STORAGE ALLOCATION.

ADDRESS	LENGTH	BINARY CONTROL CARDS.	
0	1341	IDENT	HELPER
1341		END	

ENTRY POINTS.

RWL	-	0	H.DONE	-	162	RETURN	-	1340	ERRPARM	-	1340
ROF	-	0	ENTER	-	0	RETPAR	-	1340	ERRALOC	-	1340

EXTERNAL SYMBOLS.

REQUEST	LOCTABF	TEMPC	WRITCAB	CONVERT	GDSKPTR	M.FDISK	FR.SIZE
TAG	LOCTABL	TEMPD	SAVEREG	SETUP	FDSKPTR	M.FCLEV	FR.SHAP
USERID	LFT	TEMPE	RESTREG	DECODE	GDSKDAT	M.UNAME	FR.FUND
EVENT	FLDLEN	TEMPF	MAINCL	CRELFH	FDSKDAT	M.USCTR	FR.FLAG
NXTFREE	USERRWF	TEMPG	FILCL	OPENDAR	GETDSK	M.OPCL	FR.ROOT
FREE	USERRWL	TEMPH	SLEEP	PRVOPEN	FREEDSK	M.IOCTR	FR.CLAM
ENDFREE	DATMAP	TEMPV	MYRESP	MKPTR	BUSYDSK	M.TWAIT	FR.MEMB
SECTORS	TERMRWL	TEMPW	RESP	DSPTR	L.MNCL	M.CLTIM	FHRADDR
DATABKS	TERMROF	TEMPX	GFILE	CLOSE	M.GFILE	M.10SEC	FILEADR
ERRCODE	TERMRWF	TEMPY	HFILE	ECLOSE	M.HFILE	GF.LEN	LFTFREE
FR.DDS	CLOSRWF	TEMPZ	FILECAB	DARSPA	M.FILCL	GF.SUSF	LFHADDR
M.DESTL	CLOSRWL	MYIDENT	CTEMP	ZEROMAP	M.EMPTY	GF.SUSL	DARADDR
IOCOUNT	CLOSROF	MYDAR	UDSKSCR	CHMAP	M.RETRY	GF.IOTF	PAGESW
PBSBUSY	READRWF	MYUNIT	BFILE	CLODAR	M.CLOSE	GF.IOTL	MAPBUF
DARPTR	READRWL	MYSWOCC	DDRSP	HASH	M.TVRES	GF.DDSF	SIZES
DBSIZE	READONF	DDSIPL	RBUFS	DELHASH	M.HELP	GF.DDSL	SIZE
HDRSIZE	READONL	IOTIPL	RETRY	EXCLAIM	M.SWAB	GF.DATF	NUMRESP
PFLAG	HENTRY	HASHIPL	SLOTS	SHCLAIM	M.ABFCH	GF.DATL	CREATER
RWF	DENTRY	SUSPIPL	HBR	LOCK	M.ABFIL	GF.APTF	CREBLKR
FIXREC	ORGADDR	DATIPL	HBW	UNLOCK	M.ACREQ	GF.APTL	DELBLKR
SWAPREC	ORGCLST	APTIPL	PBR	UNLOCKW	M.ACRES	GF.HSHF	OPENR
REFUND	ORGMAP	RETPARM	PBW	RELCLAM	M.USRCC	FHRHASH	ATTACHR
PTRBLK	INTDAT	RETERR	DBR	RELEASE	M.FRWCC	DARHASH	DETACHR
SWREAD	AP0	PASSERR	DBW	FRW	M.TRMCC	GF.HSHL	ZROMAPR
ZAP	AP1	USRPACK	GETRESP	MAKEMAP	M.CLOCC	GF.TRVF	CHMAPR
TRAVERS	AP2	IOTBUF	TR.DRIV	LOADBUF	M.ACTCC	FHB	CHMAPB1
TRAVRET	AP3	PROCADR	TR.LEVL	AUDIT	M.TRYCC	FB.LEN	SETUPR
FADDR	AP4	ERRADDR	BLK.SIZ	NOQLOCK	M.DFILT	FB.NAME	CREATB1
PAGEIN	AP5	ERRPACK	BLK.DTY	PROBE	M.DOBJS	FB.WD3	CLOSER
PAGEOUT	AP6	STKBUF	BLK.FLG	RETCLK	NOBJS	FB.SHAP	MOVBLKR
OPERCL	AP7	SETPCNT	SW.SW	SYSERR	M.BFILE	FB.FUND	CREPTRR
IPLIST	AP8	DISKENT	SW.DDS	FRETURN	M.DDREQ	FHR	DORESPR
RLINK3	TEMP0	DISKERR	PG.PG	ERRFILE	M.DDRSP	FR.LEN	ERRNUM
CELLS3	TEMP1	DISKINT	PG.DDS	ERRMAP	M.RBUFS	FR.NAME	ERRCLAS
RLINK4	TEMP2	FRWENT	PG.DTY	CALBEAD	M.WBUFS	FR.WD1	TABADDR
CELLS4	TEMP3	FRWERR	PTR.PTR	REGS	M.SLOTS	FR.WD2	EC:STMP
RLINK1	TEMP4	FRWINT	PTR.DDS	D.ENTRY	M.LOCKS	FR.WD3	EC:DFIL
CELLS1	TEMP5	CLKBUF	PTR.CM	D.FNAME	NLOCKS	FR.SUSP	EC:RTRN
RLINK2	TEMP6	DSYSTIM	PTR.DTY	DBUG1	M.DDSCT	FR.LOCK	EC:DBLK

CELLS2	TEMP7	DSWPTIM	PTR.NUM	DSKLCK	M.FHRL	FR.DAR	EC:GEVF
COMMROF	TEMP8	DUSRTIM	CREATE	DBUG2	M.DARL	FR.OPEN	SCRCL
COMMROL	TEMP9	MYSCRF	CREBLK	M.AUTH	M.HASHL	FR.CAPX	EC:COUT
COMMRWF	TEMP10	MYCODF	DELBLK	M.MKCAP	M.ADDS	FR.DBSZ	EC:CIN
COMMRWL	TEMP11	MYSUBP	OPEN	REDSHP	M.ASUSP	FR.ONEL	EC:SEV
HOLDBLK	TEMPA	MYEVCH	ATTACH	GDSKHDR	M.ADISK	FR.FROZ	EC:GEVH
LOCTAB	TEMPB	READCAP	DETACH	FDSKHDR	M.SDISK	FR.WRIT	EC:READ

```
                        IDENT   HELPER
                *
                        ENTRY   RWL,ROF,H.DONE
                *
                        EXT     REQUEST,TAG,USERID,EVENT,NXTFREE,FREE,ENDFREE
                        EXT     SECTORS,DATABKS,ERRCODE,FR.DDS,M.DESTL
                        EXT     IOCOUNT,PBSBUSY,DARPTR,DBSIZE,HDRSIZE,PFLAG
                        EXT     RWF,FIXREC,SWAPREC,REFUND,PTRBLK
                        EXT     SWREAD,ZAP,TRAVERS,TRAVRET,FADDR,PAGEIN,PAGEOUT
                        EXT     OPERCL,IPLIST
                *
0               PARAMS  XTEXT
0               MACROS  XTEXT
0               SYSCALL XTEXT
                *
                        MACSET  OPERCL,IPLIST,ECS
```

MACROS

```
                        *
                        * MACROS TO ADJUST AVAILABLE SECTOR COUNTERS
                        *
GAIN    MACRO   TYPE,KIND
        COUNT   TYPE,KIND,+
        ENDM
*
LOSE    MACRO   TYPE,KIND
        COUNT   TYPE,KIND,-
        ENDM
*
COUNT   MACRO   TYPE,KIND,OP
        IFC     EQ,/TYPE/DATABLK/
        SA3     DRSIZE
        ELSE
        SX3     1
        ENDIF
        IFC     EQ,/TYPE/HDRBLK/
        SA3     HDRSIZE
        ENDIF
        IFC     EQ,/KIND/SWAPPED/
        SA4     SWAPREC
        ELSE
        SA4     FIXREC
        ENDIF
        IX6     X4,OP,X3
        SA6     A4
        ENDM
*
* MACROS TO ADJUST DISK SPACE OCCUPIED
*
CREDIT  MACRO   TYPE
        CHARGE  TYPE,+
        ENDM
*
DERIT   MACRO   TYPE
        CHARGE  TYPE,-
        ENDM
*
CHARGE  MACRO   TYPE,OP
        IFC     EQ,/TYPE/DATABLK/
        SA3     DRSIZE
        ELSE
        SX3     1
        ENDIF
        IFC     EQ,/TYPE/HDRBLK/
        SA3     HDRSIZE
        ENDIF
        SA4     REFUND
        IX6     X4,OP,X3
        SA6     A4
        ENDM
```

```
                        *
                        * STORE-ZEROS MACRO
                        *
ZERO        MACRO       A,B,C,D
            BX6         X0-X0
            SETA6       A
            SETA6       B
            SETA6       C
            SETA6       D
            ENDM
                        *
SETA6       MACRO       X
            IFC         NE,/X//
            SA6         X
            ENDIF
            ENDM
                        *
                        * MACRO SETS NEEDED-FLAGS ON POINTER BLOCKS
                        *
NEEDED      MACRO       ONDISK,INDDS
            IFC         NE,/INDDS//
            SX6         ND.DDS+ND.DISK
            ELSE
            SX6         ND.DISK
            ENDIF
            SA5         B1+BLK.FLG
            BX6         X5+X6
            SA6         A5
            ENDM
                        *
                        *
2           ND.DDS      EQU         2               NEEDED-IN-DDS FLAG
4           ND.DISK     EQU         4               NEEDED-ON-DISK FLAG
```

```
     0                          RWL     BSS     0
                                *
                                *
     0                          ROF     BSS     0
                                *
     0  7110ñ00000 X            ENTER   SX1     RWF
                14211                   BX2     -X1
     1  7160ñ00000 X                    READ    MYCODF,X1,X1,RWL,X2,FRET
                                *
    12  7160ñ00000 X                    GETEVM  (MAINCL,M,ASUSP)
    20  0317ñ00021 +                    NZ      X7,BEGIN1
                                *
                0100000000 X            RJ      SYSERR          NO SUSP WORD AVAILABLE
                                *
    21  5170ñ00000 X            BEGIN1  SA7     MYIDENT
                73170                   SX1     X7
    22  7160ñ00000 X                    RESUSP  X1,TEMP1
    33  5120ñ00000 X                    SA2     TEMP1
                7160000000 X            SENDEV  *,X2            UPDATE AVAIL
                                *
    42  7160ñ00000 X                    CAPIN   SLEEP,X1,MYEVCH
    51  7160ñ00000 X                    CAPIN   RESP,X1,MYRESP
    60  7160ñ00000 X                    CAPOUT  =XSCRCL,X1,MYSCRF
                                *
    67  7160ñ00000 X            BEGIN2  GETEVF  MYEVCH,BEGIN3   CLEAR SLEEP CHANNEL
    75  0200ñ00067 +                    JP      BEGIN2
                                *
    76  7160ñ00000 X            BEGIN3  GETEVF  MYRESP,BEGIN4
   104  0200ñ00076 +                    JP      BEGIN3
                                *
   105  0200ñ00106 +            BEGIN4  JP      H.MAINL
```

```
                                *
                                * HELPER PROCESS MAIN LOOP
                                *
 106  5150000000 X              H.MAINL   SA5     MYIDENT
                                *
                   7265777771             SX6     X5=HELPF          IS THIS PROCESS THE ACCTP SLAVE
 107  0306000121 +                        ZR      X6,H.MAINLA       IF SO, HIDE FROM PEASANTS
                   7160000000 X           SENDEV  (MAINCL*M.HELP),X5 ELSE MAKE SELF AVAILABLE
 121  7160000000 X              H.MAINLA  GETEVH  MYEVCH            GET WORK TO DO
 126  5170000000 X                        SA7     REQUEST
                   73670                  SX6     X7
 127  5160000000 X                        SA6     FHRADDR           ADDR OF FHR
                   21722                  AX7     18
                        73670             SX6     X7
 130  5160000000 X                        SA6     USERID            USER PROCESS INDEX
                   21722                  AX7     18
                        73670             SX6     X7
 131  5160000000 X                        SA6     TAG               REQUEST IDENT TAG
                   21722                  AX7     18
                        43667             MX6     60-5
 132  15674                              BX6     -X6*X7
                 63160                    SB1     X6                REQUEST CODE
                                *
                   5150000000 X           SA5     FHRADDR
 133  0305000156 +                        ZR      X5,H.MAINL0       JUMP IF NO FHR ADDRESS
                   7160000000 X           REDDS   X5,FHR,FR.LEN     READ IN FHR (ALREADY LOCKED)
                                *
 146  5150000000 X                        SA5     FR.CAPX
                   43655                  MX6     60-15
                        15556             BX5     -X6*X5
 147  7160000000 X                        CAPIN   FILCL,X5,FILECAP  MOVE IN CAP FOR ECS INCARN
                                *
 156  0610000157 +              H.MAINL0  PL      B1,H.MAINL1
                                *
                   0100000000 X           RJ      SYSERR            NEGATIVE REQUEST CODE
                                *
 157  6120000007                H.MAINL1  SB2     NTYPES
                   0712000161 +           LT      B1,B2,H.MAINL2
                                *
 160  0100000000 X                        RJ      SYSERR            REQ CODE TOO BIG
                                *
 161  0210000176 +              H.MAINL2  JP      B1+REQTAB         JUMP TO PROPER ROUTINE
                                *
                                *
                                * WAKE UP REQUESTING PROCESS AND GET WORK
                                *
 162  5140000000 X              H.DONE    SA4     REQUEST           PICK UP ORIGINAL REQUEST
                   0324000106 +           PL      X4,H.MAINL        JUMP IF NO NOTIFICATION NEEDED
                                *
 163  5140000000 X                        SA4     USERID
                   5150000000 X           SA5     EVENT
 164  7160000000 X                        SENDEV  (RESP,X4),(,X5)   NOTIFY REQUESTING PROCESS
                                *
```

MAIN LOOP

```
  175  0200000106 +                    JP          H.MAINL
```

HELPER JUMP TABLE

```
                                *
                                * HELPER JUMP TABLE
                                *
 176                            REQTAB  BSS     0
                                *
 176  0200000205 *              *       JP      H.RCLOS         REAL CLOSE
 177  0200000215 *              *       JP      H.PCLOS         PSEUDO CLOSE
 200  0200000501 *              *       JP      H.DSTRY         DESTROY FILE
 201  0200000701 *              *       JP      H.AUDIT         AUDIT FILE
 202  0200001031 *              *       JP      H.FREEZ         FREEZE FILE
 203  0200001031 *              *       JP      H.MELT          MELT FILE
 204  0200001027 *              *       JP      H.DIE           SUICIDE THIS PROCESS
                                *
 205                            *       BSS     0
                          7     NTYPES  EQU     *-REQTAB
```

```
                                    *
                                    * REAL CLOSE..MAIN ROUTINE
                                    *
 205  7170000206 +                  H.RCLOS  CALL     READY
                                    *
 206  7160000000                     SX6      CLO.REAL
                5160000000 X        SA6      PFLAG              INDICATE REAL CLOSE
                                    *
 207  6150000236 +                  SB5      CSWITCH
                7170000211 +        CALL     TRAVERS
                                    *
 211  7170000212 +                  CALL     RELDISK
                                    *
 212  7170000213 +                  CALL     ADJUST
                                    *
 213  5110000000 X                  SA1      DARPTR
                6160000162 +        CALLX    CLODAR,B6,H.DONE
                                    *
                                    *
                   0     CLO.REAL   EQU      0
```

```
                                *
                                * PSEUDO-CLOSE..MAINL ROUTINE
                                *
  215  7170ñ00216 +             H.PCLOS   CALL      READY
                                *
  216  7160ñ00010                        SX6       CLO.PSEU
                5160000000 X             SA6       PFLAG              INDICATE PSEUDO-CLOSE
                                *
  217  6150ñ00256 +                       SB5       PSWITCH
                7170000221 +             CALL      TRAVERS
                                *
                                ********** MORE OF DDS ACCOUNTING KLUDGE
  221  5140ñ00000 X                       SA4       FHRADDR            WRITE OUT FHR (ESPECIALLY
                7160000000 X             WRDDS     X4+2,FHR+2,FR.LEN-2   FR,DDS)
                                ********
                                *
  234  7170ñ00235 +                       CALL      RELDISK
                                *
  235  7170ñ00162 +                       CALL      ADJUST,H.DONE
                                *
                                *
                                *
                          10    CLO.PSEU  EQU       8
```

```
                                *
                                * REAL CLOSE DRIVE SWITCH
                                *
236                             CSWITCH  BSS      0
236  0200ñ00276 +               +        JP       C.DBOUT          T.DATA,S.OUT
237  0200ñ00276 +               +        JP       C.DBOUT          T.DATA,S.FOO
240  0200ñ00312 +               +        JP       C.DBIN           T.DATA,S.IN.FX
241  0100ñ00000 X               +        RJ       SYSERR           T.DATA,S.IN.SW
242  0200ñ00330 +               +        JP       C.DBGO           T.DATA,S.GOING
243  0200ñ00331 +               +        JP       C.DBNO           T.DATA,S.NONEXT
244  0100ñ00000 X               +        RJ       SYSERR           T.DATA,S.COM.FX
245  0100ñ00000 X               +        RJ       SYSERR           T.DATA,S.COM.SW
                                *
246  0200ñ00000 X               +        JP       TRAVRET          T.PTR.S.OUT
247  0200ñ00000 X               +        JP       TRAVRET          T.PTR,S.FOO
250  0200ñ00337 +               +        JP       C.PBIN           T.PTR.S.IN.FX
251  0100ñ00000 X               +        RJ       SYSERR           T.PTR.S.IN.SW
252  0200ñ00344 +               +        JP       C.PBGO           T.PTR,S.GOING
253  0200ñ00000 X               +        JP       TRAVRET          T.PTR.S.NONEXT
254  0100ñ00000 X               +        RJ       SYSERR           T.PTR,S.COM.FX
255  0100ñ00000 X               +        RJ       SYSERR           T.PTR.S.COM.SW
                                *
                                * PSEUDO-CLOSE DRIVE SWITCH
                                *
256                             PSWITCH  BSS      0
256  0200ñ00276 +               +        JP       P.DBOUT          T.DATA,S.OUT
257  0200ñ00276 +               +        JP       P.DBOUT          T.DATA,S.FOO
260  0200ñ00324 +               +        JP       P.DBIN           T.DATA.S.IN.FX
261  0200ñ00324 +               +        JP       P.DBIN           T.DATA,S.IN.SW
262  0200ñ00330 +               +        JP       P.DBGO           T.DATA.S.GOING
263  0200ñ00331 +               +        JP       P.DBNO           T.DATA.S.NONEXT
264  0200ñ00345 +               +        JP       P.DBCOM          T.DATA,S.COM.FX
265  0200ñ00345 +               +        JP       P.DBCOM          T.DATA.S.COM.SW
                                *
266  0200ñ00000 X               +        JP       TRAVRET          T.PTR.S.OUT
267  0200ñ00000 X               +        JP       TRAVRET          T.PTR,S.FOO
270  0200ñ00341 +               +        JP       P.PBIN           T.PTR.S.IN.FX
271  0100ñ00000 X               +        RJ       SYSERR           T.PTR.S.IN.SW
272  0200ñ00344 +               +        JP       P.PBGO           T.PTR,S.GOING
273  0200ñ00000 X               +        JP       TRAVRET          T.PTR.S.NONEXT
274  0200ñ00000 X               +        JP       TRAVRET          T.PTR.S.COM.FX
275  0100ñ00000 X               +        RJ       SYSERR           T.PTR,S.COM.SW
```

```
                                *
                                * CLOSE..PROCESS POINTER TO A DATA BLOCK WHICH IS OUT
                                *
 276                            C.DBOUT   CONTINUE  2
                                *
 276                            P.DBOUT   CONTINUE  2
                                *
                                *
 276  7160000004                          NEEDED    ONDISK              MARK FATHER NEEDED
                                *
                   5140000000 X           SA4       PTR.PTR             PICK UP POINTER
 300  20444                               LX4       60-24               POSITION SWAPPED ADDR
           43644                         MX6       60-24
                    15346                BX3       -X6*X4              SWAPPED ADDR
 301  0303000000 X                        ZR        X3,TRAVRET          IF NO SWAPPED ADDR, ALL DONE
                                *
                    11464               BX4       X6*X4               CLEAR SWAPPED ADDR
                         20430          LX4       24                  RESTORE POSITION
 302  15544                               BX5       -X6*X4              OLD FIXED ADDR
           11464                         BX4       X6*X4               CLEAR OLD FIXED ADDR IN PTR
                    12643               BX6       X4+X3               REPLACE WITH OLD SWAPPED ADDR
 303  5160000000 X                        SA6       PTR.PTR             UPDATE PTR
                                *
                    7160000001          SX6       1
 304  5160000000 X                        SA6       PTR.DTY             MARK PTR DIRTY
                   5161000000 X          SA6       B1+BLK.DTY          MARK BLOCK DIRTY
                                *
 305  5130000000 X                        GAIN      DATABLK.SWAPPED
                                *
                         0315000311 +    NZ        X5,C.DBOUT1         JUMP IF OLD FIXED WAS NOT NULL
                                *
 307  5130000000 X                        LOSE      DATABLK.FIXED
                                *
 311  7170000000 X           C.DBOUT1     CALL      FREEDB,TRAVRET      FREE OLD FIXED BLOCK AND RETURN
```

CLOSE: DATA BLOCK IS IN

```
                                *
                                * CLOSE..PROCESS POINTER TO A DATA BLOCK WHICH IS IN
                                *
  312                           C.DBIN    CONTINUE  2
                                *
                                *
  312  0710000313 +                       NG        B1,C.DBIN1          JUMP IF 1-LEVEL FILE
                                *
                 0100000000 X             RJ        SYSERR              DATA BLOCK OF MULTI-LEVEL
                                *                                        FILE WAS IN DURING CLOSE
                                *
                                *
  313  6170000314 +             C.DBIN1   CALLX     HBW,B7              WRITE THE HEADER BLOCK
                                *
  314  7160000000 X                       DSBLK     FILECAP,0,FRET
  323  7170000000 X                       CALL      KILLECS,TRAVRET
                                *
                                *
                                * PSEUDO-CLOSE..PROCESS POINTER TO A DATA BLOCK WHICH IS IN
                                *
  324                           P.DBIN    CONTINUE  2
                                *
  324  0710000327 +                       NG        B1,P.DBIN1          JUMP IF 1-LEVEL
                                *
                 7160000006             NEEDED    ONDISK,INDDS
  326  0200000000 X                       JP        TRAVRET
                                *
  327  6170000000 X             P.DBIN1   CALLX     HBW,B7,TRAVRET      WRITE HEADER OF 1-LEVEL FILE
```

```
                                *
                                * CLOSE..PROCESS POINTER TO A DATA BLOCK WHICH IS GOING OUT
                                *
330                             C.DBGO    CONTINUE  2
                                *
330                             P.DBGO    CONTINUE  2
                                *
330  0200000117 *                        JP        BUSYBLK
```

CLOSE: DATA BLOCK DOES NOT EXIST

```
                                *
                                * CLOSE..PROCESS POINTER TO NON-EXISTENT (MAYBE DELETED) DATA BLOCK
                                *
331                             C.DBNO    CONTINUE  2
                                *
331                             P.DBNO    CONTINUE  2
                                *
                                *
331  5140000000 X                        SA4       PTR.PTR
                  43644                  MX6       60-24
                       15546             BX5       -X6*X4          FIXED ADDR
332  0305000000 X                        ZR        X5,TRAVRET      IF FIXED NULL, THEN ALL DONE
                                *
                      11664             BX6       X4*X4           CLEAR FIXED ADDR IN PTR
                           54640        SA6       A4              UPDATE PTR
                                *
333  7160000001                          SX6       1
                    5160000000 X        SA6       PTR.DTY         MARK PTR DIRTY
334  5161000000 X                        SA6       B1+BLK.DTY      MARK BLOCK DIRTY
                                *
                    5130000000 X        GAIN      DATABLK.FIXED
                                *
336  7170000000 X                        CALL      FREEDB,TRAVRET  FREE FIXED BLOCK AND EXIT
```

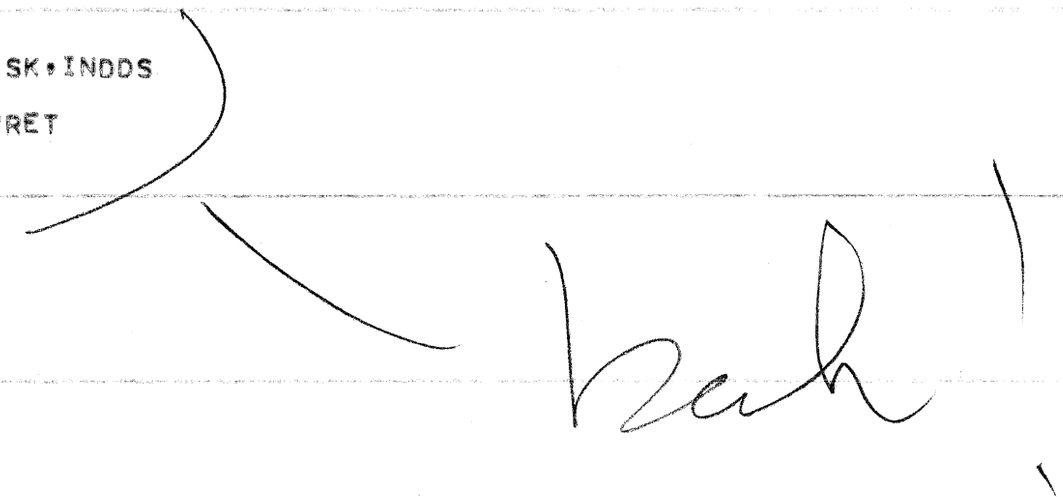
CLOSE: POINTER BLOCK IS IN

```
                                *
                                * CLOSE..PROCES POINTER TO POINTER BLOCK WHICH IS IN
                                *
337                             C.PBIN    CONTINUE  2
                                *
337  7170000340 +                        CALL      PBLKIN                PROCESS PTR BLOCK
340  7170000000 X                        CALL      PBFLUSH,TRAVRET       FLUSH PTR BLOCK AND EXIT
                                *
                                * PSEUDO-CLOSE..PROCESS POINTER TO POINTER BLOCK WHICH IS IN
                                *
341                             P.PBIN    CONTINUE  2
                                *
341  7170000342 +                        CALL      PBLKIN                PROCESS PTR BLOXK
342  0710000000 X                        NG        B1,TRAVRET            IF ROOT, NO FLUSH
                                *
                     7170000000 X       CALL      PBFLUSH,TRAVRET       FLUSH PTR BLOCK
```

```
                                *
                                * CLOSE..PROCESS POINTER TO POINTER BLOCK WHICH IS GOING OUT
                                *
344                             C.PBGO    CONTINUE  2
                                *
344                             P.PBGO    CONTINUE  2
                                *
344  0200601117 +                        JP        BUSYBLK
```

CLOSE: DATA BLOCK IS COMING IN

```
                                *
                                * PSEUDO-CLOSE..PROCESS POINTER TO DATA BLOCK WHICH IS COMING IN
                                *
  345                           P.DBCOM   CONTINUE  2
                                *
  345  7160A00006                        NEEDED    ONDISK,INDDS
                                *
                  0200000000 X          JP        TRAVRET
```



```
                                *
                                * PROCESS POINTER BLOCK IN DDS
                                *
347                             PBLKIN  ROUTINE 3
                                *
                                DSKADDR LBSS    1
                                *
                  0610000362 +          PL      B1,PBLKIN3      JUMP IF NOT ROOT PTR
                                *
                                * PROCESS ROOT POINTER
                                *
350  5150000000 X               PBLKIN1 SA5     IOCOUNT         COUNT OF PBWS IN PROGRESS
                  7275777776            SX7     X5-1
351  0337000353 +                       NG      X7,PBLKIN2
                    54750               SA7     A5
352  6170000350 +                       CALLX   GETRESP,B7,PBLKIN1
                                *
353  5140000000 X               PBLKIN2 SA4     REFUND          TOTAL SECTORS RETURNED TO OWNER
                  5150000000 X          SA5     FR.SIZE
354  37654                              IX6     X5-X4           DECR TOTAL SECTORS OCCUPIED
                       54650            SA6     A5              UPDATE IN FHR
                                *
                  5150000000 X          SA5     BLK.SIZ         SIZE OF PTR BLK
355  63557                              SB5     X5
                 6140000000 X           SB4     SW.SW           CM ADDR OF ROOT PAGE SWITCH
356  6170000357 +                       CALLX   HRW,B7
                                *
357  13600                              ZERO    DSKADDR         NO DISK BLOCK TO BE RELEASED
                                *
360  5150000000 X                       EXIT
                                *
                                * PROCESS NON-ROOT POINTER
                                *
362  5130000000 X               PBLKIN3 SA3     PFLAG
                  5141000001 X          SA4     B1+1+BLK.FLG
363  5151000001 X                       SA5     B1+1+BLK.DTY
                    12553               BX5     X5+X3
                         12554          BX5     X5+X4
364  63555                              SB5     X5
                    0250000365 +        JP      B5+JTABLE       GO THROUGH JUMP TABLE
```

```
                                    *
                                    * PBLKIN JUMP TABLE
                                    *
  365                               JTABLE    BSS       0
                                    *
                                    * CLOSE:
                                    *
  365  0200000405  +                +         JP        PBLKINA
  366  0200000405  +                +         JP        PBLKINA
  367  0100000000  X                +         RJ        SYSERR
  370  0100000000  X                +         RJ        SYSERR
  371  0200000416  +                +         JP        PBLKINB
  372  0200000426  +                +         JP        PBLKINC
  373  0100000000  X                +         RJ        SYSERR
  374  0100000000  X                +         RJ        SYSERR
                                    *
                                    * PSEUDO-CLOSE
                                    *
  375  0200000405  +                +         JP        PBLKINA
  376  0200000405  +                +         JP        PBLKINA
  377  0100000000  X                +         RJ        SYSERR
  400  0100000000  X                +         RJ        SYSERR
  401  0200000416  +                +         JP        PBLKINB
  402  0200000433  +                +         JP        PBLKIND
  403  0200000440  +                +         JP        PBLKINE
  404  0200000444  +                +         JP        PBLKINF
```

```
                                *
                                * POINTER BLOCK IS IN:
                                *
                                *       REAL OR PSEUDO CLOSE
                                *       NOT NEEDED ON DISK
                                *       NOT NEEDED IN DDS
                                *       CLEAN OR DIRTY REL TO DISK
                                *
 405  5140000000 X              PBLKINA SA4     PTR.PTR                 PICK UP PTR
                43544                   MX5     60-24
                    15645               BX6     -X5*X4                  DISK ADDR OF PTR BLK
 406  5160000000 X                      SA6     DSKADDR                 SAVE FOR FLUSH
                                *
                7160000015              SX6     T.PTR+S.NONEXT          NEW STATUS = NON-EXISTENT
 407  20677                             LX6     60-4                    DISK ADDR = NULL
                    54640               SA6     A4                      UPDATE POINTER
                                *
                7160000001              SX6     1
 410  5160000000 X                      SA6     PTR.DTY                 MARK PTR DIRTY
                5161000000 X            SA6     B1+BLK.DTY              MARK BLOCK DIRTY
                                *
 411  7130000001                        GAIN    PTRBLK
                7130000001              CREDIT  PTRBLK
                                *
 414  5150000000 X                      EXIT
                                *
                                * POINTER BLOCK IS IN:
                                *
                                *       REAL OR PSEUDO-CLOSE
                                *       NEEDED ON DISK
                                *       NOT NEEDED IN DDS
                                *       CLEAN REL TO DISK COPY
                                *
 416  5140000000 X              PRLKINR SA4     PTR.PTR                 PICK UP PTR
                20404                   LX4     4                       POSITION TUS
                    43671               MX6     60-3
 417  11464                             BX4     X4*X4                   CLEAR TUS
                7160000000              SX6     S.OUT                   NEW STATUS = OUT
                    12646               BX6     X4+X6                   INSERT NEW STATUS
 420  20677                             LX6     60-4                    RESTORE POINTER POSITION
                    54640               SA6     A4                      UPDATE POINTER
                                *
                7160000001              SX6     1
 421  5160000000 X                      SA6     PTR.DTY                 MARK POINTER DIRTY
                                *
                13600                   ZERO    DSKADDR                 INDICATE NO DISK BLOCK TO BE FREED
                                *
                7160000004              NEEDED  ONDISK                  MARK FATHER BLOCK NEEDED
                                *
 424  5150000000 X                      EXIT
```

```
                                *
                                * POINTER BLOCK IS IN
                                *
                                *       REAL CLOSE
                                *       NEEDED ON DISK
                                *       NOT NEEDED IN DDS
                                *       DIRTY REL TO DISK COPY
                                *
426  1340ñ                      PBLKINC BX4     X0-X0
           7176000430 *                 CALL    WRITPB
                                *
430  7160ñ00004                         NEEDED  ONDISK          MARK FATHER BLOCK NEEDED
                                *
                   5150000000 X         EXIT


                                *
                                * POINTER BLOCK IS IN
                                *
                                *       PSEUDO CLOSE
                                *       NEEDED ON DISK
                                *       NOT NEEDED IN DDS
                                *       DIRTY REL TO DISK COPY
                                *
433  5140ñ00000 X               PBLKIND SA4     PTR.DDS
           7170000435 *                 CALL    WRITPB          WRITE PIR BLK ON DISK
                                *
435  7166ñ00006                         NEEDED  ONDISK.INDDS    MARK FATHER BLOCK NEEDED
                                *
                   5150000000 X         EXIT
```

```
                                *
                                * POINTER BLOCK IS IN
                                *
                                *       PSEUDO CLOSE
                                *       NEEDED ON DISK
                                *       NEEDED IN DDS
                                *       CLEAN REL TO DISK COPY
                                *
440  7160Ā00006                 PBLKINE NEEDED  ONDISK,INDDS        MARK FATHER NEEDED
                                *
                   13600                ZERO    DSKADDR             INDICATE NO BLOCK TO BE RELEASED
                                *
                   5150000000 X         EXIT


                                *
                                * POINTER BLOCK IS IN
                                *
                                *       PSEUDO CLOSE
                                *       NEEDED ON DISK
                                *       NEEDED IN DDS
                                *       DIRTY REL TO DISK
                                *
444  1340Ā                      PBLKINF BX4     X0-X0               INDICATE PTR NOT TO BE MADE BUSY
               7170000446 +             CALL    WRITPB              WRITE POINTER BLOCK TO DISK
                                *
446  7160ĀĀ0006                         NEEDED  ONDISK,INDDS
                                *
                   5150000000 X         EXIT
```

```
                                *
                                * WRITE POINTER BLOCK TO DISK
                                *
                                *       X4 = DDS ADDR OF PTR BLOCK
                                *
451                             WRITPB  ROUTINE 4
                                *
                                DDSADDR LBSS    1
                                *
                    10644               BX6     X4
452  5160000000 X                  SA6     DDSADDR
                                *
                    7140000001          SX4     1
453  6160000454 +                  CALLX   GETDSK,B6       GET 1 SECTOR OF DISK
                                *
454  5130000000 X                  SA3     TR.LEVL         RESTORE STACK LEVEL
                    63130          SB1     X3
                                *
455  5140000000 X                  SA4     PTR.PTR
                    43544          MX5     60-24
                         15745     BX7     -X5*X4
456  5170000000 X                  SA7     DSKADDR         SAVE ADDR OF OLD COPY FOR FLUSH
                                *
                    11554          BX5     X5*X4           CLEAR OLD ADDR FROM PTR
                         12656     BX6     X5+X6           INSERT NEW DISK ADDR IN PTR
457  5464                          SA6     A4              UPDATE PTR
                                *
                    7160000001          SX6     1
460  5160000000 X                  SA6     PTR.DTY         MARK PTR DIRTY
                    5161000000 X  SA6     B1+BLK.DTY      MARK BLOCK DIRTY
                                *
461  5150000000 X                  SA5     IOCOUNT         COUNT OF PBWS IN PROGRESS
                    7275777770    SX7     X5-EVCHSZ+1     ROOM FOR ONE MORE
462  0317000465 +                  NZ      X7,WRITPB1      JUMP IF SO
                                *
                    6170000464 +  CALLX   GETRESP,B7      WAIT FOR A PBW TO FINISH
464  5150000000 X                  SA5     IOCOUNT
                    7255777776    SX5     X5-1
                                *
465  7275000001     WRITPB1        SX7     X5+1
                    54750          SA7     A5              INCR IOCOUNT
                                *
466  7170000467 +                  CALL    PAGEOUT         PBW MAY UNLOCK..MOVE PAGE OUT
                                *
467  5131000001 X                  SA3     B1+1+BLK.SIZ    SIZE OF BLOCK
                    63530          SB5     X3
470  6140000000 X                  SB4     SW.SW
                                *
                    6111000001          SB1     B1+1
471  7170000472 +                  CALL    SWREAD          BRING IN PREV LEVELS PAGE SWITCH
                                *
472  5140000000 X                  SA4     PTR.PTR
                    5150000000 X  SA5     DDSADDR
```

```
   473  6170000474 +                CALLX    PBW,B7          WRITE NEW COPY ON DISK
                          *
   474  6111777776                  SB1      B1-1            MOVE BACK UP TO CURRENT LEVEL
                  7170000476 +      CALL     SWREAD          GET BACK CURRENT PAGE SWITCH
                          *
   476  7170000477 +                CALL     PAGEIN          GET PAGE BACK AFTER PBW
                          *
   477  5150000000 X                EXIT
```

```
                                *
                                * DESTROY.. MAIN ROUTINE
                                *
 501  7170000502 +              H.DSTRY  CALL     READY
                                *
                                *
 502  7160000105                        SX6      CLO.DSTR
                5160000000 X            SA6      PFLAG
                                *
                                ***************  KLUDGE FOR DDS SPACE
 503  5150000000 X                      SA5      FR.DDS
                20555                   LX5      60-15
                     43655              MX6      60-15
 504  15654                             BX6      -X6*X5
           13556                        BX5      X5-X6
                7266000062              SX6      X6+DDSLOP
 505  12665                             BX6      X6+X5
           20617                        LX6      15
                54650                   SA6      A5
                                ***************
 506  7170000507 +                      CALL     FTREE
                                *
 507  6150000537 +                      SB5      DSWITCH
                7170000511 +            CALL     TRAVERS
                                *
 511  7170000512 +                      CALL     RELDISK
                                *
                                ***************  MORE KLUDGE
 512  5150000000 X                      SA5      FR.DDS
                20555                   LX5      60-15
                     43655              MX6      60-15
 513  15654                             BX6      -X6*X5
           13556                        BX5      X5-X6
                7266777715              SX6      X6-DDSLOP
 514  0336000536 +                      NG       X6,H.DOOPS
                12656                   BX6      X5+X6
                     20617              LX6      15
 515  5465                              SA6      A5
                                ***************
                                *
           7170000517 +                 CALL     ADJUST
                                *
 517  5150000000 X                      SA5      DARPTR
                63350                   SB3      X5
 520  6140000003                        SB4      R.FILE
                6150777776              SB5      -1
 521  6160000522 +                      CALLX    DARSPA,B6
                                *
 522  5110000000 X                      SA1      DARPTR
                6160000524 +            CALLX    CLODAR,B6
                                *
 524  7160000000 X                      SENDEV   (MAINCL.M.DEST(),B0   RELEASE DESTROY LOCK
                                *
```

Note see also CREATE pg 22

CLODARP

DECR FILE CTR BY 1

```
                                  *
   535  0200000162 +                        JP        H.DONE
                                  *
                                  *
                                  *
   536  0100000000 X              H.DOOPS   RJ        SYSERR
                                  *
                                  *
                          105     CLO.DSTR  EQU       69
```

```
                                 *
                                 * DESTROY DRIVE SWITCH
                                 *
     537                         DSWITCH  BSS      0
     537   0200000572 +          +        JP       D.DBOUT         T.DATA.S.OUT
     540   0200000557 +          +        JP       D.DBFOO         T.DATA.S.FOO
     541   0200000575 +          +        JP       D.DBIN          T.DATA.S.IN.FX
     542   0200000575 +          +        JP       D.DBIN          T.DATA.S.IN.SW
     543   0200000630 +          +        JP       D.DBGO          T.DATA.S.GOING
     544   0200000631 +          +        JP       D.DBNO          T.DATA.S.NONEXT
     545   0200000632 +          +        JP       D.DBCOM         T.DATA.S.COM.FX
     546   0200000632 +          +        JP       D.DBCOM         T.DATA.S.COM.SW
                                 *
     547   0100000000 X          +        RJ       SYSERR          T.PTR.S.OUT
     550   0200000633 +          +        JP       D.PBFOO         T.PTR.S.FOO
     551   0200000640 +          +        JP       D.PBIN          T.PTR.S.IN.FX
     552   0100000000 X          +        RJ       SYSERR          T.PTR.S.IN.SW
     553   0100000000 X          +        RJ       SYSERR          T.PTR.S.GOING
     554   0200000000 X          +        JP       TRAVRET         T.PTR.S.NON
     555   0100000000 X          +        RJ       SYSERR          T.PTR.S.COM.FX
     556   0100000000 X          +        RJ       SYSERR          T.PTR.S.COM.SW
```

```
                                *
                                * DESTROY..PROCESS POINTER TO DATA BLOCK WHICH CANNOT BE RECOVERED
                                *
557                             D.DBF00   CONTINUE  2
                                *
                                * FIGURE OUT WHICH COPY IS BAD
                                *
557  5120000000 X                        SA2       PTR.PTR
                43344                   MX3       60-24
                    15523               BX5       -X3*X2              FIXED ADDRESS
560  20244                              LX2       60-24
       15123                            BX1       -X3*X2              SWAPPED ADDRESS
             0301000566 +               ZR        X1,D.DBF002         JP IF SWAPPED ADDR = NULL
                                *
                                * SWAPPED COPY EXISTS..FIXED BLOCK (IF ANY) IS OK..RELEASE IT
                                *
561  0305000565 +                      ZR        X5,D.DBF001         JP IF FIXED ADDR = NULL
                7170000563 +            CALL      FREEDB              RELEASE FIXED BLOCK
563  5130000000 X                       GAIN      DATABLK,FIXED       NOTE FIXED SECTORS FREED
565  1051                   D.DBF001    BX5       X1                  BAD BLOCK = SWAPPED
                                *
                                * PROCESS BAD SPOT ON DISK
                                *
566  5140000000 X               D.DBF002 SA4       DBSIZE              SIZE OF BAD BLOCK
                7170000570 +            CALL      BADBLK
                                *
                                * RETURN DISK SPACE TO OWNER OF FILE
                                *
570  5130000000 X                       CREDIT    DATABLK
                                *
                0200000000 X            JP        TRAVRET
```

```
                                *
                                * DESTROY..PROCESS POINTER TO DATA BLOCK WHICH IS OUT
                                *
572                             D.DBOUT   CONTINUE  2
                                *
572  7170000573 +                        CALL      RELFXSW             RELEASE DISK COPY(S)
                                *
573  5130000000 X                        CREDIT    DATABLK             RETURN DISK SPACE TO OWNER
                                *
               0200000000 X             JP        TRAVRET
                                *
                                * DESTROY.. PROCESS POINTER TO DATA BLOCK WHICH IS IN
                                *
575                             D.DBIN    CONTINUE  2
                                *
575  0710000611 +                        NG        B1,D.DBIN1          JP IF 1-LEVEL FILE
                                *
                                * PROCESS DATA BLOCK OF MULTI-LEVEL FILE
                                *
               7170000577 +             CALL      RELFXSW             RELEASE DISK COPY(S)
                                *
577  7170000600 +                        CALL      FADDR               SET X3 = FILE ADDR OF BLOCK
600  7160000000 X                        DSBLK     FILECAP,(,X3),FRET  DESTROY BLOCK IN ECS INCARN
                                *
607  5130000000 X                        CREDIT    DATABLK
                                *
               0200000000 X             JP        TRAVRET
                                *
                                * PROCESS DATA BLOCK OF 1-LEVEL FILE
                                *
611  6170000612 +               D.DBIN1   CALLX     ZAP,B7              SMASH FHB
                                *
612  5150000000 X                         SAS       FR.NAME
                    43644                MX6       60-24
                       15556             BX5       -X6*X5              DISK ADDR OF FHB
613  7170000614 +                         CALL      FREEHB              FREE THE FHB
                                *
614  7130000001                           GAIN      HDRBLK              ADJUST COUNTER
616  7130000001                           CREDIT    HDRBLK              RETURN DISK SPACE TO OWNER
                                *
620  7160000000 X                         DSBLK     FILECAP,0,FRET      DELETE BLOCK FROM ECS INCARN
627  7170000000 X                         CALL      KILLECS,TRAVRET     DESTROY ECS INCARN AND FHR
                                *
                                * DESTROY..PROCESS POINTER TO DATA BLOCK WHICH IS GOING OUT
                                *
630                             D.DBGO    CONTINUE  2
630  0200001117 +                         JP        BUSYBLK
                                *
                                *
                                * DESTROY..PROCESS POINTER TO A DATA BLOCK WHICH DOES NOT EXIST
                                *
631                             D.DBNO    CONTINUE  2
631  7170000000 X                         CALL      RELFXSW,TRAVRET     RELEASE OLD FIXED COPY (IF ANY)
```

DESTROY: DATA BLOCK IS IN OR OUT

```
                                *
                                *
                                * DESTROY .. PROCESS POINTER TO DATA BLOCK WHICH IS COMING IN
                                *
632                             D.DBCOM   CONTINUE  2
632  02000001177 +                        JP        BUSYBLK
```

```
                                *
                                * DESTROY..PROCESS POINTER TO POINTER BLOCK WHICH CANNOT BE RECOVERED
                                *
  633                           D.PBF00   CONTINUE  2
  633  5140000000 X                      SA4       PTR.PTR
                43544                    MX5       60-24
                     15545               BX5       -X5*X4              DISK ADDR
  634  7140000001                         SX4       1                   SIZE OF POINTER BLOCK
                7170000636 +             CALL      BADBLK              MARK BLOCK BAD
                                *
  636  7130000001                         CREDIT    PTRBLK              RETURN DISK SPACE TO OWNER
                                *
                0200000000 X             JP        TRAVRET
```

DESTROY: POINTER BLOCK IS IN

```
                                *
                                * DESTROY..PROCESS POINTER TO POINTER BLOCK WHICH IS IN
                                *
640                             D.PBIN    CONTINUE  2
                                *
640  7170000641 *                        CALL      DPBLK
                                *
641  7170000000 X                        CALL      PBFLUSH,TRAVRET
```

```
                                *
                                * RELEASE FIXED AND SWAPPED COPIES OF DATABLOCK
                                *
  642                           RELFXSW   ROUTINE   3
                                *
                                * RELEASE FIXED COPY
                                *
                    5120000000 X          SA2       PTR.PTR
  643  43344                    MX3       60-24
             15523               BX5       -X3*X2              EXTRACT FIXED ADDR
                    0305000647 +          ZR        X5,RELFS1   JP IF DISK ADDR IS NULL
                                *
  644  7170ñ00645 +             CALL      FREEDB              FREE DISK SECTORS
  645  5130ñ00000 X             GAIN      DATABLK,FIXED       ADJUST COUNTER
                                *
                                * RELEASE SWAPPED COPY
                                *
  647  2123ñ                    RELFS1    AX2       24
             43344               MX3       60-24
                 15523           BX5       -X3*X2              EXTRACT SWAPPED ADDR
  650  0305ñ00654 +             ZR        X5,RELFS2           JP IF NULL
                                *
                    71700000652 +         CALL      FREEDB              FREE DISK SECTORS
  652  5130ñ00000 X             GAIN      DATABLK,SWAPPED     ADJUST COUNTER
                                *
  654  5150ñ00000 X             RELFS2    EXIT
```

```
                                *
                                *  DESTROY POINTER BLOCK IN DDS
                                *
656                             DPBLK    ROUTINE  3
                                *
                                DSKADDR  LBSS     1
                                *
                    0610000671 +         PL       B1,DPBLK1          JP IF NOT ROOT POINTER
                                *
                                * PROCESS ROOT POINTER
                                *
657  6170000640 +               CALLX    ZAP,B7                      SMASH FHB OF DISK
                                *
660  5150000000 X               SA5      FR.NAME
                         43644  MX6      60-24
                               15556  BX5      -X6*X5                 DISK ADDR
661  7170000662 +               CALL     FREEHB                      FREE FHB
                                *
662  1360000                    ZERO     DSKADDR                     NO BLOCK FOR FLUSH
                                *
663  7130000001                 GAIN     HDRBLK                      ADJUST COUNTER
665  7130000001                 CREDIT   HDRBLK                      RETURN DISK SPACE TO OWNER
                                *
667  5150000000 X               EXIT
                                *
                                * PROCESS NON-ROOT POINTER
                                *
671  5140000000 X               DPBLK1   SA4      PTR.PTR             PICK UP POINTER
                         43644  MX6      60-24
                               15646  BX6      -X6*X4                 DISK ADDR
672  5160000000 X               SA6      DSKADDR                     SAVE FOR FLUSH
                                *
                    7130000001          GAIN     PTRBLK              ADJUST COUNTER
674  7130000001                 CREDIT   PTRBLK                      RETURN SPACE TO OWNER
                                *
                    5150000000 X        EXIT
                                *
                                *
```

```
                                *
                                *
                                * RECORD BAD SPOT ON DISK
                                *
677                             BADBLK   ROUTINE  3
                                *
                                * TEMPORARY NO-OP
                                *
                    5150000000 X        EXIT
```

```
                                *
                                * AUDIT A SINGLE MULTI-LEVEL FILE
                                *
 701  7170000702 +              H.AUDIT  CALL     READY
                                *
                                *
 702  7170000703 +                       CALL     FTREE
                                *
 703  6150000711 +                       SB5      ASWITCH
                7170000705 +             CALL     TRAVERS
                                *
 705  7170000706 +                       CALL     SETDAR
                                *
 706  7170000707 +                       CALL     SETCTR
                                *
 707  7170000710 +                       CALL     CHKFHR          CHECK FHR AND UNLOCK IT
                                *
 710  7170000162 +                       CALL     MKEVENT,H.DONE  MAKE RESPONSE EVENT AND EXIT
```

```
                                *
                                * AUDIT DRIVE SWITCH
                                *
  711                           ASWITCH  BSS     0
  711  0200000731 +             +        JP      A;DBOUT      T.DATA,S.OUT
  712  0100000000 X             +        RJ      SYSERR       T.DATA,S.FOO
  713  0200000731 +             +        JP      A;DBOUT      T.DATA,S.IN.FX (ONLY IN ACCTG FILE)
  714  0100000000 X             +        RJ      SYSERR       T.DATA,S.IN.SW
  715  0100000000 X             +        RJ      SYSERR       T.DATA,S.GOING
  716  0200000000 X             +        JP      TRAVRET      T.DATA,S.NONEXT
  717  0100000000 X             +        RJ      SYSERR       T.DATA,S.COM.FX
  720  0100000000 X             +        RJ      SYSERR       T.DATA,S.COM.SW
                                *
  721  0100000000 X             +        RJ      SYSERR       T.PTR.S.OUT
  722  0200000743 +             +        JP      A;PBFOO      T.PTR,S.FOO
  723  0200000746 +             +        JP      A;PBIN       T.PTR.S.IN.FX
  724  0100000000 X             +        RJ      SYSERR       T.PTR,S.IN.SW
  725  0100000000 X             +        RJ      SYSERR       T.PTR.S.GOING
  726  0200000000 X             +        JP      TRAVRET      T.PTR,S.NONEXT
  727  0100000000 X             +        RJ      SYSERR       T.PTR,S.COM.FX
  730  0100000000 X             +        RJ      SYSERR       T.PTR.S.COM.SW
```

```
                                *
                                * AUDIT..PROCESS POINTER TO A DATA BLOCK WHICH IS OUT
                                *
731                             A:DBOUT   CONTINUE  2
                                *
731  5150000000 X                        SA5       PTR.PTR              PICK UP POINTER
               43644                     MX6       60-24
                    15556                BX5       -X6*X5               DISK ADDRESS
                                *
732  5140000000 X                        SA4       DBSIZE               SECTORS PER DATA BLOCK
                                *
               6160000735 +             CALLX     BUSYDSK,B6,A:DBOT1   MARK SECTORS BUSY
                                *
734  0200000737 +               +        JP        A:DBOT2              NORMAL RETURN FROM BUSYDSK
                                *
735  7160000001                 A:DBOT1  SX6       ERR.MPD              ERROR RETURN FROM BUSYDSK
               5160000000 X             SA6       ERRCODE
736  0200000000 X                        JP        TRAVRET
                                *
737  5140000000 X               A:DBOT2  SA4       SECTORS
               5150000000 X             SA5       DBSIZE
740  366465                             IX6       X4+X5                INCR NUMBER OF SECTORS IN FILE
                54640                   SA6       A4
                                *
               5140000000 X             SA4       DATABKS
741  7264000001                         SX6       X4+1                 INCR DATABLOCKS IN FILE
                54640                   SA6       A4
                                *
742  0200000000 X                        JP        TRAVRET
```

```
                                *
                                * AUDIT..PROCESS POINTER TO A POINTER BLOCK WHICH CANNOT BE RECOVERED
                                *
743  7160000015                 A:PBFOO  SX6     T.PTR+S.NONEXT     SUBTREE ROOTED
                  20670                  LX6     60-4                 AT OFFENDING
744  5160000000 X                        SA6     PTR.PTR                PTR BLK DISAPPEARS
                                *
                  7160000005            SX6     ERR.FOO
745  5160000000 X                        SA6     ERRCODE
                                *
                  0200000000 X          JP      TRAVRET
                                *
                                *
                                * AUDIT..PROCESS POINTER TO A POINTER BLOCK WHICH IS IN
                                *
746  0710000000 X               A:PBIN   NG      B1,TRAVRET         NO-OP IF ROOT POINTER
                                *
                  5150000000 X          SA5     PTR.PTR            PICK UP POINTER
747  43644                              MX6     60-24
                       15556             BX5     -X6*X5             DISK ADDRESS
                                *
                  7140000001            SX4     1                  PTR BLK = 1 SECTOR
                                *
750  6160000752 +                       CALLX   BUSYDSK,B6,A:PBIN1
                                *
751  0200000754 +               *       JP      A:PBIN2            NORMAL RETURN FROM BUSYDSK
                                *
752  7160000002                A:PBIN1  SX6     ERR.MPP            ERROR RETURN FROM BUSYDSK
                       5160000000 X     SA6     ERRCODE
753  0200000000 X                       JP      TRAVRET
                                *
754  5140000000 X               A:PBIN2  SA4     SECTORS
                       7264000001       SX6     X4+1               INCR SECTORS IN FILE
755  5464                               SA6     A4
                                *
                       0200000000 X     JP      TRAVRET
```

```
                                *
                                * ADJUST DAR FOR FILE BEING AUDITED
                                *
  756                           SETDAR    ROUTINE   1
                                *
                  5150000000 X            SA5       DARPTR
  757  6335?                    SB3       X5
             6140000002                   SB4       R.DISK          INDICATE DISK SPACE
  760  5140?00000 X             SA4       SECTORS                   NUMBER OF SECTORS
                  63540         SB5       X4
                                *
  761  6160?00763 +             CALLX     DARSPA,B6,SETDAR1         INCR DISK OCCUPIED
                                *
  762  0100?00000 X             +         RJ        SYSERR
  763  5150?00000 X             SETDAR1   SA5       DARPTR
                  63350         SB3       X5
  764  6140?00003                SB4       R.FILE                    INDICATE FILE COUNTER
                  6150000001    SB5       1                         INCR BY 1 FILE
                                *
  765  6160?00767 +             CALLX     DARSPA,B6,SETDAR2         INCR NUMBER OF FILES
                                *
  766  0100?00000 X             +         RJ        SYSERR
  767  5150?00000 X             SETDAR2   EXIT
                                *
                                *
                                * ADJUST FIXED SECTOR COUNTER
                                *
  771                           SETCTR    ROUTINE   1
                                *
                  7160000000 X            GETEVH    (MAINCL,M,FDISK)
 1000  5140?00000 X             SA4       SECTORS
                  37474         IX4       X7-X4
 1001  7160?00000 X             SENDEV    *,X4
                                *
 1010  5150?00000 X             EXIT
                                *
                                *
                                * CHECK FHR AND UNLOCK
                                *
 1012                           CHKFHR    ROUTINE   1
                                *
                  5110000000 X            SA1       FR.SIZE
 1013  5120?00000 X             SA2       SECTORS
                  5130000000 X            SA3       DATABKS
                                *
 1014  7361?                    SX6       X1
             13616              BX6       X1-X6                     CLEAR OLD SECTORS-OCCUPIED
                  12662         BX6       X6+X2                     INSERT NEW SECTORS-OCCUPIED
                                *
                       20630    LX6       60-36
 1015  7376?                    SX7       X6
                  13767         BX7       X6-X7                     CLEAR OLD NO-OF-EXISTING-DATABLOCKS
                       12773    BX7       X7+X3                     INSERT NEW NO-OF-EXISTING-DATABLOCKS
```

```
                     20744            LX7       36
                                *
 1016  54715                          SA7       A1                   PLACE NEW FR.SIZE IN FHR
              13771                   BX7       X7-X1                COMPARE WITH OLD VERSION
           0307001020 +               ZR        X7,CHKFHR1           JUMP IF SAME
                                *
 1017  7160000003                     SX6       ERR.FHR              FHR MUST HAVE BEEN WRONG
           5160000000 X               SA6       ERRCODE
                                *
 1020  6160001021 +             CHKFHR1 CALLX   UNLOCK,B6            UNLOCK THE FHR
                                *
 1021  5150000000 X                   EXIT
                                *
                                *
                                * MAKE AUDIT RESPONSE EVENT
                                *
 1023                           MKEVENT ROUTINE 1
                                *
           5140000000 X               SA4       ERRCODE
 1024  5150000000 X                   SA5       TAG
           20522                      LX5       18
                     12645            BX6       X4+X5                EVENT = TAG AND ERROR CODE
 1025  5160000000 X                   SA6       EVENT
                                *
           5150000000 X               EXIT
                                *
```

DIE! COMMIT PROCESS SUICIDE

```
                                *
                                * DIE.. COMMIT PROCESS SUICIDE
                                *
1027  013000001030 +            H.DIE     RETURN          RETURN TO BUILDER
                                *
```

ACTIONS NOT YET IMPLIMENTED

```
                                *
                                *
 1031                           H.FREEZ   BSS       0
 1031                           H.MELT    BSS       0
                                *
                                *
 1031  0100000000 X                       RJ        SYSERR
```

```
                                *
                                * FETCH ENTIRE POINTER TREE FROM DISK INTO DDS
                                *
 1032                           FTREE     ROUTINE   1
                                *
                                * TRAVERSE PART OF TREE WHICH IS IN, READING POINTER BLOCKS
                                *
 1033  1360                     FTREE1    ZERO      PRSBUSY
 1034  1360                     FTREE2    ZERO      IOCOUNT
 1035  6150001047 +                       SB5       FSWITCH
             7170001037 +                  CALL      TRAVERS
                                *
                                * WAIT FOR I/O TO COMPLETE
                                *
 1037  5150000000 X                       SA5       IOCOUNT
             0305001043 +                  ZR        X5,FTREE4          JP IF NO I/O WAS STARTED
                                *
 1040  5150000000 X             FTREE3    SA5       IOCOUNT
             7275777776                    SX7       X5-1               DECR I/O COUNT
 1041  0337001034 +                       NG        X7,FTREE2          IF ALL RESP IN, MAKE NEXT PASS
             54750                         SA7       A5
 1042  6170001040 +                       CALLX     GETRESP,B7,FTREE3  IF MORE RESP OUT, KEEP TRYING
                                *
                                *  SEE IF ANY POINTER BLOCKS WERE BUSY
                                *
 1043  5150000000 X             FTREE4    SA5       PRSBUSY            PTR-BLKS-WERE-BUSY FLAG
             0305001045 +                  ZR        X5,FTREE5          JUMP IF NONE WERE BUSY
 1044  6160001033 +                       CALLX     UNLOCKW,B6,FTREE1  START AGAIN WHEN SOMETHING HAPPENS
                                *
 1045  5150000000 X             FTREE5    EXIT
```

```
                                *
                                * TREE-FETCH DRIVE SWITCH
                                *
1047                            FSWITCH  BSS     0
1047  0200000000 X              +        JP      TRAVRET         T.DATA,S.OUT
1050  0200000000 X              +        JP      TRAVRET         T.DATA,S.FOO
1051  0200000000 X              +        JP      TRAVRET         T.DATA,S.IN.FX
1052  0200000000 X              +        JP      TRAVRET         T.DATA,S.IN.SW
1053  0200000000 X              +        JP      TRAVRET         T.DATA,S.GOING
1054  0200000000 X              +        JP      TRAVRET         T.DATA,S.NONEXT
1055  0200000000 X              +        JP      TRAVRET         T.DATA,S.COM.FX
1056  0200000000 X              +        JP      TRAVRET         T.DATA,S.COM.SW
                                *
1057  0200001047 +              +        JP      F.PBOUT         T.PTR,S.OUT
1060  0200000000 X              +        JP      TRAVRET         T.PTR,S.FOO
1061  0200000000 X              +        JP      TRAVRET         T.PTR,S.IN.FX
1062  0100000000 X              +        RJ      SYSERR          T.PTR,S.IN.SW
1063  0200001103 +              +        JP      F.PBGO          T.PTR,S.GOING
1064  0200000000 X              +        JP      TRAVRET         T.PTR,S.NONEXT
1065  0200001103 +              +        JP      F.PBCOM         T.PTR,S.COM.FX
1066  0100000000 X              +        RJ      SYSERR          T.PTR,S.COM.SW
```

```
                                *
                                * TREE-FETCH..PROCESS POINTER TO POINTER BLOCK WHICH IS OUT
                                *
 1067                           F.PBOUT   CONTINUE  2
 1067  5150000000 X                      SA5       IOCOUNT              COUNT OF PENDING PBRS
             7275777770                   SX7       X5-EVCHSZ+1          SEE IF ROOM FOR ONE MORE
 1070  0317001073 +                      NZ        X7,F.PBOT1           YES..DO IT
             6170001072 +                 CALLX     GETRESP,B7           NO..WAIT FOR A PBR TO FINISH
 1072  5150000000 X                      SA5       IOCOUNT                  AND DECR I/O COUNT
             7255777776                   SX5       X5-1
                                *
 1073  7275000001             F.PBOT1   SX7       X5+1                 INCR I/O COUNT
             54750                        SA7       A5
                                *
 1074  5140000000 X                      SA4       PTR.PTR              COPY OF POINTER
             5150000000 X                 SA5       PTR.DDS              DDS ADDR OF POINTER
                                *
 1075  5131500001 X                      SA3       B1+1+BLK.SIZ
             24353                        NX3       B5,X3                NORMALIZE PTR BLK SHAPE NO.
 1076  6155477720                       SB5       B5-47                SHIFT COUNT - 47
             67505                        SB5       -B5                  47 - SHIFT COUNT = LOG2 SHAPE NO.
                                *
 1077  6140000001                       SB4       1                    RETURN-IMMEDIATELY FLAG
                                *
             6170001102 +               CALLX     PBR,B7,F.PBOT2       START POINTER BLOCK READ
                                *
 1101  0100000000 X             +         RJ        SYSERR
 1102  0200000000 X             F.PBOT2   JP        TRAVRET
                                *
                                *
                                * TREE-FETCH..PROCESS POINTER TO POINTER BLOCK WHICH IS COMING IN
                                *
 1103                           F.PBCOM   CONTINUE  2
                                *
                                * TREE FETCH..PROCESS POINTER TO POINTER BLOCK WHICH IS GOING OUT
                                *
 1103                           F.PBGO    CONTINUE  2
                                *
 1103  7160000001                       SX6       1
             5160000000 X                 SA6       PBSBUSY                  INDICATE BUSY POINTER
                                *
 1104  0200000000 X                      JP        TRAVRET
```

```
                                *
                                * FLUSH POINTER BLOCK FROM DDS
                                *
 1105                           PBFLUSH  ROUTINE  3
                                *
                                DSKADDR  LBSS     1
                                *
                                * DESTROY DDS COPY IF NECESSARY
                                *
                  5151000001 X          SA5      B1+1+BLK.FLG
 1106  20575                  LX5      60-2              POSITION NEEDED-IN-DDS FLAG
             0335001111 +       NG       X5,PBFLUSH1       JP IF NEEDED-IN-DDS
 1107  5151000001 X            SA5      B1+1+SW.DDS       PICK UP DDS ADDR
                6160001111 +    CALLX    DSPTR,B6
                                *
                                * FLUSH OLD DISK COPY IF NECESSARY
                                *
 1111  5150000000 X            PBFLUSH1 SA5      DSKADDR
                7170001113 +    CALL     FREEPB
                                *
 1113  0610001115 +            PL       B1,PBFLUSHX       IF NOT ROOT, THEN ALL DONE
                                *
                                * ROOT PTR BLK .. FLUSH FHR AND ECS INCARNATION
                                *
                7170001115 +    CALL     KILLECS           DESTROY ECS INCARN AND FHR
                                *
 1115  5150000000 X            PBFLUSHX EXIT
```

```
                                *
                                * WAIT FOR BUSY BLOCK
                                *
 1117                           BUSYBLK  CONTINUE  2
                                *
 1117  7170001120 +                      CALL     PAGEOUT          MOVE CURRENT PAGE OUT TO DDS
 1120  6160001121 +                      CALLX    UNLOCKW,B6       WAIT FOR SOMETHING TO HAPPEN
 1121  7170001122 +                      CALL     PAGEIN           MOVE PAGE BACK IN
                                *
 1122  5141000000 X                      SA4      B1+PTR.NUM       BACK UP
                   7264777776           SX6      X4-1               TO REPROCESS
 1123  5464                           SA6      A4                   THE POINTER
                                *
                 0200000000 X           JP       TRAVRET
```

```
                                *
                                * ADD A DISK BLOCK TO FREE LIST
                                *       X5 = DISK ADDR
                                *
 1124                           FREEHR  ROUTINE 4
                 5140000000 X           SA4     HDRSIZE         SIZE OF HEADER BLOCK
 1125  20435                            LX4     24
          12745                         BX7     X4+X5           COMBINE WITH DISK ADDR
                 0200001133 +           JP      FREEB
                                *
                                *
 1126                           FREEPR  ROUTINE 4
                 0305001137 +           ZR      X5,FREEX        NO POINTER BLOCK TO FREE
 1127  7140000001                       SX4     1
                 20430                  LX4     24
                      12745             BX7     X4+X5
 1130  0200001133 +                     JP      FREEB
                                *
                                *
 1131                           FREEDR  ROUTINE 4
                 0305001137 +           ZR      X5,FREEX        NO DATA BLOCK TO FREE
 1132  5140000000 X                     SA4     DBSIZE          SECTORS PER DATA BLOCK
                 20430                  LX4     24
                      12745             BX7     X4+X5
                                *
                                *
 1133  5150000000 X             FREEB   SA5     NXTFREE         NEXT FREE LIST WORD
                      53750             SA7     X5              STORE DISK ADDR / SIZE CODE
 1134  7275000001                       SX7     X5+1            INCR TO NEXT-WORD
                      54750             SA7     A5
 1135  7160000000 X                     SX6     ENDFREE
                      13776             BX7     X7-X6           COMPARE WITH LIMIT
 1136  0317001137 +                     NZ      X7,FREEX        ALL DONE
                      0100000000 X      RJ      SYSERR
                                *
 1137  5150000000 X             FREEX   EXIT
```

```
                                *
                                * INITIALIZE FOR CLOSE, DESTROY, ETC
                                *
 1141                           READY   ROUTINE  2
                                *
                                * CLEAR VARIOUS COUNTERS
                                *
                    13600               ZERO    IOCOUNT,FIXREC,SWAPREC,REFUND
 1144  13600                        X    ZERO    DATABKS,ERRCODE
                                *
                                * INITIALIZE FREE-LIST OF BLOCK TO BE RELEASED LATER
                                *
                 7160000000 X           SX6     FREE
 1146  5160000000 X                    SA6     NXTFREE
                                *
                                * CONVERT DATA BLOCK SIZE CODE TO SECTORS PER DATA BLOCK
                                *
                 5150000000 X           SA5     FR.DBSZ
 1147  20500                          LX5     3
                43672                   MX6     60-2
                    15556               BX5     -X6*X5
                       63550            SB5     X5
 1150  5155001334 *                    SA5     BE+NSECTS
                    10655               BX6     X5
 1151  5160000000 X                    SA6     DBSIZE
                                *
                                * CONVERT HEADER BLOCK SIZE CODE TO SECTORS IN HEADER BLOCK
                                *
                 5150000000 X           SA5     FR.NAME
 1152  21530                          AX5     24
                43672                   MX6     60-2
                    15556               BX5     -X6*X5
                       63550            SB5     X5
 1153  5155001334 *                    SA5     BE+NSECTS
                    10655               BX6     X5
 1154  5160000000 X                    SA6     HDRSIZE
                 5160000000 X           SA6     SECTORS
                                *
                                * SAVE DAR POINTER FROM FHR
                                *
 1155  5150000000 X                    SA5     FR.DAR
                    20530               LX5     6+18
                       73650            SX6     X5
 1156  5160000000 X                    SA6     DARPTR
                                *
                 5150000000 X           EXIT
```

```
                                       *
                                       * RELEASE ALL DISK BLOCKS PREVIOUSLY PLACED IN FREE LIST
                                       *
 1160                                  RELDISK  ROUTINE  2
                                       *
                                       * MARK END OF LIST
                                       *
                  5150000000 X                  SA5      NXTFREE
 1161  13605                                    ZERO     X5
                                       *
                                       * RESET FREE LIST POINTER
                                       *
                  7160000000 X                  SX6      FREE
 1162  54655                                    SA6      A5
                                       *
                                       * LOOP TO FREE ALL BLOCKS IN LIST
                                       *
 1163  5150000000 X                    RELDISK1 SA5      NXTFREE                INCREMENT
                  7265000001                    SX6      X5+1                     FREE-LIST
 1164  54655                                    SA6      A5                         POINTER
                                       *
             53450                              SA4      X5                     PICK UP NEXT ITEM IN LIST
                  0304001167 +                  ZR       X4,RELDISKX            JUMP IF END OF LIST
 1165  43544                                    MX5      60-24
             15545                              BX5      -X5*X4                 EXTRACT BLOCK ADDR
                  21430                         AX4      24
                                       *
 1166  6160001163 +                             CALLX    FREEDSK,B6,RELDISK1
                                       *
 1167  5150000000 X                    RELDISKX EXIT
```

```
                                *
                                * UPDATE GLOBAL SECTOR COUNTERS AND REFUND DISK SPACE TO OWNER OF FILE
                                *
 1171                           ADJUST   ROUTINE  2
                                *
                    7160000000 X        GETEVH   (MAINCL,M.FDISK)
 1200  5140000000 X             SA4      FIXREC
                      36474     IX4      X7+X4
 1201  7160000000 X             SENDEV   *,X4
                                *
 1210  7160000000 X             GETEVH   (MAINCL,M.SDISK)
 1216  5140000000 X             SA4      SWAPREC
                      36474     IX4      X7+X4
 1217  7160000000 X             SENDEV   *,X4
                                *
 1226  5150000000 X             SA5      DARPTR          DAR ADDR
                      63350     SB3      X5
 1227  6140000002                SB4      R.DISK          INDICATE DISK SPACE
                    5140000000 X        SA4      REFUND          SECTORS TO REFUND
 1230  6354                      SB5      X4
                        67505   SB5      -R5
                      6160001232 +      CALLX    DARSPA,B6       REFUND SPACE TO OWNER
                                *
                                *****    KLUDGE DDS ALLOCATION
 1232  5150000000 X             SA5      PFLAG
                   7255777767   SX5      X5-CLO.PSEU
 1233  0305000122 +             ZR       X5,ADJUST1      SKIP IF PSEUDO CLOSE
                                *
                    5150000000 X        SA5      FR.DDS
 1234  21517                     AX5      15
                         4000   MX6      60-15
                        15556   BX5      -X6*X5
 1235  7160000000 X             GETEVH   (MAINCL,M.DDSCT)
 1243  36575                     IX5      X7+X5
                    7160000000 X        SENDEV   *,X5
                                ********
 1252  5150000000 X             ADJUST1  EXIT
```

```
                                    *
                                    * DESTROY ECS INCARNATION AND FHR AND RELEASE SPOT IN FILES-CLIST
                                    *
1254                                KILLECS   ROUTINE   4
                                    *
                    7160000000 X            DSFILE    FILECAP
1261  5150000000 X                         SA5       FR.CAPX
                    43655                   MX6       60-15
                         15556              BX5       -X6*X5
1262  7160000000 X                          CAPIN     FILCL,B0,CTEMP
1271  7160000000 X                          GETEVH    (MAINCL+M.FCLEV)     FREE CHAIN HEAD
1277  10047                                 BX4       X7
            7160000000 X                    SETEMP    CTEMP,CTEMP,X4
1306  7160000000 X                          CAPOUT    FILCL,X5,CTEMP
1315  7160000000 X                          SENDEV    (MAINCL+M.FCLEV),X5
                                    *
1326  5110000000 X                          SA1       FR.NAME
                    6140000000 X            SB4       M.FHRL
1327  6150000000 X                          SB5       FHRHASH
                    61600001331 +           CALLX     DELHASH,B6
                                    *
1331  5150000000 X                          EXIT
```

```
                                    *
                                    * UNEXPECTED F-RETURN
                                    *
 1333  0100000000 X                 FRET      RJ        SYSERR              UNEXPECTED F-RETURN
                                    *
                                    * TABLE OF BLOCK SIZES IN SECTORS
                                    *
 1334  00000000000000000001         NSECTS    DATA      1,2,4,7
                                    *
                                    *
                                    *
 1340                               RETURN    BSS       0
 1340                               RETPAR    BSS       0
 1340                               ERRALOC   BSS       0
 1340                               ERRPARM   BSS       0
 1340  0100000000 X                           RJ        SYSERR
                                    *
 1340                               SYMBOLS   XTEXT
                                    *
 1341                                         END

                         43267      STORAGE USED          5020 STATEMENTS      670 SYMBOLS      000094 INVENTED SYMBOLS
                                    6600 ASSEMBLY       29.028 SECONDS         981 REFERENCES
```

SYMBOLIC REFERENCE TABLE.

ADJUST	1771	PROGRAM*	10/15	11/20	27/42	53/04 L						
ADJUST1	1052	PROGRAM*	53/27	53/37 L								
APTIPL	0	EXTERNAL*										
AP0	0	EXTERNAL*										
AP1	0	EXTERNAL*										
AP2	0	EXTERNAL*										
AP3	0	EXTERNAL*										
AP4	0	EXTERNAL*										
AP5	0	EXTERNAL*										
AP6	0	EXTERNAL*										
AP7	0	EXTERNAL*										
APR	0	EXTERNAL*										
ASWITCH	711	PROGRAM*	37/09	38/04 L								
ATTACH	0	EXTERNAL*										
ATTACHR	0	EXTERNAL*										
AUNIT	0	EXTERNAL*										
A!DROT1	735	PROGRAM*	39/12	39/16 L								
A!DROT2	737	PROGRAM*	39/14	39/20 L								
A!DROUT	731	PROGRAM*	38/05	38/07	39/04 L							
A!DRFOO	743	PROGRAM*	38/15	40/04 L								
A!DRIN	746	PROGRAM*	38/16	40/16 L								
A!DRIN1	752	PROGRAM*	40/24	40/28 L								
A!DRIN2	754	PROGRAM*	40/26	40/32 L								
BANBLK	677	PROGRAM*	30/26	33/10	36/46 L							
BEGIN1	21	PROGRAM*	6/11	6/15 L								
BEGIN2	67	PROGRAM*	6/25 L	6/26								
BEGIN3	76	PROGRAM*	6/26	6/28 L	6/29							
BEGIN4	705	PROGRAM*	6/29	6/31 L								
BFILE	0	EXTERNAL*										
BLK.QTY	0	EXTERNAL*	13/26 S	16/19 S	20/36	22/20 S	25/30 S					
BLK.FLG	0	EXTERNAL*	13/10	19/07	22/49	23/32	24/31					
			14/26	20/35	23/13	27/10	48/10					
BLK.SIZ	0	EXTERNAL*	20/23	25/45	47/18							
BUSYBLK	1117	PROGRAM*	15/08	18/08	31/47	32/06	49/04 L					
BUSYDSK	0	EXTERNAL*	39/13	40/25								
CALREAD	0	EXTERNAL*										
CELLS1	0	EXTERNAL*										
CELLS2	0	EXTERNAL*										
CELLS3	0	EXTERNAL*	20/06	36/06	48/06							
CELLS4	0	EXTERNAL*	25/08									
CELLX	0		20/05 D	25/07 D	35/05 D	36/06	41/41 D	48/06	50/13 D	53/05 D		
			20/06	25/08	36/05 D	36/47 D	42/18 D	48/06 D	50/21 D	54/05 D		
			20/06 D	25/08 D	36/06	41/05 D	45/05 D	48/06	51/05 D			
			20/06	25/08	36/06 D	41/29 D	48/05 D	50/06 D	52/05 D			
CHKFHR	1012	PROGRAM*	37/17	41/40 L								
CHKFHR1	1020	PROGRAM*	42/05	42/10 L								
CHMAP	0	EXTERNAL*										
CHMAPB1	0	EXTERNAL*										
CHMAPR	0	EXTERNAL*										
CLKBUF	0	EXTERNAL*										
CLODAR	0	EXTERNAL*	10/18	27/51								
CLOSE	0	EXTERNAL*										
CLOSER	0	EXTERNAL*										

SYMBOLIC REFERENCE TABLE.

CLOSROF	0	EXTERNAL*							
CLOSRWF	0	EXTERNAL*							
CLOSRWL	0	EXTERNAL*							
CLO.DSTR	105		27/07	28/09 D					
CLO.PSEU	10		11/06	11/23 D	53/26				
CLO.REAL	0		10/06	10/20 D					
COMMROF	0	EXTERNAL*							
COMMROL	0	EXTERNAL*							
COMMRWF	0	EXTERNAL*							
COMMRWL	0	EXTERNAL*							
CONVERT	0	EXTERNAL*							
CREATBI	0	EXTERNAL*							
CREATE	0	EXTERNAL*							
CREATER	0	EXTERNAL*							
CREBLK	0	EXTERNAL*							
CREBLKR	0	EXTERNAL*							
CRELFH	0	EXTERNAL*							
CRFPTRR	0	EXTERNAL*							
CSWITCH	536	PROGRAM*	10/09	12/04 L					
CTEMP	0	EXTERNAL*	54/11	54/14	54/14	54/15			
C.OBGO	930	PROGRAM*	12/09	15/04 L					
C.OBIN	312	PROGRAM*	12/07	14/04 L					
C.OBINI	913	PROGRAM*	14/07	14/13 L					
C.OBNO	931	PROGRAM*	12/10	16/04 L					
C.OBOUT	576	PROGRAM*	12/05	12/06	13/04 L				
C.OBOUTI	911	PROGRAM*	13/30	13/34 L					
C.OBGO	944	PROGRAM*	12/18	18/04 L					
C.OBIN	937	PROGRAM*	12/16	17/04 L					
OAPADDR	0	EXTERNAL*							
OASHASK	0	EXTERNAL*							
OATPTR	0	EXTERNAL*	10/16	27/43	27/49	41/06	41/15	51/44 S	53/16
OATSPA	0	EXTERNAL*	27/48	41/13	41/21	53/23			
OATARKS	0	EXTERNAL*	39/25	41/44	51/10 S				
OATIPL	0	EXTERNAL*							
OATMAP	0	EXTERNAL*							
OBB	0	EXTERNAL*							
OBSIZE	0	EXTERNAL*	13/28	16/21	30/24	31/08	35/14	39/10	50/22
			13/32	30/10	30/29	31/35	35/24	39/21	51/25 S
OBUG1	0	EXTERNAL*							
OBUG2	0	EXTERNAL*							
ORW	0	EXTERNAL*							
ORSP	0	EXTERNAL*							
OSADDR	0	EXTERNAL*	25/08 D	25/11 S	25/53				
OSIPL	0	EXTERNAL*	7/27 S	7/27 S	7/27	11/15 S	11/15 S		
			7/27 S	7/27 S	11/15 S	11/15 S	11/15		
OSLOP	62		27/16	27/34					
OECODE	0	EXTERNAL*							
OELBLK	0	EXTERNAL*							
OELBLKR	0	EXTERNAL*							
OELHASH	0	EXTERNAL*	54/21						
OENTRY	0	EXTERNAL*							
OETACH	0	EXTERNAL*							
OETACHR	0	EXTERNAL*							

SYMBOLIC REFERENCE TABLE.

.ISKENT	0	EXTERNAL*								
.ISKERR	0	EXTERNAL*								
.ISKINT	0	EXTERNAL*								
.ORESPR	0	EXTERNAL*								
.PALK	456	PROGRAM*	34/07	36/04 L						
.PALK1	471	PROGRAM*	36/08	36/28 L						
.SKADDR	0	EXTERNAL*	20/06 D	22/12 S	24/12 S	34/06 D	36/31 S	48/18		
			20/29 S	22/47 S	25/22 S	34/20 S	48/06 D			
.SKLCK	0	EXTERNAL*								
.SPTR	0	EXTERNAL*	48/15							
.SWITCH	437	PROGRAM*	27/23	29/04 L						
.SWPTIM	0	EXTERNAL*								
.SYSTIM	0	EXTERNAL*								
.UERTIM	0	EXTERNAL*								
D.ABCOM	432	PROGRAM*	29/11	29/12	32/05 L					
D.ABF00	457	PROGRAM*	29/06	30/04 L						
D.ABF001	465	PROGRAM*	30/17	30/20 L						
D.ABF002	466	PROGRAM*	30/13	30/24 L						
D.ABG0	430	PROGRAM*	29/09	31/46 L						
D.ABIN	475	PROGRAM*	29/07	29/08	31/14 L					
D.ABIN1	411	PROGRAM*	31/16	31/31 L						
D.ABND	431	PROGRAM*	29/10	31/52 L						
D.ABOUT	472	PROGRAM*	29/05	31/04 L						
D.ENTRY	0	EXTERNAL*								
D.FNAME	0	EXTERNAL*								
D.PRF00	433	PROGRAM*	29/15	33/04 L						
D.PRIN	440	PROGRAM*	29/16	34/04 L						
FCLOSE	0	EXTERNAL*								
FCICIN	0	EXTERNAL*	6/22	6/23	7/32	54/11				
FCICOUT	0	EXTERNAL*	6/24	54/15						
FCINBLK	0	EXTERNAL*	14/16	31/24	31/42					
FCIOFIL	0	EXTERNAL*	54/07							
FCIGEVF	0	EXTERNAL*	6/26	6/29						
FCIGEVK	0	EXTERNAL*	6/11	7/10	41/31	53/07	53/12	53/34	54/12	
FCIREAD	0	EXTERNAL*	6/09							
FCIRTRN	0	EXTERNAL*	43/05							
FCISEV	0	EXTERNAL*	6/20	7/53	41/34	53/15	54/16			
			7/09	27/53	53/10	53/36				
FCTSTMP	0	EXTERNAL*	54/14							
FNDFREE	0	EXTERNAL*	50/31							
FNTER	0	PROGRAM*	6/06 L							
FRRADDR	0	EXTERNAL*								
FRRALOC	1340	PROGRAM*	55/14 L							
FRRCLAS	0	EXTERNAL*								
FRRCODE	0	EXTERNAL*	39/17 S	40/09 S	40/29 S	43/08 S	42/19	51/10 S		
FRRFILE	0	EXTERNAL*								
FRRMAP	0	EXTERNAL*								
FRRNUM	0	EXTERNAL*								
FRRPACK	0	EXTERNAL*								
FRRPARM	1340	PROGRAM*	55/15 L							
FRR.FHR	3		42/07							
FRR.FOO	5		40/08							
FRR.MPD	1		39/16							

SYMBOLIC REFERENCE TABLE.

ERD.MPP	2		40/28						
EVCHSZ	10		25/33	47/06					
EVENT	0	EXTERNAL*	7/51	42/23 S					
EXCLAIM	0	EXTERNAL*							
FADDR	0	EXTERNAL*	31/23						
FB.FUND	0	EXTERNAL*							
FB.LEN	0	EXTERNAL*							
FB.NAME	0	EXTERNAL*							
FB.SHAP	0	EXTERNAL*							
FB.WD3	0	EXTERNAL*							
FDSKDAT	0	EXTERNAL*							
FDSKHDR	0	EXTERNAL*							
FDSKPTR	0	EXTERNAL*							
FHA	0	EXTERNAL*							
FHD	0	EXTERNAL*	7/27	11/15					
FHDADDR	0	EXTERNAL*	7/12 S	7/24	11/13				
FHDHASH	0	EXTERNAL*	54/19						
FILCL	0	EXTERNAL*	7/32	54/11	54/15				
FILEADR	0	EXTERNAL*							
FILECAP	0	EXTERNAL*	7/32	14/16	31/24	37/42	54/07		
FIXREC	0	EXTERNAL*	13/33	22/23	31/39	36/22	51/09 S		
			16/22	30/20	35/15	36/34	53/07		
FLALEN	0	EXTERNAL*							
FREE	0	EXTERNAL*	51/13	52/13					
FREER	1733	PROGRAM*	50/09	50/17	50/27 L				
FREEDB	1731	PROGRAM*	13/35	16/24	30/19	36/14	35/24	50/20 L	
FREEDSK	0	EXTERNAL*	52/29						
FREEHA	1724	PROGRAM*	31/37	36/18	50/05 L				
FREEPA	1726	PROGRAM*	48/20	50/12 L					
FREEX	1737	PROGRAM*	50/13	50/21	50/33	56/36 L			
FRET	1733	PROGRAM*	6/09	14/16	31/24	37/42	55/04 L		
FRETURN	0	EXTERNAL*							
FRW	0	EXTERNAL*							
FRWENT	0	EXTERNAL*							
FRWERR	0	EXTERNAL*							
FRWINT	0	EXTERNAL*							
FR.CAPX	0	EXTERNAL*	7/28	54/07					
FR.CLAM	0	EXTERNAL*							
FR.DAR	0	EXTERNAL*	51/41						
FR.DBSZ	0	EXTERNAL*	51/18						
FR.DDS	0	EXTERNAL*	27/11	27/29	53/29				
FR.FLAG	0	EXTERNAL*							
FR.FROZ	0	EXTERNAL*							
FR.FUND	0	EXTERNAL*							
FR.LEN	0	EXTERNAL*	7/27	11/15					
FR.LOCK	0	EXTERNAL*							
FR.MEMB	0	EXTERNAL*							
FR.NAME	0	EXTERNAL*	31/33	36/14	51/29	54/17			
FR.ONEL	0	EXTERNAL*							
FR.OPEN	0	EXTERNAL*							
FR.ROOT	0	EXTERNAL*							
FR.SHAP	0	EXTERNAL*							
FR.SIZE	0	EXTERNAL*	20/19	41/42					

SYMBOLIC REFERENCE TABLE.

FR.SUSP	0	EXTERNAL*						
FR.WD1	0	EXTERNAL*						
FR.WD2	0	EXTERNAL*						
FR.WD3	0	EXTERNAL*						
FR.WRIT	0	EXTERNAL*						
FSWITCH	1047	PROGRAM*	45/10	46/04 L				
FTREE	1032	PROGRAM*	27/22	37/08	45/04 L			
FTREE1	1033	PROGRAM*	45/08 L	45/28				
FTREE2	1034	PROGRAM*	45/09 L	45/20				
FTREE3	1040	PROGRAM*	45/18 L	45/22				
FTREE4	1043	PROGRAM*	45/16	45/26 L				
FTREE5	1045	PROGRAM*	45/27	45/30 L				
F.PRCOM	1103	PROGRAM*	46/20	47/33 L				
F.PRGO	1103	PROGRAM*	46/18	47/37 L				
F.PROT1	1073	PROGRAM*	47/07	47/12 L				
F.PROT2	1102	PROGRAM*	47/25	47/28 L				
F.PROUT	1067	PROGRAM*	46/14	47/04 L				
GDSKDAT	0	EXTERNAL*						
GDSKHDR	0	EXTERNAL*						
GDSKPTR	0	EXTERNAL*						
GETDSK	0	EXTERNAL*	25/15					
GETRESP	0	EXTERNAL*	20/17	25/37	45/23	47/09		
GFILE	0	EXTERNAL*						
GF.APTF	0	EXTERNAL*						
GF.APTL	0	EXTERNAL*						
GF.DATF	0	EXTERNAL*						
GF.DATL	0	EXTERNAL*						
GF.DDSF	0	EXTERNAL*	7/27	11/15				
GF.DDSL	0	EXTERNAL*	7/27	11/15				
GF.HSHF	0	EXTERNAL*						
GF.HSHL	0	EXTERNAL*						
GF.IOTF	0	EXTERNAL*						
GF.IOTL	0	EXTERNAL*						
GF.LEN	0	EXTERNAL*						
GF.SUSF	0	EXTERNAL*	6/18					
GF.SUSL	0	EXTERNAL*	6/18					
GF.TRVF	0	EXTERNAL*						
HASH	0	EXTERNAL*						
HASHIPL	0	EXTERNAL*						
HBP	0	EXTERNAL*						
HBW	0	EXTERNAL*	14/14	14/29	20/27			
HDRSIZE	0	EXTERNAL*	31/39	31/40	36/22	34/23	50/06	51/36 S
HELBF	6		7/06					
HENTRY	0	EXTERNAL*						
HFILE	0	EXTERNAL*						
HOLDBLK	0	EXTERNAL*						
H.AUDIT	501	PROGRAM*	9/09	37/04 L				
H.DIE	1027	PROGRAM*	9/12	43/04 L				
H.DONE	162	PROGRAM*	3/03 E	7/47 L	10/17	11/19	28/02	37/18
H.DOOPS	E36	PROGRAM*	27/35	28/06 L				
H.DSTRY	501	PROGRAM*	9/08	27/04 L				
H.FREEZ	1031	PROGRAM*	9/10	44/03 L				
H.MAINL	106	PROGRAM*	6/31	7/04 L	7/48	8/01		

SYMBOLIC REFERENCE TABLE.

H.MAINLA	721	PROGRAM*	7/07	7/09 L								
H.MAINL0	756	PROGRAM*	7/25	7/33 L								
H.MAINL1	757	PROGRAM*	7/33	7/37 L								
H.MAINL2	761	PROGRAM*	7/38	7/42 L								
H.MELT	1031	PROGRAM*	9/11	44/04 L								
H.PCLOS	915	PROGRAM*	9/07	11/04 L								
H.RCLOS	905	PROGRAM*	9/06	10/04 L								
INTDAT	0	EXTERNAL*										
IOCOUNT	0	EXTERNAL*	20/12	25/37	45/15	47/05	51/09 S					
			25/32	45/10 S	45/18	47/09						
IOTBUF	0	EXTERNAL*										
IOTIPL	0	EXTERNAL*										
IPLIST	0	EXTERNAL*	3/16									
IPILIST	0	EXTERNAL*	3/16 D	6/22 S	6/26	7/32	31/24 S	53/10 S	54/07 S	54/14		
			6/09 S	6/22 S	6/29 S	7/53 S	31/24	53/10 S	54/07 S	54/15 S		
			6/09 S	6/22	6/29 S	7/53 S	31/42 S	53/10	54/07	54/15 S		
			6/09 S	6/23 S	6/29	7/53 S	31/42 S	53/12 S	54/11 S	54/15 S		
			6/09 S	6/23 S	7/09 S	7/53	31/42 S	53/12 S	54/11 S	54/15 S		
			6/09 S	6/23 S	7/09 S	14/16 S	31/42	53/12	54/11 S	54/15		
			6/09	6/23 S	7/09 S	14/16 S	41/31 S	53/15 S	54/11 S	54/16 S		
			6/11 S	6/23	7/09	14/16 S	41/31 S	53/15 S	54/11	54/16 S		
			6/11 S	6/24 S	7/10 S	14/16	41/31	53/15	54/12 S	54/16 S		
			6/11	6/24 S	7/10 S	27/53 S	41/34 S	53/34 S	54/12 S	54/16		
			6/20 S	6/24 S	7/10	27/53 S	41/34 S	53/34 S	54/12			
			6/20 S	6/24 S	7/32 S	27/53 S	41/34	53/34	54/14 S			
			6/20	6/24	7/32 S	27/53	53/07 S	53/36 S	54/14 S			
			6/22 S	6/26 S	7/32 S	31/24 S	53/07 S	53/36 S	54/14 S			
			6/22 S	6/26 S	7/32 S	31/24 S	53/07	53/36	54/14 S			
JTABLE	965	PROGRAM*	20/40	21/04 L								
KILLECS	1654	PROGRAM*	14/17	31/43	48/26	54/04 L						
LFWADDR	0	EXTERNAL*										
LFT	0	EXTERNAL*										
LFTFREE	0	EXTERNAL*										
LOADBUF	0	EXTERNAL*										
LOCK	0	EXTERNAL*										
LOCTAB	0	EXTERNAL*										
LOCTABF	0	EXTERNAL*										
LOCTABL	0	EXTERNAL*										
L.MNCL	0	EXTERNAL*										
MAINCL	0	EXTERNAL*	6/11	27/53	53/07	53/34	54/16					
			7/09	41/31	53/12	54/12						
MAKEMAP	0	EXTERNAL*										
MAPBUF	0	EXTERNAL*										
MKEVENT	1623	PROGRAM*	37/19	42/17 L								
MKPTR	0	EXTERNAL*										
MOVBLKR	0	EXTERNAL*										
MYCODF	0	EXTERNAL*	6/09									
MYDAR	0	EXTERNAL*										
MYFVCH	0	EXTERNAL*	6/22	6/26	7/10							
MYIDENT	0	EXTERNAL*	6/15 S	7/04								
MYDESP	0	EXTERNAL*	6/23	6/29								
MYSCRF	0	EXTERNAL*	6/24									
MYSUBP	0	EXTERNAL*										

SYMBOLIC REFERENCE TABLE.

MYSWOCC	0	EXTERNAL*						
MYIINIT	0	EXTERNAL*						
M.ABFCH	0	EXTERNAL*						
M.ABFIL	0	EXTERNAL*						
M.ACREQ	0	EXTERNAL*						
M.ACRES	0	EXTERNAL*						
M.ACTCC	0	EXTERNAL*						
M.ADDS	0	EXTERNAL*						
M.ADISK	0	EXTERNAL*						
M.ASUSP	0	EXTERNAL*	6/11					
M.AUTH	0	EXTERNAL*						
M.BFILE	0	EXTERNAL*						
M.CLOCC	0	EXTERNAL*						
M.CLOSE	0	EXTERNAL*						
M.CLTIM	0	EXTERNAL*						
M.DABL	0	EXTERNAL*						
M.DDREQ	0	EXTERNAL*						
M.DDRSP	0	EXTERNAL*						
M.DDSCT	0	EXTERNAL*	53/34					
M.DESTL	0	EXTERNAL*	27/53					
M.DFILT	0	EXTERNAL*						
M.DOBJS	0	EXTERNAL*						
M.EMPTY	0	EXTERNAL*						
M.FCLEV	0	EXTERNAL*	54/12	54/16				
M.FDISK	0	EXTERNAL*	41/31	53/07				
M.FHRL	0	EXTERNAL*	54/18					
M.FILCL	0	EXTERNAL*						
M.FRWCC	0	EXTERNAL*						
M.GFILE	0	EXTERNAL*						
M.HASHL	0	EXTERNAL*						
M.HELP	0	EXTERNAL*	7/09					
M.HFILE	0	EXTERNAL*						
M.IOCTR	0	EXTERNAL*						
M.LOCKS	0	EXTERNAL*						
M.MKCAP	0	EXTERNAL*						
M.OPCL	0	EXTERNAL*						
M.PBUFS	0	EXTERNAL*						
M.RETRY	0	EXTERNAL*						
M.SDISK	0	EXTERNAL*	53/12					
M.SLOTS	0	EXTERNAL*						
M.SWAB	0	EXTERNAL*						
M.TRMCC	0	EXTERNAL*						
M.TRYCC	0	EXTERNAL*						
M.TVRES	0	EXTERNAL*						
M.TWAIT	0	EXTERNAL*						
M.UNAME	0	EXTERNAL*						
M.USCTR	0	EXTERNAL*						
M.USRCC	0	EXTERNAL*						
M.WBUFS	0	EXTERNAL*						
M.TOSEC	0	EXTERNAL*						
ND.DDS	2		5/32 D	14/25	19/06	23/31	24/09	24/30
ND.DISK	4		5/33 D	14/25	22/48	23/31	24/30	
			13/09	19/06	23/12	24/09		

SYMBOLIC REFERENCE TABLE.

NLOCKS	0	EXTERNAL*								
NOBJS	0	EXTERNAL*								
NOBLOCK	0	EXTERNAL*								
NSECTS	1234	PROGRAM*	51/23	51/34	55/08 L					
NTYPES	7		7/37	9/15 D						
NUMRFSP	0	EXTERNAL*								
NXTFREE	0	EXTERNAL*	50/27	51/14 S	52/08	52/16				
OPEN	0	EXTERNAL*								
OPENBAR	0	EXTERNAL*								
OPENR	0	EXTERNAL*								
OPERCL	0	EXTERNAL*	3/16							
OPTIMCL	0	EXTERNAL*	3/16 D	6/21	6/28	7/52	31/41	53/06	53/33	54/11
			6/08	6/22	7/08	14/15	41/30	53/09	53/35	54/13
			6/10	6/23	7/09	27/52	41/33	53/11	54/06	54/14
			6/19	6/25	7/31	31/23	43/05	53/14	54/10	54/15
ORGADDR	0	EXTERNAL*								
ORGCLST	0	EXTERNAL*								
ORGMAP	0	EXTERNAL*								
PAGEIN	0	EXTERNAL*	26/07	49/09						
PAGEOUT	0	EXTERNAL*	25/44	49/07						
PAGESW	0	EXTERNAL*								
PASSERR	0	EXTERNAL*								
PBFLUSH	1105	PROGRAM*	17/08	17/17	34/09	48/04 L				
PBFLUSHX	1115	PROGRAM*	48/21	48/27 L						
PBFLUSH1	1111	PROGRAM*	48/12	48/18 L						
PBLKIN	347	PROGRAM*	17/07	17/14	20/04 L					
PBLKINA	405	PROGRAM*	21/08	21/09	21/19	21/20	22/09 L			
PBLKINB	416	PROGRAM*	21/12	21/23	22/34 L					
PBLKINC	426	PROGRAM*	21/13	23/09 L						
PBLKIND	433	PROGRAM*	21/24	23/28 L						
PBLKINE	446	PROGRAM*	21/25	24/09 L						
PBLKINF	444	PROGRAM*	21/26	24/27 L						
PBLKIN1	350	PROGRAM*	20/12 L	20/16						
PBLKIN2	353	PROGRAM*	20/14	20/18 L						
PBLKIN3	362	PROGRAM*	20/08	20/34 L						
PBR	0	EXTERNAL*	47/25							
PBUSY	0	EXTERNAL*	45/09 S	45/25	47/40 S					
PBW	0	EXTERNAL*	26/02							
PFLAG	0	EXTERNAL*	10/07 S	11/07 S	20/34	27/08 S	53/25			
PG.DDS	0	EXTERNAL*								
PG.DTY	0	EXTERNAL*								
PG.PD	0	EXTERNAL*								
PROBE	0	EXTERNAL*								
PROCADR	0	EXTERNAL*								
PRVOPEN	0	EXTERNAL*								
PSWITCH	356	PROGRAM*	11/09	12/25 L						
PTRALK	0	EXTERNAL*								
PTR.CM	0	EXTERNAL*								
PTR.DDS	0	EXTERNAL*	23/28	47/16						
PTR.DTY	0	EXTERNAL*	13/25 S	16/18 S	22/19 S	25/44 S	25/29 S			
PTR.NUM	0	EXTERNAL*	49/10							
PTR.PTR	0	EXTERNAL*	13/11	16/09	22/34	25/52	33/05	36/28	40/06 S	47/15
			13/22 S	22/09	25/19	30/08	35/08	39/06	40/18	

SYMBOLIC REFERENCE TABLE.

P.DRCOM	345	PROGRAM*	12/32	12/33	19/04 L				
P.DRGO	330	PROGRAM*	12/30	15/06 L					
P.DRIN	324	PROGRAM*	12/28	12/29	14/21 L				
P.DRIN1	327	PROGRAM*	14/23	14/28 L					
P.DRNO	331	PROGRAM*	12/31	16/06 L					
P.DROUT	326	PROGRAM*	12/26	12/27	13/06 L				
P.PRGO	344	PROGRAM*	12/39	18/06 L					
P.PRIN	341	PROGRAM*	12/37	17/11 L					
DBUFS	0	EXTERNAL*							
DEADCAP	0	EXTERNAL*	6/17	7/26					
DEADONF	0	EXTERNAL*							
DEADONL	0	EXTERNAL*							
DEADRWF	0	EXTERNAL*							
DEADRWL	0	EXTERNAL*							
DEADY	1141	PROGRAM*	10/05	11/05	27/05	37/05	51/04 L		
DEDSHP	0	EXTERNAL*							
DEFUND	0	EXTERNAL*	20/18	30/30	31/26	33/12	36/35	53/19	
			22/24	31/09	31/40	34/23	51/09 S		
DEGS	0	EXTERNAL*							
DELCLAM	0	EXTERNAL*							
DELDISK	1160	PROGRAM*	10/13	11/18	27/27	52/04 L			
DELDISKX	1167	PROGRAM*	52/23	52/30 L					
DELDISK1	1163	PROGRAM*	52/18 L	52/28					
DELEASE	0	EXTERNAL*							
DELFS1	647	PROGRAM*	35/11	35/18 L					
DELFS2	654	PROGRAM*	35/21	35/26 L					
DELFXSW	642	PROGRAM*	31/07	31/21	32/01	35/04 L			
DENTAB	176	PROGRAM*	7/42	9/04 L	9/15				
DEQUEST	0	EXTERNAL*	7/10 S	7/47					
DESP	0	EXTERNAL*	6/23	7/53					
DESTREG	0	EXTERNAL*							
DETCLK	0	EXTERNAL*							
DETERR	0	EXTERNAL*							
DETRAP	1340	PROGRAM*	55/13 L						
DETPARM	0	EXTERNAL*							
DETRY	0	EXTERNAL*							
DETURN	1340	PROGRAM*	55/12 L						
DLINK1	0	EXTERNAL*	41/05 S	41/29 S	41/41 S	42/18 S	45/05 S		
			41/23	41/35	42/12	42/25	45/30		
DLINK2	0	EXTERNAL*	51/05 S	51/46	52/05 S	52/30	53/05 S	53/37	
DLINK3	0	EXTERNAL*	20/05 S	22/50	24/13	33/26	36/36	48/05 S	
			20/30	23/14	24/32	34/05 S	36/47 S	48/27	
			22/25	23/33	35/05 S	36/24	36/50		
DLINK4	0	EXTERNAL*	25/07 S	26/08	50/06 S	50/13 S	50/21 S	50/36	54/05 S 54/22
DOE	0	PROGRAM*	3/03 E	6/04 L					
DWE	0	EXTERNAL*	6/06						
DWL	0	PROGRAM*	3/03 E	6/01 L	6/09				
D.DISK	2		41/08	53/18					
D.FILE	3		27/45	41/17					
SAVFREG	0	EXTERNAL*							
SCPCL	0	EXTERNAL*	6/24						
SECTORS	0	EXTERNAL*	39/20	40/32	41/09	41/31	41/43	51/37 S	
SETCTR	771	PROGRAM*	37/15	41/28 L					

SYMBOLIC REFERENCE TABLE.

$ETDAR	756	PROGRAM*	37/13	41/04 L						
$ETDAR1	763	PROGRAM*	41/12	41/15 L						
$ETDAR2	767	PROGRAM*	41/20	41/23 L						
$ETPCNT	0	EXTERNAL*								
$ETUP	0	EXTERNAL*								
$ETUPR	0	EXTERNAL*								
$HCLAIM	0	EXTERNAL*								
$IZE	0	EXTERNAL*								
$IZES	0	EXTERNAL*								
$LEEP	0	EXTERNAL*	6/22							
$LOTS	0	EXTERNAL*								
$TKBUF	0	EXTERNAL*								
$USPIPL	0	EXTERNAL*	6/18 S	6/18 S	6/18 S	6/18				
$WAPREC	0	EXTERNAL*	13/29	35/25	51/09 S	53/12				
$WDEAD	0	EXTERNAL*	25/51	26/05						
$W.DDS	0	EXTERNAL*	48/13							
$W.SW	0	EXTERNAL*	20/25	25/47						
$YSERR	0	EXTERNAL*	6/13	7/27	12/11	21/10	29/14	38/11	41/22	53/15
			6/18	7/35	12/12	21/11	29/17	38/12	41/34	53/36
			6/18	7/40	12/17	21/14	29/18	38/14	44/07	54/16
			6/18	7/53	12/20	21/15	29/20	38/17	46/17	55/04
			6/20	11/15	12/21	21/21	29/21	38/18	46/21	55/16
			7/09	11/15	12/38	21/22	38/06	38/20	47/27	
			7/27	11/15	12/42	27/53	38/08	38/21	50/34	
			7/27	12/08	14/09	28/06	38/09	41/14	53/10	
S.NONEXT	5			22/14		40/04				
S.OUT	0			22/38						
TABADDR	0	EXTERNAL*								
TAB	0	EXTERNAL*		7/18 S	42/20					
TEMPA	0	EXTERNAL*								
TEMPB	0	EXTERNAL*								
TEMPC	0	EXTERNAL*								
TEMPD	0	EXTERNAL*								
TEMPE	0	EXTERNAL*								
TEMPF	0	EXTERNAL*								
TEMPG	0	EXTERNAL*								
TEMPH	0	EXTERNAL*								
TEMPV	0	EXTERNAL*								
TEMPW	0	EXTERNAL*								
TEMPX	0	EXTERNAL*								
TEMPY	0	EXTERNAL*								
TEMPZ	0	EXTERNAL*								
TEMP0	0	EXTERNAL*								
TEMP1	0	EXTERNAL*		6/18		6/18				
TEMP10	0	EXTERNAL*								
TEMP11	0	EXTERNAL*								
TEMP2	0	EXTERNAL*								
TEMP3	0	EXTERNAL*								
TEMP4	0	EXTERNAL*								
TEMP5	0	EXTERNAL*								
TEMP6	0	EXTERNAL*								
TEMP7	0	EXTERNAL*								
TEMP8	0	EXTERNAL*								

SYMBOLIC REFERENCE TABLE.

TEMP0	0	EXTERNAL*								
TERMROF	0	EXTERNAL*								
TERMRWF	0	EXTERNAL*								
TERMRWL	0	EXTERNAL*								
TRAVERS	0	EXTERNAL*	10/11	11/11	27/25	37/11	45/12			
TRAVRET	0	EXTERNAL*	12/14	12/41	16/12	29/19	33/13	40/11	46/07	46/15
			12/15	13/15	16/23	30/31	34/08	40/16	46/08	46/16
			12/19	13/34	17/07	31/10	38/10	40/30	46/09	46/19
			12/35	14/16	17/14	31/27	38/19	40/36	46/10	47/28
			12/36	14/26	17/16	31/42	39/18	46/05	46/11	47/42
			12/40	14/28	19/08	31/43	39/29	46/06	46/12	49/14
TR.DRIV	0	EXTERNAL*								
TR.LEVL	0	EXTERNAL*	25/16							
T.PTR	10		22/14	40/04						
IIDSKSCR	0	EXTERNAL*								
IINLOCK	0	EXTERNAL*	42/11							
IINLOCKW	0	EXTERNAL*	45/29	49/08						
IISERID	0	EXTERNAL*	7/15 S	7/50						
IISERRWF	0	EXTERNAL*								
IISERRWL	0	EXTERNAL*								
IISRPACK	0	EXTERNAL*								
WRITCAP	0	EXTERNAL*	11/14							
WRITPB	451	PROGRAM*	23/11	23/30	24/29	25/06 L				
WRITPB1	465	PROGRAM*	25/34	25/40 L						
ZAP	0	EXTERNAL*	31/32	36/13						
ZROMAP	0	EXTERNAL*								
ZROMAPR	0	EXTERNAL*								