   | 10644        |          | SB2 | -1           | REPEAT LST CHAR                             |
|     |              |              |          | BX6 | X4           | ASSUME OCTAL                                |
| 346 | 5140000114 X | 0304000352 * |          | SA4 | DTMMODELG    | CHECK MODE                                  |
|     |              |              |          | ZR  | X4, GETTKN5F | WAS OCTAL                                   |
| 347 | 10655        | 0200000352 * |          | BX6 | X5           | WAS DECIMAL                                 |
|     |              |              |          | JP  | GETTKN5E     |   |
| 350 | 10655        | 66200        | GETTKNED | BX6 | 85           | DECIMAL                                     |
|     |              | 0200000352 * |          | SB2 | R0           | DO NOT REPEAT LAST CHAR                     |
|     |              |              |          | JP  | GETTKN5E     |   |

|     |              |   |          |      |              |                                    |  |
|-----|--------------|---|----------|------|--------------|------------------------------------|--|
| 351 | 10644        | * | GETTKN6E | BX6  | X4           | OCTAL                              |  |
|     | 66200        |   |          | S82  | S0           | CO NOT REPEAT LAST CHAR            |  |
| 352 | 5160000107 X | * | GETTKN6F | SA6  | STRNGVAL+1   |                                    |  |
|     | 7160000001   |   |          | SX6  | DTMVTYP      |                                    |  |
| 353 | 5160000106 X | * |          | SA6  | STRNGVAL     |                                    |  |
|     | 7160001001   |   |          | SX6  | DTMTKN       |                                    |  |
| 354 | 5160000104 X | * |          | SA6  | STRNGTKN     |                                    |  |
|     | 0270000000   |   |          | JP   | R7           |                                    |  |
| 355 | 66270        | * | GETTKN6  | SB2  | R7           | LETTER OR SINGLE QUOTE, HENCE ID   |  |
|     | 6140000107 X |   |          | SB4  | STRNGVAL+1   |                                    |  |
| 356 | 6150000005   |   |          | SB5  | STRNGVSZ     |                                    |  |
|     | 66600        |   |          | SB6  | R0           |                                    |  |
| 357 | 6170000360 + |   |          | CALL | STASCII      |                                    |  |
| 360 | 66720        |   |          | SB7  | R2           |                                    |  |
|     | 0200000365 + |   |          | JP   | GETTKN6C     |                                    |  |
| 361 | 66270        | * | GETTKN6B | SB2  | R7           |                                    |  |
| 362 | 6170000363 + |   |          | CALL | DKASCII      |                                    |  |
| 363 | 66720        |   |          | SB7  | R2           |                                    |  |
|     | 6120000365 + |   |          | SB2  | GETTKN6C     |                                    |  |
| 364 | 0270000000   |   |          | JP   | R7           |                                    |  |
| 365 | 6120000366 + | * | GETTKN6C | SB2  | *+1          |                                    |  |
|     | 0200000405 + | * |          | JP   | GETTKN7      |                                    |  |
| 366 | 0200000361 + |   |          | JP   | GETTKN6B     | LETTER                             |  |
| 367 | 0200000361 + |   |          | JP   | GETTKN6B     | DIGIT                              |  |
| 370 | 0200000374 + |   |          | JP   | GETTKN6D     | BLANK                              |  |
| 371 | 0200000374 + |   |          | JP   | GETTKN6D     | CR                                 |  |
| 372 | 0200000402 + |   |          | JP   | GETTKN6E     | SINGLE QUOTE                       |  |
| 373 | 7247777761   | * |          | SX4  | X7-ASCII1PD  |                                    |  |
|     | 0304000361 + | * |          | ZR   | X4, GETTKN6B | OTHER ACCEPT PERIOD                |  |
| 374 | 66270        |   | GETTKN6D | SB2  | R7           |                                    |  |
| 375 | 6170000376 + |   |          | CALL | DNASCII      |                                    |  |
| 376 | 7160000002   |   |          | SX6  | IDVTYPE      |                                    |  |
|     | 5160000106 X |   |          | SA6  | STRNGVAL     |                                    |  |
| 377 | 7160001002   |   |          | SX6  | IDTKN        |                                    |  |
|     | 516000104 X  |   |          | SA6  | STRNGTKN     |                                    |  |
| 400 | 66720        |   |          | SB7  | R2           |                                    |  |
|     | 612077776    |   |          | SB2  | -1           | STOP AND REPEAT LAST CHAR          |  |
| 401 | 0270000000   |   |          | JP   | R7           |                                    |  |
| 402 | 6120000403 + | * | GETTKN6E | SB2  | *+1          | SINGLE QUOTE, ACCEPT ANY NEXT CHAR |  |
|     | 0270000000   | * |          | JP   | R7           | EXCEPT CR                          |  |
| 403 | 724777622    | * |          | SX4  | X7-ASCII1CR  |                                    |  |
|     | 0304000374 + | * |          | ZR   | X4, GETTKN6D | CR, END OF ID                      |  |
| 404 | 0200000361 + |   |          | JP   | GETTKN6B     | ACCEPT ANY OTHER CHAR              |  |

## TEST TYPE OF CHAR IN X7

GO TO B2 + 0 LETTER  
1 DIGIT  
2 BLANK  
3 CR  
4 SINGLE QUOTE  
5 OTHER

|     |                              |          |     |                       |
|-----|------------------------------|----------|-----|-----------------------|
| 405 | 724777736                    | GETTKNT  | SX4 | X7-ASCII IA           |
|     | 0334000410 +                 |          | NG  | X4, GETTKNT1          |
| 406 | 724777754                    |          | SX4 | X7-ASCII IZ-1         |
|     | 0324000410 +                 |          | PL  | X4, GETTKNT1          |
| 407 | 0220000000                   |          | JP  | R2 WAS A LETTER       |
| 410 | 724777757                    | GETTKNT1 | SX4 | X7-ASCII IO           |
|     | 0334000414 +                 |          | NG  | X4, GETTKNT2          |
| 411 | 724777745                    |          | SX4 | X7-ASCII I9-1         |
|     | 0324000414 +                 |          | PL  | X4, GETTKNT2          |
| 412 | 0220000001                   |          | JP  | R2+1 WAS A DIGIT      |
| 413 | 0000000000000000000000000000 | :        |     |                       |
| 414 | 724777777                    | GETTKNT2 | SX4 | X7-ASCII ISLN         |
|     | 0314000416 +                 |          | NZ  | X4, GETTKNT3          |
| 415 | 0220000002                   |          | JP  | R2+2 WAS A BLANK      |
| 416 | 724777622                    | GETTKNT3 | SX4 | X7-ASCII ICRL         |
|     | 0314000420 +                 |          | NZ  | X4, GETTKNT4          |
| 417 | 0220000003                   |          | JP  | R2+3 WAS A CR         |
| 420 | 724777770                    | GETTKNT4 | SX4 | X7-ASCII ISOT         |
|     | 0314000422 +                 |          | NZ  | X4, GETTKNT5          |
| 421 | 0220000004                   |          | JP  | R2+4 WAS SINGLE QUOTE |
| 422 | 0220000005                   | GETTKNT5 | JP  | R2+5 OTHER            |

THIS ROUTINE PLACES A STRING VALUE IN VALUE STACK  
ONLY 2 KINDS OF VALUE POSSIBLE  
ID OR DATUM ( OR NONE )

|     |              |          |       |                              |
|-----|--------------|----------|-------|------------------------------|
| 423 | 5110000106 X | GETSVAL  | S A1  | STRNGVAL                     |
|     | 0301000000 X |          | ZR    | X1, RTNR NO VALUE TO PLACE   |
| 424 | 7221777776   |          | SX2   | X1-DTMVTYPE                  |
|     | 0302000427 + |          | ZR    | X2, GETSVAL1 DATUM TYPE      |
| 425 | 7221777778   |          | SX2   | X1-IDVTYPE                   |
|     | 0302000435 + |          | ZR    | X2, GETSVAL2 IDENTIFIER TYPE |
| 426 | 6170000427 + |          | CALL  | CRASH                        |
| 427 | 5011000001   | GETSVAL1 | S A1  | A1+1                         |
|     | 10611        |          | BX6   | X1                           |
| 430 | 5160000077 X |          | SA6   | VAL.DTM                      |
|     | 7110000001   |          | SX1   | I                            |
| 431 | 76200        |          | SX2   | B0                           |
|     | 7130000001   |          | SX3   | DTMVTYPE                     |
| 432 | 6170004363 + |          | CALLR | ENTERV                       |
| 434 | 0200000000 X |          | RTNR  |                              |
| 435 | 7110000107 X | GETSVAL2 | SX1   | STRNGVAL+I                   |
| 436 | 6170000437 + |          | CALL  | SKID                         |
| 437 | 5160000077 X |          | SA6   | VAL.DTM                      |
|     | 7110000001   |          | SX1   | I                            |
| 440 | 76200        |          | SX2   | B0                           |
|     | 7130000002   |          | SX3   | IDVTYPE                      |
| 441 | 6170004363 + |          | CALLR | ENTERV                       |
| 443 | 0200000000 X |          | RTNR  |                              |

\*\*\*\*\*

## KEY WORD FACILITY

USE INSTEAD OF GETTKN

|                  |              |          |       |  |
|------------------|--------------|----------|-------|--|
| 444 76670        |              | GETKYWD  | SAVE7 | GETKYWD7                                     |
|                  | 76610        |          | SX6   | B1   |
| 445 5160000137 X |              |          | SA6   | SVKYWDL                                      |
| 446 6170000447 * |              |          | CALL  | GETTKN GET A TOKEN FROM THE STRING           |
| 447 5110000104 X |              |          | SA7   | STRNGTKN                                     |
|                  | 7217776775   |          | SX7   | X1-IDTKN MAKE SURE IS AN IDENTIFIER TOKEN    |
| 450 0311000461 * |              |          | NZ    | X1-GETKYWDX OTHER THAN ID, LEAVE ALONE       |
|                  | 6116000107 X |          | CALLR | DSPLNM,STRNGVAL+1,10 CONVERT TO DISPLAY CODE |
| 453 5130000137 X | 63130        |          | SA3   | SVKYWDL                                      |
|                  |              |          | CALLR | NAMEVEC,X3                                   |
| 456 0301000461 * |              |          | ZR    | X1,GETKYWDX NOT RECOGNIZED, LEAVE ALONE      |
|                  | 10671        |          | SX6   | X1   |
| 457 5160000104 X | 76660        |          | SA6   | STRNGTKN SET OBTAINED TOKEN                  |
|                  |              |          | SX6   | 00   |
| 460 5160000106 X |              |          | SA6   | STRNGVAL SET VALUE EMPTY                     |
| 461 5110000136 X | *            | GETKYWDX | GET7  | GETKYWD7 EXIT                                |
| 462 0270000000   | *            |          | JP    | B7   |

463 76670  
5160000140 X  
464 5110000105 X  
721777622  
465 0301000300 +  
76160  
466 6170000467 +  
467 6170000166 +  
471 10611  
0206000472 \*

SUBGRAM SX6  
SA6  
SA1  
SX1  
ZR  
SX1  
CALL  
CALLR  
BX6  
JP

INITIATE A SUBGRAMMAR  
INITIAL STATE IN B1

ONLY WORKS WITH AT LEAST ONE PRM

472 5110000104 X  
54610  
76600  
473 5160000106 X  
10611  
474 5160000105 X  
5116000021 X  
475 7261000002  
54610  
476 7170000017 X  
37776  
477 0337000502 +  
53160  
73610  
500 5160000101 X  
5116000140 X  
501 63710  
0270000000  
502 6170000503 +

FINSBGRM SA1  
SA6  
SX6  
SA6  
BX6  
SA6  
SA1  
SX6  
SA6  
SX7  
IX7  
N6  
SA1  
SX6  
SA6  
SA1  
SB7  
JP  
FINSBGRM CALL

COMPLETE A SUBGRAMMAR  
RESULT TOKEN IN X6

STRNGTKN SAVE STRING TOKEN  
AI PLACE OBTAINED TOKEN IN ITS PLACE  
SO  
STRNGVAL ZERO VALUE  
X1  
SAVESTKN PUSH DOWN OLD TOKEN

TKN.TOP POP  
X1+2 UP  
X1 TOKEN

TKN.BASE  
X7-X6  
X7,FINSBGR1 / MAKE SURE ENOUGH ROOM /  
NOT ENOUGH

X6 STACK  
X1  
CURNST

SUBGRMS7 RETURN TO PARSER AS IF JUST GOT A  
X1 STRING TOKEN  
B7

CRASH NOT ENOUGH ROOM TO REDUCE TKN STACK

FUNCTION COMPUTATION PROCEEDS AS FOLLOWS:

1. REDUCE VAL STACK
2. FOR EACH ARGUMENT, CHECK TYPE. IF NECESSARY EVALUATE.  
IN ANY CASE LEAVE ARGL.DTM AND ARGL.CAP POINTING TO  
VALUES.
3. COMPUTE FUNCTION FROM ARGUMENT VALUES. LEAVING RESULT  
AT VAL.DTM AND VAL.CAP
4. NOW REDUCE DTM AND CAP STACKS AND THEN PLACE NEW  
VALUES IN THEM.

|     |              |               |          |       |              |                                   |
|-----|--------------|---------------|----------|-------|--------------|-----------------------------------|
| 503 | 76670        |               | FNCEVAL  | SAVET | FNCEVSV7     |                                   |
|     |              | 76600         |          | SX6   | BO           |                                   |
| 504 | 5160000121 X | 51160000102 X |          | SA6   | ARGFLAG      | PRESET TO NO ARGUMENTS            |
| 505 | 53110        | 43066         |          | SA1   | RULEFCN      |                                   |
|     |              | 26106         |          | SA1   | X1           | GET FUNCTION CONTROL WORD         |
|     |              | 15210         |          | MX0   | 60-6         |                                   |
| 506 | 0302000542 + | 7160000001    |          | LX1   | 6            |                                   |
|     |              | 10611         |          | SX2   | -X0*X1       | ARGUMENT COUNT                    |
| 507 | 5160000121 X |               |          | ZR    | X2, FNCEVAL4 | NO ARGUMENTS                      |
|     |              | 10622         |          | SX6   | 1            |                                   |
| 510 | 5160000120 X |               |          | SA6   | ARGFLAG      | INDICATE THAT THERE ARE ARGUMENTS |
|     |              | 10622         |          | BX6   | X1           |                                   |
| 511 | 5160000122 X |               |          | SA6   | FNCEVSCW     | SAVE ROTATED CONTROL WORD         |
|     |              | 5116000020 X  |          | BX6   | X2           |                                   |
| 512 | 37612        | 54610         |          | SA6   | ARGCNT       | SAVE COUNT OF ARGUMENTS           |
|     |              | 7176000000 X  |          | SA1   | VAL-FREE     |                                   |
| 513 | 37667        | 0336000554 +  |          | IX6   | X1-X2        | REDUCE FREE POINTER FOR VAL STACK |
|     |              | 76600         |          | SA6   | A1           |                                   |
| 514 | 5160000076 X |               |          | SX7   | VAL-BASE     |                                   |
|     |              | 54610         |          | IX6   | X6-X7        |                                   |
|     |              | *             |          | NG    | X6, FNCEVX1  | NOT ENOUGH ARGUMENTS              |
|     |              | *             |          | SX6   | BO           |                                   |
|     |              | *             |          | SA6   | ARGX         | INITIALIZE ARGUMENT INDEX         |
|     |              | *             |          |       |              |                                   |
|     |              | *             |          |       |              | NOW EVALUATE THE ARGUMENTS:       |
| 515 | 5110000122 Y | 7261777776    | FNCEVAL1 | SA1   | ARGCNT       |                                   |
| 516 | 54810        | 0336000542 *  |          | SX6   | X1-1         |                                   |
|     |              | *             |          | SA6   | A1           |                                   |
| 517 | 5110000076 X | 63110         |          | NG    | X6, FNCEVAL4 | ALL ARGUMENTS EVALUATED           |
|     |              | *             |          | SA1   |              |                                   |
| 520 | 5110000120 X | 20106         |          | S81   | ARGX         |                                   |
|     |              | 43066         |          | SA1   | X1           | ARGUMENT INDEX INTO B1            |
| 521 | 10611        | 54610         |          | LX1   | FNCEVSCW     |                                   |
|     |              | 15110         |          | MX0   | 6            |                                   |
|     |              | *             |          | BX6   | 60-6         | ROTATE CONTROL WORD TO NEXT       |
|     |              | *             |          | SA6   | X1           | ARGUMENT TYPE                     |
| 522 | 5120000020 X | 53221         |          | BX1   | A1           |                                   |
|     |              | 73620         |          | SA2   | -X0*X1       | GET DESIRED ARGUMENT TYPE         |
| 523 | 5160000073 X | 5161000051 X  |          | SA2   | VAL-FREE     |                                   |
|     |              |               |          | SX6   | X2+B1        | PICK UP ARGUMENT CONTROL WORD     |
| 524 | 20252        |               |          | SA6   | X2           |                                   |
|     |              |               |          | SA6   | ARG-DTM      |                                   |
|     |              |               |          | LX2   | ARGL-DTM+B1  |                                   |
|     |              |               |          |       | 60-18        |                                   |

|                |   |          |               |                             |
|----------------|---|----------|---------------|-----------------------------|
| 73620          |   | SX6      | X2            |                             |
| 525 5161000057 | x | SA6      | ARG.CAP       |                             |
| 26252          |   | SA6      | ARGL.CAP+B1   |                             |
| 526 5160000075 | x | LX2      | 60-18         |                             |
| 73620          |   | SX6      | X2            |                             |
| 527 5161000065 | x | SA6      | ARG.TYPE      |                             |
| 527 73220      | * | SA6      | ARGL.TYP+B1   |                             |
| 0301000540     | + | SX2      | X2            | ARGUMENT TYPE               |
| 13312          |   | ZR       | X1,FNCEVAL3   | NO TYPE CHECK DESIRED       |
| 530 0303000540 | + | BX3      | X1-X2         |                             |
| 6225777776     |   | ZR       | X3,FNCEVAL3   | ALREADY OF CORRECT TYPE     |
| 531 0720000555 | * | SB2      | X2-1          |                             |
| 6136000015     |   | LT       | B2,B0,FNCEVX2 | NO SUCH TYPE                |
| 532 0623000555 | + | SB3      | TYPEVEC       |                             |
| 5125000561     | * | GE       | B2,B3,FNCEVX2 | NO SUCH TYPE                |
| 533 7231777776 |   | SA2      | TYPEVEC+B2    |                             |
| 0303000536     | + | SX3      | X1-DTMVTYPE   |                             |
| 534 7231777774 |   | ZR       | X3,FNCEVAL2   | DATUM DESIRED               |
| 0313000556     | + | SX3      | X1-OBJVTYPE   | MUST DESIRE DATUM OR OBJECT |
| 535 20236      | * | NZ       | X3,FNCEVALX   |                             |
| 536 63220      |   | LX2      | 60-30         |                             |
| 0420000556     | * | FNCEVAL2 | SB2           | X2                          |
| 537 0220000000 |   |          | EQ            | GO EVALUATE THE ARGUMENT    |
|                |   |          | JP            | BAD PARAMETER               |
|                |   |          |               | AND RETURN TO FNCEVAL       |

540 5110000076 x  
7261000001  
541 54610  
0200000515 \*

\*  
\*  
\*  
\* FNCEVAL3 SAI ARGX STEP ARGUMENT INDEX  
SX6 X1+1  
SAB 81 FNCEVAL1 DO NEXT ARGUMENT  
JP

RETURN IS TO HERE AFTER EVALUATING AN ARGUMENT

542 5110000102 x  
6211000002  
543 0210000000

\*  
\*  
\*  
\*  
\* FNCEVAL4 SAI RULEFCN  
SSI X1+2 RETURN TO FNCEVAL5  
JP 81 ( IDENTITY RETURNS TO FNCEVAL7 )

NOW COMPUTE THE FUNCTION

FUNCTION EVALUATION RETURNS HERE  
( EXCEPT IDENTITY )

X1 = COUNT OF DATA ITEMS  
X2 = COUNT OF CAPS  
X3 = TYPE RESULT

DATA ITEMS AT VAL.DTM  
CAPS AT VAL.CAP

( IDENTIFIERS ARE IN ID STACK POINTED TO BY DATUMS )

|     |              |          |       |              |                                |
|-----|--------------|----------|-------|--------------|--------------------------------|
| 544 | 5140000121 X | FNCEVAL5 | SA4   | ARGFLAG      |                                |
|     | 0304000550 + |          | ZR    | X4, FNCEVAL6 | NO NEED TO RESET FREE POINTERS |
| *   | *            | *        | *     | *            |                                |
| 545 | 5140000020 X |          | SA4   | VAL.FREE     | RESET                          |
|     | 53450        |          | SA4   | X4           | FREE                           |
|     | 73640        |          | SX6   | X4           | POINTERS                       |
| 546 | 5160000034 X |          | SA6   | DTM.FREE     |                                |
|     | 26452        |          | LX4   | 60-18        |                                |
|     | 73640        |          | SX6   | 84           |                                |
| 547 | 5160000035 X |          | SA6   | CAP.FREE     |                                |
| *   | *            | *        | *     | *            |                                |
| 550 | 6170004363 + | FNCEVAL6 | CALLR | ENTERV       | PUT VALUES INTO STACKS         |
| *   | *            | *        | *     | *            |                                |
| *   | *            | *        | *     | *            | IDENTITY RETURNS HERE          |
| 552 | 5110000117 X | FNCEVAL7 | GET7  | FNCEVSV7     |                                |
| 553 | 0270000000   |          | JP    | B7           |                                |
| *   | *            | *        | *     | *            |                                |
| 554 | 6170000555 + | FNCEVX1  | CALL  | CRASH        | NOT ENOUGH ARGUMENTS           |
| 555 | 6170000556 + | FNCEVX2  | CALL  | CRASH        | BAD ARGUMENT TYPE              |

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION

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\*  
\*  
\*  
\*  
\*  
556 5110000102 x  
6115000000 x

FNCEVALX SAI  
CALL

RAD PARAMETER TYPE SUPPLIED

RULEFCN  
EEXITM,ECN,BDP,XI

\*  
\*  
\* THIS TABLE CONTROLS THE PREPARATION  
\*  
\*

COLUMN 1 PRODUCES OBJECTS  
COLUMN 2 PRODUCES DATA

|     |                         |             |         |                               |  |
|-----|-------------------------|-------------|---------|-------------------------------|--|
|     |                         | TYPEENT     | MACRO   | OBJACT,DTMACT                 |  |
|     |                         | *           | VFD     | 12/0,18/OBJACT,12/0,18/DTMACT |  |
|     |                         | *           | ENDM    |                               |  |
|     |                         | *           |         |                               |  |
| 561 | 00000000000000000000    | TYPEVEC     | TYPEENT | 0*0                           | 1 DATUM                                  |
| 562 | 0000000740 +            |             | TYPEENT | EVALIO,EVALID                 | 2 IDENTIFIER                             |
| 563 | 00000000000000000000    |             | TYPEENT | 0*0                           | 3 OBJECT                                 |
| 564 | 0000000576 +            |             | TYPEENT | EVALCL,0                      | 4 CLIST LOC (UNUSED)                     |
| 565 | 0000000607 +            |             | TYPEENT | EVALUCL,0                     | 5 USER SUBPROCESS CLIST LOC<br>(UNUSED)  |
|     |                         | *           |         |                               |  |
| 566 | 0000000621 +            |             | TYPEENT | EVALSQL,0                     | 6 SCAN LIST LOC                          |
| 567 | 0000000641 +            |             | TYPEENT | EVALDL,0                      | 7 DIRECTORY LOC                          |
| 570 | 000000000000000000651 + |             | TYPEENT | 0*EVALFL                      | 8 FILE LOC (UNUSED)                      |
| 571 | 000000000000000000707 + |             | TYPEENT | 0*EVALUM                      | 9 USER SUBPROCESS MEMORY LOC<br>(UNUSED) |
|     |                         | *           |         |                               |  |
| 572 | 0000000576 +            |             | TYPEENT | EVALCL,EVALFL                 | 10 INDEXED OBJECT                        |
| 573 | 0000000607 +            |             | TYPEENT | EVALUCL,EVALUM                | 11 INDEXED SUBPROCESS                    |
| 574 | 000000000000000000733 + |             | TYPEENT | 0*EVALR                       | 12 REGISTER LOC                          |
| 575 | 0000000725 +            |             | TYPEENT | EVALNO,EVALVD                 | 13 VARIABLE LOC                          |
|     |                         | *           |         |                               |  |
| 576 |                         | 15 TYPEVECN | BSS EQU | 0*-TYPEVEC                    |  |

576 5120000074 X  
5130000073 X  
577 53330  
6110000000 X  
606 0200000540 \*

EVALCL  
SA2  
SA3  
SA3  
DOXJ  
JP

EVALUATE A CLIST LOC

ARG.CAP  
ARG.DTM  
X3  
EC:CIN:X2,X3,X2  
FNCEVAL3

607 7110000005  
5120000073 X  
610 53220  
5130000000 X  
36223  
611 6170000000 X  
613 6110000001  
615 73310  
5110000000 X  
620 0200000540 \*

EVALUCI  
SX1  
SA2  
SA2  
SA3  
IX2  
CALLR  
CALL  
SX3  
CALLR  
JP

( GET CAP )

ARG.DTM  
X2  
UCLR  
X2+X3  
ASKBDG  
ARGCPS,I  
X1  
MVCAP,CX,TEMP,X1  
FNCEVAL3

EVALUATE A SCAN LIST LOC

621 5110000073 X  
53110  
622 6170000623 \*  
623 5160000126 X  
6110000000 X  
627 0130000000 X  
633 5110000074 X  
6110000000 X  
636 5110000073 X  
53110  
637 6170000640 \*  
640 0200000540 \*

EVALSCL  
SA1  
SA1  
CALL  
SA6  
SETXJ  
\*

EVALSCLI  
XJ  
SA1  
CALLR  
SA1  
SETXJ  
\*

EVALSCL  
XJ  
SA1  
CALL  
SA1  
SETXJ  
\*

ARG.DTM  
X1  
FORDIR  
TEMPWDI  
DR:ASCL1,ARG.CAP\*IND,TEMPWDI\*IND

XJLOC,,,RET1CAP  
ARG.CAP  
MVCAP,CX,TEMP,X1  
ARG.DTM  
X1  
RLSID  
FNCEVAL3

EVALUATE A DIRECTORY LOC

641 5110000073 X  
53110  
642 6170000643 \*  
643 5160000126 X  
5140000074 X  
644 6110000000 X  
650 0200000627 \*

EVALDL  
SA1  
SA1  
CALL  
SA6  
SA4  
SETXJ  
\*

ARG.DTM  
X1  
FORDIR  
TEMPWDI  
ARG.CAP  
DR:UACC1,X4,TEMPWDI\*IND,X4+1  
EVALSCL

no svry object, (name)  
Freturn?

NO curs not  
YES 3 curs return

new fil? (name)

NO curs not  
YES creats fil  
Freturn

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, ARGUMENT PRE EVALUATION

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| EVALUATE A FILE LOC                |         |       |                                  |
|------------------------------------|---------|-------|----------------------------------|
| 651 5120000074 x                   | *       | SA2   | ARG.CAP                          |
| 653 0311000674 *                   | EVALFL  | CALLR | TESTDEF                          |
|                                    |         | NZ    | X1,EVALFL                        |
|                                    | *       |       | NOT A DISK FILE                  |
| 654 6110100022 *                   |         | SA1   | ARG.CAP                          |
| 657 5140000073 x                   |         | CALLR | OPENDE,PF:OPROF,X1,CX,TEMP       |
|                                    |         | SA4   | ARG.DTM                          |
| 671 6170000000 x                   |         | DOXJ  | DF:READ:,CX,TEMP,X4+IND,X4,1     |
| 673 0200000540 *                   |         | CALLR | CLOSEDE                          |
|                                    |         | JP    | FNCEVALS                         |
| 674 5140000073 x                   | *       | SA4   | ARG.DTM                          |
| 706 0200000540 *                   | EVALFL  | DOXJ  | EC:READ:,ARG.CAP+IND,X4+IND,X4,1 |
|                                    |         | JP    | FNCEVALS                         |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
| EVALUATE A USER CORE LOC           |         |       |                                  |
| 707 7110000001                     | EVALUM  | SX1   | I (READ CORE)                    |
| 5130000000 x                       |         | SAS   | UMEMRA                           |
|                                    | *       |       |                                  |
| 710 5120000073 x                   | EVALUMI | SA2   | ARG.DTM                          |
| 53220                              |         | SA2   | X2                               |
| 36223                              |         | IX2   | X2+X3                            |
| 711 6170000000 x                   |         | CALLR | ASKBDG                           |
| 713 5110000073 x                   |         | SA4   | ARG.DTM                          |
| 5120000000 x                       |         | SA5   | DBGBLK                           |
| 714 10622                          |         | BX6   | X6                               |
| 53610                              |         | SA6   | X1                               |
| 0200000540 *                       |         | JP    | FNCEVALS                         |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
| EVALUATE A VARIABLE LOC AS A DATUM |         |       |                                  |
| 715 5110000073 x                   | EVALVD  | SA1   | ARG.DTM                          |
| 53110                              |         | SA1   | X1                               |
| 63210                              |         | SB2   | X1 INDEX OF VARIABLE             |
| 716 20152                          |         | LX1   | 60-18 POSITION TYPE FIELD        |
|                                    | *       |       |                                  |
| 717 7211777776                     | EVALVDT | SX1   | X1-DTMVTYPE                      |
| 0311000556 *                       |         | NZ    | X1,FNCEVALX                      |
|                                    |         | SA1   | V=DVAL+B2                        |
| 720 5112000000 x                   |         | BX6   | X1                               |
| 10611                              |         | SA1   | ARG.DTM                          |
| 721 5110000073 x                   |         | SA6   | X1                               |
| 53610                              |         | JP    | FNCEVALS                         |
| 722 0200000540 *                   |         |       |                                  |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
|                                    | *       |       |                                  |
| VARIABLE NOT DEFINED               |         |       |                                  |
| 723 6110000000 x                   | EVALVDX | CALL  | EEEXIT,ECN,NOV                   |
|                                    | *       |       |                                  |

725 5110000073 X  
53110  
63210

726 20152  
7211777774

727 0311000556 ±  
7162000000 X

730 5160000074 X  
5110000076 X

731 63110  
5161000057 X

732 0200000540 \*

EVALVO SAI  
SAI  
SB5  
LX1  
SX1  
NZ  
SX6  
SA6  
SA1  
SB1  
SA6  
JP

EVALUATE A VARIABLE LOC AS AN OBJECT

ARG.DTM  
X1  
X1 INDEX OF VARIABLE  
60-18 POSITION TYPE FIELD  
X1-OBJVTYPE  
X1,FNCEVALX WRONG TYPE  
B2+V.CAP  
ARG.CAP  
ARGX  
X1  
ARGL+CAP+B1  
FNCEVAL3

733 7110000003  
76350

734 0200000710 \*

EVALR SX1  
SX3  
JP

EVALUATE A REGISTER LOC

3 ( READ A REGISTER WORD )  
B0  
EVALUM1

735 5110000073 X  
6170000737 \*

736 6170000737 \*

737 0720000723 ±  
0200000717 \*

EVALID SAI  
CALL  
LT  
JP

EVALUATE AN IDENTIFIER AS A DATUM  
( VARIABLE EVALUATION )

ARG.DTM  
FINDVAR  
B2,B0,EVALVDX NOT FOUND  
EVALVD1 OK

740 5110000073 X  
53110

741 6170000742 \*

742 5160000126 X  
6110000001

744 10611  
5160000074 X

745 6110000000 X

751 0200000627 \*

EVALIO SAI  
SA1  
CALL  
SA6  
CALL  
BX6  
SA6  
SETXJ  
JP

EVALUATE AN IDENTIFIER AS AN OBJECT  
( STANDARD SCAN LIST LOOK UP )

ARG.DTM  
X1  
FORDIR  
TEMPWD1  
ARGCPS,1  
X1  
ARG.CAP  
DR:ASCI,I,CX,SCNL,TEMPWD1\*IND  
EVALSCL1

|     |              |         |     |                          |
|-----|--------------|---------|-----|--------------------------|
| 752 | 511000035 x  | ARGCPSI | SA1 | CAP-FREE                 |
|     | 73611        |         | SX6 | X1+B1                    |
|     | 54610        |         | SA6 | B1                       |
| 753 | 7170000000 x |         | SX7 | CAP-LIM                  |
|     | 37667        |         | IX6 | X6-X7                    |
| 754 | 0326000757 * |         | PL  | X6,ARGCPSI               |
|     | 512000076 x  |         | SA2 | NO ROOM FOR CAPS         |
| 755 | 63120        |         | SB1 | ARGX                     |
|     | 10611        |         | BX6 | X2                       |
| 756 | 0270000000   |         | SA6 | X1                       |
|     | 5161000057 x |         | JP  | ARGL+CAP+B1              |
| 757 | 0200000221 * | ARGCPSI | JP  | B7                       |
|     |              |         |     | PARSEF3 NO ROOM FOR CAPS |

GET SPACE IN CP STACK  
DURING ARGUMENT EVALUATION

PLACES NEW CAP BASE AT ARGL+CAP+B1 AND IN X1

COUNT NEEDED IN B1

MUST BE FOR FULL AMOUNT TO BE NEEDED

CAP-FREE

X1+B1

B1

CAP-LIM

X6-X7

X6,ARGCPSI

NO ROOM FOR CAPS

ARGX

X2

X1

ARGL+CAP+B1

B7

PARSEF3 NO ROOM FOR CAPS

\*  
\*  
\*  
\*  
\*

FUNCTION MACRO  
\*  
VFD  
XFUNCT  
XFUNCT  
XFUNCT  
XFUNCT  
XFUNCT  
ENDIF  
DATA  
ENDM

\*

XFUNCT MACRO  
IFC  
VFD  
ENDM

MACRO USED TO DEFINE FUNCTIONS

NAME,RANDCNT,R1,R2,R3,R4+R5

6/RANDCNT  
R1  
R2  
R3  
R4  
R5

NAME:

R  
NE,SR\$S  
6/R

760 00  
762 0200000552 +

\*  
\*  
\*  
\*  
F.NOACT FUNCTION IDENTITY FUNCTION  
JP IDENTITY,0  
FNCEVAL?

( SPECIAL RETURN FOR THIS FNC )

763 02  
765 6170000766 +  
766 37645  
5160000077 X  
767 0200000544 +

\*  
\*  
\*  
\*  
F.ADD FUNCTION ADD,2,DTMVTYPE,DTMVTYPE  
CALL ARITHSU  
IX6 SET UP FOR ARITHMETIC  
SA6 X4+X5  
JP VAL,DTM  
FNCEVALS

770 02  
772 6170000773 +  
773 37645  
5160000077 X  
774 0200000544 +

\*  
\*  
\*  
\*  
F.SUB FUNCTION SUBTRACT,2,DTMVTYPE,DTMVTYPE  
CALL ARITHSU  
IX6 X4-X5  
SA6 VAL,DTM  
JP FNCEVALS

775 01  
777 7110000001  
1000 7130000001 76260  
1001 53440  
14644  
5160000077 X  
1002 0200000544 +

\*  
\*  
\*  
\*  
F.NEG FUNCTION NEGATE,1,DTMVTYPE  
SX1 T  
SX2 S0  
SX3 DTMVTYPE  
SA4 ARGL,DTM  
SA4 X4  
BX6 ZX4  
SA6 VAL,DTM  
JP FNCEVALS

1003 02  
1005 6110000000 X

\*  
\*  
\*  
\*  
F.MULT FUNCTION MULTIPLY,2,DTMVTYPE,DTMVTYPE  
CALL EXITM,ECN,NIM,F,MULT

1007 02  
1011 6110000000 X

\*  
\*  
\*  
\*  
F.DIV FUNCTION DIVIDE,2,DTMVTYPE,DTMVTYPE  
CALL EXITM,ECN,NIM,F,DIV

1013 02

\*  
\*  
\*  
\*  
F.WP FUNCTION WORDPART,2,DTMVTYPE,DTMVTYPE

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

1015 6170001016 +  
1016 10655  
5160006077 X  
1017 0200000544 +

CALL ARITHSU  
BX6 X5  
SA6 VAL.DTM  
JP FNCEVALS

\*  
\*  
\*  
\*

COMBINE A WORD WITH A WORD PART

1020 03  
1022 6170001023 +  
1023 63150  
22614  
43561  
1024 611177776  
23575  
22515  
1025 20601  
5140000053 X  
53440  
1026 11454  
15665  
12646  
1027 5160000677 X  
0206000544 +

F.WWP FUNCTION WRDWRDPRT,3,DTMVTYPE,DTMVTYPE,DTMVTYPE  
CALL ARITHSU  
SB7 X5 SHIFT COUNT  
LX6 B1,X4 WORD IS POSITIONED  
MX5  
SB1 B1-1  
AX5 B1,X5  
LX5 B1,X5  
LX5 I MASK FORMED  
SA4 ARGLL,DTM+2  
SA4 X4  
BX4 X5\*X4 WORD PART MASKED  
BX6 +X5\*X6 WORD MASKED  
BX6 X4\*X6 NEW WORD FORMED  
SA6 VAL.DTM  
JP FNCEVALS

\*  
\*  
\*  
\*

CONSTRUCT AN INDEXED OBJECT

1030 02  
1032 5120000057 X  
63150  
1035 5110000052 X  
53110  
10611  
1036 5160000077 X  
7110000001  
1037 7120000001  
7130000012  
1040 0200000544 +

F.OBJX FUNCTION INDXDOB,2,OBJVTYPE,DTMVTYPE  
SA2 ARGLL,CAP  
CALLR MVCAP,X2,VAL,CAP  
SA1 ARGLL,DTM+1  
SA1 X1  
BX6 X1  
SA4 VAL.DTM  
SX1 X1  
SX2 X1  
SX3 OBXVTYPE  
JP FNCEVALS

\*  
\*  
\*  
\*

CONSTRUCT AN INDEXED SUBPROCESS

1041 01  
1043 7130000013  
1044 7110000000 X  
5120000000 X  
1045 11112  
0301001051 +  
1046 5110000051 X  
53110  
10611

F.SUBPX FUNCTION INDXDSUBP,1,DTMVTYPE  
SX3 SBXVTYPE  
\*  
F.SUBPXA SX1 D8GBIT  
SA2 SRVBITS CURRENT ALLOWED BITS  
BX1 X1\*X2  
ZR X1,F.SUBPXA  
SA1 ARGLL,DTM  
SA1 X1  
BX6 X1

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FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

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|                               |              |                 |                   |
|-------------------------------|--------------|-----------------|-------------------|
| 1047 5160000077 x             |              | SA6             | VAL.DTM           |
|                               | 7110000001   | SX1             | I                 |
| 1050 7120000000               |              | SX2             | O                 |
|                               | 0200000544 * | JP              | FNCEVALS          |
| * * * * *                     |              |                 |                   |
| USER SUBPROCESS NOT REACHABLE |              |                 |                   |
| 1051 6110000000 x             |              | F.SUBPX1 CALL   | EEXIT,ECN,NUS     |
| * * * * *                     |              |                 |                   |
| CONSTRUCT A REGISTER LOC      |              |                 |                   |
| 1053 01                       |              |                 |                   |
| 1055 5110000051 x             |              | F.REGL FUNCTION | BEGLOC,1,DTMVTYPE |
|                               | 53110        | SA1             | ARGL,DTM          |
| 1056 0331001061 *             |              | SA1             | X1                |
|                               | 7211777757   | NG              | X1,F.REGLI        |
| 1057 0321001061 *             |              | SX1             | X1-20B            |
|                               | 7130000014   | PL              | X1,F.BEGLI        |
| 1060 0200001044 *             |              | SX3             | RLCVTYPE          |
|                               |              | JP              | F.SUBPX1          |
| * * * * *                     |              |                 |                   |
| PARAMETER OUT OF RANGE        |              |                 |                   |
| 1061 6110000000 x             |              | F.REGLI CALL    | EEXIT,ECN,POR     |

\*  
\*  
\*  
\*  
\*

CREATE A NEW USER

|                   |   |                |                 |  |
|-------------------|---|----------------|-----------------|--|
| 1063 00           | 1 | DVT<br>F,NEWUS | EQU<br>FUNCTION | $\bar{D}TMVTYPE$<br>$NEWUSER!0, IDVTYPE, DVT, DVT, DVT, DVT$ |
|                   | 3 | PARAM          | EQU             | *  |
| 1065 5150000125 x |   |                | SAS             | $\bar{S}TNDPCNT$   |
|                   |   |                | SX1             | $x5-2$   |
| 1066 0331001250 + |   |                | NG              | $x1, F, NUERR1$  |
|                   |   |                | SX1             | $x5-7$   |
| 1067 0321001251 * |   |                | PL              | $x1, F, NUERR2$  |

\*

\* FETCH IDENTIFIER

|                 |              |  |     |  |
|-----------------|--------------|--|-----|--|
| 1070 53110      | 5110000051 x |  | SA1 | $\bar{A}RGLL\bar{D}TM$                     |
|                 | 53210        |  | SA1 | $x1$                                       |
|                 | 5211000001   |  | SA2 | $x1$                                       |
| 1071 43004      | 15610        |  | SA1 | $x1+1$ : CHAR COUNT                        |
|                 | 5160000003 x |  | MX0 |  |
| 1072 76600      | 5066000001   |  | BX6 | 4 : FIRST TEXT WORD                        |
|                 | 5066000001   |  | SA6 | $-x0*x1$ : ELIMINATE SYSTEM BITS           |
| 1073 7222777766 | 0332001075 + |  | SX6 | $\bar{B}ARAM+xJLOC$                        |
| 1074 5011000001 | 15660        |  | SA6 | $x0$                                       |
|                 | 54660        |  | SX2 | $A6+1$                                     |
|                 |              |  | NG  | $x2-9$                                     |
|                 |              |  | SA1 | $X2, F, NUSR1$ : JPI IF NO MORE TEXT WORDS |
|                 |              |  | BX6 | $A1+1$ : FETCH SECOND TEXT WORD            |
|                 |              |  | SA6 | $-x0*x6$                                   |
|                 |              |  |     | $A6$ : SEND SECOND TEXT WORD               |

\*

\* CHECK TYPE FIELD: \* FETCH DEFAULT PARAMETERS

|                   |              |     |                                   |
|-------------------|--------------|-----|-----------------------------------|
| 1075 5110000052 x | F,NUSR1      | SA1 | $\bar{A}RGLL\bar{D}TM+1$          |
| 53110             |              | SA1 | $x1$ .. TYPE FIELD                |
| 1076 7221777766   | 0332001252 + | SX2 | $x1-1$                            |
|                   | 0332001252 + | NG  | $x2, F, NUERR3$ .. TYPE TOO SMALL |
| 1077 7221777766   | 0322001253 + | SX2 | $x1-5$                            |
|                   | 0322001253 + | PL  | $x2, F, NUERR4$ .. TYPE TOO BIG   |

\*

|                   |  |     |   |
|-------------------|--|-----|---|
| 1100 5211001132 * |  | SA1 | $\bar{N}EWUBLK*x1$                      |
| 5126000022        |  | S82 | $NU, SIZE-2$ .. DONT CLOBBER IDENTIFIER |
| 1101 6130000000   |  | S83 | $\bar{o}$ : BEGIN INDEXING AT ZERO      |
|                   |  | S84 | 1                                       |

\*

|              |          |     |  |
|--------------|----------|-----|--|
| 1102 53213   | F,NULOOP | SA2 | $x1+83$ .. FETCH DEFAULT VALUE               |
| 10622        |          | BX6 | $x2$   |
| 5163000005 x |          | SA6 | $xJLOC+PARAM+NU, ACCT+83$ .. DEFAULT PARAMS  |
|              |          |     | BEGIN WITH NU.ACCT (DONT CLOBBER IDENTIFIER) |

|                              |          |      |  |
|------------------------------|----------|------|--|
| 1103 66334                   |          | SB3  | $\bar{B}3+B4$                              |
| 0523001162 *                 |          | NE   | $\bar{B}2,\bar{B}3,F,NULLOOP$              |
| 1104 7255777775              |          | SX5  | X5-2 .. CHECK IF THERE ARE MORE PARAMETERS |
| 0305001121 *                 |          | ZR   | X5,F,NUSRXJ                                |
| * DO DIRECTORY SIZE: NU.PDSK |          |      |  |
| 1105 S110000053 X            |          | SA1  | $\bar{A}RGL+DTM+\bar{2}$                   |
| 53110                        |          | SA1  | X1   |
| 10611                        |          | BX6  | X1   |
| 1106 S160000007 X            |          | SA6  | PARAM+XJLOC+NU.PDSK                        |
| 7255777776                   |          | SX5  | X5-1                                       |
| 1107 0305001121 *            |          | ZR   | X5,F,NUSRXJ                                |
| * DO MONEY: NU.GIVES         |          |      |  |
| 1110 S116000054 X            |          | SA1  | $\bar{A}RGL+DTM+\bar{3}$                   |
| 7130001750                   |          | SA1  | X1   |
| 27101                        |          | SX3  | 1000                                       |
| 10611                        |          | IMPY | X1,X1,X3 .. Xj=X1*X3                       |
| 1112 S160000010 X            |          | BX6  | X1   |
| 21163                        |          | SA6  | PARAM+NU.GIVS+XJLOC                        |
| 10611                        |          | AX1  | 3 .. DIVIDE BY 8                           |
| 1113 S160000012 X            |          | BX6  | X1   |
|                              |          | SA6  | PARAM+NU.WRNS+XJLOC .. AND SET WARNING     |
| 1114 0305001121 *            |          | SX5  | X5-1                                       |
|                              |          | ZR   | X5,F,NUSRXJ                                |
| * DO ACCOUNT NUMBER: NU.ACCT |          |      |  |
| 1115 S3110                   |          | SA1  | $\bar{A}RGL+DTM+\bar{4}$                   |
| 10611                        |          | SA1  | X1   |
| 5166000005 X                 |          | BX6  | X1   |
|                              |          | SA6  | PARAM+XJLOC+NU.ACCT                        |
| 1116 7255777776              |          | SX5  | X5-1                                       |
| 0305001121 *                 |          | ZR   | X5,F,NUSRXJ                                |
| * DO SUBUSERS COUNT: NU.SBU  |          |      |  |
| 1117 S110000056 X            |          | SA1  | $\bar{A}RGL+DTM+\bar{5}$                   |
| 53110                        |          | SA1  | X1   |
| 10611                        |          | BX6  | X1   |
| 1120 S160000011 X            |          | SA6  | PARAM+XJLOC+NU.SBU                         |
|                              |          | S*   | *  |
| 1121 6110000000 X            | F.NUSRXJ | DOXJ | $\bar{C}P\bar{I}NUSR!+NUBD+IND.CX.PRMD$    |
| 1130 0200000000 X            |          | JP   | FEDEXIT                                    |

1131 0000000240000000003 X NUBD VFD 30/20,30/XJLOC+PARAM  
1132 0000000000000001137 + NEWUBLK ITEMS NEWUB0,NEWUB1,NEWUB2,NEWUB3,NEWUB4  
1137 NEWUB0 BSS 1 . DUMMY

\*  
\*  
\* THE TYPE INDEX REFERS TO TWENTY WORD BLOCKS OF DEFAULT PARAMETERS  
\*  
\*

|          |       |                   |
|----------|-------|-------------------|
| NUSRPARS | MACRO | DIRSIZ            |
| BSSZ     |       | ?                 |
| VFD      |       | 60/DIRSIZ         |
| BSSZ     |       | NU.SIZE=NU.DSIZ-1 |
| ENDM     |       |                   |

\*  
\*  
\*  
\*  
\*

|          |          |          |
|----------|----------|----------|
| NEWUB1   | NUSRPARS | 608      |
| NEWUB2   | NUSRPARS | 1608     |
| NEWUB3   | NUSRPARS | 3608     |
| NEWUB4   | NUSRPARS | 7608     |
| F.NUERR1 | JP       | TOOFEW   |
| F.NUERR2 | JP       | TOOMANY  |
| F.NUERR3 | S81      | ?        |
| F.NUERR4 | JP       | TOOSMALL |
|          | S81      | ?        |
|          | JP       | TOOBIG   |

1250 0200001254 +  
1251 0200001262 +  
1252 6110000002 0206001271 +  
1253 6110000002 0206001305 +  
1254 6110001257 +  
1261 0200000000 X  
1262 6110001265 +  
1270 0200000000 X  
1271 76610 5160000126 X  
1272 6170001273 +  
1273 7110001321 + 63110  
1276 5110000126 X 6110000024  
1277 6170001300 +  
1300 7110001323 + 63110  
1303 6170001304 +  
1304 0200000000 X  
1305 76610 5160000126 X  
1306 6170001307 +  
1307 7110001321 + 63110  
1312 5110000126 X 6110000024  
1313 6170001314 +  
1314 7110001325 + 63110

|          |        |                       |
|----------|--------|-----------------------|
| TOOFEW   | MSGOUT | (TOO FEW PARAMETERS)  |
| TOOMANY  | MSGOUT | (TOO MANY PARAMETERS) |
| TOOSMALL | SX6    | ?                     |
|          | S81    | TEMPH01               |
|          | CALL   | SETPRNT               |
|          | SX1    | TOSML1                |
|          | CALL   | DISLINE?X1,20         |
|          | S81    | TEMPH01               |
|          | CALL   | 20                    |
|          | S81    | OCTNPK                |
|          | CALL   | TOSML2                |
|          | SX1    | DISLINE?X1,40         |
|          | CALL   | FINPRNT               |
|          | S81    | ?                     |
|          | CALL   | TEMPH01               |
|          | S81    | SETPRNT               |
|          | SX1    | TOBIG1                |
|          | CALL   | DISLINE?X1,20         |
|          | S81    | TEMPH01               |
|          | CALL   | 20                    |
|          | S81    | OCTNPK                |
|          | CALL   | TOBIG2                |
|          | SX1    | DISLINE?X1,40         |

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

|      |                      |        |      |                  |
|------|----------------------|--------|------|------------------|
| 1317 | 6170001320 +         |        | CALL | FINPRNT          |
| 1320 | 0200000000 X         |        | JP   | FEEXIT           |
| 1321 | 20012201150524052255 | TOSML1 | DIS  | ,,PARAMETER ,    |
| 1323 | 55112355241717552315 | TOSML2 | DIS  | ,, IS TOO SMALL. |
|      | 1321 +               | TOBIG1 | EQU  | TOSML1           |
| 1325 | 55112355241717550211 | TOBIG2 | DIS  | ,, IS TOO BIG.   |
|      | *                    |        |      | *                |
|      | *                    |        |      | *                |
|      | *                    |        |      | *                |
|      | *                    |        |      | *                |
|      | *                    |        |      | *                |

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REMOVE A USER AND ALL DEPENDENCIES

|      |              |         |          |                                      |
|------|--------------|---------|----------|--------------------------------------|
| 1327 | 01           | F.KILLU | FUNCTION | KILLUSER,I,IVTYPE                    |
| 1331 | 5110000051 X |         | SA1      | ARGL,DTR                             |
|      | 53110        |         | SA1      | X1                                   |
| 1332 | 6170001333 + |         | CALL     | FORDIR                               |
| 1333 | 5160000126 X |         | SA6      | TEMPWD1                              |
|      | 6116000000 X |         | SETXJ    | DR:UACCI,CX,PRMD,TEMPWD1+IND,CX,NLKY |
| 1340 | 0130000000 X |         | XJ       | XJLOC,,RET1CAP                       |
| 1344 | 6110000006   |         | CALLR    | CMMDS,6 (KILL OBJ)                   |
| 1346 | 6110000000 X |         | DOXJ     | DR1RMOE1,CX,PRMD,TEMPWD1+IND,CX,NLKY |
| 1355 | 0200000000 X |         | JP       | FEEXIT                               |
|      | *            |         |          | *                                    |
|      | *            |         |          | *                                    |
|      | *            |         |          | *                                    |
|      | *            |         |          | *                                    |

CHANGE PASS WORD

|      |              |         |          |                              |
|------|--------------|---------|----------|------------------------------|
| 1356 | 01           | F.CHPSW | FUNCTION | CHANGEPASS,I,IVTYPE          |
| 1360 | 5110000051 X |         | SA1      | ARGL,DTR                     |
|      | 53110        |         | SA1      | X1                           |
| 1361 | 5251000001   |         | SAS      | X1*1                         |
|      | 4306*        |         | MX0      | 4                            |
| 1362 | 5160000126 X |         | BX6      | -X0*X6                       |
|      | 6116000000 X |         | SA6      | TEMPWD1                      |
| 1371 | 0200000000 X |         | DOXJ     | CP:NPSWI,CX,PRMD,TEMPWD1+IND |
|      | *            |         | JP       | FEEXIT                       |
|      | *            |         |          | *                            |
|      | *            |         |          | *                            |
|      | *            |         |          | *                            |

(TOO MANY CHARACTERS)  
FEEXIT

PUT OBJECT AT CX.HOLD INTO 1ST ARGUMENT LOCATION

|      |              |         |          |          |
|------|--------------|---------|----------|----------|
| 1401 | 01           | F.CPUTI | FUNCTION | PUTOBJ,I |
| 1403 | 7110000000 X |         | SX1      | CX,HOLD  |
|      | 66150        |         | SB1      | BO       |
| 1404 | 6170004300 + |         | CALLR    | PUTOBJ   |
| 1406 | 0200000000 X |         | JP       | FEEXIT   |
|      | *            |         |          | *        |
|      | *            |         |          | *        |
|      | *            |         |          | *        |
|      | *            |         |          | *        |

CONSTRUCT A VARIABLE LOC

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|                   |        |          |                   |
|-------------------|--------|----------|-------------------|
| 1407 01           | F.VARL | FUNCTION | VARIABLE,I,IVTYPE |
| 1411 511000051 X  |        | SAI      | ARGLL,DTM         |
| 1412 6170001413 * |        | CALLR    | FINDVAR           |
| 1413 0720000723 * |        | LT       | B2,B0,EVALVDX     |
| 43052             |        | MX0      | 60-18             |
|                   |        | BX1      | =X0*X1            |
| 1414 20122        |        | LX1      | I8                |
| 76620             |        | SX6      | I2                |
| 12616             |        | BX6      | X1*X6             |
| 1415 5160000077 X |        | SA4      | VAL,DTM           |
| 7116000001        |        | SX1      | I                 |
| 1416 76200        |        | SX2      | I0                |
| 7130000015        |        | SX3      | VLVTYPE           |
| 1417 0200000544 * |        | JP       | FNCEVALS          |

\* \* \* \* \* CONSTRUCT SCAN LIST LOC. USING STANDARD SCAN LIST

|                   |         |          |                       |
|-------------------|---------|----------|-----------------------|
| 1420 01           | F.STSCN | FUNCTION | STANSCNLST,I,IVTYPE   |
| 1422 6110000000 X |         | CALLR    | MVCAP,CX,SCNL,VAL,CAB |
| 1425 511000051 X  |         | SAI      | ARGLL,DTM             |
| 0200001434 *      |         | JP       | F.SCNLSI              |

\* \* \* \* \* CONSTRUCT SCAN LIST LOC. USING GIVEN SCAN LIST

|                   |          |          |                              |
|-------------------|----------|----------|------------------------------|
| 1426 02           | F.SCNLS  | FUNCTION | SCANLSTLOC,2,OBJVTYPE,IVTYPE |
| 1430 511000057 X  |          | SAI      | ARGLL,CAP                    |
| 63110             |          | CALLR    | MVCAP,X1,VAL,CAP             |
| 1433 511000052 X  |          | SAI      | ARGLL,DTM+1                  |
| 1434 53110        | F.SCNLSI | SAI      | X1                           |
| 1435 6170001436 * |          | CALL     | SLSID                        |
| 1436 6170001437 * |          | CALL     | PKID                         |
| 1437 5160000077 X |          | SA6      | VAL,DTM                      |
| 7116000001        |          | SX1      | I                            |
| 1440 7120000001   |          | SX2      | I                            |
| 7130000006        |          | SX3      | SLVTYPE                      |
| 1441 0200000544 * |          | JP       | FNCEVALS                     |

\* \* \* \* \* CONSTRUCT A DIRECTORY LOC. USING NULL ACCESS KEY

|                   |         |          |                            |
|-------------------|---------|----------|----------------------------|
| 1442 02           | F.DRCTN | FUNCTION | DIRLOCNL,2,OBJVTYPE,IVTYPE |
| 1444 6110000000 X |         | CALLR    | MVCAP,CX,NLKY,VAL,CAP+1    |
| 1447 0200001455 * |         | JP       | F.DRCTYI                   |

\* \* \* \* \* CONSTRUCT A DIRECTORY LOC. USING GIVEN ACCESS KEY

|                   |         |          |                                   |
|-------------------|---------|----------|-----------------------------------|
| 1450 03           | F.DRCTY | FUNCTION | DIRLOC,3,OBJVTYPE,IVTYPE,OBJVTYPE |
| 1452 5110000061 X |         | SAI      | ARGL,CAP+2                        |
| 63110             |         | CALLR    | MVCAP,X1,VAL,CAP+1                |

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|      |              |          |          |                  |
|------|--------------|----------|----------|------------------|
| 1455 | 5110000057 X | F.DRCTY1 | SA1      | ARGL,CAP         |
|      | 63110        |          | CALLR    | MVCAP,X1,VAL,CAP |
| 1460 | 5110000052 X | SA1      | SA1      | ARGL,DTM+1       |
|      | 53110        |          | CALL     | X1               |
| 1461 | 6170001462 * | SA1      | CALL     | BLSID            |
| 1462 | 6170001463 * | SA1      | CALL     | PKID             |
| 1463 | 5160000077 X | SA6      | VAL      | VAL,DTM          |
|      | 7110000001   | SX1      | 1        |                  |
| 1464 | 7120000062   | SX2      | 2        |                  |
|      | 7130000007   | SX3      | DLCVTYPE |                  |
| 1465 | 0200000544 * | JP       | FNCEVALS |                  |

\* \* \* \* \* GENERATE A PARAMETER

|      |              |         |          |             |
|------|--------------|---------|----------|-------------|
| 1466 | 00           | F.PARAM | FUNCTION | PARAMETER,0 |
| 1470 | 7110005001   |         | SX1      | 5001B       |
|      | 0200000000 X |         | RTNR     |             |

\* \* \* \* \* USER ENTERS NAME FOR TEMPORARY DIRECTORY

|      |              |          |              |                                |
|------|--------------|----------|--------------|--------------------------------|
| 1471 | 01           | F.TEMP   | FUNCTION     | LOGON1,1,OBJTYPE               |
| 1473 | 5110000051 X | SA1      | ARGL,DTM     |                                |
|      | 53110        | SA1      | X1           |                                |
|      | 63110        | CALLR    | DISPLAY,X1,B |                                |
| 1476 | 0312001501 * | NZ       | X2,F.TEMP01  |                                |
|      | 0301001501 * | ZR       | X1,F.TEMP01  |                                |
| 1477 | 5110000051 X | SA1      | ARGL,DTM     |                                |
|      | 53110        | SA1      | X1           |                                |
| 1500 | 0200000000 X | JP       | LOGON        |                                |
|      |              |          |              |                                |
| 1501 | 6110001504 * | F.TEMP01 | MSGOUT       | (BAD TEMPORARY DIRECTORY NAME) |
| 1507 | 0200000000 X |          | JP           | FEDEXIT                        |

\* \* \* \* \* CALL TO A SUBPROCESS, BEAD TYPE

|      |              |        |                              |                   |
|------|--------------|--------|------------------------------|-------------------|
| 1510 | 01           | F.CMMD | FUNCTION                     | COMMAND,1,OBJTYPE |
| 1512 | 5110000057 X | SA1    | ARGL,CAP                     |                   |
|      | 63110        | CALLR  | MVCAP,X1,CX,TEMP             |                   |
| 1515 | 5110000057 X | SA1    | ARGL,CAP                     |                   |
|      | 63110        | CALLR  | MVCAP,X1,CX,SBPD             |                   |
| 1520 | 6170004633 * | CALLR  | BEADP GET 1ST PARAM          |                   |
| 1522 | 10611        | BX6    | X1                           |                   |
|      | 5160000126 X | SA6    | TEMPWD1                      |                   |
| 1523 | 6170004633 * | CALLR  | BEADP GET 2ND PARAM          |                   |
| 1525 | 10611        | BX6    | X1                           |                   |
|      | 5160000127 X | SA6    | TEMPWD2                      |                   |
| 1526 | 6110000001   | CALLR  | CMMDS,1 CREATE THE SUBPROCES |                   |
| 1530 | 6110000000 X | SETXJ  | CX,TEMP                      |                   |
| 1533 | 5110000126 X | SA1    | TEMPWD1                      |                   |

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5120000127 X  
1534 0200000000 X

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SA2 TEMPWD2  
RTNR

| CREATE A NEW VARIABLE              |              |          |                     |                              |            |
|------------------------------------|--------------|----------|---------------------|------------------------------|------------|
| 1535 01                            | F.NEWV       | FUNCTION | NEWVAR,1,IVTYPE     |                              |            |
| 1537 5110000051 x                  |              | SA1      | ARGL,DTM            |                              |            |
| 1540 6170001541 *                  |              | CALL     | FINDVAR             |                              |            |
| 1541 0620001557 *                  |              | GE       | B2,B0,NEWV3         |                              |            |
| 6110777776 x                       |              | SBI      | NVARS-1             |                              |            |
|                                    |              |          | ALREADY EXISTS      |                              |            |
| 1542 5111000000 x                  | *            | NEWV1    | SA1                 | V,NAME+B1                    | TRY A SLOT |
| 0311001547 *                       |              |          | NZ                  | X1,NEWV2                     | IN USE     |
| 1543 0331001547 *                  | *            |          | NG                  | X1,NEWV2                     | IN USE     |
|                                    |              |          |                     |                              |            |
| 1544 53110                         | 5110000051 x | SA1      | ARGL,DTM            |                              |            |
| 5211000001                         |              | SA1      | X1                  |                              |            |
|                                    |              | SA1      | X1+1                | PICK UP NEW NAME             |            |
| 43004                              |              | MX0      | 4                   | MASK OFF UPPER 4 BITS        |            |
| 1545 15610                         | 5161000000 x | BX6      | -X0*X1              |                              |            |
| 76600                              |              | SA6      | V,NAME+B1           | DEFINE THE VARIABLE          |            |
| 1546 5161000000 x                  | 0200000000 x | SX6      | R0                  |                              |            |
|                                    |              | SA4      | V,DVAL+B1           |                              |            |
|                                    |              | JP       | FEXIT               |                              |            |
| 1547 6111777776                    | *            | NEWV2    | SBI                 | B1-1                         |            |
| 0610001542 *                       |              |          | GE                  | B1,B0,NEWV1                  |            |
| 1550 6110001553 *                  |              | MSGOUT   |                     | (NO ROOM FOR A NEW VARIABLE) |            |
| 1556 0200000000 x                  |              | JP       |                     | FEXIT                        |            |
| 1557 6110001562 *                  | *            | NEWV3    | MSGOUT              | (VARIABLE ALREADY EXISTS)    |            |
| 1565 0200000000 x                  |              |          | JP                  |                              | FEXIT      |
|                                    |              |          |                     |                              |            |
| MOVE A DATUM TO A DATUM LOC        |              |          |                     |                              |            |
| 1566 02                            | F.MVD        | FUNCTION | BUTDTM,2,DTMVTYPE,0 |                              |            |
| 1570 5110000051 x                  |              | SA1      | ARGL,DTM            |                              |            |
| 6110000001                         |              | SB1      | 1                   |                              |            |
| 1571 6170004202 *                  |              | CALLR    | BUTDTM              |                              |            |
| 1573 0200000000 x                  |              | JP       | FEXIT               |                              |            |
|                                    |              |          |                     |                              |            |
| MOVE A CAPABILITY TO AN OBJECT LOC |              |          |                     |                              |            |
| 1574 02                            | F.MVC        | FUNCTION | BUTCAP,2,OBJVTYPE,0 |                              |            |
| 1576 5110000057 x                  |              | SA1      | ARGL,CAP            |                              |            |
| 6110000001                         |              | SB1      | 1                   |                              |            |
| 1577 6170004300 *                  |              | CALLR    | BUTOBJ              |                              |            |
| 1601 0200000000 x                  |              | JP       | FEXIT               |                              |            |
|                                    |              |          |                     |                              |            |
| KILL A VARIABLE                    |              |          |                     |                              |            |
|                                    |              |          |                     |                              |            |

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|                   |         |          |                                |
|-------------------|---------|----------|--------------------------------|
| 1602 01           | F.KILLV | FUNCTION | KILLVAR#1.IDVTYPE              |
| 1604 5110000051 x |         | SA1      | ARGL,DTM                       |
| 1605 6170001606 * |         | CALL     | FINDVAR                        |
| 1606 0720000723 * |         | LT       | B2,B0,EVALVDX NO SUCH VARIABLE |
| 1607 0721001611 * |         | SB1      | NPERMV                         |
| 1608 76600        |         | LT       | B2,B1,KILLVI PERMANENT         |
| 1610 5162000000 x |         | SX6      | 00                             |
| 1611 0200000000 x |         | SA6      | V.NAME+B2                      |
|                   |         | JP       | FEXIT                          |
| 1612 6110001614 * | KILLVI  | MSGOUT   | (VARIABLE IS PERMANENT)        |
| 1617 0200000000 x |         | JP       | FEXIT                          |
| *                 | *       | *        | *                              |
| *                 | *       | *        | *                              |
| *                 | *       | *        | *                              |
| *                 | *       | *        | *                              |

DISPLAY AN OBJECT

|                   |         |          |  |
|-------------------|---------|----------|--|
| 1620 01           | F.DISP  | FUNCTION | DISPLAY#1.OBJVTYPE                     |
| 1622 6110000000 x |         | DOXJ     | EC:DSCPI,ARGL,CAP,IND                  |
| 1630 76200        |         | SX2      | B0 ( FOR NAMEVEC )                     |
| 1631 43152        |         | MX1      | 60-18                                  |
| 1632 15161        |         | BX1      | X1*X6 ( X1 NOW HAS TYPE FIELD )        |
| 1633 6110001635 * |         | CALLR    | NAMEVEC#F.DISPLS                       |
| 1634 0201001653 * |         | ZR       | X1,F.DISDAB (ASSUME FUNDING DIRECTORY) |
| 1635 63170        |         | SB1      | SL                                     |
| 1636 0210000000   |         | JP       | SL                                     |
| 1637              |         |          |  |
| *                 | F.DISPS | BSS      | 60/1767B,60/F.DISAB (ALLOC BLOCK)      |
| *                 |         | VFD      |  |
| *                 |         | DATA     | 6                                      |
| *                 | *       | *        | *                                      |
| *                 | *       | *        | *                                      |
| *                 | *       | *        | *                                      |

DISPLAY AN ALLOC BLOCK

|                  |         |       |                                  |
|------------------|---------|-------|----------------------------------|
| 1640 611000000 x | F.DISAB | DOXJ  | EC:DISAB#1,ARGL,CAP,IND,XJLOC,*8 |
| 1647 611000000 x |         | CALLR | DISWDS,XJLOC,*8                  |
| 1652 020000000 x |         | JP    | FEXIT                            |
| *                | *       | *     | *                                |
| *                | *       | *     | *                                |
| *                | *       | *     | *                                |

NOT AN ALLOC BLOCK, SO ASSUME FUNDING DIRECTORY

|                   |          |        |                        |
|-------------------|----------|--------|------------------------|
| 1653 611000010    | F.DISDAB | SETRET | 6,XJLOC,B0,B0          |
| 1656 611000000 x  |          | SETXJ  | DA:DSP#1,ARGL,CAP,*IND |
| 1661 0130000000 x |          | XJ     | XJLOC,,,RETLOC         |
| 1665 611000000 x  |          | CALLR  | DISWDS,XJLOC,*8        |
| 1670 020000000 x  |          | JP     | FEXIT                  |
| *                 | *        | *      | *                      |
| *                 | *        | *      | *                      |
| *                 | *        | *      | *                      |

PRINT A SEQ OF WDS IN FULL WD MODE  
B1 ADDRESS 1ST WD  
B2 COUNT

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|      |              |         |       |                   |
|------|--------------|---------|-------|-------------------|
| 1671 | 76610        | DISWDS  | SX6   | \$1               |
|      | 5160000127 X |         | SA6   | TEMPWD2           |
|      | 76620        |         | SX6   | \$2               |
| 1672 | 5160000126 X |         | SA6   | TEMPWD1           |
|      | 0306000000 X | *       | ZR    | X6,FEXIT          |
| 1673 | 5110000127 X | DISWDS1 | SA1   | TEMPWD2           |
|      | 63110        |         | CALLR | SPCPRT,X1,FWOPMDE |
| 1676 | 6170001677 * |         | CALL  | PWRDSSTP          |
| 1677 | 0200001673 * |         | JP    | DISWDS1           |
|      | *            |         |       | *                 |
|      | *            |         |       | *                 |
|      | *            |         |       | *                 |
|      | *            |         |       | *                 |

PRINT A DATUM

|      |              |        |          |                   |
|------|--------------|--------|----------|-------------------|
| 1700 | 01           | F,PWRD | FUNCTION | PDATUM,1,DTMVTYPE |
| 1702 | 5110000051 X |        | SA1      | ARGL,DTM          |
|      | 5126000000 X |        | SA2      | PMODE             |
| 1703 | 63110        |        | CALLR    | SPCPRT,X1,X2      |
| 1705 | 0200000000 X |        | JP       | FEXIT             |
|      | *            |        |          | *                 |
|      | *            |        |          | *                 |
|      | *            |        |          | *                 |
|      | *            |        |          | *                 |

PRINT WITH A DATUM LOC AND WORD COUNT

|      |              |         |          |                      |
|------|--------------|---------|----------|----------------------|
| 1706 | 02           | F,PWRDS | FUNCTION | PDATUMS:2,0,DTMVTYPE |
| 1710 | 5110000052 X |         | SA1      | ARGL,DTM*I           |
|      | 53110        |         | SA1      | X1                   |
| 1711 | 5160000126 X |         | BX6      | X1                   |
|      | 10611        |         | SA6      | TEMPWD1              |
|      | 0306000000 X |         | ZR       | SAVE COUNT           |
| 1712 | 0336000000 X |         | NG       | X6,RTNR ALL DONE     |
|      | *            |         |          | X6,RTNR ALL DONE     |
|      | *            |         |          | *                    |

|      |              |  |     |              |
|------|--------------|--|-----|--------------|
| 1713 | 7221777767   |  | SA1 | ARGL,TYP     |
|      | 0306001721 * |  | SX2 | X1-FLCVTYPE  |
| 1714 | 7221777766   |  | ZR  | X2,PWRDSF    |
|      | 0306002004 * |  | SX2 | X1-SBNVTYPE  |
| 1715 | 7221777765   |  | ZR  | X2,PWRDSC    |
|      | 0306001721 * |  | SX2 | X1-OBXVTYPE  |
| 1716 | 7221777764   |  | ZR  | X2,PWRDSF    |
|      | 0306002004 * |  | SX2 | X1-SBXVTYPE  |
| 1717 | 7221777763   |  | ZR  | ZR,PWRDSC    |
|      | 0306002017 * |  | SX2 | X1-RLCVTYPE  |
| 1720 | 0200000556 * |  | ZR  | X2,PWRDSR    |
|      | *            |  | JP  | FNCEVALX     |
|      | *            |  |     | REGISTER LOC |
|      | *            |  |     | BAD ARGUMENT |
|      | *            |  |     | *            |

FILE LOC TYPE

USER CORE TYPE

INDEXED OBJECT

INDEXED SUBPROCESS

REGISTER LOC

BAD ARGUMENT

PRINT DATA FROM A FILE

|      |              |        |     |                      |
|------|--------------|--------|-----|----------------------|
| 1721 | 5110000051 X | PWRDSF | SA1 | ARGL,DTM             |
|      | 53110        |        | SA1 | X1                   |
|      | 10611        |        | BX6 | X1                   |
| 1722 | 5160000127 X | *      | SA6 | TEMPWD2 FILE ADDRESS |
|      |              |        | SA2 | ARGL,CAP             |
|      | *            |        |     | *                    |
|      | *            |        |     | *                    |
|      | *            |        |     | *                    |

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|      |              |              |          |                            |   |
|------|--------------|--------------|----------|----------------------------|---|
| 1723 | 6170004551 + |              | CALLR    | TESTDF                     |   |
| 1725 | 0301001745 + |              | ZR       | X1,PWRDSEF                 | DISK FILE                                   |
|      | *            | *            | *        |                            | PROBABLY ECS FILE                           |
| 1726 | 6110000000 X |              | PWRDSEF  | DOXJ                       | EC:READI,ARGL,CAP+IND,TEMPWD2+IND,TEMPWD3,1 |
| 1740 | 5110000000 X | 6110000130 X |          | SA1                        | PMODE                                       |
|      | *            |              | CALLR    | SPCPRNT,TEMPWD3,X1         |   |
| 1743 | 6170001744 + |              | CALL     | PWRDSSTP                   |   |
| 1744 | 0200001726 + |              | JP       | PWRDSEF                    |   |
|      | *            | *            | *        |                            | DISK FILE                                   |
|      | *            | *            | *        |                            | ATTACHING DONE IN 128 WORD UNITS            |
| 1745 | 5110000057 X | 6110100022 + | PWRDSEF  | SA1                        | ARGL,CAP                                    |
|      | *            |              | CALLR    | OPENDF,DF:OPROT,X1,CX,TEMP |   |
| 1751 | 5110000127 X | 43065        |          | SA1                        | TEMPWD2                                     |
|      | *            | 15610        |          | MX6                        | 60-7  |
| 1752 | 14666        | 7266000200   |          | BX6                        | -X0*X1                                      |
| 1753 | 5160000131 X |              |          | SX6                        | -X6   |
|      | *            |              |          | SA6                        | 200B+X6                                     |
| 1754 | 5160000132 X | 11601        |          | BX6                        | NUMBER WORDS LEFT IN                        |
|      | *            |              |          | SA6                        | TEMPWD4 CURRENT 128 WORD UNIT               |
| 1755 | 5110000132 X | 6170000000 X | PWRDSEF1 | SA1                        | TEMPWD5 ATTACH A BLOCK                      |
|      | *            |              | CALLR    |                            | ATCHBLK                                     |
| 1757 | 6110000000 X |              | PWRDSEF2 | DOXJ                       | DF:READI,CX,TEMP,TEMPWD2+IND,TEMPWD3,1      |
| 1771 | 5110000000 X | 6110000130 X |          | SA1                        | PMODE                                       |
|      | *            |              | CALLR    | SPCPRNT,TEMPWD3,X1         |   |
| 1774 | 6170001775 + |              | CALL     | PWRDSSTP                   |   |
| 1775 | 5110000131 X | 7261777776   |          | SA1                        | TEMPWD4                                     |
| 1776 | 54610        | 7266777776   |          | SX6                        | X1=1  |
| 1777 | 0326001757 + |              |          | SA6                        | A1  |
|      | *            |              |          | SX6                        | X6=1  |
| 2001 | 5110000132 X | 6170000000 X | PL       | X6,PWRDSEF2                |   |
|      | *            | 716000200    |          |                            | ATCHBLK                                     |
| 2002 | 36616        |              | CALLR    | TEMPWD5                    |   |
|      | 54610        |              | SA1      | 200B                       |   |
|      |              |              | SX6      | X1+X6                      | STEP ADDRESS OF ATTACHED BLOCK              |
| 2003 | 5160000131 X | 716000200    |          | SA6                        | A1  |
|      | 0206001755 + |              | SA6      | 200B                       | RESET COUNT OF WORDS LEFT IN 128 WORD UNIT  |
|      | *            |              | JP       | PWRDSEF1                   |   |
|      | *            | *            | *        |                            | PRINT FROM USER CORE                        |
| 2004 | 5110000051 X |              | PWRDSC   | SA1                        | ARGL,DTM                                    |

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|      |              |          |                        |                         |
|------|--------------|----------|------------------------|-------------------------|
| 2005 | 5120000000 x |          | SA1                    | X1                      |
| 2006 | 5160000127 x |          | SA2                    | UMEMRA                  |
| 2007 | 7110000001   | *        | IX6                    | X1+X2                   |
|      | 5120000127 x | PWRDSCI  | SA6                    | TEMPWD2 CORE ADDRESS    |
| 2010 | 6170000000 x |          | SX1                    | I ( READ CORE )         |
| 2012 | 5110000000 x |          | SA2                    | TEMPWD2                 |
|      | 6170000000 x | CALLR    | ASKBDG                 |                         |
| 2015 | 6170002016 + |          | SA6                    | PMODE                   |
| 2016 | 0200002007 * |          | CALLR                  | SPCPRT!DBGBLK,X1        |
|      |              |          | CALL                   | PWRDSSTP                |
|      |              |          | JP                     | PWRDSCI                 |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
| 2017 | 5110000051 x | PWRDSR   | SA1                    | ARGL+DTM                |
|      | 53110        |          | SA1                    | X1                      |
|      | 10611        |          | BX6                    | X1                      |
| 2020 | 5160000127 x | *        | SA6                    | TEMPWD2 REGISTER INDEX  |
| 2021 | 7110000003   | PWRDSRI  | SX1                    | I (READ A REGISTER)     |
|      | 5120000127 x |          | SA2                    | TEMPWD2                 |
| 2022 | 0332001061 + |          | NG                     | X2,F,REGLI              |
|      | 7245777757   |          | SX4                    | X2=208                  |
| 2023 | 0324001061 + |          | PL                     | X4,F,REGLI              |
|      | 6170000000 x | CALLR    | ASKBDG                 |                         |
| 2025 | 6110000000 x | CALLR    | SPCPRT!DBGBLK,FWDPMODE |                         |
| 2030 | 6170002031 + | CALL     | PWRDSSTP               |                         |
| 2031 | 0200002021 + | JP       | PWRDSCI                |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
| 2032 | 5110000127 x | PWRDSSTP | SA1                    | TEMPWD2                 |
|      | 7120000001   |          | SA2                    | I                       |
| 2033 | 36612        |          | IX6                    | X1+X2                   |
|      | 54610        |          | SA6                    | A1                      |
|      | 5110000126 x |          | SX1                    | TEMPWD1                 |
| 2034 | 726177776    |          | SX6                    | X1=1                    |
|      | 54610        |          | SA6                    | A1                      |
| 2035 | 0306000000 x |          | ZR                     | X6,FEXIT                |
|      | 0334000000 x |          | NG                     | X6,FEXIT                |
| 2036 | 0270000000   |          | JP                     | B7                      |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
|      |              | *        |                        |                         |
| 2037 | 01           | F:DCAP   | FUNCTION               | SPCAP,I,OBJVTYPE        |
| 2041 | 6110000000 x |          | 00XJ                   | EC:DCP!,ARGL,CAP+IND    |
| 2047 | 5160000126 x |          | SA6                    | TEMPWD1                 |
|      | 5170000127 x |          | SA7                    | TEMPWD2                 |
| 2050 | 6110000126 x |          | CALLR                  | SPCPRT!TEMPWD1,FWDPMODE |

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2053 6110000127 X  
2056 0200000000 X

CALLR JP SPCPRNT!TEMPWD2,FWDPMODE  
FEXIT

2057 01  
2061 5130000051 X  
53330  
2062 5140000000 X  
36334  
2063 6110000000 X  
2072 6110000126 X  
2075 6110000127 X  
2100 6110000130 X  
2103 0200000000 X

\*  
\*  
\*  
\*  
\* F.VIEW FUNCTION VIENSTACK,1,DTMVTYPE  
SA3 ARG1,DTM  
SA3 X3  
SA4 VIEWX  
IX3 X3+X4  
DOXJ EC:DSSE!,TEMPWD1,X3  
CALLR SPCPRNT!TEMPWD1,FWDPMODE  
CALLR SPCPRNT!TEMPWD2,FWDPMODE  
CALLR SPCPRNT!TEMPWD3,FWDPMODE  
JP FEXIT

LOOK AT CALL STACK

2104 01  
2106 5110000051 X  
53110  
2107 6170002110 +  
2110 5160000126 X  
6116000000 X  
2115 0130000000 X  
2121 6110000000 X  
2127 0200000000 X

\*  
\*  
\*  
\* F.NEWDF FUNCTION NEWDSKFILE,1,DLCVTYPE  
SA1 ARG1,DTM  
SA1 X1  
CALL FORDIR  
SA6 TEMPWD1  
SETXJ DR:CRFL1,ARG1,CAP+IND,TEMPWD1+IND,SHPBLKD+IND  
XJ XJLOC,,,RET1CAP  
DOXJ DF:CLOSE!,CX,TEMP  
JP FEXIT

CREATE A NEW DIRECTORY

2130 03  
2132 5110000051 X  
53110  
2133 6170002134 +  
2134 5160000126 X  
5146000052 X  
2135 5150000053 X  
6116000000 X  
2144 0130000000 X  
2150 6110000000 X  
2156 0200000000 X

\*  
\*  
\* F.NEWDR FUNCTION NEWDIRC1Y,3,DLCVTYPE,DTMVTYPE,DTMVTYPE  
SA1 ARG1,DTM  
SA1 X1  
CALL FORDIR  
SA6 TEMPWD1  
SA4 ARG1,DTM+1  
SA5 ARG1,DTM+2  
SETXJ DR:CRDRI,ARG1,CAP+IND,TEMPWD1+IND,X4+IND,X5+IND  
XJ XJLOC,,,RET1CAP  
DOXJ DR:CLDR1,CX,TEMP  
JP FEXIT

KILL A DISK FILE

2157 01  
2161 6110002164 +  
2170 0200000000 X

\*  
\* F.KLLDF FUNCTION KILLDSKF,1,DLCVTYPE  
MSGOUT (KILL DISK FILE NOT IMPLEMENTED)  
JP FEXIT

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|                   |   |         |  |
|-------------------|---|---------|--|
|                   | * |         | KILL A DIRECTORY   |
| 2171 01           | * | F.KLLDR | FUNCTION   |
| 2173 6110002176 + | * |         | MSGOUT   |
| 2202 0600000000 X | * |         | JP   |
|                   | * |         | KILLDIR?1,DLCVTYPE<br>(KILL DIRECTORY NOT IMPLEMENTED)                                     |
|                   | * |         | FEDEXIT  |
|                   | * |         | COPY A NAMED READ EC'S FILE TO A DISK<br>FILE. TEST ONLY HAS A LARGE BUFFER<br>IN LOW CORE |
|                   | * |         | CPYBFSH,CPYBFBL,CPYBFBD  |
|                   | * |         | READ   |
| 2203 03           | * | F.CPYBF | FUNCTION   |
| 2205 5110000051 X | * |         | CPYBDFILE,3,IVTYPE,IVTYPE,DLCVTYPE   |
| 53110             | * |         | ARGL,DTM   |
| 63110             | * |         | X1   |
| 2210 0312002312 + | * |         | DSPLYW,X1,7  |
| 10611             | * |         | X2,F.CPYBFE  |
| 2211 5160000126 X | * |         | X1 TOO MANY CHARS  |
| 5110000052 X      | * |         | TEMPWDI  |
| 2212 53110        | * |         | ARGL,DTM+1   |
| 63110             | * |         | X1   |
| 2215 0312002312 + | * |         | DSPLYW,X1,8  |
| 10211             | * |         | X2,F.CPYBFE  |
| 2216 5110000126 X | * |         | X1 TOO MANY CHARS  |
| 6115000000 X      | * |         | TEMPWDI  |
| 2217 6170000002 X | * |         | XJLOC  |
| 68660             | * |         | CX,TEMP*2  |
| 2220 0130000000 X | * |         | S86  |
| 2223 6110000000 X | * |         | XJ   |
| 6176000002 X      | * |         | READ   |
| 2224 6160000001   | * |         | S87  |
| 2225 0130000000 X | * |         | S86  |
|                   | * |         | XJ   |
| 2230 5110000003 X | * |         | READ   |
| 26136             | * |         | S81  |
| 73610             | * |         | LXI  |
| 2231 5160000000 X | * |         | SX6  |
|                   | * |         | X1 BLOCK SIZE  |
|                   | * |         | CPYBFBL  |
| 5110000000 X      | * |         |  |
| 2232 0311002321 + | * |         | S81  |
| 7160000001 X      | * |         | NZ   |
| 2233 5160000000 X | * |         | SX6  |
| 5110000053 X      | * |         | S86  |
| 2234 53110        | * |         | EXTFLAG  |
| 2235 6170002236 + | * |         | X1,FLCPYBFX  |
| 2236 5160000126 X | * |         | CX,TEMP*1  |
| 6110000000 X      | * |         | OPNFILE REMEMBER WHERE FILE WILL BE  |
| 2243 0130000000 X | * |         | ARGL,DTM+2   |
| 2247 7160000001   | * |         | X1   |
|                   | * |         | CALL   |
|                   | * |         | FORDIR   |
|                   | * |         | TEMPWDI  |
|                   | * |         | DR:CRFL1,ARGL,CAP+2+IND,TEMPWD1+IND,CPYBFSH+IND  |
|                   | * |         | XJLOC,,,RET2CAPS   |
|                   | * |         | 1  |

|      |              |          |          |  |                               |
|------|--------------|----------|----------|--|-------------------------------|
|      | 516000000 X  | *        | SA6      | EXTFLAG  | SIGNAL THAT IT IS OPEN        |
| 2250 | 76600        |          | SX6      | R0   |                               |
|      | 5160000126 X | *        | SA6      | TEMPWD1  |                               |
| 2251 | 6110000000 X | F.CPYBF1 | SETXJ    | EC:READ1,CX,TEMP+2,TEMPWD1+IND,CPYBFBF,CPYBFBL+IND |                               |
| 2260 | 0130000000 X |          | XJ       | XJLOC,FEEXIT                                       |                               |
| 2263 | 6110000000 X |          | DOXJ     | DF:CBLK1,CX,TEMP+1,TEMPWD1+IND+1                   |                               |
| 2272 | 10633        |          | BX6      | X3   |                               |
|      | 5160000000 X |          | SA6      | ATCHDBL  |                               |
| 2273 | 7160000002   |          | SX6      | 2  |                               |
|      | 5160000000 X | *        | SA6      | EXTFLAG  |                               |
| 2274 | 6110000000 X |          | DOXJ     | DF:WRIT1,CX,TEMP+1,TEMPWD1+IND,CPYBFBF,CPYBFBL+IND |                               |
| 2306 | 6170000000 X | *        | CALLR    | DTCHBLK  |                               |
| 2310 | 5110000126 X |          | SA1      | TEMPWD1  |                               |
|      | 5120000000 X |          | SA2      | CPYBFBL  |                               |
| 2311 | 36612        |          | IX6      | X1*X2  |                               |
|      | 54610        |          | SA6      | A1   |                               |
|      | 0206002251 + | *        | JP       | F.CPYBF1   |                               |
| 2312 | 6110002315 + | F.CPYBFE | MSGOUT   | (TOO MANY CHARACTERS)                              |                               |
| 2320 | 0200000000 X |          | JP       | FEEXIT   |                               |
| 2321 | 6170002322 + | F.CPYBFX | CALL     | CRASH A FILE IS ALREADY OPEN                       |                               |
|      |              | *        |          |  | -CREATE A NEW BLOCK ON A FILE |
| 2322 | 01           | F.NEW    | FUNCTION | NEWBLK,1,OBXVTYPE                                  |                               |
| 2324 | 5120000057 X |          | SA2      | ARGL,CAP   |                               |
|      | 6170004551 + |          | CALLR    | TESTDF   |                               |
| 2326 | 0301002337 + |          | ZR       | X1,F.NEWBD RISK FILE                               |                               |
|      | 513000051 X  | *        |          |  |                               |
| 2327 | 6110000000 X | SA3      |          | ARGL,RTM   |                               |
| 2336 | 0200000000 X | DOXJ     |          | EC:CBLK1,ARGL,CAP+IND,X3+IND                       |                               |
|      |              | JP       |          | FEEXIT   |                               |
| 2337 | 5110000057 X | F.NEWBD  | SA1      | ARGL,CAP   |                               |
|      | 6110100023 + |          | CALLR    | OPENDF,DF:OPRM1:X1,CX,TEMP                         |                               |
| 2343 | 5130000051 X |          | SA1      | ARGL,RTM   |                               |
| 2353 | 0200000000 X |          | DOXJ     | DF:CBLK1,CX,TEMP,X3+IND+1                          |                               |
|      |              |          | JP       | FEEXIT   |                               |
|      |              | *        |          |  | -DELETE A BLOCK FROM A FILE   |
| 2354 | 01           | F.KILLB  | FUNCTION | KILLBLK,1,OBXVTYPE                                 |                               |
| 2356 | 5120000057 X |          | SA2      | ARGL,CAP   |                               |
|      | 6170004551 + |          | CALLR    | TESTDF   |                               |

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2360 0301002371 2R X1,F,KILLBD DISK FILE

|      |              |           |                              |                            |
|------|--------------|-----------|------------------------------|----------------------------|
|      | 5130000051 X | SA3       | ARGL,DTM                     |                            |
| 2361 | 6110000000 X | DOXJ      | EC:DBLK1,ARGL,CAP+IND,X3+IND |                            |
| 2370 | 0200000000 X | JP        | PEXIT                        |                            |
| 2371 | 5110000057 X | F,KILLEBD | SA1                          | ARGL,CAP                   |
|      | 6110100023 + |           | CALLR                        | OPENDE,DF:OPRW:,X1,CX,TEMP |
| 2375 | 5130000051 X |           | SA3                          | ARGL,DTM                   |
|      | 6110000000 X | DOXJ      | DF:DBLK1,CX,TEMP,X3+IND,1    |                            |
| 2405 | 0200000000 X | JP        | PEXIT                        |                            |

KUJUAN- OBJECT

|      |              |         |          |                   |
|------|--------------|---------|----------|-------------------|
| 2406 | 01           | F.KLOBJ | FUNCTION | KILLOBJ:1,OBJTYPE |
| 2410 | 5110000057 X |         | SAI      | ARGL,CAP          |
|      | 63110        |         | CALLR    | MVCAP,X1,CX,TEMP  |
| 2413 | 6110000006   |         | CALLR    | CMMDS,6           |
| 2415 | 0200000000 X |         | JP       | FEEXIT            |

## ~~DELETE AN OWNERSHIP ENTRY FROM A DIRECTORY~~

|      |                              |         |          |                              |
|------|------------------------------|---------|----------|------------------------------|
| 2416 | 01                           | F•DLOWN | FUNCTION | DELETEOWN•I•DLCTVTYPE        |
| 2420 | 5110000051 x<br>53110        |         | SA1      | ARGL•DTM                     |
| 2421 | 6170002422 +                 |         | SA1      | X1                           |
| 2422 | 5160000126 x<br>5140000057 x |         | CALL     | FORDIR                       |
| 2423 | 6110000000 x                 |         | SA6      | TEMPWD1                      |
| 2427 | 0130000000 x                 |         | SA4      | ARGL•CAP                     |
| 2433 | 6110000006                   |         | SETXJ    | DR:UACCI•X4,TEMPWD1•TND•X4+1 |
| 2435 | 5140000057 x                 |         | XJ       | SJLOC,,?•RETICAP             |
|      | 6110000000 x                 |         | CALLR    | CMDMS,6 (KILL OBJ)           |
|      |                              |         | SA4      | ARGL•CAP                     |
| 2445 | 0200000000 x                 |         | DOXJ     | DR:RMDEI•X4,TEMPWD1•TND•X4+1 |
|      |                              |         | JP       | REEXIT                       |

## DELETE A LINK DIRECTORY ENTRY

|      |              | F•DLNK | FUNCTION | DELETELINK, I•DLCVTYPE            |
|------|--------------|--------|----------|-----------------------------------|
| 2446 | 01           |        | SAT      | ARGL,DTH                          |
| 2450 | 5110000051 X |        | SAT      | X1                                |
|      | 53110        |        | CALL     | WORDIB                            |
| 2451 | 6170002452 + |        | SAB      | TEMPWDI                           |
| 2452 | 5160000126 X |        | DOXJ     | DRTRMLKI,ARGL,CAP+IND,TEMPWDI+IND |
| 2461 | 0200000000 X |        | JP       | REEXIT                            |

### CREATE NEW ACCESS KEY

2462 01 F. NEWKY FUNCTION NEWKEY, 1, 0  
2464 6110000000 X SETXJ AKICRAK

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2467 66100  
2472 0130000000 X  
2476 7110000000 X  
66160  
2477 6170004300 +  
2501 0200000000 X

SETRET  
XJ  
SX1  
SBI  
CALLR  
JP

B0,B0,1,VAL,CAP  
XJLOC,,,RETLOC  
VAL,CAP  
B0  
PUTOBJ  
FEXIT

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2551 0322000217 +  
0200004662 +

PL  
JP

X2,PARSEF TOO MANY  
OBJSEQ

\*

\*

```

*
* SLIST
*
* SMALL DLIST
*
126 X FLAG EQU TEMPWD1
127 X INDEX EQU TEMPWD2
130 X DIRSPCE EQU TEMPWD3
131 X DESCSPC EQU TEMPWD4
132 X FILSPCE EQU TEMPWD5
133 X MONEY EQU TEMPWD6
*
* DEFINE TABLE FIELD SIZES
*
10 NAMESIZ EQU 8          • MAX SIZE FOR A NAME
4 TYPESIZ EQU 4          • MAX SIZE FOR TYPE DESCRIPTOR
4 OBJSIZE EQU 4          • MAX SIZE FOR OBJECT DESCRIPTOR
10 FILESIZ EQU 8          • MAX SIZE FOR FILE INFO
10 RSVDSIZ EQU 8          • MAX SIZE FOR RESERVED SPACE INFO
10 USEDLSIZ EQU 8          • MAX SIZE FOR IN-USE SPACE INFO
10 DESCSSIZ EQU 8          • MAX SIZE FOR SPACE-TO-DESCENDENTS INFO
10 FINPRSIZ EQU 8          • FINAL PRINTED INFO MAX SIZE
12 MONYSIZ EQU FINPRSIZ+2 • MAX SIZE FOR MONEY INFO
*
* HEADER LINE
*
2552 160115050000000000000000 LISTP1 DIS ,NAME.
2553 243120000000000000000000 LISTP2 DIS ,TYP.
2554 170212000000000000000000 LISTP3 DIS ,OBJ.
2555 06111405232003000000 LISTP4 DIS ,FILESPC.
2556 22232604232003000000 LISTP5 DIS ,RSVDSPC.
2557 25230504232003000000 LISTP6 DIS ,USEDSPC.
2560 04052303232003000000 LISTP7 DIS ,DESCSPC.
2561 22232604530000000000 LISTP8 DIS ,RSVDS.
2562 25230504530000000000 LISTP9 DIS ,USEDSE.
*
2563 00000000000000002567 + DR.TYPVC ITEMS DR.SOFT,DR.HRD,DR.OWN
*
2567 230624000000000000000000 DR.SOFT DIS ,SFT.
2570 102204000000000000000000 DR.HRD DIS ,HRD.
2571 172716000000000000000000 DR.OWN DIS ,OWN.
*
2572 00000000000000002600 + OBJVEC ITEMS DR.FILE,DR.DIR,DR.SUB,DR.SNT,DR.DNT,DR.AKY
*
2600 040614000000000000000000 DR.FILE DIS ,DFL.
2601 041122000000000000000000 DR.DIR DIS ,DIR.
2602 232004000000000000000000 DR.SUB DIS ,SPD.
2603 231624000000000000000000 DR.SNT DIS ,SNT.
2604 041624000000000000000000 DR.DNT DIS ,DNT.
2605 011331000000000000000000 DR.AKY DIS ,AKY.

```

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|                         |                                 |  |   |
|-------------------------|---------------------------------|--|---|
| 2606 01                 | F.SLIST                         | FUNCTION   | SLIST,I!OBJVTYPE                            |
| 2610 6110000000         |                                 | CALLR7   | LIST,0                                      |
| 2612 0200000000 X       |                                 | JP   | PEXIT                                       |
| * * * * *               |                                 |  |   |
|                         | * BLIST                         | BIG DLIST  |   |
| * * * * *               |                                 |  |   |
| 2613 01                 | F.BLIST                         | FUNCTION   | BLIST,I!OBJVTYPE                            |
| 2615 6110000000 X       |                                 | DOXJ   | EC:DSCPI,ARGL,CAP,IND                       |
| 2623 21622              |                                 | AX6  | 18  |
| 7110000004              |                                 | SX1  | OB,IMPL . IMPLICIT ACCESS KEY               |
| 2624 0916002640 + 11616 |                                 | BX6  | X1*X6                                       |
|                         |                                 | NZ   | X6,F.BLISTI . JP IF WE CAN PROCEDE NORMALLY |
| * * * * *               |                                 |  |   |
| 2635 6110000000         | MSGOUT                          | (IMPLICIT ACCESS REQUIRED FOR BLIST, WILL QLIST) |   |
| 2637 0200000000 X       | CALLR7                          | LIST,0   |   |
| 2640 6110000000 X       | JP                              | PEXIT  |   |
| 2646 6110000001         | DOXJ                            | DR:OPDRI,ARGL,CAP,IND                            |   |
| 2650 6110000000 X       | CALLR7                          | LIST,1   |   |
| 2656 0200000000 X       | DOXJ                            | DR:CLDR1,ARGL,CAP,IND                            |   |
|                         | JP                              | PEXIT  |   |
| * * * * *               |                                 |  |   |
| 2657 76610              | LIST                            | SX6  | \$1   |
| 5160000125 X            |                                 | SA6  | FLAG  |
| 76600                   |                                 | SX6  | R0  |
| 2660 5160000130 X       |                                 | SA6  | DIRSPCE                                     |
| 5160000131 X            |                                 | SA6  | DESCSPC                                     |
| 2661 5160000132 X       |                                 | SA6  | FILSPCE                                     |
| 5160000133 X            |                                 | SA6  | MONEY                                       |
| 2662 0410002712 *       |                                 | EQ   | \$1,R0,LISTI . JP IF NO HEADER              |
| * * * * *               |                                 |  |   |
| 2663 6170002664 *       | CALL                            | SETPRNT  |   |
| 2664 6110002552 *       | CALL                            | LINEPK,LISTP1,NAMESIZ                            |   |
| 2666 6110002553 *       | CALL                            | LINEPK,LISTP2,TYPEISIZ                           |   |
| 2670 6110002554 *       | CALL                            | LINEPK,LISTP3,OBJSIZE                            |   |
| 2672 6110002555 *       | CALL                            | LINEPK,LISTP4,FILESIZ                            |   |
| 2674 6110002556 *       | CALL                            | LINEPK,LISTPS,RSYDSIZ                            |   |
| 2676 6110002557 *       | CALL                            | LINEPK,LISTP6,USEDDSIZ                           |   |
| 2700 6110002560 *       | CALL                            | LINEPK,LISTP7,DESCSIZ                            |   |
| 2702 6110002561 *       | CALL                            | LINEPK,LISTP8,MONYSIZ                            |   |
| 2704 6110002562 *       | CALL                            | LINEPK,LISTP9,MONYSIZ                            |   |
| 2706 6170002707 *       | CALL                            | FINPRNT  |   |
| 2707 6170002710 *       | BLNKLIN                         |  |   |
| * * * * *               |                                 |  |   |
| 2711 0200002712 *       | JP                              | LISTI  |   |
| * * * * *               |                                 |  |   |
|                         | * CODE TO REALLY DO THE LISTING |  |   |
| * * * * *               |                                 |  |   |
| 2712 7160000001         | LISTI                           | SX6  | I   |
| 5160000127 X            |                                 | SA6  | INDEX                                       |
| 2713 0200002715 *       |                                 | JP   | LIST2                                       |

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|      |              |   |         |                            |                                    |                         |
|------|--------------|---|---------|----------------------------|------------------------------------|-------------------------|
| 2714 | 6170002715 * | * | LIST20  | CALL                       | FINPRNT . FINISH UP THE LINE       |                         |
| 2715 | 6110000127 x | * | LIST2   | CALLR7                     | DOENTRY, INDEX, XJLOC, 9           |                         |
|      |              | * |         |                            | * LEAVE DATA AT XJLOC              |                         |
|      |              | * |         |                            | * MAX OF 9 WDS                     |                         |
| 2720 | 0410003264 * | * |         | EQ                         | SI, 80, LISTDONE                   |                         |
|      |              | * |         |                            | * NO MORE ENTRIES (SET BY DOENTRY) |                         |
|      | 6116000003 x |   |         | CALLR7                     | DONAME, XJLOC+3                    |                         |
| 2723 | 6110000000 x |   |         | CALLR7                     | DOTYPE, XJLOC                      |                         |
| 2725 | 6110000000 x | * |         | CALLR7                     | DOOBJ, XJLOC                       |                         |
| 2727 | 5110000127 x |   | SAL     | INDEX                      |                                    |                         |
|      | 7271000001   |   | SX7     | X1+1                       |                                    |                         |
| 2730 | 54710        |   | SA7     | A1                         |                                    |                         |
|      | 5110000126 x |   | SA1     | FLAG                       |                                    |                         |
| 2731 | 0301002714 * | * | ZR      | X1, LIST20                 | * LOOP IF SLIST                    |                         |
|      | 5116000000 x |   | SAL     | XJLOC                      |                                    |                         |
| 2732 | 43052        |   | MX0     | 60-18                      |                                    |                         |
|      | 15110        | * | BX1     | -X0*X1                     |                                    |                         |
|      | 7211777774   |   | SX1     | X1-3                       |                                    |                         |
| 2733 | 0311002714 * |   | NZ      | X1, LIST20                 | . LOOP IF NOT OWNERSHIP ENTRY      |                         |
|      | 5116000001 x |   | SA1     | XJLOC+1                    |                                    |                         |
| 2734 | 15110        |   | BX1     | -X0*X1                     |                                    |                         |
|      | 5110002710 + |   | CALL    | TRAVEC, LISTVEC, LSTVC\$IZ |                                    |                         |
| 2737 | 0200003443 * | * | JP      | LISTER0                    |                                    |                         |
| 2740 | 0200003050 * |   | LISTVEC | JP                         | LISTFILE 0                         | * DISK FILE             |
| 2741 | 0200003144 * |   |         | JP                         | LISTDIR 1                          | * DIRECTORY             |
| 2742 | 0200002714 * |   |         | JP                         | LIST20 2                           | * SUBPROCESS DESCRIPTOR |
| 2743 | 0200002714 * |   |         | JP                         | LIST20 3                           | * STATIC NAME TAG       |
| 2744 | 0200002714 * |   |         | JP                         | LIST20 4                           | * DYNAMIC NAME TAG      |
| 2745 | 0200002714 * | * |         | JP                         | LIST20 5                           | * ACCESS KEY            |
| 2746 |              |   | 6       | LSTVC\$IZ EQU              | 0                                  |                         |
|      |              |   |         |                            | 0-LISTVEC                          |                         |

```

* DOENTRY
* DISPLAY THE NEXT ENTRY IN A DIRECTORY.
* RETURN WITH B1=1 IF OK, B1=0 IF NO MORE ENTRIES
* CALLR7 DOENTRY,INDEX,ADDR,BUFR,ADR,COUNT

2746 56020
      76330
      66310
2747 6110100020 *
2757 63130
      *
2763 0130000000 X
2767 6110000001
      0200000000 X
2770 66100
      0200000000 X

* DOENTRY
      SA0      B2      . SAVE B2
      SX3      B3      . SAVE B3
      SB3      B1
      SETXJ7  DR:DSPN1,ARGL,CAP+IND,B3+IND
      SETRETT  X3,A0,B0,R0

* XJ      XJLOC,DOENTRY1,++RETLOC
      SB1      1
      RTNR7

* DOENTRY1
      SB1      B0
      RTNR7

* DONAME
* PRINT A NAME FOR LISTING PURPOSES.
* 1) IF NAME>NAMESIZ CHARS, PRINT WITH ↑CRT AND THEN ADD
* NAMESIZ BLANKS TO THE CURRENT LINE.
* 2) OTHERWISE RIGHT JUSTIFY, BLANK FILL THE NAME INTO A FIELD
* NAMESIZ IN LENGTH. NO ↑CRT
* LEAVE REGISTERS SET UP FOR ASCYI ROUTINES.

* INPUT   RI=PTR TO TEXT
* CALLR7  DONAME,TEXT,ADDR

* DONAME1
      SA1      RI      FETCH CHARCOUNT
      SB2      NAMESIZ
      SB3      R1      . SAVE R1
      SB1      X1
      SB1      B2-R1  . NUMBER OF LEADING BLANKS, IF APPROPRIATE
      LT      R1,B0,DONMEBIG  . JP IF BIG NAME
      EQ      R1,B0,DONAME2
      CALL
      CALL    BLNKPK  . R1 SET ABOVE
      CALL    DOPRNT . NO ↑CRT

* DONAME2
      SX1      10B     . CONSTRUCT BLOCK DATUM SPECIFIER
      SX7      R3      FOR LINE COLLECTOR.
      LX1      30
      BX7      X1+X7
      SA7      XJLOC+17 . IP2
      SX7      CX,LINE
      SA7      XJLOC+15 . IP0
      SX7      XJLOC+16 . IP1
      SA7

```

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|      |              |          |  |   |
|------|--------------|----------|--|---|
| 3003 | 0130000017 x |          | XJ   | XJLOC+15 . DONT CLOBBER DISPLAYED DIRECTORY STUFF |
| 3006 | 6170003007 + | *        | CALL RTNR7   | SETPRNT . FOR FURTHER PROCESSING                  |
| 3007 | 0200000000 x | *        |  |   |
|      |              | *        |  | * THE NAME WAS BIG                                |
| 3010 | 76730        | DONMBIG  | SX7  | R3 . SAVE ORIGINAL INPUT                          |
|      | 5170000022 x | *        | SA7  | XJLOC+18  |
|      |              |          | CALL   | ADDCHAR(B3,ASCIIICR)                              |
| 3013 | 5120000022 x | SA2      | XJLOC+19 . ADDR OF TEXT                            |   |
|      | 66130        | SX1      | 10B . CONSTRUC BLOCK DATUM SPECIFIER               |   |
| 3014 | 7116000010   | LX1      | 30   |   |
|      | 20136        | BX7      | X2+X1  |   |
|      | 12721        | SA7      | XJLOC+17 . IP2 (DONT CLOBBER DISPLAYED DIR. STUFF) |   |
| 3015 | 5170000021 x | SX7      | CX,LINE  |   |
|      | 7170000000 x | SAT      | XJLOC+15 . IP0                                     |   |
| 3016 | 5170000017 x | SX7      | 2  |   |
|      | 7170000002   | SAT      | XJLOC+16 . IP1                                     |   |
| 3017 | 5170000020 x | XJ       | XJLOC+15   |   |
|      |              | *        |  | * ELIMINATE THE ^CR^ WHICH IS NOW IN THE NAME     |
| 3022 | 5110000022 x | SA1      | XJLOC+18 . FETCH THE TEXT ADDR                     |   |
| 3023 | 6170003024 + | CALL     | FORDIR2 . GET BLOCK PARAMETER                      |   |
| 3024 | 6217777776   | SBI      | X7-1 . TEXT ADDR-1                                 |   |
|      | 21756        | AX7      | 30 . NUM WDS                                       |   |
|      | 53171        | SA1      | S1+X7 . LAST TEXT WORD                             |   |
| 3025 | 7120000155   | SX2      | ASCIIICR   |   |
|      | 43065        | MX0      | 60-7 . MASK FOR SINGLE ASCII CHAR                  |   |
| 3026 | 20070        | LX0      | 60-4   |   |
|      |              | LX2      | 60-4 . PREPARE THE MASKS                           |   |
| 3027 | 20265        | DONMBIG1 | LX2  | 60-7 . POSITION THE MASK                          |
|      | 20065        | LX0      | 60-7   |   |
|      | 15310        | BX3      | -X0*X1 . ISOLATE A SINGLE CHAR                     |   |
|      | 13332        | BX3      | X3-X2 . COMPARE WITH ASCII ^CR^                    |   |
| 3030 | 0313003027 + | NZ       | X3,DONMBIG1 . LOOP IF ^CR^ ISNT HERE               |   |
|      | 13712        | BX7      | X1-X2 . ELIMINATE ^CR^                             |   |
|      | 54710        | SA7      | A1   |   |
| 3031 | 6170003032 + | CALL     | SETPRNT  |   |
| 3032 | 6110000010   | CALL     | BLNPK, NAMESIZ . ADD BLANKS                        |   |
| 3034 | 0200000000 x | RTNR7    |  |   |
|      |              | *        |  | * DOTYPE  |
| 3035 | 56110        | DOTYPE   | SA1  | B1 . B1=ADDR OF DISPLAYED DIRECTORY ENTRY         |
|      | 43052        | MX0      | 60-18  |   |
|      | 15170        | BX1      | -X0*X1   |   |
| 3036 | 5211002563 + | SA1      | X1+DR.TYPVC  |   |

```

63110          CALL    LINEPK,X1,TYPESIZ
3041 0200000000 X          RTNR7

*
*
* DOOBJ          B1=ADDR OF DISPLAYED DIRECTORY ENTRY
*
3042 56110      DOOBJ   SAI     B1
                  ZR      x1,000BJ1      ; JP IF A SOFT LINK
3043 5111000001      SAI     B1+1
                  43052      MX0     60-18
                  15110      BX1     -X0*X1
3044 5211002572      SAI     X1+OBJVEC
                  63110      CALL    LINEPK,X1,OBJSIZE
3047 0200000000 X          DOOBJ1 RTNR7

*
* LIST CONTROL FOR AN OWNED FILE
*
3050 7110000003 X          LISTFILE SX1     XJLOC+3
3051 6170003052 +          CALL    FORDIB2      ; SAVE I/O REGISTERS
3052 5170000021 X          SA7     XJLOC+15+2
                  5170000037 +          SA1     DR:UACCI-IND
3053 10711      BX7     X1
                  5170000017 X          SA7     XJLOC+15+6      ; IP0
3054 5110000057 X          SA1     ARGL1,CAP
                  10711      BX7     X1
3055 5170000020 X          SA7     XJLOC+15+1      ; IP1
                  7170000000 X          SX7     CX,NLKY
3056 5170000022 X          SA7     XJLOC+15+3      ; IP3
3057 0130000017 X          XJ     XJLOC+15,,LISTER1,,RET1,CAP

*
* NOW OPEN THE FILE
*
3063 6110100022 +          SETXJ7  DF1OPPO!,CX,TEMP
3072 0130000000 X          XJ     XJLOC,,LISTER2,,RET1,CAP

*
* DISPLAY THE ECS CAPABILITY
*
3076 10166      BX1     X6      ; SAVE X6
                  6110100011 +
3106 0130000000 X          SEBXJ7  EC;DSCP!,CX,TEMP
3111 5170000017 X          XJ     XJLOC,,LISTER3
                  10611      SA7     XJLOC+15
                  BX6     X1      ; SAVE UNIQUE NAME
                                         ; RESTORE X6

*
* DISPLAY THE FILE
*
3112 6110000013          SETRET7 11,XJLOC,B0,B0
3116 6110100031 +          SETXJ7  DF1DSF!,XJLOC+15+IND,CX,TEMP
3126 0130000000 X          XJ     XJLOC,,LISTER3,,RETLOC

*
* CLOSE THE FILE
*

```

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

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|      |                    |         |                              |
|------|--------------------|---------|------------------------------|
| 3132 | 0130003142 *       | XJ      | LISTFL1                      |
| 3135 | 5110000132 x       | SA1     | FILSPCE                      |
|      | 512000004 x        | SA2     | XJLOC+4                      |
| 3136 | 43052              | MX0     | 60-18                        |
|      | 15220              | BX2     | -X0*X2 . ISOLATE FILE SIZE   |
|      | 36712              | IX7     | X1*X2 . NEW TOTAL            |
|      | 54710              | SA7     | A1 . UPDATE TOTAL            |
| 3137 | 10122              | BX1     | X2 . X1=FILE SIZE            |
|      | 5110000010         | CALL    | OCTBPK,FILESIZ,B0            |
| 3141 | 0200002714 *       | JP      | LIST20                       |
| 3142 | 4000000000 x       | LISTFL1 | VFD I/1,29/DF:CL0.30/CX.0PRS |
|      | 0000000000000000 x | ITEMS   | CX.TEMP                      |

\* LIST CONTROL FOR AN OWNED DIRECTORY

|      |              |         |                    |                                 |
|------|--------------|---------|--------------------|---------------------------------|
| 3144 | 7110000003 x | LISTDIR | SX1                | XJLOC+3 . GET ACCESS TO THE DIR |
| 3145 | 6170003146 * | CALL    | FORDIR2            |                                 |
| 3146 | 5170000021 x | SA7     | XJLOC+15+2 . IP2   |                                 |
|      | 5110000037 * | SA1     | DR:UACC1-IND       |                                 |
| 3147 | 10711        | BX7     | X1                 |                                 |
|      | 5170000017 x | SA7     | XJLOC+15+0 . IP0   |                                 |
| 3150 | 5110000057 x | SA1     | ARGL-CAP           |                                 |
|      | 10711        | BX7     | X1                 |                                 |
| 3151 | 5170000020 x | SA7     | XJLOC+15+1 . IP1   |                                 |
|      | 7170000000 x | SX7     | CX.NLKY            |                                 |
| 3152 | 5170000022 x | SA7     | XJLOC+15+3 . IP3   |                                 |
| 3153 | 0130000017 x | XJ      | XJLOC+15,,,RET1CAP |                                 |

\* DISPLAY THE DIR

|      |              |         |                                       |
|------|--------------|---------|---------------------------------------|
| 3157 | 6110000010   | CALL    | BLNPK,FILESIZ . SKIP FILE SPACE FIELD |
| 3161 | 6110000010   | SETRET7 | x,XJLOC,B0,B0                         |
| 3165 | 6110100052 * | SETXJ7  | DA:DSP:GX TEMP                        |
| 3174 | 0130000000 x | XJ      | XJLOC,,LISTDIR1,,RETLOC               |
| 3200 | 5110000003 x | SA1     | XJLOC+3                               |
|      | 5120000130 x | SA2     | DIRSPCE                               |
| 3201 | 36712        | IX7     | X1*X2                                 |
|      | 54720        | SA7     | A2                                    |
|      | 43036        | MX0     | 00                                    |
|      | 11110        | BX1     | X1*X0                                 |
| 3202 | 20136        | LX1     | 30                                    |
|      | 5110000001   | CALL    | BLNPK,1                               |
| 3204 | 6110000007   | CALL    | OCTBPK,RSVDSIZ-1 . RESERVED SPACE     |
| 3206 | 5110000003 x | SA1     | XJLOC+3                               |
|      | 43036        | MX0     | 30                                    |
|      | 15110        | BX1     | -X0*X1                                |
| 3207 | 6110000001   | CALL    | BLNPK,1                               |
| 3211 | 6110000007   | CALL    | OCTBPK,USEDDSIZ-1 . USED SPACE        |

COMMAND PROCESSOR DECK 8  
FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

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3213 5120000131 X          SA2      DESCSPC
                                5110000007 X          SA1      XJLOC+7
3214 43036                 MX0      30
          15110             BX1      -X0*X1
          36712             IX7      X1*X2
          54720             SA7      A2
3215 6110000001             CALL    BLNPK,1
3217 6110000007             CALL    OCTBPK,DESCSIZ-1 . UPDATE DESCENDANTS CUM. TOTAL
                                         DESCENDANTS SPACE

* DISPLAY THE PROFILE AND GET MONEY INFO
*
3221 6110000012             SETRET7 10,XJLOC+5,80,80 . DISPLAY THE PROFILE, IF ANY
3225 6110100057 +           SETXJ7  CPDSPEI,CX,TEMP
3234 0130000000 X           XJ      XJLOC,LISTDIR2,LISTDIR2+,RETLOC

* GET PROFILE STUFF AND KEEP ON TRUCKIN
*
3240 5110000133 X          SA1      MONEY   . CURRENT TOTAL
                                5120000013 X          SA2      XJLOC+5+P,GIVENS
3241 36712                 IX7      X1*X2
          54710             SA7      A1      . UPDATE TOTAL
          43036             MX0      30
          11102             BX1      -X0*X2 . GET RESERVED FIELD
          6110000001             LX1      30 . RIGHT JUSTIFY IT
3242 20136                 CALL    BLNPK,1
3244 6110000011             CALL    DCBPK,MONYSIZE-1+-3 . OUTPUT RESERVED MONEY
                                         *
3246 5110000013 X          SA1      XJLOC+5+P,SPENT$+
                                43036             MX0      30
          15110             BX1      -X0*X1
          6110000001             CALL    BLNPK,1
3247 6110000001             CALL    DCBPK,MONYSIZE-1+-3 . OUTPUT USED MONEY
3251 6110000011             CALL    LIST20
3253 0200002714 +           JP
                                         *
3254 6110003262 +           LISTDIR1 CALL    LINEPK,LISTDIR3,TYPE$IZ
3256 0200002714 +           JP
                                         *
3257 6110003263 +           LISTDIR2 CALL    LINEPK,LISTDIR4+7
3261 0200002714 +           JP
                                         *
3262 1606040000000000000000 LISTDIR3 DIS    ..NFD. . NOT A FUNDING DIRECTORY
3263 1617552022060000000000 LISTDIR4 DIS    ..NO PRE. . NO PROFILE ASSOCIATED WITH DIR.

* PRINT OUT FINAL INFO
*
3264 5110000126 X          LISTDONE SA1      FLAG
                                0301003345 +          ZR      X1,LISTDONE1
3265 6110000000 X           SETXJ    DA;DSPT;ARGL,CAP+IND
3270 6110000012             SETRET   10,XJLOC,80,80
3273 0130000000 X           XJ      XJLOC,,ESTDONE1,,RETLOC
                                         *

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|      |              |         |                                      |   |
|------|--------------|---------|--------------------------------------|---|
| 3277 | 6170003300 + |         | BLNKLIN                              |   |
| 3301 | 6170003302 + | CALL    | SETPRNT                              |   |
| 3302 | 6110003433 + | CALL    | LINEPK, LSTDNEP1, 9                  |   |
| 3304 | 6110003434 + | CALL    | LINEPK, LSTDNEP2, FINPRSIZ           |   |
| 3306 | 6110003435 + | CALL    | LINEPK, LSTDNEP3, FINPRSIZ           |   |
| 3310 | 6110003436 + | CALL    | LINEPK, LSTDNEP4, FINPRSIZ           |   |
| 3312 | 6110002561 + | CALL    | LINEPK, LSTDNEP8, MONYSIZ            |   |
| 3314 | 6110002562 + | CALL    | LINEPK, LSTDNEP9, FINPRSIZ           |   |
| 3316 | 6170003317 + | CALL    | FINPRNT                              |   |
| 3317 | 6170003320 + |         | BLNKLIN                              |   |
| 3321 | 6170003322 + | CALL    | SETPRNT                              |   |
| 3322 | 6110003437 + | CALL    | LINEPK, LSTDNEP5, 9                  |   |
| 3324 | 6110000003 X | CALLR7  | LSTDNEPK, XJLOC+3, XJLOC+7, ARG1.CAP | • GET PROFILE                               |
| 3327 | 6170003330 + | CALL    | SETPRNT                              |   |
| 3330 | 6110003440 + | CALL    | LINEPK, LSTDNEP6, 9                  |   |
| 3332 | 6110000130 X | CALLR7  | LSTDNEPK, DIRSPCE, DESCSPC, -1       | • DONT GET PROFILE                          |
| 3335 | 6170003336 + | LSTDNEP | BLNKLIN                              | • DO WHAT IT SAYS                           |
| 3337 | 6170003340 + |         | CALL                                 | SETPRNT                                     |
| 3340 | 6110003441 + |         | CALL                                 | LINEPK, LSTDNEP7, 11                        |
| 3342 | 5110000132 X |         | S1                                   | FILSPCE                                     |
|      | 6110000010   |         | CALL                                 | OCTBPK, FINPRSIZ                            |
| 3344 | 6170003345 + |         | CALL                                 | FINPRNT                                     |
| 3345 | 0€00000000 X | LSTDNEP | RTNR                                 |   |
|      |              |         |                                      | • LSTDNEP                                   |
|      |              |         |                                      | PRINT CUMULATIVE DIRECTORY INFO             |
|      |              |         |                                      | B1=RESERVED PTR                             |
|      |              |         |                                      | B2=DESCENDANTS PTR                          |
|      |              |         |                                      | B3=DIRECTORY CAPABILITY INDEX PTR OR <0     |
| 3346 | 56110        | LSTDNEP | S1                                   | • FETCH VFB 30/RESERVED, 30/INUSE           |
|      | 56220        |         | S2                                   | • FETCH 30/0, 30/SPACE GIVEN TO DESCENDANTS |
|      | 76730        |         | SX7                                  | • SAVE THE CLIST INDEX PTR/NO PROFILE FLAG  |
| 3347 | 5170000020 X |         | S47                                  | XJLOC+16                                    |
|      |              |         |                                      |   |
|      |              |         |                                      | MX0   |
|      |              |         | BX3                                  | 30  |
|      |              |         | BX7                                  | X0*X1 . 30/RESERVED, 30/0                   |
|      |              |         | LX2                                  | -X0*X1 . 30/0, 30/INUSE                     |
|      |              |         | BX2                                  | 30  |
|      |              |         | BX7                                  | X0*X2 . 30/DESCENDANTS, 30/0                |
|      |              |         | S47                                  | X2*X7                                       |
|      |              |         | BX1                                  | XJLOC+15 . 30/DESCENDANTS, 30/INUSE         |
|      |              |         | LX1                                  | X3  |
|      |              |         | BX1                                  | 30 . 30/0, 30/RESERVED                      |
|      |              |         | CALL                                 | BLNPK, 1                                    |
|      |              |         | CALL                                 | OCTBPK, FINPRSIZ=1 . RESERVED               |
| 3352 | 6110000001   |         |                                      |   |
| 3354 | 6110000007   |         |                                      |   |

|   |                      |          |         |   |
|---|----------------------|----------|---------|---|
| 3356  | 5110000017 x         |          | SA1     | XJLOC+15  |
|   | 43036                |          | MX0     | 30  |
|   |                      | 15110    | BX1     | =X0*X1  |
| 3357  | 6110000001           |          | CALL    | BLNPK,1   |
| 3361  | 6110000007           |          | CALL    | OCTBPK,FINPRSIZE-1 . IN USE                       |
| 3363  | 5110000017 x         |          | SA1     | XJLOC+15  |
|   | 20136                |          | LX1     | 30  |
|   |                      |          | MX0     | 30  |
| 3364  | 15110                |          | BX1     | =X0*X1  |
|   | 6110000001           |          | CALL    | BLNPK,1   |
| 3366  | 6110000007           |          | CALL    | OCTBPK,FINPRSIZE-1 . DESCENDANTS                  |
| * GET FINAL PROFILE INFO, IF FLAG IN B3 WAS > 0 |                      |          |         |   |
| 3370  | 5110000020 x         |          | SA1     | XJLOC+16  |
|   | 0331003423 +         |          | NG      | X1,LSTDNPB2 . SKIP TO END                         |
| 3371  | 53310                |          | SA3     | X1  |
|   | 10733                |          | BX7     | X3  |
|   |                      |          | SA7     | XJLOC+16  |
| 3372  | 6110000012           |          | SETRET7 | I0,XJLOC+5,B0,B0                                  |
| 3376  | 6110100057 +         |          | SETXJ7  | CPIDSPFT,XJLOC+16,IND                             |
| 3405  | 0130000000 x         |          | XJ      | XJLOC,LSTDNPB2,LSTDNPB2,,RETLOC                   |
| 3411  | 5110000013 x         |          | SA1     | XJLOC+5*P,GIVEN*                                  |
|   | 43036                |          | MX0     | 30  |
|   |                      | 11101    | BX1     | =X0*X1  |
| 3412  | 20136                |          | LX1     | 30  |
|   | 6110000001           |          | CALL    | BLNPK,1   |
| 3414  | 6110000011           |          | CALL    | OCTBPK,MONYSIZE-1,-3 . PRINT S WITH DECIMAL POINT |
| 3416  | 5110000013 x         |          | SA1     | XJLOC+5*P,SPENT*                                  |
|   | 43036                |          | MX0     | 30  |
|   |                      | 15110    | BX1     | =X0*X1  |
| 3417  | 6110000001           |          | CALL    | BLNPK,1   |
| 3421  | 6110000011           |          | CALL    | OCTBPK,MONYSIZE-1,-3 . PRINT S WITH DECIMAL       |
| 3423  | 6170003424 +         | LSTDNPB2 | CALL    | FINPRNT   |
| 3424  | 0200000000 x         |          |         | RTNR7   |
| * ERROR IN FINAL LISTING PROCESS                |                      |          |         |   |
| 3425  | 6110003430 +         | LSTDONE1 | MSGOUT  | (NFD)   |
| 3431  | 0200003335 +         |          | JP      | LSTDNE0 , GO BACK AND PRINT FILE INFO             |
| 3432  | 0200000000 x         |          | RTNR    |   |
| * FINAL PRINT MESSAGES                          |                      |          |         |   |
| 3433  | 04112205032400000000 | LSTDNEP1 | DIS     | ,,DIRECT,   |
| 3434  | 22232622040000000000 | LSTDNEP2 | DIS     | ,,RSVRD,  |

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|      |                      |            |        |                            |
|------|----------------------|------------|--------|----------------------------|
| 3435 | 11164625230500000000 | LSTDNEP3   | DIS    | ,,IN-USE.                  |
| 3436 | 04230316042423000000 | LSTDNEP4   | DIS    | ,,DSCNDIS.                 |
| 3437 | 10052205000000000000 | LSTDNEP5   | DIS    | ,,HERE.                    |
| 3440 | 23250204112223000000 | LSTDNEP6   | DIS    | ,,SUBDIRS.                 |
| 3441 | 06111405552320010305 | LSTDNEP7   | DIS    | ,,FILE SPACE=.             |
|      | 2561                 | + LSTDNEP8 | EQU    | LISTP8                     |
|      | 2562                 | + LSTDNEP9 | EQU    | LISTP9                     |
| 3443 | 6110003453 +         | LISTER0    | CALL   | DISLINE,LISTER01,20        |
| 3445 | 5110000001 X         |            | SA1    | XJLOC+1                    |
|      | 43652                |            | MX0    | 60-18                      |
|      | 15110                |            | BX1    | =X0*X1                     |
| 3446 | 6110000007           |            | CALL   | OCTNPK,7                   |
| 3450 | 6110003456 +         |            | CALL   | DISLINE,LISTER02,20        |
| 3452 | 0200000000 X         |            | JP     | FEXIT                      |
| 3453 | 02010455260114550622 | LISTER01   | DIS    | ,,BAD VAL FROM DIRSY=.     |
| 3456 | 04141123245501021722 | LISTER02   | DIS    | ,,DLIST ABORTING.          |
| 3460 | 6170003461 +         | LISTER1    | CALL   | FINPRNT                    |
| 3461 | 6110777776 X         |            | CALL   | ETELL,EEXITSV=1,T,CMMD     |
| 3463 | 6110003466 +         |            | MSGOUT | (CANT GET ACCESS TO FILE)  |
| 3471 | 0200002715 +         |            | JP     | LIST2                      |
| 3472 | 6170003473 +         | LISTER2    | CALL   | FINPRNT                    |
| 3473 | 6110777776 X         |            | CALL   | ETELL,EEXITSV=1,T,CMMD     |
| 3475 | 6110003500 +         |            | MSGOUT | (ERROR WHILE OPENING FILE) |
| 3503 | 0200002715 +         |            | JP     | LIST2                      |
| 3504 | 6110100027 +         | LISTER3    | SETXJ7 | DF:CLO:,CX,TEMP            |
| 3513 | 0130000000 X         |            | XJ     | XJLOC                      |
| 3516 | 6110777776 X         |            | CALL   | ETELL,EEXITSV=1,T,CMMD     |
| 3520 | 0200000000 X         |            | RTNR   |                            |

\*  
\*  
\*  
\*  
\*  
\* GENERAL SPACE COMMAND

\*  
\* RIGHT MOST FIELDS ARE LOW PRIORITY  
\* RIGHT MOST FIELDS ARE OBTAINED FIRST  
\* WITH LESS THAN MAX NO. OF PARAMS, RIGHT  
\* MOST FIELDS ARE TRUNCATED

|                   |       |                 |   |
|-------------------|-------|-----------------|---|
| 3521 00           | F,SPC | FUNCTION        | SPACE,0,DTMVTYPE,DTMVTYPE,DTMVTYPE,DTMVTYPE |
| 3523 5110000125 x | SA1   | STNDPCNT        | PICK UP ACTUAL NO. PARAMS                   |
| 3526 0331000217 ± | CALLR | SPCCMD,ARGL,DTM |   |
| 0200000000 x      | NG    | 81,PARSEF       | TOO MANY PARAMS                             |
|                   | JP    | FEXIT           | OK  |

\*  
\*  
\*  
\* MOVE SPACE FROM PARM1 TO PARAM3 IN AMOUNT PARM2  
\* WORKS FOR DIRECTORIES ONLY NOW

|                   |         |   |                                    |
|-------------------|---------|---|------------------------------------|
| 3527 03           | F,MVSPC | FUNCTION                                    | MVSPACE,OBJVTYPE,DTMVTYPE,OBJVTYPE |
| 3531 5140000052 x | SA4     | ARGL,DTM+1                                  |                                    |
| 6116000000 x      | DOXJ    | DA,MVSP1,ARGL,CAP+IND,ARGL,CAP+2+IND,X4+IND |                                    |
| 3541 0600000000 x | JP      | FEXIT                                       |                                    |

\*  
\*  
\* MOVE DOLLARS BETWEEN USERS  
\* PARM1 IS THE DONNER'S DIRECTORY  
\* PARM2 IS THE AMOUNT IN DOLLARS  
\* PARM3 IS THE RECEIVING USER'S DIRECTORY

|                   |         |   |                                    |
|-------------------|---------|---|------------------------------------|
| 3542 02           | F,MDOLS | FUNCTION  | MDOLS,3,OBJVTYPE,DTMVTYPE,OBJVTYPE |
|                   | *       | MULTIPLY THE SECOND PARAMETER BY 1000 TO GET MILS |                                    |
| 3544 5140000052 x | SA4     | ARGL,DTM+1  |                                    |
| 53140             | SA1     | X4  |                                    |
| 3545 7120001750   | SX2     | 1000  |                                    |
| 27181             | IMPY    | X6=X1*X2 . X6=X1*X2                               |                                    |
| 53620             | SA6     | X4  |                                    |
|                   | *       | CALL BEADS TO DO THE DIRTY WORK                   |                                    |
| 3547 6110000000 x | DOXJ    | CPIMONY1,ARGL,CAP+IND,ARGL,CAP+2+IND,X4+IND       |                                    |
| 3556 0200000000 x | JP      | FEXIT   |                                    |

\*  
\*  
\* MOVE SUBUSERS BETWEEN USERS  
\* PARM1 IS THE DONNER'S DIRECTORY  
\* PARM2 IS THE NUMBER OF SUBUSERS  
\* PARM3 IS THE RECEIVING USER'S DIRECTORY

|         |         |          |                                     |
|---------|---------|----------|-------------------------------------|
| 3557 03 | F,MUSRS | FUNCTION | MUSERS,3,OBJVTYPE,DTMVTYPE,OBJVTYPE |
|---------|---------|----------|-------------------------------------|

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

3561 5140000052 X  
6110000000 X  
3571 0200000000 X

SA4  
DOXJ  
JP

ARGL.DTM+1  
CP:SONS1,ARGL.CAP+IND,ARGL.CAP+2\*IND,X4+IND  
FEXIT

3572 02  
3574 6170003575 +  
3575 76600  
5160000126 X  
66100

F.SHAZ  
FUNCTION  
CALL

SHAZAM,F,OBJVTYPE,OBJVTYPE  
SETPI (LOCK OUT PANIS, THIS CODE DOES NOT HANGUP)

3601 6110000000 X  
3604 0130000000 X  
3610 66100  
3613 6110000000 X  
3616 0130000000 X  
3622 6110000000 X  
3626 0130000000 X

80  
TEMPWD1 INDICATE NO ERROR SO FAR  
B0,B0,1,CX,TEMP  
DF:OPRW1,ARGL.CAP+IND  
XJLOC,F.SHAZE1,F.SHAZE2,,RETLOC  
B0,B0,1,CX,TEMP+1  
DF:OPRW1,ARGL.CAP+1\*IND  
XJLOC,F.SHAZE3,F.SHAZE4,,RETLOC  
DF:SHAZI,CX,TEMP+1,CX,TEMP  
XJLOC,F.SHAZE5,F.SHAZE6

3631 6110000000 X  
3634 0130000000 X

F.SHAZI  
SETXJ

DF:FCLO,CX,TEMP+1  
XJLOC,F.SHAZE3,F.SHAZE4

3637 6110000000 X  
3642 0130000000 X

F.SHAZI  
SETXJ

DF:FCLO,CX,TEMP  
XJLOC,F.SHAZE1,F.SHAZE2

3645 6170003645 +  
3646 5110000126 X  
0301000000 X

F.SHAZI  
CALL  
SA1  
ZR  
CALL

CLRPI  
TEMPWD1  
X1,FEXIT  
EEXIT,X1

3651 7160000000 X  
3652 5160000126 X  
020003645 +

F.SHAZE1  
F.SHZE1X  
JP

ECN.UXE  
TEMPWD1  
F.SHAZ3

3653 7160000000 X  
020003652 +

F.SHAZE2  
JP

ECN.UXE  
F.SHZE1X

3654 7160000000 X  
3655 5160000126 X  
020003637 +

F.SHAZE3  
F.SHZE3X  
JP

ECN.UXE  
TEMPWD1  
F.SHAZ2

3656 7160000000 X

F.SHAZE4  
SX6

ECN.UXE

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THIS CODE PERFORMS SHAZAM

ASSUMES 1ST OPERAND OF DISK SYSTEM SHAZ  
IS ONE THAT DOES NOT GET HURT.  
WE MAKE THAT THE SECOND PARAMETER  
OF THE COMMAND.

SINCE THIS CODE REQUIRES 2 FILES TO BE OPEN  
ALL ERRORS, RETURNS AND PANICS ARE CAUGHT.  
(VERY KLUDGEY)

COMMAND PROCESSOR DECK B  
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|      |              |          |     |          |
|------|--------------|----------|-----|----------|
|      | 0206003655 + |          | JP  | F.SHZE3X |
|      | *            |          |     |          |
| 3657 | 7160000000 X | F.SHAZ6  | SX6 | ECN.UXE  |
| 3660 | 5160000126 X | F.SHZE5X | SA6 | TEMPWD1  |
|      | 0206003631 + |          | JP  | F.SHAZ1  |
| 3661 | 7160000000 X | F.SHAZ6  | SX6 | ECN.UXE  |
|      | 0206003660 + |          | JP  | F.SHZE5X |
|      | *            |          |     |          |
|      | *            |          |     |          |
|      | *            |          |     |          |
|      | *            |          |     |          |
|      | *            |          |     |          |

THIS CODE CHAINS TWO DIRECTORIES TOGETHER  
PUTS A LINK IN FIRST TO SECOND)

|      |              |         |          |                                      |
|------|--------------|---------|----------|--------------------------------------|
| 3662 | 02           | F.CHAIN | FUNCTION | CHAIN,2,OBJVTYPE,OBJVTYPE            |
| 3664 | 6110000000 X |         | 00XJ     | DR:SSUL1,ARGL,CAP+IND,ARGL,CAP+1+IND |
| 3673 | 0200000000 X |         | JP       | FEJECT                               |
|      | *            |         |          |                                      |
|      | *            |         |          |                                      |
|      | *            |         |          |                                      |
|      | *            |         |          |                                      |

THIS CODE CLEARS DIRECTORY CHAIN LINK

|      |              |         |          |                       |
|------|--------------|---------|----------|-----------------------|
| 3674 | 01           | F.UNCHN | FUNCTION | UNCAHN,1,OBJVTYPE     |
| 3676 | 6110000000 X |         | 00XJ     | DR:CSUL1,ARGL,CAP+IND |
| 3704 | 0200000000 X |         | JP       | FEJECT                |
|      | *            |         |          |                       |
|      | *            |         |          |                       |
|      | *            |         |          |                       |
|      | *            |         |          |                       |

THIS CODE FORMS A SOFT LINK

1ST ARGUMENT IS THE LINK  
2ND ARGUMENT IS WHERE TO PLACE THE LINK

|      |              |         |          |                                     |
|------|--------------|---------|----------|-------------------------------------|
| 3705 | 02           | F.SOFTL | FUNCTION | SOFTL,2,DLCVTYPE,BLCVTYPE           |
| 3707 | 511000051 X  |         | SA1      | ARGL,DTM                            |
|      | 53110        |         | SA1      | X1                                  |
| 3710 | 6170003711 + |         | CALL     | EORDIR                              |
| 3711 | 5160000126 X |         | SA6      | TEMPWD1                             |
|      | 5116000052 X |         | SA1      | ARGL,DTM+1                          |
| 3712 | 53110        |         | SA1      | X1                                  |
| 3713 | 6170003714 + |         | CALL     | EORDIR                              |
| 3714 | 5160000127 X |         | SA6      | TEMPWD2                             |
|      | 6116000000 X |         | SETXJ    | DR:SFLK1,ARGL,CAP+1+IND,TEMPWD2+IND |
| 3720 | 5140000057 X |         | SA4      | ARGL,CAP                            |
|      | 73160        |         | YSETXJ   | X4,TEMPWD1+IND,X4+1                 |
| 3724 | 0130000000 X |         | XJ       | XJLOC                               |
| 3727 | 0200000000 X |         | JP       | FEJECT                              |
|      | *            |         |          |                                     |
|      | *            |         |          |                                     |
|      | *            |         |          |                                     |
|      | *            |         |          |                                     |
|      | *            |         |          |                                     |

THIS CODE RENAMES A DIRECTORY ENTRY, USES DRICHNM  
1ST ARGUMENT IS AN IDENTIFIER GIVING NEW NAME  
2ND ARGUMENT IS A DIRECTORY LOC GIVING THE ENTRY  
TO BE CHANGED; THE ACCESS KEY IS IGNORED

|      |             |        |          |                          |
|------|-------------|--------|----------|--------------------------|
| 3730 | 02          | F.RENM | FUNCTION | RENAME,2,IVTYPE,DLCVTYPE |
| 3732 | 511000051 X |        | SA1      | ARGL,DTM                 |

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|      |              |      |   |
|------|--------------|------|---|
|      | 53110        |      | x1  |
| 3733 | 6170003734 + | CALL | EORDIR  |
| 3734 | 5160000126 x | SA6  | TEMPWD1   |
|      | 5110000052 x | SA1  | ARGL.DTM+1                                      |
| 3735 | 53110        | SA1  | X1  |
| 3736 | 6170003737 + | CALL | EORDIR  |
| 3737 | 5160000127 x | SA6  | TEMPWD2   |
|      | 6110000000 x | DOXJ | DR:CHNM1,ARGL.CAP+1.IND,TEMPWD2.IND,TEMPWD1.IND |
| 3747 | 0200000000 x | JP   | FEXIT   |

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SEND AN INTERRUPT TO THE FAKE GHOST IN A SPECIFIED PROCESS

|      |              |        |  |
|------|--------------|--------|--|
|      | 01           |        |  |
| 3750 | 5150000051 x | F.KICK | FUNCTION KICK,I,DTMVTYPE                   |
|      | 53550        |        | ARGL.DTM .. PROC NUMBER                    |
| 3752 | 7110000002   |        | SA5 .. X5 WAS REALLY A PTR                 |
|      | 26536        |        | SX1 .. ACTION NUMBER FOR A KICK            |
| 3753 | 12715        |        | LX5  |
| 3754 | 6170005111 + |        | BX7  |
| 3756 | 0200000000 x |        | CALLR ASKTTYW .. SEND REQUEST TO TTYWTCHER |
|      |              |        | JP FEXIT                                   |

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CONVERT OCTAL TO DECIMAL

|      |                      |         |   |
|------|----------------------|---------|---|
|      | 03                   |         |   |
| 3757 | 6170003762 +         | F.DECML | FUNCTION DECML,3,DTMVTYPE,DTMVTYPE,DTMVTYPE |
| 3761 | 5110000051 x         | CALL    | SETPRNT                                     |
| 3762 | 7110004001 +         | SX1     | F.DECPI                                     |
|      | 63110                | CALL    | DISLINE,X1,20                               |
| 3765 | 5110000051 x         | SA1     | ARGL.DTM .. PTR TO DATUM                    |
|      | 53110                | SA1     | X1 .. THE REAL POOP                         |
| 3766 | 6110000024           | CALL    | OCTNPK,20                                   |
| 3770 | 6170003771 +         | CALL    | FINPRNT                                     |
|      |                      |         |   |
| 3771 | 6170003772 +         | CALL    | SETPRNT                                     |
| 3772 | 5110000051 x         | SA1     | ARGL.DTM                                    |
|      | 53110                | SA1     | X1  |
| 3773 | 5120000052 x         | SA2     | ARGL.DTM+1                                  |
|      | 53220                | SA2     | X2 .. MAX NUM CHARS                         |
| 3774 | 5130000053 x         | SA3     | ARGL.DTM+2                                  |
|      | 53330                | SA3     | X3 .. SCALING FACTOR                        |
|      | 63120                | CALL    | DECNPK,X2,X3                                |
| 3777 | 6170004000 +         | CALL    | FINPRNT                                     |
| 4000 | 0200000000 x         | JP      | FEXIT                                       |
| 4001 | 17032401145524011454 | F.DECPI | DIS .. OCTAL VAL=.                          |

|                           |       |                   |  |
|---------------------------|-------|-------------------|--|
|                           |       | *                 |  |
|                           |       | *                 | TBLINE                                       |
|                           |       | *                 | RIGHT JUSTIFY BLNAK FILL BCD INTO ASCII      |
|                           |       | *                 |  |
| 4003 02                   |       | F.TBL             | FUNCTION IBLINE,2, IDVTYPE,DTMVTYPE          |
| 4005 5110000051 X         | 53110 |                   | SA1 ARG1,DTM                                 |
|                           |       |                   | SA1 X1                                       |
|                           |       |                   | CALLR DSPLXW,X1,10 . CONVERT TO BCD. SIGN    |
| 4010 10611                | 63110 |                   | BX6  |
|                           |       |                   | SAS TEMPWDS . BCD STRING                     |
| 4011 6170004012 +         |       | *                 | CALL SETPRNT                                 |
| 4012 6110004027 +         |       |                   | CALL DISLINE,F.TBLMG1,20                     |
| 4014 6110000132 X         |       |                   | CALL DISLINE,TEMPWDS,20                      |
| 4016 6170004017 +         |       | *                 | CALL FINPRNT                                 |
| 4017 6170004020 +         |       |                   | CALL SETPRNT                                 |
| 4020 6110004030 +         |       |                   | CALL DISLINE,F.TBLMG2,20                     |
| 4022 5110000052 X         | 53210 |                   | ARG1,DTM+1                                   |
| 4023 6110000132 X         |       |                   | SA1 X1                                       |
| 4025 6170004026 +         |       |                   | CALL LINEPK,TEMPWDS,X2                       |
| 4026 0200000000 X         |       |                   | CALL EINPRNT                                 |
| 4027 23242211160754000000 |       |                   | JP FEXIT                                     |
| 4030 20010313050455232422 |       | F.TBLMG1 F.TBLMG2 | DIS DIS ,.STRING=, ,.PACKED STRING=,         |
|                           |       | *                 |  |
|                           |       | *                 | DCTBL  |
|                           |       | *                 | RJBF A OCTAL-->DECIMAL NUMBER                |
|                           |       | *                 |  |
| 4032 03                   |       | F.DCTBL           | FUNCTION DCTBL,3,DTMVTYPE,DTMVTYPE,DTMVTYPE  |
| 4034 6170004035 +         |       |                   | CALL SETPRNT                                 |
| 4035 6110004055 +         |       |                   | CALL DISLINE,F.DCTBL1,20                     |
| 4037 5110000051 X         | 53110 |                   | ARG1,DTM , GET PIR                           |
|                           |       |                   | SA1 X1 , GET VALUE                           |
| 4040 6110000024           |       |                   | CALL OCTNPK,20                               |
| 4042 6170004043 +         |       |                   | CALL FINPRNT                                 |
| 4043 6170004044 +         |       | *                 | CALL SETPRNT                                 |
| 4044 6110004057 +         |       |                   | CALL DISLINE,F.DCTBL2,20                     |
| 4046 5110000051 X         |       |                   | ARG1,DTM                                     |
|                           |       |                   | SA1 X1 , GET VALUE                           |
| 4047 5120000052 X         | 53110 |                   | SA2 ARG1,DTM+1                               |
|                           |       |                   | SA1 X2 , GET FIELD SIZE                      |
| 4050 5130000053 X         | 53220 |                   | SA2 ARG1,DTM+2                               |
|                           |       |                   | SA3 X3 , GET SCALING FACTOR                  |
|                           |       |                   | CALL DCBPK,X2,X3                             |
| 4053 6170004054 +         | 63120 |                   | CALL EINPRNT                                 |
| 4054 0200000000 X         |       |                   | JP FEXIT                                     |
| 4055 17032401145526011454 |       | F.DCTBL1 F.DCTBL2 | DIS DIS ,.OCTAL VAL=, ,.PACKED DECIMAL VAL=, |
| 4057 20010313050455040503 |       | *                 |  |

|      |              |                           |  |
|------|--------------|---------------------------|--|
|      |              | * F <sub>1</sub> FORCEOUT |  |
|      |              |                           | SHUT DOWN A TTY (FORCED LOGOUT)                  |
|      |              | F <sub>1</sub> .FLOUT     | FUNCTION FORCEOUT,I,DTMVTYPE                     |
|      |              |                           | CALL SETPI                                       |
| 4062 | 01           |                           | SA1 ARG1,DTM                                     |
| 4064 | 6170004065 + |                           | SX2 EV.FRCLG . REQUEST                           |
| 4065 | 5110000051 X |                           | SA1 X1+0   |
|      | 7120000003   |                           | LX1  |
| 4066 | 5211000000   |                           | BX7  |
|      | 20136        |                           | X1+X2 . 30/PROCSLOT*30/EV.FRCLG                  |
|      | 12712        |                           | ASKTTYW . SEND REQUEST TO TTYWATCHER             |
| 4067 | 6170005111 + |                           | CALLR CLRPI                                      |
| 4071 | 6170004072 + |                           | CALL JP  |
| 4072 | 0200000000 X |                           | FEXIT  |
|      |              | * F <sub>2</sub> SYSDOWN  |  |
|      |              |                           | SHUT DOWN ENTIRE SYSTEM                          |
|      |              | F <sub>2</sub> .SYSDN     | FUNCTION SYSDN,I                                 |
|      |              |                           | CALL SETPI . INHIBIT INTERRUPTS                  |
| 4073 | 00           |                           | SX7 EV.SHDN . ACTION REQUEST                     |
| 4075 | 6170004076 + |                           | CALLR ASKTTYW . SEND REQUEST TO TELETYPE WATCHER |
| 4076 | 7170000004   |                           | DOXJ EC:GEVHI,CX,SPCH                            |
|      | 6176005111 + |                           | TEMPWQ1  |
| 4100 | 6110000000 X |                           | DOXJ TEMPWQ1                                     |
| 4106 | 5170000126 X |                           | SA1 TEMPWQ1                                      |
|      | 5116000126 X |                           | NZ X1,SYSDN1 . JP IF BAD NEWS                    |
| 4107 | 0311004117 + |                           |  |
|      |              | * F <sub>3</sub> SYSDNO   |  |
|      |              |                           | (SYSTEM IS SHUTDOWN)                             |
| 4110 | 6110004113 + |                           | MSGOUT CLRPI                                     |
| 4115 | 6170004116 + |                           | JP FEXIT   |
| 4116 | 0200000000 X |                           |  |
|      |              | * F <sub>4</sub> SYSDN1   |  |
|      |              |                           | SYSDN0   |
| 4117 | 0200004110 + |                           | MSGOUT (DEADSTART NECESSARY FOR DISK DUMP)       |
| 4120 | 6110004123 + |                           | CALL CLRPI                                       |
| 4127 | 6170004130 + |                           | JP FEXIT   |
| 4130 | 0200000000 X |                           | JP FEXIT   |
| 4131 | 0200000000 X |                           | JP FEXIT   |
| 4132 | 0200000000 X |                           |  |
|      |              | * F <sub>5</sub> LKTTY    |  |
|      |              |                           | LOCKTTY,I,DTMVTYPE                               |
| 4133 | 01           |                           | MSGOUT (NOT YET IMPLEMENTED)                     |
| 4135 | 6110004140 + |                           | JP FEXIT   |
| 4143 | 0200000000 X |                           |  |
|      |              | * F <sub>6</sub> TTYON    |  |
|      |              |                           | ASK TELETYPEWATCHER TO TURN ON A TTY             |
|      |              | F <sub>6</sub> .TTYON     | FUNCTION TTYON,I,DTMVTYPE                        |
|      |              |                           | CALL ARG1,DTM                                    |
| 4144 | 01           |                           | SA1 EV.TTYON                                     |
| 4146 | 5110000051 X |                           | SX2 X1+0 . REAL TTY NUMBER                       |
|      | 7120000005   |                           | SA1  |
| 4147 | 5211000000   |                           | LX1  |
|      | 20136        |                           | 30   |

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|  |              |         |            |                                    |
|--|--------------|---------|------------|------------------------------------|
|  | 12712        | BX7     | X1+X2      | . 30/PROCESS NUM, 30/EV.TTYON      |
| 4150   | 6170005111 + | CALLR   | ASKTTYW    | . SEND REQUEST TO TTYWTCHER        |
| 4152   | 0200000000 X | JP      | FEXIT      |                                    |
| * * * TTYSON *                                       |              |         |            |                                    |
| 4153   | 00           | F.ALLON | FUNCTION   | TTYSON,0                           |
| 4155   | 7170000006   | SX7     | EV.ALLON   |                                    |
|  | 6170005111 + | CALLR   | ASKTTYW    | . SEND REQUEST TO TTYWTCHER        |
| 4157   | 0200000000 X | JP      | FEXIT      |                                    |
| * * * TTYOFF *                                       |              |         |            |                                    |
| * ASK TTYWTCH TO TURN OFF A TTY *                    |              |         |            |                                    |
| 4160   | 01           | F.TYOFF | FUNCTION   | TYOFF,1,DTMVTYPE                   |
| 4162   | 5110000051 X | SX1     | ARGL,DTM   |                                    |
|  | 7120000007   | SX2     | EV.TYOFF   |                                    |
| 4163   | 5211000000   | SA1     | X1+0       |                                    |
|  | 20136        | LX1     | 30         |                                    |
|  | 12717        | BX7     | X1+X7      |                                    |
| 4164   | 6170005111 + | CALLR   | ASKTTYW    | . SEND REQUEST TO TELETYPE WATCHER |
| 4166   | 0200000000 X | JP      | FEXIT      |                                    |
| * * * NEWMASTER *                                    |              |         |            |                                    |
| * TELL THE TELETYPE WATCHER TO CHANGE THE INDEX OF * |              |         |            |                                    |
| * THE MASTER TTY *                                   |              |         |            |                                    |
| 4167   | 01           | F.NMAST | FUNCTION   | NEWMASTER,1,DTMVTYPE               |
| 4171   | 5150000051 X | SX5     | ARGL,DTM   |                                    |
|  | 53550        | SX5     | X5         | . FETCH THE REAL POOP              |
| 4172   | 7140000010   | SX4     | EV.NMAST   |                                    |
|  | 20536        | LX5     | 30         |                                    |
|  | 12745        | BX7     | X4+X5      | . 30/PROCSLOT, 30/ACTION REQUEST   |
| 4173   | 6170005111 + | CALLR   | ASKTTYW    |                                    |
| 4175   | 0200000000 X | JP      | FEXIT      |                                    |
| * * * * SET UP FOR ARITHMETIC FUNCTIONS *            |              |         |            |                                    |
| 4176   | 7110000001   | ARITHSU | SX1        | I                                  |
|  | 76260        | SX2     | S0         |                                    |
| 4177   | 7130000001   | SX3     | DTMVTYPE   |                                    |
|  | 5140000051 X | SA4     | ARGL,DTM   |                                    |
| 4200   | 53440        | SA4     | X4         |                                    |
|  | 5150000052 X | SA5     | ARGL,DTM+I |                                    |
|  | 53550        | SAS     | X5         |                                    |
| 4201   | 0270000000   | JP      | 87         |                                    |

|      |              |        |         |                                       |
|------|--------------|--------|---------|---------------------------------------|
|      | *            |        |         |                                       |
|      | *            |        |         |                                       |
|      | *            |        |         |                                       |
|      | *            |        |         |                                       |
|      | *            |        |         |                                       |
|      | *            |        |         |                                       |
| 4202 | 53110        | PUTDTM | SA1     | STORE A DATUM IN A LOCATION           |
|      | 10611        |        | BX6     | DATUM POINTED TO BY X1                |
|      | 516000131 X  |        | SA6     | LOCATION IS ARGUMENT INDEX B1         |
|      |              |        | X1      |                                       |
|      |              |        | X1      |                                       |
|      |              |        | TEMPWD4 |                                       |
| 4203 | 6170004204 * | CALL   |         | SETUP                                 |
| 4204 | 5110000075 X |        | SA1     |                                       |
|      | 7221777767   |        | SX2     | ARG. TYPE                             |
| 4205 | 0302004214 * |        | ZR      | X1-FLCVTYPE                           |
|      | 7221777766   |        | SX2     | X2,MVDF                               |
| 4206 | 0302004251 * |        | ZR      | X1-SBVTYPE                            |
|      | 7221777765   |        | SX2     | X2,MVDM                               |
| 4207 | 0302004214 * |        | ZR      | X1-OBXVTYPE                           |
|      | 7221777764   |        | SX2     | X2,MVDF                               |
| 4210 | 0302004251 * |        | ZR      | X1-SBXVTYPE                           |
|      | 7221777765   |        | SX2     | X2,MVDM                               |
| 4211 | 0302004273 * |        | ZR      | X1-IDVTYPE                            |
|      | 7221777762   |        | SX2     | X2,MVDI                               |
| 4212 | 0302004256 * |        | ZR      | X1-VLCVTYPE                           |
|      | 7221777763   |        | SX2     | X2,MVDV                               |
| 4213 | 0302004276 * |        | ZR      | X1-RLCVTYPE                           |
|      | 0200000556 * |        | JP      | X2,MVREG                              |
|      |              |        |         | FNCEVALX                              |
|      |              |        |         | REGISTER LOC                          |
|      |              |        |         | RAD ARGUMENT                          |
|      |              |        |         |                                       |
|      |              |        |         |                                       |
|      |              |        |         |                                       |
| 4214 | 5120000074 X | MVDF   | SA2     | STORE A DATUM IN A FILE               |
|      | 617004551 *  |        | CALLR   | ARG.CAP                               |
| 4216 | 0301004232 * |        | ZR      | TESTDEL                               |
|      |              |        |         | X1,MVDDF                              |
|      |              |        |         | DISK FILE                             |
| 4217 | 5130000073 X |        | SA3     |                                       |
|      | 6110000000 X |        | DOXJ    | ARG.DTM                               |
| 4231 | 0200000000 X |        | RTNR    | EC:WRITI,ARG.CAP+IND,X3+IND,TEMPWD4,I |
|      |              |        |         |                                       |
|      |              |        |         |                                       |
|      |              |        |         |                                       |
| 4232 | 5110000074 X | MVDDF  | SA1     | DISK FILE                             |
|      | 6110100023 * |        | CALLR   | ARG.CAP                               |
| 4236 | 5130000073 X |        | SA3     | OPENDE,OPRWI,X1,CX,TEMP               |
|      | 6110000000 X |        | DOXJ    | ARG.DTM                               |
| 4250 | 0200000000 X |        | RTNR    | DF:WRITI,CX,TEMP,X3+IND,TEMPWD4,I     |
|      |              |        |         |                                       |
|      |              |        |         |                                       |
|      |              |        |         |                                       |
| 4251 | 7110000002   | MVDM   | SX1     | STORE A ATUM IN USERS MEMORY          |
|      |              |        | z       | ( WRITE CORE )                        |

|      |                                |   |  |                    |
|------|--------------------------------|---|--|--------------------|
|      | 5130000000 X                   | SA3   | ÚMENRÁ   |                    |
| 4252 | 5120000073 X<br>53250<br>36223 | MVDM1   | ARG.DTM<br>X2<br>Y2+X3<br>TEMPWD4<br>ASKBDG  |                    |
| 4253 | 5130000131 X<br>6170000000 X   | SA2<br>IX2<br>SA3<br>CALLR<br>RTNR  |  |                    |
| 4255 | 0200000000 X                   | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
| 4256 | 5110000073 X<br>53170<br>63210 | MVDV  | ARG.DTM<br>X1<br>X1 INDEX OF VARIABLE  |                    |
| 4257 | 6110000000 X<br>0721004265 +   | MVDV2   | NFIVEDV<br>B2,B1,MVDV1<br>LT<br>SA1<br>BX6<br>SA6<br>SA1<br>MX0<br>BX6<br>SX1<br>LX1<br>BX6<br>SA6<br>RTNR | CAN NOT BE CHANGED |
| 4260 | 5110000131 X<br>16671          | SA1<br>TEMPWD4<br>X1<br>V.DVAL+B2<br>V.NAME+B2<br>4<br>=X0*X1<br>DTMVTYPE<br>60=4<br>X1+X6<br>V.NAME+B2 |  |                    |
| 4261 | 5162000000 X<br>5170000000 X   |   |  |                    |
| 4262 | 43004<br>15610<br>711600001    |   |  |                    |
| 4263 | 20170<br>12616<br>5162000000 X |   | INSTALL NEW TYPE FIELD   |                    |
| 4264 | 0200000000 X                   |   |  |                    |
| 4265 | 6110004270 +                   | MVDV1   | (VARIABLE) FIXED >   |                    |
| 4272 | 0200000000 X                   | MSGOUT<br>JP  | FEEXIT   |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
| 4273 | 5110000073 X                   | MVDI  | ARG.DTM  |                    |
| 4274 | 6170004275 +                   | CALL  | FINDVAR  |                    |
| 4275 | 0720000723 +<br>020004257 +    | LT<br>JP  | B2,B0,EVALVDX<br>MVDV2<br>NO SUCH VARIABLE   |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
|      | *                              | *   |  |                    |
| 4276 | 7110000004<br>76360            | MVREG   | STORE A DATUM IN A REGISTER WORD   |                    |
| 4277 | 0200004252 +                   | SX1<br>SX3<br>JP  | (WRITE A REGISTER WORD)<br>R0<br>MVDM1   |                    |

|      |            |            |         |       |                                     |
|------|------------|------------|---------|-------|-------------------------------------|
| 4300 | 73610      |            | PUTOBJ  | SX6   | STORE AN OBJECT AT A LOCATION       |
| 4301 | 6170004302 | *          |         | SA6   | OBJECT AT X1                        |
|      |            | *          |         | CALL  | LOCATION IS ARGUMENT INDEX B1       |
| 4302 | 5110000075 | x          |         | SA1   | X1                                  |
|      |            | 7221777773 |         | SX2   | TEMPWD4                             |
| 4303 | 0302004311 | *          |         | ZR    | SETPUT                              |
|      |            | 7221777772 |         | SX2   | ARG-TYPE                            |
| 4304 | 0302004322 | *          |         | ZR    | X1-CLCV-TYPE                        |
|      |            | 7221777765 |         | SX2   | ZR                                  |
| 4305 | 0302004311 | *          |         | SX2   | X1-MVCCL                            |
|      |            | 7221777764 |         | ZR    | X1-SBCV-TYPE                        |
| 4306 | 0302004322 | *          |         | SX2   | X2,MVCSUBP                          |
|      |            | 7221777762 |         | ZR    | X1-OBXV-TYPE                        |
| 4307 | 0302004332 | *          |         | SX2   | X2,MVCCL                            |
|      |            | 7221777770 |         | ZR    | X1-SBXV-TYPE                        |
| 4310 | 0302004343 | *          |         | SX2   | X2,MVCSUBP                          |
|      |            | 0266000556 | *       | ZR    | X1-VLCV-TYPE                        |
|      |            | *          |         | JP    | X2,MVCV                             |
|      |            | *          |         |       | X1-DLCV-TYPE                        |
|      |            | *          |         |       | X2,MVCDR                            |
|      |            | *          |         |       | FNCEVALX                            |
|      |            | *          |         |       | DIRECTORY LOC                       |
|      |            | *          |         |       | BAD ARGUMENT                        |
| 4311 | 5130000073 | x          | MVCCL   | SA3   | PLACE OBJECT IN CLIST               |
|      |            | 53330      |         | SA3   | ARG-DTM                             |
| 4312 | 6110000000 | x          |         | DOXJ  | X3                                  |
| 4321 | 0200000000 | x          |         | RTNR  | EC:COULI,ARG,CAP+IND,X3,TEMPWD4+IND |
| 4322 | 5110000131 | x          | MVCSUBP | SA1   | PLACE OBJECT IN SUBPROCESS CLIAT    |
|      |            | 63110      |         | CALLR | TEMPWD4                             |
| 4325 | 7110000006 |            |         | SX1   | MVCAP,X1,CX,TEMP                    |
|      |            | 5120000073 | x       | SX2   | S ( PUT CAP IN CLIST )              |
| 4326 | 53220      |            |         | SX2   | ARG-DTM                             |
|      |            | 5130000000 | x       | SX3   | X2                                  |
|      |            | 36223      |         | IX2   | UCLR                                |
| 4327 | 6170000000 | x          |         | CALLR | X2+X3                               |
| 4331 | 0200000000 | x          |         | RTNR  | ASKBDG                              |
| 4332 | 5110000073 | x          | MVCV    | SA1   | PLACE OBJECT IN VARIABLE            |
|      |            | 53110      |         | SA1   | ARG-DTM                             |
|      |            | 63210      |         | SB2   | X1                                  |
|      |            | *          |         |       | INDEX OF VARIABLE                   |

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, ACTUAL FUNCTION EVALUATION

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|      |              |       |  |                                |
|------|--------------|-------|--|--------------------------------|
| 4333 | 6110000000 X | SB1   | NFIXEDV                                      |                                |
|      | 0721004265 + | LT    | B2,B1,MVDV1                                  | FIXED VARIABLE                 |
| 4334 | 5112000000 X | SA1   | V.NAME+B2                                    |                                |
|      | 43064        | MX0   | 4  |                                |
|      | 15610        | BX6   | -X0*X1                                       |                                |
| 4335 | 7110000003   | SX1   | OBJVTYPE                                     |                                |
|      | 26170        | LX1   | 60-4   |                                |
|      | 12616        | BX6   | X1+X6  | INSTALL NEW TYPE FIELD         |
| 4336 | 5162000000 X | SA6   | V.NAME+B2                                    |                                |
|      | 7135000000 X | SX3   | V.CAP+B2                                     |                                |
| 4337 | 5110000131 X | SA1   | TEMPWD4                                      |                                |
|      | 63110        | CALLR | MVCAP,X1,X3                                  |                                |
| 4342 | 0200000000 X | RTNR  |  |                                |
|      | *            |       |  | PLACE DISK OBJECT IN DIRECTORY |
|      | *            |       |  |                                |
|      | *            |       |  |                                |
|      | *            |       |  |                                |
| 4343 | 5110000073 X | MVCDR | SA1  | ARG.DTM                        |
|      | 55170        |       | SA1  | 31                             |
| 4344 | 6170004345 + |       | CALL   | CORDIR                         |
| 4345 | 5160000126 X |       | SA6  | TEMPWD1                        |
|      | 6110000000 X | DOXJ  | DR:HDLK1+ARG.CAP+IND TEMPWD1+IND TEMPWD4+IND |                                |
| 4355 | 0200000000 X | RTNR  |  |                                |

|      |              |         |        |     |                           |                 |
|------|--------------|---------|--------|-----|---------------------------|-----------------|
| 4363 | 5140000020 X |         | ENTERV | SA4 | VAL.FREE                  |                 |
|      | 7264000001   |         |        | SX6 | X4+1                      | STEP VAL.FREE   |
| 4364 | 54640        |         |        | SA6 | A4                        |                 |
|      | 5150000051 X |         |        | SAS | TKN.TOP                   |                 |
|      | 37545        |         |        | IX5 | X4-X5                     |                 |
| 4365 | 0325004427 + |         |        | PL  | X5,ENTERVX1               | NOT ENOUGH ROOM |
|      | 43052        |         | *      | MX0 | 60-18 SAVE                |                 |
|      | 15630        |         |        | BX6 | -X0*X3 BASES              |                 |
| 4366 | 20622        |         |        | LX6 | 18                        |                 |
|      | 5150000035 X |         |        | SAS | CAP.FREE OF               |                 |
|      | 15550        |         |        | BX5 | -X0*X5 INFO               |                 |
| 4367 | 12656        |         |        | BX6 | X5*X6                     |                 |
|      | 20622        |         |        | LX6 | 18                        |                 |
|      | 5156000034 X |         |        | SAS | DTM.FREE AND TYPE         |                 |
| 4370 | 15550        |         |        | BX5 | -X0*X5 IN VAL STACK       |                 |
|      | 12656        |         |        | BX6 | X5*X6                     |                 |
|      | 53640        |         | *      | SA6 | X4                        |                 |
| 4371 | 0301004401 + |         |        | ZR  | X1,ENTERV2                | NO DATA ITEMS   |
|      | 5146000034 X |         |        | SA4 | DTM.FREE CHECK DATA STACK |                 |
| 4372 | 36641        |         |        | IX6 | X4+X1                     |                 |
|      | 54640        |         |        | SA6 | A4                        |                 |
|      | 7170000034 X |         |        | SX7 | DTM.LIM                   |                 |
| 4373 | 37667        |         |        | IX6 | X6-X7                     |                 |
|      | 0326004427 + |         | *      | PL  | X6,ENTERVX2               | NOT ENOUGH ROOM |
| 4374 | 5150000077 X |         |        | SAS | VAL.DTM                   |                 |
| 4375 | 0301004401 * | ENTERV1 | ZR     | ZR  | X1,ENTERV2                | MOVE DATA VALUE |
|      | 0321004401 * |         | NG     | NG  | X1,ENTERV2                | INTO DATA STACK |
| 4376 | 10655        |         |        | BX6 | X5                        |                 |
|      | 53640        |         |        | SA6 | X4                        |                 |
|      | 5055000001   |         |        | SAS | A5+1                      |                 |
| 4377 | 7244000001   |         |        | IX4 | X4+1                      |                 |
|      | 7217777776   |         |        | SX1 | X1+1                      |                 |
| 4400 | 0200004375 + |         | *      | JP  | ENTERV1                   |                 |
| 4401 | 0302004426 + | ENTERV2 | ZR     | ZR  | X2,ENTERV2                | NO CAPS         |
|      | 5146000035 X |         | SA4    | SA4 | CAP.FREE CHECK CAP STACK  |                 |
| 4402 | 36642        |         |        | IX6 | X4+X2                     |                 |
|      | 54640        |         |        | SA6 | A4                        |                 |
|      | 7170000000 X |         | *      | SX7 | CAP.LIM                   |                 |

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, MISC ROUTINES

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|                   |              |         |                               |
|-------------------|--------------|---------|-------------------------------|
| 4403 37667        |              | IX6     | X6-X7                         |
|                   | 0326004427 + | PL      | X6,ENTERVX3 NOT ENOUGH ROOM   |
|                   | 73520        | SX5     | X2 CAP COUNT                  |
| 4404 73340        | 7120000000 X | SX3     | X4 CAP TARGET                 |
| 4405 6110000000 X | *            | SX2     | VAL+CAP CAP SOURCE            |
|                   |              | DOXJ    | EC:MCAP1,X2,X3,MINUS0+IND     |
| 4414 725577776    | ENTERV3      | SX5     | X5-1                          |
|                   | 0305004426 + | ZR      | X5,ENTERV4                    |
| 4415 0335004426 + | 6110000000 X | NG      | X5,ENTERV4                    |
| 4425 0200004414 + | *            | DOXJ    | EC:MCAP1,X2+1,X3+1,MINUS0+IND |
| 4426              | ENTERV4      | JP      | ENTERV3                       |
| 4426 0200000000 X | *            | BSS     | *                             |
|                   | *            | RTNR    | *                             |
| 4427              | ENTERVX1     | BSS     | *                             |
| 4427              | ENTERVX2     | BSS     | NO ENOUGH ROOM IN VAL         |
| 4427              | ENTERVX3     | BSS     | NOT ENOUGH ROOM IN DTM        |
| 4427 0200000221 + | JP           | PARSEF3 | NOT ENOUGH ROOM IN CAPS       |

|      |              |        |        |                         |
|------|--------------|--------|--------|-------------------------|
|      |              | *      |        |                         |
|      |              | *      |        |                         |
|      |              | *      |        |                         |
|      |              | *      |        |                         |
| 4430 | 6110004433 + | VDUMP  | MSGOUT | (VAL STACK DUMP)        |
| 4435 | 7110000000 X |        | SX1    | VAL.BASE                |
|      | 5126000020 X |        | SA2    | VAL.FREE                |
| 4436 | 6170004507 + |        | CALLR  | VDUMP3                  |
| 4440 | 6110004443 + |        | MSGOUT | (DTM)                   |
| 4444 | 7110000022 X |        | SX1    | DTM.BASE                |
|      | 5126000034 X |        | SA2    | DTM.FREE                |
| 4445 | 6170004507 + |        | CALLR  | VDUMP3                  |
| 4447 | 6110004452 + |        | MSGOUT | (CAPS)                  |
| 4453 | 7160000000 X |        | SX6    | CAP.BSE                 |
|      | 5126000035 X |        | SA2    | CAP.FREE                |
| 4454 | 5160000134 X |        | SA6    | DMPX                    |
|      | 10622        |        | BX6    | X2                      |
| 4455 | 5160000135 X |        | SA6    | DMPY                    |
|      |              | *      |        |                         |
| 4456 | 5110000134 X | VDUMPI | SA1    | DMPX                    |
|      | 5126000135 X |        | SA2    | DMPY                    |
| 4457 | 37212        |        | IX2    | X1-X2                   |
|      | 0322004477 + |        | PL     | X2,VDUMP2               |
| 4460 | 7261000001   |        | SX6    | X1+1                    |
|      | 54610        |        | SA6    | A1                      |
|      | 73210        |        | SX2    | X1                      |
| 4461 | 6110000000 X |        | DOXJ   | EC:DSCE1,X2             |
| 4467 | 5160000126 X |        | SA6    | TEMPWD1                 |
|      | 5176000127 X |        | SA7    | TEMPWD2                 |
| 4470 | 6110000126 X |        | CALLR  | SPCPRT,TEMPWD1,FWDPMODE |
| 4473 | 6110000127 X |        | CALLR  | SPCPRT,TEMPWD2,FWDPMODE |
| 4476 | 0200004456 + |        | JP     | VDUMPI                  |
|      |              | *      |        |                         |
| 4477 | 6110004502 + | VDUMP2 | MSGOUT | (ID)                    |
| 4503 | 7110000036 X |        | SX1    | ID.BASE                 |
|      | 5126000050 X |        | SA2    | ID.FREE                 |
| 4504 | 6170004507 + |        | CALLR  | VDUMP3                  |
| 4506 | 0200000000 X |        | RTNR   |                         |
|      |              | *      |        |                         |
| 4507 | 10611        | VDUMP3 | BX6    | X1                      |
|      | 5160000134 X |        | SA6    | DMPX                    |
|      | 10622        |        | BX6    | X2                      |
| 4510 | 5160000135 X |        | SA6    | DMPY                    |
|      |              | *      |        |                         |
| 4511 | 5110000134 X | VDUMP4 | SA1    | DMPX                    |
|      | 5126000135 X |        | SA2    | DMPY                    |
| 4512 | 37212        |        | IX2    | X1-X2                   |
|      | 0322000060 X |        | PL     | X2,RTNR                 |
| 4513 | 7261000001   |        | SX6    | X1+1                    |
|      | 54610        |        | SA6    | A1                      |
|      | 63110        |        | CALLR  | SPCPRT,X1,FWDPMODE      |
| 4516 | 0200004511 + |        | JP     | VDUMP4                  |

\*  
\*  
\*  
\*  
\*  
\*  
\*

X1 IS ADDRESS OF AN ID  
PLACES IN ID STACK  
( INCLUDES COMPACTING STACK )  
RETURNS IN X6 NEW ADDRESS OF ID

|                   |       |     |                                     |
|-------------------|-------|-----|-------------------------------------|
| 4517 5120000050 x | PKID  | SA2 | ID.FREE                             |
| 53370             |       | SA3 | X1 GET CHAR CNT                     |
| 43071             |       | MX0 | 60-3                                |
|                   |       | BX4 | -X0*X3 PARTIAL WORD CHAR COUNT      |
| 4520 15430        |       | LX3 | 60-3                                |
| 20371             |       | BX3 | -X0*X3 FULL WORD COUNT              |
| 15330             |       | ZR  | X4,*+1 ADD ONE FOR PARTIAL WORD     |
| 4521 0304004522 * |       | SX3 | X3+1 ADD 1 FOR CHARACTER COUNT WORD |
| 7233000001        | *     | SB2 | NEE FREE POINTER                    |
| 4522 6223000001   |       | SX6 | X2+B2                               |
| 73652             |       | SA6 | ID.FREE                             |
| 4523 5160000050 x |       | SX7 | ID.LIM                              |
| 7170000050 x      |       | IX6 | X6-X7                               |
| 4524 37667        |       | PL  | X6,PKID3 NOT ENOUGH ROOM            |
| 0326004532 *      |       | SA1 | X1                                  |
| 53110             |       | BX6 | X1                                  |
| 4525 10611        |       | SA6 | X2                                  |
| 53620             | *     |     |                                     |
| 4526 612277776    | PKID1 | SB2 | 62-1                                |
| 0600004531 *      |       | LE  | 62,80,PKID2                         |
| 4527 5011000001   |       | SA1 | A1+1                                |
| 10611             |       | BX6 | X1                                  |
| 4530 5066000001   |       | SA6 | A6+1                                |
| 0200004526 *      |       | JP  | PKID1                               |
| 4531 10622        | PKID2 | BX6 | X2                                  |
| 0270000000        |       | JP  | 67                                  |
| 4532 0200000221 * | PKID3 | JP  | PARSEF3 NOT ENOUGH ROOM IN ID STACK |

4533 5120000050 X  
37212  
4534 0332004535 \*  
0270000000  
4535 10611  
5160000050 X  
4536 0270000000

|        |       |                   |
|--------|-------|-------------------|
| RLSID  | S A Z | I D . F R E E     |
|        | I X 2 | X 1 - X 2         |
| N G    |       | X 2 , R L S I D ) |
| J P    |       | X 7               |
| *      |       |                   |
| RLSID1 | B X 6 | X 1               |
|        | S A 6 | I D . F R E E     |
|        | J P   | X 7               |

RELEASE IN SPACE

NEEDS HELP LATER TO COMPACTING HIGHER IDS

X1 HOLDS ADDRESS OF TD

ID.FREE  
X1-X2  
X2,RLSIDI  
B7

1  
10.  
FREE

## XI POINTS TO AN IDEAL

MAKE UP A BLOCK DATUM SPECIFIER FOR A CALL  
ON DIRECTORY SYSTEM.  
PLACE IN X6

|      |            |            |            |       |
|------|------------|------------|------------|-------|
| 4537 | 53210      | 43071      | 15320      | 20271 |
| 4540 | 15620      |            |            |       |
| 4541 | 0303004542 |            | 7268000001 |       |
| 4542 | 20636      | 7211000001 |            | 12616 |
| 4543 | 0270000000 |            |            |       |

|        |       |           |
|--------|-------|-----------|
| FORDIR | S A 2 | X 1       |
|        | M X 0 | 6 0 + 3   |
|        | B X 3 | + X 0 * 7 |
| *      | L X 2 | 6 0 - 3   |
|        | B X 6 | + X 0 * 7 |
|        | Z R   | X 3 + **  |
|        | S X 6 | X 6 + 1   |
|        | S X 1 | 6 0       |
|        | S X 6 | X 1 + 1   |
|        | S X 6 | X 1 + X 6 |

PICK UP CHAR COUNT  
PARTIAL WORD CHAR COUNT  
FULL WD COUNT  
ADD ONE FOR NON EMPTY PARTIAL WORD  
ADDRESS OF FIRST TEXT WORD

FORM 7B

FORDIR FOR USE WHEN I/O PKGS HAVE MANY REGISTERS TIED UP

|      |            |            |
|------|------------|------------|
| 4544 | 53210      |            |
|      | 43671      |            |
|      |            | 156320     |
|      |            | 20271      |
| 4545 | 15720      |            |
| 4546 | 0303004547 | *          |
|      |            | 7277000001 |
| 4547 | 7211000001 |            |
|      |            | 26736      |
| 4550 | 0270000000 | 12717      |

FORDIR<sup>E</sup>  
SAZ  
HX0  
BX3  
LX2  
BX7  
ZR  
S1  
S1  
LX7  
BX7  
JP

PICK UP CHAR COUNT  
PARTIAL WORD CHAR COUNT  
FULL WD COUNT  
ADD ONE FOR NON EMPTY PARTIAL WORD



|      |              |          |  |                                 |
|------|--------------|----------|--|---------------------------------|
|      |              |          | FIND A VARIABLE CORRESPONDING TO AN IDENTIFIER |                                 |
| *    | *            | *        | X1 POINTS TO A DATUM POINTING TO THE ID        |                                 |
| *    | *            | *        | RETURN INDEX OF VARIABLE IN B2                 |                                 |
| *    | *            | *        | ( B2 = -1 IF NOT FOUND )                       |                                 |
| *    | *            | *        | RETURN TYPE IN X1                              |                                 |
| *    | *            | *        | ALSO PSEUDO RELEASES IDENTIFIER                |                                 |
| 4561 | 53110        | FINDVAR  | SA1  | X1                              |
|      | 5120000050 X |          | SA2  | ID.FREE                         |
|      | 37212        |          | IX2  | X1-X2                           |
| 4562 | 0322004563 + |          | PL   | X2,FINDVAR1                     |
|      | 10671        |          | BX6  | X1 RELEASE ID SPACE             |
|      | 54620        |          | SA6  | A2                              |
| 4563 | 53210        | FINDVAR1 | SA2  | X1 GET CHAR COUNT               |
|      | 7222777766   |          | SX2  | X2-9 8 CHARS MAX ALLOWED        |
| 4564 | 0322004572 + |          | PL   | X2,FINDVAR4 TOO MANY            |
|      | 5221000001   |          | SA2  | X1+1 PICK UP CHARS              |
| 4565 | 43004        |          | MX0  |                                 |
|      | 15220        |          | BX2  | -X0*X2 ZERO TOP 4 BITS          |
|      | 6126777776 X |          | S82  | NVARS-1                         |
| 4566 | 5132000000 X | FINDVAR2 | SA3  | V.NAME+B2 TRY A NAME            |
|      | 15490        |          | BX4  | -X0*X3                          |
|      | 13442        |          | BX4  | X4-X2 COMPARE WITH DESIRED NAME |
| 4567 | 0304004571 + |          | ZR   | X4,FINDVAR3 FOUND               |
|      | 6125777776   |          | S82  | B2-1                            |
| 4570 | 0620004566 + |          | GE   | B2,B0,FINDVAR2                  |
|      | 0276000000   |          | JP   | B7 NOT FOUND                    |
| 4571 | 11103        | FINDVAR3 | BX1  | X0*X3 FOUND                     |
|      | 20104        |          | LX1  | GET TYPE IN X1                  |
|      | 0276000000   |          | JP   | B7                              |
| *    | *            | *        | TOO MANY CHARACTERS IN VARIABLE NAME           |                                 |
| 4572 | 6110000000 X | FINDVAR4 | CALL   | EXIT,ECN.BDV                    |

|      |              |                       |      |                       |                              |
|------|--------------|-----------------------|------|-----------------------|------------------------------|
| 4574 | 56120        | SPCPRN <sub>T</sub>   | S A1 | B2                    | PICK UP FIRST CONTROL WD     |
|      | 7162000001   |                       | S X6 | B2+1                  |                              |
| 4575 | 5160000142 * |                       | S A6 | SPCPRN <sub>T</sub> A | SAVE ADDRESS NEXT CONTROL WD |
|      | 56310        |                       | S A3 | B1                    | PICK UP DATA WD              |
|      |              |                       |      |                       |                              |
| 4576 | 20006        |                       | M X0 | 6                     |                              |
|      | 20106        |                       | L X0 | 6                     |                              |
|      | 12610        |                       | L X1 | 6                     |                              |
| 4577 | 5160000141 * |                       | B X6 | x1+x0                 |                              |
|      | 11161        |                       | S A6 | SPCPRN <sub>T</sub> C | SAVE ROTATED CONTROL WD      |
|      | 63110        |                       | B X1 | x0*x1                 |                              |
| 4600 | 22313        |                       | S B1 | x1                    |                              |
|      |              |                       | L X3 | B1, X3                | SKIP INITIAL BITS            |
|      |              |                       |      |                       |                              |
| 4601 | 6140000000 X |                       | S B4 | OUTBU <sub>E</sub>    | SET                          |
|      | 6150000000 * |                       | S B5 | OUTBF SZ              | UP                           |
|      | 66600        |                       | S B6 | R0                    | FOR                          |
| 4602 | 6170004603 * |                       | CALL | STASCII               | PRINT                        |
|      |              |                       |      |                       |                              |
| 4603 | 5110000141 * | SPCPRN <sub>T</sub> I | S A1 | SPCPRN <sub>T</sub> C | PICK UP CONTROL WD           |
|      | 43066        |                       | M X0 | 6                     |                              |
|      | 20006        |                       | L X0 | 6                     |                              |
| 4604 | 20106        | SPCPRN <sub>T</sub> 2 | L X1 | 6                     | ROTATE, MASK IN 77B,         |
|      | 12710        |                       | B X7 | x1+x0                 | AND SAVE                     |
|      | 56710        |                       | S A7 | 21                    |                              |
|      |              |                       | B X1 | x0*x1                 | BIT COUNT                    |
| 4605 | 63110        |                       | S B1 | x1                    |                              |
|      | 6120000077   |                       | S B2 | 77B                   |                              |
| 4606 | 0712004611 * |                       | L T  | B1, B2, SPCPRNT3      |                              |
|      |              |                       |      |                       |                              |
| 4607 | 5110000142 * |                       | S A1 | SPCPRN <sub>T</sub> A | FORCED TO NEXT WORD          |
|      | 7271000001   |                       | S X7 | x1+1                  |                              |
|      | 54710        |                       | S A7 | A1                    |                              |
|      | 53110        |                       | S A1 | x1                    |                              |
| 4610 | 0200004604 * |                       | JP   | SPCPRN <sub>T</sub> 2 |                              |
|      |              |                       |      |                       |                              |
| 4611 | 0410004621 * | SPCPRN <sub>T</sub> 3 | EQ   | B1, B0, SPCPRNT4      | ALL DONE                     |
|      | 22313        |                       | L X3 | B1, X3                | SHIFT DATA WORD              |
|      | 43101        |                       | M X1 | 1                     |                              |
| 4612 | 6111777776   |                       | S B1 | B1-1                  |                              |

SPECIAL PRINT

DATA WD AT B1  
CONTROL WORDS START AT B2  
IN FORM OF 6 BIT FIELDS CONTAINING BIT  
COUNTS. FIRST COUNT IS OF BITS TO  
SKIP. 0 COUNT WILL STOP. 77B COUNT  
WILL FORCE TO NEXT CONTROL WD.  
ALL FIELDS START AT SIGN BIT.

COMMAND PROCESSOR DECK B  
FUNCTION COMPUTATION, MISC ROUTINES

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|      |                      |                       |  |
|------|----------------------|-----------------------|--|
|      | 23111                | AX1                   | \$1,X1                                     |
|      | 22111                | LX1                   | \$1,X1                                     |
| 4613 | 20101                | LX1                   | 1  |
|      | 5120004626 *         | SA2                   | SPCPRN <sub>T</sub> 5 HAVE NOW FORMED MASK |
|      |                      | BX2                   | ( = 001001 . . . 001)                      |
| 4614 | 47222                | CX2                   | X1*X2                                      |
|      | 11212                | SB1                   | X2 OCTAL CHARACTER COUNT                   |
|      | 63120                | BX1                   | X2   |
|      | 11113                | *                     | X1*X3 BITS TO PRINT                        |
| 4615 | 6170004616 *         | CALL                  | OCTPK ( X3 NOT AFFECTED )                  |
| 4616 | 6110000001           | SB1                   | 1  |
| 4617 | 6170004620 *         | CALL                  | BLNPK <sub>T</sub> INSTALL A BLANK         |
| 4620 | 0200004603 *         | JP                    | SPCPRN <sub>T</sub> 1                      |
| 4621 | 6170004622 *         | SPCPRN <sub>T</sub> 4 | CALL CRASCII                               |
| 4622 | 0130000000 X         | XJ                    | TTYOUT                                     |
| 4625 | 0200000000 X         | RTNR                  | *  |
| 4626 | 111111111111111111   | SPCPRN <sub>T</sub> 5 | DATA 111111111111111111                    |
|      | *                    | *                     | *  |
|      | *                    | *                     | *  |
|      | *                    | *                     | *  |
|      | *                    | *                     | *  |
|      | *                    | *                     | *  |
| 4627 | 00040707070707070707 | ASCPMODE              | VFD 6/0,6/4,6/7,6/7,6/7,6/7,6/7,6/7,6/7    |
| 4630 | 00                   | VFD                   | 6/0  |
| 4631 | 001717171700         | INSPMODE              | VFD 6/0,6/15,6/15,6/15,6/15,6/0            |
| 4632 | 007400               | FWDPMODE              | VFD 6/0,6/60,6/0                           |
|      | *                    | *                     | *  |
|      | *                    | *                     | *  |
|      | *                    | *                     | *  |
| 4632 | *                    | FWDPMODE              | EQU FWDPMODE                               |
| 4631 | *                    | INSPMODE              | EQU INSPMODE                               |
| 4627 | *                    | ASCPMODE              | EQU ASCPMODE                               |

SPECIAL PRINT FIXED CONTROL WORDS:

6/0,6/4,6/7,6/7,6/7,6/7,6/7,6/7,6/7,6/7  
6/0,6/15,6/15,6/15,6/15,6/0  
6/0,6/60,6/0

\*  
\*  
\*  
\*  
\*  
\* OBTAIN BEAD SUBPROCESS TYPE PARAMETER

|                                   |        |                          |  |                     |
|-----------------------------------|--------|--------------------------|--|---------------------|
| 4633 5110000104 g<br>7221777622   | BEADP  | SA1<br>SX2<br>ZR         | STRNGTKN<br>X1-ASCIIICR<br>X2,BEADP2           |                     |
| 4634 0302004654 *                 |        | *                        |  | WAS A CR LAST TIME  |
| 4635 6110004636 *                 | BEADP1 | CALL<br>SA1<br>SX2<br>ZR | GETTKN<br>STRNGTKN<br>X1-ASCIIICR<br>X2,BEADP2 |                     |
| 4636 5110000104 X<br>7221777622   |        | SX2<br>ZR                | X1-ASCIIIBLN                                   |                     |
| 4637 0302004654 +<br>7221777777   |        | SX2<br>ZR                | X2,BEADP1                                      | IS A CR             |
| 4640 0302004635 +<br>7221776775   |        | SX2<br>ZR                | X1-IDTKN                                       | SKIP BLANK          |
| 4641 0302004655 +<br>7221776776   |        | SX2<br>ZR                | X2,BEADP3                                      | IDENTIFIER          |
| 4642 0302004661 *                 |        | SX2<br>ZR                | X1-DTMTKN<br>X2,BEADP4                         | DATUM               |
| 4643 6110004646 *                 | BEADPX | MSGOUT                   | (BAD PARAMETER FOR BEAD TYPE SUBPROCESS)       |                     |
| 4652 5110000000 X                 |        | GET7                     | BUN87  |                     |
| 4653 0270000000                   |        | JP                       | 87   |                     |
| 4654 76100<br>0200000000 X        | BEADP2 | SX1<br>RTNR              | BO   | CR HENCE 0 PARAM    |
| 4655 6110000107 X                 | BEADP3 | CALLR                    | DSPLYW,STRNGVAL*I,10                           | IDENTIFIER          |
| 4660 0312004643 +<br>0200000000 X |        | NZ<br>RTNR               | X2,BEADPX                                      | TOO MANY CHARACTERS |
| 4661 5110000107 g<br>0200000000 X | BEADP4 | SA1<br>RTNR              | STRNGVAL*I                                     | DATUM               |

|      |                                     |         |  |  |
|------|-------------------------------------|---------|--|--|
|      |                                     |         | COLLECT SEQ OF OBJS UP TO CR<br>USED BY COMMANDS WITH ARB NO PARAMS<br>THAT SET STNDPCNT |  |
|      |                                     |         | RETURN WITH CLIST INDEX OF 1ST OBJ IN X1<br>COUNT IN X2                                  |  |
|      |                                     |         | WILL BE IN OBJ STACK OF PARSER AREA  |  |
| 4662 | 5110000057 x<br>7267000001          | OBJSEQ  | SA1<br>SX6<br>SA6  | ARGL-CAP<br>x1+1<br>TEMPWD1 INITIALIZE TARGET INDEX          |
| 4663 | 5160000126 x                        | *       | SX6<br>SA6   | ARGL-CAP+1<br>TEMPWD2 INITIALIZE SOURCE SUB INDEX            |
| 4664 | 7160000060 x<br>5110000127 x        | *       | SA1<br>SX6<br>SA6  | STNDPCNT<br>x1-2<br>TEMPWD3 ALREADY DONE IF COUNT WAS 0 OR 1 |
| 4665 | 7261777775<br>5160000130 x          | *       | SA1<br>SX6<br>SA6  | TEMPWD3<br>x1-1<br>A1  |
| 4666 | 5110000130 x<br>0331004676 *        | OBJSEQ1 | SA1<br>NG  | ALL DONE, PREPARE EXIT                                       |
| 4667 | 7261777776<br>54610                 | *       | SX6<br>SA6   |  |
| 4670 | 5110000127 x<br>7267000001          | *       | SA1<br>SX6<br>SA6  | TEMPWD2<br>x1+1<br>A1 STEP SOURCE SUB INDEX                  |
| 4671 | 54610<br>53110                      | *       | SA1  | X1 PICK UP SOURCE ACTUAL INDEX                               |
| 4672 | 5120000126 x<br>7262000001<br>54620 | *       | SA2<br>SX6<br>SA6  | TEMPWD1<br>x2+1<br>A2 STEP TARGET INDEX                      |
| 4675 | 0600004666 *                        | 63110   | CALLR<br>JP  | MVCAP,x1,x2<br>OBJSEQ1                                       |
| 4676 | 5110000057 x<br>5120000125 x        | *       | OBJSEQ2  | ARGL-CAP<br>STNDPCNT   |
| 4677 | 0200000000 x                        |         | SA1<br>SA2<br>RTNR   |  |

GENERAL GET SPACE SUBROUTINE

USED BY F.SPC AND SUBPROCESS CALL  
TO GET SPACE

ENTER WITH

B1 POINTING TO VECTOR OF POINTERS TO DATA  
X1 COUNT OF DATA

RETURNS WITH

X1 = 0 OK  
= -1 TOO MANY PARAMS

|      |               |              |         |       |              |                                |
|------|---------------|--------------|---------|-------|--------------|--------------------------------|
| 4700 | 76610         |              | SPCCMD  | SX6   | \$1          |                                |
|      |               | 5160000130 X |         | SA6   | TEMPWD3      | SAVE ADDRESS OF POINTER VECOTR |
| *    | *             |              | *       |       |              |                                |
| 4701 | 7120000000 X  |              |         | SX2   | MXSPCLV      | GET MAX SPACE LEVEL            |
|      |               | 37621        |         | IX6   | X2-X1        |                                |
| 4702 | 7130000001    |              |         | SX3   | 1            |                                |
|      |               | 36663        |         | IX6   | X6+X3        |                                |
| 4703 | 5160000126 X  |              |         | SA6   | TEMPWD1      | INITIAL LEVEL FOR THIS REQUEST |
|      |               | 0306004721 * |         |       |              |                                |
| 4704 | 0306004721 *  |              | *       | NG    | X6,SPCCMD4   | TO MANY LEVELS                 |
|      |               |              | *       | ZR    | X6,SPCCMD4   | TO MANY LEVELS                 |
| 4705 | 5160000127 X  | 37613        |         | IX6   | X1-X3        |                                |
|      |               |              | *       | SA6   | TEMPWD2      | INDEX OF INITIAL PARAM         |
| 4706 | 5110000127 X  | 0307004720 * | SPCCMD1 | SA1   | TEMPWD2      |                                |
|      |               |              | *       | NG    | X1,SPCCMD3   | ALL DONE                       |
| 4707 | -5120000130 X | 36172        |         | SZ2   | TEMPWD3      |                                |
|      |               | 53110        |         | IX1   | X1+X2        |                                |
| 4710 | 53110         | 0301004714 * |         | SA1   | X1           | GET POINTER TO REQUEST SIZE    |
|      |               |              | *       | SA1   | X1           | REQUEST SIZE AT THIS LEVEL     |
|      |               |              | *       | ZR    | X1,SPCCMD2   | NO REQUEST AT THIS LEVEL       |
| 4711 | 5120000126 X  | 5225777776 X |         | SZ2   | TEMPWD1      | LEVEL OF THIS REQUEST          |
| 4712 | 63120         |              |         | SZ2   | SPCLIST*X2-1 | ADDRESS OF DESCRIPTOR          |
|      |               |              | *       | CALLR | GETSPC,X2    | CALL FOR SPACE                 |
| 4714 | 5110000126 X  | 7261000001   | SPCCMD2 | SA1   | TEMPWD1      | STEP TO NEXT PARAM ETC.        |
| 4715 | 54610         | 5110000157 X |         | SX6   | X1+1         |                                |
| 4716 | 7261777776    | 54670        |         | SA6   | A1           | INCREMENT LEVEL                |
| 4717 | 0200004706 *  |              |         | SA1   | TEMPWD2      |                                |
|      |               |              | *       | SX6   | X1-1         |                                |
|      |               |              | *       | SA6   | A1           | DECREMENT PARAM INDEX          |
|      |               |              | *       | JP1   | SPCCMD1      |                                |
| 4720 | 76100         |              | SPCCMD3 | SX1   | 60           |                                |

COMMAND PROCESSOR DECK S  
FUNCTION COMPUTATION, MISC ROUTINES

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020000000 X

RTNR

OK EXIT

\*

\*

4721 711077776

SPCCMD4

SX1

-1

RTNR

TOO MANY PĀRAMS EXIT

020000000 X

\*  
\*  
\*  
\*  
\*

## MODE SETTING

|      |                              |         |           |                     |
|------|------------------------------|---------|-----------|---------------------|
| 4722 | 7160004627 +                 | PMDA    | SX6       | ASCP MODE           |
| 4723 | 5160000000 X<br>0200000000 X | SETPMD  | SA6<br>JP | PMODE<br>SERV1      |
| 4724 | 7160004632 +<br>0200004723 + | PMDF    | SX6<br>JP | FWDP MODE<br>SETPMD |
| 4725 | 7160004631 +<br>0200004723 + | PMDI    | SX6<br>JP | INSP MODE<br>SETPMD |
| 4726 | 76600                        | INMDOCT | SX6       | BO                  |
| 4727 | 5160000114 X<br>0200000000 X | SETINMD | SA6<br>JP | DTMMDFLG<br>SERV1   |
| 4730 | 7160000001<br>0200004727 +   | INMDDEC | SX6<br>JP | SETINMD             |

\*  
\*  
\*  
\*  
\*  
\*  
PRINT OUT ERROR CLASS AND NUMBER  
STARTS AT R1

|      |                      |        |          |          |
|------|----------------------|--------|----------|----------|
| 4731 | 56110                | EPRINT | SA1      | R1       |
|      | 5121000001           |        | SA2      | R1+1     |
| 4732 | 5160000126 X         |        | BX6      | X1       |
|      | 10611                |        | SA6      | TEMPWD1  |
| 4733 | 5160000127 X         |        | BX6      | X2       |
|      | 10622                |        | SA6      | TEMPWD2  |
| 4734 | 6140000000 X         | *      | SB4      | OUTBUF   |
|      | 6150000000 X         |        | SB5      | OUTBFSZ  |
| 4735 | 6170004736 *         |        | SB6      | R0       |
|      | 66600                |        | CALL     | STASCII  |
| 4736 | 5110000126 X         | *      | SA1      | TEMPWD1  |
|      | 6110000006           |        | SB1      | 6        |
| 4737 | 6170004740 *         |        | CALL     | OCTPK    |
| 4740 | 7170000014           |        | SX7      | ASCIICMA |
| 4741 | 6170004742 *         |        | CALL     | PKASCII  |
| 4742 | 6110000001           |        | SB1      | 1        |
| 4743 | 6170004744 *         |        | CALL     | BLNPKP   |
| 4744 | 5110000127 X         | *      | SA1      | TEMPWD2  |
|      | 6110000006           |        | SB1      | 6        |
| 4745 | 6170004746 *         |        | CALL     | OCTPK    |
| 4746 | 7170000014           |        | SX7      | ASCIICMA |
| 4747 | 6170004750 *         |        | CALL     | PKASCII  |
| 4750 | 6110000001           |        | SB1      | 1        |
|      | 6110000001           |        | SB1      | 1        |
| 4751 | 6170004752 *         |        | CALL     | BLNPKP   |
| 4752 | 5110000127 X         | *      | SA1      | TEMPWD2  |
|      | 20152                |        | LX1      | 60-18    |
| 4753 | 6110000016           |        | SB1      | 14       |
| 4754 | 6170004755 *         |        | CALL     | OCTPK    |
| 4755 | 6110004764 *         | *      | SB1      | EPRNTMSG |
|      | 6126000144           |        | SB2      | 100      |
| 4756 | 6170004757 *         | *      | CALL     | DISLINE  |
| 4757 | 6170004760 *         |        | CALL     | CRASCII  |
| 4760 | 0130000000 X         |        | XJ       | TTYOUT   |
| 4763 | 0200000000 X         |        | RTNR     |          |
| 4764 | 55555505222217220000 | *      | EPRNTMSG | DIS      |
|      |                      | 14     | ASCIICMA | EQU      |

THIS ROUTINE GENERATES DESCRIPTIVE INFO  
ABOUT AN ERROR

ENTER WITH:

|    |                                 |
|----|---------------------------------|
| B1 | ADDRESS OF ERROR DATA VECTOR    |
| B2 | ADDRESS OF A TABLE (ROOT TABLE) |
| B7 | RETURN                          |

ASSOCIATED WITH EACH TABLE IS A ROUTINE.  
THIS ASSOCIATED ROUTINE EXPECTS ADDRESS OF ERROR  
DATA VECTOR IN TEMPWD2 AND A RETURN IN B1. (B ONE)  
THIS ASSOCIATED ROUTINE MUST NOT MODIFY  
A5, X5, A6, X6, B4, B5, B6, B7

(REGISTERS USED BY ASCIIPACK ROUTINES)  
THIS ASSOCIATED ROUTINE WILL RETURN A DATUM IN X1  
TO BE USED FOR LOOK UP IN TABLE. THIS ASSOCIATED  
ROUTINE MAY PLACE INFO IN LINE, MAY TERMINATE  
CURRENT LINE IF IT STARTS A NEW ONE. MAY USE  
TEMPWD4.

THE ADDRESS OF THE ASSOCIATED ROUTINE IS  
PLACED IN WORD FOLLOWING TABLE CONTROL WD.

|      |              |              |        |      |              |                             |
|------|--------------|--------------|--------|------|--------------|-----------------------------|
| 4765 | 76670        |              | ETELL  | SX6  | \$7          |                             |
|      |              | 5160000126 X |        | S46  | TEMPWD1      | SAVE FINAL RETURN           |
| 4766 | 76610        |              | ETELL1 | SX6  | \$1          | (RESET ENTRY)               |
|      |              | 5160000127 X |        | S46  | TEMPWD2      | ADDRESS INPUT DATA          |
|      |              | 76620        |        | SX6  | \$2          | TEMPWD3                     |
| 4767 | 5110000130 X |              |        | S46  | SETPRNT      | CURRENT TABLE               |
| 4770 | 6170004771 + |              |        | CALL |              |                             |
| 4771 | 5110000130 X | 0301005021 + | ETELL2 | S41  | TEMPWD3      | (MAIN LOOP)                 |
| 4772 | 5211000001   |              |        | ZR   | X1, ETELL4   | ALL DONE                    |
|      |              | 63210        |        | S41  | X1+1         | GET ASSOCIATED ROUTINE      |
| 4773 | 6110004774 + | 0220000000   |        | SB2  | X1           |                             |
|      |              |              |        | S41  | +1           |                             |
|      |              |              |        | JP   | \$2          | CALL THE ASSOCIATED ROUTINE |
| 4774 | 5120000130 X | 53220        |        | S42  | TEMPWD3      |                             |
|      |              | 63120        |        | S42  | X2           | PICK UP TABLE CONTROL WD    |
|      |              |              |        | S51  | X2           | TYPE OF TABLE               |
| 4775 | 0710005021 + | 6121777775   |        | LT   | 51,50,ETELL4 | BAD TYPE                    |
| 4776 | 0620005021 + | 0216004777 + |        | SB2  | 51-ETELLX\$Z |                             |
|      |              |              |        | GE   | 52,50,ETELL4 | BAD TYPE                    |
|      |              |              |        | JP   | ETELLX+B1    |                             |
| 4777 | 0200005001 + |              | ETELLX | JP   | ETELLX0 0    | INDEXED TABLE               |

5000 0200005005 \*

JP

ETELLX1

1

SEARCHED TABLE

5001

\*

BSS

EQU

ETELLX\$Z

\*

INDEXED TABLE

NUMBER OF ENTRIES IN UPPER 30 BITS OF CONTROL WD:  
EACH ENTRY 1 WD: UPPER 30BITS = SUBTABLE  
LOWER 30BITS = TEXT ADDRS

5001 0331005021 \*

20236

73220

ETELLX0

NG

LX2

SX2

IX2

PL

SX1

SB1

SA1

JP

X1,ETELL4 INDEX TOO SMALL  
30 GET SIZE FIELD

X2

X1-X2

X2,ETELL4 INDEX TOO BIG

X1+2

A2

X1+B1 PICK UP ENTRY

ETELL3

SEARCHED TABLE

NUMBER OF ENTRIES IN UPPER 30 BITS OF CONTROL WD:  
EACH ENTRY 2 WDS

1ST WD TEST WD, COMPARED WITH X1  
2ND WD AND ENTRY AS IN INDEXED TABLE

5005 20236

63120

ETELLX1

LX2

SSI

30

X2 COUNT

5006 0601005021 \*

5025000002

ETELLX1A

LE

SA2

BX2

NG

NZ

B1,80,ETELL4 NOT FOUND

A2+2 TRY NEXT ENTRY

X1-X2

X2,ETELLX1B NOT THIS ONE

X2,ETELLX1B NOT THIS ONE

5007 13212

0332005012 \*

5010 0312005012 \*

ETELLX1B

SA1

JP

A2+1 FOUND, PICK UP ENTRY

ETELL3

5011 0200005013 \*

ETELLX1B

SSI

JP

B1-2

ETELLX1A

FOUND A TABLE ENTRY

5013 10711

20736

ETELL3

BX7

LX7

X1

30

COMMAND PROCESSOR DECK B  
OTHER MISC ROUTINES

5014 5170000130 X 73770

5015 0301004771 + 73710

5020 0200004771 + 63710

SX7 X7 SUBTABLE ADDRESS OR 0  
SA7 TEMPWD3  
SX1 X1 TEXT ADDRESS OR 0  
ZR X1,ETELL2 NO TEXT  
CALL DISLINE,X1,80  
JP ETELL2

\*  
\*  
\* ALL DONE

ETELL4 CALL FINPRNT  
SA1 TEMPWD1  
SB7 X1  
JP B7

5021 6170005022 +  
5022 5110000126 X 63710  
5023 0270000000

MISC ASSOCIATED ROUTINES

ERROR NUMBER, CLASS AND MODIFIER BEING PRESENTED  
TYPE IN OCTAL FIRST  
THEN PROCESS CLASS

|      |                      |   |          |      |                      |                            |
|------|----------------------|---|----------|------|----------------------|----------------------------|
| 5024 | 76710                |   | ETELLCI  | SX7  | 81                   |                            |
|      | 5170000131 X         |   |          | SA1  | TEMPWD4              | SAVE RETURN                |
| 5025 | 6170005026 *         |   |          | CALL | FINPRNT              | TERMINATE CURRENT LINE     |
| 5026 | 6170005027 *         | * |          | CALL | SETPRNT              | START A NEW LINE           |
| 5027 | 5110000127 X         |   |          | SA1  | TEMPW52              |                            |
|      | 53110                |   |          | SA1  | X1                   |                            |
| 5030 | 6110000006           |   |          | CALL | OCTNPK,6             | ERROR CLASS                |
| 5032 | 7170000014           |   |          | SX7  | ASCIICMA             |                            |
| 5033 | 6170005034 *         |   |          | CALL | PKASCII              |                            |
| 5034 | 6110000001           |   |          | CALL | BLNPK,1              |                            |
| 5036 | 5110000127 X         |   |          | SA1  | TEMPW52              |                            |
|      | 5211000001           |   |          | SA1  | X1+1                 |                            |
| 5037 | 6110000006           |   |          | CALL | OCTNPK,6             | ERROR NUMBER               |
| 5041 | 7170000014           |   |          | SX7  | ASCIICMA             |                            |
| 5042 | 6170005043 *         |   |          | CALL | PKASCII              |                            |
| 5043 | 6110000001           |   |          | CALL | BLNPK,1              |                            |
| 5045 | 5110000127 X         |   |          | SA1  | TEMPW52              |                            |
|      | 5211000001           |   |          | SA1  | X1+1                 |                            |
| 5046 | 20152                |   |          | LXI  | 60-18                |                            |
|      | 6110000016           |   |          | CALL | OCTNPK,14            | ERROR MODIFIER             |
| 5050 | 6110005057 *         |   |          | CALL | DISLINE:ETELLCIM,100 |                            |
| 5052 | 6170005053 *         |   |          | CALL | FINPRNT              |                            |
| 5053 | 6170005054 *         |   |          | CALL | SETPRNT              |                            |
| 5054 | 5110000131 X         |   |          | SA1  | TEMPW4               |                            |
| 5055 | 5110000127 X         |   |          | SB1  | X1                   |                            |
|      | 53110                |   |          | SA1  | TEMPW52              |                            |
| 5056 | 0210000000           |   |          | SA1  | X1                   | NOW PROCESS CLASS          |
| 5057 | 55550522221722000000 |   | ETELLCIM | DIS  | ..                   | ERROR.                     |
|      |                      |   |          |      |                      | PRODUCE ERROR NUMBER IN X1 |
| 5060 | 5110000127 X         |   | ETELLNM  | SA1  | TEMPW52              |                            |
|      | 5211000001           |   |          | SA1  | X1+1                 |                            |
| 5061 | 73110                |   |          | SX1  | X1                   |                            |
|      | 0210000000           |   |          | JP   | B1                   |                            |

5062 5110000127 X  
5217000001  
5063 20152  
43222  
15112  
5064 0210000000

\*  
\*  
\*  
\*  
\*  
ETELLMD SAI TEMPW02  
SAI X1+1  
LXI 60-18  
MX2 18  
BXI -X2\*X1  
JP X1

PRODUCE ERROR MOD IN X1

5065 5110000127 X  
53170  
5066 0210000000

\*  
\*  
\*  
\*  
\*  
ETELLCE SAI TEMPW02  
SAI X1  
JP X1

DATA IS TO BE 1ST WORD IN DATA VECTOR

5067 7170000000 X  
5070 5170000127 X  
76160  
5071 0210000000

\*  
\*  
\*  
\*  
\*  
ETELLCI SX7 ERCLASS  
ETELLCIX SA7 TEMPW02  
SX1 80  
JP 81

SWITCH ERROR DATA TO ERCLASS

5072 5110000051 X  
15771  
5073 0200005070 \*

\*  
\*  
\*  
\*  
\*  
ETELLC2 SAI ARG1-DTM  
BX7 X1  
JP ETELLCIX

SWITCH ERROR DATA TO ARG1.DTM+IND

5074 03  
5076 6110000000 X  
5100 6170005101 \*

\*  
\*  
\*  
\*  
\*  
ENTRY F•ETTST  
FUNCTION ETELL,3;DTMVTYPE,DTMVTYPE,DTMVTYPE;  
CALL EEXIT,ECN,TST  
CALL CRASH

TEST OF ETELL

S101 76210  
76320 6116000000 X  
S110 0200000000 X

MVCAP SX2  
SX3 DOXJ  
RTNR

MOVE CAP FROM B1 TO B2

B1  
B2  
EC;MCAP1,X2,X3,MINUS0+IND

S111 5170000002 X  
6116000000 X  
S120 0200000000 X  
S121

ASKTTYW SA7  
DOXJ  
RTNR  
END

\* ASKTTYW  
\* ASK THE TELETYPE WATCHER TO DO SOMETHING

\* X7=EVENT TO BE SENT

XJLOC+2 . IP2  
EC;SEV;CX.KICK . IP0,IP1, AND XJ

41525 STORAGE USED  
6600 ASSEMBLY

15056 STATEMENTS  
56.286 SECONDS

1149 SYMBOLS  
4028 REFERENCES

000046 INVENTED SYMBOLS

COMMAND PROCESSOR DECK 8  
ERROR DIRECTORY.

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3 TYPE ERROR DUPLICATE MACRO DEFINITION. NEW ONE OVERRIDES.  
OCCURRED ON PAGES 3

**COMMAND PROCESSOR SYMBOLIC REFERENCE TABLE.**

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COMMAND PROCESSOR DECK B  
SYMBOLIC REFERENCE TABLE

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|                 |      |           |          |          |          |          |        |        |                |
|-----------------|------|-----------|----------|----------|----------|----------|--------|--------|----------------|
| ASCIITMS        | 12   |           | 16/19 D  |          |          |          |        |        |                |
| ASCIIZ          | 72   |           | 16/09 D  | 35/14    |          |          |        |        |                |
| ASCIIO          | 20   |           | 16/10 D  | 33/23    | 33/34    | 35/19    |        |        |                |
| ASCIIS          | 31   |           | 16/11 D  | 33/36    | 35/21    |          |        |        |                |
| ASCPMDE         | 4627 | PROGRAM*  | 4/24 E   | 103/35 D |          |          |        |        |                |
| ASCPMODE        | 4627 | PROGRAM*  | 103/25 L | 103/35   | 108/06   |          |        |        |                |
| ASKBDG          | 0    | EXTERNAL* | 46/19    | 47/27    | 65/06    | 65/27    | 91/07  | 92/45  |                |
| ASKTTYW         | 5111 | PROGRAM*  | 86/20    | 88/11    | 88/21    | 89/02    | 89/09  | 89/21  | 89/34 115/15 L |
| ATCHBLK         | 0    | EXTERNAL* | 64/29    |          |          |          |        |        |                |
| ATCHDBL         | 0    | EXTERNAL* | 68/10 S  |          |          |          |        |        |                |
| BEAD            | 0    | EXTERNAL* | 67/31    | 67/35    |          |          |        |        |                |
| BEADP           | 4633 | PROGRAM*  | 4/25 E   | 59/45    | 59/48    | 104/05 L |        |        |                |
| BEADPX          | 4643 | PROGRAM*  | 104/20 L | 104/28   |          |          |        |        |                |
| BEADP1          | 4635 | PROGRAM*  | 104/29 L | 104/14   |          |          |        |        |                |
| BEADP2          | 4654 | PROGRAM*  | 104/07   | 104/12   | 104/24 L |          |        |        |                |
| BEADP3          | 4655 | PROGRAM*  | 104/16   | 104/27 L |          |          |        |        |                |
| BEADP4          | 4661 | PROGRAM*  | 104/18   | 104/31 L |          |          |        |        |                |
| BLNPK           | 0    | EXTERNAL* | 75/42    | 78/47    | 79/27    | 81/06    | 81/39  | 109/34 |                |
|                 |      |           | 76/46    | 78/52    | 79/33    | 81/13    | 103/13 | 113/22 |                |
|                 |      |           | 78/36    | 79/08    | 80/53    | 81/33    | 109/25 | 113/29 |                |
| BREAK           | 0    | EXTERNAL* | 23/17    | 46/20    | 58/46    | 62/23    | 66/01  | 69/19  | 88/34 97/15    |
| CALLR           | 0    | EXTERNAL* | 23/22    | 46/23    | 59/01    | 62/37    | 66/02  | 69/20  | 88/43 97/12    |
|                 |      |           | 23/47    | 46/37    | 59/04    | 62/46    | 66/14  | 69/34  | 89/03 97/14    |
|                 |      |           | 24/05    | 47/05    | 59/28    | 63/09    | 66/15  | 70/06  | 89/10 97/31    |
|                 |      |           | 25/40    | 47/09    | 59/35    | 63/19    | 66/16  | 70/43  | 89/22 97/32    |
|                 |      |           | 25/46    | 47/12    | 59/43    | 64/02    | 66/51  | 73/16  | 89/35 97/35    |
|                 |      |           | 26/26    | 47/28    | 59/45    | 64/09    | 67/05  | 81/47  | 90/36 97/38    |
|                 |      |           | 28/27    | 52/32    | 59/46    | 64/17    | 67/19  | 82/22  | 90/46 97/52    |
|                 |      |           | 32/39    | 56/26    | 59/49    | 64/30    | 67/25  | 82/27  | 91/08 104/21   |
|                 |      |           | 36/25    | 56/31    | 59/52    | 64/34    | 68/16  | 83/13  | 91/32 104/28   |
|                 |      |           | 36/34    | 57/21    | 61/26    | 64/42    | 68/25  | 86/21  | 92/40 105/38   |
|                 |      |           | 37/16    | 57/40    | 61/31    | 65/00    | 68/35  | 87/09  | 92/46 106/43   |
|                 |      |           | 37/18    | 57/49    | 61/40    | 65/11    | 68/44  | 88/12  | 93/13          |
|                 |      |           | 38/14    | 58/21    | 61/49    | 65/26    | 69/01  | 88/22  | 97/06          |
|                 |      |           | 43/27    | 58/30    | 62/12    | 65/29    | 69/09  | 88/29  | 97/09          |
| CALLR7          | 0    | EXTERNAL* | 73/03    | 73/20    | 74/11    | 74/13    | 80/21  |        |                |
|                 |      |           | 73/17    | 74/05    | 74/12    | 80/17    |        |        |                |
| CAP.BSE         | 0    | EXTERNAL* | 22/19    | 97/14    |          |          |        |        |                |
| CAP.FREE        | 35   | EXTERNAL* | 17/07 D  | 22/20 S  | 43/24 S  | 49/13    | 95/22  | 95/50  | 97/15          |
| CAP.LIM         | 0    | EXTERNAL* | 49/16    | 95/53    |          |          |        |        |                |
| CHPSWX          | 1372 | PROGRAM*  | 57/39 L  |          |          |          |        |        |                |
| CLCVTYPE        | 4    |           | 25/22 D  | 92/13    |          |          |        |        |                |
| CLOSDF          | 0    | EXTERNAL* | 47/11    |          |          |          |        |        |                |
| CLRPI           | 0    | EXTERNAL* | 84/37    | 88/13    | 88/30    | 88/35    |        |        |                |
| CMMDS           | 0    | EXTERNAL* | 57/21    | 59/52    | 69/20    | 69/34    |        |        |                |
| CMMDSBK         | 0    | EXTERNAL* |          |          |          |          |        |        |                |
| CPYBFBF         | 0    | EXTERNAL* | 68/07    | 68/15    |          |          |        |        |                |
| CPYBFBL         | 0    | EXTERNAL* | 67/40 S  | 68/07    | 68/15    | 68/18    |        |        |                |
| CPYBFSH         | 0    | EXTERNAL* | 67/52    |          |          |          |        |        |                |
| CPIDLPF         | 0    | EXTERNAL* | 20/03    |          |          |          |        |        |                |
| CPIDLPF1 100055 |      | PROGRAM*  | 20/03 D  |          |          |          |        |        |                |
| CPDSPF          | 0    | EXTERNAL* | 20/04    |          |          |          |        |        |                |

COMMAND PROCESSOR DECK B  
SYMBOLIC REFERENCE TABLE.

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|           |        |           |         |         |       |         |         |         |        |
|-----------|--------|-----------|---------|---------|-------|---------|---------|---------|--------|
| CP;DSPF!  | 100057 | PROGRAM*  | 20/04 D | 79/13   | 81/25 |         |         |         |        |
| CP;IMONY  | 0      | EXTERNAL* | 20/02   |         |       |         |         |         |        |
| CP;IMONY! | 100055 | PROGRAM*  | 20/02 D | 83/45   |       |         |         |         |        |
| CP;NPSW   | 0      | EXTERNAL* | 19/53   |         |       |         |         |         |        |
| CP;INPSW! | 100053 | PROGRAM*  | 19/53 D | 57/36   |       |         |         |         |        |
| CP;INUSR  | 0      | EXTERNAL* | 20/01   |         |       |         |         |         |        |
| CP;INUSR! | 100054 | PROGRAM*  | 20/01 D | 55/53   |       |         |         |         |        |
| CP;ISONS  | 0      | EXTERNAL* | 20/05   |         |       |         |         |         |        |
| CP;ISONS! | 100060 | PROGRAM*  | 20/05 D | 84/03   |       |         |         |         |        |
| CRASCI    | 0      | EXTERNAL* | 103/17  | 109/45  |       |         |         |         |        |
| CRASH     | 0      | EXTERNAL* | 23/38   | 27/02   | 31/16 | 32/36   | 38/44   | 43/40   | 114/43 |
|           |        |           | 24/27   | 27/18   | 31/17 | 36/17   | 43/39   | 68/28   |        |
| CRUNKJ    | 0      | EXTERNAL* |         |         |       |         |         |         |        |
| CURNST    | 101    | EXTERNAL* | 17/35 D | 25/43 S | 26/02 | 26/44 S | 28/25 S | 29/19 S | 30/15  |
| CX.HOLD   | 0      | EXTERNAL* | 57/66   |         |       |         |         |         |        |
| CX.KICK   | 0      | EXTERNAL* | 115/17  |         |       |         |         |         |        |
| CX.LINE   | 0      | EXTERNAL* | 75/69   | 76/17   |       |         |         |         |        |
| CX.NLKY   | 0      | EXTERNAL* | 57/19   | 57/22   | 58/45 | 77/29   | 78/29   |         |        |
| Cx.OPRS   | 0      | EXTERNAL* | 19/09   | 19/16   | 19/24 | 19/31   | 19/38   | 19/45   | 19/52  |
|           |        |           | 19/10   | 19/17   | 19/25 | 19/32   | 19/39   | 19/46   | 19/53  |
|           |        |           | 19/11   | 19/18   | 19/26 | 19/33   | 19/40   | 19/47   | 20/01  |
|           |        |           | 19/12   | 19/19   | 19/27 | 19/34   | 19/41   | 19/48   | 20/02  |
|           |        |           | 19/13   | 19/20   | 19/28 | 19/35   | 19/42   | 19/49   | 20/03  |
|           |        |           | 19/14   | 19/21   | 19/29 | 19/36   | 19/43   | 19/50   | 20/04  |
|           |        |           | 19/15   | 19/23   | 19/30 | 19/37   | 19/44   | 19/51   | 20/05  |
| Cx.PRMD   | 0      | EXTERNAL* | 55/53   | 57/19   | 57/22 | 57/36   |         |         |        |
| CX.SBPD   | 0      | EXTERNAL* | 59/65   |         |       |         |         |         |        |
| CX.SCNL   | 0      | EXTERNAL* | 48/45   | 58/20   |       |         |         |         |        |
| CX.SPCH   | 0      | EXTERNAL* | 88/23   |         |       |         |         |         |        |
| CX.TEMP   | 0      | EXTERNAL* | 20/22   | 47/11   | 56/29 | 68/07   | 69/09   | 77/42   | 82/29  |
|           |        |           | 20/25   | 59/43   | 66/44 | 68/09   | 69/11   | 77/50   | 84/22  |
|           |        |           | 46/22   | 59/53   | 67/29 | 68/15   | 69/19   | 78/15   | 84/25  |
|           |        |           | 46/36   | 64/17   | 67/33 | 68/44   | 70/43   | 78/38   | 84/28  |
|           |        |           | 47/09   | 64/32   | 67/44 | 68/46   | 77/36   | 79/14   | 84/31  |
| DA;DSP    | 0      | EXTERNAL* | 19/52   |         |       |         |         |         |        |
| DA;DSP!   | 100052 | PROGRAM*  | 19/52 D | 62/44   | 78/37 | 79/51   |         |         |        |
| DA;MVSP   | 0      | EXTERNAL* | 19/51   |         |       |         |         |         |        |
| DA;MVSP!  | 100051 | PROGRAM*  | 19/51 D | 83/26   |       |         |         |         |        |
| DBGBIT    | 0      | EXTERNAL* | 52/67   |         |       |         |         |         |        |
| DBGBLK    | 0      | EXTERNAL* | 47/29   | 65/10   | 65/28 |         |         |         |        |
| DCBPK     | 0      | EXTERNAL* | 79/28   | 79/34   | 81/34 | 81/40   | 87/48   |         |        |
| DECNPK    | 0      | EXTERNAL* | 86/43   |         |       |         |         |         |        |
| DESCSIZ   | 10     |           | 72/21 D | 73/41   | 79/08 |         |         |         |        |
| DESCSPC   | 131    | EXTERNAL* | 72/08 D | 73/28 S | 79/01 | 80/21   |         |         |        |
| DF;CBLK   | 0      | EXTERNAL* | 19/23   |         |       |         |         |         |        |
| DF;CBLK!  | 100015 | PROGRAM*  | 19/23 D | 68/09   | 68/46 |         |         |         |        |
| DF;CLO    | 0      | EXTERNAL* | 19/23   | 78/13   |       |         |         |         |        |
| DF;CLOS   | 0      | EXTERNAL* | 19/30   |         |       |         |         |         |        |
| DF;CLOS!  | 100024 | PROGRAM*  | 19/30 D | 66/29   |       |         |         |         |        |
| DF;CLO!   | 100027 | PROGRAM*  | 19/33 D | 82/28   | 84/31 | 84/34   |         |         |        |
| DF;DBLK   | 0      | EXTERNAL* | 19/24   |         |       |         |         |         |        |
| DF;DBLK!  | 100016 | PROGRAM*  | 19/24 D | 69/11   |       |         |         |         |        |
| DF;DSF    | 0      | EXTERNAL* | 19/35   |         |       |         |         |         |        |

COMMAND PROCESSOR DECK B  
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|          |        |           |         |         |         |         |       |       |        |
|----------|--------|-----------|---------|---------|---------|---------|-------|-------|--------|
| DF:DSF:  | 100031 | PROGRAM*  | 19/35 D | 77/49   |         |         |       |       |        |
| DF:END   | 0      | EXTERNAL* | 19/36   |         |         |         |       |       |        |
| DF:END:  | 100032 | PROGRAM*  | 19/36 D |         |         |         |       |       |        |
| DF:OPRO  | 0      | EXTERNAL* | 19/28   |         |         |         |       |       |        |
| DF:OPRO: | 100022 | PROGRAM*  | 19/28 D | 47/08   | 64/16   | 77/35   |       |       |        |
| DF:OPRW  | 0      | EXTERNAL* | 19/29   |         |         |         |       |       |        |
| DF:OPRW: | 100023 | PROGRAM*  | 19/29 D | 68/43   | 69/08   | 84/23   | 84/26 | 90/45 |        |
| DF:READ  | 0      | EXTERNAL* | 19/31   |         |         |         |       |       |        |
| DF:READ: | 100025 | PROGRAM*  | 19/31 D | 47/11   | 64/32   |         |       |       |        |
| DF:SHAZ  | 0      | EXTERNAL* | 19/34   |         |         |         |       |       |        |
| DF:SHAZ: | 100030 | PROGRAM*  | 19/34 D | 84/28   |         |         |       |       |        |
| DF:WRIT  | 0      | EXTERNAL* | 19/32   |         |         |         |       |       |        |
| DF:WRIT: | 100026 | PROGRAM*  | 19/32 D | 68/15   | 90/48   |         |       |       |        |
| DIRNAME  | 0      | EXTERNAL* |         |         |         |         |       |       |        |
| DIRSPCE  | 130    | EXTERNAL* | 72/07 D | 73/27 S | 78/40   | 80/20   |       |       |        |
| DIRTYPE  | 0      | EXTERNAL* |         |         |         |         |       |       |        |
| DISLINE  | 0      | EXTERNAL* |         |         |         |         |       |       |        |
| DISWDS   | 1671   | PROGRAM*  | 56/37   | 56/49   | 82/09   | 86/30   | 87/15 | 87/34 | 109/43 |
| DISWDS1  | 1673   | PROGRAM*  | 56/42   | 57/01   | 82/14   | 87/14   | 87/19 | 87/41 | 112/06 |
| DKBDATA  | 0      | EXTERNAL* | 62/37   | 62/46   | 63/01 L |         |       |       |        |
|          |        |           | 63/07 L | 63/10   |         |         |       |       |        |
|          |        |           | 16/47   | 17/04   | 17/20   | 17/32   | 17/44 | 18/06 | 18/17  |
|          |        |           | 16/48   | 17/07   | 17/22   | 17/35   | 17/47 | 18/07 | 18/18  |
|          |        |           | 16/50   | 17/10   | 17/25   | 17/36   | 17/49 | 18/09 | 18/19  |
|          |        |           | 16/51   | 17/11   | 17/28   | 17/37   | 17/52 | 18/12 | 18/20  |
|          |        |           | 17/01   | 17/13   | 17/27   | 17/38   | 18/03 | 18/13 | 18/21  |
|          |        |           | 17/02   | 17/18   | 17/29   | 17/39   | 18/05 | 18/16 | 18/23  |
|          |        |           | 22/08   |         |         |         |       |       | 18/35  |
| DKBDSZ   | 0      | EXTERNAL* |         |         |         |         |       |       |        |
| DKBDTAN  | 0      | EXTERNAL* |         |         |         |         |       |       |        |
| DKBINIT  | 65     | PROGRAM*  | 4/15 E  | 21/04 L |         |         |       |       |        |
| DLCVTYPE | 7      |           | 25/25 D | 66/22   | 66/50   | 67/16   | 69/42 | 70/28 | 85/53  |
|          |        |           | 59/14   | 66/35   | 67/04   | 69/26   | 70/12 | 85/33 | 92/23  |
| DMPX     | 134    | EXTERNAL* | 18/23   | 97/16 S | 97/20   | 97/41 S | 97/45 |       |        |
| DMPY     | 135    | EXTERNAL* | 18/24   | 97/18 S | 97/21   | 97/43 S | 97/46 |       |        |
| DOENTRY  | 2746   | PROGRAM*  | 74/05   | 75/08 L |         |         |       |       |        |
| DOENTRY1 | 2770   | PROGRAM*  | 75/15   | 75/18 L |         |         |       |       |        |
| DONAME   | 2771   | PROGRAM*  | 74/11   | 75/33 L |         |         |       |       |        |
| DONAME2  | 2777   | PROGRAM*  | 75/39   | 75/44 L |         |         |       |       |        |
| DONMBIG1 | 3027   | PROGRAM*  | 76/36 L | 76/40   |         |         |       |       |        |
| DONMEBIG | 3010   | PROGRAM*  | 75/38   | 76/08 L |         |         |       |       |        |
| DOOBJ    | 3042   | PROGRAM*  | 74/13   | 77/08 L |         |         |       |       |        |
| DOOBJI   | 3047   | PROGRAM*  | 77/09   | 77/15 L |         |         |       |       |        |
| DOPRNT   | 0      | EXTERNAL* | 75/43   |         |         |         |       |       |        |
| DOTYPE   | 3035   | PROGRAM*  | 74/12   | 76/50 L |         |         |       |       |        |
| DR.AKY   | 2605   | PROGRAM*  | 72/44   | 72/50 L |         |         |       |       |        |
| DR.DIR   | 2601   | PROGRAM*  | 72/44   | 72/46 L |         |         |       |       |        |
| DR.DNT   | 2604   | PROGRAM*  | 72/44   | 72/49 L |         |         |       |       |        |
| DR.FILE  | 2600   | PROGRAM*  | 72/43   | 72/45 L |         |         |       |       |        |
| DR.HRD   | 2570   | PROGRAM*  | 72/38   | 72/40 L |         |         |       |       |        |
| DR.OWN   | 2571   | PROGRAM*  | 72/38   | 72/41 L |         |         |       |       |        |
| DR.SNT   | 2603   | PROGRAM*  | 72/44   | 72/48 L |         |         |       |       |        |
| DR.SOFT  | 2567   | PROGRAM*  | 72/37   | 72/39 L |         |         |       |       |        |
| DR.SUB   | 2602   | PROGRAM*  | 72/44   | 72/47 L |         |         |       |       |        |
| DR.TYPVC | 2563   | PROGRAM*  | 72/37 L | 76/53   |         |         |       |       |        |

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|----------|--------|-----------|---------|---------|----------|-------|-------|--------|
| DR:ADPR  | 0      | EXTERNAL* | 19/47   |         |          |       |       |        |
| DR:ADPRI | 100045 | PROGRAM*  | 19/47 D | 70/18   |          |       |       |        |
| DR:ASCL  | 0      | EXTERNAL* | 19/40   |         |          |       |       |        |
| DR:ASCLI | 100036 | PROGRAM*  | 19/40 D | 46/33   | 48/45    |       |       |        |
| DR:CHNM  | 0      | EXTERNAL* | 19/49   |         |          |       |       |        |
| DR:CHNM: | 100047 | PROGRAM*  | 19/49 D | 86/09   |          |       |       |        |
| DR:CLDR  | 0      | EXTERNAL* | 19/44   |         |          |       |       |        |
| DR:CLDRI | 100042 | PROGRAM*  | 19/44 D | 66/44   | 73/21    |       |       |        |
| DR:CRDR  | 0      | EXTERNAL* | 19/27   |         |          |       |       |        |
| DR:CRDR: | 100021 | PROGRAM*  | 19/27 D | 66/42   |          |       |       |        |
| DR:CRFI  | 0      | EXTERNAL* | 19/25   |         |          |       |       |        |
| DR:CRFI: | 100017 | PROGRAM*  | 19/25 D | 66/27   | 67/52    |       |       |        |
| DR:CSUL  | 0      | EXTERNAL* | 19/38   |         |          |       |       |        |
| DR:CSUL: | 100034 | PROGRAM*  | 19/38 D | 85/24   |          |       |       |        |
| DR:DLPTR | 0      | EXTERNAL* | 19/48   |         |          |       |       |        |
| DR:DLPRI | 100046 | PROGRAM*  | 19/48 D | 70/34   |          |       |       |        |
| DR:DSPN  | 0      | EXTERNAL* | 19/26   |         |          |       |       |        |
| DR:DSPNI | 100020 | PROGRAM*  | 19/26 D | 75/11   |          |       |       |        |
| DR:HOLK  | 0      | EXTERNAL* | 19/42   |         |          |       |       |        |
| DR:HDLKI | 100040 | PROGRAM*  | 19/42 D | 93/23   |          |       |       |        |
| DR:OPDR  | 0      | EXTERNAL* | 19/43   |         |          |       |       |        |
| DR:OPDR: | 100041 | PROGRAM*  | 19/43 D | 73/19   |          |       |       |        |
| DR:RMLK  | 0      | EXTERNAL* | 19/46   |         |          |       |       |        |
| DR:RMLKI | 100044 | PROGRAM*  | 19/46 D | 69/47   |          |       |       |        |
| DR:RMOE  | 0      | EXTERNAL* | 19/45   |         |          |       |       |        |
| DR:RMOE: | 100043 | PROGRAM*  | 19/45 D | 57/22   | 69/36    |       |       |        |
| DR:SFLK  | 0      | EXTERNAL* | 19/39   |         |          |       |       |        |
| DR:SFLKI | 100035 | PROGRAM*  | 19/39 D | 85/42   |          |       |       |        |
| DR:SSUL  | 0      | EXTERNAL* | 19/37   |         |          |       |       |        |
| DR:SSUL: | 100033 | PROGRAM*  | 19/37 D | 85/17   |          |       |       |        |
| DR:UACC  | 0      | EXTERNAL* | 19/41   |         |          |       |       |        |
| DR:UACCI | 100037 | PROGRAM*  | 19/41 D | 46/51   | 57/19    | 69/32 | 77/23 | 78/23  |
| DSIZE    | 143    |           | 18/38 L | 22/09   |          |       |       |        |
| DSKFTYP  | 0      | EXTERNAL* | 100/09  |         |          |       |       |        |
| DSPLYW   | 0      | EXTERNAL* | 37/16   | 59/28   | 67/19    | 67/25 | 87/09 | 104/28 |
| DTCHBLK  | 0      | EXTERNAL* | 64/31   | 68/15   |          |       |       |        |
| DTMMDFLG | 114    | EXTERNAL* | 17/47 D | 33/46   | 108/19 S |       |       |        |
| DTMTKN   | 1001   | EXTERNAL* | 25/13 D | 34/08   | 104/17   |       |       |        |
| DTMVTYPE | 1      |           | 25/14 D | 51/11   | 52/01    | 61/37 | 70/28 | 86/27  |
|          |        |           | 34/06   | 51/20   | 52/10    | 63/16 | 83/11 | 87/06  |
|          |        |           | 36/12   | 51/22   | 52/30    | 63/25 | 83/24 | 87/32  |
|          |        |           | 36/23   | 51/31   | 52/45    | 66/08 | 83/37 | 88/05  |
|          |        |           | 41/18   | 51/42   | 53/14    | 66/35 | 84/01 | 88/42  |
|          |        |           | 47/62   | 51/48   | 54/06    | 70/12 | 86/15 | 88/50  |
|          |        |           | 17/01 D | 22/17   | 97/10    |       |       |        |
| DTM.BASE | 22     | EXTERNAL* | 17/04 D | 22/18 S | 43/21 S  | 95/26 | 95/32 | 97/11  |
| DTM.FREE | 34     | EXTERNAL* | 17/02 D | 95/35   |          |       |       |        |
| DTM.LIM  | 34     | EXTERNAL* | 54/06 D | 54/08   |          |       |       |        |
| DVT      | 1      |           |         |         |          |       |       |        |
| ECN.BDP  | 0      | EXTERNAL* | 44/06   |         |          |       |       |        |
| ECN.BDS  | 0      | EXTERNAL* | 23/41   | 27/11   |          |       |       |        |
| ECN.BDV  | 0      | EXTERNAL* | 101/43  |         |          |       |       |        |
| ECN.NIM  | 0      | EXTERNAL* | 51/42   | 51/48   |          |       |       |        |
| ECN.NOV  | 0      | EXTERNAL* | 47/52   |         |          |       |       |        |

COMMAND PROCESSOR DECK B  
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|           |        |           |         |          |       |         |        |        |
|-----------|--------|-----------|---------|----------|-------|---------|--------|--------|
| ECN.NUS   | 0      | EXTERNAL* | 53/08   |          |       |         |        |        |
| ECN.POR   | 0      | EXTERNAL* | 53/24   |          |       |         |        |        |
| ECN.TCM   | 0      | EXTERNAL* | 27/15   |          |       |         |        |        |
| ECN.TST   | 0      | EXTERNAL* | 114/41  |          |       |         |        |        |
| ECN.UXE   | 0      | EXTERNAL* | 84/46   | 84/53    | 85/07 |         |        |        |
| ECN.UXF   | 0      | EXTERNAL* | 84/42   | 84/49    | 85/03 |         |        |        |
| EC.DRCT   | 0      |           | 20/06 D |          |       |         |        |        |
| EC:CBLK   | 0      | EXTERNAL* | 19/10   |          |       |         |        |        |
| EC:CBLK1  | 100001 | PROGRAMS  | 19/10 D | 68/39    |       |         |        |        |
| EC:CIN    | 0      | EXTERNAL* | 19/09   |          |       |         |        |        |
| EC:CIN1   | 100000 | PROGRAMS  | 19/09 D | 46/09    |       |         |        |        |
| EC:COOUT  | 0      | EXTERNAL* | 19/12   |          |       |         |        |        |
| EC:COOUT1 | 100003 | PROGRAMS  | 19/12 D | 92/33    |       |         |        |        |
| EC:DBLKL  | 0      | EXTERNAL* | 19/11   |          |       |         |        |        |
| EC:DBLKL1 | 100002 | PROGRAMS  | 19/11 D | 69/05    |       |         |        |        |
| EC:DSAB   | 0      | EXTERNAL* | 19/19   |          |       |         |        |        |
| EC:DSAB1  | 100012 | PROGRAMS  | 19/19 D | 62/36    |       |         |        |        |
| EC:DSCP   | 0      | EXTERNAL* | 19/18   |          |       |         |        |        |
| EC:DSCP1  | 100011 | PROGRAMS  | 19/18 D | 62/19    | 65/51 | 73/16   | 77/41  | 97/26  |
| EC:DSSE   | 0      | EXTERNAL* | 19/16   |          |       |         |        | 100/08 |
| EC:DSSE1  | 100007 | PROGRAMS  | 19/16 D | 66/13    |       |         |        |        |
| EC:DSUB   | 0      | EXTERNAL* | 19/17   |          |       |         |        |        |
| EC:DSUB1  | 100010 | PROGRAMS  | 19/17 D |          |       |         |        |        |
| EC:GEVH   | 0      | EXTERNAL* | 19/20   |          |       |         |        |        |
| EC:GEVH1  | 100013 | PROGRAMS  | 19/20 D | 88/23    |       |         |        |        |
| EC:MCAP   | 0      | EXTERNAL* | 19/13   |          |       |         |        |        |
| EC:MCAP1  | 100004 | PROGRAMS  | 19/13 D | 96/07    | 96/12 | 115/08  |        |        |
| EC:READ   | 0      | EXTERNAL* | 19/14   |          |       |         |        |        |
| EC:READ1  | 100005 | PROGRAMS  | 19/14 D | 47/16    | 64/07 | 68/07   |        |        |
| EC:SEV    | 0      | EXTERNAL* | 19/21   |          |       |         |        |        |
| EC:SEV1   | 100014 | PROGRAMS  | 19/21 D | 115/17   |       |         |        |        |
| EC:WRT    | 0      | EXTERNAL* | 19/15   |          |       |         |        |        |
| EC:WRT1   | 100006 | PROGRAMS  | 19/15 D | 90/40    |       |         |        |        |
| EEXIT     | 0      | EXTERNAL* | 23/42   | 27/16    | 53/09 | 84/40   | 114/42 |        |
| EEXITM    | 0      | EXTERNAL* | 27/12   | 47/53    | 53/25 | 151/44  |        |        |
| EEXITSV   | 0      | EXTERNAL* | 44/07   | 51/43    | 51/42 |         |        |        |
| ENTERV    | 4363   | PROGRAMS  | 52/00   | 82/25    | 82/30 |         |        |        |
| ENTERVX1  | 4427   | PROGRAMS  | 36/24   | 36/33    | 43/26 | 95/12 L |        |        |
| ENTERVX2  | 4427   | PROGRAMS  | 95/17   | 96/18 L  |       |         |        |        |
| ENTERVX3  | 4427   | PROGRAMS  | 95/37   | 96/19 L  |       |         |        |        |
| ENTERVX4  | 4427   | PROGRAMS  | 96/02   | 96/20 L  |       |         |        |        |
| ENTERV1   | 4370   | PROGRAMS  | 95/40 L | 95/47    |       |         |        |        |
| ENTERV2   | 4401   | PROGRAMS  | 95/31   | 95/40    | 95/41 | 95/49 L |        |        |
| ENTERV3   | 4414   | PROGRAMS  | 96/08 L | 96/12    |       |         |        |        |
| ENTERV4   | 4426   | PROGRAMS  | 95/49   | 96/09    | 96/10 | 96/14 L |        |        |
| EN.NDAR   | 0      |           | 20/07 D |          |       |         |        |        |
| EPRINT    | 4731   | PROGRAMS  | 4/21 E  | 109/06 L |       |         |        |        |
| EPRNTMS®  | 4764   | PROGRAMS  | 109/40  | 109/48 L |       |         |        |        |
| ERCLASS   | 0      | EXTERNAL* | 3/49    | 114/22   |       |         |        |        |
| ERESTORE  | 0      | EXTERNAL* | 3/20    | D        |       |         |        |        |
| ERNUMBR   | 1      | EXTERNAL* | 3/49    | D        |       |         |        |        |
| ERSTR     | 0      | EXTERNAL* | 3/20    |          |       |         |        |        |
| ESAVE     | 0      | EXTERNAL* |         |          |       |         |        |        |

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|          |      |          |          |          |        |        |          |
|----------|------|----------|----------|----------|--------|--------|----------|
| ETELL    | 4765 | PROGRAM* | 4/21 E   | 82/21    | 82/26  | 82/31  | 110/29 L |
| ETELLCE  | 5065 | PROGRAM* | 4/23 E   | 114/15 L |        |        |          |
| ETELLCL  | 5024 | PROGRAM* | 4/22 E   | 113/10 L |        |        |          |
| ETELLCLM | 5057 | PROGRAM* | 113/35   | 113/45 L |        |        |          |
| ETELLC1  | 5067 | PROGRAM* | 4/23 E   | 114/22 L |        |        |          |
| ETELLC1X | 5070 | PROGRAM* | 114/23 E | 114/32 L |        |        |          |
| ETELLC2  | 5072 | PROGRAM* | 4/23 E   | 114/30 L |        |        |          |
| ETELLMD  | 5062 | PROGRAM* | 4/22 E   | 114/05 L |        |        |          |
| ETELLNM  | 5060 | PROGRAM* | 4/22 E   | 113/50 L |        |        |          |
| ETELLX   | 4777 | PROGRAM* | 110/51   | 110/53 L |        |        |          |
| ETELLXSZ | 2    |          | 110/49   | 111/04 D |        |        |          |
| ETELLX0  | 5001 | PROGRAM* | 110/53   | 111/14 L |        |        |          |
| ETELLX1  | 5005 | PROGRAM* | 111/01   | 111/33 L |        |        |          |
| ETELLX1A | 5006 | PROGRAM* | 111/36 L | 111/46 L |        |        |          |
| ETELLX1B | 5012 | PROGRAM* | 111/39   | 111/40 L |        |        |          |
| ETELL1   | 4756 | PROGRAM* | 110/32 L |          |        |        |          |
| ETELL2   | 4771 | PROGRAM* | 110/38 L | 112/04 L |        |        |          |
| ETELL3   | 5013 | PROGRAM* | 111/22   | 111/43 L |        |        |          |
| ETELL4   | 5021 | PROGRAM* | 110/39   | 110/48 L |        |        |          |
| EVALCL   | 576  | PROGRAM* | 45/16    | 45/24    |        |        |          |
| EVALDL   | 641  | PROGRAM* | 45/20    | 46/45 L  |        |        |          |
| EVALFL   | 651  | PROGRAM* | 45/21    | 45/25 L  |        |        |          |
| EVALFL1  | 674  | PROGRAM* | 47/65    | 47/14 L  |        |        |          |
| EVALID   | 735  | PROGRAM* | 45/15    | 48/28 L  |        |        |          |
| EVALIO   | 740  | PROGRAM* | 45/14    | 48/37 L  |        |        |          |
| EVALR    | 733  | PROGRAM* | 45/26    | 48/20 L  |        |        |          |
| EVALSCL  | 621  | PROGRAM* | 45/19    | 46/28 L  |        |        |          |
| EVALSCL1 | 627  | PROGRAM* | 46/34 L  | 46/51    |        |        |          |
| EVALUCL  | 607  | PROGRAM* | 45/17    | 45/25    |        |        |          |
| EVALUM   | 707  | PROGRAM* | 45/22    | 45/26    |        |        |          |
| EVALUM1  | 710  | PROGRAM* | 47/24 L  | 48/22    |        |        |          |
| EVALVD   | 715  | PROGRAM* | 45/28    | 47/37 L  |        |        |          |
| EVALVDX  | 723  | PROGRAM* | 47/52 L  | 48/30    |        |        |          |
| EVALVD1  | 717  | PROGRAM* | 47/42 L  | 48/31    |        |        |          |
| EVALVO   | 725  | PROGRAM* | 45/27    | 48/04 L  |        |        |          |
| EVNTSUM  | 11   |          | 5/26 D   | 5/28     |        |        |          |
|          |      |          | 5/27 D   | 5/28 D   | 5/29 D | 5/30   | 5/32     |
|          |      |          | 5/27 D   | 5/28     | 5/29   | 5/31   | 5/32 D   |
|          |      |          | 5/27     | 5/29     | 5/30 D | 5/31 D | 5/32     |
|          |      |          | 5/33 D   | 69/08    | 5/30   | 5/31   | 5/33     |
|          |      |          | 5/28 D   |          | 5/29   | 5/31   | 5/33 D   |
|          |      |          | 5/30 D   | 88/07    | 5/29   | 5/31   | 5/33     |
|          |      |          | 5/29 D   | 86/17    | 5/28   | 5/30   | 5/34     |
|          |      |          | 5/35 D   | 89/31    | 5/30   | 5/31 D | 5/34 D   |
|          |      |          | 5/27 D   |          | 5/29   | 5/31   | 5/35 D   |
|          |      |          | 5/31 D   | 88/20    | 5/30 D | 5/31   | 5/34     |
|          |      |          | 5/32 D   | 88/51    | 5/30   | 5/31   | 5/35     |
|          |      |          | 5/34 D   | 89/17    | 5/30   | 5/31   | 5/35     |
| EV.ALLON | 6    |          |          |          |        |        |          |
| EV.BRK   | 1    |          |          |          |        |        |          |
| EV.FRCLG | 2    |          |          |          |        |        |          |
| EV.KICK  | 3    |          |          |          |        |        |          |
| EV.NMAST | 10   |          |          |          |        |        |          |
| EV.PANC  | 0    |          |          |          |        |        |          |
| EV.SHDN  | 4    |          |          |          |        |        |          |
| EV.TTYON | 5    |          |          |          |        |        |          |
| EV.TYOFF | 7    |          |          |          |        |        |          |

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|          |      |           |        |       |        |        |       |        |        |        |
|----------|------|-----------|--------|-------|--------|--------|-------|--------|--------|--------|
| FEXIT    | 0    | EXTERNAL* | 55/53  | 59/35 | 62/46  | 66/51  | 69/36 | 83/14  | 86/21  | 88/43  |
|          |      |           | 56/29  | 61/23 | 63/05  | 67/05  | 69/47 | 83/26  | 86/44  | 89/03  |
|          |      |           | 56/31  | 61/28 | 63/19  | 68/08  | 70/06 | 83/45  | 87/23  | 89/10  |
|          |      |           | 56/43  | 61/31 | 65/42  | 68/25  | 70/22 | 84/03  | 87/49  | 89/22  |
|          |      |           | 57/02  | 61/40 | 65/43  | 68/30  | 70/34 | 84/38  | 88/13  | 89/35  |
|          |      |           | 57/22  | 61/49 | 66/02  | 68/46  | 73/03 | 85/17  | 88/30  | 91/32  |
|          |      |           | 57/36  | 62/09 | 66/16  | 69/05  | 73/17 | 85/24  | 88/35  |        |
|          |      |           | 57/40  | 62/12 | 66/29  | 69/11  | 73/21 | 85/45  | 88/36  |        |
|          |      |           | 57/49  | 62/37 | 66/44  | 69/20  | 82/14 | 86/09  | 88/37  |        |
| FILESIZ  | 10   | EXTERNAL* | 72/18  | D     | 73/38  | 78/10  | 78/35 |        |        |        |
| FILSPCE  | 132  | EXTERNAL* | 72/09  | D     | 73/29  | S      | 80/25 |        |        |        |
| FINDVAR  | 4561 | PROGRAM*  | 48/30  |       | 58/04  | 61/08  | 62/04 | 91/40  | 101/14 | L      |
| FINDVAR1 | 4563 | PROGRAM*  | 101/17 |       | 101/21 | L      |       |        |        |        |
| FINDVAR2 | 4566 | PROGRAM*  | 101/29 | L     | 101/34 |        |       |        |        |        |
| FINDVAR3 | 4571 | PROGRAM*  | 101/32 |       | 101/37 | L      |       |        |        |        |
| FINDVAR4 | 4572 | PROGRAM*  | 101/23 |       | 101/43 | C      |       |        |        |        |
| FINPRNT  | 0    | EXTERNAL* | 56/43  |       | 73/45  | 80/11  | 80/28 | 82/25  | 87/16  | 87/49  |
|          |      |           | 57/02  |       | 74/03  | 80/13  | 81/41 | 86/34  | 87/23  | 112/12 |
|          |      |           | 73/44  |       | 80/02  | 80/23  | 82/26 | 86/44  | 87/38  | 113/13 |
|          |      |           | 72/22  | D     | 80/06  | 80/08  | 80/56 | 81/06  |        |        |
|          |      |           | 72/23  |       | 80/07  | 80/10  | 80/53 | 81/13  |        |        |
| FINPRSZ  | 10   |           | 38/15  |       | 38/22  | L      |       |        |        |        |
| FINSBGRM | 472  | PROGRAM*  | 38/34  |       | 38/43  | L      |       |        |        |        |
| FINSBGR1 | 502  | PROGRAM*  | 72/05  | D     | 73/25  | S      | 74/17 | 79/48  |        |        |
| FLAG     | 126  | EXTERNAL* | 25/26  | D     | 69/33  | 90/15  |       |        |        |        |
| FLCVTYPE | 10   |           | 24/40  |       |        |        |       |        |        |        |
| FNASCII  | 0    | EXTERNAL* | 22/33  |       | 23/37  |        | 24/26 | 27/06  | 40/05  | L      |
| FNCEVAL  | 505  | PROGRAM*  | 41/21  |       | 41/25  | 44/05  | L     | 47/43  | 48/09  | 63/43  |
| FNCEVALX | 556  | PROGRAM*  | 40/33  | L     | 42/08  |        |       |        | 90/29  | 92/28  |
| FNCEVALY | 515  | PROGRAM*  | 41/19  |       | 41/24  | L      |       |        |        |        |
| FNCEVALZ | 536  | PROGRAM*  | 41/10  |       | 42/05  | L      | 46/23 | 47/12  | 47/32  | 48/15  |
| FNCEVAL3 | 540  | PROGRAM*  | 41/12  |       | 46/09  |        | 46/40 | 47/16  | 47/48  |        |
| FNCEVAL4 | 542  | PROGRAM*  | 40/13  |       | 40/36  | 42/16  | L     |        |        |        |
| FNCEVAL5 | 544  | PROGRAM*  | 43/15  | L     | 51/23  | 52/04  | 52/39 | 58/14  | 59/12  |        |
| FNCEVAL6 | 550  | PROGRAM*  | 51/14  |       | 51/36  | 52/24  | 53/04 | 58/39  |        |        |
| FNCEVAL7 | 552  | PROGRAM*  | 43/16  |       | 43/26  | L      |       |        |        |        |
| FNCEVSCW | 120  | EXTERNAL* | 43/21  | L     | 51/05  |        |       |        |        |        |
| FNCEVSV7 | 117  | EXTERNAL* | 18/05  | D     | 40/17  | S      | 40/41 |        |        |        |
| FNCEVX1  | 554  | PROGRAM*  | 18/03  | D     | 40/06  | S      | 43/31 |        |        |        |
| FNCEVX2  | 555  | PROGRAM*  | 40/26  |       | 43/38  | L      |       |        |        |        |
| FORDIR   | 4537 | PROGRAM*  | 41/14  |       | 41/16  | 43/39  | L     |        |        |        |
|          |      |           | 41/27  | E     | 46/40  | 66/36  | 69/45 | 85/36  | 86/07  |        |
|          |      |           | 46/31  |       | 57/17  | 67/50  | 70/15 | 85/40  | 93/21  |        |
|          |      |           | 46/48  |       | 66/25  | 69/29  | 70/31 | 86/03  | 99/25  | L      |
| FORDIR2  | 4544 | PROGRAM*  | 76/27  |       | 77/22  | 78/22  | 89/40 | L      |        |        |
| FWDPMDE  | 4632 | PROGRAM*  | 4/24   | E     | 63/09  | 103/23 | D     |        |        |        |
| FWDPMODE | 4632 | PROGRAM*  | 65/29  |       | 66/02  | 66/15  | 97/31 | 97/52  | 103/33 |        |
| EXTFLAG  | 0    | EXTERNAL* | 66/01  |       | 66/14  | 66/16  | 97/32 | 103/30 | L      | 108/11 |
| F•ADD    | 763  | PROGRAM*  | 67/42  |       | 68/01  | S      | 68/16 | S      |        |        |
| F•ADDKY  | 2502 | PROGRAM*  | 4/29   | E     | 51/10  | L      |       |        |        |        |
| F•ALLON  | 4153 | PROGRAM*  | 4/44   | E     | 70/11  | L      |       |        |        |        |
| F•BLIST  | 2613 | PROGRAM*  | 4/47   | E     | 89/07  | L      |       |        |        |        |
|          |      |           | 4/48   | E     | 73/08  | L      |       |        |        |        |

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SYMBOLIC REFERENCE TABLE.

|          |      |          |        |   |          |
|----------|------|----------|--------|---|----------|
| F.BLIST1 | 2640 | PROGRAM* | 73/13  | E | 73/18 L  |
| F.CHAIN  | 3662 | PROGRAM* | 4/45   | E | 85/15 L  |
| F.CHPSW  | 1356 | PROGRAM* | 4/34   | E | 57/27 L  |
| F.CMMD   | 1510 | PROGRAM* | 4/33   | E | 59/40 L  |
| F.CPUT1  | 1401 | PROGRAM* | 4/34   | E | 57/45 L  |
| F.CPYBF  | 2203 | PROGRAM* | 4/41   | E | 67/15 L  |
| F.CPYBFE | 2312 | PROGRAM* | 67/19  | E | 67/25 L  |
| F.CPYBFX | 2321 | PROGRAM* | 67/43  | E | 68/27 L  |
| F.CPYBFI | 2251 | PROGRAM* | 68/06  | E | 68/21 L  |
| F.DCAP   | 2037 | PROGRAM* | 4/36   | E | 65/49 L  |
| F.DCTBL  | 4032 | PROGRAM* | 4/16   | E | 87/31 L  |
| F.DCTBL1 | 4055 | PROGRAM* | 87/33  | E | 87/51 L  |
| F.DCTBL2 | 4057 | PROGRAM* | 87/40  | E | 87/52 L  |
| F.DECML  | 3757 | PROGRAM* | 4/16   | E | 86/26 L  |
| F.DECPI  | 4001 | PROGRAM* | 86/28  | E | 86/46 L  |
| F.DELKY  | 2523 | PROGRAM* | 4/44   | E | 70/27 L  |
| F.DISAB  | 1640 | PROGRAM* | 62/39  | E | 62/35 L  |
| F.DISDAB | 1653 | PROGRAM* | 62/23  | E | 62/42 L  |
| F.DISP   | 1620 | PROGRAM* | 4/38   | E | 62/17 L  |
| F.DISPLS | 1635 | PROGRAM* | 62/22  | E | 62/27 L  |
| F.DIV    | 1007 | PROGRAM* | 4/29   | E | 51/47 L  |
| F.DLNK   | 2446 | PROGRAM* | 4/43   | E | 69/41 L  |
| F.DLOWN  | 2416 | PROGRAM* | 4/43   | E | 69/25 L  |
| F.DRCTN  | 1442 | PROGRAM* | 4/31   | E | 58/44 L  |
| F.DRCTY  | 1450 | PROGRAM* | 4/31   | E | 58/51 L  |
| F.DRCTY1 | 1455 | PROGRAM* | 58/46  | E | 59/02 L  |
| F.ETTST  | 5074 | PROGRAM* | 114/36 | E | 114/40 L |
| F.FLOUT  | 4062 | PROGRAM* | 4/46   | E | 88/04 L  |
| F.KICK   | 3750 | PROGRAM* | 4/46   | E | 86/14 L  |
| F.KILLB  | 2354 | PROGRAM* | 4/42   | E | 68/51 L  |
| F.KILLBD | 2371 | PROGRAM* | 69/01  | E | 69/07 L  |
| F.KILLU  | 1327 | PROGRAM* | 4/34   | E | 57/13 L  |
| F.KILLV  | 1608 | PROGRAM* | 4/37   | E | 62/01 L  |
| F.KLLOF  | 2157 | PROGRAM* | 4/60   | E | 66/49 L  |
| F.KLLDR  | 2171 | PROGRAM* | 4/60   | E | 67/03 L  |
| F.KLOBJ  | 2406 | PROGRAM* | 4/63   | E | 69/16 L  |
| F.LKTTY  | 4133 | PROGRAM* | 4/66   | E | 88/41 L  |
| F.MDOLS  | 3542 | PROGRAM* | 4/39   | E | 83/36 L  |
| F.MULT   | 1003 | PROGRAM* | 4/29   | E | 51/41 L  |
| F.MUSRS  | 3557 | PROGRAM* | 4/39   | E | 83/53 L  |
| F.MVC    | 1574 | PROGRAM* | 4/37   | E | 61/45 L  |
| F.MVD    | 1566 | PROGRAM* | 4/37   | E | 61/36 L  |
| F.MVSpC  | 3527 | PROGRAM* | 4/38   | E | 83/23 L  |
| F.NEG    | 775  | PROGRAM* | 4/29   | E | 51/28 L  |
| F.NEWB   | 2322 | PROGRAM* | 4/42   | E | 68/32 L  |
| F.NEWBD  | 2337 | PROGRAM* | 68/35  | E | 68/42 L  |
| F.NEWDF  | 2104 | PROGRAM* | 4/40   | E | 66/21 L  |
| F.NEWDR  | 2130 | PROGRAM* | 4/40   | E | 66/34 L  |
| F.NEWKY  | 2462 | PROGRAM* | 4/44   | E | 69/52 L  |
| F.NEWUS  | 1063 | PROGRAM* | 4/34   | E | 54/07 L  |
| F.NEWV   | 1535 | PROGRAM* | 4/37   | E | 61/05 L  |
| F.NMAST  | 4167 | PROGRAM* | 4/47   | E | 89/28 L  |
| F.NOACT  | 760  | PROGRAM* | 4/29   | E | 51/04 L  |

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|          |      |           |       |       |   |
|----------|------|-----------|-------|-------|---|
| F.NUERR1 | 1250 | PROGRAM*  | 54/14 | 56/20 | L |
| F.NUERR2 | 1251 | PROGRAM*  | 54/16 | 56/21 | L |
| F.NUERR3 | 1252 | PROGRAM*  | 54/10 | 56/22 | L |
| F.NUERR4 | 1253 | PROGRAM*  | 54/42 | 56/24 | L |
| F.NULOOP | 1162 | PROGRAM*  | 54/50 | 55/03 |   |
| F.NUSRXJ | 1121 | PROGRAM*  | 55/07 | 55/16 |   |
| F.NUSR1  | 1075 | PROGRAM*  | 54/30 | 54/37 |   |
| F.OBJ    | 2540 | PROGRAM*  | 4/34  | 70/40 |   |
| F.OBJS   | 2546 | PROGRAM*  | 4/34  | 70/51 |   |
| F.OBJX   | 1030 | PROGRAM*  | 4/32  | 52/29 |   |
| F.PARAM  | 1466 | PROGRAM*  | 4/33  | 59/17 |   |
| F.PWRD   | 1700 | PROGRAM*  | 4/36  | 63/15 |   |
| F.PWRS   | 1706 | PROGRAM*  | 4/36  | 63/24 |   |
| F.REGL   | 1053 | PROGRAM*  | 4/32  | 55/13 |   |
| F.REGL1  | 1061 | PROGRAM*  | 53/16 | 53/18 |   |
| F.RENM   | 3730 | PROGRAM*  | 4/45  | 55/52 |   |
| F.SCNLS  | 1426 | PROGRAM*  | 4/31  | 56/27 |   |
| F.SCNLS1 | 1434 | PROGRAM*  | 58/32 | 58/32 |   |
| F.SHAZ   | 3572 | PROGRAM*  | 4/45  | 84/17 |   |
| F.SHAZE1 | 3651 | PROGRAM*  | 84/24 | 84/35 |   |
| F.SHAZE2 | 3653 | PROGRAM*  | 84/34 | 84/35 |   |
| F.SHAZE3 | 3654 | PROGRAM*  | 84/37 | 84/32 |   |
| F.SHAZE4 | 3656 | PROGRAM*  | 84/27 | 84/32 |   |
| F.SHAZED | 3657 | PROGRAM*  | 84/29 | 85/03 |   |
| F.SHAZE6 | 3661 | PROGRAM*  | 84/29 | 85/07 |   |
| F.SHAZ1  | 3631 | PROGRAM*  | 84/30 | 85/05 |   |
| F.SHAZ2  | 3637 | PROGRAM*  | 84/33 | 84/51 |   |
| F.SHAZ3  | 3645 | PROGRAM*  | 84/36 | 84/44 |   |
| F.SHZE1X | 3652 | PROGRAM*  | 84/43 | 84/47 |   |
| F.SHZE3X | 3655 | PROGRAM*  | 84/50 | 85/01 |   |
| F.SHZE5X | 3660 | PROGRAM*  | 85/64 | 85/08 |   |
| F.SLIST  | 2606 | PROGRAM*  | 4/48  | 73/01 |   |
| F.SOFTL  | 3705 | PROGRAM*  | 4/48  | 85/32 |   |
| F.SPC    | 3521 | PROGRAM*  | 4/38  | 83/10 |   |
| F.STSCN  | 1420 | PROGRAM*  | 4/31  | 56/19 |   |
| F.SUB    | 770  | PROGRAM*  | 4/29  | 51/19 |   |
| F.SUBPX  | 1041 | PROGRAM*  | 4/32  | 52/44 |   |
| F.SUBPXA | 1044 | PROGRAM*  | 52/47 | 53/20 |   |
| F.SUBPXi | 1081 | PROGRAM*  | 52/50 | 53/08 |   |
| F.SYSDN  | 4073 | PROGRAM*  | 4/66  | 88/18 |   |
| F.TBL    | 4083 | PROGRAM*  | 4/16  | 87/05 |   |
| F.TBLMG1 | 4027 | PROGRAM*  | 67/13 | 87/25 |   |
| F.TBLMG2 | 4030 | PROGRAM*  | 67/18 | 87/26 |   |
| F.TEMPD  | 1471 | PROGRAM*  | 4/35  | 59/24 |   |
| F.TEMPD1 | 1501 | PROGRAM*  | 59/28 | 59/29 |   |
| F.TTYON  | 4144 | PROGRAM*  | 4/67  | 88/49 |   |
| F.TYOFF  | 4180 | PROGRAM*  | 4/67  | 89/15 |   |
| F.UNCHN  | 3674 | PROGRAM*  | 4/45  | 85/22 |   |
| F.VARL   | 1407 | PROGRAM*  | 4/32  | 58/01 |   |
| F.VIEW   | 2057 | PROGRAM*  | 4/37  | 66/07 |   |
| F.WP     | 1013 | PROGRAM*  | 4/30  | 51/53 |   |
| F.WWP    | 1020 | PROGRAM*  | 4/30  | 52/09 |   |
| GENASC   | 0    | EXTERNAL* | 25/46 | 32/39 |   |

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84/53 L

59/34 L

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|          |      |           |         |         |         |         |         |                |
|----------|------|-----------|---------|---------|---------|---------|---------|----------------|
| GETKYWD  | 444  | PROGRAM*  | 4/26 E  | 37/08 L |         |         |         |                |
| GETKYWDX | 461  | PROGRAM*  | 37/14   | 37/18   | 37/24 L |         |         |                |
| GETKYWD7 | 136  | EXTERNAL* | 18/27 D | 37/09 S | 37/24   |         |         |                |
| GETSPC   | 0    | EXTERNAL* | 106/43  |         |         |         |         |                |
| GETSVAL  | 423  | PROGRAM*  | 26/25   | 36/10 L |         |         |         |                |
| GETSVAL1 | 427  | PROGRAM*  | 36/13   | 36/18 L |         |         |         |                |
| GETSVAL2 | 435  | PROGRAM*  | 36/15   | 36/27 L |         |         |         |                |
| GETTKN   | 300  | PROGRAM*  | 4/26 E  | 28/15   | 32/24 L | 37/12   | 38/10   | 104/10         |
| GETTKNS7 | 115  | EXTERNAL* | 17/49 D | 32/38 S | 32/39   |         |         |                |
| GETTKNT  | 405  | PROGRAM*  | 32/43   | 34/27   | 35/12 L |         |         |                |
| GETTKNT1 | 410  | PROGRAM*  | 35/13   | 35/15   | 35/19 L |         |         |                |
| GETTKNT2 | 414  | PROGRAM*  | 35/20   | 35/22   | 35/26 L |         |         |                |
| GETTKNT3 | 416  | PROGRAM*  | 35/27   | 35/31 L |         |         |         |                |
| GETTKNT4 | 420  | PROGRAM*  | 35/32   | 35/36 L |         |         |         |                |
| GETTKNT5 | 422  | PROGRAM*  | 35/37   | 35/40 L |         |         |         |                |
| GETTKN1  | 314  | PROGRAM*  | 32/39   | 32/42 L |         |         |         |                |
| GETTKN1A | 305  | PROGRAM*  | 32/29   | 32/35 L |         |         |         |                |
| GETTKN1B | 306  | PROGRAM*  | 32/25   | 32/37 L |         |         |         |                |
| GETTKN2  | 322  | PROGRAM*  | 32/51 L |         |         |         |         |                |
| GETTKN3  | 325  | PROGRAM*  | 32/48   | 33/04 L | 33/16   | 33/18   |         |                |
| GETTKN4  | 330  | PROGRAM*  | 32/47   | 33/10 L | 33/14   |         |         |                |
| GETTKN4A | 331  | PROGRAM*  | 33/10   | 33/13 L |         |         |         |                |
| GETTKN5  | 334  | PROGRAM*  | 32/46   | 33/20 L |         |         |         |                |
| GETTKN5A | 335  | PROGRAM*  | 33/23 L | 33/37   |         |         |         |                |
| GETTKN5B | 341  | PROGRAM*  | 33/31   | 33/34 L |         |         |         |                |
| GETTKN5C | 343  | PROGRAM*  | 33/35   | 33/39 L |         |         |         |                |
| GETTKN5D | 350  | PROGRAM*  | 33/40   | 33/51 L |         |         |         |                |
| GETTKN5E | 351  | PROGRAM*  | 33/42   | 34/02 L |         |         |         |                |
| GETTKN5F | 352  | PROGRAM*  | 33/47   | 33/49   | 33/53   | 34/05 L |         |                |
| GETTKN6  | 365  | PROGRAM*  | 32/65   | 32/49   | 34/12 L |         |         |                |
| GETTKN6B | 367  | PROGRAM*  | 34/20 L | 34/29   | 34/30   | 34/36   | 34/52   |                |
| GETTKN6C | 365  | PROGRAM*  | 34/76   | 34/23   | 34/26 L |         |         |                |
| GETTKN6D | 374  | PROGRAM*  | 34/31   | 34/32   | 34/36 L | 34/51   |         |                |
| GETTKN6E | 462  | PROGRAM*  | 34/33   | 34/48 L |         |         |         |                |
| IDTKN    | 1002 |           | 25/16 D | 34/42   | 37/13   | 104/15  |         |                |
| IDVTYPE  | 2    |           | 25/17 D | 36/32   | 57/26   | 58/26   | 59/25   | 67/16          |
| ID:BASE  | 36   | EXTERNAL* | 34/60   | 54/08   | 58/02   | 58/45   | 61/06   | 85/53          |
| ID:FREE  | 50   | EXTERNAL* | 36/14   | 57/14   | 58/20   | 58/82   | 62/02   | 87/06          |
| ID:LIM   | 50   | EXTERNAL* | 17/10 D | 22/21   | 97/35   |         |         |                |
|          |      |           | 17/13 D | 22/22 S | 97/36   | 98/08   | 98/18 S | 99/09          |
|          |      |           | 17/11 D | 98/19   |         |         |         | 99/15 S 101/15 |

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|----------|--------|-----------|---------|----------|---------|---------|-------|-------|-------|--------|
| IND      | 100000 |           | 4/51 0  | 19/25    | 19/41   | 20/04   | 64/07 | 68/46 | 77/23 | 85/42  |
|          |        |           | 19/59   | 19/26    | 19/42   | 20/05   | 64/32 | 69/05 | 77/50 | 85/44  |
|          |        |           | 19/10   | 19/27    | 19/43   | 46/33   | 65/51 | 69/11 | 78/23 | 86/09  |
|          |        |           | 19/11   | 19/28    | 19/44   | 46/33   | 66/27 | 69/32 | 79/51 | 86/09  |
|          |        |           | 19/12   | 19/29    | 19/45   | 46/51   | 66/27 | 69/36 | 81/26 | 90/40  |
|          |        |           | 19/13   | 19/30    | 19/46   | 47/11   | 66/42 | 69/47 | 83/26 | 90/48  |
|          |        |           | 19/14   | 19/31    | 19/47   | 47/16   | 66/42 | 69/47 | 83/26 | 92/33  |
|          |        |           | 19/15   | 19/32    | 19/48   | 47/16   | 66/42 | 70/18 | 83/45 | 92/33  |
|          |        |           | 19/16   | 19/33    | 19/49   | 48/45   | 67/52 | 70/20 | 83/45 | 93/23  |
|          |        |           | 19/17   | 19/34    | 19/50   | 55/53   | 67/52 | 70/21 | 84/03 | 93/23  |
|          |        |           | 19/18   | 19/35    | 19/51   | 57/19   | 68/07 | 70/34 | 84/03 | 96/07  |
|          |        |           | 19/19   | 19/36    | 19/52   | 57/22   | 68/07 | 70/34 | 84/23 | 96/12  |
|          |        |           | 19/20   | 19/37    | 19/53   | 57/36   | 68/09 | 73/10 | 84/26 | 115/08 |
|          |        |           | 19/21   | 19/38    | 20/01   | 62/19   | 68/15 | 73/19 | 85/17 |        |
|          |        |           | 19/23   | 19/39    | 20/02   | 62/36   | 68/15 | 73/21 | 85/24 |        |
|          |        |           | 19/24   | 19/40    | 20/03   | 62/44   | 68/39 | 75/12 | 85/42 |        |
| INDEX    | 127    |           | 72/06 D | 73/52 S  | 74/04   | 74/14   |       |       |       |        |
| INLCL    | 0      | EXTERNAL* | 25/45   | 32/38    |         |         |       |       |       |        |
| INMDDEC  | 4730   | PROGRAM*  | 4/20    | 108/22 L |         |         |       |       |       |        |
| INMDOCT  | 4726   | PROGRAM*  | 4/20    | 108/17 L |         |         |       |       |       |        |
| INSPMDE  | 4631   | PROGRAM*  | 4/24    | 103/34 D |         |         |       |       |       |        |
| INSPMODE | 4631   | PROGRAM*  | 21/04   | 103/28 L | 103/34  | 108/14  |       |       |       |        |
| KILLV1   | 1611   | PROGRAM*  | 62/06   | 62/11 L  |         |         |       |       |       |        |
| LINEPK   | 0      | EXTERNAL* | 73/35   | 73/38    | 73/41   | 77/02   | 79/40 | 80/07 | 80/10 | 80/25  |
|          |        |           | 73/36   | 73/39    | 73/42   | 77/15   | 80/05 | 80/08 | 80/16 | 87/22  |
|          |        |           | 73/37   | 73/40    | 73/43   | 79/37   | 80/06 | 80/09 | 80/20 |        |
| LIST     | 2657   | PROGRAM*  | 73/03   | 73/17    | 73/20   | 73/24 L |       |       |       |        |
| LISTDIR  | 3144   | PROGRAM*  | 74/32   | 78/20    |         |         |       |       |       |        |
| LISTDIR1 | 3254   | PROGRAM*  | 78/29   | 79/36    |         |         |       |       |       |        |
| LISTDIR2 | 3257   | PROGRAM*  | 79/15   | 79/15    |         |         |       |       |       |        |
| LISTDIR3 | 3262   | PROGRAM*  | 79/36   | 79/43 L  |         |         |       |       |       |        |
| LISTDIR4 | 3263   | PROGRAM*  | 79/39   | 79/44 L  |         |         |       |       |       |        |
| LISTDONE | 3264   | PROGRAM*  | 74/07   | 79/48 L  |         |         |       |       |       |        |
| LISTER0  | 3443   | PROGRAM*  | 74/29   | 82/08 L  |         |         |       |       |       |        |
| LISTER01 | 3453   | PROGRAM*  | 82/08   | 82/16 L  |         |         |       |       |       |        |
| LISTER02 | 3456   | PROGRAM*  | 82/13   | 82/17 L  |         |         |       |       |       |        |
| LISTER1  | 3460   | PROGRAM*  | 77/32   | 82/19 L  |         |         |       |       |       |        |
| LISTER2  | 3472   | PROGRAM*  | 77/37   | 82/24 L  |         |         |       |       |       |        |
| LISTER3  | 3504   | PROGRAM*  | 77/43   | 77/51    |         |         |       |       |       |        |
| LISTFILE | 3050   | PROGRAM*  | 74/31   | 77/20 L  |         |         |       |       |       |        |
| LISTFL1  | 3142   | PROGRAM*  | 78/01   | 78/13 L  |         |         |       |       |       |        |
| LISTP1   | 2552   | PROGRAM*  | 72/27   | 73/34    |         |         |       |       |       |        |
| LISTP2   | 2553   | PROGRAM*  | 72/28   | 73/35    |         |         |       |       |       |        |
| LISTP3   | 2554   | PROGRAM*  | 72/29   | 73/36    |         |         |       |       |       |        |
| LISTP4   | 2555   | PROGRAM*  | 72/30   | 73/37    |         |         |       |       |       |        |
| LISTP5   | 2556   | PROGRAM*  | 72/31   | 73/38    |         |         |       |       |       |        |
| LISTP6   | 2557   | PROGRAM*  | 72/32   | 73/39    |         |         |       |       |       |        |
| LISTP7   | 2560   | PROGRAM*  | 72/33   | 73/40    |         |         |       |       |       |        |
| LISTP8   | 2561   | PROGRAM*  | 72/34   | 73/41    | 82/06   |         |       |       |       |        |
| LISTP9   | 2562   | PROGRAM*  | 72/35   | 73/42    | 82/07   |         |       |       |       |        |
| LISTVEC  | 2740   | PROGRAM*  | 74/28   | 74/31 L  | 74/39   |         |       |       |       |        |
| LIST1    | 2712   | PROGRAM*  | 73/31   | 73/46    | 73/51 L |         |       |       |       |        |
| LIST2    | 2715   | PROGRAM*  | 73/53   | 74/04 L  | 82/22   | 82/27   |       |       |       |        |

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| LIST20   | 2714 | PROGRAM*  | 74/62 L | 74/25   | 74/34   | 74/36   | 79/34   | 79/40   |         |
|----------|------|-----------|---------|---------|---------|---------|---------|---------|---------|
| LOCALPXJ | 2    |           | 74/18   | 74/33   | 74/35   | 78/11   | 79/37   | 79/13 D | 84/26 D |
|          |      |           | 46/69 D | 57/36   | 66/42 D | 69/05   | 73/21   | 79/13 D | 90/40 D |
|          |      |           | 46/69 D | 59/53 D | 66/42 D | 69/11 D | 75/11 D | 84/26 D | 90/40 D |
|          |      |           | 46/69 D | 59/53 D | 66/42 D | 69/11 D | 75/12 D | 84/26 D | 90/48 D |
|          |      |           | 46/69 D | 59/53 D | 66/42 D | 69/11 D | 75/12 D | 84/26 D | 90/48 D |
|          |      |           | 46/33 D | 62/19 D | 66/42 D | 69/11 D | 75/12 D | 84/28 D | 90/48 D |
|          |      |           | 46/33 D | 62/19 D | 66/44 D | 69/32 D | 75/12 D | 84/28 D | 90/48 D |
|          |      |           | 46/33 D | 62/19 D | 66/44 D | 69/32 D | 75/12 D | 84/28 D | 90/48 D |
|          |      |           | 46/51 D | 62/36 D | 66/44 D | 69/32 D | 75/12 D | 84/31 D | 92/33 D |
|          |      |           | 46/51 D | 62/36 D | 67/52 D | 69/32 D | 75/12 D | 84/31 D | 92/33 D |
|          |      |           | 46/51 D | 62/36 D | 67/52 D | 69/36 D | 77/35 D | 79/51 D | 84/31 D |
|          |      |           | 46/51 D | 62/36 D | 67/52 D | 69/36 D | 77/36 D | 81/25 D | 84/34 D |
|          |      |           | 47/11 D | 62/44 D | 67/52 D | 69/36 D | 77/36 D | 81/26 D | 84/34 D |
|          |      |           | 47/11 D | 62/44 D | 68/07 D | 69/36 D | 77/36 D | 81/26 D | 84/34 D |
|          |      |           | 47/11 D | 62/44 D | 68/07 D | 69/47 D | 77/36 D | 81/26 D | 85/17 D |
|          |      |           | 47/11 D | 64/07 D | 68/07 D | 69/47 D | 77/36 D | 81/26 D | 85/17 D |
|          |      |           | 47/11 D | 64/07 D | 68/07 D | 69/47 D | 77/36 D | 81/26 D | 85/17 D |
|          |      |           | 47/16 D | 64/07 D | 68/07 D | 70/01 D | 77/41 D | 81/26 D | 85/17 D |
|          |      |           | 47/16 D | 64/07 D | 68/09 D | 70/01 D | 77/42 D | 82/28 D | 85/24 D |
|          |      |           | 47/16 D | 64/07 D | 68/09 D | 70/01 D | 77/42 D | 82/29 D | 85/24 D |
|          |      |           | 47/16 D | 64/32 D | 68/09 D | 70/18 D | 77/42 D | 82/29 D | 85/42 D |
|          |      |           | 48/65 D | 64/32 D | 68/09 D | 70/18 D | 77/42 D | 82/29 D | 85/42 D |
|          |      |           | 48/65 D | 64/32 D | 68/15 D | 70/20 D | 77/42 D | 82/29 D | 85/43 D |
|          |      |           | 48/65 D | 64/32 D | 68/15 D | 70/21 D | 77/49 D | 83/26 D | 85/44 D |
|          |      |           | 55/53 D | 64/32 D | 68/15 D | 70/21 D | 77/50 D | 83/26 D | 85/44 D |
|          |      |           | 55/53 D | 65/51 D | 68/15 D | 70/21 D | 77/50 D | 83/26 D | 85/44 D |
|          |      |           | 55/53 D | 65/51 D | 68/15 D | 70/34 D | 77/50 D | 83/26 D | 85/44 D |
|          |      |           | 55/53 D | 65/51 D | 68/15 D | 70/34 D | 77/50 D | 83/45 D | 86/09 D |
|          |      |           | 57/19 D | 66/13 D | 68/39 D | 70/34 D | 77/50 D | 83/45 D | 86/09 D |
|          |      |           | 57/19 D | 66/13 D | 68/39 D | 70/34 D | 77/50 D | 83/45 D | 86/09 D |
|          |      |           | 57/19 D | 66/13 D | 68/39 D | 70/34 D | 77/50 D | 83/45 D | 86/09 D |
|          |      |           | 57/19 D | 66/27 D | 68/46 D | 73/10 D | 77/50 D | 83/45 D | 86/09 D |
|          |      |           | 57/19 D | 66/27 D | 68/46 D | 73/10 D | 78/37 D | 84/03 D | 88/23 D |
|          |      |           | 57/22 D | 66/27 D | 68/46 D | 73/10 D | 78/38 D | 84/03 D | 88/23 D |
|          |      |           | 57/22 D | 66/27 D | 68/46 D | 73/10 D | 78/38 D | 84/03 D | 88/23 D |
|          |      |           | 57/22 D | 66/29 D | 69/05 D | 73/19 D | 78/38 D | 84/03 D | 90/40 D |
|          |      |           | 57/22 D | 66/29 D | 69/05 D | 73/21 D | 78/38 D | 84/23 D | 90/40 D |
|          |      |           | 57/26 D | 66/29 D | 69/05 D | 73/21 D | 78/38 D | 84/23 D | 90/40 D |
|          |      |           | 75/11 D | 77/35 D | 77/41 D | 77/49 D | 78/37 D | 79/13 D | 81/25 D |
|          |      |           | 75/12 D | 77/36 D | 77/42 D | 77/50 D | 78/38 D | 79/14 D | 81/26 D |
|          |      |           | 75/12 D | 77/36 D | 77/42 D | 77/50 D | 78/38 D | 79/14 D | 81/26 D |
|          |      |           | 75/12 D | 77/36 D | 77/42 D | 77/50 D | 78/38 D | 79/14 D | 81/26 D |
|          |      |           | 75/12 D | 77/36 D | 77/42 D | 77/50 D | 78/38 D | 79/14 D | 81/26 D |
|          |      |           | 75/12 D | 77/36 D | 77/42 D | 77/50 D | 78/38 D | 79/14 D | 81/26 D |
| LOGON2   | 0    | EXTERNAL* | 59/32   |         |         |         |         |         | 82/28 D |
| LSTDNEPR | 3346 | PROGRAM*  | 80/17   | 80/21   | 80/38 L |         |         |         | 82/29 D |
| LSTDNEP1 | 3433 | PROGRAM*  | 80/34   | 81/52 L |         |         |         |         | 82/29 D |
| LSTDNEP2 | 3434 | PROGRAM*  | 80/05   | 81/53 L |         |         |         |         | 82/29 D |

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|          |      |           |         |          |         |         |         |        |
|----------|------|-----------|---------|----------|---------|---------|---------|--------|
| NU.GIVS  | 5    |           | 5/66 D  | 55/25 S  |         |         |         |        |
| NU.LIMT  | 11   |           | 5/70 D  |          |         |         |         |        |
| NU.LMSZ  | 12   |           | 5/11 D  |          |         |         |         |        |
| NU.PDSK  | 4    |           | 5/65 D  | 55/14 S  |         |         |         |        |
| NU.SBU   | 6    |           | 5/27 D  | 55/49 S  |         |         |         |        |
| NU.SIZE  | 24   |           | 5/12 D  | 54/46    | 56/17   | 56/18   | 56/19   | 56/20  |
| NU.UNAM  | 0    |           | 5/62 D  |          |         |         |         |        |
| NU.WRNS  | 7    |           | 5/68 D  | 55/28 S  |         |         |         |        |
| NVARS    | 0    | EXTERNAL* | 61/69   | 101/27   |         |         |         |        |
| NWTKN    | 241  | PROGRAM*  | 26/25   | 27/05    | 29/02 L | 38/13   |         |        |
| OBJSEQ   | 4662 | PROGRAM*  | 71/02   | 105/12 L |         |         |         |        |
| OBJSEQ1  | 4666 | PROGRAM*  | 105/23  | L        | 105/38  |         |         |        |
| OBJSEQ2  | 4676 | PROGRAM*  | 105/24  | L        | 105/40  | L       |         |        |
| OBJSIZE  | 4    |           | 72/17 D | 73/37    | 77/15   |         |         |        |
| OBJVEC   | 2572 | PROGRAM*  | 72/43 L | 77/13    |         |         |         |        |
| OBJVTYPE | 5    |           | 25/21 D | 52/30    | 58/52   | 62/14   | 70/41   | 73/02  |
| OBXVTYPE | 12   |           | 41/20   | 58/28    | 59/41   | 65/50   | 70/51   | 73/09  |
| OBXIMPL  | 4    |           | 48/08   | 58/45    | 61/46   | 69/17   | 70/52   | 83/24  |
| OCTBPK   | 0    | EXTERNAL* | 25/28 D | 52/38    | 63/37   | 68/33   | 68/52   | 90/19  |
| OCTNPK   | 0    | EXTERNAL* | 73/11   |          |         |         |         |        |
| OCTPK    | 0    | EXTERNAL* | 78/11   | 78/48    | 78/53   | 79/09   | 80/27   | 81/01  |
| OPENDF   | 0    | EXTERNAL* | 56/40   | 56/52    | 82/13   | 86/33   | 87/37   | 113/19 |
| OPNFILE  | 0    | EXTERNAL* | 103/11  | 109/21   | 109/29  | 109/30  |         |        |
| OUTBFSZ  | 0    | EXTERNAL* | 47/09   | 64/17    | 68/44   | 69/09   | 90/46   |        |
| OUTBUF   | 0    | EXTERNAL* | 67/45 S |          |         |         |         |        |
| PARAM    | 3    | EXTERNAL* | 102/28  | 109/14   |         |         |         |        |
| PARSEF   | 217  | PROGRAM*  | 102/27  | 109/13   |         |         |         |        |
| PARSEF3  | 221  | PROGRAM*  | 54/10 D | 54/52 S  | 55/25 S | 55/38 S | 56/03   |        |
| PARSEF4  | 223  | PROGRAM*  | 54/26 S | 55/14 S  | 55/28 S | 55/49 S |         |        |
| PARSEP   | 224  | PROGRAM*  | 26/22   | 27/02    | 27/11 L | 71/01   | 83/13   |        |
| PARSEP1  | 230  | PROGRAM*  | 27/15 L | 29/12    | 29/13   | 49/25   | 96/21   | 98/37  |
| PARSEP2  | 232  | PROGRAM*  | 22/11   | 27/17 L  |         |         |         |        |
| PARSEO   | 154  | PROGRAM*  | 4/18 E  | 23/21    | 23/46   | 24/06   | 28/11 L | 28/15  |
| PARSEOA  | 163  | PROGRAM*  | 28/13   | 28/17 L  |         |         |         |        |
| PARSEOB  | 165  | PROGRAM*  | 28/18   | 28/22 L  |         |         |         |        |
| PARSE1   | 166  | PROGRAM*  | 4/17 E  | 25/39 L  |         |         |         |        |
| PARSE2   | 171  | PROGRAM*  | 28/16   | 25/46    |         |         |         |        |
| PARSE3   | 176  | PROGRAM*  | 4/17    | 25/52 L  |         |         |         |        |
| PARSE4   | 202  | PROGRAM*  | 25/60   | 26/09 L  | 26/26   | 38/13   |         |        |
| PARSE5   | 214  | PROGRAM*  | 25/66   | 26/14    | 26/17 L | 27/06   | 28/66   |        |
| PARSTP   | 247  | PROGRAM*  | 26/20   | 26/24 L  |         |         |         |        |
| PARSTPA0 | 264  | PROGRAM*  | 26/21   | 26/31 L  |         |         |         |        |
| PARSTPA1 | 266  | PROGRAM*  | 26/33   | 27/04 L  |         |         |         |        |
| PARSTPA2 | 270  | PROGRAM*  | 26/19   | 26/52    | 30/15 L |         |         |        |
| PARSTPA3 | 265  | PROGRAM*  | 30/33   | 30/40 L  |         |         |         |        |
| PARSTPA4 | 267  | PROGRAM*  | 30/34   | 30/46 L  |         |         |         |        |
| PARSTPA5 | 273  | PROGRAM*  | 30/35   | 30/52 L  |         |         |         |        |
| PARSTPB5 | 275  | PROGRAM*  | 30/36   | 30/43 L  |         |         |         |        |
| PARSTPE1 | 276  | PROGRAM*  | 30/37   | 30/49 L  |         |         |         |        |
| PARSTPE2 | 277  | PROGRAM*  | 30/38   | 31/07 L  |         |         |         |        |
|          |      | PROGRAM*  | 31/08   | 31/13 L  |         |         |         |        |
|          |      | PROGRAM*  | 30/25   | 30/26    | 31/15 L |         |         |        |
|          |      | PROGRAM*  | 31/01   | 31/16 L  |         |         |         |        |

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|          |      | PROGRAM*  | 30/20 L | 30/41    | 30/47   | 31/05   | 31/11   |          |
|----------|------|-----------|---------|----------|---------|---------|---------|----------|
| PARSTP1  | 251  | PROGRAM*  | 30/22 L |          |         |         |         |          |
| PARSTP2  | 262  | PROGRAM*  | 30/31   | 30/33 L  |         |         |         |          |
| PARSTP3  | 256  | PROGRAM*  | 30/31   | 30/33 L  |         |         |         |          |
| PKASCII  | 0    | EXTERNAL* | 34/22   | 109/23   | 109/31  | 113/21  | 113/28  |          |
| PKID     | 4517 | PROGRAM*  | 36/29   | 58/35    | 59/08   | 98/08 L |         |          |
| PKID1    | 4526 | PROGRAM*  | 98/26 L | 98/31    |         |         |         |          |
| PKID2    | 4531 | PROGRAM*  | 98/27   | 98/33 L  |         |         |         |          |
| PKID3    | 4532 | PROGRAM*  | 98/21   | 98/37 L  |         |         |         |          |
| PMDA     | 4722 | PROGRAM*  | 4/19 E  | 108/06 L |         |         |         |          |
| PMDF     | 4724 | PROGRAM*  | 4/19 E  | 108/11 L |         |         |         |          |
| PMDI     | 4725 | PROGRAM*  | 4/19 E  | 108/14 L |         |         |         |          |
| PMode    | 0    | EXTERNAL* | 21/05 S | 63/17    | 64/07   | 64/32   | 65/09   | 108/08 S |
| POPR     | 0    | EXTERNAL* |         |          |         |         |         |          |
| POPR7    | 0    | EXTERNAL* |         |          |         |         |         |          |
| PRSFNCST | 116  | EXTERNAL* | 17/52 D |          |         |         |         |          |
| PUTDTM   | 4202 | PROGRAM*  | 61/39   | 90/08 L  |         |         |         |          |
| PUTOBJ   | 4300 | PROGRAM*  | 57/48   | 61/48    | 70/05   | 92/08 L |         |          |
| PWRDSC   | 2004 | PROGRAM*  | 63/36   | 63/40    | 64/53 L |         |         |          |
| PWRDSC1  | 2007 | PROGRAM*  | 65/06 L | 65/12    |         |         |         |          |
| PWRDSDF  | 1745 | PROGRAM*  | 64/02   | 64/15 L  |         |         |         |          |
| PWRDSDF1 | 1755 | PROGRAM*  | 64/28 L | 64/48    |         |         |         |          |
| PWRDSDF2 | 1757 | PROGRAM*  | 64/31 L | 64/39    |         |         |         |          |
| PWRDSEF  | 1726 | PROGRAM*  | 64/06 L | 64/10    |         |         |         |          |
| PWRDSF   | 1721 | PROGRAM*  | 63/34   | 63/38    | 63/48 L |         |         |          |
| PWRDSR   | 2017 | PROGRAM*  | 63/42   | 65/17 L  |         |         |         |          |
| PWRDSR1  | 2021 | PROGRAM*  | 65/22 L | 65/30    |         |         |         |          |
| PWRDSSTP | 2032 | PROGRAM*  | 63/10   | 64/10    | 64/35   | 65/13   | 65/30   | 65/35 L  |
| P.GIVENS | 6    |           | 5/16 D  | 5/17     | 79/19   | 81/28   |         |          |
| P.SPENTS | 6    |           | 5/37 D  | 79/29    | 81/35   |         |         |          |
| RETLOC   | 0    | EXTERNAL* | 62/45   | 79/15    | 78/39   | 79/53   | 84/24   |          |
| RET1CAP  | 61   | PROGRAM*  | 70/03   | 77/51    | 79/18   | 81/27   | 84/27   |          |
|          |      |           | 20/21 L | 57/20    | 66/43   | 77/32   | 78/32   |          |
|          |      |           | 46/35   | 66/26    | 69/33   | 77/37   |         |          |
| RET2CAPS | 63   | PROGRAM*  | 20/24 L | 67/53    |         |         |         |          |
| RLCVTYPE | 14   |           | 25/30 D | 63/19    | 63/41   | 90/27   |         |          |
| RLSID    | 4533 | PROGRAM*  | 46/40   | 56/34    | 59/07   | 99/09 L |         |          |
| RLSID1   | 4535 | PROGRAM*  | 99/11   | 99/14 L  |         |         |         |          |
| RSVDSIZ  | 10   |           | 72/19 D | 73/39    | 78/47   |         |         |          |
| RTNR     | 0    | EXTERNAL* | 22/24   | 36/11    | 63/29   | 82/31   | 92/33   | 104/29   |
|          |      |           | 22/33   | 36/25    | 63/30   | 90/40   | 92/46   | 97/48    |
|          |      |           | 28/20   | 36/34    | 70/43   | 90/48   | 93/13   | 104/32   |
|          |      |           | 28/31   | 59/19    | 80/26   | 91/08   | 93/23   | 104/42   |
|          |      |           | 28/34   | 60/02    | 81/46   | 91/29   | 96/15   | 107/01   |
|          |      |           | 75/16   | 75/19    | 76/04   | 76/46   | 77/02   | 107/05   |
| RTNR7    | 0    | EXTERNAL* | 17/36 D | 22/31 S  | 23/35 S | 24/24 S | 26/48 S | 40/08    |
| RULEFCN  | 102  | EXTERNAL* | 17/37 D | 26/33 S  | 26/50   |         |         | 42/16    |
| RULETKN  | 103  | EXTERNAL* | 104/21  |          |         |         |         | 44/06    |
| RUNB7    | 0    | EXTERNAL* |         |          |         |         |         |          |
| RUNFNC   | 102  | PROGRAM*  | 4/18 E  | 22/30 L  |         |         |         |          |
| SAVESTKN | 105  | EXTERNAL* | 17/39 D | 21/14 S  | 32/24   | 32/32 S | 38/06   | 38/27 S  |
| SBCVTYPE | 5    |           | 25/23 D | 92/15    |         |         |         |          |
| SBMVTYPE | 11   |           | 25/27 D | 63/35    | 90/17   |         |         |          |
| SBXVTYPE | 13   |           | 25/29 D | 52/45    | 63/39   | 90/21   | 92/19   |          |
| SCLVTYPE | 6    |           | 25/24 D | 58/38    |         |         |         |          |

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|          |      |           |        |        |        |        |        |       |       |        |          |
|----------|------|-----------|--------|--------|--------|--------|--------|-------|-------|--------|----------|
| SERV1    | 0    | EXTERNAL* | 108/09 | 108/20 |        |        |        |       |       |        |          |
| SET      | 0    | EXTERNAL* | 46/09  | 57/22  | 65/51  | 68/09  | 70/01  | 84/03 | 86/09 | 97/28  |          |
|          |      |           | 46/33  | 57/36  | 66/13  | 68/15  | 70/18  | 84/23 | 88/23 | 100/08 |          |
|          |      |           | 46/51  | 59/53  | 66/27  | 68/15  | 70/21  | 84/26 | 90/40 | 115/08 |          |
|          |      |           | 47/11  | 62/19  | 66/29  | 68/39  | 70/34  | 84/28 | 90/40 | 115/17 |          |
|          |      |           | 47/11  | 62/36  | 66/42  | 68/46  | 73/10  | 84/31 | 90/48 |        |          |
|          |      |           | 47/16  | 62/44  | 66/42  | 69/05  | 73/19  | 84/34 | 90/48 |        |          |
|          |      |           | 47/16  | 64/07  | 66/44  | 69/11  | 73/21  | 85/17 | 92/33 |        |          |
|          |      |           | 48/45  | 64/07  | 67/52  | 69/32  | 79/51  | 85/24 | 93/23 |        |          |
|          |      |           | 55/53  | 64/32  | 68/07  | 69/36  | 83/26  | 85/42 | 96/07 |        |          |
|          |      |           | 57/19  | 64/32  | 68/07  | 69/47  | 83/45  | 85/44 | 96/12 |        |          |
| SETINMD  | 4727 | PROGRAM*  | 108/19 | L      | 108/23 |        |        |       |       |        |          |
| SETPARS  | 71   | PROGRAM*  | 4/18   | L      | 22/08  | 23/16  | 25/39  |       |       |        |          |
| SETPPI   | 0    | EXTERNAL* | 64/19  | E      | 68/06  | 68/20  |        |       |       |        |          |
| SETPMD   | 4723 | PROGRAM*  | 108/08 | L      | 108/12 | 108/15 |        |       |       |        |          |
| SETPRNT  | 0    | EXTERNAL* | 56/35  | E      | 73/45  | 76/45  | 80/13  | 80/23 | 86/36 | 87/33  | 113/15   |
|          |      |           | 56/47  | E      | 75/41  | 80/02  | 80/15  | 80/24 | 87/13 | 87/40  | 113/3a   |
|          |      |           | 73/34  | E      | 76/04  | 80/04  | 80/19  | 86/28 | 87/18 | 110/37 |          |
|          |      |           | 90/13  | E      | 92/11  | 94/07  | L      |       |       |        |          |
| SETPUT   | 4356 | PROGRAM*  | 62/63  | E      | 70/02  | 79/52  | 84/22  | 84/25 |       |        |          |
| SETRET   | 0    | EXTERNAL* | 75/19  | E      | 77/49  | 78/37  | 79/13  | 81/25 |       |        |          |
| SETRETT  | 0    | EXTERNAL* | 75/13  | E      | 77/49  | 78/37  | 79/13  | 81/25 |       |        |          |
| SETRETB  | 0    | EXTERNAL* | 21/11  | E      | 21/13  | L      | 22/24  |       |       |        |          |
| SETTKN   | 67   | PROGRAM*  | 75/12  | E      | 77/36  | 77/42  | 77/50  | 78/38 | 79/15 | 81/26  | 82/29    |
| SETXJ7   | 0    | EXTERNAL* | 75/12  | E      | 77/36  | 77/42  | 77/50  | 78/38 | 79/14 | 81/26  | 82/29    |
|          |      |           | 75/12  | E      | 77/36  | 77/42  | 77/50  | 78/38 | 79/14 | 81/26  | 82/29    |
| SHPBLKD  | 0    | EXTERNAL* | 66/27  |        |        |        |        |       |       |        |          |
| SPCCMD   | 4700 | PROGRAM*  | 4/28   | E      | 83/13  | 106/16 | L      |       |       |        |          |
| SPCCMD1  | 4706 | PROGRAM*  | 106/31 | L      | 106/50 |        |        |       |       |        |          |
| SPCCMD2  | 4714 | PROGRAM*  | 106/38 | L      | 106/44 |        |        |       |       |        |          |
| SPCCMD3  | 4720 | PROGRAM*  | 106/32 | L      | 106/53 |        |        |       |       |        |          |
| SPCCMD4  | 4721 | PROGRAM*  | 106/25 | L      | 106/26 | 107/04 | L      |       |       |        |          |
| SPCLIST  | 0    | EXTERNAL* | 106/41 |        |        |        |        |       |       |        |          |
| SPCPRNT  | 4574 | PROGRAM*  | 4/21   | E      | 63/19  | 64/34  | 65/29  | 66/02 | 66/15 | 97/31  | 97/52    |
|          |      |           | 63/09  | E      | 64/09  | 65/15  | 66/01  | 66/14 | 66/16 | 97/32  | 102/13 L |
| SPCPRNTA | 142  | EXTERNAL* | 18/35  | D      | 102/15 | S      | 102/44 |       |       |        |          |
| SPCPRNTC | 141  | EXTERNAL* | 18/34  | D      | 102/22 | S      | 102/32 |       |       |        |          |
| SPCPRNTI | 4603 | PROGRAM*  | 102/32 | L      | 103/13 |        |        |       |       |        |          |
| SPCPRNT2 | 4604 | PROGRAM*  | 102/35 | L      | 102/48 |        |        |       |       |        |          |
| SPCPRNT3 | 4611 | PROGRAM*  | 102/42 | L      | 102/50 | L      |        |       |       |        |          |
| SPCPRNT4 | 4621 | PROGRAM*  | 102/50 | L      | 103/16 | L      |        |       |       |        |          |
| SPCPRNT5 | 4626 | PROGRAM*  | 103/04 | L      | 103/20 | L      |        |       |       |        |          |
| SRVBITS  | 0    | EXTERNAL* | 52/48  |        |        |        |        |       |       |        |          |
| STANDP   | 105  | PROGRAM*  | 4/17   | E      | 23/11  | L      |        |       |       |        |          |
| STANDPX  | 152  | PROGRAM*  | 4/17   | E      | 24/28  | L      |        |       |       |        |          |
| STANDP1  | 112  | PROGRAM*  | 23/21  | L      | 23/30  |        |        |       |       |        |          |
| STANDP2  | 116  | PROGRAM*  | 23/25  | L      | 23/27  | L      |        |       |       |        |          |
| STANDP3  | 121  | PROGRAM*  | 23/29  | L      | 23/33  | L      | 24/05  |       |       |        |          |
| STANDP4  | 125  | PROGRAM*  | 23/27  | L      | 23/28  | L      | 23/31  | 23/41 | L     | 24/06  |          |
| STANDP5  | 127  | PROGRAM*  | 23/18  | L      | 23/43  | L      |        |       |       |        |          |
| STANDP6  | 130  | PROGRAM*  | 23/46  | L      | 24/02  |        |        |       |       |        |          |
| STANDP7  | 134  | PROGRAM*  | 23/49  | L      | 23/51  | L      |        |       |       |        |          |
| STANDP8  | 137  | PROGRAM*  | 23/19  | L      | 24/04  | L      |        |       |       |        |          |

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SYMBOLIC REFERENCE TABLE.

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|       |   |           |       |       |       |         |         |         |       |        |
|-------|---|-----------|-------|-------|-------|---------|---------|---------|-------|--------|
| XJLOC | O | EXTERNAL* | 46/68 | 62/18 | 67/32 | 70/21   | 76/25   | 78/48   | 83/25 | 90/40  |
|       |   |           | 46/69 | 62/19 | 67/37 | 70/33   | 77/20   | 79/02   | 83/26 | 90/47  |
|       |   |           | 46/32 | 62/35 | 67/51 | 70/34   | 77/22 S | 79/13   | 83/44 | 90/48  |
|       |   |           | 46/34 | 62/36 | 67/52 | 73/09   | 77/25 S | 79/14   | 83/45 | 92/32  |
|       |   |           | 46/50 | 62/36 | 68/06 | 73/10   | 77/28 S | 79/14   | 84/02 | 92/33  |
|       |   |           | 47/10 | 62/36 | 68/07 | 73/18   | 77/30 S | 79/19   | 84/03 | 93/22  |
|       |   |           | 47/11 | 62/43 | 68/08 | 73/19   | 77/31   | 79/29   | 84/22 | 93/23  |
|       |   |           | 47/15 | 62/43 | 68/09 | 73/20   | 77/36   | 79/50   | 84/23 | 96/06  |
|       |   |           | 47/16 | 62/44 | 68/14 | 73/21   | 77/36   | 79/52   | 84/25 | 96/07  |
|       |   |           | 48/44 | 62/45 | 68/15 | 74/05   | 77/42   | 79/52   | 84/26 | 96/11  |
|       |   | S         | 54/26 | 64/06 | 68/38 | 74/10   | 77/42   | 80/16   | 84/27 | 96/12  |
|       |   | S         | 54/22 | 64/07 | 68/39 | 74/11   | 77/43 S | 80/17   | 84/28 | 97/27  |
|       |   | S         | 55/14 | 64/31 | 68/45 | 74/12   | 77/49   | 80/41 S | 84/30 | 97/28  |
|       |   | S         | 55/25 | 64/32 | 68/46 | 74/20   | 77/50   | 80/49 S | 84/31 | 100/07 |
|       |   | S         | 55/28 | 65/50 | 69/04 | 74/26   | 77/50   | 81/02   | 84/33 | 100/08 |
|       |   | S         | 55/38 | 65/51 | 69/05 | 75/12   | 77/50   | 81/08   | 84/34 | 115/07 |
|       |   | S         | 55/49 | 66/12 | 69/10 | 75/14   | 78/04   | 81/17   | 85/16 | 115/08 |
|       |   | S         | 55/52 | 66/13 | 69/11 | 75/48 S | 78/20   | 81/22 S | 85/17 | 115/15 |
|       |   | S         | 55/53 | 66/26 | 69/34 | 75/50 S | 78/22 S | 81/25   | 85/23 | 115/16 |
|       |   | S         | 56/03 | 66/27 | 69/32 | 75/52 S | 78/25 S | 81/26   | 85/24 | 115/17 |
|       |   | S         | 57/18 | 66/28 | 69/35 | 76/01   | 78/28 S | 81/26   | 85/41 |        |
|       |   | S         | 57/19 | 66/29 | 69/36 | 76/09 S | 78/30 S | 81/26   | 85/44 |        |
|       |   | S         | 57/21 | 66/41 | 69/46 | 76/12   | 78/31   | 81/28   | 86/08 |        |
|       |   | S         | 57/22 | 66/42 | 69/47 | 76/16 S | 78/37   | 81/35   | 86/09 |        |
|       |   | S         | 57/35 | 66/43 | 69/53 | 76/18 S | 78/38   | 82/09   | 88/22 |        |
|       |   | S         | 57/36 | 66/44 | 70/02 | 76/20 S | 78/38   | 82/29   | 88/23 |        |
|       |   | S         | 59/52 | 67/28 | 70/17 | 76/21   | 78/39   | 82/29   | 90/39 |        |