```
        ADDRESS    LENGTH              BINARY CONTROL CARDS.

              0      1377              IDENT      ASORT
           1377                        END


                        ENTRY POINTS.

                        DECLARE  =     1260   DSPBLK   =      122   MELT     =      223   PROBE    =        0
                        DONE     =     1343   ALLCLD   =      142   SHAZAM   =      255   RETCLK   =       57
                        DSPFILF  =       67   SETCLDS  =      161   RESTSUB  =      766
                        DSPFILN  =      114   FREEZE   =      202   AUDIT    =     1101


                        EXTERNAL SYMBOLS.

                        OPERCL    AP1      GETPARM   SLOTS     HASH      M.FILCL   M.CLTIM   FR.ROOT
                        IPLIST    AP2      RETERR    HBR       DELHASH   M.EMPTY   M.IOSEC   FR.CLAM
                        ALLCLOP   AP3      PASSERR   HBW       EXCLAIM   M.RETRY   GF.LFN    FR.MEMB
                        ALLCLT1   AP4      USRPACK   PBR       SHCLAIM   M.CLOSE   GF.SUSF   FHRADDR
                        ALLCLT2   AP5      POTBUF    PBW       LOCK      M.TVRES   GF.SUSL   FILEADR
                        DETALL    AP6      PROCADR   DBR       UNLOCK    M.HELP    GF.IOTF   LFTREF
                        ZAP       AP7      ERRADDR   DBW       UNLOCKW   M.SWAB    GF.IOTL   LFHADDR
                        PRIFHR    AP8      ERRPACK   GETRESP   RELCLAM   M.ABFCH   GF.DDSF   DARADDR
                        PRILFH    TEMP0    STKBUF    TR.DRIV   RELEASE   M.ABFIL   GF.DDSL   PAGESW
                        SECFHR    TEMP1    SETPCNT   TR.LEVL   FRW       M.ACREQ   GF.DATF   MAPBUF
                        SECLFH    TEMP2    DISKENT   BLK.SIZ   MAKEMAP   M.ACRES   GF.DATL   SIZES
                        ERRSUBR   TEMP3    DISKERR   BLK.DTY   LOADBUF   M.USRCC   GF.APTF   SIZE
                        MAPX      TEMP4    DISKINT   BLK.FLG   NOQLOCK   M.FRWCC   GF.APTL   NUMRESP
                        COMMROF   TEMP5    FRWENT    SW.SW     SYSERR    M.TRMCC   GF.HSHF   CREATER
                        COMMROL   TEMP6    FRWERR    SW.DDS    FRETURN   M.CLOCC   FHRHASH   CREBLKR
                        COMMRWF   TEMP7    FRWINT    PG.PG     RETURN    M.ACTCC   DARHASH   DELBLKR
                        COMMRWL   TEMP8    ENTER     PG.DDS    RETPAR    M.TRYCC   GF.HSHL   OPENR
                        HOLDBLK   TEMP9    CLKBUF    PG.DTY    ERRPARM   M.DFILT   GF.TRVF   ATTACHR
                        LOCTAB    TEMP10   DSYSTIM   PTR.PTR   ERRFILE   M.DOBJS   FHB       DETACHR
                        LOCTABF   TEMP11   DSWPTIM   PTR.DDS   ERRALOC   NOBJS     FB.LFN    FROMAPR
                        LOCTABL   TEMPA    DUSRTIM   PTR.CM    ERRMAP    M.BFILE   FR.NAME   CHMAPR
                        LFT       TEMPB    MYSCRF    PTR.DTY   CALBEAD   M.DDREQ   FR.WD3    CHMAPB1
                        FLDLEN    TEMPC    MYCODF    PTR.NUM   REGS      M.DDRSP   FR.SHAP   SETUPR
                        USERRWF   TEMPD    MYSUBR    CREATE    D.ENTRY   M.RBUFS   FR.FUND   CREATB1
                        USERRWL   TEMPE    MYEVCH    CREBLK    D.FNAME   M.WBUFS   FHR       CLOSER
                        DATMAP    TEMPF    READCAP   DELBLK    DBUG1     M.SLOTS   FR.LFN    MOVBLKR
                        TERMRWL   TEMPG    WRITCAP   OPEN      DSKLCK    M.LOCKS   FR.NAME   CREPTRR
                        TERMROF   TEMPH    SAVEREG   ATTACH    DBUG2     NLOCKS    FR.WD1    DDRESPR
                        TERMRWF   TEMPV    RESTREG   DETACH    M.AUTH    M.DDSCT   FR.WD2    ERRNUM
                        CLOSRWF   TEMPW    MAINCL    CONVERT   M.MKCAP   M.FHRL    FR.WD3    ERRCLAS
                        CLOSRWL   TEMPX    FILCL     SETUP     REDSHR    M.DARL    FR.SUSP   TABADDR
                        CLOSROF   TEMPY    SLEEP     DECODE    GDSKHDR   M.HASHL   FR.LOCK   EC.COUT
                        READRWF   TEMPZ    MYRESP    CRELFH    FDSKHDR   M.ADDS    FR.DAR    D.AFLAG
                        READRWL   MYIDENT  RESP      OPENDAR   GDSKPTR   M.ASUSP   FR.OPEN   EC.DSUB
                        READONF   MYDAR    GFILE     PRVOPEN   FDSKPTR   M.ADISK   FR.CAPX   EC.ZRM
                        READONL   MYUNIT   HFILE     MKPTR     GDSKDAT   M.SDISK   FR.DBSZ   EC.DSAM
                        HENTRY    MYSWOCC  FILECAP   DSPTR     FDSKDAT   M.FDISK   FR.ONEL   EC.DSSR
```

DENTRY	DDSIPL	CTEMP	CLOSE	GETDSK	M.FCLEV	FR.FROZ	EC.DSSE
ORGADDR	IOTIPL	DDSKSCR	ECLOSE	FREEDSK	M.UNAME	FR.WRIT	EC.FSON
ORGCLST	HASHIPL	AFILE	DARSPA	BUSYDSK	M.USCTR	FR.SYZE	EC.SEV
ORGMAP	SUSPIPL	DDRSP	ZEROMAP	I.MNCL	M.OPCL	FR.SHAP	EC.GEVH
INTDAT	DATIPL	RBUFS	CHMAP	M.GFILE	M.IOCTR	FR.FUND	EC.CIN
APO	APTIPL	RETRY	CLODAR	M.HFILE	M.TWAIT	FR.FLAG	EC.DSCR

```
                              IDENT      ASORT
                    *
                    *
                    *
     0              MACROS     XTEXT
     0              TYPES      XTEXT
     0              SYSCALL    XTEXT
                    *
                              ENTRY      DECLARE.DONE
                              EXT        OPERCL.IPLIST
                              MACSET     OPERCL.IPLIST.FCS
                    *
     0              ERRORS     XTEXT
     0              PARAMS     XTEXT
```

```
                           *
                           *
                           *
                           *          PROBE DISK FILE FOR MISSING BLOCKS
                           *
                           *                  PROBE RETURNS NUMBER OF APPARENTLY MISSING
                           *                  BLOCK IN USER*S X6
                           *                  IF BLOCKS HAVE BEEN DELETED SINCE THE FILE
                           *                  WAS LAST CLOSED, TOO FEW MISSING LEVELS
                           *                  MAY BE REPORTED
                           *
                           *
                           *                  AP1: C: ECS FILE CAPABILITY
                           *                  AP2: D: FILE ADDR TO BE PROBBED
                           *
                           *
   0   5110000000 X        PROBE     SA1      AP1
       6170000011 +                  SB7      PROBET
   1   13666                         BX6      X6=X6             INSURE CLOBBERED USER X6
       5160000016 X                  SA6      USRPACK+16B
   2   7160000000 X        DISPCAP   X1                         X7 * DISK FILE UNIQUE NAME
   7   0200000000 X        JP        CONVERT                    CONVERT USER SUPPLIED CAP
                           *                                    TO DISK SYSTEM DATA
  10   0200000051 +        +         JP       PROBET2           NO SUCH OPEN FILE
  11   5110000000 X        PROBE1    SA1      AP2               FILE ADDR TO BE CHECKED
       6170000017 +                  SB7      PROBEP
  12   13222                         BX2      X2=X2             (WORD COUNT FOR *SETUP*)
       0200000000 X                  JP       SETUP             CHECK ADDRESS FOR IN BOUNDS
                           *
                           *                  RETURN VECTOR FOR *SETUP*
                           *
  13   0200000053 +        +         JP       PROBET3           FILE ADDR ERROR (B7=ERRNUM)
  14   0200000037 +        +         JP       PROBE7A           ONE LEVEL FILE (FHR UNLOCKED)
  15   0260000000          +         JP       B6                LOCAL FROZEN  (NOP)
  16   0260000000          +         JP       B6                GLOBAL FROZEN  (NOP)
                           *
  17   6170000025 +        PROBE2    SB7      PROBE3            *SETUP* WENT OK
       0200000000 X                  JP       DECODE            DECODE FILE ADDRESS
                           *
                           *                  RETURN VECTOR FOR *DECODE*
                           *
  20   0200000027 +        +         JP       PROBE4            I/O ERROR (ASSUME MISSING)
  21   0200000050 +        +         JP       PROBE11           BUSY POINTER
  22   0200000027 +        +         JP       PROBE4            NON-EXISTANT PTR BLK
  23   0200000043 +        +         JP       PROBE9            PTR BLOCK ON DISK
  24   0200000035 +        +         JP       PROBE4            NON-EXISTANT DATA BLOCK
  25   0200000036 +        +         JP       PROBE7            DATA BLOCK EXISTS
  26   0200000036 +        PROBE3    JP       PROBE7            DATA BLOCK EXISTS
```

```
                                  *
                                  *
                                  *                      POINTER BLOCK(S) MISSING
                                  *                         B6 = NUMBER OF BITS IN FILE ADDRESS
                                  *                            WHICH CORESPOND TO MISSING SECTION
                                  *
27   5110000000 X      PROBE4     SA1    FR.SHAP           FILE SHAPE WORD
              66500               SB5    B0                MISSING LEVEL COUNTER
              66400               SB4    B0                MISSING BIT COUNTER
30   43270                        MX2    60-4              (USE TO EXTRACT SHAPE NUMS)
        20120                     LXI    16
31   20104             PROBE4A    LXI    4                 SEARCH FOR LOG2(DATA BLK
        15612                     BX6    -X2*X1            SIZE)..1ST NON-ZERO SHAPE BYTE
        0306000031 +              ZR     X6,PROBE4A        ON THE LEFT
                                  *
32   63464             PROBE5     SB4    B4+X6             COUNT UP BITS FROM SHAPE BYTES
        6155000001               SB5    B5+1
              20104               LXI    4
33   15612                       BX6    -X2*X1
        0546000032 +             NE     B4,B6,PROBE5       LOOP
                                  *
34   7165000001                  SX6    B5+1
        0200000041 +             JP     PROBE8             LEVELS


                                  *
                                  *
                                  *                      NON-EXISTANT DATA BLOCK
                                  *
35   7160000001       PROBE6     SX6    1                 ONE MISSING LEVEL
        0200000041 +             JP     PROBE8


                                  *
                                  *
                                  *                      DATA BLOCK EXISTS
                                  *
36   7160000000       PROBE7     SX6    0                 NO MISSING LEVELS
        0200000041 +             JP     PROBE8


                                  *
                                  *
                                  *                      ONE LEVEL FILE (BLOCK EXISTS)
                                  *
37   7160000000       PROBE7A    SX6    0
        5160000016 X             SA6    USRPACK+16B
```

```
40   0200000000 X              JP        RETURN          (FILE ALREADY UNLOCKED)




                              *
                              *                         EXIT
                              *
41   5160000016 X    PROBE8   SA6       USRPACK+16B      STORE RESULT IN USER REGISTER
     6160000000 X             SB6       RETURN
42   0200000000 X             JP        UNLOCK




                              *
                              *
                              *                         POINTER BLOCK ON DISK..MUST FETCH
                              *
43   76550            PROBE9  SX5       B5              (DDS ADDR OF PTR)
     63520                    SB5       X2              (LOG2(PTR BLK SIZE))
     6170000045 +             SB7       PROBE10
44   66400                    SB4       B0               B4+0 FOR +PBR+
     0200000000 X             JP        PBR              READ POINTER BLOCK FROM DISK
                              *
45   0326000017 +    PROBE10  PL        X6,PROBE2        (X1 OK THRU +PBR+)
     7276000003               SX7       X6+3
46   0400000055 +             ZR        PROBE14          JP IF OUT OF DDS
47   0200000017 +             JP        PROBE2           TRY AGAIN AND GET I/O ERR
                              *                          STATUS
                              *                          AND GET I/O ERR STATUS




                              *
                              *
                              *
                              *                         BUSY POINTER
                              *
50   6160000017 +    PROBE11  SB6       PROBE2           UNLOCK FILE..WAIT AND TRY
     0200000000 X             JP        UNLOCKW          AGAIN
                              *
                              *




                              *
                              *
                              *                         ***   ERRORS   ***
                              *
51   7160000025      PROBE12  SX6       F.NODFIL         NO SUCH OPEN DISK FILE
```

```
             5160000000 X              SA6      ERRNUM
     52  0400000000 X                  JP       ERRFILE
                                  *
                                  *
     53  76670              PROBE13     SX6      B7                   FILE ADDR ERROR (*SETUP*)
             5160000000 X              SA6      ERRNUM
     54  0200000000 X                  JP       ERRPARM
                                  *
                                  *                           OUT OF DDS
     55  7160000025          PROBE14    SX6      B.NODDS
             5160000000 X              SA6      ERRNUM
     56  6160000000 X                  CALLX    UNLOCK,B6,ERRALOC
                                  *
```

```
                                  *
                                  *
                                  *          RETURN AND RESET CLOCKS
                                  *
                                  *
                                  *              THE DISK SYSTEM CUMULATIVE CLOCKS ARE
                                  *              RETURNED AS 3 WORD RETURN DATA PARAM.   THE
                                  *              CUMULATIVE CLOCKS AND RESET TO ZERO
                                  *              Clocks are not re-set
                                  *
                                  *
 57  5110000000 X      RETCLK     SA1          DSYSTIM              PICK UP CLOCKS AND MOVE TO
         5120000000 X             SA2          DSWPTIM              BUFFER
 60  5130000000 X                 SA3          DUSRTIM
         10611                    BX6          X1
             10722                BX7          X2
 61  5160000000 X                 SA6          PAGESW
         5170000001 X             SA7          PAGESW+1
 62  10633                        BX6          X3
         13777                    BX7          X7-X7
         5160000002 X             SA6          PAGESW+2
 63  54710                        SA7          X1                  ZERO CLOCKS
         54720                    SA7          X2
             54730                SA7          X3
 64  5110000066 +                 SA1          RETCLK1             PICK UP DATA RETURN CONTROL
         13222                    BX2          X2-X2               (NO CAPS RETURNED)
 65  0200000000 X                 JP           RETPAR
                                  *
 66  000000000030000000000 X  RETCLK1  VFD     30/3,30/PAGESW      DATA RETURN CONTROL
                                  *
                                  *
                                  *
                                  *
                                  *
```

```
                                    *
                                    *
                                    *
                                    *        DISPLAY FILE STATUS  (FHR AND LFH)
                                    *
                                    *           THE ECS FILE UNIQUE NAME, THE FILE HEADER RECORD,
                                    *           AND THE LOCAL FILE HEADER ARE RETURNED AS ONE BLOCK
                                    *           PARAMETER (LENGTH = 11)
                                    *
                                    *           OPERATION NAME:  *DFILSF*
                                    *
                                    *           PARAMETERS: AP1: N: ECSFILE UNIQUE NAME
                                    *
                                              ENTRY     DSPFILE
                                    *
  67  5110000000 X        DSPFILE   SA1       AP1
        43447                       MX4       39
           11641                    BX6       X4*X1
  70  5160000000 X                  SA6       TEMP0                    STORE ECS FILE UNIQUE NAME
                                    *
                                    *                       SEARCH LOCAL FILE TABLE
        5120777775 X                SA2       LFT-2
  71  5022000002        DSPFILE1    SA2       A2+2
        0302000135 +                ZR        X2,DSPRLK4               JP IF END OF TABLE
  72  13621                         BX6       X2-X1
          11646                     BX6       X4*X6
        0316000071 +                NZ        X6,DSPFILE1             LOOP
                                    *
                                    *
                                    *                       GET THE FILE ( A2 = LFH ADDR)
                                    *                                   ( X2 = 1ST WD OF LFH)
  73  73220            DSPFILE2    SX2       X2                      FHR ADDRESS
                                    *
        54420                       SA4       A2                      MOVE LOCAL FILE HEADER
        5052000001                  SA5       A2+1
  74  10644                         BX6       X4
          10755                     BX7       X5
        7130000001 X                SX3       FR.LEN+1
  75  5263000000 X                  SA6       TEMP0+X3
        5076000001                  SA7       A6+1
                                    *
                                    *                       COPY IN FILE HEADER RECORD
  76  7160000000 X        REDDS     X2,TEMP0+1,FR.LEN
                                    *
                                    *                       RETURN WITH PARAMETERS
 110  5110000112 +                  SA1       DATARET
        5120000113 +                SA2       CAPRET
 111  0200000000 X                  JP        RETPAR
                                    *
                                    *
 112  0000000003 X        DATARET   VFD       30/FR.LEN+3,30/TEMP0
        0000000000 X
```

```
 113   00000000000000000000     CAPRET    VFD          60/0
                                    *
                                    *



                                    *
                                    *
                                    *         DISPLAY FILE STATUS OF N-TH LOCAL FILE
                                    *
                                    *            RETURN DATA SAME AS ABOVE
                                    *
                                    *            PARAMETERS:  AP1:  0:  INDEX OF FILE TO DISPLAY (I.E. #N#)
                                    *
                                    *            OPERATION NAME:  #DF:DSFN#
                                    *
                                    *
                                              ENTRY     DSPFILN
                                    *
 114   5150000000 X        DSPFILN  SA5       AP1
              63550                  SB5       X5                     IF N=1 THEN RETURN 1ST FILE
 115   0605000137 +                 LE        B5,B0,DSPBLK5
                                    *
                                    *                     SCAN FOR DESIRED FILE
           5120777775 X             SA2       FIT-2
 116   5022000002        DSPFILN1   SA2       A2+2
           0332000120 +             NG        X2,DSPFILN2            SKIP IF NO FILE HERE
 117   0302000141 +                 ZR        X2,DSPBLK6            JP IF NOT THAT MANY FILES
           6155777776                SB5       B5-1
 120   0550000116 +      DSPFILN2   NE        B5,B0,DSPFILN1        LOOP
                                    *
                                    *                     GOT THE FILE
              42647                  MX6       -9
              11662                  BX6       X6*X2                 COPY ECS FILE UNIQUE NAME
 121   5160000000 X                 SA6       TEMP0
                                    *
           0200000073 +             JP        DSPFILE2              GO DO THE REST (A2=LFH ADDR)
                                    *
                                    *
```

```
                                          *
                                          *
                                          *
                                          *                DISPLAY N-TH ATTACH BLOCK OF A DISK FILE
                                          *
                                          *                    THE N-TH ATTACHED BLOCK RECORD OF THE FILE SPECIFIED
                                          *                    BY AP1 IS RETURNED AS A BLOCK DATA   (LENGTH=2)
                                          *
                                          *                        PARAMETERS  AP1  D  ECS FILE UNIQUE NAME
                                          *                                    AP2  D  INDEX OF ABR (I.E. =N=)
                                          *
                                          *                    OPERATION NAME  +DF$DSBN+
                                          *
                                          *            ENTRY     DSPBLK
                                          *
122    5110000000 X       DSPBLK   SA1       AP1                    SEARCH LOCAL FILE TABLE
          5120777775 X             SA2       FT-2
123    43447                       MX4       39
124    5022000002       DSPBLK1    SA5       A2+2
          0302000135 +             ZR        X2,DSPBLK4             JP IF END OF TABLE
125    13621                       BX6       X2-X1
          11646                     BX6       X4*X6
          0316000124 +             NZ        X6,DSPBLK1            LOOP
                                          *
                                          *                        GOT FILE  (A2 = LFH ADDR)
126    5140000000 X               SA4       AP2                    INDEX FOR ABR
          63440                     SB4       X4
127    0604000137 +               LE        B4,B0,DSPBLK5
          5032000001               SA3       A2+1
                                          *
                                          *                        SCAN ATTACHED BLOCK LIST
130    73330            DSPBLK2    SX3       X3
          0303000141 +             ZR        X3,DSPBLK6
          53330                     SA3       X3
131    21322                       AX3       18
          6144777776               SB4       B4-1
132    0540000130 +               NE        B4,B0,DSPBLK2
                                          *
                                          *                        GOT THE ATTACHED BLOCK RECORD (A3=ABR ADDR)
          7110000002               SX1       2                     FORM DATA RETURN CONTROL WORD
133    20136                       LX1       30
          74230                     SX2       A3
          12112                     BX1       X1+X2
          13222                     BX2       X2-X2                FORM CAPAB RETURN CONTROL
                                          *
134    0200000000 X               JP        RETPAR                RETURN WITH PARAMETERS
                                          *
                                          *
                                          *
                                          *
```

```
                                    *                         ERROR CONDITIONS
                                    *
  135  7160000025         DSPBLK4    SX6    F.NODFIL           NO SUCH OPEN DISK FILE
            5160000000 X             SA6    ERRNUM
  136  0200000000 X                  JP     ERRFILE
                                    *
                                    *
  137  7160000000         DSPBLK5    SX6    F.NEGPAR           NEGATIVE OR ZERO INDEX
            5160000000 X             SA6    ERRNUM
  140  0200000000 X                  JP     ERRPARM
                                    *
                                    *
  141  0200000000 X       DSPBLK6    JP     FRETURN            INDEX TOO LARGE...DO F-RETURN
                                    *
                                    *
```

```
                                    *
                                    *
                                    *              * * CLOSE ALL LOCALLY OPEN FILES * *
                                    *
                                    *
                                    *              ALL LOCALLY OPEN FILES ARE CLOSED.
                                    *              IF THE OVER RIDE FLAG IS SET ON
                                    *              ENTRY TO *ALLCLO* THE CLOSE FLAG IN THE LOCAL
                                    *              FILE HEADER IS IGNORED
                                    *
                                    *              A BLOCK IN A MAP DURING FILE CLOSE WILL CAUSE
                                    *              AN ERROR TO BE RETURNED  .
                                    *
                                    *
                                    *              ON ENTRY, X1 = NON-ZERO IF LFH FLAG TO BE IGNORED
                                    *                        B7 = RETURN LINK
                                    *
                                    *              ROUTINES CALLED: ECLOSE
                                    *
                                    *              TEMPORARIES USED: ALLCLOR, ALLCLT1, ALLCLT2
                                    *
                            ENTRY       ALLCLO
                            EXT         ALLCLOR,ALLCLT1,ALLCLT2
                                    *
                                    *
142   76670             ALLCLO      SX6         B7                      STORE RETURN LINK
      10711                         BX7         X1                      STORE OVERRIDE FLAG
           5160000000 X             SA6         ALLCLOR
143   5170000000 X                  SA7         ALLCLT2
                                    *
      10411                         BX4         X1
144   5130777775 X                  SA3         LFT-2
145   5033000002             ALLCLO1 SA3         A3+2                    NEXT LOCAL FILE HEADER
           0303000157 +             ZR          X3,ALLCLO4              JP IF END OF LOCAL FILE TABLE
146   0333000145 +                  NG          X3,ALLCLO1             LOOP IF EMPTY LOCAL FILE HEADER
           0314000151 +             NZ          X4,ALLCLO2             SKIP IF LOCAL FLAG OVER RIDE
147   5023000001                    SA2         A3+1
      20203                         LX2         LH.CLO
150   0332000145 +                  NG          X2,ALLCLO1             LOOP IF LOCAL CLOSE LOCK OUT SET
                                    *
151   74630             ALLCLO2     SX6         A3
      5160000000 X                  SA6         ALLCLT1                SAVE LOCAL FILE TABLE PLACE
           20247                    LX2         60-LH.CLO-18
152   43652                         MX6         60-18
      11226                         BX2         X2*X6                  SET LOCAL OPEN COUNT = 1
           43673                    MX6         59
           37626                    IX6         X2-X6
153   20622                         LX6         18
      54620                         SA6         A2
```
                                    *

```
            6170000155 +              SB7      ALLCLO3
154  020000000 x                      JP       FCLOSE                    (X3 = ECS FILE U.N.)
                               *
                               *
155  5130000000 x      ALLCLO3        SA3      ALLCLT1
            53330                      SA3      x3
156  5140000000 x                     SA4      ALLCLT2
            0200000145 +              JP       ALLCLO1
                               *
                               *
157  5140000000 x      ALLCLO4        SA4      ALLCLOR                   ALL DONE
            63740                      SB7      x4
160  0270000000                       JP       B7
                               *
                               *
                               *
```

```
                                        *
                                        *
                                        *
                                        *           SET OR RE-SET LOCAL CLOSE LOCK OUT FLAG
                                        *           WHICH PROTECTS FILE FROM BEING
                                        *           CLOSED DURING A NORMAL *CLOSE ALL FILES* ACTION
                                        *
                                        *           ON ENTRY: AP1 = EPS FILE CAPABILITY (OR. ≥ )
                                        *                      AP2 = ZERO FOR RESET; NON-ZERO FOR SET
                                        *
                                        *           ON EXIT: OLD STATUS OF FLAG SET UP AS DATUM RETURN
                                        *
                                        *
                                        *
                                        *
                                        *
                                        *           ENTRY      SETCLOS
                                        *
161   5110000000 X         SETCLOS      SA1        AP1
      7160000000 X                      DISPCAP    v1
166   5150777775 X                      SA5        LFT-2
      43447                             MX6        39
167   5055000002         SETCLOS1       SA5        A5+2                    FIND FILE IN LOCAL FILE TABLE
      0305000200 +                      ZR         X5,SETCLOS3             JP IF END OF LFT
170   13657                             BX6        X5-X7
      11646                             BX6        X4*X6
      0316000167 +                      NZ         X6,SETCLOS1
                                        *
                                        *                                 FOUND THE FILE
171   5025000001                        SA2        A5+1                    2ND WORD OF LOCAL FILE HEADER
      5160000000 X                      SA5        AP2
172   43601                             MX6        1
      20671                             LX6        40-LH.CLO
      11762                             BX7        X6*X2                   EXTRACT OLD STATUS
      20704                             LX7        LH.CLO+1                RT JUSTIFY OLD STATUS AND
173   5170000000 X                      SA7        TEMP0                   STORE FOR RETURN PARAM
      15226                             BX2        -X6*X2
174   0305060175 +                      ZR         X5,SETCLOS2            SKIP IF RESET THIS TIME
      15226                             BX2        X2+X6                  SET CLOSE LOCK OUT
175   10622                SETCLOS2      BX6        X2
      54620                             SA6        A2                      STORE 2ND WD OF LFT
                                        *
      7110000001                        SX1        1                       RETURN 1 DATUM
176   20136                             LX1        30
      7120000000 X                      SX2        TEMP0                   ADDRESS OF DATUM TO RETURN
      12112                             BX1        X1+X2
                                        *
177   13200                             BX2        X0-X0                   RETURN NO CAPS
                                        *
      0200000000 X                      JP         SETPAR
                                        *
                                        *
200   7160000025         SETCLOS3       SX6        E.NODFIL                NO SUCH LOCALLY OPEN FILE
      5160000000 X                      SA6        ERRNUM
```

      201   0200000000 V   JP   FRRFILE

```
                              *
                              *
                              *
                              *            FREEZE DISK FILE
                              *                    TEMPORARY VERSION...ALL BLOCKS MUST
                              *                    ALREADY BE ATTACHED...
                              *
                              *                    AP1: ECS FILE CAP FOR OPEN DISK FILE
                              *
                              *            ENTRY     FREEZE
                              *
  202  5110000000 X           FREEZE     SA1       AP1
       7160000000 X                      DISPCAP   X1
  207  6170000211 +                      CALLX     CONVERT,B7,FREEZE1
                              *
  210  0200000220 +           +          JP        FREEZE2              NO SUCH LOCALLY OPEN FILE
  211  5140000000 X           FREEZE1    SA4       FR.FLAG
       20404                             LX4       FR.FRZF
  212  0334000222 +                      NG        X4,FREEZE3           JP IF FROZEN ALREADY
                              *
       43601                             MX6       1
       12664                             BX6       X6+X4                SET FROZEN FLAG
  213  20670                             LX6       40-FR.FRZF
       54640                             SA6       A4
                              *
       5130000000 X                      SA3       FR.OPEN              SET FREEZE OPEN CNT = 1
  214  43601                             MX6       1
       20656                             LX6       1+45
       12663                             BX6       X6+X3
       54630                             SA6       A3
                              *
  215  5130000000 X                      SA3       LFRADDR              SET LOCAL +1 FROZ ITM
       5233000601                        SA3       X3+1
  216  43601                             MX6       1
       20670                             LX6       40-LH.IFRZ
       12663                             BX6       X6+X3
       54630                             SA6       A3
                              *
  217  6160000000 X                      CALLX     UNLOCK,B4,RETURN
                              *
                              *
                              *
                              *                                NO SUCH OPEN FILE
  220  7160000025           FREEZE2    SX6       E.NODFIL
       5160000000 X                      SA6       ERRNUM
  221  0200000000 X                      JP        ERRFILE
                              *
                              *                                ALREADY FROZEN
  222  7160000045           FREEZE3    SX6       E.FROZ
       0200000253 +                      JP        MELT6
                              *
```

```
                              *
                              *
                              *
                              *
                              *
                              *             MELT DISK FILE
                              *
                              *                     TEMPORARY VERSION...BLOCKS ARE ATTACHED MANUALLY
                              *
                              *                     XP1: ECS FILE CAP FOR FROZEN FILE
                              *
                              *             ENTRY     MELT
                              *
  223   5110000000 X      MELT      SA1       XP1
        6170000233 +                SB7       MELT1
  224   7160000000 X                DISPCAP   X1
  231   0200000000 X                JP        CONVERT
                              *
  232   0200000246 +        +       JP        MELT2                      NO SUCH OPEN FILE
  233   5140000000 X      MELT1     SA4       FR.FLAG
        20404                       LX4       FR.FRZF
  234   0324000250 +                PL        X4,MELT3                   JP IF NOT FROZEN
                              *
        5130000000 X                SA3       FR.OPEN
  235   43617                       MX6       15                         CHECK FOR ALL FROZEN OPENS
        12663                       BX6       X6*X3                      GONE
        20617                       LX6       15
  236   7265777776                  SX6       X6-1
        0316000251 +                NZ        X6,MELT4                   JP IF OTHER FROZ OPENS
                              *
  237   5130000000 X                SA3       IFRADDR
        5233000001                  SA3       X3+1
  240   20304                       LX3       LH.IFRZ
        0323000252 +                PL        X3,MELT5
        43601                       MX6       1                          CLEAR +I FROZ IT+
  241   15636                       BX6       -X6*X3
        20670                       LX6       A0-LH.IFRZ
        54630                       SA6       X3
                              *
  242   5140000000 X                SA4       FR.FLAG                    CLEAR FROZEN STATUS
        43601                       MX6       1
        20670                       LX6       A0-FR.FRZF
  243   15646                       BX6       -X6*X4
        54640                       SA6       A4
                              *
        5140000000 X                SA4       FR.OPEN
  244   43617                       MX6       15                         CLEAR FROZEN OPEN COUNT
        15646                       BX6       -X6*X4
        54640                       SA6       A4
                              *
  245   6160000000 X                CALLX     UNLOCK,B6,RETURN
                              *
```

```
                                    *
                                    *
                                    *                    NO SUCH OPEN FILE
    246   7160000025               MELT2    SX6      F.NODFIL
          5160000000 X                      SA6      ERRNUM
    247   0200000000 X                      JP       ERRFILE
                                    *
                                    *                        FILE NOT FROZEN
    250   7160000045               MELT3    SX6      F.FROZ
          0200000253 +                      JP       MELT6
                                    *
                                    *                    FROZEN OPENS STILL ON FILE
    251   7160000034               MELT4    SX6      F.TMOPN
          0200000253 +                      JP       MELT6
                                    *
                                    *                    I WASN'T THE ONE WHO FROZ IT
    252   7160000000               MELT5    SX6      F.NLOCK
          0200000253 +                      JP       MELT6
                                    *
                                    *
                                    *
    253   5160000000 X             MELT6    SA6      ERRNUM              ERROR EXIT
          6160000000 X                      CALLX    UNLOCK,B6,ERRFILE
                                    *
                                    *
                                    *
```

U (handwritten, left margin at line 252)

(handwritten near line 252: F.NLOCK circled, "NJ IFROZ")

```
                          *
                          *
                          *        SHAZAM INTERCHANGES THE CONTENTS FO TWO FILES.
                          *
                          *        THE FILE ARE CALLED THE *PRIMARY* FILE AND THE *SECONDARY*
                          *        FILE. THE PRIMARY FILE MAY BE THOUGHT OF AS THE BACKUP OR
                          *        MOST VALUABLE FILE. IN CASE OF A SYSTEM CHARSH, THE SECONDARY
                          *        FILE MAY BE LOST BUT THE PRIMARY FILE WILL BE UNCHANGES OR
                          *        CONTAIN THE CONTENTS OF THE SECONDARY FILE.
                          *
                          *
                          *            NOTES?     A) BOTH FILES MUST BE LOCALLY
                          *                          OPEN AND NOT OPEN BY ANY OTHER PROCESSES
                          *                       B) ONE LEVEL FILES CAN NOT BE INTERCHANGED
                          *                       C) NO BLOCK FROM EITHER FILE MAY BE
                          *                          IN A MAP
                          *                       D) THE OWNING ACCOUNTING RECORDS ARE
                          *                          UPDATED TO REFLECT DIFFERENCES IN
                          *                          THE FILE SIZES
                          *                       E) ALL BLOCKS OF BOTH FILES WILL BE
                          *                          DETACHED
                          *                       F) THE NEW CONTENTS OF BOTH FILE ARE
                          *                          REFLECTED TO THE DISK
                          *
                          *
                          *            ROUTINES CALLED: CONVERT, DARSPA, ZAP, UNLOCK,
                          *                             DETALL
                          *
                          *
                          *            TEMPORARIES: PRIFHR, PRILFH, SECFHR, SECLFH
                          *
                          *
                                      ENTRY     SHAZAM
                                      EXT       DETALL,ZAP,PRIFHR,PRILFH,SECFHR,SECLFH
                          *
                          *
255  5110000000 X         SHAZAM      SA1       AP1                    PRIMARY FILE
     7160000000 X                     DISPCAP   V1
262  6170000264 *                     S87       SHAZAM1
     0200000000 X                     JP        CONVERT                LOCATE AND LOCK PRIMARY
                          *
263  0200000675 *         *           JP        SHAZAM12               FILE NOT LOCALLY OPEN
264  5150000000 X         SHAZAM1     SA5       PR.FLAG                CHECK FOR ONE LEVEL
     0335000701 *                     NG        X5,SHAZAM14            JP IF ONE LEVEL
                          *
265  20504                            LX5       PR.FRZF                CHECK FOR FROZEN
     0335000703 *                     NG        X5,SHAZM14A
                          *
266  5150000000 X                     SA5       IPRADDR                CHECK FOR BLOCK IN MAP
     5255000001                       SA5       X5+1
267  43610                            MX6       6
270  73550           SHAZAM1A         SX5       Y5
     0305000273 *                     ZR        X5,SHAZAM2             JP IF END OF ABR LIST
```

```
                    53550                 SA5        X5
271   11765                               BX7        X6*X5
        0317000705 +                      NZ         X7,SHAZAM15         JP IF BLOCK IN A MAP (A5 = ABP ADDR)
                    20552                 LX5        60-18
272   0200000270 +                        JP         SHAZAM1A
                                    #
273   5140000000 X     SHAZAM2            SA4        FR.OPEN             CHECK GLOBAL OPEN COUNT
                    20436                 LX4        60-30
                    43655                 MX6        60-15
274   15646                               BX6        -X6*X4
        7266777776                        SX6        X6-1
275   0316000677 +                        NZ         X6,SHAZAM13         JP IF GLOBAL OPEN .NE. 1
                    43655                 MX6        60-15
                    11664                 BX6        X6*X4
276   20636                               LX6        30
        5464?                             SA6        A4                  SET GLOBAL OPEN = 0
        5140000000 X                      SA4        FHRADDR
277   5150000000 X                        SA5        IFHADDR
        10644                             BX6        X4
        10755                             BX7        X5
300   5160000000 X                        SA6        PRIFHR              SAVE PRIMARY FHR ADDRESS
        5170000000 X                      SA7        PRILFH              SAVE PRIMARY LOCAL FILE ADDR
301   7160000000 X                        WRDDS      X4+2,FHR+2,FR.LEN-2
                                    #
                                    #
314   6170777776 X                        SB7        FR.LEN-1
315   5147000000 X     SHAZAM3            SA4        FHR+B7              MOVE PRIMARY FILE FHR TO
        10644                             BX6        X4                  BUFFER AT *PAGESW*
316   5167000000 X                        SA6        PAGESW+B7
        6177777776                        SB7        B7-1
317   0670000315 +                        GE         B7,B0,SHAZAM3
                                    #
                                    #
        5110000000 X                      SA1        P2                  SECONDARY FILE
                                    #
320   7160000000 X                        DISPCAP    X1
                                    #
325   5120000000 X                        SA2        IFHADDR             CHECK FOR PRIMARY = SECONDARY
        53220                             SA2        X2
        43347                             MX3        39
326   13227                               BX2        X2-X7
        11232                             BX2        X3*X2
        0302000764 +                      ZR         X2,SHAZAM24         JP IF SAME FILE (ERROR)
                                    #
327   6170000331 +                        SB7        SHAZAM4
        0200000000 X                      JP         CONVERT             LOCATE AND LOCK SECONDARY
                                    #
330   0200000711 +       +                JP         SHAZAM16            FILE NOT LOCALLY OPEN
331   5150000000 X     SHAZAM4            SA5        FR.FLAG             CHECK FOR ONE LEVEL FILE
        0335000737 +                      NG         X5,SHAZAM20         JP IF ONE LEVEL FILE
                                    #
332   20504                               LX5        FR.FRZF             CHECK FOR FROZEN
        0335000743 +                      NG         X5,SHAZM20A
```

handwritten note: + callx chkmap,B6,shazam
JP shazam15
(arrow pointing to line 272) = blk in a map

```
                                      *
                                      *                        CHECK FOR BLOCK IN A MAP
333    5150000000 X                   SA5        FHADDR
       5255000001                     SA5        X5+1
334    43610                          MX6        0
335    73550            SHAZAM6A      SX5        X5
       0305000340 +                   ZR         X5,SHAZAM6         JP IF END OF ABR LIST
       53550                          SA5        X5
336    11756                          BX7        X5*X6
       0317000747 +                   NZ         X7,SHAZAM21        JP IF BLOCK IN A MAP
       20552                          LX5        40-18
337    0200000335 +                   JP         SHAZAM6A

340    5140000000 X     SHAZAM6       SA4        FR.OPEN           CHECK GLOBAL OPEN COUNT
       20436                          LX4        40-30
       43655                          MX6        40-15
341    15646                          BX6        -X6*X4
       7266777776                     SX6        X6-1
342    0316000733 +                   NZ         X6,SHAZAM9        JP IF OPEN .NE. 1
       43655                          MX6        40-15
       11664                          BX6        X6*X4
343    20636                          LX6        30
       54640                          SA6        A4                ZERO GLOBAL OPEN COUNT
       5140000000 X                   SA4        FHADDR
344    5150000000 X                   SA5        FHADDR
       11644                          BX6        X4
       10755                          BX7        X5
345    5160000000 X                   SA6        SECFHR
       5170000000 X                   SA7        SECLFH
346    7160000000 X                   WRDS       X4+2,FHR+2,FR.LEN-2
                                      *
                                      *
361    7140000000 X                   SX4        PAGESW            FIX UP ACCOUNTING
       7150000000 X                   SX5        FHR
362    37245                          IX2        X4-X5
       5242000000 X                   SA4        X2+FR.DAR         PRIMARY ACCOUNT RECORD
363    5150000000 X                   SA5        FR.DAR            SECONDARY ACCOUNTING RECORD
       13545                          BX5        X4-X5
       21544                          AX5        36
364    73550                          SX5        X5
       0305000400 +                   ZR         X5,SHAZAM7        SKIP IF SAME ACCOUNT
365    5242000000 X                   SA4        X2+FR.SIZE        PRIMARY FILE
       5150000000 X                   SA5        FR.SIZE           SECONDARY FILE
366    73440                          SX4        X4
       73550                          SX5        X5
       37454                          IX4        X5-X4
367    0304000400 +                   ZR         X4,SHAZAM7        SKIP IF NO CHANGE IN SIZE
                                      *
       63540                          SB5        X4                AMT TO CHARGE PRIMARY FILE
370    6140000002                     SB4        2                 FOR DISK SPACE
       5242000000 X                   SA4        X2+FR.DAR
371    21444                          AX4        36
       63340                          SB3        X4
```

(handwritten annotations:)
CHECK FOR BLOCK IN A MAP

callx chkmap, B6, shazam6
JP shazam21
blk in a map

```
              6160000374 +              S86      SHAZAM6
372   0200000000 X                      JP       DARSPA
                                 *
                                 *
373   0200000754 +              +        JP       SHAZAM22              INSUFFICIENT SPACE
374   67505                     SHAZAM6  SB5      B5                    CHARGE TO SECONDARY ACCOUNT
              6140000002                 SB4      2
375   5140000000 X                       SA4      FR.DAR
              21444                       AX4      36
                     63340                SB3      X4
376   6160000400 +                       SB6      SHAZAM7
              0200000000 X                JP       DARSPA
                                 *
377   0200000760 +              +        JP       SHAZAM23             INSUFFICIENT SPACE
                                 *
                                 *        MUST UNLOCK BOTH FILE TO INSURE FREE
                                 *        TERMINATOR TO HANDLE THE UPCOMMING ZAP
400   6160000401 +              SHAZAM7   SB6      SHAZAM7A
              0200000000 X                JP       UNLOCK                UNLOCK SECONDARY
                                 *
401   5140000000 X              SHAZAM7A  SA4      DRIFHR
              10644                       BX6      X4
402   5160000000 X                        SA6      FHRADDR
              7140000000 X                 REDDS    X4,FHR,FR.LEN
415   6160000416 +                        SB6      SHAZAM7B
              0200000000 X                 JP       UNLOCK                UNLOCK PRIMARY
                                 *
                                 *
416   6170000417 +              SHAZAM7B   SB7      SHAZAM7C              SMASH SECONDARY FILE
              0200000000 X                 JP       ZAP                  HEADER ON DISK
                                 *
                                 *         RE-LOCK BOTH FILES
417   5140000000 X              SHAZAM7C   SA4      DRIFHR
              6170777776 X                 SB7      FR.LEN-1
420   6160000421 +                         SB6      SHAZAM7D
              0200000000 X                 JP       LOCK                  LOCK PRIMARY
                                 *
421   5157000000 X              SHAZAM7D   SA5      FHR+B7
              10655                        BX6      X5
422   5167000000 X                         SA6      DAGESW+B7
              6177777776                   SB7      B7-1
423   0670000421 +                         GE       B7,B0,SHAZAM7D        MOVE PRIMARY FHR
                                 *
              5140000000 X                 SA4      SECFHR                LOCK SECONDARY
424   6160000425 +                         SB6      SHAZAM8
              0200000000 X                 JP       LOCK
                                 *
                                 *
                                 *
                                 *
                                 *
425   7140000000 X              SHAZAM8    SX4      DAGESW                INTERCHANGE DAR NAMES
              7130000000 X                 SX3      FHR
```

```
    426  37243                          IX2        X4-X3
             5242000000 X               SA4        X2+FR.FUND              PRIMARY DAR NAME
    427  5130000000 X                   SA3        FR.FUND                 SECONDARY DAR NAME
             43652                       MX5        60-18
                 15645                   BX6        -X5*X4
    430  15735                          BX7        -X5*X3
             13446                       BX4        X4-X6
                 13337                   BX3        X3-X7
                     12747               BX7        X4+X7
    431  12636                          BX6        X3+X6
             54740                       SA7        A4
                 54630                   SA6        A3
                                *
                                *
                                *
                                *
                                *
                                                   INTERCHANGE CLAIM DATA (I.E. CLAIM
                                                      STUFF STAYS WITH DISK NAME)
    432  5242000000 X                   SA4        X2+FR.CLAM
             5150000000 X               SA5        FR.CLAM
    433  10644                          BX6        X4
             10755                       BX7        X5
                 54650                   SA6        A5
                     54740               SA7        X4
                                *
                                *
                                *
                                                   INTERCHANGE OPEN WRITE AND XCLU OPEN FLAGS
                                                      (I.E. THEY STAY WITH DISK NAME)
    434  5242000000 X                   SA4        X2+FR.FLAG
             5150000000 X               SA5        FR.FLAG
    435  43303                          MX3        3
             20371                       LX3        60-FR.RWFG
                 11634                   BX6        X3*X4
                     11735               BX7        X3*X5
    436  15443                          BX4        -X3*X4
             15553                       BX5        -X3*X5
                 12465                   BX6        X6+X5
                     12774               BX7        X7+X4
    437  54650                          SA6        A5
             54740                       SA7        X4
                                *
                                *
                                *
                                                   COPY SECONDARY FHR INTO
                                                   PRIMARY FHR IN DDS
             5150000000 X               SA5        PRIFHR
    440  7160000000 X                   WRDDS      X5+2,FHR+2,FR.LEN-2
                                *
    453  5150000000 X                   SA5        SECFHR                  COPY PRIMARY FHR INTO
             7160000000 X               WRDDS      X5+2,PAGESW+2,FR.LEN-2          SECONDARY FHR IN DDS
                                *
                                *
                                *
                                *
                                *
                                                   INTERCHANGE ECS FILE UNIQUE NAMES
                                                   IN LFH (I.E. ECS CAPS KEY DIFFERENT LFH
                                                   AND THUN DIFFERENT FHR)
    466  5140000000 X                   SA4        PRILFH                  PRIMARY LFH ADDR
             5150000000 X               SA5        SECLFH                  SECONDARY LFH
    467  53440                          SA4        X4
```

```
            53550                          SA5      X5
              43347                        MX3      39
                  11634                    BX6      X3*X4
470   11735                                BX7      X3*X5
         15443                             BX4      -X3*X4
            15553                          BX5      -X3*X5
               12665                       BX6      X6+X5
471   12774                                BX7      X7+X4
         54650                             SA6      A5
            54740                          SA7      A4
                                   *
                                   *
                                   *                INTERCHANGE ABR LIST AND NUM ATTACHED BLKS
                                                    IN LFH
472   5044000001                          SA4      A4+1
         5055000001                        SA5      A5+1
473   43622                                MX6      18
         43722                             MX7      18
            20666                          LX6      60-6
               20722                       LX7      18
474   12367                                BX3      X6+X7
         11643                             BX6      X4*X3
            11753                          BX7      X5*X3
               15443                       BX4      -X3*X4
475   15553                                BX5      -X3*X5
         12665                             BX6      X6+X5
            12774                          BX7      X7+X4
               54650                       SA6      A5
476   54740                                SA7      A4
                                   *
                                   *
         5140000000 X                      SA4      BRIFHR
477   5150000000 X                         SA5      BRILFH
         10644                             BX6      X4
            10755                          BX7      X5
500   5255000001                           SA5      X5+1        SKIP IF NO BLOCKS ATTACHED
         20530                             LX6      60-36
            73550                          SX5      X5
                                   *       ZR       X5,SHAZAMBR
501   5160000000 X                         SA6      FHRADDR
         5170000000 X                      SA7      IFHADDR
                                   *
502   7160000000 X                         REDDS    X4,FHR,FR.LEN   READ LATEST FHR (SECONDARY)
514   5140000000 X                         SA4      FR.CAPX
         43655                             MX6      60-15
            15446                          BX4      -X6*X4
515   7160000000 X                         CAPIN    FILCL,X4,FILECAP
524   6170000526 +                         SB7      SHAZAMBR
         0200000000 X                      JP       DETAIL
                                   *
                                   *
                                   *
525   0100000000 X                         RJ       SYSERR          BLOCK IN A MAP
                                   *
```
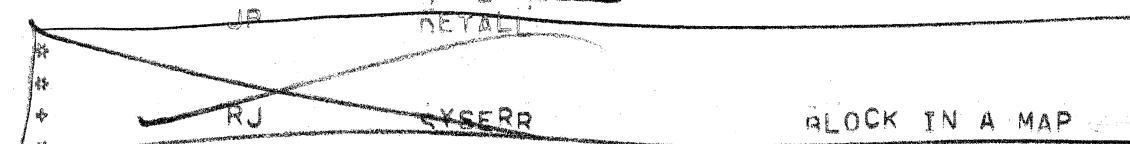
```
526   7160000000 X              SHAZAMGB   GETEVH    (MAINCL,M.HELP)     PSEUDO CLOSE PRIMARY FILE
534   10477                                BX4       X7                  HELPER INDEX
      5130000000 X                         SA3       MYIDENT
535   7160000001                           SX6       P.PCLOS             PSEUDO-CLOSE REQ CODE
      20644                                LX6       18+18
            12663                           BX6       X6+X3
534   20622                                LX6       18
      5150000000 X                         SA5       PRIFHR
            12565                           BX5       X6+X5
537   43601                                MX6       1                   REQUEST NOTIFICATION
      12565                                BX5       X6+X5
            7160000000 X                   SENDEV    (SLEEP,X4),(,X5)    CALL HELPER
                                     *
551   7160000000 X                         GETEVH    MYRESP
                                     *
                                     *                          DETACH BLOCK FROM SECONDARY
556   5140000000 X                         SA4       SECFHR
      5150000000 X                         SA5       SECLFH
557   10644                                BX6       X4
      10755                                BX7       X5
      5255000001                           SA5       X5+1               CHECK FOR NO BLOCKS
560   20530                                LX5       40-36
      73550                                SX5       X5
                                     *     ZR        X5,SHAZAMBA
      5160000000 X                         SA6       FHRADDR
561   5170000000 X                         SA7       FHRADDR
                                     *
            7160000000 X                   REDDS     X4,FHR,FR.LEN
574   5140000000 X                         SA4       FR.CAPX
      43655                                MX6       60-15
            15446                           BX4       -X6*X4
575   7160000000 X                         CAPIN     FILCL,X4,FILECAP
604   6170000606 +                         SB7       SHAZAMBA
      0200000000 X                         JP        RETALL
                                     *
605   0100000000 X                         RJ        SYSERR.
                                     *
                                     *
                                     *
                                     *
606   7160000000 X              SHAZAMBA   GETEVH    (MAINCL,M.HELP)     PSEUDO-CLOSE SECONDARY
614   10477                                BX4       X7
      5130000000 X                         SA3       MYIDENT
615   7160000001                           SX6       P.PCLOS             P-CLOSE REQ CODE
      20644                                LX6       18+18
            12663                           BX6       X6+X3
616   20622                                LX6       18
      5150000000 X                         SA5       SECFHR
            12565                           BX5       X6+X5
617   43601                                MX6       1
      12565                                BX5       X6+X5
            7160000000 X                   SENDEV    (SLEEP,X4),(,X5)
                                     *
```

```
631   7160000000 X                              GETEVH    MYRESP
                                       *
                                       *
                                       *
636   5140000000 X                              SA4       SECFHR
              10644                             BX6       X4
637   5160000000 X                              SA6       FHRADDR
              7160000000 X                      REDDS     X4+2,FHR+2,FR.LEN=2      FOR SECONDARY
                                       *
                                       *                            RESTORE OPEN COUNTS
652   5140000000 X                              SA4       FR.OPEN              RESTORE SECONDARY FILE OPEN CNT
              43601                             MX6       1
                    20637                       LX6       1+30
653   12664                                     BX6       X6+X4
          54640                                 SA4       X4
              6160000655 +                      SB6       SHAZAM9
654   0200000000 X                              JP        UNLOCK               UNLOCK SECONDARY
                                       *
655   5140000000 X          SHAZAM9             SA4       PRIFHR
              10644                             BX6       X4
656   5160000000 X                              SA6       FHRADDR
              7160000000 X                      REDDS     X4+2,FHR+2,FR.LEN=2    COPY IN PRIMARY FHR
                                       *
671   5140000000 X                              SA4       FR.OPEN              RESTORE PRIMARY OPEN COUNT
              43601                             MX6       1
                    20637                       LX6       1+30
672   12664                                     BX6       X6+X4
          54640                                 SA6       X4
              6160000674 +                      SB6       SHAZAM11
673   0200000000 X                              JP        UNLOCK               UNLOCK PRIMARY
                                       *
674   0200000000 X          SHAZAM11  JP        RETURN                         EXIT
                                       *
                                       *
                                       *
```

```
                                          *
                                          *
                                          *          *  *  *   ERRORS   *  *  *
                                          *
                                          *
     675   7160000025          SHAZAM12   SX6        F.NODFIL              PRIMARY FILE NOT LOCALLY OPEN
                  5160000000 X            SA6        ERRNUM
     676   0200000000 X                   JP         ERRFILE
                                          *
                                          *
                                          *
     677   7160000034          SHAZAM13   SX6        F.TMOPN               PRIMARY GLOBAL OPEN .NE. 1
                  5160000000 X            SA6        ERRNUM
     700   6160000000 X                   SB6        ERRFILE
                  0200000000 X            JP         UNLOCK
                                          *
                                          *
                                          *
     701   7160000033          SHAZAM14   SX6        F.ZLEV                PRIMARY FILE ONE LEVEL
                  5160000000 X            SA6        ERRNUM
     702   6160000000 X                   SB6        ERRFILE
                  0200000000 X            JP         UNLOCK
                                          *
                                          *
                                          *
     703   7160000045          SHAZM14A   SX6        F.FROZ                PRIMARY FILE FROZEN
                  5160000000 X            SA6        ERRNUM
     704   6160000000 X                   SB6        ERRFILE
                  0200000000 X            JP         UNLOCK
                                          *
                                          *
                                          *
     705   5055000001          SHAZAM15   SA6        X5+1                  BLOCK IS IN A MAP (ADDRESS OF MAP)
                  20522                    LX5        78
     706   7160000002                     SX6        F.INMAPS
                  12665                    BX6        X6+X5
     707   5160000000 X                   SA6        ERRNUM
                  6160000000 X            SB6        ERRFILE
     710   0200000000 X                   JP         UNLOCK.
                                          *
                                          *
                                          *
     711   7160000025          SHAZAM16   SX6        F.NODFIL              SECONDARY FILE NOT
                  43701                    MX7        1                    LOCALLY OPEN
                       20723              LX7        1+18
     712   12667                          BX6        X6+X7                 MODIFY ERROR NUM
                  5160000000 X            SA6        ERRNUM
713   6170000000 X           SB7        ERRFILE                TYPE ERROR (CLASS)
                  0200000714 +            JP         SHAZAM17
                                          *
                                          *
                                          *
                                          *
```

handwritten annotation: X5= fil addr

```
714  5140000000 X      SHAZAM17  SA4    PRIFHR        READ LATEST PRIMARY FHR
     10644                       BX6    X4
715  5160000000 X                SA6    FHRADDR
     7160000000 X                REDDS  X4,FHR,FR.LEN
                       #
730  5140000000 X                SA4    FR.OPEN       FIX OPEN COUNT
     43601                       MX6    1
         20637                   LX6    1+30
731  12646                       BX6    X4+X6
     54640                       SA6    X4
         66670                   SB6    B7            EXIT ADDR
732  0200000000 X                JP     UNLOCK        UNLOCK PRIMARY
                       #
                       #
                       #
733  7160000034      SHAZAM19  SX6    F.TMOPN       GLOBAL OPEN CNT .NE. 1
     43701                       MX7    1             (SECONDARY FILE )
         20723                   LX7    1+18
734  12667                       BX6    X6+X7         MODIFY ERROR NUM
     5160000000 X                SA6    ERRNUM
735  6160000714 +                SB6    SHAZAM17      (FIX UP PRIMARY AFTER UNLOCKING
     6170000000 X                SB7    ERRFILE          SECONDARY)
736  0200000000 X                JP     UNLOCK        UNLOCK SECONDARY
                       #
                       #
                       #
737  7160000033      SHAZAM20  SX6    F.ZLEV        ONE LEVEL FILE (SECONDARY)
     43701                       MX7    1
         20723                   LX7    1+18
740  12667                       BX6    X6+X7         MODIFY ERROR NUM
     5160000000 X                SA6    ERRNUM
741  6160000714 +                SB6    SHAZAM17      (FIX UP PRIMARY AFTER UNLOCK 2ND)
     6170000000 X                SB7    ERRFILE
742  0200000000 X                JP     UNLOCK        UNLOCK SECONDARY
                       #
                       #
                       #
743  7160000045      SHAZM20A  SX6    F.FROZ        SECONDARY FILE FROZEN
     43701                       MX7    1
         20723                   LX7    1+18
744  12667                       BX6    X6+X7
     5160000000 X                SA6    ERRNUM
745  6160000714 +                SB6    SHAZAM17
     6170000000 X                SB7    ERRFILE
746  0200000000 X                JP     UNLOCK        UNLOCK SECONDAY
                       #
                       #
                       #
747  5055000001      SHAZAM21  SA5    A5+1          BLOCK IS IN A MAP (A5=ADDR OF APR)
     20522                       LX5    18
         43701                   MX7    1
750  7160000002                  SX6    F.INMAPS
```

```
                12665                    BX6        X6+X5
                        12667            BX6        X6+X7
751    5160000000 X                      SA6        FRRNUM
                6160000714 +             SB6        SHAZAM17
752    6170000000 X                      SB7        FRRFILE
                0200000000 X             JP         UNLOCK              UNLOCK SECONDARY
                                         *
                                         *
                                         *
753    0400000000 X                      +  RJ      SYSERR
754    7160000004            SHAZAM22     SX6        F.NODSK             INSUFFICIENT SPACE(PRIMARY)
                5160000000 X              SA6        FRRNUM
755    5150000000 X                       SA5        FR.OPEN
                43601                     MX6        6
                        20637             LX6        J+30
756    12656                             BX6        X5+X6               FIX OPEN (SECONDARY)
                64650                     SA6        A5
                6170000000 X              SB7        FRRALOC
757    6160000714 +                      SB6        SHAZAM17
                0200000000 X             JP         UNLOCK              UNLOCK SECONDARY
                                         *
                                         *
                                         *
760    7140000000 X            SHAZAM23   SX4        DAGESW              INSUFFICIENT SPACE (SECONDARY)
                7150000000 X              SX5        FHR
761    37445                             IX4        X4-X5
                5244000000 X             SA4        X4+FR.DAR            REFUND TO PRIMARY DAR
                        67505             SB5        -BR
762    6140000002                        SB4        5
                21444                     AX4        +6
                        63340             SB3        X4
763    6160000754 +                      SB6        SHAZAM22
                0200000000 X             JP         DARSPA
                                         *
                                         *
                                         *
764    7160000044            SHAZAM24     SX6        F.SAME              PRIMARY = SECONDARY
                5160000000 X              SA6        FRRNUM
765    6170000000 X                       SB7        FRRFILE
                0200000716 +             JP         SHAZAM17            GO FIX UP PRIMARY
                                         *
                                         *
```

```
                              *
                              *
                              *
                              *      DESTROY SUBPROCESS AFTER ZEROING DISK FILE MAP ENTRIES
                              *
                              *          AP1: C1 SUBPROCSS NAME (OB.DSTRY+OB.CHMAP)
                              *
                              *
                              *                   NOTES:      AFTER CHECKING THAT THE SUBPROCESS
                              *                               EXISTS AND IS A LEAF AND IS NOT IN
                              *                               THE STACK, THE MAP IS SCANNED FOR
                              *                               DISK FILE ENTRIES.  MAP ENTRIES
                              *                               WHICH ARE FOR LOCALLY OPEN DISK FILES
                              *                               ARE ZEROED AND THE FILE BLOCKS ARE
                              *                               DETACHED.  FINALLY, THE SUBPROCESS
                              *                               IS DESTROYED
                              *
                              *
                              *
                    0  SUBPX      EQU       0                   INDEX OF USER SUPPLIED
                              *                                 SUBPROCESS NAME
                              *
                       EXT       FRRSUBP
                       EXT       MAPX
                              *
                              *
                              *
                       ENTRY     DESTSUB
                              *
 766  7160001002 +     DESTSUB   SX6       DESTSUB1             CHECK THAT SUBPROCESS IS A
      5160000000 X               SA6       PROCADR              LEAF OF SUBP TREE
 767  7160000000 X               FINDSON   SUBPX,1,TEMPIX,DESTSUB2
                              *                                 F-RETURN IF NO SON (I.E. LEAF)
                              *
 777  13777                      BX7       X7-X7                SUBPROCESS IS NOT A LEAF
      5170000000 X               SA7       PROCADR
1000  7160000013                 SX6       F.NLEAF
      5160000000 X               SA6       ERRNUM
1001  0200000000 X               JP        FRRSUBP
                              *
                              *
1002  13777            DESTSUB1  BX7       X7-X7
      5170000000 X               SA7       PROCADR
1003  0200000000 X               JP        PASSERR              SUBPROCESS DOES NOT EXIST
                              *
                              *
                              *                   GOT F-RETURN (I.E. SUBP IS A LEAF)
1004  13777            DESTSUB2  BX7       X7-X7
      5170000000 X               SA7       PROCADR
1005  7160000000 X               DISPCAP   SUBPX                NOW MUST CHECK STACK
1012  10177                      BX1       X7                   X1 * SUBPROCESS NAME
      6140000001                 SB4       1
1013  7170001025 +               SX7       DESTSUB4             SET ERROR EXIT
      5170000000 X               SA7       PROCADR
```

```
                                            *
1014   7160000000 X          DESTSUB3   VIEW      STKBUF,B4
1022   5140000000 X                     SA4       STKBUF
               13441                     BX4       X4-X1
1023   030400Ī076 +                     ZR        X4,DESTSUB9     JP IF SUBP IS IN STACK
           6144000001                    SB4       B4+1
1024   020000Ī014 +                     JP        DESTSUB3        LOOP UNTIL ERROR
                                            *
                                            *                    REACHED BOTTOM OF STACK
1025   1Ē777                DESTSUB4   BX7       X7-X7
           5170000000 X                  SA7       PROCADR
1026   7160000000 X                     DISPSUB   SUBPX,SUBPBUF,8     NEXT SCAN MAP
1035   5140000004 X                     SA4       SUBPBUF+4
               2Ō430                     LX4       A0-36
1036   7244777776                       SX4       X4-1            SIZE OF LOGICAL MAP
                                            *
                                            *                    CHECK EACH MAP ENTRY
               1Ō644                     BX6       X4
1037   5160000000 X                     SA6       MAPX            STORE MAP INDEX
                                            *
1040   7160000000 X          DESTSUB5   DISPMAP   SUBPX,X4,MAPBUF
1047   5150000000 X                     SA5       MAPBUF          ECS FILE UNIQUE NAME
           0305001065 +                  ZR        X5,DESTSUB7     SKIP IF EMPTY MAP ENTRY
                                            *
1050   10755                            BX7       X5
           4170001053 +                  SB7       DESTSUB6        *CONVERT* CHECK FOR LOCALLY
1051   020000Ō000 X                     JP        CONVERT         OPEN FILE AND LOCKS IF SO
                                            *
                                            *
1052   020000Ī065 +                     JP        DESTSUB7        SKIP IF NOT DISK FILE
                                            *
1053   5140000000 X          DESTSUB6   SA4       MAPX            ENTRY FOR DISK FILE
           7160000000 X                  ZRMAP     SUBPX,X4,FILECAP  CLEAR MAP ENTRY
                                            *
1062   511000Ō001 X                     SA1       MAPBUF+1        FILE ADDRESS
           512000000Ž X                  SA2       MAPBUF+2
1063   73220                            SX2       X2              WORD COUNT
           616000Ō001                    SB6       1               INDICATE MAP DETACH
1064   617000Ī065 +                     SB7       DESTSUB7
           020000Ō000 X                  JP        DETACH
                                            *
                                            *
1065   5140000000 X          DESTSUB7   SA4       MAPX            DECREMENT MAP INDEX AND
           0304001070 +                  ZR        X4,DESTSUB8     JP IF THRU
1066   7244777776                       SX4       X4-1
               1Ō644                     BX6       X4
               54640                     SA6       A4
1067   020000Ī040 +                     JP        DESTSUB5        LOOP
                                            *
                                            *
1070   7160000000 X          DESTSUB8   DELSUBP   SUBPX           DESTROY SUBPROCESS
1075   020000Ō000 X                     JP        RETURN
                                            *
```

```
                                        *
    1076  13777            DESTSUB9   BX7      X7-X7
          5170000000 X                SA7      PROCADR
    1077  7160000014                  SX6      P.INSTK                    ERROR...SUBPROCESS IN THE STACK
          5160000000 X                SA6      ERRNUM
    1100  0200000000 X                JP       ERRSUBP
```

```
                                    *
                                    *  AUDIT A CLIST FULL OF FILES (ECS INCARN CAPS)
                                    *
                                    *        USES ERRPACK AS RETURN-PARAMETERS BUFFER:
                                    *               ERRPACK+0 = OR OF ERRPACK+1 THRU ERRPACK+15
                                    *               ERRPACK+J = ERROR CODE FOR JTH FILE (0<J<16)
                                    *                       SEE PARAMS FOR ERROR CODES
                                    *
                                    *        USES TEMPA AS FILE COUNTER
                                    *             TEMPB AS OUTSTANDING-HELPER-REQUEST COUNTER
                                    *             TEMPC TO SAVE NO-OF-SECTORS-IN-HDR-BLK
                                    *             TEMPD TO SAVE NO-OF-FILES-TO-AUDIT
                                    *
                                    *
1101   13600                 AUDIT     BX6     X0-X0
       6160000000 X                    SA6     TEMPA
1102   5160000000 X                    SA6     TEMPB
       6110000017                      SB1     15
1103   5161000000 X          AUDIT0    SA6     B1+ERRPACK
       6111777776                      SB1     B1-1
1104   0610001103 +                    PL      B1,AUDIT0
                                    *
       5110000000 X                    SA1     AP2                     PICK UP NUMBER OF FILES
1105   10611                           BX6     X1
       5160000000 X                    SA6     TEMPD                   SAVE IT
                                    *
1106   5110000000 X          AUDIT1    SA1     TEMPA                   FILE INDEX
       7160000000 X                    DISPCAP (B0,X1)                 X6,X7 = ECS INCARN CAP
                                    *
1114   7110001577                      SX1     T.FILE                  BE SURE CAP IS FOR ECS FILE
       13116                           BX1     X1-X6
       73110                           SX1     X1
1115   0301001117 +                    ZR      X1,AUDIT1A
       7140000004                      SX6     ERR.NOF
1116   0200001234 +                    JP      AUDIT9
                                    *
1117   6170001121 +          AUDIT1A   CALLX   CONVERT,B7,AUDIT2       FIND AND LOCK FHR
                                    *
1120   7160000004            *         SX6     ERR.NOF                 ERROR..NO SUCH OPEN FILE
       0200001234 +                    JP      AUDIT9
                                    *
                                    * MARK HEADER BLOCK BUSY IN DAT
                                    *
1121   5110000000 X          AUDIT2    SA1     FR.NAME                 NORMAL RETURN FROM CONVERT
       43644                           MX6     60-24
       15516                           BX5     -X6*X1                  DISK ADDR
1122   21130                           AX1     24
       43672                           MX6     60-2
       15116                           BX1     -X6*X1                  HDR BLK SIZE CODE
       63110                           SB1     X1
1123   5141001373 +                    SA4     B1+NSECTS               CONVERT TO SECTORS-IN-HDR-BLK
       16744                           BX7     X4
1124   5170000000 X                    SA7     TEMPC                   SAVE IT
```

```
                                        *
         6160001127 +                            CALLX     BUSYDSK,B6,AUDIT3       MARK BUSY IN DAT
                                        *
1126     0200001130 +                   *        JP        AUDIT4                  NORMAL RETURN FROM BUSYDSK
                                        *
1127     7160000005                      AUDIT3  SX6       ERR.FAA                 ERROR..BLOCK ALREADY BUSY
         0200001234 +                            JP        AUDIT9
                                        *
                                        *  CHECK UNIQUE NAMES IN FHR AGAINST UNIQUE NAME COUNTER
                                        *
1130     7160000000 X                    AUDIT4  GETEVH    (MAINCL,M.UNAME)        GET UNIQUE NAME COUNTER
                                        *
1136     5140000000 X                            SA4       FR.NAME                 FILE UNIQUE NAME
         21432                                   AX4       24+2                    COMPARE W/ COUNTER
         37574                                   IX5       X7+X4                   JUMP IF COUNTER IS GREATER
1137     0325001141 +                            PL        X5,AUDIT5
         7170000001                              SX7       1
1140     36747                                   IX7       X4+X7
                                        *
1141     5140000000 X                    AUDIT5  SA4       FR.MEMB                 MEMBERSHIP UNIQUE NAME
         21432                                   AX4       24+2                    COMPARE W/ COUNTER
         37574                                   IX5       X7+X4                   JUMP IF COUNTER IS GREATER
1142     0325001144 +                            PL        X5,AUDIT6               ELSE COUNTER = MEMBERSHIP
         7170000001                              SX7       1                        UNIQUE NAME + 1
1143     36747                                   IX7       X4+X7
1144     10477                           AUDIT6  BX4       X7
         7160000000 X                            SENDEV    *+X4                    UPDATE COUNTER
                                        *  CHECK FOR MULTI-LEVEL FILE
                                        *
1153     5140000000 X                            SA4       FR.ROOT
         0334001202 +                            NG        X4,AUDIT7               JUMP IF MULTI-LEVEL
                                        *  ADJUST DAR
                                        *
1154     5140000000 X                            SA4       FR.DAR
         21444                                   AX4       18+18
         63340                                   SB3       X4                      DAR ADDR
1155     6140000002                              SB4       2                       INDICATE DISK SPACE
         5140000000 X                            SA4       TEMPC
1156     63540                                   SB5       X4                      TOTAL SECTORS IN FILE
                                        *
         6160001160 +                            CALLX     DARSPA,B6
                                        *
1160     6140000003                              SB3       X2        DARADDR
         6150000001                              SB4
                                                 SB5       1
1161     6160001162 +                            CALLX     DARSPA,B6
                                        *
1162     6160001163 +                            CALLX     UNLOCK,B6               UNLOCK THE FILE
                                        *
                                        *  ADJUST FIXED SECTOR COUNTER
```

(handwritten annotations)

50-50

BJ NG (circled) PL   X7-X4 → X4-X7

BJ NG (circled) PL   X7-X4 → X4-X7

X7 (circled X4) (gX4)   BJ

(2) (Dave)   SA4   (2) (Dave)   AX4   X4

(circled SB3 X2 DARADDR) Dave

Handwritten box:
```
SA4   FR.SIZE
AX4   36
SX4   X4-B5
ZR    X4,XYZ
RJ    SYSERR

XYZ   BSS   0
```

```
                                              #
     1163   7160000000 X                           GETEVH      (MAINCL,M.FDISK)
     1171   5140000000 X                           SA4         TEMPC                SECTORS IN HDR BLK
                37474                               IX4         X7-X4
     1172   7160000000 X                           SENDEV      *,X4
                                              #
     1201   0200001237 +                           JP          AUDIT10              GO ON TO NEXT FILE
```

```
                          *
                          * MULTI-LEVEL..CALL FOR A HELPER
                          *
1202  5150000000 X        AUDIT7   SA5       TEMPB              COUNT OF OUTSTANDING REQS
            7275777770              SX7       X5-EVCHSZ+1        ROOM FOR ONE MORE..
1203  0317001206 +                 NZ        X7,AUDIT8          YES..DO IT
                          *
            6170001205 +           CALLX     PROCESS,B7         NO..PROCESS ONE RESPONSE
1205  5150000000 X                 SA5       TEMPB              DECR COUNT
                          *
1206  7275000001          AUDIT8   SX7       X5+1               INCR COUNT
            54750                   SA7       A5
                          *
                          * RESERVE A HELPER
                          *
1207  7160000000 X                 GETEVH    (MAINCL,M.HELP)
1215  10577                        BX5       X7                 SAVE HELPER I.D.
                          *
                          * BUILD HELPER REQUEST IN X4
                          *
            7140000003             SX4       R.AUDIT            AUDIT REQUEST CODE
            20422                  LX4       18
1216  5130000000 X                 SA3       TEMPA              INDEX OF CURRENT FILE
            12443                  BX4       X4+X3
            20422                  LX4       18
1217  5130000000 X                 SA3       MYIDENT            PROCESS I.D. OF THIS PROCESS
            12443                  BX4       X4+X3
            20422                  LX4       18
1220  5130000000 X                 SA3       FHRADDR            BDS ADDRESS OF FHR
            12443                  BX4       X4+X3
            43301                  MX3       1                  REQUEST NOTIFICATION
1221  12443                        BX4       X4+X3
                          *
                          * SEND HELPER REQUEST
                          *
            7160000000 X           SENDEV    (SLEEP,X5),(,X4)
1233  0200001237 +                 JP        AUDIT10
                          *
                          * ERROR..STORE ERROR CODE AND GO ON TO NEXT FILE
                          *
1234  5140000000 X        AUDIT9   SA4       TEMPA              FILE INDEX
            5264000001 X           SA6       X4+ERRPACK+1       STORE ERROR CODE
1235  5140000000 X                 SA4       ERRPACK
            12646                  BX6       X4+X6              OR ERROR CODE INTO 1ST RETURN PARAM
            54640                  SA6       A4
                          *
1236  6160001237 +                 CALLX     UNLOCK,B6
                          *
                          * GO ON TO NEXT FILE
                          *
1237  5140000000 X        AUDIT10  SA4       TEMPA
            7264000001             SX6       X4+1               INCR INDEX
1240  54640                        SA6       A4
```

```
                                         *
            5140000000 X                       SA4        TEMPD
                    13664                      BX6        X6-X4              ANY MORE FILES TO DO..
     1241  0316001106 +                        NZ         X6,AUDIT1          JUMP IF SO
                                         *
                                         *  ALL FILES STARTED .. WAIT FOR ANY HELPERS TO FINISH
                                         *
     1242  5150000000 X              AUDIT11    SA5        TEMPB
                  0305001244 +                  ZR         X5,AUDIT12
                                         *
     1243  6170001242 +                        CALLX      PROCESS,B7,AUDIT11
                                         *
                                         *  RETURN WITH PARAMETERS
                                         *
     1244  7110000000 X              AUDIT12    SX1        ERRPACK            START OF ERROR CODE BUFFER
            5120000000 X                        SA2        TEMPD              NO. OF FILES
     1245  7222000001                           SX2        X2+1              (+1 FOR OR-WORD)
                    20236                        LX2        30
                    12112                        BX1        X1+X2              DATA RETURN SPEC
                                         *
     1246  13200                               BX2        X0-X0              CAP RETURN SPEC
                                         *
            0200000000 X                        JP         RETPAR
```

```
                                   *
                                   *  AUDIT..PROCESS ONE HELPER RESPONSE
                                   *
                                   *          B7 = RETURN LINK
                                   *
     1247  7160000000 X            PROCESS   GETEVH    MYRESP              GET A RESPONSE EVENT
                                   *
     1254  73670                             SX6       X7                  ERROR CODE
               21722                          AX7       18                  INDEX OF FILE AUDITED BY HELPER
                  5267000001 X               SA6       X7+ERRPACK+1        STORE ERROR CODE
                                   *
     1255  5150000000 X                      SA5       ERRPACK
               12665                          BX6       X6+X5               OR CODE INTO OR-WORD
                  54650                       SA6       A5
                                   *
     1256  5150000000 X                      SA5       TEMPB
               7365777776                     SX6       X5-1                DECREMENT COUNT
     1257  54650                             SA6       A5
                                   *
           0270000000                        JP        B7
```

```
                              * DECLARE ACCOUNTING FILE
                              *
                              *******************************************
1260   5150000000 X           DECLARE    SA4        XD.AFLAG               *
              0315001262 *                NZ         X5,DECLGO              *
1261   0200000000 X                       JP         RETURN                *
1262                          DECLGO     BSS         0                     *
                              *******************************************
1262   7160000000 X                       CABOUT     MAINCL.M.ABFIL.BO

                              * SEND A START REQUEST TO EACH ACCOUNTANT
                              *
1271   7140000000                         SX4        B.START
              20466                        LX4        18+18+18
1272   7150000003                         SX5        NACCTS

1273   7160000000 X           DECLAR1    GETEVH      (MAINCL.M.ACRES)
1301   7160000000 X                       SENDEV      (MAINCL.M.ACREQ)+(,X4)
                              *
1312   7255777776                         SX5        X5-1
              0315001273 *                NZ         X5,DECLAR1

                              * SEND A SCAN REQUEST TO ONE ACCOUNTANT
                              *
1313   7140000001                         BX4        B.SCAN
              20466                        LX4        18+18+18
1314   5150000000 X                       SAS        MYIDENT
              12445                        BX4        X4+X5
              43401                        MX6        1                    REQUEST NOTIFICATION
1315   12446                              BX4        X4+X6

       7160000000 X                       GETEVH     (MAINCL.M.ACRES)     RESERVE ACCOUNTANT
1324   7160000000 X                       SENDEV     (MAINCL.M.ACREQ)+(,X4)
1335   7160000000 X                       GETEVH     MYEVCH              WAIT FOR NOTIFICATION

1342   0200000000 X                       JP         RETURN              EXIT
```

```
                                   *
                                   *  DONE..LOAD/RECOVERY IS COMPLETE
 1343   714000002                  DONE       SX4       0.DONE
                                   ***********************************************
          515000000 X                         SA5       XD.AFLAG
 1344   0315001345 *                          NZ        X5,DONEGO
          020000000 X                         JP        RETURN
 1345                              DONEGO     BSS
                                   *
                                   ***********************************************
 1345   20466                                 LX2       18.18.18
          43601                                MX6
          12446                                BX4       X4*X6
                                   *
 1346   716000000 X               GETEVH      (MAINCL.M.ACRES)
 1354   716000000 X               SENDEV      (MAINCL.M.ACRES).(.X4)
 1365   716000000 X               GETEVH      MYEVCH
                                   *
 1372   020000000 X                           JP        RETURN
```

Moved to ACCNT

Dave

```
                                    *
                                    *
       1372                         SYMBOLS XTEXT
                                    *
                                    *
                      0  X   SUBPRUF    EQU        PAGESW
                      0  X   TEMPIX     EQU        FILECAP
                                    *
       1373  0000000000000000000001  NSECTS   DATA      1,2,4,7
                                    *
                                    *
       1377                         END

                      42743   STORAGE USED            4854 STATEMENTS      756 SYMBOLS      000043 INVENTED SYMBOLS
                              6660 ASSEMBLY          29.367 SECONDS       1014 REFERENCES

                                       1 ERROR IN  ASORT
```

U TYPE ERROR   UNDEFINED SYMBOL.   VALUE ASSUMED 0.
        OCCURRED ON PAGES   19

Symbol	Addr	Type	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
ALLCLO	142	PROGRAM#	13/25 E	13/29 L						
ALLCLOR	0	EXTERNAL#	13/31 S	14/11						
ALLCLO1	145	PROGRAM#	13/36 L	13/38	13/42	14/08				
ALLCLO2	151	PROGRAM#	13/39	13/44 L						
ALLCLO3	155	PROGRAM#	14/01	14/05 L						
ALLCLO4	157	PROGRAM#	13/37	14/11 L						
ALLCLT1	0	EXTERNAL#	13/45 S	14/05						
ALLCLT2	0	EXTERNAL#	13/32 S	14/07						
APTIPL	0	EXTERNAL#								
AP0	0	EXTERNAL#								
AP1	0	EXTERNAL#	4/17	9/17	10/22	11/19	15/18	17/13	18/15	20/37
AP2	0	EXTERNAL#	4/25	11/29	15/30	21/34	34/23			
AP3	0	EXTERNAL#								
AP4	0	EXTERNAL#								
AP5	0	EXTERNAL#								
AP6	0	EXTERNAL#								
AP7	0	EXTERNAL#								
AP8	0	EXTERNAL#								
ATTACH	0	EXTERNAL#								
ATTACHR	0	EXTERNAL#								
AUDIT	1161	PROGRAM#	34/15 L							
AUDITO	1163	PROGRAM#	34/19 L	34/21						
AUDIT1	1166	PROGRAM#	34/27 L	38/04						
AUDIT1A	1117	PROGRAM#	34/33	34/37 L						
AUDIT10	1237	PROGRAM#	36/07	37/37	37/51 L					
AUDIT11	1242	PROGRAM#	38/08 L	38/11						
AUDIT12	1244	PROGRAM#	38/09	38/15 L						
AUDIT2	1121	PROGRAM#	34/37	34/44 L						
AUDIT3	1127	PROGRAM#	36/02	35/06 L						
AUDIT4	1130	PROGRAM#	35/04	35/11 L						
AUDIT5	1141	PROGRAM#	35/16	35/20 L						
AUDIT6	1144	PROGRAM#	35/23	35/27 L						
AUDIT7	1202	PROGRAM#	35/33	37/04 L						
AUDIT8	1206	PROGRAM#	37/06	37/11 L						
AUDIT9	1234	PROGRAM#	34/35	34/40	35/07	37/47 L				
BFILE	0	EXTERNAL#								
BLK.DTY	0	EXTERNAL#								
BLK.FLG	0	EXTERNAL#								
BLK.SIZ	0	EXTERNAL#								
BUSYDSK	0	EXTERNAL#	35/03							
CALBEAD	0	EXTERNAL#								
CAPRET	113	PROGRAM#	9/48	10/01 L						
CHMAP	0	EXTERNAL#								
CHMAPB1	0	EXTERNAL#								
CHMAPR	0	EXTERNAL#								
CLKBUF	0	EXTERNAL#								
CLODAR	0	EXTERNAL#								
CLOSE	0	EXTERNAL#								
CLOSER	0	EXTERNAL#								
CLOSROF	0	EXTERNAL#								
CLOSRWF	0	EXTERNAL#								
CLOSRWL	0	EXTERNAL#								
COMMROF	0	EXTERNAL#								

```
COMMROL        0      EXTERNAL*
COMMRWF        0      EXTERNAL*
COMMRWL        0      EXTERNAL*
CONVERT        0      EXTERNAL*      4/22       17/16      18/18      20/40      21/46      32/27      34/38
CREATB1        0      EXTERNAL*
CREATE         0      EXTERNAL*
CREATER        0      EXTERNAL*
CREBLK         0      EXTERNAL*
CREBLKR        0      EXTERNAL*
CRELFH         0      EXTERNAL*
CREPTRR        0      EXTERNAL*
CTEMP          0      EXTERNAL*
DARADDR        0      EXTERNAL*
DARHASH        0      EXTERNAL*
DARSPA         0      EXTERNAL*      23/02      23/12      30/33      35/46      35/50
DATARET      192      PROGRAM*       9/47       9/52 L
DATIPL         0      EXTERNAL*
DATMAP         0      EXTERNAL*
DBR            0      EXTERNAL*
DBUG1          0      EXTERNAL*
DBUG2          0      EXTERNAL*
DBW            0      EXTERNAL*
DDRSP          0      EXTERNAL*
DDSIPL         0      EXTERNAL*      9/45  S    21/24  S   22/31      24/43  S   24/46  S   26/29  S   27/09  S   27/23
                                    9/45  S    21/24  S   23/25  S   24/43  S   24/46      26/29  S   27/09  S   29/06  S
                                    9/45  S    21/24      23/25  S   24/43  S   25/43  S   26/29  S   27/09      29/06  S
                                    9/45  S    22/31  S   23/25  S   24/43      25/43  S   26/29  S   27/23  S   29/06  S
                                    9/45       22/31  S   23/25  S   24/46  S   25/43  S   26/29      27/23  S   29/06  S
                                   21/24  S    22/31  S   23/25      24/46  S   25/43  S   27/09  S   27/23  S   29/06
                                   21/24  S    22/31  S   24/43  S   24/46  S   25/43      27/09  S   27/23  S

DECLARE     1240      PROGRAM*       3/09 E    40/05 L
DECLAR1     1273      PROGRAM*      40/16 L    40/22
DECLB0      1262      PROGRAM*      40/16      40/08 L
DECODE         0      EXTERNAL*      4/38
DELBLK         0      EXTERNAL*
DELBLKR        0      EXTERNAL*
DELHASH        0      EXTERNAL*
DENTRY         0      EXTERNAL*
DESTSUB      766      PROGRAM*      31/27 E    31/29 L
DESTSUB1    1002      PROGRAM*      31/29      31/41 L
DESTSUB2    1004      PROGRAM*      31/32      31/47 L
DESTSUB3    1014      PROGRAM*      32/02 L    32/07
DESTSUB4    1025      PROGRAM*      31/42      32/10 L
DESTSUB5    1040      PROGRAM*      32/01 L    32/46
DESTSUB6    1053      PROGRAM*      32/26      32/32 L
DESTSUB7    1065      PROGRAM*      32/23      32/30      32/39      32/43 L
DESTSUB8    1070      PROGRAM*      32/44      32/51 L
DESTSUB9    1076      PROGRAM*      32/05      33/02 L
DETACH         0      EXTERNAL*     32/40
DETACHR        0      EXTERNAL*
DETALL         0      EXTERNAL*     25/48      26/34
DISKENT        0      EXTERNAL*
DISKERR        0      EXTERNAL*
```

Symbol	Value	Type	Ref							
DISKINT	0	EXTERNAL#								
DONE	1343	PROGRAM*	3/09 E	41/04 L						
DONEGO	1345	PROGRAM*	41/08	41/10 L						
DORESPR	0	EXTERNAL#								
DSKLCK	0	EXTERNAL#								
DSPBLK	122	PROGRAM*	11/17 E	11/19 L						
DSPBLK1	124	PROGRAM*	11/22 L	11/26						
DSPBLK2	130	PROGRAM*	11/35 L	11/40						
DSPBLK4	135	PROGRAM*	9/25	11/23	12/03 L					
DSPBLK5	137	PROGRAM*	10/24	11/31	12/08 L					
DSPBLK6	141	PROGRAM*	10/30	11/36	12/13 L					
DSPFILE	47	PROGRAM*	9/15 E	9/17 L						
DSPFILE1	71	PROGRAM*	9/24 L	9/28						
DSPFILE2	73	PROGRAM*	9/33 L	10/39						
DSPFILN	114	PROGRAM*	10/20 E	10/22 L						
DSPFILN1	116	PROGRAM*	10/28 L	10/32						
DSPFILN2	120	PROGRAM*	10/29	10/32 L						
DSPTR	0	EXTERNAL#								
DSWPTIM	0	EXTERNAL#	8/13							
DSYSTIM	0	EXTERNAL#	8/12							
DUSRTIM	0	EXTERNAL#	8/14							
D.AFLAG	0	EXTERNAL#	40/05	41/07						
D.ENTRY	0	EXTERNAL#								
D.FNAME	0	EXTERNAL#								
ECLOSE	0	EXTERNAL#	14/02							
EC:CIN	0	EXTERNAL#	25/47	26/33						
EC:COUT	0	EXTERNAL#	40/11							
EC:DSAM	0	EXTERNAL#	32/22							
EC:DSCP	0	EXTERNAL#	4/22	15/20	17/15	18/18	20/39	21/37	31/50	34/29
EC:DSSB	0	EXTERNAL#	32/13							
EC:DSSE	0	EXTERNAL#	32/43							
EC:DSUB	0	EXTERNAL#	32/52							
EC:FSON	0	EXTERNAL#	31/32							
EC:GEVH	0	EXTERNAL#	26/02	26/42	35/12	37/17	40/19	40/34	41/20	
			26/15	27/02	36/03	39/07	40/34	41/18		
EC:SEV	0	EXTERNAL#	26/13	26/53	35/29	36/06	37/37	40/20	40/35	41/19
EC:ZRM	0	EXTERNAL#	32/34							
ENTER	0	EXTERNAL#								
ERRADDR	0	EXTERNAL#								
ERRALOC	0	EXTERNAL#	7/12	30/18						
ERRCLAS	0	EXTERNAL#								
ERRFILE	0	EXTERNAL#	7/02	17/47	28/08	28/28	29/23	30/05		
			12/45	19/06	28/14	28/38	29/34	30/39		
			16/01	19/23	28/21	28/48	29/45			
ERRMAP	0	EXTERNAL#								
ERRNUM	0	EXTERNAL#	7/01 S	12/04 S	17/46 S	28/07 S	28/27 S	29/21 S	30/03 S	31/37 S
			7/06 S	12/09 S	19/05 S	28/13 S	28/37 S	29/32 S	30/12 S	33/05 S
			7/11 S	15/53 S	19/22 S	28/20 S	28/47 S	29/43 S	30/38 S	
ERRPACK	0	EXTERNAL#	34/19 S	37/42 S	37/43	38/15	39/10 S	39/12		
ERRPARM	0	EXTERNAL#	7/07	12/10						
ERRSUBP	0	EXTERNAL#	31/38	33/06						
ERR.FAA	6		35/36							
ERR.NOF	4		34/34	34/39						

```
   EVCHS7          10                        37/05
   EXCLAIM          0        EXTERNAL*
   E.FROZ          45                        17/50       19/09       28/26       29/39
   F.INMAPS         2                        28/35       29/53
   E.INSTK         14                        33/04
   E.NEGPAR         0                        12/08
   E.NLEAF         13                        31/36
U  E.NLOCF                                   19/17
   E.NODDS         25                        7/10
   E.NODFIL        25                        6/53        12/03       15/52       17/45       19/04       28/06       29/43
   F.NODSK          4                        30/11
   E.SAME          44                        30/37
   E.TMOPN         34                        19/13       28/12       29/17
   E.ZLEV          33                        28/19       29/28
   FR.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*
   FHB              0        EXTERNAL*
   FHR              0        EXTERNAL*       21/24       22/31       23/25       23/53       25/43       27/09       29/06
                                            21/27       22/34       23/38       24/43       26/29       27/23       30/25
   FHRADDR          0        EXTERNAL*       21/17       23/23 S     26/25 S     27/21 S     37/29
                                            22/24       25/39 S     27/07 S     29/04 S
   FHRHASH          0        EXTERNAL*
   FILCL            0        EXTERNAL*       25/47       26/33
   FILEADR          0        EXTERNAL*
   FILECAP          0        EXTERNAL*       25/47       26/33       32/34       42/07
   FLDLEN           0        EXTERNAL*
   FREEDSK          0        EXTERNAL*
   FREEZE         202        PROGRAM*        17/11 E     17/13 L
   FREEZE1        211        PROGRAM*        17/15       17/18 L
   FREEZE2        220        PROGRAM*        17/17       17/45 L
   FREEZE3        222        PROGRAM*        17/20       17/50 L
   FRETURN          0        EXTERNAL*       12/13
   FRW              0        EXTERNAL*
   FRWENT           0        EXTERNAL*
   FRWERR           0        EXTERNAL*
   FRWINT           0        EXTERNAL*
   FR.CAPX          0        EXTERNAL*       25/43       26/29
   FR.CLAM          0        EXTERNAL*       24/17       24/18
   FR.DAR           0        EXTERNAL*       22/36       22/37       22/51       23/08       30/27       35/37
   FR.DBSZ          0        EXTERNAL*
   FR.FLAG          0        EXTERNAL*       17/18       18/21       18/41       20/43       21/49       24/26       24/27
   FR.FROZ          0        EXTERNAL*
   FR.FRZF          4                        17/19       17/24       18/22       18/43       20/46       21/52
   FR.FUND          0        EXTERNAL*       24/02       24/03
   FR.LEN           0        EXTERNAL*       9/39        9/52        21/26       23/25       24/43       25/43       27/09       29/06
                                            9/45        21/24       22/31       23/34       24/46       26/29       27/23
   FR.LOCK          0        EXTERNAL*
```

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FR.MEMB          0      EXTERNAL*      35/20
FR.NAME          0      EXTERNAL*      34/44      35/13
FR.ONEL          0      EXTERNAL*
FR.OPEN          0      EXTERNAL*      17/27      18/47      22/14      27/24      30/13
                                      18/25      21/07      27/11      29/07
FR.ROOT          0      EXTERNAL*      35/32
FR.RWFG          3                     24/29
FR.SHAP          0      EXTERNAL*       5/27
FR.SIZE          0      EXTERNAL*      22/42      22/43
FR.SUSP          0      EXTERNAL*
FR.WD1           0      EXTERNAL*
FR.WD2           0      EXTERNAL*
FR.WD3           0      EXTERNAL*
FR.WRIT          0      EXTERNAL*
GDSKDAT          0      EXTERNAL*
GDSKHDR          0      EXTERNAL*
GDSKPTR          0      EXTERNAL*
GETDSK           0      EXTERNAL*
GETRESP          0      EXTERNAL*
GFILE            0      EXTERNAL*
GF.APTF          0      EXTERNAL*
GF.APTL          0      EXTERNAL*
GF.DATF          0      EXTERNAL*
GF.DATL          0      EXTERNAL*
GF.DDSF          0      EXTERNAL*       9/45      22/31      24/43      25/43      27/09      29/06
                                      21/24      23/25      24/46      26/29      27/23
GF.DDSL          0      EXTERNAL*       9/45      22/31      24/43      25/43      27/09      29/06
                                      21/24      23/25      24/46      26/29      27/23
GF.HSHF          0      EXTERNAL*
GF.HSHL          0      EXTERNAL*
GF.IOTF          0      EXTERNAL*
GF.IOTL          0      EXTERNAL*
GF.LEN           0      EXTERNAL*
GF.SUSF          0      EXTERNAL*
GF.SUSL          0      EXTERNAL*
GF.TRVF          0      EXTERNAL*
HASH             0      EXTERNAL*
HASHIPL          0      EXTERNAL*
HBR              0      EXTERNAL*
HBW              0      EXTERNAL*
HENTRY           0      EXTERNAL*
HFILE            0      EXTERNAL*
HOLDBLK          0      EXTERNAL*
INTDAT           0      EXTERNAL*
IOTBUF           0      EXTERNAL*
IOTIP            0      EXTERNAL*
IPLIST           0      EXTERNAL*       3/11
```

IP::LIST	0	EXTERNAL#	3/11 D	21/37 S	26/33 S	31/32 S	32/22 S	35/29 S	39/07 S	40/35 S
			4/22 S	21/37	26/33 S	31/32 S	32/22 S	35/29 S	39/07	40/35 S
			4/22 S	25/47 S	26/33 S	31/32	32/22	35/29	40/11 S	40/35 S
			4/22	25/47 S	26/33 S	31/50	32/34 S	36/03 S	40/11 S	40/35
			15/20 S	25/47 S	26/33	31/50 S	32/34 S	36/03 S	40/11 S	40/36 S
			15/20 S	25/47 S	26/42 S	31/50	32/34 S	36/03	40/11 S	40/36 S
			15/20	25/47	26/42 S	32/03 S	32/34 S	36/06 S	40/11	40/36
			17/15 S	26/02 S	26/42	32/03 S	32/34	36/06 S	40/19 S	41/18 S
			17/15 S	26/02 S	26/53 S	32/03 S	32/52 S	36/06	40/19 S	41/18 S
			17/15	26/02	26/53 S	32/03	32/52 S	37/17 S	40/19	41/18
			18/18 S	26/13 S	26/53 S	32/13 S	32/52	37/17 S	40/20 S	41/19 S
			18/18 S	26/13 S	26/53	32/13 S	34/29 S	37/17	40/20 S	41/19 S
			18/18	26/13 S	27/02 S	32/13 S	34/29 S	37/37 S	40/20 S	41/19 S
			20/39 S	26/13	27/02 S	32/13 S	34/29	37/37 S	40/20	41/19
			20/39 S	26/15 S	27/02	32/13	35/12 S	37/37 S	40/34 S	41/20 S
			20/39	26/15 S	31/32 S	32/22 S	35/12 S	37/37	40/34 S	41/20 S
			21/37 S	26/15	31/32 S	32/22 S	35/12	39/07 S	40/34	41/20
LFHADDR	0	EXTERNAL#	17/33	20/49	21/38	22/25	26/26 S			
			18/32	21/18	22/03	25/40 S				
LFT	0	EXTERNAL#	9/23	10/27	11/20	13/36	15/20			
LFTFREE	0	EXTERNAL#								
LH.CLO	3		13/41	13/46	15/32	15/34				
LH.IFRZ	4		17/36	18/34	18/38					
LOADBUF	0	EXTERNAL#								
LOCK	0	EXTERNAL#	23/36	23/46						
LOCTAB	0	EXTERNAL#								
LOCTABF	0	EXTERNAL#								
LOCTABL	0	EXTERNAL#								
L.MNCL	0	EXTERNAL#								
MAINCL	0	EXTERNAL#	26/02	35/12	37/17	40/19	40/36	41/18		
			26/42	36/03	40/11	40/20	40/35	41/19		
MAKEMAP	0	EXTERNAL#								
MAPBUF	0	EXTERNAL#	32/22	32/22	32/35	32/36				
MAPX	0	EXTERNAL#	32/19 S	32/32	32/43					
MELT	203	PROGRAM#	18/13 E	18/15 L						
MELT1	233	PROGRAM#	18/16	18/21 L						
MELT2	246	PROGRAM#	18/20	19/04 L						
MELT3	250	PROGRAM#	18/23	19/09 L						
MELT4	251	PROGRAM#	18/30	19/13 L						
MELT5	252	PROGRAM#	18/35	19/17 L						
MELT6	253	PROGRAM#	17/51	19/10	19/14	19/18	19/22 L			
MKPTR	0	EXTERNAL#								
MOVBLKR	0	EXTERNAL#								
MYCODE	0	EXTERNAL#								
MYDAR	0	EXTERNAL#								
MYEVCH	0	EXTERNAL#	40/36	41/20						
MYIDENT	0	EXTERNAL#	26/43	26/43	37/26	40/28				
MYRESP	0	EXTERNAL#	26/15	27/02	39/07					
MYSCRF	0	EXTERNAL#								
MYSUBP	0	EXTERNAL#								
MYSWOCC	0	EXTERNAL#								
MYUNIT	0	EXTERNAL#								
M.ABFCH	0	EXTERNAL#								

```
     M.ABFIL          0      EXTERNAL#      40/11
     M.ACREQ          0      EXTERNAL#      40/20       40/35       41/19
     M.ACRES          0      EXTERNAL#      40/19       40/34.      41/18
     M.ACTCC          0      EXTERNAL#
     M.ADDS           0      EXTERNAL#
     M.ADISK          0      EXTERNAL#
     M.ASUSP          0      EXTERNAL#
     M.AUTH           0      EXTERNAL#
     M.BFILE          0      EXTERNAL#
     M.CLOPC          0      EXTERNAL#
     M.CLOSE          0      EXTERNAL#
     M.CLTIM          0      EXTERNAL#
     M.DARL           0      EXTERNAL#
     M.DDREQ          0      EXTERNAL#
     M.DDRSP          0      EXTERNAL#
     M.DDSCT          0      EXTERNAL#
     M.DFILT          0      EXTERNAL#
     M.DOBJS          0      EXTERNAL#
     M.EMPTY          0      EXTERNAL#
     M.FCLEV          0      EXTERNAL#
     M.FDISK          0      EXTERNAL#      36/43
     M.FHRL           0      EXTERNAL#
     M.FILCL          0      EXTERNAL#
     M.FRWCC          0      EXTERNAL#
     M.GFILE          0      EXTERNAL#
     M.HASHL          0      EXTERNAL#
     M.HELP           0      EXTERNAL#      26/02       26/42       37/17
     M.HFILE          0      EXTERNAL#
     M.IOCTR          0      EXTERNAL#
     M.LOCKS          0      EXTERNAL#
     M.MKCAP          0      EXTERNAL#
     M.OPCL           0      EXTERNAL#
     M.RBUFS          0      EXTERNAL#
     M.RETRY          0      EXTERNAL#
     M.SDISK          0      EXTERNAL#
     M.SLOTS          0      EXTERNAL#
     M.SWAR           0      EXTERNAL#
     M.TRMCC          0      EXTERNAL#
     M.TRYCC          0      EXTERNAL#
     M.TVRES          0      EXTERNAL#
     M.TWAIT          0      EXTERNAL#
     M.UNAME          0      EXTERNAL#      35/12
     M.USCTR          0      EXTERNAL#
     M.USRCC          0      EXTERNAL#
     M.WBUFS          0      EXTERNAL#
     M.10SEC          0      EXTERNAL#
     NACCTS           3                     40/16
     NLOCKS           0      EXTERNAL#
     NOBJS            0      EXTERNAL#
     NOQLOCK          0      EXTERNAL#
     NSECTS        1373      PROGRAM#       34/61       42/09 L
     NUMRESP          0      EXTERNAL#
     OPEN             0      EXTERNAL#
```

OPENDAR	0	EXTERNAL*							
OPENR	0	EXTERNAL*							
OPERCL	0	EXTERNAL*	3/11						
OP:::CL	0	EXTERNAL*	3/11 D	20/38	26/14	31/37	32/33	36/02	40/10	40/35
			4/21	21/36	26/32	31/49	32/51	36/05	40/18	41/17
			15/19	25/46	26/41	32/02	34/28	37/16	40/19	41/18
			17/14	26/01	26/52	32/12	35/11	37/36	40/33	41/10
			18/17	26/12	27/01	32/21	35/28	39/06	40/34	
ORGADDR	0	EXTERNAL*							
ORGCLST	0	EXTERNAL*							
ORGMAP	0	EXTERNAL*							
PAGESW	0	EXTERNAL*	8/17 S	8/21 S	21/29 S	23/40 S	24/66	42/06	
			8/18 S	8/29 -	22/33	23/52	30/24		
PASSERR	0	EXTERNAL*	31/43						
PBR	0	EXTERNAL*	6/25						
PBW	0	EXTERNAL*							
PG.DDS	0	EXTERNAL*							
PG.DTY	0	EXTERNAL*							
PG.PG	0	EXTERNAL*							
PRIFHR	0	EXTERNAL*	21/21 S	23/21	23/33	24/47	25/31	26/08	27/19	29/02
PRILFH	0	EXTERNAL*	21/22 S	24/51	25/32				
PROBE	0	PROGRAM*	4/17 L						
PROBE1	11	PROGRAM*	4/18	4/25 L					
PROBE10	45	PROGRAM*	6/23	6/27 L					
PROBE11	50	PROGRAM*	4/43	6/41 L					
PROBE12	51	PROGRAM*	4/24	6/53 L					
PROBE13	53	PROGRAM*	4/32	7/05 L					
PROBE14	55	PROGRAM*	6/29	7/10 L					
PROBE2	17	PROGRAM*	4/26	4/37 L	6/27	6/36	6/41		
PROBE3	26	PROGRAM*	4/27	4/48 L					
PROBE4	27	PROGRAM*	4/42	4/44	5/07 L				
PROBE4A	31	PROGRAM*	5/12 L	5/14					
PROBE5	32	PROGRAM*	5/16 L	5/20					
PROBE6	35	PROGRAM*	4/46	5/32 L					
PROBE7	36	PROGRAM*	4/47	4/48	5/42 L				
PROBE7A	37	PROGRAM*	4/33	5/52 L					
PROBE8	41	PROGRAM*	5/23	5/33	5/43	6/09 L			
PROBE9	43	PROGRAM*	4/45	6/21 L					
PROCADR	0	EXTERNAL*	31/30 S	31/35 S	31/42 S	31/48 S	31/53 S	32/11 S	33/03 S
PROCESS	1247	PROGRAM*	37/49	38/12	39/06 L				
PRVOPEN	0	EXTERNAL*							
PTR.CM	0	EXTERNAL*							
PTR.DDS	0	EXTERNAL*							
PTR.DTY	0	EXTERNAL*							
PTR.NUM	0	EXTERNAL*							
PTR.PTR	0	EXTERNAL*							
RBUFS	0	EXTERNAL*							
READCAP	0	EXTERNAL*	9/44	23/24	25/42	26/28	27/08	27/22	29/05
READONF	0	EXTERNAL*							
READONL	0	EXTERNAL*							
READRWF	0	EXTERNAL*							
READRWL	0	EXTERNAL*							
REDSHP	0	EXTERNAL*							

REGS	0	EXTERNAL*						
RELCLAM	0	EXTERNAL*						
RELEASE	0	EXTERNAL*						
RESP	0	EXTERNAL*						
RESTREG	0	EXTERNAL*						
RETCLK	67	PROGRAM*	8/12 L					
RETCLK1	66	PROGRAM*	8/25	8/29 L				
RETERR	0	EXTERNAL*						
RETPAR	0	EXTERNAL*	8/27	9/49	11/49	15/49	38/23	
RETPARM	0	EXTERNAL*						
RETRY	0	EXTERNAL*						
RETURN	0	EXTERNAL*	6/01	17/40	27/32	40/07	41/09	
			6/10	18/52	32/52	40/37	41/21	
R.AUDIT	3		37/21					
R.DONE	2		41/34					
R.PCLOS	1		26/04	26/44				
R.SCAN	1		40/26					
R.START	0		40/14					
SAVEREG	0	EXTERNAL*						
SECFHR	0	EXTERNAL*	22/28 S	23/44	24/44	26/17	26/48	27/05
SECLFH	0	EXTERNAL*	22/29 S	24/52	26/18			
SETCLOS	161	PROGRAM*	15/16 E	15/18 L				
SETCLOS1	167	PROGRAM*	15/22 L	15/26				
SETCLOS2	175	PROGRAM*	15/37	15/39 L				
SETCLOS3	200	PROGRAM*	15/23	15/52 L				
SETPCNT	0	EXTERNAL*						
SETUP	0	EXTERNAL*	4/28					
SETUPR	0	EXTERNAL*						
SHAZAM	255	PROGRAM*	20/33 E	20/37 L				
SHAZAM1	264	PROGRAM*	20/39	20/43 L				
SHAZAM1A	270	PROGRAM*	20/52 L	21/06				
SHAZAM11	674	PROGRAM*	27/29	27/32 L				
SHAZAM12	675	PROGRAM*	20/42	28/06 L				
SHAZAM13	677	PROGRAM*	21/12	28/12 L				
SHAZAM14	701	PROGRAM*	20/44	28/19 L				
SHAZAM15	705	PROGRAM*	21/13	28/33 L				
SHAZAM16	711	PROGRAM*	21/48	28/43 L				
SHAZAM17	714	PROGRAM*	28/49	29/02 L	29/22	29/33	29/44	30/04	30/19	30/40
SHAZAM19	733	PROGRAM*	22/19	29/17 L				
SHAZAM2	273	PROGRAM*	20/53	21/07 L				
SHAZAM20	737	PROGRAM*	21/50	29/28 L				
SHAZAM21	747	PROGRAM*	22/10	29/50 L				
SHAZAM22	754	PROGRAM*	23/05	30/11 L	30/32			
SHAZAM23	760	PROGRAM*	23/14	30/24 L				
SHAZAM24	764	PROGRAM*	21/43	30/37 L				
SHAZAM3	315	PROGRAM*	21/27 L	21/31				
SHAZAM4	331	PROGRAM*	21/45	21/49 L				
SHAZAM4A	335	PROGRAM*	22/06 L	22/12				
SHAZAM5	340	PROGRAM*	22/07	22/14 L				
SHAZAM6	374	PROGRAM*	23/01	23/06 L				
SHAZAM7	400	PROGRAM*	22/41	22/47	23/11	23/18 L		
SHAZAM7A	401	PROGRAM*	23/18	23/21 L				
SHAZAM7B	416	PROGRAM*	23/25	23/29 L				

Symbol	Value	Type								
SHAZAM7C	417	PROGRAM*	23/29	23/33 L						
SHAZAM7D	421	PROGRAM*	23/35	23/38 L	23/42					
SHAZAM8	425	PROGRAM*	23/45	23/52 L						
SHAZAM8A	606	PROGRAM*	26/33	26/41 L						
SHAZAM8B	526	PROGRAM*	25/47	26/01 L						
SHAZAM9	665	PROGRAM*	27/16	27/19 L						
SHAZM14A	703	PROGRAM*	20/47	28/26 L						
SHAZM20A	743	PROGRAM*	21/53	29/39 L						
SHCLAIM	0	EXTERNAL*								
SIZE	0	EXTERNAL*								
SIZES	0	EXTERNAL*								
SLEEP	0	EXTERNAL*	26/13	26/53	37/37					
SLOTS	0	EXTERNAL*								
STKBUF	0	EXTERNAL*	32/03	32/03						
SUBPBUF	0	EXTERNAL*	32/13	32/13	42/06 D					
SUBPX	0		31/19 D	31/32	31/50	32/13	32/22	32/34	32/52	
SUSPIPL	0	EXTERNAL*								
SW.DDS	0	EXTERNAL*								
SW.SW	0	EXTERNAL*								
SYSERR	0	EXTERNAL*	9/45	22/31	24/43	25/43	26/29	27/09	29/06	40/35
			9/45	22/31	24/43	25/43	26/29	27/23	30/10	41/10
			9/45	22/31	24/43	25/43	26/36	27/23	35/29	
			21/24	23/25	24/46	25/51	26/53	27/23	36/06	
			21/24	23/25	24/46	26/13	27/09	29/06	37/37	
			21/24	23/25	24/46	26/29	27/09	29/06	40/20	
TABADDR	0	EXTERNAL*								
TEMPA	0	EXTERNAL*	34/16 S	34/27	37/23	37/41	37/51			
TEMPB	0	EXTERNAL*	34/17 S	37/04	37/09	38/08	39/16			
TEMPC	0	EXTERNAL*	34/53 S	35/41	36/03					
TEMPD	0	EXTERNAL*	34/25 S	38/02	38/16					
TEMPE	0	EXTERNAL*								
TEMPF	0	EXTERNAL*								
TEMPG	0	EXTERNAL*								
TEMPH	0	EXTERNAL*								
TEMPIX	0	EXTERNAL*	31/32	42/07 D						
TEMPV	0	EXTERNAL*								
TEMPW	0	EXTERNAL*								
TEMPX	0	EXTERNAL*								
TEMPY	0	EXTERNAL*								
TEMPZ	0	EXTERNAL*								
TEMP0	0	EXTERNAL*	9/20 S	9/40 S	9/45	9/53	10/37 S	15/35 S	15/44	
TEMP1	0	EXTERNAL*								
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*								
TEMP9	0	EXTERNAL*								
TERMROF	0	EXTERNAL*								

```
TERMRWF         0       EXTERNAL*
TERMRWL         0       EXTERNAL*
TR.DRIV         0       EXTERNAL*
TR.LEVL         0       EXTERNAL*
T.FILE       1577                       34/30
UDSKSCR         0       EXTERNAL*
UNLOCK          0       EXTERNAL*        6/11      18/53     23/26     28/15     28/39     29/35     30/20
                                        7/13      19/24     27/17     28/22     29/13     29/46     35/52
                                        17/41     23/19     27/30     28/29     29/24     30/06     37/48

UNLOCKW         0       EXTERNAL*        6/42
USERRWF         0       EXTERNAL*
USERRWL         0       EXTERNAL*
USRPACK         0       EXTERNAL*        4/20 S    5/53 S    6/09 S
WRITCAP         0       EXTERNAL*        21/23     22/30     24/42     24/45
ZAP             0       EXTERNAL*        23/30
ZEROMAP         0       EXTERNAL*
ZROMAPR         0       EXTERNAL*
```

```
01.41.10. 03/25/71 TSS SCOPE 3.0
01.41.12.CPU = 000 SEC : CM =  014000
01.41.14.GET,XTEXT,DISKSYS
01.41.16.FILE,XTEXT
01.41.16.RFL,50000
01.41.16.CPU = 000 SEC : CM =  050000
01.41.16.TEXT,OUTPUT
01.41.16.GET,SYSSUBP,MACROS,,RO
01.41.16.GET,MACROS,DISKSYS,,RO
01.41.17.GET,SYMBOLS,DISKSYS,,RO
01.41.17.GET,PARAMS,DISKSYS,,RO
01.41.17.GET,DSKOPS,OPERS,,RO
01.41.17.GET,OBBITS,DISKSYS,,RO
01.41.17.GET,TYPES,DISKSYS,,RO
01.41.17.GET,ERRORS,DISKSYS,,RO
01.41.18.GET,DSKOPR,DISKSYS,,RO
01.41.18.GET,SYSCALL,MACROS,,RO
01.41.19.GET,ASORT,DISKSYS
01.41.25.NOMPASS,S=0,I=ASORT
01.41.26.ASSEMBLING ASORT
01.42.13.ASSEMBLING ASORT
01.43.52.ASSEMBLING ASORT
01.43.53.           1 ERROR IN  ASORT
01.44.24. ASSEMBLY ERRORS.
01.44.24.ABORT
01.44.27.FIN
01.44.27.CPU TIME:     034.312 SECONDS
01.44.27.SYS TIME:     008.216 SECONDS
01.44.27.SYSTEXT :       2379 LINES
```

END OF FILE

```
ASORT, DISKSYS
ASORT, DISKSYS
ASORT, DISKSYS
ASORT, DISKSYS
ASORT, DISKSYS
ASORT, DISKSYS
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ASORT, DISKSYS
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