STORAGE ALLOCATION.

ADDRESS	LENGTH	BINARY CONTROL CARDS.
0	0	IDENT DISK
0		END

IDENT DISK

```
                *
                *
                *
                *                   TFLAG CONTROLS REFERENCE TO DISK AND DISK,DIRECT
                *
                *                   TFLAG = 0 PREVENTS SUCH REFERANCE IN A VERY PRIMATIVWAY
                *                           1 FOR NORMAL
                *
1               TFLAG     EQU       1          SET TO NORMAL VALUE
                *
                *
                *
                *                   USERNM IS THE USER NAME OF THE CODE FILE
                *
                *                   STURGIS  IS THE VALUE FOR DISK,STURGIS
                *                   S        IS THE VALUE FOR DISK,S
                *
                          IFEQ      TFLAG,1
                USERNM    MICRO     1,,,S.     THIS DEFINITION ONLY USED WITH NORMAL TFLAGP
                          ENDIF
                *
                *
                          IFNE      TFLAG,1
                          ENDIF
                *
                *
```

```
                                  *
                                  *
                                  *
                                  *
                                  *
                                  *
                                  *
                                  *
   0                                      ORG     0
                                  *
   0                                      BSSZ    2
   2  04112313000000000000                DATA    0LDISK,0LCLASS
   4  00000000000000000012                DATA    10          NO MAP ENTRIES
   5  00000000000000000062                DATA    50          COMPILED MAP SIZE
   6  00000000000000010633                VFD     60/FIELDLN
   7  00000000000000004550                VFD     60/STARTP
  10  00000000000000000106                DATA    70          CLIST SIZE
  11  00000000000000004455                VFD     60/SCRSZ    SCRATCH SIZE
                                  *
                                  MAP     MACRO   FNAME,UNAME,FILEAD,CMAD,WRDCNT,RFLAG
                                          IFC     EQ,**FNAME*
                                          DATA    0,0
                                          ENDIF
                                          IFC     NE,**FNAME*
                                          DATA    0L*FNAME,0L*UNAME
                                          ENDIF
                                          VFD     60/FILEAD,60/CMAD
                                          VFD     60/WRDCNT,60/RFLAG
                                          ENDM
                                  *
  12  00000000000000000000                MAP     ,,0,0,SCRSZ,0
  20  04112313000000000000                MAP     DISK,*USERNM*,SCRSZ,SCRSZ,FIELDLN-SCRSZ,1
                                  *
  26  77777777777777777776                DATA    -1
                                  *
                                          MACRO   CAP,L,CNAME,USER
                                          IFC     NE,**CNAME*
                                          DATA    0L*CNAME,0L*USER
                                          ENDIF
                                  CAPX    SET     CAPX+1
                                  L       SET     CAPX
                                          ENDM
                                  *
                                  *
                                          MACRO   CAPBSS,L,DELTA
                                  L       SET     CAPX+1
                                  CAPX    SET     CAPX+DELTA
                                          ENDM
                                  *
                              1   C.BEAD  EQU     1
                              3   C.RFILE EQU     3
                              4   C.WFILE EQU     4
                              5   C.SENDE EQU     5
                              6   C.GETE  EQU     6
```

```
                                  *
                          15      CAPX      SET       13
                                  *
                                  *
   27  23051406000000000000       C.SELF    CAP       SELF,OPERATE
   31  03012011160000000000       C.CAPIN   CAP       CAPIN,OPERATE
   33  04112313000000000000       C.MAINF   CAP       DISK,*USERNM*
   35  23012605000000000000       C.SAVE    CAP       SAVE,OPERATE
   37  22052324172200000000       C.RESTOR  CAP       RESTOR,OPERATE
   41  03021413000000000000       C.CBLK    CAP       CBLK,OPERATE
   43  22052425221600000000       C.RETURN  CAP       RETURN,OPERATE
   45  04231314170313000000       C.DSKLCK  CAP       DSKLOCK,OPERATE
                                  C.TAPE    CAPBSS    3
                                  C.CARDS   CAPBSS    3
                                  C.LISTF   CAPBSS    1
                                  C.DBEAD   CAPBSS    1
                                  C.NULL    CAPBSS    1
                                  C.INTFTL  CAPBSS    1
                                  C.FILE    CAPBSS    1
                                  C.FILE0   CAPBSS    10
                                  C.DISKF   CAPBSS    12
                                  C.MUX     CAPBSS    2
                                  *
   47  00000000000000000000                 DATA      0
                                  *
```

```
*
*
*
SEND      MACRO     EC,EVENT
          SET6      EVENT
          SA6       EC+2
          XJ        EC
          ENDM
*
XJ        MACRO     A,CNT
          IFC       EQ,*,CNT.
*         VFD       12/0130B,18/A,30/0
          ENDIF
          IFC       -EQ,*,CNT.
*         VFD       12/0130B,18/A,30/CNT
          ENDIF
          ENDM
*
SET6      MACRO     A
          IF        REG,A
          BX6       A
          ENDIF
          IF        ABS,A
          SX6       A
          ENDIF
          IF        REL,A
          SA1       A
          BX6       X1
          ENDIF
          ENDM
*
CALL      MACRO     A
*         SB7       *+1
          JP        A
          ENDM
*
DEBUG     MACRO
          XJ        SAVE
          SB6       4
          XJ        READ
          XJ        RESTOR
          ENDM
```

```
                    *
                    *
                    *
                    WRITE     MACRO     FILEAD,CMAD,CNT
                              FILE      WFILE,FILEAD,CMAD,CNT
                              XJ        WFILE
                              ENDM
                    READ      MACRO     FILEAD,CMAD,CNT
                              FILE      RFILE,FILEAD,CMAD,CNT
                              XJ        RFILE
                              ENDM
                    *
                    FILE      MACRO     FILEX,FILEAD,CMAD,CNT
                              SET6      FILEAD
                              SA6       FILEX+2
                              SET6      CMAD
                              SA6       FILEX+3
                              SET6      CNT
                              SA6       FILEX+4
                              ENDM
                    *
50  00000000000000000000      P
```

```
*
*
*
REQWR     MACRO     SZB,SZX,ARMPS,HEAD,SECTOR
          X1        GBUF,SZB
          SA7       XBUF
          READ      X7,PBUF,1
          FRMREQ    1,SZX,ARMPS,HEAD,SECTOR
          SA1       PBUF
          SX6       X1
          SA6       PBUF        XTRACT BUFFER INDEX
          LX1       60-18
          SX6       X1
          SA6       SZBUF       SAVE SIZE INDEX FOR REFERANCE
          ENDM
*
REQRD     MACRO     SZX,ARMPS,HEAD,SECTOR
          SX6       RD
          SA6       XBUF
          FRMREQ    0,SZX,ARMPS,HEAD,SECTOR
          ENDM
*
FRMREQ    MACRO     RW,SZX,ARMPS,HEAD,SECTOR
          X1        GSLOT
          SA7       XSLOT
          MX0       60-5
          SET6      ARMPS
          BX7       -X0*X6
          SET6      HEAD
          BX6       -X0*X6
          LX7       5
          BX7       X6+X7
          SET6      SECTOR
          MX0       60-7
          BX6       -X0*X6
          LX7       7
          BX7       X6+X7
          SET6      SZX
          MX0       60-2
          BX6       -X0*X6
          LX7       2
          BX7       X6+X7
          LX7       3           ZERO RETRY COUNT
          SET6      RW
          MX0       60-1
          BX6       -X0*X6
          LX7       1
          BX7       X6+X7
          SA1       USRINDX
          BX6       X1
          SX1       1
          IX6       X1+X6
          MX0       60-20
```

```
Bx6     -X0*X6
SA6     USRINDX
Lx7     20
Bx7     X6+X7
SA1     XBUF
Mx0     60-8
Bx1     -X0*X1
Lx7     8
Bx7     X7+X1
SA1     XSLOT
Mx0     60-9
Bx1     -X0*X1
Lx7     9
Bx7     X7+X1
SA7     BREQ+2
ENDM
```

```
*
*
*
FORK      MACRO     A
          IFEQ      TFLAG,1
          SX6       A
+         SB7       *+1
          JP        FORK
          ENDIF
          ENDM
*
*
TORLOCK   MACRO
+         SB6       *+1
          JP        TOBLOCK
          ENDM
```

```
                                  *
                                  *
                                  *
 51  00000000000000000006   GBUF.64    VFD     60/C.GETE,60/0
 52  00000000000000000000
 53  00000000000000000006   GBUF.129   VFD     60/C.GETE,60/0
 54  00000000000000000000
 55  00000000000000000006   GBUF.257   VFD     60/C.GETE,60/0
 56  00000000000000000000
 57  00000000000000000006   GBUF.513   VFD     60/C.GETE,60/0
 60  00000000000000000000
                                  *
 61  00000000000000000005   PBUF.64    VFD     60/C.SENDE,60/0,60/0
 62  00000000000000000000
 63  00000000000000000000
 64  00000000000000000005   PBUF.129   VFD     60/C.SENDE,60/0,60/0
 65  00000000000000000000
 66  00000000000000000000
 67  00000000000000000005   PBUF.257   VFD     60/C.SENDE,60/0,60/0
 70  00000000000000000000
 71  00000000000000000000
 72  00000000000000000005   PBUF.513   VFD     60/C.SENDE,60/0,60/0
 73  00000000000000000000
 74  00000000000000000000
                                  *
 75  00000000000000000006   GSLOT      VFD     60/C.GETE,60/0
 76  00000000000000000000
 77  00000000000000000005   PSLOT      VFD     60/C.SENDE,60/0,60/0
100  00000000000000000000
101  00000000000000000000
                                  *
102  00000000000000000005   PREQ       VFD     60/C.SENDE,60/0,60/0
103  00000000000000000000
104  00000000000000000000
105  00000000000000000006   GRESP      VFD     60/C.GETE,60/0
106  00000000000000000000
                                  *
107  00000000000000000004   WFILE      VFD     60/C.WFILE,60/0,60/0,60/0,60/0
110  00000000000000000000
111  00000000000000000000
112  00000000000000000000
113  00000000000000000000
114  00000000000000000003   RFILE      VFD     60/C.RFILE,60/0,60/0,60/0,60/0
115  00000000000000000000
116  00000000000000000000
117  00000000000000000000
120  00000000000000000000
                                  *
121  00000000000000000003   RBASE      VFD     60/C.RFILE,60/C.INTFIL,60/2,60/BASE,60/1
122  00000000000000000037
123  00000000000000000002
124  00000000000000000256
125  00000000000000000001
```

```
                                  *
 126  00000000000000000017   GETIF     VFD      60/C.CAPIN,60/C.SELF,60/2,60/C.INTFIL        WILL BE MODIFIED
 127  00000000000000000016
 130  00000000000000000002
 131  00000000000000000037
                                  *
 132  00000000000000000021   SAVE      VFD      60/C.SAVE,60/REGSAVE
 133  00000000000000000141
 134  00000000000000000022   RESTOR    VFD      60/C.RESTOR,60/REGSAVE
 135  00000000000000000141
                                  *
 136  00000000000000000023   NEWBLK    VFD      60/C.CBLK,60/0,60/0
 137  00000000000000000000
 140  00000000000000000000
                                  *
                                  *
 141                            REGSAVE   BSSZ     20
                                  *
 165  00000000000000000021   SPCLSVE   VFD      60/C.SAVE,60/SPCLREG
 166  00000000000000000171
 167  00000000000000000022   SPCLREST  VFD      60/C.RESTOR,60/SPCLREG
 170  00000000000000000171
                                  *
 171                            SPCLREG   BSSZ     20B
                                  *
                                  *
 211  00000000000000000024   RETURN    VFD      60/C.RETURN
                                  *
 212  00000000000000000005   TREQ      VFD      60/C.SENDE,60/0,60/0
 213  00000000000000000000
 214  00000000000000000000
 215  00000000000000000006   TRSP      VFD      60/C.GETE,60/0
 216  00000000000000000000
                                  *
 217  00000000000000000003   RTBASE    VFD      60/C.RFILE,60/C.INTFIL,60/1,60/TBASE,60/1
 220  00000000000000000037
 221  00000000000000000001
 222  00000000000000000224
 223  00000000000000000001
                                  *
 224                            TBASE     BSSZ     1
                                  *
 225  00000000000000000006   DSKLCK    VFD      60/C.GETE,60/C.DSKLCK
 226  00000000000000000025
 227  00000000000000000005   DSKCLR    VFD      60/C.SENDE,60/C.DSKLCK
 230  00000000000000000025
                                  *
                                  *
                                  *
 231  00000000000000000003   RMBASE    VFD      60/C.RFILE,60/C.INTFIL,60/0,60/MBASE,60/1
 232  00000000000000000037
 233  00000000000000000000
 234  00000000000000000236
```

```
 235  00000000000000000001
                                 *
 236                             MBASE     BSSZ      1
                                 *
                          20     MAXMSG    EQU       16        MAX NUMBER OF WORDS OF CHARACTERS IN A BRDCAST MSG
                                 *
 237  00000000000000000004       PTBRDMSG  VFD       60/C.WFILE,60/C.MUX,60/0,60/MSGBUF,60/MAXMSG+1
 240  00000000000000000067
 241  00000000000000000000
 242  00000000000000004355
 243  00000000000000000021
 244  00000000000000000005       PTBRDEV   VFD       60/C.SENDE,60/C.MUX+1,60/10000B
 245  00000000000000000070
 246  00000000000000010000
```

```
                                  *
                                  *                  DISK IO DATA AREA
                                  *
  247  00000000000000000010       WRCNT     DATA     8
  250  00000000000000000012       RDCNT     DATA     10
  251  00000000000000000000       ACTVCNT   DATA     0
                                  *
  252                             BUFX      BSSZ     1
  253                             PBUFD     BSSZ     1
  254                             PBUF      BSSZ     1
  255                             BUFSZX    BSSZ     1
                                  *
  256                             BASE      BSSZ     1
                                  *
  257                             RESPONSE  BSSZ     1
  260                             XSLOT     BSSZ     1
                                  *
  261                             CHKWD     BSSZ     1
                                  *
  262                             DATA      BSSZ     513
                                  *
                                  *
 1263  00000000000000000005       CREQ      VFD      60/C.SENDE,60/0,60/0
 1264  00000000000000000000
 1265  00000000000000000000
 1266  00000000000000000006       CRSP      VFD      60/C.GETE,60/0
 1267  00000000000000000000
```

```
                                 *
                                 *
                                 *                    DIRECTORY DATA AREA
                                 *
                                 *
 1270                            DHEAD     BSS        0
                                 *
                          30     NARMPS    EQU        24
                                 *
 1270                            UNAME     BSSZ       1
 1271                            BITWORDX  BSSZ       1
 1272                            BITWDLMT  BSSZ       1
 1273                            BITTABLE  BSSZ       8*NARMPS
                                 *
 1573                            DLIMIT    BSSZ       1
 1574                            DENTRYX   BSSZ       1
                                 *
                        1274     DSIZE     EQU        10*70     MUST BE A MULTIPLE OF 10
                                 *
                         305     DHEADSZ   EQU        *-DHEAD
                                 *
                                 *
 1575                            DENTRIES  BSSZ       4*10
                                 *
                                 *
 1645                            DBEADE    BSSZ       4
 1651                            NULLRDE   BSSZ       4
                                 *
 1655                            DSCANSV7  BSSZ       1
                                 *
 1656                            DSCANZRX  BSSZ       1
 1657                            DSCANZR   BSSZ       1
                                 *
 1660                            PUTSVCN   BSSZ       1
                                 *
 1661                            SVR5      BSSZ       1
```

```
                                 *
                                 *
                                 *                    DATA FOR TTY INTERFACE
                                 *
1662                             INSTRING   BSSZ      15
                                 *
                           5     NPARAMS    EQU       5
1701                             PARAMS     BSSZ      NPARAMS
                                 *
1706  0000000000000001710        OUTPOINT   VFD       60/OUTBUF
1707                             OUTCNT     BSSZ      1
1710  4732000000000000000        OUTBUF     VFD       4/11B,7/155B,49/0
1711                                        BSSZ      15
                                 *
1730                             SVR7       BSSZ      1
                                 *
1731                             CMMDRTN    BSSZ      1          ZERO IS NEEDED INITIAL VALUE
                                 *
                                 *
                                 *                    TAPE IO DATA
                                 *
1732                             TRESPONS   BSSZ      1
1733  0001000110010000000        TAPECODE   VFD       1/0,11/1,12/1,12/513,12/0,12/0
1734                             TRPTCNT    BSSZ      1
1735                             TREADCNT   BSSZ      1
1736                             PDERFLAG   BSSZ      1
                                 *
                                 *
                                 *                    DATA FOR DUMP AND LOAD AND ETC
                                 *
1737                             DUMPSV1    BSSZ      1
1740                             DUMPSV2    BSSZ      1
1741                             DUMPSV3    BSSZ      1
1742                             DUMPSV7    BSSZ      1
                                 *
                                 *
                                 *                    DATA FOR LIST OPS
                                 *
1743                             LISTFBLK   BSSZ      4
                                 *
1747                             LISTFPNT   BSSZ      1
                                 *
1750                             LISTACT    BSSZ      1
                                 *
1751                             LISTFLG    BSSZ      1
                                 *
1752                             LISTOPS7   BSSZ      1
1753                             LOADECS7   BSSZ      1
                                 *
                                 *                    FLAG DATA
                                 *
1754                             FLAGS      BSS       0
                                 *
```

```
  SCRATCH AREA

  1754  00000000000000000000   SYSFLAG   DATA     0,0LSYSTEM
  1756  00000000000000000000   DELEFLAG  DATA     0,0LDELETE
  1760  00000000000000000000   TESTFLAG  DATA     0,0LTEST
  1762  00000000000000000000   SFLAG     DATA     0,0LSFLAG
                               *
  1764                                   BSS      0
                         10    NFLAGS    EQU      *-FLAGS
                               *
                               *
                               *
                               *                                DATA AREA FOR DISK IO ERROR DIAGNOSTICS
                               *
                               *
  1764                         DISKERRA  BSSZ     1
  1765                         DISKERRB  BSSZ     1
  1766                         STATUS1   BSSZ     1
  1767                         TERMX     BSSZ     1
```

```
                        *
                        *                FORM OF FILE DATA STORAGE AREA FOR EACH FILE
                        *
1770                    ALPHA     BSS    0
                        *
   0                              ORG    0
                        *
   0                    BEADRLK   BSS    4
                        *
   4                    CLISTX    BSS    1
                        *
   5                    DIRECTX   BSS    1
   6                    DIRECTY   BSS    4
                        *
  12                    HEADER    BSS    2
                        *
  14                    BPOINTS   BSS    512-2
                        *
                        *
1012                    FAREA     BSS    0
                        *
1770                              ORG    ALPHA
                        *
                        *
                        *                FILE DATA STORAGE AREA
                        *
                    1   NFILES    SET    1
                        *
1770                    FILEDATA  BSSZ   NFILES*FAREA
                        *
```

```
                                  *
                                  *
3002                              STOP      BSSZ      1
3003  0130000132000000000000                DEBUG
3007  0200003002                            JP        STOP
```

```
                        *
                        *                   MISC DATA
                        *
3010                    DISKADSV  BSSZ      1
                        *
3011                    RDRCDFLG  BSSZ      1          ADRESS OF FILE NAME IF ANY FOR RDRCD
                        *
3012                    TEMP1     BSSZ      1
3013                    TEMP2     BSSZ      1
                        *
3014                    UTABLE    BSSZ      2*100
                 310    UTABLESZ  EQU       *-UTABLE
                        *
                        *
                        *
3324                    WRTN      BSSZ      1
3325                    RRTN      BSSZ      1
                        *
                        *
3326                    GETFLAG   BSSZ      1
                        *
                        *                   DATA FOR TEST CARDS
                        *
3327                    CRSPDTA   BSSZ      1
                        *
3330                    CARDLA    BSSZ      1          HOLDS ERROR RECOVERY BIT FOR CARDL
                        *
                        *
                        *                   DATA FOR DUMP DATA
                        *
3331                    DMPDATAX  BSSZ      1
3332                    DMPDATAY  BSSZ      1
                        *
                        *                   DATA FOR DMPWD
                        *
3333                    DMPWDX1   BSSZ      2
3335                    DMPWDX2   BSSZ      1
```

```
                                  *
                                  *
                                  *                    DATA FOR INFO COLLECITING
                                  *
                                  *
                          10      INFOSZ    EQU        10B
                         100      INFON     EQU        100B
                                  *
   3336                           INFOBF    BSSZ       INFON*INFOSZ
   4336                           INFOMX    BSS        0
                                  *
   4336  0000000000000003336      INFOX     VFD        60/INFOBF
   4337                           INFOCNT   BSSZ       1
                                  *
                                  *
                                  *
                                  *                    DATA AREA FOR ASK USER A QUESTION
                                  *
                                  *
   4340                           ASKSVB7   BSSZ       1
                                  *
                           5      ASKMX     EQU        5
                                  *
   4341                           ASKPRMS   BSSZ       ASKMX
                                  *
                                  *
                                  *
                                  *                    DATA AREA FOR BRDCAST FACILITY
                                  *
                                  *
   4346                           NWCKPSB7  BSSZ       1
   4347                           INWDX     BSSZ       1
   4350                           INCNT     BSSZ       1
   4351                           INFLAG    BSSZ       1
   4352                           OUTCNTB   BSSZ       1
   4353                           CHAR      BSSZ       1
   4354                           BRDSVB7   BSSZ       1
                                  *
                                  *
   4355  0000000000000000000      MSGBUF    VFD        60/0
   4356                                     BSSZ       MAXMSG     SIZE DEFINED AT PTBRDMSG
                                  *
                          4355    OUTWRDX   EQU        MSGBUF
```

```
                                 *
                                 *                CONTROL DATA FOR IO CO-ROUTINES
                                 *
4376                             FORKUP   BSSZ     1
4377                             MAINSV   BSSZ     2
4401  0000000000000004403        FORKNXT  VFD      60/FSTFORK
4402                             PSPNSSV  BSSZ     1
                                 *
                                 *
                                 *
                          24     NFORKS   SET      20
                                 *
                        4403     FSTFORK  EQU      *
                                 *
                      000024             DUP      NFORKS
                                         VFD      60/*+2,60/0
                                         ENDD
                                 *
4453  0000000000000000000                 DATA     0,0                 LAST FORK SAVE AREA
                                 *
                                 *
```

```
START OF READ ONLY AREA

                                  *
                                  *
                                  *
4455                              SCRSZ     BSS       0          END OF SCRATCH AREA
                                  *
                                  *
                                  *
4455  00000000000000000003        SETSCR    VFD       60/C.RFILE,60/C.MAINF
4456  00000000000000000020
4457  00000000000000000000                  VFD       60/0,60/0,60/SCRSZ
4460  00000000000000000000
4461  00000000000000004455
                                  *
4462  00000000000000000001        READ      VFD       60/C.READ
```

```
                                  *
                                  *
                                  *
4463  0130004455000000000   SETUP   XJ      SETSCR
4464  0130000126000000000           XJ      GETIF
4465  0130000121000000000           XJ      RBASE
4466  0130000217000000000           XJ      RTBASE
4467  0130000231000000000           XJ      RMBASE
4470  5110000256                    SA1     BASE
                7120000053          SX2     C.DISKF
4471  6110000014                    SB1     12
                                  *
4472  73610                       SETUP1  SX6     X1
          5160000130                    SA6     GETIF+2
                    73620               SX6     X2
4473  5160000131                    SA6     GETIF+3
4474  0130000126000000000           XJ      GETIF
4475  6111777776                    SB1     B1-1
                7211000001          SX1     X1+1
4476  7222000001                    SX2     X2+1
                0510004472          NE      B1,B0,SETUP1
                                  *
                                  *
                                    IFNE    TFLAG,1
                                    ENDIF
                                  *
                                  *
                                  *
4477  7160000054                    SX6     C.DISKF+1
                5160000103          SA6     PREQ+1
                                  *
4500  7266000001                    SX6     X6+1
                5160000106          SA6     GRESP+1
                                  *
4501  7266000001                    SX6     X6+1
                5160000062          SA6     PBUF.64+1
4502  7266000001                    SX6     X6+1
                5160000065          SA6     PBUF.129+1
4503  7266000001                    SX6     X6+1
                5160000070          SA6     PBUF.257+1
4504  7266000001                    SX6     X6+1
                5160000073          SA6     PBUF.513+1
                                  *
4505  7266000001                    SX6     X6+1
                5160000052          SA6     GBUF.64+1
4506  7266000001                    SX6     X6+1
                5160000054          SA6     GBUF.129+1
4507  7266000001                    SX6     X6+1
                5160000056          SA6     GBUF.257+1
4510  7266000001                    SX6     X6+1
                5160000060          SA6     GBUF.513+1
                                  *
4511  7266000001                    SX6     X6+1
```

```
START OF READ ONLY AREA

                5160000076                  SA6     GSLOT+1
4512  5160000100                            SA6     PSLOT+1
                                    *
4513                                SETUPX  BSS     0
                                    *
                                    *
                                    *
4513  5110000224                            SA1     TBASE
                7120000026                  SX2     C.TAPE
4514  6110000003                            SB1     3
                                    *
4515  73610                         SETUP2  SX6     X1
          5160000130                        SA6     GETIF+2
                    73620                   SX6     X2
4516  5160000131                            SA6     GETIF+3
4517  0130000126000000000                   XJ      GETIF
4520  6111777776                            SB1     B1-1
                7211000001                  SX1     X1+1
4521  7222000001                            SX2     X2+1
                0510004515                  NE      B1,B0,SETUP2
                                    *
4522  7160000027                            SX6     C.TAPE+1
                5160000213                  SA6     TREQ+1
4523  7266000001                            SX6     X6+1
                5160000216                  SA6     TRSP+1
                                    *
                                    *
4524  5110000224                            SA1     TBASE
                7211000006                  SX1     X1+6        SKIP TAPES AND PRINTER
4525  7120000031                            SX2     C.CARDS
                6110000003                  SB1     3
                                    *
4526  73610                         SETUP3  SX6     X1
          5160000130                        SA6     GETIF+2
                    73620                   SX6     X2
4527  5160000131                            SA6     GETIF+3
4530  0130000126000000000                   XJ      GETIF
4531  6111777776                            SB1     B1-1
                7211000001                  SX1     X1+1
4532  7222000001                            SX2     X2+1
                0510004526                  NE      B1,B0,SETUP3
                                    *
4533  7160000032                            SX6     C.CARDS+1
                5160001264                  SA6     CREQ+1
4534  7266000001                            SX6     X6+1
                5160001267                  SA6     CRSP+1
                                    *
                                    *
                                    *
4535  5110000236                            SA1     MBASE
                7120000067                  SX2     C.MUX
4536  6110000002                            SB1     2
                                    *
```

```
START OF READ ONLY AREA

4537  73610                    SETUP4   Sx6     X1
            5160000130                  SA6     GETIF+2
                      73620             Sx6     X2
4540  5160000131                        SA6     GETIF+3
4541  0130000126000000000               XJ      GETIF                GET MUX FILE AND REQ CHAN
4542  6111777776                        SB1     B1-1
                 7211000001             Sx1     X1+1
4543  7222000001                        Sx2     X2+1
                 0510004537             NE      B1,B0,SETUP4
                                 *
                                 *
                                 *
4544  0270000000                        JP      B7
```

```
                                  *
                                  *
                                  *
                                  *
4545  46000                       *        NO       0        NEW ENTRY POINT CONVENTIONS
4546  46000                       *        NO
4547  46000                       *        NO
4550  6170004551                  STARTP   CALL     SETUP
4551  6170004552                           CALL     SETUPBIT
4552  6110004553                           SR1      HELLO
                0200004554                JP       NXTCMMD
                                  *
4553  04112313551005220500        HELLO    DATA     9LDISK HERE
```

```
                                  *
                                  *
                                  *
4554  5110001731                  NXTCMMD   SA1       CMMDRTN
                0301004561                  ZR        X1,NXTCMMDX
4555  63710                                 SB7       X1
          76600                               SX6       B0
               54610                          SA6       A1
4556  0270000000                            JP        B7
                                  *
                                  *
4557  76670                       CALLCMMD  SX6       B7
          5160001731                          SA6       CMMDRTN
4560  0260000000                            JP        B6
                                  *
                                  *
4561  0410004564                  NXTCMMDX  EQ        B1,B0,NXTCMMDY
                6120000144                  SB2       100
4562  6170004564                            CALL      PACK
4563  6170004564                            CALL      TYPEOUT
                                  *
4564  6110001662                  NXTCMMDY  SB1       INSTRING
                6160000006                  SB6       6
4565  0130004462000000000                   XJ        READ
4566  6110001662                            SB1       INSTRING
                6120001701                  SB2       PARAMS
4567  6130000005                            SB3       NPARAMS
4570  6170004571                            CALL      SPLITUP
4571  5110001701                            SA1       PARAMS
                6110000060                  SB1       NCMMDS
4572  0200004577                            JP        NXTCMMD2
                                  *
4573  5121004602                  NXTCMMD1  SA2       CMMDS+B1
                13212                       BX2       X1-X2
4574  0312004577                            NZ        X2,NXTCMMD2
                0332004577                  NG        X2,NXTCMMD2
4575  5121004603                            SA2       CMMDS+1+B1
                63720                       SB7       X2
4576  0270000000                            JP        B7
                                  *
4577  6111777776                  NXTCMMD2  SB1       B1-2
                0610004573                  GE        B1,B0,NXTCMMD1
4600  6110004601                            SB1       NXTCMMDE
                0200004554                  JP        NXTCMMD
                                  *
4601  2301315501070111600         NXTCMMDE  DATA      9LSAY AGAIN
                                  *
                                  *
4602                              CMMDS     BSS       0
4602  0322050124050000000                   VFD       60/0LCREATE,60/CREATE
4603  0000000000000005554
4604  2025240000000000000                   VFD       60/0LPUT,60/PUT
4605  0000000000000005633
```

```
4606  07052400000000000000          VFD     60/0LGET,60/GFT
4607  00000000000000005763
4610  14070524000000000000          VFD     60/0LLGET,60/LGET
4611  00000000000000006055
4612  14202524000000000000          VFD     60/0LLPUT,60/LPUT
4613  00000000000000006061
4614  04051405240500000000          VFD     60/0LDELETE,60/DELETE
4615  00000000000000006123
4616  07052402000000000000          VFD     60/0LGETB,60/GETB
4617  00000000000000005765
4620  14112324000000000000          VFD     60/0LLIST,60/LIST
4621  00000000000000005543
4622  22050317260522000000          VFD     60/0LRECOVER,60/RECOVER
4623  00000000000000006172
4624  04251520000000000000          VFD     60/0LDUMP,60/DUMP
4625  00000000000000006247
4626  14170104000000000000          VFD     60/0LLOAD,60/LOAD
4627  00000000000000006337
4630  06111600000000000000          VFD     60/0LFIN,60/FIN
4631  00000000000000005533
4632  04050225070000000000          VFD     60/0LDEBUG,60/DEBUG
4633  00000000000000010525
4634  22050104000000000000          VFD     60/0LREAD,60/READ
4635  00000000000000005476
4636  24220501040000000000          VFD     60/0LTREAD,60/TREADP
4637  00000000000000005514
4640  03171404000000000000          VFD     60/0LCOLD,60/COLD
4641  00000000000000005433
4642  06140107171600000000          VFD     60/0LFLAGON,60/FLAGON
4643  00000000000000006522
4644  06140107170606000000          VFD     60/0LFLAGOFF,60/FLAGOFF
4645  00000000000000006527
4646  03140501220423130000          VFD     60/0LCLEARDSK,60/CLEARDSK
4647  00000000000000005534
4650  24052324000000000000          VFD     60/0LTEST,60/TESTCD
4651  00000000000000005307
4652  04012401000000000000          VFD     60/0LDATA,60/DMPDATA
4653  00000000000000005403
4654  03012204230000000000          VFD     60/0LCARDS,60/TCARDS
4655  00000000000000005324
4656  03012204140000000000          VFD     60/0LCARDL,60/CARDL
4657  00000000000000005356
4660  24052324152307000000          VFD     60/0LTESTMSG,60/TESTMSG
4661  00000000000000005423
                          *
                          *
                          *
4662                                  BSS     0
                    60    NCMMDS      EQU     *-CMMDS
```

```
                                  *
                                  *                SPLITS UP A CHARACTER STRING ( SYSTEM STANDARD TEXT )
                                  *                         INTO PARAMETERS.
                                  *
                                  *                B1  1ST WORD OF STRING
                                  *                B2  1ST PARAMETER LOCATION
                                  *                B3  NUMBER OF PARAMETER LOCATIONS
                                  *
                                  *                ZEROS ALL UNUSED PARAMETER LOCATIONS
                                  *
                                  *
4662  43065                       SPLITUP   MX0     60-7
          76300                             SX3     B0          WILL HOLD A PARAMETER
               6150000012                   SB5     10          CHARS LSPACES LEFT IN PARAMETER
                                  *
4663  56110                       SPLITUP1  SA1     B1
          6111000001                        SB1     B1+1
                   20104                    LX1     4
4664  6140000010                            SB4     8
                                  *
4665  6144777776                  SPLITUP2  SB4     B4-1
               0740004663                   LT      B4,B0,SPLITUP1
4666  20107                                 LX1     7
          15210                             BX2     -X0*X1      GET A CHARACTER
                                  *
               6262777622                   SB6     X2-155B
4667  0460004676                            EQ      B6,B0,SPLITUP4      CR ( END OF STRING )
               6262777763                   SB6     X2-14B
4670  0460004676                            EQ      B6,B0,SPLITUP4      COMMA ( END OF A PARAMETER )
                                  *
               0605004665                   GE      B0,B5,SPLITUP2      PARAM FULL, IGNORE
4671  6262777643                            SB6     X2-134B
               0706004665                   LT      B0,B6,SPLITUP2      CHARACTER OUT OF RANGE, IGNORE
4672  5222004706                            SA2     INTRANS+X2
               0302004665                   ZR      X2,SPLITUP2         CHARACTER OTHER THAN SLPHANUMERIC,IGNORE
4673  20306                                 LX3     6
          12323                             BX3     X2+X3
               6155777776                   SB5     B5-1
4674  0200004665                            JP      SPLITUP2
                                  *
4675  20306                       SPLITUP3  LX3     6           LEFT ADJUST PARAM
          6155777776                        SB5     B5-1
4676  0705004675                  SPLITUP4  LT      B0,B5,SPLITUP3
               10633                        BX6     X3
                   56620                    SA6     B2          STORE THE PARAMETER
4677  6122000001                            SB2     B2+1
               6133777776                   SB3     B3-1
4700  6150000012                            SB5     10
               76300                        SX3     B0
4701  0430004705                            EQ      B3,B0,SPLITUP6      NO PARAMETER SPACE LEFT, ALL DONE
                                  *
               6262777622                   SB6     X2-155B
4702  0560004665                            NE      B6,B0,SPLITUP2      WAS NOT A CR, HENCE MORE TO DO
```

```
                76600                    SX6     B0
                                *
4703  56620                     SPLITUP5  SA6     B2        ZERO ALL EXTRA PARAM SPACES
            6122000001                    SB2     B2+1
4704  6133777776                          SB3     B3-1
                0530004703                NE      B3,B0,SPLITUP5
                                *
4705  0270000000                SPLITUP6  JP      B7
```

```
                                 *
                                 *                INPUT TRANSLATION TABLE
                                 *
4706  00000000000000000000   INTRANS   DATA    0,0,0,0,53B,0,0,0
4716  00000000000000000000             DATA    0,0,0,0,0,0,0,0
4726  00000000000000000033             DATA    33B,34B,35B,36B,37B,40B,41B,42B
4736  00000000000000000043             DATA    43B,44B,0,0,0,0,0,0
4746  00000000000000000000             DATA    0,1B,2B,3B,4B,5B,6B,7B
4756  00000000000000000010             DATA    10B,11B,12B,13B,14B,15B,16B,17B
4766  00000000000000000020             DATA    20B,21B,22B,23B,24B,25B,26B,27B
4776  00000000000000000030             DATA    30B,31B,32B,0,0,0,0,0
5006  00000000000000000000             DATA    0,1B,2B,3B,4B,5B,6B,7B
5016  00000000000000000010             DATA    10B,11B,12B,13B,14B,15B,16B,17
5026  00000000000000000020             DATA    20B,21B,22B,23B,24B,25B,26B,27B
5036  00000000000000000030             DATA    30B,31B,32B,0,0,0,0,0
```

```
                                  *
                                  *          PCKS CHARACTES INTO OUTPUT BUFFER, TRANSLATING.
                                  *
                                  *          B1 POINTS TO FIRST WORD CONTAINING CHARACTERS ( LEFT JUSTIFIED )
                                  *          B2  MAX CHARACTER COUNT
                                  *
                                  *          STOPS WHEN B2 GOES TO ZERO OR FINDS A ZERO
                                  *
5046  5110001706                  PACK    SA1    OUTPOINT
                5120001707                SA2    OUTCNT
5047  63620                             SB6    X2
          43071                           MX0    60-3
                15320                     BX3    -X0*X2     CHAR POSITION OF CR
                      20271               LX2    60-3
5050  63310                             SB3    X1
          63323                           SB3    B3+X2      WORD POSITION
                56230                     SA2    B3
                      20204               LX2    4
5051  63430                             SB4    X3
                                  *
5052  0440005054                  PACK1   EQ     B4,B0,PACK1A        ADJUST PARTAL WORD
                20207                     LX2    7
5053  6144777776                         SB4    B4-1
                0200005052                JP     PACK1
                                  *
5054  20207                       PACK1A  LX2    7
          43465                           MX4    60-7
                11242                     BX2    X4*X2      REMOVE CR
                      20265               LX2    60-7
                                  *
5055  63430                       PACK2   SB4    X3
          6150000010                      SB5    8
                      67454               SB4    B5-B4
5056  56110                             SA1    B1
          6150000012                      SB5    10
                      43066               MX0    60-6
5057  43465                             MX4    60-7
                                  *
5060  0420005073                  PACK3   EQ     B2,B0,PACK5
                20106                     LX1    6
                      15310               BX3    -X0*X1
5061  0303005073                         ZR     X3,PACK5
                6166000001                SB6    B6+1
5062  20207                             LX2    7
          11242                           BX2    X4*X2
                5233005100                SA3    OUTTRANS+X3
5063  12223                             BX2    X2+X3
          6144777776                      SB4    B4-1
5064  0540005067                         NE     B4,B0,PACK4
                10622                     BX6    X2
                      56630               SA6    B3
5065  6133000001                         SB3    B3+1
                76200                     SX2    B0
```

```
5066  6140000010                          SB4     B
                                  *
5067  6155777776                  PACK4   SB5     B5-1
                6122777776                SB2     B2-1
5070  0550005060                          NE      B5,B0,PACK3
                6150000012                SB5     10
5071  6111000001                          SB1     B1+1
                56110                     SA1     B1
5072  0200005060                          JP      PACK3
                                  *
5073  76660                       PACK5   SX6     B6
          5160001707                      SA6     OUTCNT
5074  7130000155                          SX3     155B        ( CP )
                                  *
5075  20207                       PACK6   LX2     7
          12223                           BX2     X2+X3
                6144777776                SB4     B4-1
5076  0540005075                          NE      B4,B0,PACK6
                10622                     BX6     X2
                     56630                SA6     B3
5077  0270000000                          JP      B7
```

```
                                  *
                                  *                OUTPUT TRANSLATION TABLE
                                  *
5100  00000000000000000000  OUTTRANS  DATA   00B,41B,42B,43B,44B,45B,46B,47B
5110  00000000000000000050            DATA   50B,51B,52B,53B,54B,55B,56B,57B
5120  00000000000000000060            DATA   60B,61B,62B,63B,64B,65B,66B,67B
5130  00000000000000000070            DATA   70B,71B,72B,20B,21B,22B,23B,24B
5140  00000000000000000025            DATA   25B,26B,27B,30B,31B,13B,15B,12B
5150  00000000000000000017            DATA   17B,10B,11B,04B,35B,00B,14B,16B
5160  00000000000000000003            DATA   03B,73B,75B,32B,07B,77B,01B,06B
5170  00000000000000000076            DATA   76B,02B,34B,36B,40B,37B,76B,33B
```

```
                                  *
                                  *                  SENDS A LINE TO TTY
                                  *
5200  76670                       TYPEOUT   SX6      B7
            5160001730                      SA6      SVB7
5201  5110001707                            SA1      OUTCNT
                  7261000001                SX6      X1+1
5202  54610                                 SA6      A1
            6110001706                      SB1      OUTPOINT
5203  6160000005                            SB6      5
5204  01300044620000000000                  XJ       READ
5205  5110001730                            SA1      SVB7
                  63710                     SB7      X1
5206  0200010412                            JP       RRDRESET          RESET THE LINE
```

```
                                  *
                                  *
                                  *                 DISK ERROR HANDLING MESSAGES
                                  *
                                  *
                                  *
```

```
5235  6170005236                          CALL    PACK
                                 *
5236  5110001765                 DISKERR1 SA1     DISKERRB
                 0301005254               ZR      X1,DISKERR3
5237  0331005254                          NG      X1,DISKERR3
5240  6170005241                          CALL    TYPEOUT
5241  6110005303                          SR1     DISKERRV
                 6120000144               SR2     100
5242  6170005243                          CALL    PACK
5243  5110001765                          SA1     DISKERRB
                 63110                    SR1     X1
5244  6120000007                          SR2     7
5245  6170005246                          CALL    PACK
5246  6110005305                          SR1     DISKERRU
                 6120000002               SR2     2
5247  6170005250                          CALL    PACK
5250  5110001765                          SA1     DISKERRB
                 6211000001               SR1     X1+1
5251  6120000010                          SR2     8
5252  6170005253                          CALL    PACK
5253  0200005254                          JP      DISKERR3
                                 *
5254  6170005255                 DISKERR3 CALL    TYPEOUT
5255  6110005301                          SR1     DISKERRW
                 6120000144               SR2     100
5256  6170005257                          CALL    PACK
5257  5110001764                          SA1     DISKERRA
                 63110                    SR1     X1
5260  6120000144                          SR2     100
5261  6170005262                          CALL    PACK
5262  6170005263                          CALL    TYPEOUT
5263  6110005276                          SR1     DISKERRX
                 6120000144               SR2     100
5264  6170005265                          CALL    PACK
5265  6170005266                          CALL    TYPEOUT
5266  6160000004                          SR6     4
5267  0130004462000000000                XJ      READ
5270  0130000134000000000                XJ      RESTOR
5271  0270000000                          JP      R7
                                 *
                                 *
5272  05222217225524312005       DISKERRZ DIS     ,.ERROR TYPE.
5274  57552324012425235527       DISKERRY DIS     ,*. STATUS WD 1 = *
5276  24312005552205232417       DISKERRX DIS     ,.TYPE RESTORE TO CONTINUE.
5301  17030325220504550425       DISKERRW DIS     ,.OCCURED DURING .
5303  06111405551601150555       DISKERRV DIS     ,.FILE NAME IS .
5305  55550000000000000000       DISKERRU DIS     ,.  .
5306  55553300000000000000       DISKERRT DIS     ,.  0.
```

```
                                 *
                                 *
                                 *                    TEST CODE FOR VARIOUX PURPOSES
                                 *
                                 *
5307  6110001760                 TESTCD   SB1     TESTFLAG
5310  6170005311                          CALL    FLAGTST
                                 *
5311  6110005314                          SB1     TESTMS
5312  6170005313                          CALL    BRDCAST
5313  6110005322                          SB1     TESTMS2
                0200004554                JP      NXTCMMD
                                 *
5314  24052324551706550222       TESTMS   DIS     ..TEST OF BRDCAST FACILITY IN DISK,S    IGNORE  HES.
5322  05160455170655240523       TESTMS2  DIS     ..END OF TEST.
                                 *
                                 *
                                 *                ACTIONS ON CARD READER FOR TEST
                                 *
5324  6110001760                 TCARDS   SB1     TESTFLAG
5325  6170005326                          CALL    FLAGTST
                                 *
5326  5110001702                          SA1     PARAMS+1
5327  6170005330                          CALL    DISOCT
5330  20673                              LX6     59
          43001                          MX0     1
                11606                    BX6     X0*X6
5331  5110005351                          SA1     TCARDSX
                12616                    BX6     X1+X6
5332  5160001265                          SA6     CREQ+2
                5110001703               SA1     PARAMS+2
5333  6170005334                          CALL    DISOCT
5334  5110001265                          SA1     CREQ+2
                12616                    BX6     X1+X6
5335  5160001265                          SA6     CREQ+2
                                 *
5336  01300012630000000000              XJ      CREQ
5337  01300012660000000000              XJ      CRSP
5340  5170003327                          SA7     CRSPDTA
                6110005352               SB1     TCARDSY
5341  6120000144                          SB2     100
5342  6170005343                          CALL    PACK
5343  5110003327                          SA1     CRSPDTA
5344  6170005345                          CALL    DMPWD
5345  7110000031                          SX1     C.CARDS
                76200                    SX2     B0
5346  7130000262                          SX3     DATA
                7140000020               SX4     20B
5347  6170005350                          CALL    READF
5350  6110005355                          SB1     TCARDSZ
                0200004554               JP      NXTCMMD
                                 *
                                 *
```

```
5351  0000000100210000000     TCARDSX   VFD     12/0,12/1,12/21B,12/0,12/0
5352  0301220423552205010 4   TCARDSY   DIS     ,,CARDS READER RESPONSE .
5355  5500000000000000000     TCARDS7   DIS     ,, .
                              *
                              *
                              *
                              *                 RUNS CARD READER IN CONTINUOUS READ
                              *
                              *
5356  6110001760              CARDI     SB1     TESTFLAG
5357  6170005360                        CALL    FLAGTST
                              *
5360  5110005377              CARDI1    SA1     CARDLX
5361  5120003330              CARDI1A   SA2     CARDLA
                12612                   BX6     X1+X2
5362  5160001265                        SA6     CREQ+2
5363  0130001263000000000               XJ      CREQ
5364  0130001266000000000               XJ      CRSP
5365  5170003327                        SA7     CRSPDTA
                0337005374              NE      X7,CARDL2
5366  0357005374                        OP      X7,CARDL2
                7110000031              SX1     C,CARDS
5367  76200                             SX2     B0
            7130000262                  SX3     DATA
5370  7140000021                        SX4     21B
5371  6170005372                        CALL    READF     READ ONE OUT OF 4 CARDS
5372  5110000264                        SA1     DATA+2    EXAMINE COLS 6, 7, 8, 9, AND 10
                0311005360              NZ      X1,CARDL1
5373  6110005401                        SB1     CARDLZ
                0200004554              JP      NXTCMMD
                              *
5374  5110003330              CARDI2    SA1     CARDLA
                43001                   MX0     1
                     13610              BX6     X1-X0
5375  54610                             SA6     A1
                              *
5376  5110005400              CARDI3    SA1     CARDLY
                0200005361              JP      CARDLIA
                              *
5377  0000000400210000010 1   CARDLX    VFD     12/0,12/4,12/21B,12/0,12/101B
5400  0000000100210000020 0   CARDLY    VFD     12/0,12/1,12/21B,12/0,12/200B          USE ERROR WAIT
5401  0301220455141717205 5   CARDLZ    DIS     ,,CARD LOOP STOPPED.
                              *                 TYPES OUT WORDS FROM DATA, STARTING WITH PARAM1
                              *                         AND PARAM 2 IS COUNT
                              *
5403  5110001702              DMPDATA   SA1     PARAMS+1
5404  6170005405                        CALL    DISOCT
5405  7266000262                        SX6     X6+DATA
                5160003331              SA6     DMPDATAX
5406  5110001703                        SA1     PARAMS+2
5407  6170005410                        CALL    DISOCT
5410  5160003332                        SA6     DMPDATAY
                              *
```

```
5411  5110003331                DMPDATA1  SA1     DMPDATAX
                 7261000001               SX6     X1+1
5412  5160003331                          SA6     DMPDATAX
                 53110                    SA1     X1
5413  6170005414                          CALL    DMPWD
5414  6170005415                          CALL    TYPEOUT
5415  5110003332                          SA1     DMPDATAY
                 7261777776               SX6     X1-1
5416  5160003332                          SA6     DMPDATAY
                 6110005421               SB1     DMPDATA2
5417  0301004554                          ZR      X1,NXTCMMD
                 0306004554               ZR      X6,NXTCMMD
5420  0200005411                          JP      DMPDATA1
                                *
5421  0401240155202211162 4     DMPDATA2  DTS     ..DATA PRINTED.
```

```
                                  *
                                  *
                                  *                    SEND OUT TEST MESSAGE AND SET SFLAG = 1
                                  *
5423  6110005427                  TESTMSG   SB1        TESTMSG1
5424  6170005425                            CALL       BRDCAST
5425  7160000001                            SX6        1
                5160001762                  SA6        SFLAG
5426  6110000000                            SB1        0
                0200004554                  JP         NXTCMMD
                                  *
5427  23312324051555251604        TESTMSG1  DTS        ..SYSTEM UNDER TEST, DO NOT USE.
```

```
                                  *
                                  *                  COLD START THE DISK
                                  *
5433  6110001754                  COLD     SB1       SYSFLAG
5434  6170005435                           CALL      FLAGTST
5435  6170005436                           CALL      NEWDIR
5436  6170005437                           CALL      GETDIR
5437  76600                                SX6       B0
            5160002002                     SA6       FILEDATA+HEADER
5440  5160002003                           SA6       FILEDATA+HEADER+1
                                  *
5441  6160001575                  COLD1    SB6       DENTRIES          INITIALIZE 10 ENTRIES
                6150000012                 SB5       10
                                  *
5442  76600                       COLD2    SX6       B0
            56660                          SA6       B6
                5166000001                 SA6       B6+1
5443  6166000002                           SB6       B6+2
5444  6170005445                           CALL      NEWBLCK   INITIALIZE DISK ADDRESSES
5445  6170005446                           CALL      DCDBLK
5446  56660                                SA6       B6
            6166000001                     SB6       B6+1
5447  6170005450                           CALL      NEWBLCK
5450  6170005451                           CALL      DCDBLK
5451  56660                                SA6       B6
            6166000001                     SB6       B6+1
5452  6155777776                           SB5       B5-1
                0550005442                 NE        B5,B0,COLD2
                                  *
5453  6120001770                           SB2       FILEDATA
                6130000012                 SB3       10
5454  6110001577                           SB1       DENTRIES+2
                                  *
5455  7160007401                  COLD3    FORK      WDESC     WRITE DUMMY FILE DESCRIPTORS
5457  6111000001                           SB1       B1+1
                7160007401                 FORK      WDESC
5461  6111000003                           SB1       B1+3
                6133777776                 SB3       B3-1
5462  0530005455                           NE        B3,B0,COLD3
5463  6170005464                           CALL      IOWAIT
                                  *
5464  7110000035                           SX1       C.DBEAD
                5120001574                 SA2       DENTRYX
5465  7130001575                           SX3       DENTRIES
                7140000050                 SX4       4*10
5466  6170005467                           CALL      WRITEF
                                  *
5467  5110001574                           SA1       DENTRYX
                7261000050                 SX6       X1+4*10
5470  5160001574                           SA6       DENTRYX
                7266772112                 SX6       X6-DSIZE*4-DHEADSZ
5471  0336005441                           NG        X6,COLD1
                                  *
```

```
5472  6170005473                        CALL    PUTDIR
5473  6110005474                        SB1     COLDMSG1
                0200004554              JP      NXTCMMD
                                *
5474  04112313550317140455    COLDMSG1  DIS     ..DISK COLD STARTED.
```

```
                                 *
                                 *                THIS CODE READS A DISK RECORD TO DATA
                                 *
5476  6110001754                 READ     SB1     SYSFLAG
5477  6170005500                          CALL    FLAGTST
5500  7160777776                          SX6     -1
                5160003011               SA6     RDRCDFLG  INDICATE NO NAME TO RDRCD
5501  5110001702                          SA1     PARAMS+1
5502  6170005503                          CALL    DISOCT
5503  5160000262                          SA6     DATA
5504  0130000225000000000                 XJ      DSKLCK    LOCK ACCESS TO DISK
5505  7160007502                          FORK    RDRCD
5507  6170005510                          CALL    IOWAIT
5510  0130000227000000000                 XJ      DSKCLR    UNLOCK ACCESS TO DISK
5511  6110005512                          SB1     READMSG
                0200004554               JP      NXTCMMD
                                 *
5512  2205031722045522050 1      READMSG  DIS     ..RECORD READ.
                                 *
                                 *
                                 *                READS PARAM1 RECORDS FROM TAPE TO DATA
                                 *                        ( 0 SAME AS 1 )
                                 *
5514  6110001754                 TREADP   SB1     SYSFLAG
5515  6170005516                          CALL    FLAGTST
5516  6170005517                          CALL    GETTAPE
5517  5110001702                          SA1     PARAMS+1
5520  6170005521                          CALL    DISOCT
5521  5160001735                          SA6     TREADCNT
                                 *
5522  6170005522                 TREADP1  CALL    TREAD
5523  6170005524                          CALL    TCHKRD
5524  5110001735                          SA1     TREADCNT
                7261777776               SX6     X1-1
5525  54610                              SA6     A1
          0336005527                     NG      X6,TREADP2
5526  0316005522                         NZ      X6,TREADP1
                                 *
5527  6170005530                 TREADP2  CALL    PUTTAPE
5530  6110005531                          SB1     TREADMSG
                0200004554               JP      NXTCMMD
                                 *
5531  2401200555220503172 2      TREADMSG DIS     ..TAPE RECORDS READ.
                                 *
                                 *
                                 *                THIS CODE RETURNS TO BEAD
                                 *
5533  0130000211000000000        FIN      XJ      RETURN
                                 *
                                 *
                                 *                THIS CODE CLEARS DISK LOCK CHANNEL
                                 *
5534  6110001754                 CLEARDSK SB1     SYSFLAG
```

```
5535  6170005536                          CALL    FLAGTST
5536  0130000227000000000                 XJ      DSKCLR
5537  6110005540                          SB1     DSKCLRMS
                0200004554                 JP      NXTCMMD
                                 *
5540  0411231355141703135 5     DSKCLRMS   DTS     ..DISK LOCK CHANNEL CLEARED.
```

```
                                  *
                                  *                  CODE TO LIST DIRECTORY
                                  *                  IF PARAM1 IS NULL, LISTS ALL USER NAMES
                                  *                  IF PARAM 1 IS NOT NULL, LISTS ALL FILE NAMES
                                  *                          WITH USER NAME = PARAM1
                                  *
5543  6170005544                  LIST      CALL     GETDIR
5544  6170005545                            CALL     PUTDIR
5545  5110001702                            SA1      PARAMS+1
                0311005550                  NZ       X1,LIST1
5546  6170005547                            CALL     LISTU
5547  0200005551                            JP       LIST2
                                  *
5550  6170005551                  LIST1     CALL     LISTX
5551  6110005552                  LIST2     SB1      LISTMSG
                0200004554                  JP       NXTCMMD
                                  *
5552  14112324550317152014        LISTMSG   DIS      ..LIST COMPLETE.
```

```
                                  *
                                  *                 THIS CODE CREATES A NEW DISK FILE
                                  *
5554  5110001702                  CREATE   SA1       PARAMS+1
                5120001703                 SA2       PARAMS+2
5555  43052                                MX0       7*6        ONLY 7 CHAR FILE NAMES ALLOWED
          11601                            BX6       X0*X1
                43060                      MX0       8*6        ONLY 8 CHAR USER NAMES ALLOWED
                    11702                  BX7       X0*X2
5556  5160001702                           SA6       PARAMS+1
                5170001703                 SA7       PARAMS+2
5557  5160001704                           SA6       PARAMS+3
                5170001705                 SA7       PARAMS+4
5560  6120001770                           SB2       FILEDATA
                7160000040                 SX6       C.FILE
5561  5162000004                           SA6       B2+CLISTX
                6160000000                 SB6       0
5562  6170005563                           CALL      READUSER
5563  6160000001                           SB6       1
5564  6170005565                           CALL      READUSER
5565  5112000003                           SA1       B2+BEADBLK+3        GET ECS WORD COUNT
                73110                      SX1       X1
5566  0301005621                           ZR        X1,CREATEX2
5567  6170005570                           CALL      GETDIR
5570  6170005571                           CALL      DSCAN
5571  0610005613                           GE        B1,B0,CREATEX1      ERROR, FILE ALREADY EXISTS
5572  6170005573                           CALL      DNEW
5573  0310005626                           NZ        X0,CREATEZ
                5110001704                 SA1       PARAMS+3
5574  5120001705                           SA2       PARAMS+4
                10611                      BX6       X1
                    10722                  BX7       X2
5575  6120001770                           SB2       FILEDATA
                5162000012                 SA6       HEADER+B2
5576  7150000001                           SX5       1          CURRENT FILE FLAG
                12757                      BX7       X5+X7
5577  5172000013                           SA7       HEADER+1+B2
                6111001577                 SB1       DENTRIES+B1+2
5600  7160007401                           FORK      WDESC
5602  6170005603                           CALL      IOWAIT
5603  5110001705                           SA1       PARAMS+4
                7150000002                 SX5       2          BACK UP FLAG
5604  12615                                BX6       X1+X5
          5162000013                       SA6       HEADER+1+B2
5605  6111000001                           SB1       B1+1
                7160007401                 FORK      WDESC
5607  6170005610                           CALL      IOWAIT
5610  6170005611                           CALL      PUTDIR
5611  6110005612                           SB1       CREATEMG
                0200004554                 JP        NXTCMMD
                                  *
5612  03220501240504000000        CREATEMG DIS       ..CREATED.
                                  *
```

```
5613  6170005614                CREATEX1  CALL    PUTDIR
5614  6110005615                          SB1     CREATEXM
                 0200004554               JP      NXTCMMD
                                *
5615  0611140555011422050 1     CREATEXM  DTS     ..FILE ALREADY EXISTS. REQUEST IGNORED.
                                *
5621  6110005622                CREATEX2  SB1     CREATEYM
                 0200004554               JP      NXTCMMD
                                *
5622  0503235506111405550 5     CREATEYM  DTS     ..ECS FILE EMPTY. REQUEST IGNORED.
                                *
                                *
5626  6170005627                CREATEZ   CALL    PUTDIR    NO ROOM IN DIRECTORY
5627  6110005630                          SB1     CREATEZM
                 0200004554               JP      NXTCMMD
                                *
5630  0411220503241722315 5     CREATEZM  DTS     ..DIRECTORY FULL. SORRY.
```

```
                                  *
                                  *                THIS CODE MOVES A FILE TO DISK
                                  *
5633  6120001770                  PUT      SB2     FILEDATA
                 7160000040                SX6     C.FILE
5634  5162000004                           SA6     B2+CLISTX
                 66600                     SB6     B0
5635  6170005636                           CALL    READUSER
5636  5112000003                           SA1     B2+BEADBLK+3
                 73110                     SX1     X1          GET ECS WORD COUNT
5637  0301005734                           ZR      X1,PUTX2    ECS FILE EMPTY
5640  6170005641                           CALL    RETDIR
5641  6170005642                           CALL    DSCAN
5642  0710005724                           LT      B1,B0,PUTX1          FILE DOES NOT EXIST ON DISK
                                  *
                 6120001770                SB2     FILEDATA
5643  6112000011                           SB1     B2+DIRECTY+3
                 7160007355                FORK    RDESC       READ BACK UP DESCRIPTION
5645  6170005646                           CALL    IOWAIT
5646  6170005647                           CALL    DISKRLS     RELEASE ALL BLOCKS HELD BY BACK UP
5647  6120001770                           SB2     FILEDATA
                 6112000010                SB1     B2+DIRECTY+2
5650  7160007355                           FORK    RDESC       READ CURRENT DISCREPTION
5652  6170005653                           CALL    IOWAIT
5653  6170005654                           CALL    NEWUNMES    RESET BOTH UNIQUE NAMES
5654  5112000012                           SA1     B2+HEADER
                 10611                     BX6     X1
5655  5160001660                           SA6     PUTSVCN
                 43052                     MX0     60-18
                      11601                BX6     X0*X1       SET SIZE TO 0
5656  54610                               SA6     A1
            6112000010                     SB1     B2+DIRECTY+2
5657  7160007401                           FORK    WDESC       SET CURRENT TO EMPTY
5661  6170005662                           CALL    IOWAIT
5662  5110001660                           SA1     PUTSVCN
                 10611                     BX6     X1
5663  5162000012                           SA6     B2+HEADER RESTORE SIZE
                 5112000013                SA1     B2+HEADER+1
5664  43072                               MX0     60-2
            11601                          BX6     X0*X1       REMOVE OLD CURRENTFLAG
                 7150000002                SX5     2
5665  12665                               BX6     X6+X5       INSERT BACK UP FLAG
            54610                          SA6     A1
                 6112000011                SB1     B2+DIRECTY+3
5666  7160007401                           FORK    WDESC       WRITE OLD CURRENT OUT AS BACK UP
5670  6170005671                           CALL    IOWAIT
5671  5112000013                           SA1     B2+HEADER+1
                 43072                     MX0     60-2
                      11601                BX6     X0*X1       REMOVE BACK UP FLAG
5672  7150000001                           SX5     1
                 12656                     BX6     X5+X6       INSERT CURRENT FLAG
5673  7100000001                           SX0     1
                 20002                     LX0     2
```

```
5674  5122000000                          SA2     B2+BEADBLK
                20267                     LX2     60-7+2
                     11202                BX2     X0*X2      GET SYSTEXT BIT
5675  15660                               BX6     -X0*X6
           12626                          BX6     X2+X6      INSERT SYSTEXT BIT INTO HEADER
                54610                     SA6     A1
5676  5112000003                          SA1     B2+BEADBLK+3
                73610                     SX6     X1         NEW FILE SIZE
5677  5112000012                          SA1     B2+HEADER
                43052                     MX0     60-18
                     11101                BX1     X0*X1
5700  12616                               BX6     X1+X6
           54610                          SA6     A1
5701  6170005702                          CALL    DISKADDR   GET BLOCKS FOR NEW FILE
5702  6120001770                          SB2     FILEDATA
                0336005743                NG      X6,PUTZ    NOT ENOUGH BLOCKS
5703  6170005704                          CALL    NMBBLCKS
5704  66350                               SB3     B5
           6112000014                     SB1     B2+BPOINTS
5705  0430005713                          EQ      B3,B0,PUTLPX
5706  7160007272              PUTLP       FORK    WRFBLK     WRITE OUT DATA BLOCKS TO FILE
5710  6111000001                          SB1     B1+1
                6133777776                SB3     B3-1
5711  0703005706                          LT      B0,B3,PUTLP
5712  6170005713                          CALL    IOWAIT
                                *
5713  6112000010              PUTLPX      SB1     B2+DIRECTY+2
                7160007401                FORK    WDESC      WRITE OUT CURRENT DESCRIPTOR
5715  6170005716                          CALL    IOWAIT
5716  6170005717                          CALL    PUTDIREN
5717  6170005720                          CALL    PUTDIR
5720  6160000002                          SB6     2
5721  6170005722                          CALL    BEADUSER   DESTROY ECS FILE
5722  6110005723                          SB1     PUTMSG1
                0200004554                JP      NXTCMMD
                                *
5723  15172605040000000000      PUTMSG1     DIS     ..MOVED.
                                *
                                *
5724  6170005725              PUTX1       CALL    PUTDIR     PUT AWAY DIRECTORY
5725  6160000001                          SB6     1
5726  6170005727                          CALL    BEADUSER   RELEASE ECS FILE
5727  6110005730                          SB1     PUTMSGX1
                0200004554                JP      NXTCMMD
                                *
5730  06111405551617245517      PUTMSGX1    DIS     ..FILE NOT ON DISK, REQUEST IGNORED.
                                *
5734  6160000001              PUTX2       SB6     1
5735  6170005736                          CALL    BEADUSER   RELEASE ECS FILE
5736  6110005737                          SB1     PUTMSGX2
                0200004554                JP      NXTCMMD
                                *
5737  05032355061114055505      PUTMSGX2    DIS     ..ECS FILE EMPTY, REQUEST IGNORED.
```

```
                                  *
                                  *
5743  6170005744                  PUTZ     CALL     DISKRLS   RELEASE THOSE BLOCKS OBTAINED
5744  6120001770                           SB2      FILEDATA
                43652                      MX0      60-18
5745  5112000012                           SA1      B2+HEADER
                11601                      BX6      X0*X1
                     54610                 SA6      A1        SET FILE EMPTY ON DISK
5746  6112000010                           SB1      B2+DIRECTY+2
                7160007401                 FORK     WDESC     WRITE OUT EMPTY DESCRIPTOR
5750  6170005751                           CALL     IOWAIT
5751  6170005752                           CALL     PUTDIREN
5752  6170005753                           CALL     PUTDIR
5753  6110005754                           SB1      PUTZMSG
                0200004554                 JP       NXTCMMD
                                  *
5754  0411231355062514 1456       PUTZMSG  DIS      ..DISK FULL, CURRENT DISK NOW EMPTY, BACK UP OLD CUR
                                  .RENT, SORRY.
```

```
                                  *
                                  *                 THIS CODE OBTAINS A FILE FROM DISK
                                  *
5763  76600                       GET       SX6     B0
            5160003326                      SA6     GETFLAG
5764  0200005767                            JP      GETA
                                  *
                                  *                 THIS CODE OBTAINS BACKUP OF A FILE FROM DISK
                                  *
5765  7160000001                  GETB      SX6     1
                  5160003326                SA6     GETFLAG
5766  0200005767                            JP      GETA
                                  *
                                  *
5767  6120001770                  GETA      SB2     FILEDATA
                  7160000040                SX6     C.FILE
5770  5162000004                            SA6     B2+CLISTX
                  66600                     SB6     B0
5771  6170005772                            CALL    READUSER
5772  6170005773                            CALL    GETDIR
5773  6170005774                            CALL    DSCAN
5774  0710006045                            LT      B1,B0,GETX1          FILE NOT ON DISK
                                  *
5775  5112000003                  GET1      SA1     B2+BEADBLK+3
                  73110                     SX1     X1
5776  0301006003                            ZR      X1,GET2   ECS FILE ALREADY EMPTY
                  6160000002                SB6     2
5777  6170006000                            CALL    READUSER  DELETE OLD COPY IN ECS
6000  6160000000                            SB6     0
6001  6170006002                            CALL    READUSER  RE-OBTAIN
6002  0200005775                            JP      GET1
                                  *
6003  6120001770                  GET2      SB2     FILEDATA
                  6112000010                SB1     B2+DIRECTY+2
6004  5110003326                            SA1     GETFLAG
                  63111                     SB1     B1+X1
6005  7160007355                            FORK    RDESC     GET FILE DESCRIPTOR
6007  6170006010                            CALL    IOWAIT
6010  5112000013                            SA1     B2+HEADER+1
                  20105                     LX1     60-2*7-60
6011  7100000001                            SX0     1
                  20007                     LX0     7
                      11101                 BX1     X0*X1     GET SYSTEXT BIT
6012  5122000000                            SA2     B2+BEADBLK
                  15220                     BX2     -X0*X2    CLEAR SYSTEXT BIT IN BEAD ENTRY
                      12612                 BX6     X1+X2     INSERT SYSTEXT BIT
6013  54620                                 SA6     A2
            5112000004                      SA1     B2+CLISTX
                      10611                 BX6     X1
6014  5160000137                            SA6     NEWBLK+1
                  5112000012                SA1     B2+HEADER
6015  73210                                 SX2     X1        FILE SIZE
            5112000003                      SA1     B2+BEADBLK+3
```

```
                    20136                 Lv1     30
6016  73110                                Sx1     X1          BLOCK SIZE
          76700                             Sx7     B0
                0200006022                  Jp      GET4
                                  *
6017  5170000140                  GET3      Sa7     NEWBLK+2
6020  0130000136000000000                   Xj      NEWBLK      CREATE A BLOCK
6021  36717                                 Iv7     X1+X7
6022  37372                       GET4      Iv3     X7-X2
          0333006017                        Ng      X3,GET3
6023  5112000003                            Sa1     B2+BEADBLK+3
                12717                       Bv7     X1+X7
                    54710                   Sa7     A1
                                  *
6024  6170006025                            CALL    NMBBLCKS
6025  66350                                 Sb3     B5
          6112000014                        Sb1     B2+BPOINTS
6026  0430006034                            Eq      B3,B0,GETLPX
                                  *
6027  7160007317                  GETLP     FORK    RDFBLK      READ IN DATA BLOCKS
6031  6111000001                            Sb1     B1+1
                6133777776                  Sb3     B3-1
6032  0703006027                            Lt      B0,B3,GETLP
6033  6170006034                            CALL    IOWAIT
                                  *
6034  6170006035                  GETLPX    CALL    PUTDIR
6035  6160000001                            Sb6     1
6036  6170006037                            CALL    READUSER  RELEASE ECS FILE
6037  5110003326                            Sa1     GETFLAG
                6110006042                  Sb1     GETMSG1
6040  0301004554                            Zr      X1,NXTCMMD
                6110006043                  Sb1     GETMSG2
6041  0200004554                            Jp      NXTCMMD
                                  *
6042  17022401111605040000      GETMSG1   DIS     ,,OBTAINED.
                                  *
6043  02010313552520551702      GETMSG2   DIS     ,,BACK UP OBTAINED.
                                  *
                                  *
6045  6170006046                  GETX1     CALL    PUTDIR
6046  6160000001                            Sb6     1
6047  6170006050                            CALL    READUSER  RELEASE ECS FILE
6050  6110006051                            Sb1     GETXMSG
                0200004554                  Jp      NXTCMMD
                                  *
6051  06111405551617245517      GETXMSG   DIS     ,,FILE NOT ON DISK, REQUEST IGNORED.
```

```
                                  *
                                  *                  GET A LIST OF FILES
                                  *
6055  7160005763                  LGET      Sx6      GET
                 7170000001                 Sx7      1
6056  5170001751                            SA7      LISTFLG   ALLOW MESSAGES
6057  6170006060                            CALL     LISTOPS
6060  66100                                 SB1      B0
           0200004554                       JP       NXTCMMD
                                  *
                                  *                  PUT A LIST OF FILES
                                  *
6061  7160005633                  LPUT      Sx6      PUT
                 7170000001                 Sx7      1
6062  5170001751                            SA7      LISTFLG   ALLOW MESSAGES
6063  6170006064                            CALL     LISTOPS
6064  66100                                 SB1      B0
           0200004554                       JP       NXTCMMD
                                  *
                                  *                  CODE FOR LIST OPS
                                  *
6065  5160001750                  LISTOPS   SA6      LISTACT
                 76670                      Sx6      B7
6066  5160001752                            SA6      LISTOPS7
6067  6170006070                            CALL     GETF
6070  5110001743                            SA1      LISTFBLK
                 20164                      Lx1      60-8
6071  0321006115                            PL       X1,LISTOPSF
                                  *
6072  6170006073                  LISTOPSL  CALL     NEXTF
6073  0760006105                            LT       B6,B0,LISTOPSX      END OF INFO
                 6110001662                 SB1      INSTRING
6074  6120001702                            SB2      PARAMS+1
                 6130000004                 SB3      NPARAMS-1
6075  6170006076                            CALL     SPLITUP
6076  5110001750                            SA1      LISTACT
                 63610                      SB6      X1
6077  6170006100                            CALL     CALLCMMD
6100  6120000144                            SB2      100
                 5110001751                 SA1      LISTFLG
6101  0301006072                            ZP       X1,LISTOPSL
6102  6170006103                            CALL     PACK
6103  6170006104                            CALL     TYPEOUT
6104  0200006072                            JP       LISTOPSL
                                  *
6105  6170006106                  LISTOPSX  CALL     PUTF
6106  6110006113                            SB1      LISTOPSM
                 6120000144                 SB2      100
6107  6170006110                            CALL     PACK
6110  6170006111                            CALL     TYPEOUT
6111  5110001752                            SA1      LISTOPS7
                 63710                      SB7      X1
6112  0270000000                            JP       B7
```

```
                                  *
6113  14112324550530100125        LISTOPSM  DIS     ..LIST EXHAUSTED.
                                  *
6115  6170006116                  LISTOPSF  CALL    PUTF
6116  6110006117                            SB1     LISTOPSG
                0200004554                  JP      NXTCMMD
                                  *
6117  06111405551617245523        LISTOPSG  DIS     ..FILE NOT SYSTEXT, REQUEST IGNORED.
```

```
                                  *
                                  *
                                  *                THIS CODE DELETES A DISK FILE
                                  *
6123  6110001756                  DELETE   SB1     DELEFLAG
6124  6170006125                           CALL    FLAGTST
6125  5110001702                           SA1     PARAMS+1
                5120001703                 SA2     PARAMS+2
6126  10611                                BX6     X1
          10722                            BX7     X2
                5160001704                 SA6     PARAMS+3
6127  5170001705                           SA7     PARAMS+4
6130  6170006131                           CALL    GETDIR
6131  6120001770                           SB2     FILEDATA
6132  6170006133                           CALL    DSCAN
6133  0710006164                           LT      B1,B0,DELETEX1      ERROR, FILE DOES NOT EXIST
                6120001770                 SB2     FILEDATA
6134  6112000011                           SB1     B2+DIRECTY+3
                7160007355                 FORK    RDESC               GET BACK UP DESCRIPTOR
6136  6170006137                           CALL    IOWAIT
6137  6170006140                           CALL    DISKRLS              RELEASE ALL BLOCKS HELD BY BACK UP
6140  6120001770                           SB2     FILEDATA
                6112000010                 SB1     B2+DIRECTY+2
6141  7160007355                           FORK    RDESC               GET CURRENT DESCRIPTOR
6143  6170006144                           CALL    IOWAIT
6144  6170006145                           CALL    DISKRLS              RELEASE ALL BLOCKS HELD BY CURRENT
6145  6120001770                           SB2     FILEDATA
                76600                      SX6     B0
6146  5162000012                           SA6     HEADER+B2           CLEAR OUT HEADER
                5162000013                 SA6     HEADER+B2+1
6147  6170006150                           CALL    NEWUNMES            RESET UNIQUE NAMES
6150  6120001770                           SB2     FILEDATA
                6112000011                 SB1     B2+DIRECTY+3
6151  7160007401                           FORK    WDESC               WRITE OUT EMPTY FILE DESCRIPTORS
6153  6112000010                           SB1     B2+DIRECTY+2
                7160007401                 FORK    WDESC
6155  6170006156                           CALL    IOWAIT
6156  76600                                SX6     B0
          5162000006                       SA6     B2+DIRECTY          CLEAR OUT DIRECTORY ENTRY
6157  5162000007                           SA6     B2+DIRECTY+1
6160  6170006161                           CALL    PUTDIREN
6161  6170006162                           CALL    PUTDIR
6162  6110006163                           SB1     DELETEMS
                0200004554                 JP      NXTCMMD
                                  *
6163  0405140524050400000000      DELETEMS DIS     ..DELETED.
                                  *
6164  6170006165                  DELETEX1 CALL    PUTDIR
6165  6110006166                           SB1     DELETEXM
                0200004554                 JP      NXTCMMD
                                  *
6166  0611140555161724551 7       DELETEXM DIS     ..FILE NOT ON DISK, REQUEST IGNORED.
```

```
                                *
                                *                RECOVER THE DISK
                                *
6172  6110001754                RECOVER   SR1     SYSFLAG
6173  6170006174                          CALL    FLAGTST
6174  6110006240                          SR1     RECOVM1
6175  6170006176                          CALL    SBRDCAST
6176  6170006177                          CALL    NEWDIR
6177  6170006200                          CALL    GETDIR
                                *
6200  6160001575                RECOVER1  SR6     DENTRIES          RECOVER 10 ENTRIES
                6150000012                SR5     10
                                *
6201  76600                     RECOVER2  SX6     B0
            56660                         SA6     B6        ZERO OUT NAME FIELDS
                5166000001                SA6     B6+1
6202  6166000002                          SR6     B6+2
6203  6170006204                          CALL    NEWBLCK   INITIALIZE DISK ADDRESSES
6204  6170006205                          CALL    DCDBLK
6205  56660                               SA6     B6
            6166000001                    SR6     B6+1
6206  6170006207                          CALL    NEWBLCK
6207  6170006210                          CALL    DCDBLK
6210  56660                               SA6     B6
            6166000001                    SR6     B6+1
6211  6155777776                          SR5     B5-1
                0550006201                NE      B5,B0,RECOVER2
                                *
6212  6130000012                          SR3     10
                6120001575                SR2     DENTRIES
                                *
6213  6112000002                RECOVER3  SR1     B2+2
                7160007422                FORK    CKDESC    READ CURRENT DESCRIPTOR
6215  6112000003                          SR1     B2+3
                7160007422                FORK    CKDESC    READ BACK UP DESCRIPTOR
6217  6122000004                          SR2     B2+4
                6133777776                SR3     B3-1
6220  0530006213                          NE      B3,B0,RECOVER3
6221  6170006222                          CALL    IOWAIT
                                *
6222  7110000035                          SX1     C.DBEAD
                5120001574                SA2     DENTRYX
6223  7130001575                          SX3     DENTRIES
                7140000050                SX4     4*10
6224  6170006225                          CALL    WRITEF
                                *
6225  5110001574                          SA1     DENTRYX
                7261000050                SX6     X1+4*10
6226  54610                               SA6     A1
            7266772112                    SX6     X6-DSIZE*4-DHEADSZ
6227  0336006200                          NG      X6,RECOVER1
                                *
6230  6170006231                          CALL    PUTDIR
```

```
6231  6110006236                          SB1     RECOVMSG
                                *
6232  6170006233                          CALL    LOADECS
6233  6110006244                          SB1     RECOVM2
6234  6170006235                          CALL    SBRDCAST
6235  66100                               SB1     B0
            0200004554                    JP      NXTCMMD
                                *
                                *
6236  04112313552205031726      RECOVMSG  DIS     ..DISK RECOVERED.
6240  04112313550205111607      RECOVM1   DIS     ..DISK BEING RECOVERED. STAY AWAY.
6244  04112313552205031726      RECOVM2   DIS     ..DISK RECOVERED, OK FOR USE.
```

```
                                 *
                                 *                 DUMP
                                 *
                                 *                                 DUMPS ONLY CURRENT VERSION OF FILE
                                 *
6247  6110001754                 DUMP     SB1      SYSFLAG
6250  6170006251                          CALL     FLAGTST
6251  6110006334                          SB1      DUMPM1
6252  6170006253                          CALL     SBRDCAST
6253  6170006254                          CALL     GETDIR
6254  6170006255                          CALL     GETTAPE
6255  6170006256                          CALL     SETTAPE
6256  7100000324                          SX0      0324B     INDICATE ITEMS TO CHECK
            7110000224                    SX1      0224B     INDICATE DESIRED VALUES
6257  6170006260                          CALL     TPCHKST
6260  0316006324                          NZ       X6,DUMP5  STATUS CHECK FAILS
            7160000001                    SX6      1
6261  5160000262                          SA6      DATA
6262  6170006263                          CALL     TWRITE    WRITE A DUMMY RECORD SO WILL HAVE SOMETHING TO CHECK
6263  7160000305                          SX4      DHEADSZ
            5160001574                    SA6      DENTRYX
                                 *
6264  7110000035                 DUMP1    SX1      C.DBEAD
            5120001574                    SA2      DENTRYX
6265  7130001575                          SX3      DENTRIES
            7140000050                    SX4      4*10
6266  6170006267                          CALL     READF
6267  5110001574                          SA1      DENTRYX
            5120001573                    SA2      DLIMIT
6270  66200                              SB2      B0
        6130000012                        SB3      10
                                 *
6271  37312                      DUMP2    IX3      X1-X2
        0323006306                        PL       X3,DUMP4  LIMIT REACHED
6272  5132001575                          SA3      DENTRIES+B2
            0303006302                    ZR       X3,DUMP3  NULL ENTRY
                                 *
6273  76630                              SX6      B3
        76720                             SX7      B2
            5160001741                    SA6      DUMPSV3
6274  5170001740                          SA7      DUMPSV2
            10611                         BX6      X1
6275  5160001737                          SA6      DUMPSV1
            6112001577                    SB1      B2+DENTRIES+2
6276  6170006277                          CALL     DUMPF
                                 *
6277  5110001741                          SA1      DUMPSV3
            5120001740                    SA2      DUMPSV2
6300  63310                              SB3      X1
        63220                             SB2      X2
            5110001737                    SA1      DUMPSV1
6301  5120001573                          SA2      DLIMIT
                                 *
```

```
6302  7211000004                DUMP3    SX1     X1+4
                6133777776               SB3     B3-1
6303  6122000004                         SB2     B2+4
                0530006271               NE      B3,B0,DUMP2
6304  10611                              BX6     X1
          5160001574                     SA6     DENTRYX
6305  0200006264                         JP      DUMP1
                                *
6306  6170006307                DUMP4    CALL    TCHKWR    CHECK LAST WRITE
6307  7110000015                         SX1     15B       ( FILE MARK )
6310  6170006311                         CALL    TAPEACT
6311  6170006312                         CALL    TAPERSP
6312  7110000011                         SX1     11B       ( REWIND UNLOAD )
6313  6170006314                         CALL    TAPEACT
6314  6170006315                         CALL    TAPERSP
                                *
6315  6170006316                         CALL    PUTTAPE
6316  6170006317                         CALL    PUTDIR
6317  6110006322                         SB1     DMPMSG
6320  6170006321                         CALL    SBRDCAST
6321  6110006322                         SB1     DMPMSG
                0200004554               JP      NXTCMMD
                                *
6322  04112313550425152005    DMPMSG   DIS     ..DISK DUMPED.
                                *
                                *
6324  6170006325                DUMP5    CALL    PUTTAPE
6325  6170006326                         CALL    PUTDIR
6326  6110006327                         SB1     DMPFMSG
                0200004554               JP      NXTCMMD
                                *
6327  24012005551617245522    DMPFMSG  DIS     ..TAPE NOT READIED PROPERLY, REQUEST IGNORED.
                                *
6334  04112313550205111607    DUMPM1   DIS     ..DISK BEING DUMPED, STAY AWAY.
```

```
                                  *
                                  *                LOAD
                                  *
6337  6110001754                  LOAD    SB1      SYSFLAG
6340  6170006341                          CALL     FLAGTST
                                  *
6341  6110006437                          SB1      LOADQST
6342  6170006343                          CALL     ASKUSER
6343  5110004341                          SA1      ASKPRMS
                5120006445                SA2      LOADYES
6344  13112                               BX1      X1-X2
          0311006446                      NZ       X1,LOADNO
                                  *
6345  6110006452                          SB1      LOADM1
6346  6170006347                          CALL     SBRDCAST
6347  6160005433                          SB6      COLD
6350  6170006351                          CALL     CALLCMMD
6351  6120000144                          SB2      100
6352  6170006353                          CALL     PACK
6353  6170006354                          CALL     TYPEOUT
6354  6170006355                          CALL     GETDIR
6355  6170006356                          CALL     GETTAPE
6356  6170006357                          CALL     SETTAPE
6357  7100000320                          SX0      0320B     ITEMS TO CHECK
                7110000220                SX1      0220B     DESIRED VALUES
6360  6170006361                          CALL     TPCHKST
6361  0316006427                          NZ       X6,LOAD6  STATUS CHECK FAILS
6362  6170006363                          CALL     TREAD
6363  6170006364                          CALL     TCHKRD
6364  6170006365                          CALL     TREAD     START FIRST ACTUAL READ
6365  7160000305                          SX6      DHEADSZ
                5160001574                SA6      DENTRYX
                                  *
6366  7110000035                  LOAD1   SX1      C.DBEAD
                5120001574                SA2      DENTRYX
6367  7130001575                          SX3      DENTRIES
                7140000050                SX4      4*10
6370  6170006371                          CALL     READF
6371  6130000012                          SB3      10
                66200                     SB2      B0
                                  *
6372  76630                       LOAD2   SX6      B3
          76720                           SX7      B2
                5160001741                SA6      DUMPSV3
6373  5170001740                          SA7      DUMPSV2
                6112001577                SB1      B2+DENTRIES+2
6374  6170006375                          CALL     LOADF
6375  5110001741                          SA1      DUMPSV3
                5120001740                SA2      DUMPSV2
6376  63310                               SB3      X1
          63220                           SB2      X2
                                  *
6377  6133777776                  LOAD3   SB3      B3-1
```

```
                6122000004          SB2     B2+4
6400  0530006372                    NE      B3,B0,LOAD2
                7110000035          SX1     C.DBEAD
6401  5120001574                    SA2     DENTRYX
                7130001575          SX3     DENTRIES
6402  7140000050                    SX4     4*10
6403  6170006404                    CALL    WRITEF
6404  5110001574                    SA1     DENTRYX
                7261000050          SX6     X1+4*10
6405  54610                         SA6     A1
          0200006366                JP      LOAD1
                          *
6406  7110000035          LOAD4     SX1     C.DBEAD   NORMAL EXIT, IRA FROM LOADF
                5120001574          SA2     DENTRYX
6407  7130001576                    SX3     DENTRIES
                7140000050          SX4     4*10
6410  6170006411                    CALL    WRITEF
6411  5110001574                    SA1     DENTRYX
                73612               SX6     X1+B2
6412  5160001573                    SA6     DLIMIT
                7110000011          SX1     11B       ( REWIND UNLOAD )
6413  6170006414                    CALL    TAPEACT
6414  6170006415                    CALL    TAPERSP
6415  6170006416                    CALL    IOWAIT    CLEAN UP DISK IO
6416  6170006417                    CALL    PUTTAPE
6417  6170006420                    CALL    PUTDIR
6420  6110006425                    SB1     LOADMSG
                          *
6421  6170006422                    CALL    LOADECS
6422  6110006455                    SB1     LOADM2
6423  6170006424                    CALL    SBRDCAST
6424  66100                         SB1     B0
          0200004554                JP      NXTCMMD
                          *
6425  0411231355141701040 5 LOADMSG  DTS     ..DISK LOADED.
                          *
                          *
6427  6170006430          LOAD6     CALL    PUTTAPE
6430  6170006431                    CALL    PUTDIR
6431  6110006432                    SB1     LOADYMSG
                0200004554          JP      NXTCMMD
                          *
6432  2401200555161724552 2 LOADYMSG DTS     ..TAPE NOT READIED PROPERLY, REQUEST IGNORED.
                          *
                          *
6437  0417558311725552205 01 LOADQST DTS     ..DO YOU REALLY WANT TO LOAD, THIS WILL CLOBBER DISK.
                          *
6445  3105231417010400000 0 LOADYES DATA     DLYESLOAD
                          *
6446  6110006447          LOADNO    SB1     LOADNOMS
                0200004554          JP      NXTCMMD
                          *
6447  1116031722220503245 5 LOADNOMS DTS     ..INCORRECT RESPONSE, NO LOAD.
```

```
                                  *
6452  04112313550205111607    LOADM1    DIS      ,,DISK BEING LOADED, STAY AWAY.
6455  04112313551417010405    LOADM2    DIS      ,,DISK LOADED, OK FOR USE.
```

```
                                *
                                *                THIS CODE, CALLED FROM LOAD AND RECOVER,
                                *                COPIES A LIST OF FILES FROM DISK TO ECS.
                                *                THE LIST IS GIVEN ON FILE WHOSE NAME IS AT ECSLIST.
                                *
6460  76670                     LOADECS   SX6     B7
            5160001753                    SA6     LOADECS7
6461  6170006462                          CALL    PACK
6462  6170006463                          CALL    TYPEOUT
                                *
                                *
6463  6120001770                          SB2     FILEDATA
                7160000040                SX6     C.FILE
6464  5162000004                          SA6     B2+CLISTX
                0200006501                JP      LOADECSX
                                *
6465  6110006516                          SB1     CPUCDE    FIND AND DESTROY CPU,CODE
6466  6170006467                          CALL    SETP123
6467  66600                               SB6     B0
6470  6170006471                          CALL    READUSER
6471  6160000002                          SB6     2
6472  6170006473                          CALL    READUSER
                                *
6473  6110006520                          SB1     PPUCDE    FIND AND DESTROY PPU,CODE
6474  6170006475                          CALL    SETP123
6475  66600                               SB6     B0
6476  6170006477                          CALL    READUSER
6477  6160000002                          SB6     2
6500  6170006501                          CALL    READUSER
                                *
6501                            LOADECSX  BSS     0
6501  6110006514                          SB1     ECSLIST
6502  6170006503                          CALL    SETP123
6503  6160005763                          SB6     GET
6504  6170006505                          CALL    CALLCMMD
6505  6110006514                          SB1     ECSLIST
6506  6170006507                          CALL    SETP123
6507  76600                               SX6     B0
            5160001751                    SA6     LISTFLG
6510  7160005763                          SX6     GET
6511  6170006512                          CALL    LISTOPS
6512  5110001753                          SA1     LOADECS7
                63710                     SB7     X1
6513  0270000000                          JP      B7
                                *
                                *
6514  04112313000000000000      ECSLIST   DATA    0LDISK
6515  05032306111405230000                DATA    0LECSFILES
                                *
6516  03202500000000000000      CPUCDE    DATA    0LCPU,0LCODE
6520  20202500000000000000      PPUCDE    DATA    0LPPU,0LCODE
```

```
                                  *
                                  *                  CODE TO TURN A FLAG ON
                                  *
6522  6170006523                  FLAGON    CALL     FNDFLG
6523  6110004601                            SB1      NXTCMMDE
                0720004554                  LT       B2,B0,NXTCMMD
6524  7160000001                            SX6      1
                56620                       SA6      B2
6525  6110006526                            SB1      FLAGONM
                0200004554                  JP       NXTCMMD
                                  *
6526  17160000000000000000        FLAGONM   DIS      ..ON.
                                  *
                                  *                  CODE TO TURN A FLAG OFF
                                  *
6527  6170006530                  FLAGOFF   CALL     FNDFLG
6530  6110004601                            SB1      NXTCMMDE
                0720004554                  LT       B2,B0,NXTCMMD
6531  76600                                 SX6      B0
           56620                            SA6      B2
                6110006533                  SB1      FLGOFFM
6532  0200004554                            JP       NXTCMMD
                                  *
6533  17060600000000000000        FLGOFFM   DIS      ..OFF.
```

```
                                  *
                                  *                 LIST USER NAMES IN DIRECTORY
                                  *
                                  *        NOTE  NO DISK PROTECTION
                                  *
                                  *
6534  76770                       LISTU    SX7     B7
            5170001655                     SA7     DSCANSV7
6535  7160000305                           SX6     DHEADSZ
                  5160001574               SA6     DENTRYX
6536  76600                                SX6     B0
            5160003014                     SA6     UTABLE
                                  *
6537  7110000035                  LISTU1   SX1     C.DBEAD
                  5120001574               SA2     DENTRYX
6540  7130001575                           SX3     DENTRIES
                  7140000050               SX4     4*10
6541  6170006542                           CALL    READF
6542  5110001574                           SA1     DENTRYX
                  5120001573               SA2     DLIMIT
6543  6160000012                           SB6     10
                  66100                    SB1     B0
                                  *
6544  37312                       LISTU2   IX3     X1-X2
            0323006566                     PL      X3,LISTU7          LIMIT REACHED
6545  5131001575                           SA3     DENTRIES+B1
                  0303006561               ZR      X3,LISTU6          EMPTY ENTRY
6546  66200                                SB2     B0
            6130000310                     SB3     UTABLESZ
                                  *
6547  5152003014                  LISTU3   SA5     UTABLE+B2
                  5121001576               SA2     DENTRIES+1+B1
6550  0305006554                           ZR      X5,LISTU4          WAS NOT IN TABLE
                  13552                    BX5     X5-X2
6551  0305006557                           ZR      X5,LISTU5          FOUND THE ENTRY
                  6122000002               SB2     B2+2
6552  6133777775                           SB3     B3-2
                  0530006547               NE      B3,B0,LISTU3
6553  0200006561                           JP      LISTU6
                                  *
6554  10622                       LISTU4   BX6     X2
            5162003014                     SA4     UTABLE+B2
6555  7160000001                           SX6     1
                  5162003015               SA6     UTABLE+1+B2
6556  0200006561                           JP      LISTU6
                                  *
6557  5152003015                  LISTU5   SA5     UTABLE+1+B2
                  7265000001               SX6     X5+1
6560  54650                                SA6     A5
                                  *
6561  7100000004                  LISTU6   SX0     4
                  36110                    IX1     X1+X0
6562  6111000004                           SB1     B1+4
```

```
                6166777776          SB6     B6-1
6563  5120001573                    SA2     DLIMIT
                0706006544          LT      B0,B6,LISTU2
6564  10611                         BX6     X1
          5160001574                SA6     DENTRYX
6565  0200006537                    JP      LISTU1
                                *
6566  66200                   LISTU7  SB2     B0
          6130000310                SB3     UTABLESZ
                                *
6567  5112003014              LISTU8  SA1     UTABLE+B2
                0301006606          ZR      X1,LISTU9 ALL DONE
6570  6170006571                    CALL    BLANKS
6571  5160003012                    SA6     TEMP1
                5112003015          SA1     UTABLE+1+B2
6572  6170006573                    CALL    OCTAL
6573  20644                         LX6     36
          5160003013                SA6     TEMP2
                    76620           SX6     B2
6574  76730                         SX7     B3
          5160001737                SA6     DUMPSV1
6575  5170001740                    SA7     DUMPSV2
                6110003012          SB1     TEMP1
6576  6120000010                    SB2     8
6577  6170006600                    CALL    PACK
6600  6110003013                    SB1     TEMP2
                6120000004          SB2     4
6601  6170006602                    CALL    PACK
6602  6170006603                    CALL    TYPEOUT
6603  5110001737                    SA1     DUMPSV1
                5120001740          SA2     DUMPSV2
6604  63210                         SB4     X1
          63320                     SB3     X2
                6122000002          SB2     B2+2
6605  6133777776                    SB3     B3-2
                0530006567          NE      B3,B0,LISTU8
                                *
6606  5110001656              LISTU9  SA1     DSCANSV7
                63710               SB7     X1
6607  0270000000                    JP      B7
```

```
                                *
                                *                LIST ALL FILES FOR A GIVEN USER NAME
                                *
6610  76770                     LISTx     Sx7     B7
          5170001655                      SA7     DSCANSV7
6611  7160000305                          Sx6     DHEADSZ
                5160001574                SA6     DENTRYX
                                *
6612  7110000035                LISTx1    Sx1     C.DBEAD
                5120001574                SA2     DENTRYX
6613  7130001575                          Sx3     DENTRIES
                7140000050                Sx4     4*10
6614  6170006615                          CALL    READF
6615  5110001574                          SA1     DENTRYX
                5120001573                SA2     DLIMIT
6616  6160000012                          SB6     10
                66100                     SB1     B0
                                *
6617  37312                     LISTx2    Ix3     X1-X2
          0323006674                      PL      X3,LISTX4          LIMIT REACHED
6620  5131001575                          SA3     DENTRIES+B1
                0303006670                ZR      X3,LISTX3          EMPTY ENRY
6621  5141001576                          SA4     DENTRIES+1+B1
                5130001702                SA3     PARAMS+1
6622  43060                               Mx0     6*8
          13334                           Bx3     X3-X4
                11303                     Bx3     X0*X3
6623  0313006670                          NZ      X3,LISTX3          NOT THE DESIRED USE NAME
                0333006670                NB      X3,LISTX3
                                *
6624  76660                               Sx6     B6
          76710                           Sx7     B1
                5160001741                SA6     DUMPSV3
6625  5170001740                          SA7     DUMPSV2
                10611                     Bx6     X1
6626  5160001737                          SA6     DUMPSV1
                5111001575                SA1     DENTRIES+B1
6627  6170006630                          CALL    BLANKS
6630  5160003012                          SA6     TEMP1
                64160                     SB1     A6
6631  6120000007                          SB2     7
6632  6170006633                          CALL    PACK
6633  0130000225000000000                 XJ      DSKLCK
6634  5110001740                          SA1     DUMPSV2
                6211001577                SB1     X1+DENTRIES+2
6635  6120001770                          SB2     FILEDATA
                7160007355                FORK    RDESC
6637  6170006640                          CALL    IOWAIT
6640  5112000012                          SA1     B2+HEADER          GET CURREN FILE SIZE
                73110                     Sx1     X1
6641  6170006642                          CALL    OCTAL
6642  20622                               Lx6     18
          5160003012                      SA6     TEMP1
```

```
                    64160          SB1     A6
6643  6120000007                   SB2     7
6644  6170006645                   CALL    PACK
6645  5110001740                   SA1     DUMPSV2
                6211001600         SB1     X1+DENTRIES+3
6646  6120001770                   SB2     FILEDATA
                7160007355         FORK    RDESC
6650  6170006651                   CALL    IOWAIT
6651  5112000012                   SA1     B2+HEADER          GET BACK UP FILE SIZE
                73110              SX1     X1
6652  6170006653                   CALL    OCTAL
6653  20622                        LX6     18
          5160003012               SA6     TEMP1
                    64160          SB1     A6
6654  6120000007                   SB2     7
6655  6170006656                   CALL    PACK
6656  0130000227000000000         XJ      DSKCLR
6657  5110001737                   SA1     DUMPSV1
6660  6170006661                   CALL    OCTAL
6661  20636                        LX6     30
          5160003012               SA6     TEMP1
                    64160          SB1     A6
6662  6120000005                   SB2     5
6663  6170006664                   CALL    PACK
6664  6170006665                   CALL    TYPEOUT
6665  5110001741                   SA1     DUMPSV3
                5120001740         SA2     DUMPSV2
6666  63610                        SB6     X1
          63120                    SB1     X2
                5110001737         SA1     DUMPSV1
6667  5120001573                   SA2     DLIMIT
                          *
6670  7100000004          LISTX3   SX0     4
                36110              IX1     X1+X0
6671  6111000004                   SB1     B1+4
                6166777776         SB6     B6-1
6672  0706006617                   LT      B0,B6,LISTX2
                10611              BX6     X1
6673  5160001574                   SA6     DENTRYX
                0200006612         JP      LISTX1
                          *
6674  5110001655          LISTX4   SA1     DSCANSV7
                63710              SB7     X1
6675  0270000000                   JP      B7
```

```
                                *
                                *                DUMP A FILE, DISK ADDRESS OF DESCRIPTOR AT B1
                                *
6676  76770                     DUMPF     SX7     B7
            5170001742                    SA7     DUMPSV7
6677  6120001770                          SB2     FILEDATA
                  7160007355              FORK    RDESC
6701  6170006702                          CALL    IOWAIT
6702  7162000012                          SX6     B2+HEADER   INDICATE TO RDRCD THAT A NAME IS AVAL
                  5160003011              SA6     RDRCDFLG
6703  5112000012                          SA1     B2+HEADER
                  5122000013              SA2     B2+HEADER+1
6704  10611                               BX6     X1
            10722                         BX7     X2
                  5160000263              SA4     DATA+1
6705  5170000264                          SA7     DATA+2
                  7160000002              SX6     2 -
6706  5160000262                          SA6     DATA
6707  6170006710                          CALL    TCHKWR
6710  6170006711                          CALL    TWRITE    WWRITE OUT HEADER
6711  6170006712                          CALL    NMBBLCKS
6712  66350                               SB3     B5
            6112000014                    SB1     B2+BPOINTS
6713  0430006725                          EQ      B3,B0,DUMPF2
                                *
6714  56110                     DUMPF1    SA1     B1
            10611                         BX6     X1
                  5160000262              SA6     DATA
6715  7160007502                          FORK    RDRCD     READ IN DATA BLOCK FROM DISK
6717  6170006720                          CALL    IOWAIT
6720  7160001000                          SX6     512
                  5160000262              SA6     DATA
6721  6170006722                          CALL    TCHKWR
6722  6170006723                          CALL    TWRITE    WRITE DATA BLOCK TO TAPE
                                *
6723  6111000001                          SB1     B1+1
                  6133777776              SB3     B3-1
6724  0703006714                          LT      B0,B3,DUMPF1
                                *
6725  5110001742                DUMPF2    SA1     DUMPSV7
                  63710                   SB7     X1
6726  0270000000                          JP      B7
```

```
                                  *
                                  *                 LOAD A FILE
                                  *
                                  *
6727  76770                       LOADF   SX7     B7
            5170001742                    SA7     DUMPSV7
6730  6170006731                          CALL    TCHKRD    FINISH READ OF HEADER
6731  0336006406                          NG      X6,LOAD4  EOF, SO ALL DONE
6732  6170006733                          CALL    TREAD     START NEXT READ
6733  5110000263                          SA1     DATA+1
                  5120000264              SA2     DATA+2
6734  43052                               MX0     6*7
            11601                         BX6     X0*X1
                  43060                   MX0     6*8
                        11702             BX7     X0*X2
6735  5162001575                          SA6     B2+DENTRIES
                  5172001576              SA7     B2+DENTRIES+1      PLACE NAME IN DIRECTORY
6736  6120001770                          SB2     FILEDATA
                  10611                   BX6     X1
                        10722             BX7     X2
6737  5162000012                          SA6     B2+HEADER          PLACE NAME AND SIZE ETC IN HEADER
                  5172000013              SA7     B2+HEADER+1
6740  56110                               SA1     B1
            10611                         BX6     X1
                  5162000010              SA6     B2+DIRECTY+2       SAVED ADDRESS OF HEADER
6741  6170006742                          CALL    DISKADDR  GET BLOCKS
6742  6120001770                          SB2     FILEDATA
6743  6170006744                          CALL    NMBBLCKS
6744  66350                               SB3     B5
            6112000014                    SB1     B2+BPOINTS
6745  0430006755                          EQ      B3,B0,LOADF2
                                  *
6746  6170006747                  LOADF1  CALL    TCHKRD
6747  6170006750                          CALL    TREAD
6750  56110                               SA1     B1
            10611                         BX6     X1
                  5160000262              SA6     DATA
6751  7160007533                          FORK    WRRCD     WRITE OUT DATA BLOCK
                                  *
6753  6111000001                          SB1     B1+1
                  6133777776              SB3     B3-1
6754  0703006746                          LT      B0,B3,LOADF1
                                  *
6755  6120001770                  LOADF2  SB2     FILEDATA
                  6112000010              SB1     B2+DIRECTY+2
6756  7160007401                          FORK    WDESC     WRITE OUT DESCRIPTOR
6760  5110001742                          SA1     DUMPSV7
                  63710                   SB7     X1
6761  0270000000                          JP      B7
```

```
                                  *
                                  *
6762  6170006763                  SCAN     CALL     GETDIR
6763  0130000132000000000                   DEBUG
6767  6170006770                           CALL     DSCAN
6770  0130000132000000000                   DEBUG
6774  6170006775                           CALL     PUTDIR
6775  0130000132000000000                   DEBUG
7001  0200004554                           JP       NXTCMMD
                                  *
7002  6110001770                  GO       SB1      FILEDATA+BEADBLK
                 6170000041                SB7      C.FILE0
7003  5110007036                           SA1      NM1
                 5120007037                SA2      NM2
7004  6160000000                           SB6      0
7005  0130004462000000000                  XJ       READ
7006  0130000132000000000                  DEBUG
7012  6120001770                           SB2      FILEDATA
                 7160000041                SX6      C.FILE0
7013  5162000004                           SA6      B2+CLISTX
                 5112000003                SA1      B2+BEADBLK+3
7014  73610                               SX6      X1
            5162000012                     SA6      B2+HEADER
7015  6170007016                           CALL     DISKADDR
7016  0130000132000000000                  DEBUG
7022  6120001770                           SB2      FILEDATA
7023  6170007024                           CALL     WDISK
7024  0130000132000000000                  DEBUG
7030  6170007031                           CALL     RDISK
7031  0130000132000000000                  DEBUG
7035  0200007002                           JP       GO
                                  *
                                  *
7036  1725242026240000000         NM1      DATA     0LOUTPUT
7037  2324252207112300000         NM2      DATA     0LSTURGIS
                                  *
                                  *
7040  76670                       WDISK    SX6      B7
            5160003324                     SA6      WRTN
7041  6170007042                           CALL     NMBBLCKS
7042  6135777776                           SB3      B5-1
                 6112000014                SB7      B2+BPOINTS
7043  7160007272                  WDISK1   FORK     WRFBLK
7045  6111000001                           SB1      B1+1
                 6133777776                SB3      B3-1
7046  0630007043                           GE       B3,B0,WDISK1
7047  6170007050                           CALL     IOWAIT
7050  5110003324                           SA1      WRTN
                 63710                     SB7      X1
7051  0270000000                           JP       B7
                                  *
                                  *
7052  76670                       RDISK    SX6      B7
```

```
            5160003325                  SA6     RRTN
7053  6170007054                        CALL    NMBBLCKS
7054  6135777776                        SB3     B5-1
                6112000014              SB1     B2+BPOINTS
7055  7160007317              RDISK1    FORK    RDFBLK
7057  6111000001                        SB1     B1+1
                6133777776              SB3     B3-1
7060  0630007055                        GE      B3,B0,RDISK1
7061  6170007062                        CALL    IOWAIT
7062  5110003325                        SA1     RRTN
                63710                   SB7     X1
7063  0270000000                        JP      B7
                              *
                              *
7064  0130000132000000000    PRNTERR   DEBUG
7070  0270000000                        JP      B7
```

```
                                  *
                                  *                THIS ROUTINE OBTAINS DIRECTORY
                                  *                  AND REDS IN BIT TABLE AND INITIALIZES
                                  *                  ENTRY SCAN
                                  *
7071  76770                       GETDIR   Sx7      B7
            5170001730                     SA7      SVB7
7072  0130000225000000000                  XJ       DSKLCK    LOCK ACCESS TO DISK
7073  66600                                SB6      B0
7074  6170007075                           CALL     BEADDIR   GET BEAD DIRECTORY ENTRY FOR DISK DIRECTORY
                                  *
7075  7110000035                           Sx1      C.DBEAD
                  76200                    Sx2      B0
7076  7130001270                           Sx3      DHEAD
                  7140000305               Sx4      DHEADSZ
7077  6170007100                           CALL     READF     READ IN HEADER OF DIRECTORY
                                  *
7100  5110001730                           SA1      SVB7
                  63710                    SB7      X1
7101  0270000000                           JP       B7
```

```
                                  *
                                  *                THIS ROUTINE RETURNS DISK DIRECTORY
                                  *
7102  76770                       PUTDIR   SX7      B7
            5170001730                     SA7      SVB7
7103  7110000035                           SX1      C.DBEAD
                 76200                     SX2      B0
7104  7130001270                           SX3      DHEAD
                 7140000305                SX4      DHEADSZ
7105  6170007106                           CALL     WRITEF    WRITE HEADER BACK TO ECS
7106  6160000001                           SB6      1
7107  6170007110                           CALL     READDIR   PUT BACK DIRECTORY
7110  0130000227000000000                  X1       DSKCLR    UNLOCK ACCESS TO DISK
7111  5110001730                           SA1      SVB7
                 63710                     SB7      X1
7112  0270000000                           JP       B7
```

```
                                  *
                                  *                THIS ROUTINE DESTROYS DIRECTORY IF IT EXISTS
                                  *                AND CREATES A NEW INITIALIZED ONE
                                  *
7113  76770                       NEWDIR    SX7     B7
            5170001655                      SA7     DSCANSV7
                      66600                 SB6     B0
7114  6170007115                            CALL    READDIR   LOCATE DIRECTORY
7115  6160000002                            SB6     2
7116  6170007117                            CALL    READDIR   DESTROY IT
7117  66600                                 SB6     B0
7120  6170007121                            CALL    READDIR   RELOCATE IT
7121  7160000035                            SX6     C.DBEAD
                  5160000137                SA6     NEWBLK+1
7122  5110001650                            SA1     DBEADE+3
                  20136                     LX1     30
                      43036                 MX0     60-30
7123  15110                                 BX1     -X0*X1    BLOCK SIZE
            76700                           SX7     B0
                  7120005665                SX2     DSIZE*4+DHEADSZ        SET DIRECTORY FILE SIZE
                                  *
7124  5170000140                  NEWDIR1   SA7     NEWBLK+2
7125  0130000136000000000                   XJ      NEWBLK    CREATE A BLOCK
7126  36771                                 IX7     X7+X1      STEP LOCATION
            37372                           IX3     X7-X2
                  0333007124                NG      X3,NEWDIR1          STILL MORE
7127  5110001650                            SA1     DBEADE+3
                  12717                     BX7     X1+X7
                      54710                 SA7     A1
                                  *
7130  7160000305                            SX6     DHEADSZ
                  5160001573                SA6     DLIMIT
7131  5160001574                            SA6     DENTRYX
7132  6170007133                            CALL    SETUPBIT
7133  6170007134                            CALL    PUTDIR
                                  *
7134  5110001655                            SA1     DSCANSV7
                  63710                     SB7     X1
7135  0270000000                            JP      B7
```

```
                                  *
                                  *
                                  *                THIS ROUTINE SCANS THE DIRECTORY FOR AN ENTRY OF
                                  *                         NAMES COMPUTED AS FOLLOWS. ( B2 POINTS TO FILEDATA )
                                  *
                                  *                IF (PARAMS+3) .EQ. 0 THEN ( ECS FILE NAME, ECS FILE USER NAME )
                                  *            ELSE IF (PARAMS+4) .NE. 0 THEN ( PARAMS+3, PARAMS+4 )
                                  *                ELSE  ( PARAMS+3, CURRENT USER NAME )
                                  *
                                  *
                                  *                IF FOUND, B1 WILL BE LOCAL FILE TABLE POSITION
                                  *                         AND ENTRY WILL BE COPIED TO B2+DIRECTY
                                  *                IF NOT FOUND, B1 WILL BE -1. IN THIS CASE DNEW CAN BE CALLED
                                  *                          TO MAKE A NEW ENTRY.
                                  *
7136  76770                       DSCAN     Sx7      B7
            5170001655                      SA7      DSCANSV7
7137  5110001704                            SA1      PARAMS+3
                  0311007144                N7       X1,DSCAN1
                                  *
7140  5112000000                            SA1      BEADBLK+B2
                  43052                     Mx0      6*7
                       11610                Bx6      X1*X0
7141  5160001704                            SA6      PARAMS+3
                  5112000001                SA1      BEADBLK+1+B2
7142  43060                                 Mx0      6*8
            11610                           Bx6      X1*X0
                  5160001705                SA6      PARAMS+4
7143  0200007160                            JP       DSCAN2
                                  *
7144  5110001705                  DSCAN1    SA1      PARAMS+4
                  0311007160                N7       X1,DSCAN2
                                  *
7145  01300001320000000000                  XJ       SAVE
7146  6110001651                            SB1      NULLBDE
                  6170000036                SB7      C.NULL
7147  5110007226                            SA1      XNULL
                  7120000000                Sx2      0
7150  66600                                 SB6      B0
7151  01300044620000000000                  XJ       BEAD
7152  5110001652                            SA1      NULLBDE+1
                  43060                     Mx0      8*6
                       11601                Bx6      X0*X1     GET CURRENT USER NAME
7153  5160001705                            SA6      PARAMS+4
                  6110001651                SB1      NULLBDE
7154  6170000036                            SB7      C.NULL
                  5110007226                SA1      XNULL
7155  7120000000                            Sx2      0
                  6160000001                SB6      1
7156  01300044620000000000                  XJ       BEAD      RETURN NULL FILE
7157  01300001340000000000                  XJ       RESTOR
                                  *
                                  *                NOW WE CAN START SCAN PROPER
```

```
                                  *
7160  7160000305                  DSCAN2   SX6     DHEADSZ
                5160001574                 SA6     DENTRYX
7161  76600                                SX6     B0
          5160001656                       SA6     DSCANZRX
                                  *
7162  7110000035                  DSCAN3   SX1     C.DBEAD
                5120001574                 SA2     DENTRYX
7163  7130001575                           SX3     DENTRIES
                7140000050                 SX4     4*10
7164  6170007165                           CALL    READF
7165  5110001574                           SA1     DENTRYX
                5120001573                 SA2     DLIMIT
7166  6160000012                           SB6     10
                66100                      SB1     B0
                                  *
7167  37312                       DSCAN4   IX3     X1-X2
          0323007214                       PL      X3,DSCAN6          LIMIT REAACHED
7170  5130001704                           SA3     PARAMS+3  COMPARE FILE NAMES
                5141001575                 SA4     DENTRIES+B1
7171  0304007222                           ZR      X4,DSCAN8 ZERO ENTRY
                13334                      BX3     X3-X4
                     43052                 MX0     6*7
7172  11303                                BX3     X0*X3
          0313007210                       NZ      X3,DSCAN5
7173  0333007210                           NG      X3,DSCAN5
                5130001705                 SA3     PARAMS+4  COMPARE USE NAMES
7174  5141001576                           SA4     DENTRIES+1+B1
                13334                      BX3     X3-X4
                     43060                 MX0     6*8
7175  11303                                BX3     X0*X3
          0313007210                       NZ      X3,DSCAN5
7176  0333007210                           NG      X3,DSCAN5
                                  *
7177  5110001655                  DSCANXT  SA1     DSCANSV7  FOUND
                63710                      SB7     X1
7200  5111001575                           SA1     B1+DENTRIES
                5121001576                 SA2     B1+DENTRIES+1
7201  5131001577                           SA3     B1+DENTRIES+2
                5141001600                 SA4     B1+DENTRIES+3
7202  10611                                BX6     X1
          10722                            BX7     X2
                5162000006                 SA6     B2+DIRECTY
7203  5172000007                           SA7     B2+DIRECTY+1
                10633                      BX6     X3
                     10633                 BX6     X3
7204  10744                                BX7     X4
          5162000010                       SA6     B2+DIRECTY+2
7205  5172000011                           SA7     B2+DIRECTY+3
                5110001574                 SA1     DENTRYX
7206  76610                                SX6     B1
          36616                            IX6     X1+X6
                5162000005                 SA6     B2+DIRECTX
```

```
7207  0270000000                          JP      B7
                                 *
7210  7100000004                 DSCAN5   SX0     4
                 36110                    IX1     X1+X0
7211  6111000004                          SB1     B1+4
                 6166777776               SB6     B6-1
7212  0706007167                          LT      B0,B6,DSCAN4
                 10611                    BX6     X1
7213  5160001574                          SA6     DENTRYX
                 0200007162               JP      DSCAN3
                                 *
7214  5150001656                 DSCAN6   SA5     DSCANZRX
                 0305007217               ZR      X5,DSCAN7
                                 *
7215  6110777776                 DSCANFL  SB1     -1
                 5110001655               SA1     DSCANSV7
7216  63710                               SB7     X1
            0270000000                    JP      B7
                                 *
7217  5150001574                 DSCAN7   SA5     DENTRYX
                 10655                    BX6     X5
7220  5160001656                          SA6     DSCANZRX
                 76610                    SX6     B1
7221  5160001657                          SA6     DSCANZR
                 0200007215               JP      DSCANFL
                                 *
7222  5150001656                 DSCAN8   SA5     DSCANZRX  EMPTY SLOT
                 0315007210               NZ      X5,DSCAN5
                                 *
7223  5150001574                          SA5     DENTRYX   REMBER IT
                 10655                    BX6     X5
7224  5160001656                          SA6     DSCANZRX
                 76610                    SX6     B1
7225  5160001657                          SA6     DSCANZR
                 0200007210               JP      DSCAN5
                                 *
                                 *
7226  16251414000000000000       XNULL    DATA    0LNULL
```

```
                                  *
                                  *                 THIS ROUTINE MAKES A NEW DIRECTORY ENTRY.
                                  *                 MUST HAVE BEEN PRECEEDED BY A CALL TO DSCAN WHICH FAILED
                                  *
                                  *                 EXITTS WITH X0 = 0 IF OK, = 1 IF NO ROOM
                                  *
7227  76770                       DNEW      SX7     B7
            5170001655                      SA7     DSCANSV7
7230  5110001656                            SA1     DSCANZRX
                10611                       BX6     X1
7231  5160001574                            SA6     DENTRYX
                7266772112                  SX6     X6-DSIZE*4-DHEADSZ
7232  0326007256                            PL      X6,DNEW2            NO ROOM
                7110000035                  SX1     C.DBEAD
7233  5120001574                            SA2     DENTRYX
                7130001575                  SX3     DENTRIES
7234  7140000050                            SX4     4*10
7235  6170007236                            CALL    READF
7236  5110001657                            SA1     DSCANZR
                63110                       SB1     X1
7237  5111001575                            SA1     DENTRIES+B1
                0301007241                  ZR      X1,DNEW1
7240  6170007241                            CALL    PRNTERR
7241  5110001704                  DNEW1     SA1     PARAMS+3
                5120001705                  SA2     PARAMS+4
7242  10611                                 BX6     X1
            10722                           BX7     X2
                5161001575                  SA6     DENTRIES+B1
7243  5171001576                            SA7     DENTRIES+1+B1
                7110000035                  SX1     C.DBEAD
7244  5120001574                            SA2     DENTRYX
                7130001575                  SX3     DENTRIES
7245  7140000050                            SX4     4*10
7246  6170007247                            CALL    WRITEF
7247  5110001574                            SA1     DENTRYX
                5120001657                  SA2     DSCANZR
7250  36612                                 IX6     X1+X2
            7266000004                      SX6     X6+4
7251  5130001573                            SA3     DLIMIT
                37063                       IX0     X6-X3
7252  0330007253                  +         NG      X0,*+1
                5160001573                  SA6     DLIMIT
7253  63120                                 SB1     X2
            76000                           SX0     B0          ( OK EXIT )
                                  *
7254  5110001655                  DNEW3     SA1     DSCANSV7
                63710                       SB7     X1
7255  0270000000                            JP      B7
                                  *
7256  7100000001                  DNEW2     SX0     1           ( FAIL EXIT )
                0200007254                  JP      DNEW3
```

```
                                  *
                                  *                 THIS ROUTINE PERFORMS A BEAD ACTION ( B6 ) ON DISK DIRECTORY
                                  *
7257  01300001320000000000   BEADDIR   XJ        SAVE
7260  6110001645                        SB1       DBEADE
                6170000035              SB7       C.DBEAD
7261  5110007265                        SA1       XDISK
                5120007266              SA2       XDIRECT
7262  01300044620000000000              XJ        BEAD
7263  01300001340000000000              XJ        RESTOR
7264  0270000000                        JP        B7
                                  *
                                  *
                                        IFEQ      TFLAG,1
7265  04112313000000000000   XDISK     DATA      OLDISK
7266  04112205032400000000   XDIRECT   DATA      OLDIRECT
                                        ENDIF
                                  *
                                  *
                                        IFNE      TFLAG,1
                                        ENDIF
                                  *
                                  *
                                  *
                                  *
                                  *
                                  *
                                  *                 THIS ROUTINE UPDATES A DIRECTORY ENTRY
                                  *                         B2 POINTS TO FILE DATA
                                  *
7267  7110000035               PUTDIREN  SX1       C.DBEAD
                5122000005              SA2       B2+DIRECTX
7270  7132000006                        SX3       B2+DIRECTY
                7140000004              SX4       4
7271  0200010477                        JP        WRITEF
```

```
                                *
                                *          THIS CO-ROUTINE WRITES ONE FILE BLOCK ON DISK
                                *          FILE DISCRIPTOR IN B2, BLOCK POINTER ADDRESS IN B1
                                *          B3 NUMBER OF BLOCKS LEFT. ( 0 ON LAST ).
                                *
7272  6170007273                WRFBLK   CALL    GETBUF
7273  5112000004                         SA1     B2+CLISTX
            77212                        SX2     B1-B2
7274  7222777763                         SX2     X2-BPOINTS
            20211                        LX2     9          FILE ADDRESS
7275  7130000263                         SX3     DATA+1
            7140001000                   SX4     512
7276  0703007301                         LT      B0,B3,WRFBLK1
            5142000012                   SA4     B2+HEADER
7277  43063                              MX0     60-9
          15440                          BX4     -X0*X4
            0314007301                   NZ      X4,WRFBLK1          COMPUTE COUNT FOR FINAL BLOCK
7300  7140001000                         SX4     512
7301  6170007302                WRFBLK1  CALL    READF
7302  56110                              SA1     B1
          10611                          BX6     X1
            5160000262                   SA6     DATA
7303  7110000053                         SX1     C.DISKF
            5120000254                   SA2     PBUF
7304  7130000262                         SX3     DATA
            7140001001                   SX4     513
7305  6170007306                         CALL    WRITEF
7306  6170007307                         CALL    WRDISK
7307  0321007727                         PL      X1,IOFINI
            6110007313                   SB1     WRFBLK2
7310  7112000012                         SX1     B2+HEADER
7311  6170007312                         CALL    DISKERR
7312  0200007727                         JP      IOFINI
                                *
7313  2722112405517065506       WRFBLK2  DIS     ..WRITE OF FILE DATA BLOCK TO DISK.
```

```
                                  *
                                  *        THIS CO-ROUTINE READS ONE FILE BLOCK FROM DISK
                                  *
7317  6170007320                  RDFBLK   CALL     RDDISK
7320  0321007332                           PL       X1,RDFBLKOK
                                  *
                  7211000001               SX1      X1+1
7321  0301007323                           ZR       X1,RDFBLK1          DO NOT ATTEMPT TO RETURN BUFFER
                                  *
7322  6170007323                           CALL     PUTBUF
                                  *
7323  6110007347                  RDFBLK1  SB1      RDFBLK3
                  7112000012               SX1      B2+HEADER
7324  6170007325                           CALL     DISKERR
7325  0200007727                           JP       IOFINI
                                  *
                                  *                REST OF ERROR PROCESSING DISABLED DUE TO BI LOUSE UP
                                  *
7326  7130000262                           SX3      DATA
                  7140001000               SX4      512
7327  6170007330                           CALL     READZ
7330  0200007337                           JP       RDFBLK4
7331  0200007727                           JP       IOFINI
                                  *
7332  7110000053                  RDFBLKOK SX1      C,DISKF
                  5120000254               SA2      PBUF
7333  7222000001                           SX2      X2+1
                  7130000262               SX3      DATA
7334  7140001000                           SX4      512
7335  6170007336                           CALL     READF
7336  6170007337                           CALL     PUTBUF
                                  *
7337  5112000004                  RDFBLK4  SA1      B2+CLISTX
                   77212                   SX2      B1-B2
7340  7222777763                           SX2      X2-BPOINTS
                   20211                   LX2      Q          FILE ADDRESS
7341  7130000262                           SX3      DATA
                  7140001000               SX4      512
7342  0703007345                           LT       B0,B3,RDFBLK2
                  5142000012               SA4      B2+HEADER
7343  43063                                MXB      60-9
           15440                           BX4      -X0*X4     COMPUTE COUNT FOR FINAL BLOCK
                  0314007345               NZ       X4,RDFBLK2
7344  7140001000                           SX4      512
7345  6170007346                  RDFBLK2  CALL     WRITEF
7346  0200007727                           JP       IOFINI
                                  *
7347  22050104551706550611        RDFBLK3  DIS      5,READ OF FILE DATA BLOCK FROM DISK, ALL ZEROS ASSUM
7354  05040000000000000000                 DIS      ,,ED.
```

```
                                  *
                                  *                THIS CO-ROUTINE READS A FILE DESCRIPTOR FROM DISK
                                  *
7355  6170007356                  RDESC     CALL     RDDISK
7356  0321007366                            PL       X1,RDESCOK
                  7211000001                SX1      X1+1
7357  0301007361                            ZR       X1,RDESC1
7360  6170007361                            CALL     PUTBUF
7361  6110007374                  RDESC1    SB1      RDESC2
                  7112000006                SX1      B2+DIRECTY
7362  6170007363                            CALL     DISKERR
7363  7132000012                            SX3      B2+HEADER
                  7140001000                SX4      512
7364  6170007365                            CALL     READZ
7365  0200007727                            JP       IOFINI
                                  *
7366  7110000053                  RDESCOK   SX1      C.DISKF
                  5120000254                SA2      PBUF
7367  7222000001                            SX2      X2+1
                  7132000012                SX3      B2+HEADER
7370  7140001000                            SX4      512
7371  6170007372                            CALL     READF
7372  6170007373                            CALL     PUTBUF
7373  0200007727                            JP       IOFINI
                                  *
7374  22050104551706550611      RDESC2    DIS      ..READ OF FILE DESCRIPTOR, EMPTY FILE ASSUMED.
```

```
                                  *
                                  *                THIS CO-ROUTINE WRITE S FILLE DESCRIPTOR TO DISK
                                  *
7401  6170007402                  WDESC     CALL     GETBUF
7402  7110000053                            SX1      C.DISKF
                5120000254                  SA2      PBUF
7403  76310                                 SX3      B1
          7140000001                        SX4      1
7404  6170007405                            CALL     WRITEF
7405  7110000053                            SX1      C.DISKF
                5120000254                  SA2      PBUF
7406  7222000001                            SX2      X2+1
                7132000012                  SX3      B2+HEADER
7407  7140001000                            SX4      512
7410  6170007411                            CALL     WRITEF
7411  6170007412                            CALL     WRDISK
7412  0321007727                            PL       X1,IOFINI
                6110007416                  SB1      WDESC1
7413  7112000006                            SX1      B2+DIRECTY
7414  6170007415                            CALL     DISKERR
7415  0200007727                            JP       IOFINI
                                  *
7416  27221124055517065506        WDESC1    DIS      ..WRITE OF FILE DESCRIPTOR TO DISK.
```

```
                                 *
                                 *                THIS CO-ROUTINE READS IN DESCRIPTOR DURING RECOVERY
                                 *
                                 *                B1 POINTS TO ADDRESS, B2 POINTS TO ENTRY LOC
                                 *
                                 *                B1 = B2 + 2 CURRENT
                                 *                B1 = B2 + 3  BACK UP
                                 *
7422  56110                      CKDESC    SA1    B1
          43053                            MX0    60-17
               15610                       BX6    -X0*X1     SET UNIQUE NAME TO 0 SO WONT BE CHECKED
                    56610                  SA6    B1
7423  6170007424                           CALL   RDDISK
7424  0321007444                           PL     X1,CKDESCOK
                                 *
               7211000001                  SX1    X1+1
7425  0301007427                           ZR     X1,CKDESC1
7426  6170007427                           CALL   PUTBUF
                                 *
7427  6110007465                 CKDESC1   SB1    CKDESC3
               7110777776                  SX1    -1
7430  6170007431                           CALL   DISKERR
7431  6170007432                 CKDESC2   CALL   GETBUF     SET DESCRIPTOR NULL
7432  7110000053                           SX1    C,DISKF
               5120000254                  SA2    PBUF
7433  76310                               SX3    B1
          7140000001                       SX4    1
7434  6170007435                           CALL   WRITEF
7435  7222000001                           SX2    X2+1
               7130007464                  SX3    ZERO
7436  6170007437                           CALL   WRITEF
7437  6170007440                           CALL   WRDISK
7440  0321007727                           PL     X1,IOFINI
               6110007475                  SB1    CKDESC4
7441  7110777776                           SX1    -1
7442  6170007443                           CALL   DISKERR
7443  0200007727                           JP     IOFINI
                                 *
7444  7110000053                 CKDESCOK  SX1    C,DISKF
               5120000254                  SA2    PBUF
7445  7130000262                           SX3    DATA
               7140001001                  SX4    513
7446  6170007447                           CALL   READF
7447  6170007450                           CALL   PUTBUF
7450  5110000262                           SA1    DATA
               10611                       BX6    X1
                    56610                  SA6    B1         FIX UP UNIQUE NAME
7451  5110000263                           SA1    DATA+1
               0301007727                  ZR     X1,IOFINI UNUSED DESCRIPTOR
7452  43052                               MX0    6*7
          11601                            BX6    X0*X1
               56620                       SA6    B2
7453  5110000264                           SA1    DATA+2
```

```
                43060                  MX0     6*8
                    11601              BX6     X0*X1
7454  5162000001                       SA6     B2+1
                5110001573             SA1     DLIMIT
7455  5120001574                       SA2     DENTRYX
                73622                  SX6     X2+B2
7456  7266776206                       SX6     X6-DENTRIES+4
                37161                  IX1     X6-X1
7457  0331007460                 *     NG      X1,*+1
                5160001573             SA6     DLIMIT    RESET DLIMIT
7460  76650                            SX6     B5
          5160001661                   SA6     SVB5      SAVE B5
7461  6170007462                       CALL    BSYDSK    SET ALL IN USE ADDRSSES AS BUSY
7462  5110001661                       SA1     SVB5
                63510                  SB5     X1        RESTORE B5
7463  0200007727                       JP      IOFINI
                                 *
7464  00000000000000000000      ZERO    DATA    0
                                 *
7465  22050104551706550611      CKDESC3 DIS     5,READ OF FILE DESCRIPTOR DURING RECOVERY.
7472  55040523032211202417              DIS     ,, DESCRIPTOR SET EMPTY.
7475  27221124055517065505      CKDESC4 DIS     ,,WRITE OF EMPTY DESCRIPTOR DURING RECOVERY.
```

```
                                  *
                                  *                THIS CO-ROUTINE READS A DISK RECORD TO DATA
                                  *
7502  6110000262                  RDRCD     SB1      DATA
7503  6170007504                            CALL     RDDISK
7504  0321007510                            PL       X1,RDRCDOK
                  7211000001                SX1      X1+1
7505  0301007515                            ZR       X1,RDRCD1
                  6110007522                SB1      RDRCD2
7506  5110003011                            SA1      RDRCDFLG    LOCATION OF NAME IF ANY
7507  6170007510                            CALL     DISKERR
7510  7110000053                  RDRCDOK   SX1      C.DISKF
                  5120000254                SA2      PBUF
7511  7130000262                            SX3      DATA
                  7140001001                SX4      513
7512  6170007513                            CALL     READF
7513  6170007514                            CALL     PUTBUF
7514  0200007727                            JP       IOFINI
                                  *
7515  6110007526                  RDRCD1    SB1      RDRCD3
                  7110777776                SX1      -1
7516  6170007517                            CALL     DISKERR
7517  7130000262                            SX3      DATA
                  7140001000                SX4      512
7520  6170007521                            CALL     READZ
7521  0200007727                            JP       IOFINI
                                  *
7522  22050104551706550155         RDRCD2    DIS      ..READ OF A DISK RECORD TO DATA.
752A  22050104551706550155         RDRCD3    DIS      ..READ OF A DISK RECORD TO DATA, ZEROS READ.
```

```
                                  *
                                  *
                                  *                THIS CO-ROUTINE WRITES A RECORD TO DISK FROM DATA
                                  *
7533  6170007534                  WRRCD     CALL     GETBUF
7534  7110000053                            SX1      C.DISKF
                 5120000254                 SA2      RBUF
7535  7130000262                            SX3      DATA
                 7140001001                 SX4      513
7536  6170007537                            CALL     WRITEF
7537  6170007540                            CALL     WRDISK
7540  0321007727                            PL       X1,IOFINI
7541  6170007542                            CALL     PRNTERR
7542  6110007545                            SB1      WRRCD1
                 7110777776                 SX1      -1
7543  6170007544                            CALL     DISKERR
7544  0200007727                            JP       IOFINI
                                  *
7545  2722112405517065501         WRRCD1    DTS      ..WRITE OF A DISK RECORD FROM DATA.
```

```
                                  *
                                  *                 THIS ROUTINE SETS UP DISK ADDRESSES FOR FILE AT B2
                                  *
                                  *                 RETURNS WITH X6 = -1 IF NOT ENOUGH BLOCKS.
                                  *                           X6 = POSITIVE NUMBER IF OK
                                  *
7551  76770                       DISKADDR  SX7     B7
            5170003010                      SA7     DISKADSV
7552  6170007553                            CALL    NMBBLCKS
7553  6162000014                            SB6     B2+BPOINTS
                                  *
7554  6170007555                  DISKADD1  CALL    NEWBLCK   THESE 2 ROUTINES DO NOT DISTURB B5 OR B6
7555  6170007556                            CALL    DCDBLK
7556  56660                                 SA6     B6
            6166000001                      SB6     B6+1
7557  6155777776                            SB5     B5-1
                  0705007554                LT      B0,B5,DISKADD1
                                  *
7560  5110003010                            SA1     DISKADSV
                  63710                     SB7     X1
7561  0270000000                            JP      B7
```

```
                                  *
                                  *                THIS ROUTINE MAKES UP NEW UNIQUE NAMES FOR FILE
                                  *                          DESCRIPTOR POINTERS IN DIRECTORY
                                  *
                                  *                B2 POINTS TO FILE DATA
                                  *
7562  5112000010                  NEWUNMES  SA1     B2+DIRECTY+2        GET CURRENT POINTER
                43053                       MX0     60-17
                      15610                 BX6     -X0*X1     GET DISK ADDRESS
7563  5120001270                            SA2     UNAME
                7130000001                  SX3     1
7564  36223                                 IX2     X2+X3      STEP UNIQUE NAME
            10722                           BX7     X2
                20721                       LX7     17
                      12667                 BX6     X6+X7
7565  54610                                 SA6     A1         STORE CURENT POINTER
            5112000011                      SA1     B2+DIRECTY+3        GET BACK UP
                      15610                 BX6     -X0*X1
7566  36723                                 IX7     X2+X3
            5170001270                      SA7     UNAME
                      20721                 LX7     17
7567  12667                                 BX6     X6+X7
            54610                           SA6     A1         STORE BACK UP POINTER
                0270000000                  JP      B7
```

```
                                  *
                                  *                THIS ROUTINE RELEASES DISK ADDRESSES USED BY FILE AT B2
                                  *
7570  66470                       DISKRLS   SR4     B7
7571  6170007572                            CALL    NMBBLCKS
7572  6162000014                            SR6     B2+BPOINTS
                0200007577                  JP      DISKRLS2
                                  *
7573  56160                       DISKRLS1  SA1     B6
          0331007600                        NG      X1,DISKRLS3          NO MORE REAL BLOCKS
7574  6170007575                            CALL    CDEBLK    THESE 2 ROUTINES DO NOT DISTURB B4,B5, OR B6
7575  6170007576                            CALL    OLDBLCK
7576  6166000001                            SR6     B6+1
                6155777776                  SR5     B5-1
7577  0705007573                  DISKRLS2  LT      B0,B5,DISKRLS1
                                  *
7600  66740                       DISKRLS3  SR7     B4
          0270000000                        JP      B7
```

```
                                  *
                                  *                 THIS ROUTINE SETS ALL ADDRESSES IN USE BY FILE
                                  *                 WHOSE DESCRIPTOR IS AT DATA AS BUSY
                                  *
7601  76770                       RSYDSK    SX7     B7
            5170003010                      SA7     DISKADSV
7602  5110000262                            SA1     DATA
7603  6170007604                            CALL    BSYUNME
7604  6120000251                            SB2     DATA+1-HEADER
7605  6170007606                            CALL    NMBBLCKS
7606  6162000014                            SB6     B2+BPOINTS
                  0200007614                JP      BSYDSK2
                                  *
7607  56160                       RSYDSK1   SA1     B6
7610  6170007611                            CALL    BSYUNME
7611  6170007612                            CALL    CDEBLK
7612  6170007613                            CALL    BSYBLCK
7613  6166000001                            SB6     B6+1
                  6155777776                SB5     B5-1
7614  0705007607                  RSYDSK2   LT      B0,B5,BSYDSK1
                                  *
                  5110003010                SA1     DISKADSV
7615  63710                                 SB7     X1
            0270000000                      JP      B7
```

```
                                  *
                                  *                THIS ROUTINE SETS B5 TO NUMBER OF BLOCKS IN FILE AT B2
                                  *
7616  5112000012                  NMBBLCKS  SA1    B2+HEADER
                43063                       MX0    60-9
                     15210                  BX2    -X0*X1
7617  20163                                 LX1    60-9
           15110                            BX1    -X0*X1
                63510                       SB5    X1
7620  0302007621                 +           ZR     X2,*+1
                6251000001                  SB5    X1+1
7621  0270000000                            JP     B7
```

```
                                  *
                                  *                 THIS ROUTINE FINDS A FREE BLOCK. SEARCH STARTED AT
                                  *                          BIT WORD INDEX  BITWORDX  AND COUNTED UP TO
                                  *                          BITWDLMT.  PRODUCES PSEUDO BLOCK ADDRESS OF
                                  *                          14 BITS IN X6. RESETS BITWRDX.
                                  *
7622  43301                       NEWBLCK   Mx3     1
          20360                             Lx3     48
                6120000040                  SB2     32
7623  5110001272                            SA1     BITWDLMT
                63410                       SB4     X1
7624  5110001271                            SA1     BITWORDX
                63310                       SB3     X1
                                  *
7625  0634007633                  NEWBLCK1  GE      B3,B4,DISKFULL
                5113001273                  SA1     BITTABLE+B3
7626  24211                                 Nx2     B1,X1
          0712007630                        LT      B1,B2,NEWBLCK2      FOUND ONE
7627  6133000001                            SB3     B3+1
                0200007625                  JP      NEWBLCK1
                                  *
7630  23613                       NEWBLCK2  Ax6     B1,X3
          13616                             Bx6     X1-X6     TURN OFF THE FOUND BIT
                54610                       SA6     A1
                     76630                  Sx6     B3        SAVE THIS BIT WORD INDEX FOR NEXT SEARCH
7631  5160001271                            SA6     BITWORDX
                                  *
                76130                       Sx1     B3
                     20105                  Lx1     5
7632  76210                                 Sx2     B1
          12612                             Bx6     X1+X2
                0270000000                  JP      B7
                                  *
                                  *
7633  7160777776                  DISKFULL  Sx6     -1        SIGNAL DISK FULL
                0270000000                  JP      B7
```

```
                                  *
                                  *                THIS ROUTINE RELEASES A FREE BLOCK, ENTE WITH PSEUDO BLOCK ADDRESS
                                  *                          IN X1, RESETS BIT WORD X
                                  *
7634  43301                       OLDBLCK   MX3     1
            20360                           LX3     48
                  43067                     MX0     60-5
                        15610               BX6     -X0*X1     GET BIT NUMBER
7635  63160                                 SB1     X6
            11601                           BX6     X0*X1
                  20667                     LX6     60-5       GET WORD INDEX
                        63360               SB3     X6
7636  5113001273                            SA1     BITTABLE+B3
                  23613                     AX6     B1,X3
                        12616               BX6     X1+X6      INSERT BIT
7637  54610                                 SA6     A1
            5110001271                      SA1     BITWORDX
                        63110               SB1     X1
7640  76630                                 SX6     B3
7641  0631007642                  +         GE      B3,B1,*+1
                  54610                     SA6     A1         RESET BITWRDX IF NEW WORD INDEX IS SMALLER
7642  0270000000                            JP      B7
```

```
                                  *
                                  *
                                  *          THIS ROUTINE CONVERTS A PSEUDO BLOCK ADDRESS TO A DISK
                                  *                    ADDRESS. ENTER WITH PSEUDO BLOCK ADDRESS IN X6.
                                  *                    PLACES DISK ADDRESS WITH NEW UNIQUE NAME IN X6.
                                  *
                                  *          PSEUDO ADDRESS = A*256 + H*16 + S
                                  *          DISK ADDRESS = A*2048 + H*128 + S*8
                                  *
                                  *          A = 6 BITS
                                  *          S = 4 BITS ( 0 THROUGH 11 ONLY )
                                  *          H = 4 BITS
                                  *
                                  *
7643  43056                       DCDBLK   Mx0     60-14
          0336007647                       Ng      x6,DCDBLK1          ( NO BLOCK )
                    15660                  Bx6     -X0*X6    MAKE SURE ONLY 14 BITS
7644  20603                                Lx6     3
          5110001270                       SA1     UNAME
7645  7271000001                           Sx7     X1+1      STEP UNIQUE NAME
                54710                      SA7     A1
                    20721                  Lx7     17
7646  12667                                Bx6     X6+X7
7647  0270000000                  DCDBLK1  Jp      B7
```

```
                                  *
                                  *
                                  *                  THIS ROUTINE CONVERTS A DISK DDRESS TO A PSEUDO BLOCK ADDRESS.
                                  *                            ENTER WITH DISK ADDRESS AND UNIQUE NAME IN X1.
                                  *                            RETURNS WITH RESULT IN X6 AND X1.
                                  *
7650  43053                       CDEBLK    Mx0      60-17
          15110                             Bx1      -X0*X1    REDUCE TO DISK ADDRESS ONLY
               20171                        Lx1      60-3
                    43056                   Mx0      60-14
7651  15610                                 Bx6      -X0*X1
          10166                             Bx1      X6
               0270000000                   Jp       B7
```

```
                                  *
                                  *                  THIS ROUTINE MARKS A BLOCK AS BUSY
                                  *
7652  43301                       RSYBLCK   MX3       1
          20360                             LX3       48
                43067                       MX0       60-5
                      15610                 BX6       -X0*X1     GET BIT NUMBER
7653  63160                                 SB1       X6
          11601                             BX6       X0*X1
                20667                       LX6       60-5       GET WORD INDEX
                      63360                 SB3       X6
7654  5113001273                            SA1       BITTABLE+B3
                23613                       AX6       B1,X3
                      15616                 BX6       -X6*X1     CLEAR BIT
7655  54610                                 SA6       A1
          0270000000                        JP        B7
                                  *
                                  *
                                  *                  THIS ROUTINE INDICATES A UNIQUE NAME IS BUSY
                                  *
7656  43053                       RSYUNME   MX0       60-17
          11601                             BX6       X0*X1
                20653                       LX6       60-17
7657  5120001270                            SA2       UNAME
                37326                       IX3       X2-X6
7660  0323007661                  *         PL        X3,*+1
                5160001270                  SA6       UNAME
7661  0270000000                            JP        B7
```

```
                                  *
                                  *                THIS ROUTINE INITIALIZES BIT TABLE AND UNIQUE NAME COUNTER
                                  *
7662  76600                       SETUPBIT  SX6     B0
            5160001270                      SA6     UNAME
7663  5160001271                            SA6     BITWORDX
                  7160000030                SX6     NARMPS
7664  20603                                 LX6     3
            5160001272                      SA6     BITWDLMT
                                  *
7665  5110007675                            SA1     FULLBITS
                  10611                     BX6     X1
7666  6110000010                            SB1     B
                  6120000030                SB2     NARMPS
7667  6140001273                            SB4     BITTABLE
                  66340                     SB3     B4
                                  *
7670  56630                       SETUPB1   SA6     B3
            6133000010                      SB3     B3+B
7671  6122777776                            SB2     B2-1
                  0520007670                NE      B2,B0,SETUPB1
                                  *
7672  6111777776                            SB1     B1-1
                  6120000030                SB2     NARMPS
7673  6144000001                            SB4     B4+1
                  66340                     SB3     B4
7674  0510007670                            NE      B1,B0,SETUPB1
                                  *
                  0270000000                JP      B7
                                  *
                                  *
7675  20007777037774100000        FULLBITS  VFD     12/2000B,16/177760B,16/177760B,1/1,15/0
```

```
IO CO-ROUTINE ( PROCESS ) CONTROL CODE

                                  *
                                  *                 SAVE DATA FOR A CO ROUTINE
                                  *
                                  *                         SAVES B1, B2, B3, B6, B7  AT B5, B5+1
                                  *
7676  76610                       TOSAVE   Sx6     B1
          76720                            Sx7     B2
                43052                      Mx0     60-18     HANDLE NEGATIVE B REGS CORRECTLY
                      15660                Bx6     -X0*X6
7677  15770                                Bx7     -X0*X7
          20622                            Lx6     18
                12667                      Bx6     X6+X7
                      76730                Sx7     B3
7700  15770                                Bx7     -X0*X7
          20622                            Lx6     18
                12667                      Bx6     X6+X7
                      56650                SA6     B5
7701  76660                                Sx6     B6
          15660                            Bx6     -X0*X6
                74770                      Sx7     B7
                      15770                Bx7     -X0*X7
7702  20622                                Lx6     18
          12667                            Bx6     X6+X7
                5165000001                 SA6     B5+1
7703  0240000000                           JP      B4
                                  *
                                  *
                                  *                 RESTORE DATA FOR A CO ROUTINE FROM B5, B5+1
                                  *
7704  56150                       TORESTOR SA1     B5
          5125000001                       SA2     B5+1
                      63310                SB3     X1
7705  20152                                Lx1     60-18
          63210                            SB2     X1
                20152                      Lx1     60-18
                      63110                SB1     X1
7706  63720                                SB7     X2
          20252                            Lx2     60-18
                63620                      SB6     X2
7707  0240000000                           JP      B4
```

```
                                  *
                                  *
                                  *                    THIS CODE STARTS OP A NEW CO ROUTINE
                                  *
                                  *                              ENTERED USING FORK MACRO
                                  *
                                  *
7710  5160004376                  FORK      SA6        FORKJP
                5150004377                  SB5        MAINSV
7711  6140007712                            SB4        FORK1
                0200007676                  JP         TOSAVE
                                  *
7712  5150004401                  FORK1     SA5        FORKNXT
                0315007714                  N7         X5,FORK2
7713  6160007712                            SB6        FORK1
                0200007734                  JP         RSPNS
                                  *
7714  53250                       FORK2     SA2        X5
           10622                            BX6        X2
                5160004401                  SA6        FORKNXT
7715  63550                                 SB5        X5
           5110004376                       SA1        FORKJP
                     63410                  SB4        X1
7716  0240000000                            JP         B4
```

```
                                  *
                                  *
                                  *                  THIS CODE ALLOWS ALL IO TO TERMINATE
                                  *
7717  6150004377                  IOWAIT    SR5      MAINSV
                                  *
                                            IFNE     TFLAG,1
                                            ENDIF
                                  *
                                  *
7720  5110000251                  IOWAIT1   SA1      ACTVCNT
                0301007722                  ZR       X1,IOWAIT2
7721  6160007720                            SR6      IOWAIT1
                0200007734                  JP       RSPNS
                                  *
7722  0270000000                  IOWAIT2   JP       R7
                                  *
                                  *
                                  *                  THIS CODE STOPS A CO ROUTINE UNTIL A RESPONSE FOR IT COMES IN
                                  *
                                  *                            CALLED BY IOBLOCK MACRO
                                  *
7723  6140007724                  IOBLOCK   SR4      *+1
                0200007676                  JP       IOSAVE
7724  6150004377                            SR5      MAINSV
7725  6140007726                  *         SR4      *+1
                0200007704                  JP       IORESTOR
7726  0270000000                            JP       R7
                                  *
                                  *
                                  *                  THIS CODE TERMINATES A CO ROUTINE
                                  *
7727  5110004401                  IOFINI    SA1      FORKNXT
                10611                       BV6      X1
                     56650                  SA6      R5
7730  76650                                 SX6      R5
          5160004401                        SA6      FORKNXT
7731  5110004402                            SA1      RSPNSSV
                63510                       SR5      X1
7732  6140007733                  *         SR4      *+1
                0200007704                  JP       IORESTOR
7733  0260000000                            JP       R6
```

```
                                  *
                                  *
                                  *                THIS CODE GETS A RESPONSE AND CONTINUES APPROPRIATE
                                  *                         CO ROUTINE
                                  *
7734  6140007735                  RSPNS    SB4     *+1
                0200007676                JP      IOSAVE    SAVE CURRENT REGISTERS
7735  76650                                SX6     B5
          5160004402                      SA6     RSPNSSV   SAVE CURRENT CO ROUTINE POINTER
7736  0130000105000000000                 XJ      GRESP
7737  5110000251                          SA1     ACTVCNT
                7261777776                SX6     X1-1
7740  54610                               SA6     A1        DECREMENT ACTVCNT
          5170000257                      SA7     RESPONSE
                    10677                 BX6     X7
7741  20653                               LX6     60-17
          43050                           MX0     60-20
                15660                     BX6     -X0*X6    GET USER INDEX
                    63560                 SB5     X6
7742  6140007743                  *       SB4     *+1
                0200007704                JP      TORESTOR
7743  5110000257                          SA1     RESPONSE
                43063                     MX0     60-9
                    15610                 BX6     -X0*X1    GET SLOT INDEX
7744  5160000101                          SA6     PSLOT+2
7745  0130000077000000000                 XJ      PSLOT     RETURN SLOT
7746  5110000257                          SA1     RESPONSE
                20117                     LX1     60-45
                    43060                 MX0     60-12
7747  15610                               BX6     -X0*X1    PLACE STATUS WRD1 IN X6
          20104                           LX1     4
                43070                     MX0     60-4
                    15510                 BX5     -X0*X1    PLACE TERMINATION INDICATION IN X5
7750  20103                               LX1     3
          43071                           MX0     60-3
                15410                     BX4     -X0*X1    PLACE FINAL RETRY COUNT IN X4
                    20101                 LX1     1
7751  43073                               MX0     60-1
          15310                           BX3     -X0*X1    PLACE RW BIT IN X3
                20134                     LX1     28
                    43064                 MX0     60-8
7752  15210                               BX2     -X0*X1    PLACE BUFFER INDEX IN X2
          20111                           LX1     9         REALIGN RESPNSE IN X1
                0260000000                JP      B6
```

```
                                  *
                                  *
                                  *                  PERFORM DISK WRITE, BUFFER ALREADY OBTAINED AND FILLED
                                  *
7753  7110000001                  WRDISK    Sx1      1          RW BIT
                5120000252                  SA2      BUFX       BUFFER INDEX
7754  6140007755                  *         SB4      *+1
                0200010053                  JP       SETREQ
7755  0130000102000000000                   XJ       PREQ       SEND REQUEST
7756  6160007757                            IOBLOCK
                                  *
7757  5110000247                            SA1      WRCNT
                7271000001                  Sx7      X1+1
7760  54710                                 SA7      A1
          0303007763                        ZP       X3,WRDISKE1          READ RESPONSE, SHOULD HAVE BEEN WRITE
7761  0312007763                            NZ       X2,WRDISKE1          BUFX NE 0, IMPOSSIBLE
                0315007771                  NZ       X5,WRDISKE2          NZ TERMINATION , HENCE ERROR
7762  7110000001                            Sx1      1
                0270000000                  JP       B7         OK EXIT
                                  *
7763  0302007771                  WRDISKE1  ZP       X2,WRDISKE2          BUFX = 0, SO DONT RELEASE IT
                10622                       Bx6      X2
7764  5160000252                            SA6      BUFX
7765  6160007766                  *         SB6      *+1
                0200010044                  JP       DOBUF      GET BUFFER POINTER AND SZX
7766  66470                                 SB4      B7
7767  6170007770                            CALL     PUTBUF
7770  66740                                 SB7      B4
                                  *
7771  7110777776                  WRDISKE2  Sx1      -1
                0270000000                  JP       B7         ERROR EXIT
```

```
                                  *
                                  *
                                  *                  PERFORMS DISK READ, CHECKS CHECK WORD, SETS BUFX, PBUF
                                  *
 7772  5110000250                 RDDISK    SA1      RDCNT
                 0311007774                 NZ       X1,RDDISK1
 7773  6160007772                           SB6      RDDISK
                 0200007734                 JP       RSPNS     DO  A RESPONSE, WAITING FOR A READ TO COMPLETE
                                  *
 7774  7261777776                 RDDISK1   SX6      X1-1
                 54610                      SA6      A1        DECREMENT READ COUNT
                      76100                 SX1      B0        RW BIT
 7775  76200                                SX2      B0        BUFFER INDEX
 7776  6140007777                 +         SB4      *+1
                 0200010053                 JP       SETREQ
 7777  0130000102000000000                  XJ       PREQ      SEND REQUEST
                                  *
                                  *
10000  7110000001                           SX1      1
                 5120000104                 SA2      PREQ+2
10001  76300                                SX3      B0
10002  6140010003                 +         SB4      *+1
                 0200010604                 JP       INFO      SAVE INFO FOR ANALYSIS
                                  *
                                  *
10003  6160010004                           IOBLOCK
                                  *
10004  5110000250                           SA1      RDCNT
                 7271000001                 SX7      X1+1
10005  54710                                SA7      A1        INCREMENT READ COUNT
            0313010025                      NZ       X3,RDDISKE1        WRITE RESPONSE, SHOULD HAVE BEEN READ
10006  0302010025                           ZR       X2,RDDISKE1        BUFX = 0, IMPOSSIBLE
                 0315010026                 NZ       X5,RDDISKE2        NZ TERMINATION, HENCE ERROR
10007  10622                                BX6      X2
            5160000252                      SA6      BUFX
10010  6160010011                 +         SB6      *+1
                 0200010044                 JP       DOBUF     GET BUFFER POINTER AND SZX
10011  56110                                SA1      B1
            43053                           MX0      60-17
                 11101                      BX1      X0*X1
10012  0301010013                 +         ZR       X1,*+1    DO NOT CHECK UNIQUE NAME
                 76000            -         SX0      B0
10013  7110000053                           SX1      C.DISKF
                 5120000254                 SA2      PBUF
10014  7130000261                           SX3      CHKWD
                 7140000001                 SX4      1
10015  66470                                SB4      B7
10016  6170010017                           CALL     READF
10017  66740                                SB7      B4
                                  *
                                  *
            7110000002                      SX1      2
10020  5120000257                           SA2      RESPONSE
```

```
                 5130000261                 SA3     CHKWD
10021  6140010022                 *          SB4     *+1
                 0200010604                 JP      INFO      SAVE INFO FOR ANALYSIS
                                 *
                                 *
10022  5110000261                           SA1     CHKWD
                 56210                      SA2     B1
                      13312                 BX3     X1-X2
10023  15330                                BX3     -X0*X3
            0313010030                      NZ      X3,RDDISKE3          CHECK WORD FAILS
10024  7110000001                           SX1     1
                 0270000000                 JP      B7        OK EXIT
                                 *
                                 *
10025  7110777776                RDDISKE1   SX1     -1        ERROR RESPONSE, SIGNAL NOT TO RETURN BUFFER
                 0270000000                 JP      B7
                                 *
10026  10622                     RDDISKE2   BX6     X2
            5160000252                      SA6     BUFX
10027  6160010030                 *          SB6     *+1
                 0200010044                 JP      DOBUF     GET BUFFER POINTER AND SZX
                                 *
10030  7110777775                RDDISKE3   SX1     -2        ERROR RESPONSE, SIGNAL TO RETURN BUFFER
                 0270000000                 JP      B7
```

```
                                  *
                                  *
                                  *                  CODE TO GET A BUFFER FOR WRITE
                                  *
10031  5110000247                 GETBUF    SA1      WRCNT
                 0311010033                 N7       X1,GETBUF1
10032  6160010031                           SR6      GETBUF
                 0200007734                 JP       RSPNS     DO A RESPONSE, WAIT FOR A WRITE TO COMPLETE
                                  *
10033  7261777776                 GETBUF1   SX6      X1-1
                 54610                      SA6      A1        DECREMENT WRITE COUNT
10034  0130000057000000000                  XJ       GBUF.513
10035  5170000252                           SA7      BUFX
10036  66670                      *         SR6      B7
            0200010044                      JP       DOBUF     GET BUFFER POINTER AND SZX
                                  *
                                  *
                                  *                  CODE TO RELEASE A BUFFER
                                  *
10037  5110000255                 PUTBUF    SA1      BUFSZX
                 10211                      BX2      X1
                      20201                 LX2      1
10040  36112                                IX1      X1+X2     SIZE * 3
            5120000252                      SA2      BUFX
                      10622                 BX6      X2
10041  5261000063                           SA6      PBUF.64+2+X1
                 6241000061                 SR4      PBUF.64+X1
10042  0130777773000000000                  XJ       -4
10043  0270000000                           JP       B7
```

```
                                  *
                                  *
                                  *                THIS CODE HANDLES BUFFER POINTER AND SZX DATA
                                  *
10044  7110000053                 DORUF    SX1      C.DISKF
                5120000252                 SA2      BUFX
10045  7130000253                          SX3      PBUFD
                7140000001                 SX4      1
10046  66470                              SB4      B7
10047  6170010050                         CALL     READF
10050  66740                              SB7      B4
            5110000253                     SA1      PBUFD
                     73610                 SX6      X1
10051  5160000254                         SA6      PBUF
                20152                      LX1      60-18
                     73610                 SX6      X1
10052  5160000255                         SA6      BUFSZX
                0260000000                 JP       B6
```

```
                                    *
                                    *
                                    *                THIS CODE PREPARES A DISK IO REQUEST
                                    *
10053  0130000075000000000     SETREQ    XJ      GSLOT
10054  5170000260                        SA7     XSLOT
                 56310                   SA3     B1        PICK UP DISK ADDRESS
                      43053              MX0     60-17
10055  15630                             BX6     -X0*X3
            7130000032                   SX3     32B       SZX = 3, RETRY CNT = 2
                      20605              LX6     5
10056  12663                             BX6     X6+X3
            20601                        LX6     1
                 12661                   BX6     X6+X1     INSERT RW BIT
                      76350              SX3     B5
10057  20624                             LX6     20
            12663                        BX6     X6+X3     INSERT USER INDEX
                 20610                   LX6     8
                      12662              BX6     X6+X2     INSERT BUFFER INDEX
10060  20611                             LX6     9
            12667                        BX6     X6+X7     INSERT SOT INDEX
                 5160000104              SA6     PREQ+2
10061  5110000251                        SA1     ACTVCNT
                 7271000001              SX7     X1+1
10062  54710                             SA7     A1                  BUMP ACTVCNT
            0240000000                   JP      B4
```

```
                                  *
                                  *                          GET TAPE
                                  *
10063  66670                      GETTAPE   SB6     B7
10064  0130000132000000000                 XJ      SAVE
10065  6160000010                          SB6     8          LOCK UP SYSTEM
10066  0130004462000000000                 XJ      READ
10067  0130000134000000000                 XJ      RESTOR
10070  5110010120                          SA1     TPCHKEV    PREPARE MARKER EVENT
                10611                      BX6     X1         TO CLEAR TAPE CHANNELS
10071  5160000214                          SA6     TREQ+2
10072  0130000212000000000       GETTAPE1  XJ      TREQ
10073  7266777774                          SX6     X6-3
                0336010077                 NG      X6,GETTAPE2          EVENT SENT
10074  0130000215000000000                 XJ      TRSP
10075  0130000215000000000                 XJ      TRSP
10076  0200010072                          JP      GETTAPE1
                                  *
10077  0130000215000000000       GETTAPE2  XJ      TRSP
10100  43061                               MX0     60-11
            15770                          BX7     -X0*X7     GET SEQ NO
                5110010121                 SA1     TPCHKSQ
10101  37171                               IX1     X7-X1
            0311010077                     NZ      X1,GETTAPE2          HAVNT GOT IT YET
                                  *
                    66760                  SB7     B6
10102  0270000000                          JP      B7
                                  *
                                  *                  SET TAPE
                                  *
10103  66670                      SETTAPE   SB6     B7
            7110000005                     SX1     05B        ( CLEAR )
10104  6170010105                          CALL    TAPEACT
10105  6170010106                          CALL    TAPERSP
10106  7110000001                          SX1     01B        ( BINARY )
10107  6170010110                          CALL    TAPEACT
10110  6170010111                          CALL    TAPERSP
10111  7110000010                          SX1     10B        ( REWIND )
10112  6170010113                          CALL    TAPEACT
10113  6170010114                          CALL    TAPERSP
10114  7110000006                          SX1     06B        ( 800 BPI )
10115  6170010116                          CALL    TAPEACT
10116  6170010117                          CALL    TAPERSP
10117  66760                               SB7     B6
            0270000000                     JP      B7
                                  *
10120  3675000110010000100       TPCHKEV   VFD     1/0,11/3675B,12/1,12/513,12/0,12/100B
10121  0000000000000003675       TPCHKSQ   DATA    3675B
                                  *
                                  *                  PUT TAPE
                                  *
10122  0130000132000000000       PUTTAPE   XJ      SAVE
10123  6160000011                          SB6     9          UNLOCK SYSTEM
```

```
10124  0130004462000000000   XJ   READ
10125  0130000134000000000   XJ   RESTOR
10126  0270000000            JP   B7
```

```
                                  *
                                  *                INITIATE A TAPE READ
                                  *
10127  7110000101                 TREAD    Sx1      101B
                0200010263                JP       TAPEACT
                                  *
                                  *                COMPLETE A TAPE READ
                                  *
10130  66670                      TCHKRD   SB6      B7
            7160000005                    Sx6      5
10131  5160001734                         SA6      TRPTCNT
                                  *
10132  6170010133                 TCHKRD1  CALL     TAPERSP
10133  0327010157                         PL       X7,TCHKRD4          READ WAS OK
                10677                     Bx6      X7
                    20644                 Lx6      60-24
10134  7100000010                         Sx0      10B        EOF BIT
                11006                     Bx0      X0*X6
10135  0310010155                         NZ       X0,TCHKRD3          WAS EOF
                5110001734                SA1      TRPTCNT
10136  7261777776                         Sx6      X1-1
                54610                     SA6      A1
10137  0306010164                         ZR       X6,TCHKRD4A
                7110010143                Sx1      TPMSG
10140  6170010141                         CALL     SPCLMSG
10141  7160000002                         Sx6      2
                5160001734                SA6      TRPTCNT
10142  0200010147                         JP       TCHKRD2
                                  *
10143  24012005552001221124     TPMSG    DYS      ..TAPE PARITY ERROR, WILL RETRY.
                                  *
10147  7110000012                 TCHKRD2  Sx1      12B        ( BACK SPACE )
10150  6170010151                         CALL     TAPEACT
10151  6170010152                         CALL     TAPERSP
10152  7110000101                         Sx1      101B
10153  6170010154                         CALL     TAPEACT
10154  0200010132                         JP       TCHKRD1
                                  *
10155  7160777776                 TCHKRD3  Sx6      -1         EOF
                5160000262                SA6      DATA
10156  66760                              SB7      B6
            0270000000                    JP       B7
                                  *
10157  7110000026                 TCHKRD4  Sx1      C.TAPE     OK READ
                76200                     Sx2      B0
10160  7130000262                         Sx3      DATA
                7140001001                Sx4      513
10161  6170010162                         CALL     READF
10162  7160000001                         Sx6      1
                66760                     SB7      B6
10163  0270000000                         JP       B7
                                  *
                                  *
```

```
                                  *                  READ ERRORS COME HERE IF PERSISTENT
                                  *
10164  7110000026                 TCHKRD4A  Sx1      C.TAPE
                  76200                     Sx2      B0
10165  7130000262                           Sx3      DATA
                  7140001001                Sx4      513
10166  6170010167                           CALL     READF
10167  73610                                Sx4      61
            5160001736                      SA6      RDERFLAG
10170  0130000165000000000                  XJ       SPCLSVE
10171  6160000004                           SB6      4
10172  0130004462000000000                  XJ       READ
10173  0130000167000000000                  XJ       SPCLREST
10174  7160000005                           Sx6      5
                  5160001734                SA6      TRPTCNT
10175  5110001736                           SA1      RDERFLAG
                  0311010147                NZ       X1,TCHKRD2
10176  7160000001                           Sx6      1
                  66760                     SB7      B6
10177  0270000000                           JP       B7
```

```
                                  *
                                  *                  INITIATE A TAPE READ
                                  *
10200  66670                      TWRITE   SB6        B7
            5110000262                     SA1        DATA
                      10611                BX6        X1
10201  20102                               LX1        2
            36616                          IX6        X1+X6      COMPUTE BYTE COUNT
                  54610                    SA6        A1
10202  7110000026                          SX1        C.TAPE
                  76200                    SX2        B0
10203  7130000262                          SX3        DATA
                  7150001001               SX5        513
10204  6170010205                          CALL       WRITEF
10205  66760                               SB7        B6
            7110000102                     SX1        102B
10206  0200010263                          JP         TAPEACT
                                  *
                                  *                  COMPLETE A TAPE WRITE
                                  *
10207  66670                      TCHKWR   SB6        B7
            76600                          SX6        B0
                  5160001734               SA6        TRPTCNT
                                  *
10210  6170010211                 TCHKWR1  CALL       TAPERSP
10211  0327010253                          PL         X7,TCHKWR7          WRITE WAS OK
                  10677                    BX6        X7
                      20644                LX6        60-24
10212  7100000040                          SX0        40B        ( END OF TAPE BIT )
                  11006                    BX0        X0*X6
10213  0300010221                          ZP         X0,TCHKWR3
                  7110010217               SX1        EOTMSG
10214  6170010215                          CALL       SPCLMSG
10215  0000000000                 TCHKWR2  PS
10216  0200010215                          JP         TCHKWR2
                                  *
10217  05160455170655240120       EOTMSG   DIS        ..END OF TAPE. SORRY.
                                  *
10221  5110001734                 TCHKWR3  SA1        TRPTCNT
                  7261777776               SX6        X1-1
10222  54610                               SA6        A1
            0326010245                     PL         X6,TCHKWR6
10223  7110010254                          SX1        BSPTMSG
10224  6170010225                          CALL       SPCLMSG
10225  7160000002                          SX6        2
                  5160001734               SA6        TRPTCNT
10226  7110000012                          SX1        12B        ( BACK SPACE )
10227  6170010230                          CALL       TAPEACT
10230  6170010231                          CALL       TAPERSP
10231  7110000016                          SX1        16B        ( SKIP BAD SPOT )
10232  6170010233                          CALL       TAPEACT
10233  6170010234                          CALL       TAPERSP
10234  10677                               BX6        X7
```

```
                20644                          Lx6      60-24
                      7100002000               Sx0      2000B     TAPE PARITY CHECK
10235  11006                                   Bx0      X0*X6
                0300010242                     Zr       X0,TCHKWR5
10236  7110010257                              Sx1      VBSPTMSG
10237  6170010240                              CALL     SPCLMSG
10240  0000000000                TCHKWR4       Ps
10241  0200010240                              Jp       TCHKWR4
                                 *
10242  7110000102                TCHKWR5       Sx1      102B
10243  6170010244                              CALL     TAPEACT
10244  0200010210                              Jp       TCHKWR1
                                 *
10245  7110000012                TCHKWR6       Sx1      12B
10246  6170010247                              CALL     TAPEACT
10247  6170010250                              CALL     TAPERSP
10250  7110000102                              Sx1      102B
10251  6170010252                              CALL     TAPEACT
10252  0200010210                              Jp       TCHKWR1
                                 *
10253  66760                     TCHKWR7       Sr7      R6
                0270000000                     Jp       R7
                                 *
                                 *
10254  24012005550201045523      BSPTMSG       DIS      ..TAPE BAD SPOT SKIPPED.
10257  02010455232017245503      VBSPTMSG      DIS      ..BAD SPOT CAN NOT BE SKIPPED, SORRY.
```

```
                                  *
                                  *                  MAKE A TAPE REQUEST
                                  *
10263  5120001733                 TAPEACT   SA2      TAPECDE
                12612                       BY6      X1+X2
10264  5160000214                           SA6      TREQ+2
10265  01300002120000000000                 XJ       TREQ
10266  0270000000                           JP       B7
                                  *
                                  *                  GET A TAPE RESPONSE, HANDLE ERROR RECOVERY BIT
                                  *
10267  01300002150000000000       TAPERSP   XJ       TRSP
10270  5170001732                           SA7      TRESPONS
                0357010272                  OP       X7,TAPERSP1          REQUEST IGNORED
10271  0337010272                           NG       X7,TAPERSP1          ERROR ON RESPONSE
                0270000000                  JP       B7
                                  *
10272  5110001733                 TAPERSP1  SA1      TAPECDE   FLIP ERROR RECOVERY BIT
                43001                       MY0      1
                    13601                   BY6      X0-X1
10273  54610                               SA6      A1
           0327010302                       PL       X7,TAPERSP2
10274  5110001732                           SA1      TRESPONS
                20160                       LY1      60-12
10275  7100000003                           SY0      3
                11101                       BX1      X0*X1
10276  0311010302                           NZ       X1,TAPERSP2          REMAKE REQUEST IF REJECTED
                                  *
                5110001732                  SA1      TRESPONS
10277  20144                               LY1      60-24
           7100004001                       SY0      4001B     TEST STATUS OF RESEARVED, NT RDY
                    11110                   BX1      X1*X0
10300  7100000001                           SY0      0001B     DESIRED VALUES
                13110                       BY1      X1-X0
10301  0311010302                           NZ       X1,TAPERSP2
                0270000000                  JP       B7
10302  5110000214                 TAPERSP2  SA1      TREQ+2    RE MAKE REQUEST IF IT WAS IGNORED
                43001                       MY0      1
                    13601                   BX6      X0-X1     BUT WITH ERROR RECOVERY BIT REVERSED
10303  54610                               SA6      A1
10304  01300002120000000000                 XJ       TREQ
10305  0200010267                           JP       TAPERSP
```

```
                                  *
                                  *                  CHECK TAPE STATUS AFTER LAST OP
                                  *                            ITEMS TO BE CHECKED IN X0
                                  *                            VALUES IN X1
                                  *
 10306  5120001732                TPCHKST   SA2      TRESPONS
                  20244                     LX2      60-24
                        13612               BX6      X1-X2
 10307  11606                              BX6      X0*X6
              0270000000                   JP       B7
```

```
                                  *
                                  *                  GET AND INITIALIZE A FILE FOR LIST OPS
                                  *
10310  0130000132000000000   GETF     XJ        SAVE
10311  6110001743                      SB1       LISTFBLK
                  5110001702           SA1       PARAMS+1
10312  5120001703                      SA2       PARAMS+2
                  6170000034           SB7       C.LISTF
10313  66600                           SB6       B0
10314  0130004462000000000             XJ        BEAD
10315  76600                           SX6       B0
            5160001747                 SA6       LISTFPNT
10316  0130000134000000000             XJ        RESTOR
10317  0270000000                      JP        B7
                                  *
                                  *
                                  *                  PUT AWAY A FILE USED FOR LIST OPS
                                  *
10320  0130000132000000000   PUTF     XJ        SAVE
10321  6110001743                      SB1       LISTFBLK
                  6160000001           SB6       1
10322  0130004462000000000             XJ        BEAD
10323  0130000134000000000             XJ        RESTOR
10324  0270000000                      JP        B7
```

```
                                  *
                                  *                 GET NEXT LINE OF A FILE FOR LIST OPS
                                  *
10325  66670                      NEXTF     SB6     B7
            6150000012                      SB5     10        MAX NO WORDS PERMITTED
10326  7110000034                           SX1     C,LISTF
                  5120001747                SA2     LISTFPNT
10327  7130001662                           SX3     INSTRING
                  7140000001                SX4     1
                                  *
10330  6170010331                 NEXTFL1   CALL    READF
10331  0336010350                           NG      X6,NEXTF3          FRETURN
                  53530                     SA5     X3
10332  0325010346                           PL      X5,NEXTF1          DATA WD, IGNORE
                  0375010347                ID      X5,NEXTF2          SLOPPY SEGMENT
10333  0355010350                           OR      X5,NEXTF3          END OF FILE
                                  *
10334  7222000001                 NEXTFW    SX2     X2+1               HAVE A DATA WORD
                  7233000001                SX3     X3+1
10335  6155777776                           SB5     B5-1
                  0450010342                EQ      B5,B0,NEXTF5       BUFFER FULL, WXIT
10336  6170010337                 NEXTFW1   CALL    READF
10337  0336010342                           NG      X6,NEXTF5          FRETURN
                  53530                     SA5     X3
10340  0325010334                           PL      X5,NEXTFW          DATA WORD, PROCEED
                  0375010352                ID      X5,NEXTF4          SLOPPY SEG
10341  0355010342                           OR      X5,NEXTF5          END OF INFO
                                  *
10342  73620                      NEXTF5    SX6     X2        HAVE FIRST OF NEXT LINE, OR EOI, OR ETC.
            5160001747                      SA6     LISTFPNT
10343  5150010353                           SA5     NEXTFCR            CONTAINS A CR
                  10655                     BX6     X5
                       53630                SA6     X3
                                  *
10344  66760                      NEXTFX    SB7     B6
            6160000001                      SB6     +1                 OK EXIT
10345  0270000000                           JP      B7
                                  *
10346  7222000001                 NEXTF1    SX2     X2+1
                  0200010330                JP      NEXTFL1
                                  *
10347  36225                      NEXTF2    IX2     X2+X5
            0200010330                      JP      NEXTFL1
                                  *
10350  66760                      NEXTF3    SB7     B6        END OF INFO EXIT ETC.
            6160777776                      SB6     -1
10351  0270000000                           JP      B7
                                  *
10352  36225                      NEXTF4    IX2     X2+X5
            0200010336                      JP      NEXTFW1
                                  *
10353  03320000000000000000       NEXTFCR   VFD     4/0,7/155B,49/0
```

```
                                  *
                                  *                THIS ROUTINE LOCATES A FLAG
                                  *                PLACES ADDRESS IN B2  ( -1 IF DID NOT LOCATE )
                                  *
10354  5110001702                 FNDFLG    SA1    PARAMS+1
                 6120000010                  SB2    NFLAGS
                                  *
10355  5122001755                 FNDFLG1   SA2    FLAGS+B2+1
                 13212                       BX2    X1-X2
10356  0312010360                            NZ     X2,FNDFLG2
                 0332010360                  NG     X2,FNDFLG2
10357  6122001754                            SB2    FLAGS+B2
                 0270000000                  JP     B7
                                  *
10360  6122777776                 FNDFLG2   SB2    B2-2
                 0620010355                  GE     B2,B0,FNDFLG1
10361  0270000000                            JP     B7
                                  *
                                  *                THIS ROUTINE TESTS A FLAG
                                  *
10362  56110                      FLAGTST   SA1    B1
            0311010366                       NZ     X1,FLAGTST1
10363  6111000001                            SB1    B1+1
                 6120000144                  SB2    100
10364  6170010365                            CALL   PACK
10365  6110010367                            SB1    FLAGMSG
                 0200004554                  JP     NXTCMMD
                                  *
10366  0270000000                 FLAGTST1  JP     B7
                                  *
10367  5506140107551617245 5      FLAGMSG   DIS    ,, FLAG NOT ON, REQUEST IGNORED.
```

```
                                  *
                                  *
                                  *
                                  *                THIS ROUTINE BROADCASTS THE CONTENTS OF OUTBUF
                                  *
                                  *                THEN RESETS OUTBUF
                                  *
10373  76670                      BRDCAST   SX6     B7
            5160004354                      SA6     BRDSVB7
10374  6120000144                           SB2     100
10375  6170010376                           CALL    PACK
10376  76600                               SX6     B0
            5160004352                      SA6     OUTCNTB
10377  5160004355                           SA6     OUTWRDX
                 5160004351                SA6     INFLAG
                                  *
10400  6170010401                 BRDCAST1  CALL    NEWCHAR
10401  0300010404                           ZR      X0,BRDCAST2
10402  6170010403                           CALL    PUTCHAR
10403  0300010404                           ZR      X0,BRDCAST2
                 0200010400                JP      BRDCAST1
                                  *
10404  6170010405                 BRDCAST2  CALL    PUTCHAR
10405  6170010406                           CALL    BRDRESET
10406  0130000237000000000                 XJ      PTBRDMSG
10407  0130000244000000000                 XJ      PTBRDEV
10410  5110004354                           SA1     BRDSVB7
                 63710                     SB7     X1
10411  0270000000                           JP      B7
                                  *
                                  *
                                  *
                                  *
                                  *                THIS ROUTINE RESETS OUTBUF
                                  *
                                  *
10412  76600                      BRDRESET  SX6     B0
            5160001707                      SA6     OUTCNT
10413  7160000011                           SX6     11B       INDICATE FIRST OF LINE
                 20607                     LX6     7
10414  7160000155                           SX6     155B      INSTALL A CARRIAGE RETURN
                 20661                     LX6     7*7       POSITION IT
10415  5110001706                           SA1     OUTPOINT
                 53610                     SA6     X1        STORE IT
10416  0270000000                           JP      B7
                                  *
                                  *
                                  *                THIS ROUTINE BROADCASTS ONLY IF SFLAG = 0
                                  *
                                  *
10417  5110001762                 SBRDCAST  SA1     SFLAG
                 0301010373                ZR      X1,BRDCAST
10420  0270000000                           JP      B7
```

```
                                 *
                                 *
                                 *                GET A NEW CHARACTER
                                 *
                                 *
                                 *        INWDX   CURRENT WORD
                                 *        INCNT   NUMBER OF CHARACTERS LEFT IN CURRENT WORD
                                 *        INFLAG  0        NEW LINE NEEDED
                                 *                1        NORMAL
                                 *                2        LINE FEED NEEDED, THEN INFLAG = 0
                                 *
                                 *
                                 *                ON RETURN X0 = 1 IF MORE TO COME, 0 IF THIS MESSAGE FINISHED
                                 *
                                 *
                        155      CR      EQU     155B
                        152      LF      EQU     152B
                                 *
                                 *
10421  76670                     NEWCHAR SX6     B7
            5160004346                   SA6     NWCHRSB7
10422  5110004351                         SA1     INFLAG
                0301010425               ZR      X1,NEWCHAR0
10423  7211777776                         SX1     X1-1
                0301010427               ZR      X1,NEWCHAR1
10424  0200010442                         JP      NEWCHAR2
                                 *
10425  76600                     NEWCHAR0 SX6     B0
            5160004350                   SA6     INCNT
10426  7160777776                         SX6     -1
                5160004347               SA6     INWDX
                                 *
10427  5110004350                NEWCHAR1 SA1     INCNT
                0311010433               NZ      X1,NEWCHARA
10430  5110004347                         SA1     INWDX
                7261000001               SX6     X1+1
10431  54610                             SA6     A1
            5216001710                   SA1     X6+OUTBUF
                  20104                  LX1     4
10432  10611                             BX6     X1
            54610                        SA6     A1
                7110000010               SX1     B
                                 *
10433  7261777776                NEWCHARA SX6     X1-1
                5160004350               SA6     INCNT
10434  5110004347                         SA1     INWDX
                5211001710               SA1     X1+OUTBUF
10435  20107                             LX1     7
            10611                        BX6     X1
                54610                    SA6     A1
                      43065              MX0     60-7
10436  15660                             BX6     -X0*X6
            5160004353                   SA6     CHAR
```

```
10437  7256777622                          Sx5     X6-CR
                 7100000001                Sx0     1
10440  7160000001                          Sx6     1
                 0315010444                N7      X5,NEWCHARZ
10441  7160000002                          Sx6     2
                 0200010444                Jp      NEWCHARZ
                                 *
10442  7160000152                NEWCHAR2  Sx6     LF
                 5160004353                SA6     CHAR
10443  76600                               Sx6     B0
            76000                          Sx0     B0
                 0200010444                Jp      NEWCHARZ
                                 *
10444  5160004351                NEWCHARZ  SA6     INFLAG
                 5110004346                SA1     NWCHRSB7
10445  63710                               SB7     X1
            0270000000                     Jp      B7
```

```
                                  *
                                  *
                                  *                INSERT A CHARACTER INTO BROADCAST MESSAGE
                                  *
                                  *        OUTWRDX  CURRENT WORD BEING ASSEMBLED
                                  *        OUTCNTB  NUMBER OF FREE SPACES IN CURRENT WORD
                                  *
                                  *
                                  *                ON RETURN X0 = 1 IF MORE ROOM, 0 IF NO MORE ROOM
                                  *
                                  *
                                  *
                                  *                SENDS NON PARITY TTY CODES
                                  *
                                  *
                          40      BLANK    EQU     40B
                                  *
                                  *
10446  5110004353                 PUTCHAR  SA1     CHAR
                43065                      MX0     60-7
                      15110                BX1     -X0*X1
10447  7211000040                         SX1     X1+40B              CONVERT TO TTY
                15110                      BX1     -X0*X1
10450  5120004352                         SA2     OUTCNTB
                0312010454                 NZ      X2,PUTCHARA
10451  5120004355                         SA2     OUTWRDX
                7262000001                 SX6     X2+1
10452  7222777757                         SX2     X2-MAXMSG
                0322010463                 PL      X2,PUTCHARD
10453  54620                              SA6     A2
           7120000005                      SX2     5
                                  *
10454  7262777776                 PUTCHARA SX6     X2-1
                5160004352                 SA6     OUTCNTB
10455  43060                              MX0     60-12
           43260                           MX2     60-12
                7130000040                 SX3     BLANK
                                  *
10456  0306010461                 PUTCHARB ZR      X6,PUTCHARC
                20114                      LX1     12
                      12113                BX1     X1+X3
10457  20214                              LX2     12
           11202                           BX2     X0*X2
                7266777776                 SX6     X6-1
10460  0200010456                         JP      PUTCHARB
                                  *
10461  5140004355                 PUTCHARC SA4     OUTWRDX
                5244004355                 SA4     X4+MSGBUF
10462  11624                              BX6     X2*X4
           12616                           BX6     X1+X6
                54640                      SA6     A4
                                  *
10463  5110004352                 PUTCHARD SA1     OUTCNTB
```

```
                  0311010467                  N7        X1,PUTCHARE
 10464  5110004355                            SA1       OUTWRDX
                  7221777757                  SX2       X1-MAXMSG
 10465  0332010467                            NG        X2,PUTCHARE
                  76000                       SX0       B0
 10466  0270000000                            JP        B7
                                  *
 10467  7100000001                PUTCHARE    SX0       1
                  0270000000                  JP        B7
                                  *
```

```
                                 *
                                 *        READ FROM A FILE
                                 *
10470  10611                     READF    Bx6      x1
            10722                         Bx7      x2
                   5160000115             SA6      RFILE+1
10471  5170000116                        SA7      RFILE+2
                   10633                 Bx6      x3
                        10744            Bx7      x4
10472  5160000117                        SA6      RFILE+3
                   5170000120            SA7      RFILE+4
10473  7160000001                        Sx6      1
10474  0130000114000000001               XJ       RFILE,1
10475  7160777776                        Sx6      -1
10476  0270000000                       JP       B7
                                 *
                                 *        WRITE TO A FILE
                                 *
10477  10611                     WRITEF   Bx6      x1
            10722                         Bx7      x2
                   5160000110             SA6      WFILE+1
10500  5170000111                        SA7      WFILE+2
                   10633                 Bx6      x3
                        10744            Bx7      x4
10501  5160000112                        SA6      WFILE+3
                   5170000113            SA7      WFILE+4
10502  0130000107000000000               XJ       WFILE
10503  0270000000                       JP       B7
                                 *
                                 *        FAKE A READ OF ALL ZEROS
                                 *
10504  76600                     READZ    Sx6      B0
            0304010510                    ZP       X4,READZX
                        53630            SA6      X3
10505  7244777776                        Sx4      X4-1
10506  0304010510                READZ1   ZP       X4,READZX
                   5066000001            SA6      A6+1
10507  7244777776                        Sx4      X4-1
                   0200010506            JP       READZ1
10510  0270000000                READZX   JP       B7
                                 *
                                 *        THIS ROUTINE CALLS THEBEAD FOR ACTIONS ( B4 ) ON USER FILE
                                 *
10511  0130000132000000000      BEADUSER XJ       SAVE
10512  6112000000                        SB1      B2+BEADBLK
                   5112000004            SA1      B2+CLISTX
10513  63710                            SB7      X1
            5110001702                   SA1      PARAMS+1
10514  5120001703                        SA2      PARAMS+2
10515  0130004462000000000               XJ       READ
10516  0130000134000000000               XJ       RESTOR
10517  0270000000                       JP       B7
```

```
                                 *
                                 *                THIS ROUTINE CONVERTS DISPLAY CODE
                                 *                        ( LEFT ADJUSTED, ZERO FILLED, IN X1 )
                                 *                TO OCTAL IN X6
                                 *
10520  76600                     DISOCT    Sx6    B0
            43066                          Mx0    60-6
                                 *
10521  20106                     DISOCT1   Lx1    6
            15710                          Bx7    -X0*X1
                 0307010524                Zr     X7,DISOCT2
10522  20603                               Lx6    3
            7277777744                     Sx7    X7-33B
                       12667               Bx6    X6+X7
10523  0200010521                          Jp     DISOCT1
                                 *
10524  0270000000                DISOCT2   Jp     B7
                                 *
                                 *
                                 *                COMMAND CODE TO CAUSE A DEBUG
                                 *
10525  6110001754                DEBUG     Sa1    SYSFLAG
10526  6170010527                          CALL   FLAGTST
10527  0130000132000000000000              DEBUG
10533  6110010534                          Sa1    DEBUGMSG
                 0200004554                Jp     NXTCMMD
                                 *
10534  0317162411162505111 6    DERUGMSG  DIS    ..CONTINUEING.
                                 *
                                 *
                                 *                OUTPUTS MESSAGES AT CRITICAL TIMES
                                 *                POINT TO MESSAGE IN X1
                                 *                NO REGISTERS CHANGED
                                 *
10536  0130000165000000000000    SPCLMSG   Xj     SPCLSVE
10537  63110                               Sa1    X1
            6120000144                     Sa2    100
10540  6170010541                          CALL   PACK
10541  6170010542                          CALL   TYPEOUT
10542  0130000167000000000000              Xj     SPCLREST
10543  0270000000                          Jp     B7
```

```
                                  *
                                  *                 CONVERT BOTTOM HALF OF X1 TO LEFT BLANK FILLED OCTAL IN X6
                                  *                          USES X0, X2, X6, B6
                                  *
10544  20136                      OCTAL     Lx1      30
            6160000012                      SB6      10
                    76600                   Sx6      B0
10545  43071                                Mx0      60-3
                                  *
10546  20103                      OCTAL1    Lx1      3
            15210                           Bx2      -X0*X1
                  0312010553                NZ       X2,OCTAL3
10547  7120000055                           Sx2      55B
                  20606                     Lx6      6
                      12626                 Bx6      X2+X6
10550  6166777776                           SB6      B6-1
                  0560010546                NE       B6,B0,OCTAL1
10551  0270000000                           JP       B7
                                  *
10552  20103                      OCTAL2    Lx1      3
            15210                           Bx2      -X0*X1
10553  7222000033                 OCTAL3    Sx2      X2+33B
                  20606                     Lx6      6
                      12626                 Bx6      X2+X6
10554  6166777776                           SB6      B6-1
                  0560010552                NE       B6,B0,OCTAL2
10555  0270000000                           JP       B7
                                  *
                                  *
                                  *                 CONVERTS X1 TO OCTAL, PLACE IN OUTPUT BUFFER
                                  *
10556  43071                      DMPWD     Mx0      60-3
            6120000002                      SB2      2
10557  6130003333                           SB3      DMPWDX1
10560  6110000012                 DMPWD1    SB1      10
                  76600                     Sx6      B0
10561  20103                      DMPWD2    Lx1      3
            15710                           Bx7      -X0*X1
                  7277000033                Sx7      X7+33B
10562  20606                                Lx6      6
            12667                           Bx6      X6+X7
                  6111777776                SB1      B1-1
10563  0501010561                           NE       B0,B1,DMPWD2
                  56630                     SA6      B3
10564  6133000001                           SB3      B3+1
                  6122777776                SB2      B2-1
10565  0502010560                           NE       B0,B2,DMPWD1
                  6110003333                SB1      DMPWDX1
10566  6120000024                           SB2      20
                  76670                     Sx6      B7
10567  5160003335                           SA6      DMPWDX2
10570  6170010571                           CALL     PACK
10571  5110003335                           SA1      DMPWDX2
```

```
                63710          SR7      X1
10572  0270000000              JP       B7
```

```
                                  *
                                  *                  CONVERT ZEROS TO BLANKS FROM X1 TO X6
                                  *                  USES X0, X2, X6, B6
                                  *
10573  6160000012                 BLANKS    SB6      10
                  43066                     MX0      60-6
                        76600               SX6      B0
10574  20106                      BLANKS1   LX1      6
            15210                           BX2      -X0*X1
                  0312010576                N7       X2,BLANKS2
10575  7120000055                           SX2      55B
10576  20606                      BLANKS2   LX6      6
            12662                           BX6      X6+X2
                  6166777776                SB6      B6-1
10577  0560010574                           NE       B6,B0,BLANKS1
                  0270000000                JP       B7
```

```
                                  *
                                  *                  THIS ROUTINE SETS UP PARAMS+1, +2 FROM CELLS AT B1
                                  *                  SETS PARAMS+3 = 0
                                  *
10600  56110                      SETP123   SA1       B1
            5121000001                     SA2       B1+1
                      10611                Bx6       X1
10601  10722                               Bx7       X2
            5160001702                     SA6       PARAMS+1
10602  5170001703                          SA7       PARAMS+2
                  76600                    Sx6       B0
10603  5160001704                          SA6       PARAMS+3
                  0270000000               JP        B7
                                  *
                                  *
                                  *                  SAVE INFO FOR ANALYSIS
                                  *
                                  *
10604  5150004336                  INFO      SA5       INFOX
                  5140004337               SA4       INFOCNT
10605  7264000001                          Sx6       X4+1
                  5160004337               SA6       INFOCNT
10606  53650                               SA6       X5
            10611                          Bx6       X1
                  5066000001               SA6       A6+1
10607  10622                               Bx6       X2
            5066000001                     SA6       A6+1
                      10633                Bx6       X3
10610  5066000001                          SA6       A6+1
                  76610                    Sx6       B1
10611  5066000001                          SA6       A6+1
                  56110                    SA1       B1
                      10611                Bx6       X1
10612  5066000001                          SA6       A6+1
                                  *
                  7215000010               Sx1       X5+INFOSZ
10613  7120004336                          Sx2       INFOMX
                  37221                    Ix2       X2-X1
10614  0312010615                          Nz        X2,INFO1
                  7110003336               Sx1       INFOBF
10615  10611                      INFO1     Bx6       X1
            5160004336                     SA6       INFOX
10616  0240000000                          JP        B4
```

```
                                  *
                                  *
                                  *                ASKS USER A QUESTION
                                  *
                                  *                GETS RESPONSE AT ASKPRMS
                                  *
10617  76670                      ASKUSER   SX6     B7
            5160004340                     SA6     ASKSVB7
10620  6120000144                         SB2     100
10621  6170010622                         CALL    PACK
10622  6170010623                         CALL    TYPEOUT
10623  6110001662                         SB1     INSTRING
                 6160000006               SB6     6
10624  0130004462000000000                X1      READ
10625  6110001662                         SB1     INSTRING
                 6120004341               SB2     ASKPRMS
10626  6130000005                         SB3     ASKMX
10627  6170010630                         CALL    SPLITUP
10630  5110004340                         SA1     ASKSVB7
                 63710                    SB7     X1
10631  0270000000                         JP      B7
```

```
                                  *
10632  00000000000000000000                DATA     0        PADDING FOR SAFTY
                                  *
10633                             FIELDLN   BSS      0
                                  *
                                  *
                                  *
                                  *
    0                                     END
                        36532     STORAGE USED          5691 STATEMENTS      574 SYMBOLS
                                  6600 ASSEMBLY        33.607 SECONDS        2371 REFERENCES
```

SYMBOLIC REFERENCE TABLE.

ACTVCNT	251	14/06 L	104/11	105/11	111/23					
ALPHA	1770	18/04 L	18/22							
ASKMX	5	21/22 D	21/24	134/17						
ASKPRMS	4341	21/24 L	62/09	134/16						
ASKSVB7	4340	21/20 L	134/08 S	134/19						
ASKUSER	10617	62/09	134/07 L							
BASE	256	11/52	14/13 L	24/09						
BEAD	4462	19/05	38/37	73/16	73/31	82/09	120/10	134/14		
		23/14 L	73/05	73/18	74/16	112/07	120/22			
		28/24	73/07	73/26	78/40	113/01	128/50			
		36/11	73/09	73/29	78/50	115/12	129/25			
BEADBLK	0	18/08 L	50/09	51/07	53/44	54/11	73/21	78/25		
		48/21	51/01	53/24	53/53	73/11	78/21	128/45		
BEADDIR	7257	75/11	76/13	77/09	77/11	77/13	82/04 L			
BEADUSER	10511	48/19	50/09	51/43	53/20	53/31	54/43	65/23	65/30	
		48/21	51/34	51/50	53/29	54/29	65/21	65/28	128/44 L	
BITTABLE	1273	15/13 L	96/16	97/13	100/12	101/15				
BITWDLMT	1272	15/12 L	96/10	101/09 S						
BITWORDX	1271	15/11 L	96/12	96/26 S	97/17	101/06 S				
BLANK	40	126/16 D	126/37							
BLANKS	10573	68/14	69/39	132/05 L						
BLANKS1	10574	132/08 L	132/15							
BLANKS2	10576	132/10	132/12 L							
BPOINTS	14	18/17 L	54/17	72/30	74/04	84/35	93/06			
		51/19	71/23	73/42	83/09	91/10	94/11			
BRDCAST	10373	39/11	42/07	123/08 L	123/52					
BRDCAST1	10400	123/17 L	123/21							
BRDCAST2	10404	123/18	123/20	123/23 L						
BRDRESET	10412	36/14	123/25	123/37 L						
BRDSVB7	4354	21/37 L	123/09 S	123/27						
BSPTMSG	10254	116/43	117/25 L							
BSYBLCK	7652	94/18	100/04 L							
BSYDSK	7601	88/14	94/05 L							
BSYDSK1	7607	94/14 L	94/20							
BSYDSK2	7614	94/12	94/20 L							
BSYUNME	7656	94/09	94/16	100/21 L						
BUFSZX	255	14/11 L	109/20	110/17 S						
BUFX	252	14/08 L	106/06	106/23 S	107/35 S	108/19 S	109/13 S	109/24	110/06	
CALLCMMD	4557	28/12 L	55/39	62/18	65/36					
CAPX	70	5/02 D	5/08	5/11	5/13	5/15	5/17	5/19	5/21	
		5/06 D	5/09 D	5/12 D	5/14	5/16	5/18	5/20	5/22	
		5/06	5/09	5/12	5/14 D	5/16 D	5/18 D	5/20 D	5/22 D	
		5/07 D	5/10 D	5/13 D	5/14	5/16	5/18	5/20	5/22	
		5/07	5/10	5/13	5/15	5/17	5/19	5/21		
		5/08 D	5/11 D	5/13 D	5/15 D	5/17 D	5/19 D	5/21 D		
CARDL	5356	29/42	40/10 L							
CARDLA	3330	20/26 L	40/14	40/32						
CARDLX	5377	40/13	40/40 L							
CARDLY	5400	40/37	40/41 L							
CARDLZ	5401	40/29	40/42 L							
CARDL1	5360	40/13 L	40/28							
CARDL1A	5361	40/14 L	40/38							
CARDL2	5374	40/20	40/21	40/32 L						

SYMBOLIC REFERENCE TABLE.

CARDL3	5376	40/37 L									
CDEBLK	7680	93/12	94/17	99/07 L							
CHAR	4353	21/36 L	124/53 S	125/09 S	126/19						
CHKWD	261	14/18 L	107/45	108/01	108/06						
CKDESC	7422	58/33	58/35	87/09 L							
CKDESCOK	7444	87/14	87/39 L								
CKDESC1	7427	87/17	87/20 L								
CKDESC2	7431	87/23 L									
CKDESC3	7465	87/20	88/20 L								
CKDESC4	7475	87/34	88/22 L								
CLEARDSK	5534	29/34	45/53 L								
CLISTX	4	18/10 L	50/06 S	53/48	73/20 S	84/33					
		48/16 S	53/17 S	65/14 S	83/07	128/46					
CMMDRTN	1731	16/17 L	28/04	28/13 S							
CMMDS	4602	28/33	28/37	28/49 L	29/49						
COLD	5433	20/28	43/04 L	62/16							
COLDMSG1	5474	44/02	44/05 L								
COLD1	5441	43/12 L	43/52								
COLD2	5442	43/15 L	43/28								
COLD3	5455	43/34 L	43/39								
CPUCDE	6516	65/17	65/50 L								
CR	155	124/16 D	125/01								
CREATE	5554	28/51	48/04 L								
CREATEMG	5612	48/49	48/52 L								
CREATEXM	5615	49/02	49/05 L								
CREATEX1	5613	48/26	49/01 L								
CREATEX2	5621	48/23	49/07 L								
CREATEYM	5622	49/07	49/10 L								
CREATEZ	5626	48/28	49/13 L								
CREATEZM	5630	49/14	49/17 L								
CREQ	1263	14/23 L	25/44 S	39/30 S	39/33	39/35 S	39/37	40/16 S	40/17		
CRSP	1266	14/26 L	25/46 S	39/38	40/18						
CRSPDTA	3327	28/24 L	39/39 S	39/43	40/19 S						
C.BEAD	1	4/49 D	23/14								
C.CAPIN	17	5/07 D	12/02								
C.CARDS	31	5/14 D	25/30	25/43	39/45	40/22					
C.CBLK	23	5/11 D	12/12								
C.DBEAD	35	5/16 D	60/23	63/13	75/12	79/07	82/06				
		43/42	62/34	67/14	76/06	81/14	82/30				
		58/41	63/03	69/09	77/13	81/30					
C.DISKF	53	5/21 D	24/29	84/25	86/05	87/24	89/12	107/43			
		24/10	83/23	85/17	86/10	87/39	90/06	110/05			
C.DSKLCK	25	5/13 D	12/44	12/46							
C.FILE	40	5/19 D	48/15	50/05	53/16	65/13					
C.FILEO	41	5/20 D	73/12	73/19							
C.GETE	6	4/53 D	11/06	11/10	11/35	12/43					
		11/04	11/08	11/26	12/32	14/26					
C.INTFIL	37	5/18 D	11/50	12/05	12/36	12/51					
C.LISTF	34	5/15 D	120/08	121/06							
C.MAINF	20	5/08 D	23/09								
C.MUX	67	5/22 D	13/08	13/13	25/51						
C.NULL	36	5/17 D	78/36	78/46							
C.RESTOR	22	5/10 D	12/09	12/21							

C.RETURN	24	5/12 D	12/27							
C.RFILE	3	4/50 D	11/43	11/49	12/35	12/50	23/08			
C.SAVE	21	5/09 D	12/07	12/19						
C.SELF	16	5/06 D	12/03							
C.SENDE	5	4/52 D	11/16	11/22	11/32	12/45	14/23			
		11/13	11/19	11/28	12/29	13/12				
C.TAPE	26	5/13 D	25/09	25/22	114/44	115/03	116/10			
C.WFILE	4	4/51 D	11/38	13/07						
DATA	262	14/20 L	45/10 S	71/28 S	83/11	84/37	89/04	94/09	116/12	
		39/47	60/18 S	71/32 S	83/22 S	87/41	89/14	114/40 S		
		40/24	71/15 S	72/10	83/25	87/45	89/23	114/46		
		40/27	71/16 S	72/11	84/19	87/48	90/08	115/05		
		40/48	71/18 S	72/37 S	84/28	87/53	94/07	116/05		
DBEADE	1645	15/26 L	77/15	77/27	82/05					
DCDBLK	7643	43/21	43/25	58/20	58/24	91/14	98/15 L			
DCDBLK1	7647	98/16	98/24 L							
DEBUG	10525	29/22	129/22 L							
DEBUGMSG	10534	129/25	129/28 L							
DELEFLAG	1756	17/02 L	57/05							
DELETE	6123	29/08	57/05 L							
DELETEMS	6163	57/43	57/46 L							
DELETEXM	6166	57/49	57/52 L							
DELETEX1	6164	57/16	57/48 L							
DENTRIES	1575	15/23 L	58/11	60/44	67/16	69/23	72/17 S	79/38	81/28 S	
		43/12	58/30	62/36	67/26	69/37	79/09	79/39	81/29 S	
		43/32	58/43	62/46	67/32	69/45	79/20	79/40	81/32	
		43/44	60/25	63/05	69/11	70/05	79/28	81/16	88/07	
		48/38	60/35	63/15	69/21	72/16 S	79/37	81/21		
DENTRYA	1574	15/16 L	58/47	62/32 S	63/18	69/07 S	79/03 S	80/20	81/35	
		43/43	60/21 S	62/35	67/10 S	69/10	79/08	80/30	88/05	
		43/48	60/24	63/04	67/15	69/14	79/12	81/11 S		
		43/50 S	60/28	63/08	67/19	70/39 S	79/50	81/15		
		58/42	61/06 S	63/14	68/05 S	77/33 S	80/09 S	81/31		
DHEAD	1270	15/06 L	15/20	75/14	76/08					
DHEADSZ	305	15/20 D	58/50	62/31	69/06	76/09	77/31	81/12		
		43/51	60/20	67/09	75/15	77/20	79/02			
DIRECTX	5	18/12 L	79/53 S	82/31						
DIRECTY	6	18/13 L	50/44	57/18	57/39 S	79/43 S	82/32	92/17		
		50/17	51/27	57/23	57/40 S	79/44 S	85/10			
		50/22	52/09	57/33	72/25 S	79/48 S	86/19			
		50/32	53/34	57/35	72/45	79/49 S	92/07			
DISKADDR	7551	51/15	72/27	73/25	91/07 L					
DISKADD1	7554	91/12 L	91/17							
DISKADSV	3010	20/04 L	91/08 S	91/19	94/06 S	94/22				
DISKERR	5207	37/14 L	84/15	86/21	87/37	89/23				
		83/33	85/12	87/23	89/12	90/17				
DISKERRA	1764	17/14 L	37/16 S	38/27						
DISKERRB	1765	17/15 L	37/18 S	38/03	38/10	38/17				
DISKERRT	5306	37/52	38/48 L							
DISKERRU	5305	38/14	38/47 L							
DISKERRV	5303	38/07	38/46 L							
DISKERRW	5301	38/24	38/45 L							
DISKERRX	5276	38/32	38/44 L							

DISKERRY	5274	37/40	38/43 L					
DISKERRZ	5272	37/19	38/42 L					
DISKERR1	5236	37/50	38/03 L					
DISKERR2	5234	37/32	37/52 L					
DISKERR3	5254	38/04	38/05	38/21	38/23 L			
DISKFULL	7633	96/15	96/35 L					
DISKRLS	7570	50/21	52/04	57/22	57/27	93/04 L		
DISKRLS1	7573	93/09 L	93/15					
DISKRLS2	7577	93/07	93/15 L					
DISKRLS3	7600	93/10	93/17 L					
DISOCT	10520	39/25	39/33	40/48	40/52	45/10	45/29	129/06 L
DISOCT1	10521	129/09 L	129/15					
DISOCT2	10524	129/11	129/17 L					
DLIMIT	1573	15/15 L	60/52	67/20	69/15	77/32 S	81/39	88/04
		60/29	63/20 S	68/02	70/31	79/13	81/42 S	88/10 S
DMPDATA	5403	29/38	40/46 L					
DMPDATAX	3331	20/31 L	40/49 S	41/01	41/03 S			
DMPDATAY	3332	20/32 L	40/52 S	41/07	41/09 S			
DMPDATA1	5411	41/01 L	41/13					
DMPDATA2	5421	41/10	41/15 L					
DMPFMSG	6327	61/29	61/32 L					
DMPMSG	6322	61/19	61/21	61/24 L				
DMPWD	10556	39/45	41/06	130/32 L				
DMPWDX1	3333	20/36 L	130/34	130/48				
DMPWDX2	3335	20/37 L	130/51 S	130/53				
DMPWD1	10560	130/35 L	130/47					
DMPWD2	10561	130/37 L	130/43					
DNEW	7227	48/28	81/07 L					
DNEW1	7241	81/22	81/24 L					
DNEW2	7256	81/13	81/50 L					
DNEW3	7254	81/46 L	81/51					
DOBUF	10044	106/25	107/37	108/21	109/15	110/05 L		
DSCAN	7136	48/26	50/14	53/22	57/16	73/06	78/16 L	
DSCANFL	7215	80/15 L	80/25					
DSCANSV7	1655	15/29 L	68/38	70/42	77/37	79/35	81/08 S	
		67/08 S	69/05 S	77/06 S	78/17 S	80/16	81/46	
DSCANXT	7177	79/35 L						
DSCANZR	1657	15/32 L	80/24 S	80/34 S	81/19	81/36		
DSCANZRX	1656	15/31 L	79/05 S	80/12	80/22 S	80/27	80/32 S	81/09
DSCAN1	7144	78/19	78/31 L					
DSCAN2	7160	78/29	78/32	79/02 L				
DSCAN3	7162	79/07 L	80/10					
DSCAN4	7167	79/17 L	80/07					
DSCAN5	7210	79/25	79/26	79/32	79/33	80/03 L	80/28	80/35
DSCAN6	7214	79/18	80/12 L					
DSCAN7	7217	80/13	80/20 L					
DSCAN8	7222	79/21	80/27 L					
DSIZE	1274	15/18 D	43/51	58/50	77/20	81/12		
DSKCLR	227	12/45 L	45/14	46/02	70/17	76/13		
DSKCLRMS	5540	46/03	46/06 L					
DSKLOK	225	12/43 L	45/11	69/43	75/08			
DUMP	6247	29/16	60/06 L					
DUMPF	6676	60/46	71/04 L					

SYMBOLIC REFERENCE TABLE.

DUMPF1	6714	71/26 L	71/38						
DUMPF2	6725	71/24	71/40 L						
DUMPM1	6334	60/08	61/34 L						
DUMPSV1	1737	16/31 L	60/43 S	60/51	68/21 S	68/30	69/36 S	70/18	70/30
DUMPSV2	1740	16/32 L	60/48	62/49	68/31	69/44	70/27		
		60/41 S	62/45 S	68/22 S	69/34 S	70/04			
DUMPSV3	1741	16/33 L	60/40 S	60/47	62/44 S	62/48	69/33 S	70/26	
DUMPSV7	1742	16/34 L	71/05 S	71/40	72/06 S	72/47			
DUMP1	6264	60/23 L	61/07						
DUMP2	6271	60/33 L	61/04						
DUMP3	6302	60/36	61/01 L						
DUMP4	6306	60/34	61/09 L						
DUMP5	6324	60/16	61/27 L						
ECSLIST	6514	65/32	65/36	65/47 L					
EOTMSG	10217	116/32	116/37 L						
FAREA	1012	18/20 L	18/29						
FIELDLN	10633	4/14	4/32	135/04 L					
FILEDATA	1770	18/29 L	48/14	50/21	53/33	57/27	70/06	72/44	
		43/09 S	48/33	51/15	57/14	57/32	71/06	73/11	
		43/10 S	50/04	52/04	57/17	65/12	72/18	73/18	
		43/30	50/16	53/15	57/22	69/46	72/27	73/26	
FIN	5533	29/20	45/48 L						
FLAGMSG	10367	122/26	122/31 L						
FLAGOFF	6527	29/32	66/16 L						
FLAGON	6522	29/30	66/04 L						
FLAGONM	6526	66/09	66/12 L						
FLAGS	1754	16/52 L	17/07	122/08	122/12				
FLAGTST	10362	39/08	40/12	45/06	46/02	58/06	62/06	129/24	
		39/22	43/06	45/26	57/07	60/08	122/21 L		
FLAGTST1	10366	122/22	122/29 L						
FLGOFFM	6533	66/21	66/24 L						
FNDFLG	10354	66/05	66/17	122/05 L					
FNDFLG1	10355	122/08 L	122/16						
FNDFLG2	10360	122/10	122/11	122/15 L					
FORK	7710	43/35	48/47	50/46	53/38	57/35	69/48	72/39	103/07 L
		43/37	50/19	51/22	54/21	57/37	70/06	72/47	
		45/13	50/24	51/29	57/20	58/34	71/08	73/44	
		48/40	50/34	52/11	57/25	58/36	71/30	74/06	
FORKJP	4376	22/04 L	103/07 S	103/21					
FORKNXT	4401	22/06 L	103/12	103/19 S	104/33	104/37 S			
FORK1	7712	103/09	103/12 L	103/14					
FORK2	7714	103/13	103/17 L						
FSTFORK	4403	22/06	22/13 D						
FULLBITS	7675	101/11	101/32 L						
GBUF.129	53	11/06 L	24/47 S						
GBUF.257	55	11/08 L	24/49 S						
GBUF.513	57	11/10 L	24/51 S	109/12					
GBUF.64	51	11/04 L	24/45 S						
GET	5763	29/02	53/04 L	55/04	65/34	65/40			
GETA	5767	53/06	53/12	53/15 L					
GETB	5765	29/10	53/10 L						
GETBUF	10031	83/07	86/05	87/24	90/06	109/05 L	109/07		
GETBUF1	10033	109/06	109/10 L						

GETDIR	7071	43/08	48/25	53/21	58/10	62/22	75/06 L	
		47/08	50/13	57/14	60/11	73/04		
GETF	10310	55/26	120/04 L					
GETFLAG	3326	20/20 L	53/05 S	53/11 S	53/35	54/29		
GETIF	126	12/02 L	24/14 S	24/17	25/15 S	25/34 S	25/37	26/04 S
		24/05	24/16 S	25/13 S	25/16	25/36 S	26/02 S	26/05
GETLP	6027	54/20 L	54/23					
GETLPX	6034	54/18	54/26 L					
GETMSG1	6042	54/30	54/35 L					
GETMSG2	6043	54/32	54/37 L					
GETTAPE	10063	45/27	60/12	62/23	112/04 L			
GETTAPE1	10072	112/12 L	112/17					
GETTAPE2	10077	112/14	112/19 L	112/24				
GETXMSG	6051	54/43	54/46 L					
GETX1	6045	53/22	54/40 L					
GET1	5775	53/24 L	53/31					
GET2	6003	53/26	53/33 L					
GET3	6017	54/06 L	54/10					
GET4	6022	54/04	54/09 L					
GO	7002	73/11 L	73/31					
GRESP	105	11/35 L	24/33 S	105/10				
GSLOT	75	11/26 L	25/01 S	111/05				
HEADER	12	18/15 L	48/44 S	51/09	57/30 S	71/12	83/31	86/13
		43/09 S	50/26	52/06	69/49	72/21 S	84/13	94/09
		43/10 S	50/37 S	53/39	70/09	72/22 S	84/40	95/04
		48/34 S	50/38	53/51	71/09	73/23 S	85/12	
		48/37 S	50/47	57/29 S	71/11	83/14	85/20	
HELLO	4553	27/10	27/13 L					
INCNT	4350	21/33 L	124/29 S	124/33	124/45 S			
INFLAG	4351	21/34 L	123/15 S	124/22	125/14 S			
INFO	10604	107/23	108/03	133/19 L				
INFOBF	3336	21/09 L	21/12	133/40				
INFOCNT	4337	21/13 L	133/20	133/22 S				
INFOMX	4336	21/10 L	133/37					
INFON	100	21/07 D	21/09					
INFOSZ	10	21/06 D	21/09	133/36				
INFOX	4336	21/12 L	133/19	133/42 S				
INFO1	10615	133/39	133/41 L					
INSTRING	1662	16/05 L	28/22	28/25	55/32	121/08	134/12	134/15
INTRANS	4706	30/34	32/04 L					
INWDX	4347	21/32 L	124/31 S	124/35	124/46			
IOBLOCK	7723	104/23 L	106/11	107/27				
IOFINT	7727	83/29	84/23	85/24	87/33	88/16	90/12	
		83/33	84/46	86/17	87/37	89/18	90/17	
		84/15	85/15	86/21	87/49	89/26	104/33 L	
IORESTOR	7704	102/30 L	104/27	104/41	105/21			
IOSAVE	7676	102/06 L	103/10	104/24	105/07			
IOWAIT	7717	43/41	50/20	51/26	54/25	58/40	71/09	104/05 L
		45/14	50/25	51/30	57/21	63/25	71/31	
		48/41	50/35	52/12	57/26	69/49	73/48	
		48/48	50/47	53/39	57/38	70/09	74/10	
IOWAIT1	7720	104/11 L	104/13					
IOWAIT2	7722	104/12	104/16 L					

LF	152	124/17 D	125/08				
LGET	6055	29/04	55/04 L				
LIST	5543	29/12	47/07 L				
LISTACT	1750	16/43 L	55/22 S	55/36			
LISTFBLK	1743	16/39 L	55/26	120/05	120/20		
LISTFLG	1751	16/45 L	55/06 S	55/15 S	55/40	65/39 S	
LISTFPNT	1747	16/41 L	120/12 S	121/07	121/30 S		
LISTMSG	5552	47/15	47/18 L				
LISTOPS	6065	55/08	55/17	55/22 L	65/42		
LISTOPSF	6115	56/28	56/04 L				
LISTOPSG	6117	56/05	56/08 L				
LISTOPSL	6072	55/30 L	55/41	55/44			
LISTOPSM	6113	55/47	56/02 L				
LISTOPSX	6105	55/31	55/46 L				
LISTOPS7	1752	16/47 L	55/24 S	55/51			
LISTU	6534	47/12	67/07 L				
LISTU1	6537	67/14 L	68/06				
LISTU2	6544	67/24 L	68/03				
LISTU3	6547	67/31 L	67/38				
LISTU4	6554	67/33	67/41 L				
LISTU5	6557	67/35	67/47 L				
LISTU6	6561	67/27	67/39	67/45	67/51 L		
LISTU7	6565	67/25	68/08 L				
LISTU8	6567	68/11 L	68/36				
LISTU9	6606	68/12	68/38 L				
LISTX	6610	47/15	69/04 L				
LISTX1	6612	69/09 L	70/40				
LISTX2	6617	69/19 L	70/37				
LISTX3	6670	69/22	69/28	69/29	70/33 L		
LISTX4	6674	69/20	70/42 L				
LIST1	5550	47/10	47/14 L				
LIST2	5551	47/12	47/15 L				
LOAD	6337	29/18	62/04 L				
LOADECS	6460	59/04	63/30	65/06 L			
LOADECSX	6501	65/15	65/31 L				
LOADECS7	1753	16/48 L	65/07 S	65/42			
LOADF	6727	62/48	72/05 L				
LOADF1	6746	72/33 L	72/42				
LOADF2	6755	72/31	72/44 L				
LOADMSG	6425	63/27	63/35 L				
LOADM1	6452	62/14	64/02 L				
LOADM2	6455	63/30	64/03 L				
LOADNO	6446	62/12	63/50 L				
LOADNOMS	6447	63/50	63/53 L				
LOADQST	6437	62/07	63/46 L				
LOADYES	6445	62/10	63/48 L				
LOADYMSG	6432	63/40	63/43 L				
LOAD1	6366	62/34 L	63/11				
LOAD2	6372	62/42 L	63/02				
LOAD3	6377	62/53 L					
LOAD4	6406	63/13 L	72/08				
LOAD6	6427	62/27	63/38 L				
LPUT	6061	29/06	55/13 L				

MAINSV	4377	22/05 L	103/08	104/05	104/25				
MAXMSG	20	13/05 D	13/11	21/41	126/28	127/03			
MBASE	236	12/53	13/03 L	25/50					
MSGBUF	4355	13/10	21/40 L	21/43	126/48				
NARMPS	30	15/08 D	15/13	101/07	101/14	101/24			
NCMMDS	60	28/30	29/49 D						
NEWBLCK	7622	43/20	43/24	58/19	58/23	91/13	96/07 L		
NEWBLCK1	7625	96/15 L	96/20						
NEWBLCK2	7630	96/18	96/22 L						
NEWBLK	136	12/12 L	53/50 S	54/06 S	54/07	77/14 S	77/22 S	77/23	
NEWCHAR	10421	123/18	124/20 L						
NEWCHARA	10433	124/34	124/44 L						
NEWCHARZ	10444	125/04	125/06	125/12	125/14 L				
NEWCHAR0	10425	124/23	124/28 L						
NEWCHAR1	10427	124/25	124/33 L						
NEWCHAR2	10442	124/26	125/08 L						
NEWDIR	7113	43/07	58/09	77/05 L					
NEWDIR1	7124	77/22 L	77/26						
NEWUNMES	7562	50/26	57/32	92/07 L					
NEXTF	10325	55/31	121/04 L						
NEXTFCR	10353	121/31	121/52 L						
NEXTFL1	10330	121/11 L	121/40	121/43					
NEXTFW	10334	121/18 L	121/25						
NEXTFW1	10336	121/22 L	121/50						
NEXTFX	10344	121/35 L							
NEXTF1	10346	121/14	121/39 L						
NEXTF2	10347	121/15	121/42 L						
NEXTF3	10350	121/12	121/16	121/45 L					
NEXTF4	10352	121/26	121/49 L						
NEXTF5	10342	121/21	121/23	121/27	121/29 L				
NFILES	1	18/27 D	18/29						
NFLAGS	10	17/07 D	122/06						
NFORKS	24	22/11 D	22/15						
NMBBLCKS	7616	51/18	71/22	73/41	91/10	94/11			
		54/16	72/29	74/03	93/06	95/04 L			
NM1	7036	73/13	73/34 L						
NM2	7037	73/14	73/35 L						
NPARAMS	5	16/07 D	16/08	28/27	65/34				
NULLBDE	1651	15/27 L	78/35	78/41	78/45				
NWCHRSB7	4346	21/31 L	124/21 S	125/15					
NXTCMMD	4554	27/11	41/11	46/04	51/35	54/44	59/07	66/06	129/26
		28/04 L	41/12	47/16	51/44	55/09	61/22	66/10	
		28/44	42/10	48/50	51/51	55/18	61/30	66/18	
		39/12	44/03	49/03	52/15	56/06	63/33	66/22	
		39/51	45/16	49/08	54/31	57/44	63/41	73/09	
		46/30	45/41	49/15	54/33	57/50	63/51	122/27	
NXTCMMDE	4601	28/43	28/46 L	66/05	66/17				
NXTCMMDX	4561	28/05	28/17 L						
NXTCMMDY	4564	28/17	28/22 L						
NXTCMMD1	4573	28/33 L	28/42						
NXTCMMD2	4577	28/31	28/35	28/36	28/41 L				
OCTAL	10544	37/34	37/45	68/17	69/52	70/12	70/20	130/05 L	
OCTAL1	10546	130/10 L	130/17						

SYMBOLIC REFERENCE TABLE.

OCTAL2	10552	130/20 L	130/26						
OCTAL3	10553	130/12	130/22 L						
OLDBLCK	7634	93/13	97/05 L						
OUTBUF	1710	16/10	16/12 L	124/38	124/47				
OUTCNT	1707	16/11 L	33/10	34/12 S	36/06	123/38 S			
OUTCNTB	4352	21/35 L	123/13 S	126/24	126/34 S	126/53			
OUTPOINT	1706	16/10 L	33/09	36/09	123/43				
OUTTRANS	5100	33/46	35/04 L						
OUTWRDX	4355	21/43 D	123/14 S	126/26	126/47	127/02			
P	50	7/22 L							
PACK	5046	28/20	37/43	38/14	38/31	55/50	68/29	70/25	130/53
		33/09 L	37/50	38/17	38/35	62/20	69/43	122/26	134/11
		37/22	38/02	38/21	39/43	65/09	70/04	123/12	
		37/39	38/10	38/27	55/43	68/26	70/17	129/39	
PACK1	5052	33/21 L	33/24						
PACK1A	5054	33/21	33/26 L						
PACK2	5055	33/31 L							
PACK3	5060	33/39 L	34/05	34/09					
PACK4	5067	33/49	34/03 L						
PACK5	5073	33/39	33/42	34/11 L					
PACK6	5075	34/15 L	34/18						
PARAMS	1701	16/08 L	40/50	48/10 S	48/41	69/24	79/19	122/05	
		28/26	45/08	48/11 S	55/33	78/18	79/27	128/48	
		28/29	45/27	48/12 S	57/07	78/24 S	81/24	128/49	
		39/23	47/09	48/13 S	57/08	78/28 S	81/25	133/09 S	
		39/31	48/04	48/29	57/11 S	78/31	120/06	133/10 S	
		40/46	48/05	48/30	57/12 S	78/44 S	120/07	133/12 S	
PBUF	254	14/10 L	84/26	86/06	87/25	89/13	107/44		
		83/24	85/18	86/11	87/40	90/07	110/14 S		
PBUFD	253	14/09 L	110/07	110/12					
PBUF.129	64	11/16 L	24/38 S						
PBUF.257	67	11/19 L	24/40 S						
PBUF.513	72	11/22 L	24/42 S						
PBUF.64	61	11/13 L	24/36 S	109/26 S	109/27				
PPUCDE	6520	65/24	65/51 L						
PREQ	102	11/32 L	24/30 S	106/09	107/16	107/20	111/22 S		
PRNTERR	7064	74/15 L	81/24	90/14					
PSLOT	77	11/28 L	25/02 S	105/25 S	105/26				
PTBRDEV	244	13/12 L	123/26						
PTBRDMSG	237	13/07 L	123/25						
PUT	5633	28/53	50/04 L	55/13					
PUTBUF	10037	84/11	85/09	87/19	89/18	109/20 L			
		84/32	85/24	87/45	106/28				
PUTCHAR	10446	123/20	123/24	126/19 L					
PUTCHARA	10454	126/25	126/33 L						
PUTCHARB	10456	126/39 L	126/45						
PUTCHARC	10461	126/39	126/47 L						
PUTCHARD	10463	126/29	126/53 L						
PUTCHARE	10467	127/01	127/04	127/08 L					
PUTDIR	7102	44/02	49/02	51/41	54/41	59/01	63/27	76/04 L	
		47/09	49/14	52/14	57/43	61/19	63/40	77/36	
		48/49	51/32	54/27	57/49	61/29	73/08		
PUTDIREN	7267	51/31	52/13	57/42	82/30 L				

PUTF	10320	55/47	56/05	120/19 L				
PUTLP	5706	51/21 L	51/24					
PUTLPx	5713	51/20	51/27 L					
PUTMSGX1	5730	51/43	51/46 L					
PUTMSGX2	5737	51/50	51/53 L					
PUTMSG1	5723	51/34	51/37 L					
PUTSVCN	1660	15/34 L	50/28 S	50/35				
PUTTAPE	10122	45/40	61/18	61/28	63/26	63/39	112/52 L	
PUTX1	5724	50/14	51/40 L					
PUTX2	5734	50/11	51/48 L					
PUTZ	5743	51/16	52/03 L					
PUTZMSG	5754	52/14	52/17 L					
PBASE	121	11/49 L	24/06					
RDCNT	250	14/05 L	107/05	107/28				
RDDISK	7772	84/05	85/05	87/14	89/06	107/05 L	107/07	
RDDISKE1	10025	107/31	107/32	108/15 L				
RDDISKE2	10026	107/33	108/18 L					
RDDISKE3	10030	108/10	108/23 L					
RDDISK1	7774	107/06	107/10 L					
RDERFLAG	1736	16/26 L	115/09 S	115/16				
RDESC	7365	50/18	53/37	57/24	70/07	85/04 L		
		50/23	57/19	69/47	71/07			
RDESCOK	7366	85/05	85/17 L					
RDESC1	7361	85/07	85/09 L					
RDESC2	7374	85/09	85/26 L					
RDFBLK	7317	54/20	74/05	84/04 L				
RDFBLKOK	7332	84/05	84/25 L					
RDFBLK1	7323	84/08	84/12 L					
RDFBLK2	7345	84/39	84/43	84/45 L				
RDFBLK3	7347	84/12	84/48 L					
RDFBLK4	7337	84/22	84/33 L					
RDISK	7052	73/30	73/53 L					
RDISK1	7055	74/05 L	74/08					
RDRCD	7502	45/12	71/29	89/04 L				
RDRCDFLG	3011	26/06 L	45/07 S	71/10 S	89/10			
RDRCDOK	7510	89/06	89/12 L					
RDRCD1	7515	89/08	89/20 L					
RDRCD2	7522	89/09	89/28 L					
RDRCD3	7526	89/20	89/29 L					
READ	5476	29/24	45/04 L					
READF	10470	39/50	62/39	75/17	83/20	87/44	110/11	121/12
		46/27	67/19	79/12	84/31	89/17	114/49	121/23
		60/28	69/14	81/19	85/23	107/49	115/08	128/04 L
READMSG	5512	45/15	45/18 L					
READZ	10504	84/22	85/15	89/26	128/32 L			
READZx	10510	128/33	128/36	128/40 L				
READZ1	10506	128/36 L	128/39					
RECOVER	6172	29/14	58/04 L					
RECOVER1	6200	58/11 L	58/51					
RECOVER2	6201	58/14 L	58/27					
RECOVER3	6213	58/32 L	58/38					
RECOVMSG	6236	59/01	59/10 L					
RECOVM1	6240	58/06	59/11 L					

RECOVM2	6244	59/04	59/12 L						
REGSAVE	141	12/08	12/10	12/17 L					
RESPONSE	257	14/15 L	37/22	105/14 S	105/22	105/27	107/53		
RESTOR	134	12/09 L	73/05	73/18	73/31	82/10	120/13	129/25	
		19/05	73/07	73/26	74/16	112/08	120/23		
		38/38	73/09	73/29	78/51	113/02	128/51		
RETURN	211	12/27 L	45/48						
RFILE	114	11/43 L	128/06 S	128/07 S	128/10 S	128/11 S	128/13		
RMBASE	231	12/50 L	24/08						
RRTN	3325	20/17 L	74/01 S	74/10					
RSPNS	7734	103/15	104/14	105/06 L	107/08	109/08			
RSPNSSV	4402	22/07 L	104/38	105/09 S					
RTBASE	217	12/35 L	24/07						
SAVE	132	12/07 L	73/04	73/17	73/30	82/04	120/04	129/24	
		19/04	73/06	73/25	74/15	112/05	120/19		
		37/14	73/08	73/28	78/34	112/52	128/44		
SBRDCAST	10417	58/08	59/06	60/10	61/21	62/16	63/32	123/51 L	
SCAN	6762	73/03 L							
SCRSZ	4455	4/17	4/31	4/32	4/32	4/32	23/04 L	23/12	
SETP123	10600	65/19	65/26	65/34	65/38	133/05 L			
SETREQ	10053	106/08	107/15	111/05 L					
SETSCR	4455	23/08 L	24/04						
SETTAPE	10103	60/13	62/24	112/31 L					
SETUP	4463	24/04 L	27/09						
SETUPBIT	7662	27/10	77/35	101/04 L					
SETUPB1	7670	101/18 L	101/21	101/27					
SETUPX	4513	25/04 L							
SETUP1	4472	24/13 L	24/21						
SETUP2	4515	25/12 L	25/20						
SETUP3	4526	25/33 L	25/41						
SETUP4	4537	26/01 L	26/09						
SFLAG	1762	17/04 L	42/08 S	123/51					
SPCLMSG	10536	114/26	116/34	116/45	117/07	129/35 L			
SPCLREG	171	12/20	12/22	12/24 L					
SPCLREST	167	12/21 L	115/13	129/40					
SPCLSVE	165	12/19 L	115/10	129/35					
SPLITUP	4662	28/29	30/12 L	55/36	134/19				
SPLITUP1	4663	30/16 L	30/22						
SPLITUP2	4665	30/21 L	30/31	30/33	30/35	30/39	30/53		
SPLITUP3	4675	30/41 L	30/43						
SPLITUP4	4676	30/27	30/29	30/43 L					
SPLITUP5	4703	31/03 L	31/06						
SPLITUP6	4705	30/50	31/08 L						
STARTP	4550	4/15	27/08 L						
STATUS1	1766	17/16 L	37/26 S	37/43					
STOP	3002	19/03 L	19/05						
SVB5	1661	15/36 L	88/12 S	88/14					
SVB7	1730	16/15 L	36/05 S	36/12	75/07 S	75/18	76/05 S	76/14	
SYSFLAG	1754	17/01 L	45/04	45/53	60/06	129/22			
		43/04	45/24	58/04	62/04				
TAPEACT	10263	61/12	112/34	112/43	114/37	116/52	117/19		
		61/15	112/37	114/05	116/17	117/12	118/04 L		
		63/23	112/40	114/34	116/49	117/16			

TAPECDE	1733	16/23 L	118/04	118/18					
TAPERSP	10267	61/13	63/24	112/38	112/44	114/35	116/50	117/17	118/42
		61/16	112/35	112/41	114/14	116/26	116/53	118/12 L	
TAPERSP1	10272	118/14	118/15	118/18 L					
TAPERSP2	10302	118/22	118/27	118/35	118/37 L				
TBASE	224	12/38	12/41 L	25/08	25/28				
TCARDS	5324	29/40	39/20 L						
TCARDSA	5351	39/28	40/01 L						
TCARDSY	5352	39/40	40/02 L						
TCARDSZ	5355	39/50	40/03 L						
TCHKRD	10130	45/33	62/30	72/08	72/34	114/09 L			
TCHKRD1	10132	114/13 L	114/37						
TCHKRD2	10147	114/28	114/32 L	115/17					
TCHKRD3	10155	114/19	114/39 L						
TCHKRD4	10157	114/14	114/44 L						
TCHKRD4A	10164	114/23	115/03 L						
TCHKWR	10207	61/10	71/20	71/34	116/21 L				
TCHKWR1	10210	116/25 L	117/12	117/19					
TCHKWR2	10215	116/34 L	116/35						
TCHKWR3	10221	116/31	116/39 L						
TCHKWR4	10240	117/07 L	117/08						
TCHKWR5	10242	117/04	117/10 L						
TCHKWR6	10245	116/42	117/14 L						
TCHKWR7	10253	116/26	117/21 L						
TEMP1	3012	20/08 L	37/36	37/47	68/23	69/53 S	70/21 S		
		37/35 S	37/46 S	68/14 S	69/39 S	70/13 S			
TEMP2	3013	20/09 L	68/18 S	68/26					
TERMA	1767	17/17 L	37/30 S						
TESTCD	5307	29/36	39/06 L						
TESTFLAG	1760	17/03 L	39/06	39/20	40/10				
TESTMS	5314	39/09	39/14 L						
TESTMSG	5423	29/44	42/05 L						
TESTMSG1	5427	42/05	42/12 L						
TESTMS2	5322	39/11	39/15 L						
TFLAG	1	3/09 D							
TPCHKEV	10120	112/39	112/47 L						
TPCHKSQ	10121	112/22	112/48 L						
TPCHKST	10306	60/16	62/27	119/06 L					
TPMSG	10143	114/24	114/30 L						
TREAD	10127	45/32	62/29	62/31	72/10	72/35	114/04 L		
TREADCNT	1735	16/25 L	45/29 S	45/33					
TREADMSG	5531	45/40	45/43 L						
TREADP	5514	29/26	45/24 L						
TREADP1	5522	45/31 L	45/37						
TREADP2	5527	45/36	45/39 L						
TREQ	212	12/29 L	25/23 S	112/11 S	112/12	118/06 S	118/07	118/37	118/41
TRESPONS	1732	16/22 L	118/13 S	118/23	118/29	119/06			
TRPTCNT	1734	16/24 L	114/11 S	114/20	114/27 S	115/15 S	116/23 S	116/39	116/46 S
TRSP	215	12/32 L	25/25 S	112/15	112/16	112/19	118/12		
TWRITE	10200	60/20	71/21	71/35	116/04 L				
TYPEOUT	5200	28/21	38/07	38/32	41/07	55/51	65/10	70/26	134/12
		36/04 L	38/24	38/36	55/44	62/21	68/30	129/40	
UNAME	1270	15/10 L	92/10	92/20 S	98/19	100/24	100/27 S	101/05 S	

SYMBOLIC REFERENCE TABLE.

UTABLE	3014	20/11 L	67/12 S	67/42 S	67/47	68/15			
		20/12	67/31	67/44 S	68/11				
UTABLESZ	310	20/12 D	67/29	68/09					
VBSPTMSG	10257	117/05	117/26 L						
WDESC	7401	43/34	48/39	50/33	51/28	57/34	72/46		
		43/36	48/46	50/45	52/10	57/36	86/04 L		
WDESC1	7416	86/18	86/23 L						
WDISK	7040	73/28	73/38 L						
WDISK1	7043	73/43 L	73/46						
WFILE	107	11/38 L	128/21 S	128/22 S	128/25 S	128/26 S	128/27		
WRCNT	247	14/04 L	106/12	109/05					
WRDISK	7753	83/29	86/17	87/33	90/12	106/05 L			
WRDISKE1	7763	106/15	106/16	106/21 L					
WRDISKE2	7771	106/17	106/21	106/30 L					
WRFBLK	7272	51/21	73/43	83/06 L					
WRFBLK1	7301	83/13	83/17	83/19 L					
WRFBLK2	7313	83/30	83/35 L						
WRITEF	10477	43/47	63/08	76/11	82/34	84/46	86/16	87/32	116/15
		58/46	63/18	81/35	83/28	86/10	87/29	90/11	128/19 L
WRRCD	7533	72/38	90/05 L						
WRRCD1	7545	90/14	90/19 L						
WRTN	3324	20/16 L	73/39 S	73/48					
XDIRECT	7266	82/08	82/16 L						
XDISK	7265	82/07	82/15 L						
XNULL	7226	78/37	78/47	80/38 L					
XSLOT	240	14/16 L	111/06 S						
ZERO	7464	87/30	88/18 L						