```
UUU         UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT  PPPPPPPPPPPP        SSSSSSSSSSSS  YYY         YYY
UUU         UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT  PPPPPPPPPPPP        SSSSSSSSSSSS  YYY         YYY
UUU         UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT  PPPPPPPPPPPP        SSSSSSSSSSSS  YYY         YYY
UUU         UUU  EEE                    TTT        PPP         PPP  SSS              YYY         YYY
UUU         UUU  EEE                    TTT        PPP         PPP  SSS              YYY         YYY
UUU         UUU  EEE                    TTT        PPP         PPP  SSS              YYY         YYY
UUU         UUU  EEE                    TTT        PPP         PPP  SSS                 YYY   YYY
UUU         UUU  EEE                    TTT        PPP         PPP  SSS                 YYY   YYY
UUU         UUU  EEE                    TTT        PPP         PPP  SSS                 YYY   YYY
UUU         UUU  EEEEEEEEEEEE           TTT        PPPPPPPPPPPP        SSSSSSSSS           YYY
UUU         UUU  EEEEEEEEEEEE           TTT        PPPPPPPPPPPP        SSSSSSSSS           YYY
UUU         UUU  EEEEEEEEEEEE           TTT        PPPPPPPPPPPP        SSSSSSSSS           YYY
UUU         UUU  EEE                    TTT        PPP                          SSS        YYY
UUU         UUU  EEE                    TTT        PPP                          SSS        YYY
UUU         UUU  EEE                    TTT        PPP                          SSS        YYY
UUU         UUU  EEE                    TTT        PPP                          SSS        YYY
UUU         UUU  EEE                    TTT        PPP                          SSS        YYY
UUU         UUU  EEE                    TTT        PPP                          SSS        YYY
UUUUUUUUUUUUUUU  EEEEEEEEEEEEEEE        TTT        PPP              SSSSSSSSSSSS           YYY
UUUUUUUUUUUUUUU  EEEEEEEEEEEEEEE        TTT        PPP              SSSSSSSSSSSS           YYY
UUUUUUUUUUUUUUU  EEEEEEEEEEEEEEE        TTT        PPP              SSSSSSSSSSSS           YYY
```

```
**FILE**ID**SATSSS01                                          M  2




  SSSSSSSS    AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS    000000        11
  SSSSSSSS    AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS    000000        11
SS          AA      AA      TT      SS          SS          SS          00      00    1111
SS          AA      AA      TT      SS          SS          SS          00      00    1111
SS          AA      AA      TT      SS          SS          SS          00    0000      11
SS          AA      AA      TT      SS          SS          SS          00    0000      11
  SSSSSS    AA      AA      TT        SSSSSS      SSSSSS      SSSSSS    00  00  00      11
  SSSSSS    AA      AA      TT        SSSSSS      SSSSSS      SSSSSS    00  00  00      11
        SS  AAAAAAAAAA      TT              SS          SS          SS  0000    00      11
        SS  AAAAAAAAAA      TT              SS          SS          SS  0000    00      11
        SS  AA      AA      TT              SS          SS          SS  00      00      11          ....
        SS  AA      AA      TT              SS          SS          SS  00      00      11          ....
SSSSSSSS    AA      AA      TT      SSSSSSSS    SSSSSSSS    SSSSSSSS      000000      111111        ....
SSSSSSSS    AA      AA      TT      SSSSSSSS    SSSSSSSS    SSSSSSSS      000000      111111        ....

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

Table of contents

```
0000                 .TITLE  SATSSS01 - SATS SYSTEM SERVICE TESTS  (SUCC S.C.)
0000                 .IDENT  'V04-000'
0000         ;
0000         ;****************************************************************************
0000         ;*                                                                          *
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0000         ;*                                                                          *
0000         ;*                                                                          *
0000         ;****************************************************************************
0000         ;
0000
0000         ;++
0000         ; FACILITY:     SATS SYSTEM SERVICE TESTS
0000         ;
0000         ; ABSTRACT:     The SATSSS01 module tests the execution of the following
0000         ;               VMS system services:
0000         ;
0000         ;               $ASSIGN
0000         ;               $ALLOC
0000         ;               $CANCEL
0000         ;               $DASSGN
0000         ;               $DALLOC
0000         ;               $INPUT
0000         ;               $GETCHN
0000         ;               $GETDEV
0000         ;               $OUTPUT
0000         ;               $QIO
0000         ;               $QIOW
0000         ;
0000         ;
0000         ; ENVIRONMENT:  User mode image.
0000         ;               Needs CMKRNL privilege and dynamically acquires other
0000         ;               privileges, as needed.
0000         ;
0000         ; AUTHOR: Larry D. Jones,               CREATION DATE: JULY, 1979
0000         ;
0000         ; MODIFIED BY:
0000         ;
0000         ;       V03-004 KDM0002         Kathleen D. Morse       28-Jun-1982
0000         ;               Added $PRDEF and $SSDEF.
0000         ;
```

```
0000     ;        V03-003 RNH0002          Richard N. Holstein,    22-Jun-1982
0000     ;                 Fix to print correct device and unit number when checking data
0000     ;                 buffer for disks (STP36).
0000     ;**
0000     ;--
```

```
                  0000            .SBTTL  DECLARATIONS
                  0000      ;
                  0000      ; MACRO LIBRARY CALLS
                  0000      ;
                  0000            .LIBRARY /SYS$LIBRARY:STARLET.MLB/
                  0000            $ATRDEF                             ; attribute control block definitions
                  0000            $CCBDEF                             ; channel control block definitions
                  0000            $DCDEF                              ; device characteristics definitions
                  0000            $DEVDEF                             ; device definitions
                  0000            $DIBDEF                             ; device information block definitions
                  0000            $DVIDEF                             ; $GETDVI definitions
                  0000            $FIBDEF                             ; file information block definitions
                  0000            $PHDDEF                             ; process header offset definitions
                  0000            $PRDEF                              ; processor register definitions
                  0000            $PRVDEF                             ; privilege definitions
                  0000            $PSLDEF                             ; PSL definitions
                  0000            $SHR_MESSAGES UETP,116,<<TEXT,INFO>> ; UETP$_TEXT definition
                  0000            $SFDEF                              ; stack frame definitions
                  0000            $SSDEF                              ; system status code definitions
                  0000            $STSDEF                             ; STS definitions
                  0000            $UETPDEF                            ; UETP message definitions
                  0000      ;
                  0000      ; Equated symbols
                  0000      ;
        00000000  0000      WARNING         = 0                       ; warning severity value for msgs
        00000001  0000      SUCCESS         = 1                       ; success     ''      ''   ''   ''
        00000002  0000      ERROR           = 2                       ; error       ''      ''   ''   ''
        00000003  0000      INFO            = 3                       ; information ''      ''   ''   ''
        00000004  0000      SEVERE          = 4                       ; fatal       ''      ''   ''   ''
                  0000      ;
        00040004  0000      MFD_FILE_ID     = <4@16>+4                ; MFD ID
                  0000      ;
                  0000      ; MACROS
                  0000      ;
```

```
                             00000000     99          .PSECT  RODATA,RD,NOWRT,NOEXE,LONG
                                 0000    100 ;
                                 0000    101 TEST_MOD_NAME:
         31 30 53 53 53 54 41 53 00' 0000    102          .ASCIC  /SATSSS01/              ; needed for SATSMS message
                                  08 0000
                                 0009    103 TEST_MOD_NAME_D:
53 53 53 54 41 53 00000011'010E0000' 0009    104          .ASCID /SATSSS01/               ; module name
                               31 30 0017
                                 0019    105 TEST_MOD_BEGIN:                           ; start end and fail messages
                  6E 75 67 65 62 00' 0019    106          .ASCIC  /begun/
                                  05 0019
                                 001F    107 TEST_MOD_SUCC:
   6C 75 66 73 73 65 63 63 75 73 00' 001F    108          .ASCIC  /successful/
                                  0A 001F
                                 002A    109 TEST_MOD_FAIL:
               64 65 6C 69 61 66 00' 002A    110          .ASCIC  /failed/
                                  06 002A
                                 0031    111 ASSIGN:                                   ; system service names
               4E 47 49 53 53 41 00' 0031    112          .ASCIC  /ASSIGN/
                                  06 0031
                                 0038    113 ALLOC:
                  43 4F 4C 4C 41 00' 0038    114          .ASCIC  /ALLOC/
                                  05 0038
                                 003E    115 CANCEL:
               4C 45 43 4E 41 43 00' 003E    116          .ASCIC  /CANCEL/
                                  06 003E
                                 0045    117 DASSGN:
               4E 47 53 53 41 44 00' 0045    118          .ASCIC  /DASSGN/
                                  06 0045
                                 004C    119 DALLOC:
               43 4F 4C 4C 41 44 00' 004C    120          .ASCIC  /DALLOC/
                                  06 004C
                                 0053    121 INPUT:
                  54 55 50 4E 49 00' 0053    122          .ASCIC  /INPUT/
                                  05 0053
                                 0059    123 GETCHN:
               4E 48 43 54 45 47 00' 0059    124          .ASCIC  /GETCHN/
                                  06 0059
                                 0060    125 GETDEV:
               56 45 44 54 45 47 00' 0060    126          .ASCIC  /GETDEV/
                                  06 0060
                                 0067    127 OUTPUT:
               54 55 50 54 55 4F 00' 0067    128          .ASCIC  /OUTPUT/
                                  06 0067
                                 006E    129 QIO:
                        4F 49 51 00' 006E    130          .ASCIC  /QIO/
                                  03 006E
                                 0072    131 QIOW:
                     57 4F 49 51 00' 0072    132          .ASCIC  /QIOW/
                                  04 0072
                                 0077    133 DCLCMH:
               48 4D 43 4C 43 44 00' 0077    134          .ASCIC  /DCLCMH/
                                  06 0077
                                 007E    135 RENAST:
54 53 54 4F 49 51 00000086'010E0000' 007E    136          .ASCID  /QIOTST.DAT;1     /     ; returned name string
   20 20 20 20 20 31 3B 54 41 44 2E  008C
                                 0097    137 DISK:
```

```
49 44 24 53 59 53 0000009F'010E0000' 0097   138          .ASCID  /SYS$DISK/                ; qio device name
                               4B 53  00A5
                                      00A7   139 CS1:                                     ; failure messages
21 20 74 73 65 54 000000AF'010E0000' 00A7   140          .ASCID  \Test !AC service name !AC step !UL failed.\
6E 20 65 63 69 76 72 65 73 20 43 41  00B5
70 65 74 73 20 43 41 21 20 65 6D 61  00C1
2E 64 65 6C 69 61 66 20 4C 55 21 20  00CD
                                      00D9   141 CS2:
74 63 65 70 78 45 000000E1'010E0000' 00D9   142          .ASCID  \Expected !AS = !XL received !AS = !XL\
4C 58 21 20 3D 20 53 41 21 20 64 65  00E7
41 21 20 64 65 76 69 65 63 65 72 20  00F3
               4C 58 21 20 3D 20 53  00FF
                                      0106   143 CS3:
74 63 65 70 78 45 0000010E'010E0000' 0106   144          .ASCID  \Expected !AS!UB = !XL received !AS!UB = !XL\
20 3D 20 42 55 21 53 41 21 20 64 65  0114
64 65 76 69 65 63 65 72 20 4C 58 21  0120
58 21 20 3D 20 42 55 21 53 41 21 20  012C
                                  4C  0138
                                      0139   145 CS4:
72 69 75 71 65 52 00000141'010E0000' 0139   146          .ASCID  \Required channel not received.\
6E 20 6C 65 6E 6E 61 68 63 20 64 65  0147
2E 64 65 76 69 65 63 65 72 20 74 6F  0153
                                      015F   147 CS5:
77 20 65 64 6F 4D 00000167'010E0000' 015F   148          .ASCID  \Mode was !AS.\
               2E 53 41 21 20 73 61  016D
                                      0174   149 EXP:
73 75 74 61 74 73 0000017C'010E0000' 0174   150          .ASCID  \status\
                                      0182   151 IOEXP:
61 74 73 20 4F 49 0000018A'010E0000' 0182   152          .ASCID  \IO status\
                            73 75 74  0190
                                      0193   153 ASTEXP:
61 70 20 54 53 41 0000019B'010E0000' 0193   154          .ASCID  \AST param.\
                         2E 6D 61 72  01A1
                                      01A5   155 DISALL:
61 20 6B 73 69 64 000001AD'010E0000' 01A5   156          .ASCID  \disk alloc.\
                      2E 63 6F 6C 6C  01B3
                                      01B8   157 IOCC:
63 20 66 6F 20 23 000001C0'010E0000' 01B8   158          .ASCID  \# of chan's\
                      73 27 6E 61 68  01C6
                                      01CB   159 FILNOTMOD:
63 20 65 6C 69 46 000001D3'010E0000' 01CB   160          .ASCID  \File characteristics not properly modified!\
69 74 73 69 72 65 74 63 61 72 61 68  01D9
65 70 6F 72 70 20 74 6F 6E 20 73 63  01E5
64 65 69 66 69 64 6F 6D 20 79 6C 72  01F1
                                  21  01FD
                                      01FE   161 UM:                                      ; mode messages
      72 65 73 75 00000206'010E0000' 01FE   162          .ASCID  \user\
   72 65 70 75 73 00000212'010E0000' 020A   164          .ASCID  \super\
                                      0217   165 EM:
74 75 63 65 78 65 0000021F'010E0000' 0217   166          .ASCID  \executive\
                            65 76 69  0225
                                      0228   167 KM:
6C 65 6E 72 65 6B 00000230'010E0000' 0228   168          .ASCID  \kernel\
                                      0236   169 MBA:                                     ; mailbox name
            41 42 4D 0000023E'010E0000' 0236   170          .ASCID  \MBA\
                                      0241   171 EFCNAM:                                  ; common EFC name
```

```
45 24 50 54 45 55 00000249'010E0000' 0241          .ASCID  \UETP$EF\
                                  46 024F
                                     0250 TEST_DATA:                               ; QIO test data
                            00000000 0250          A=0
                                     0250          .REPT 132
                                     0250          .BYTE A
                                     0250          A=A+1
                                  00 0250          .ENDR
                                     02D4 ARGLST:
                            00000001 02D4          .LONG   1                       ; super mode setup arg list
                           0000118B' 02D8          .ADDRESS SUPER_MODE
                                     02DC MSGVEC:
                            00000003 02DC          .LONG   3                       ; PUTMSG message vector
                            00741133 02E0          .LONG   UETP$_TEXT
                            00000001 02E4          .LONG   1
                           000002FF' 02E8          .ADDRESS MESSAGEL
```

```
                                02EC   ;
                                02EC           .SBTTL  R/W PSECT
                            00000000           .PSECT  RWDATA,RD,WRT,NOEXE,LONG
                                0000   ;
                                0000   TPID:
                    00000000    0000           .LONG   0                       ; PID for this process
                                0004   CURRENT_TC:
                    00000000    0004           .LONG   0                       ; ptr to current test case
                                0008           .ALIGN LONG                     ; put it on a long word boundry
                                0008   REG_SAVE_AREA:
                    00000044    0008           .BLKL   15                      ; register save area
                                0044   MOD_MSG_CODE:
                    007480D9    0044           .LONG   UETP$_SATSMS            ; test module message code for putmsg
                                0048   TMN_ADDR:
                    00000000'   0048           .ADDRESS TEST_MOD_NAME
                                004C   TMD_ADDR:
                    00000019'   004C           .ADDRESS TEST_MOD_BEGIN
                                0050   PRVPRT:
                          00    0050           .BYTE   0                       ; protection return byte for SETPRT
                                0051   PRIVMASK:
           00000000 00000000    0051           .QUAD   0                       ; priv. mask
                                0059   CHM_CONT:
                    00000000    0059           .LONG   0                       ; change mode continue address
                                005D   RETADR:
                    00000065    005D           .BLKL   2                       ; returned address's from SETPRT
                                0065   STATUS:
                    00000000    0065           .LONG   0
                                0069   STAT:
                    00000071    0069           .BLKL   2                       ; IO status blk's
                                0071   STAT1:
                    00000079    0071           .BLKL   2
                                0079   ASGN:
                                0079           $ASSIGN MBNAM,CHAN2,PSL$C_USER,0 ; ASSIGN parameter list
                                008D   ALLO:
                                008D           $ALLOC MBNAM,ML,GETBUF,PSL$C_USER ; ALLOC parameter list
                                00A5   CANC:
                                00A5           $CANCEL MBCHAN                  ; CANCEL parameter list
                                00AD   DASS:
                                00AD           $DASSGN 0                       ; DASSGN parameter list
                                00B5   DALL:
                                00B5           $DALLOC MBNAM,PSL$C_USER        ; DALLOC parameter list
                                00C1   GETC:
                                00C1           $GETCHN 0,PL,PB,SL,SB           ; GETCHN parameter list
                                00D9   GETD:
                                00D9           $GETDEV MBNAM,PL,PB,SL,SB       ; GETDEV parameter list
                                00F1   QIOP:
                                00F1           $QIO    31,CHAN1,IO$_READVBLK,STAT1,0,0,GETBUF+8,80,0,0,0,0 ; QIO parameter'
                                0125   QIOWP:
                                0125           $QIOW   31,MBCHAN,IO$_READVBLK,STAT1,0,0,GETBUF+8,80,0,0,0,0 ; QIOW param's
                                0159   MODE:
                    00000000    0159           .LONG   0                       ; current mode string pointer
                                015D   REG:
74 73 69 67 65 72 00000165'010E0000'   015D           .ASCID  \register R\
                 52 20 72 65    016B
                                016F   REGNUM:
                    00000000    016F           .LONG   0                       ; register number
                                0173   MSGL:
```

```
                     00000050  0173               .LONG   80                        ; buffer desc.
                     0000017B' 0177               .ADDRESS BUF
                               017B      BUF:
                     000001CB  017B               .BLKB   80
                               01CB      ML:
                     00000000  01CB               .LONG   0                         ; desc. for BUF_CHECK routine
                     000001DB' 01CF               .ADDRESS GETBUF+8
                               01D3      GETBUF:
                     00000084  01D3               .LONG   132                       ; same as above
                     000001DB' 01D7               .ADDRESS .+4
                     0000025F  01DB               .BLKB   132
                               025F      CTRSTR:
                     00000084  025F               .LONG   132                       ; same as above
                     00000267' 0263               .ADDRESS .+4
                     000002EB  0267               .BLKB   132
                               02EB      ARGLST1:                                   ; argument list for BUF_CHECK
                     00000236' 02EB               .ADDRESS MBA
                     000002FF  02EF               .BLKL   4
                               02FF      MESSAGEL:
                     00000000  02FF               .LONG   0                         ; message desc.
                     0000017B' 0303               .ADDRESS BUF
                               0307      SERV_NAME:
                     00000000  0307               .LONG   0                         ; service name pointer
                               030B      PRVHND1:
                     00000000  030B               .LONG   0                         ; previous handler address 1
                               030F      MBNAM:
4D 24 50 54 45 55 00000317'010E0000' 030F         .ASCID  /UETP$MB/                 ; logical name for mailbox
                           42  031D
                               031E      MBCHAN:
                         0000  031E               .WORD   0                         ; mailbox channel number
                               0320      CHAN1:
                         0000  0320               .WORD   0                         ; utility channel numbers
                               0322      CHAN2:
                         0000  0322               .WORD   0
                               0324      CHAN_SAVE:
                         0000  0324               .WORD   0                         ; channel count save location
                               0326      MSGVEC1:                                   ; PUTMSG message vector
                     00000003  0326               .LONG   3
                     00741133  032A               .LONG   UETP$_TEXT
                     00000001  032E               .LONG   1
                     00000000  0332               .LONG   0
                               0336      MB_DEV_CHAR:
                     0C150001  0336               .LONG   DEV$M_SHR!DEV$M_REC!DEV$M_AVL!DEV$M_IDV!DEV$M_ODV!DEV$M_MBX ;device
                           A0  033A               .BYTE   DC$_MAILBOX               ; device class
                           01  033B               .BYTE   DT$_MBX                   ; device type
                         0100  033C               .WORD   256                       ; buffer size
                     00000000  033E               .LONG   0                         ; device dependent info.
                    0024 0000  0342               .WORD   0,36                      ; unit # & device name offset
                     00000000  0346               .LONG   0                         ; PID
                     00010007  034A               .LONG   ^X10007                   ; owner UIC
                     00000000  034E               .LONG   0                         ; volume protection & error cnt
                     00000000  0352               .LONG   0                         ; operation count
                     00000000  0356               .LONG   0                         ; volume name offset & record size
                  41 42 4D 00' 035A               .ASCIC  /MBA/                     ; device name
                           03  035A
                     00000028  035E               MB_CHAR_SIZE=.-MB_DEV_CHAR
                               035E      PL:
```

```
                              00000000  035E    299            .LONG    0
                                        0362    300 SL:
                              00000000  0362    301            .LONG    0
                                        0366    302 PB:
                              00000074  0366    303            .LONG    DIB$K_LENGTH
                              0000036E' 036A    304            .ADDRESS .+4
                              000003E2  036E    305            .BLKB    DIB$K_LENGTH
                                        03E2    306 SB:
                              00000074  03E2    307            .LONG    DIB$K_LENGTH
                              000003EA' 03E6    308            .ADDRESS .+4
                              0000045E  03EA    309            .BLKB    DIB$K_LENGTH
                                        045E    310 FIBDES:
                              00000029' 045E    311            .LONG    FIBSIZE                   ; file information block desc.
                              00000466' 0462    312            .ADDRESS FIB
                                        0466    313 FIB:
                              00000000  0466    314            .LONG    0               ; ACCTL
                              00000470  046A    315            .BLKW    3               ; FID
                              00040004  0470    316            .LONG    MFD_FILE_ID     ; DID
                              0000048F  0474    317            .BLKB    27                        ; leave room for add in fields
                              00000029  048F    318            FIBSIZE=.-FIB                      ; set FIB size
                                        048F    319 ATR:
                             0010 0056  048F    320            .WORD    ATR$S_ASCNAME,ATR$C_ASCNAME ; attributes control block
                              000004E4' 0493    321            .ADDRESS TOPSYS_DIR
                              00000000  0497    322            .LONG    0
                                        049B    323 FILENAME:
54 53 54 4F 49 51 000004A3'010E0000' 049B    324            .ASCID   /QIOTST.DAT;1/            ; qio test file name
            31 3B 54 41 44 2E           04A9
                                        04AF    325 SYSTEST_DIR:
53 45 54 53 59 53 000004B7'010E0000' 04AF    326            .ASCID   /SYSTEST.DIR;1/           ; SYSTEST directory name
         31 3B 52 49 44 2E 54           04BD
                                        04C4    327 DOT_DIR_SEMI:                               ; Concatenates with TOPSYS_DIR
31 3B 52 49 44 2E 000004CC'010E0000' 04C4    328            .ASCID   /.DIR;1/
                              00000006  04D2    329 DOT_DIR_SEMI_LENGTH = .-DOT_DIR_SEMI-8  ; Length of ASCII string
                                        04D2    330 TOPSYS:                                     ; Logical name of any top level...
4F 54 24 53 59 53 000004DA'010E0000' 04D2    331            .ASCID   /SYS$TOPSYS/              ; ...system directory name
                        53 59 53 50     04E0
                                        04E4    332 TOPSYS_DIR:                                 ; Receives file name of top level...
                              0000000F  04E4    333            .LONG    9+DOT_DIR_SEMI_LENGTH     ; ...system directory...
                              000004EC' 04E8    334            .ADDRESS .+4                       ; ...and gets converted to...
                              000004FB  04EC    335            .BLKB    9+DOT_DIR_SEMI_LENGTH     ; ...a file spec for it
```

```
00000000          .PSECT  SATSSS01,RD,WRT,EXE,LONG
    0000          .SBTTL  SATSSS01
    0000    ;++
    0000    ; FUNCTIONAL DESCRIPTION:
    0000    ;
    0000    ;       After performing some initial housekeeping, such as
    0000    ; printing the module begin message and acquiring needed privileges,
    0000    ; the system services are tested in each of their normal conditions.
    0000    ; Detected failures are identified and  an error message is printed
    0000    ; on the terminal.  Upon completion of the test a success or fail
    0000    ; message is printed on the terminal.
    0000    ;
    0000    ; CALLING SEQUENCE:
    0000    ;
    0000    ;       $ RUN SATSSS01  ...  (DCL COMMAND)
    0000    ;
    0000    ; INPUT PARAMETERS:
    0000    ;
    0000    ;       none
    0000    ;
    0000    ; IMPLICIT INPUTS:
    0000    ;
    0000    ;       none
    0000    ;
    0000    ; OUTPUT PARAMETERS:
    0000    ;
    0000    ;       none
    0000    ;
    0000    ; IMPLICIT OUTPUTS:
    0000    ;
    0000    ;       Messages to SYS$OUTPUT are the only output from SATSSS01.
    0000    ;       They are of the form:
    0000    ;
    0000    ;               %UETP-S-SATSMS, TEST MODULE SATSSS01 BEGUN ... (BEGIN MSG)
    0000    ;               %UETP-S-SATSMS, TEST MODULE SATSSS01 SUCCESSFUL ... (END MSG)
    0000    ;               %UETP-E-SATSMS, TEST MODULE SATSSS01 FAILED ... (END MSG)
    0000    ;               %UETP-I-TEXT, ... (VARIABLE INFORMATION ABOUT A TEST MODULE FAILURE)
    0000    ;
    0000    ; COMPLETION CODES:
    0000    ;
    0000    ;       The SATSSS01 routine terminates with a $EXIT to the
    0000    ;       operating system with a status code defined by UETP$_SATSMS.
    0000    ;
    0000    ; SIDE EFFECTS:
    0000    ;
    0000    ;       none
    0000    ;
    0000    ;--
    0000
    0000            TEST_START SATSSS01                     ; let the test begin
```

```
                                  0000
                            0000  0000                   .ENTRY SATSSS01,0
                 0004'CF      D4  0002                   CLRL    W^CURRENT_TC
                      00      DD  0006                   PUSHL   #0
                 0000'CF      DF  0008                   PUSHAL  W^TPID
             00000000'GF  02  FB  000C                   CALLS   #2,G^SYS$WAKE
             00000000'GF  00  FB  0013                   CALLS   #0,G^SYS$HIBER
                 0009'CF      7F  001A                   PUSHAQ  W^TEST_MOD_NAME_D
             00000000'GF  01  FB  001E                   CALLS   #1,G^SYS$SETPRN
                    1CC1      30  0025                   BSBW    W^MOD_MSG_PRINT
          004C'CF  001F'CF    DE  0028                   MOVAL   W^TEST_MOD_SUCC,W^TMD_ADDR
      0044'CF   03   00   01  F0  002F                   INSV    #SUCCESS,#0,#3,W^MOD_MSG_CODE
                      00      DD  0036                   PUSHL   #0
            1385'CF   01      FB  0038                   CALLS #1,W^REG_SAVE
                                  003D      STP0:
                                  003D  387       $CMKRNL_S W^SETUP_SUPER,W^ARGLST ; declare CHMS handler
                 5E   10'     C0  004C  388       ADDL2   S^#EXE$C_CMSTKSZ+16,SP  ; adjust the user stack pointer
                 5D   5E      D0  004F  389       MOVL    SP,FP                   ; fix the frame pointer
            1AF2'CF   00      FB  0052  390       CALLS   #0,W^ERLBUF_DUMP        ; dump any errors that occured at kernal mod
                                  0057  391       .SBTTL  ASSIGN AND DASSGN TESTS
                                  0057  392 ;+
                                  0057  393 ;
                                  0057  394 ; $ASSIGN and $DASSGN tests
                                  0057  395 ;
                                  0057  396 ; ** NOTE **
                                  0057  397 ;
                                  0057  398 ; Because the only device that is reasonable to use for the ASSIGN/DASSGN
                                  0057  399 ; tests is a mailbox, the MBXNAM parameter is not tested by this program.
                                  0057  400 ; The only devices using this parameter are lineprinters, networks,
                                  0057  401 ; and terminals and none of these things can be guaranteed available.
                                  0057  402 ;
                                  0057  403 ; test user mode
                                  0057  404 ;
                                  0057  405 ;-
          0307'CF  0031'CF    DE  0057  406       MOVAL   W^ASSIGN,W^SERV_NAME              ; set service name
          0159'CF  01FE'CF    DE  005E  407       MOVAL   W^UM,W^MODE                       ; set mode
                                  0065  408       $ASSIGN_S CHAN = W^MBCHAN,-
                                  0065  409               DEVNAM = W^MBNAM                  ; see if perm MBX left over
          00000908 8F   50    D1  0076  410       CMPL    R0,#SS$_NOSUCHDEV                 ; is it here
                        18    13  007D  411       BEQL    10$                               ; br if not
                                  007F  412       $DELMBX_S CHAN = W^MBCHAN                 ; else get rid of it
                                  008B  413       $DASSGN_S CHAN = W^MBCHAN                 ; drop the channel
                                  0097  414 10$:
            133C'CF   00      FB  0097  415       CALLS   #0,W^COUNT_CHAN                   ; get enviromental channel count
          0324'CF  1338'CF    D0  009C  416       MOVL    W^TOTAL_CHAN,W^CHAN_SAVE          ; save the enviromental chan count
                      03      DD  00A3  417       PUSHL   #PSL$C_USER                       ; push the access mode
            1BEF'CF   01      FB  00A5  418       CALLS   #1,W^ASSDAS_CHK                   ; do the assign/deassign tests
            1AF2'CF   00      FB  00AA  419       CALLS   #0,W^ERLBUF_DUMP                  ; dump any errors
                                  00AF  420 ;+
                                  00AF  421 ;
                                  00AF  422 ; test super mode
                                  00AF  423 ;
                                  00AF  424 ;-
                                  00AF  425       NEXT_TEST
                                  00AF
                                  00AF      STP1:
            0004'CF   01      D0  00AF                   MOVL    #1,W^CURRENT_TC
```

```
              00    DD  00B4                          PUSHL   #0
      1385'CF  01    FB  00B6                          CALLS   #1,W^REG_SAVE
0307'CF   0031'CF    DE  00BB   426          MOVAL    W^ASSIGN,W^SERV_NAME          ; set service name
0159'CF   020A'CF    DE  00C2   427          MOVAL    W^SM,W^MODE                   ; set the mode
              01    BE  00C9   428          CHMS     #1                            ; do the super tests
      1AF2'CF  00    FB  00CB   429          CALLS    #0,W^ERLBUF_DUMP              ; dump any errors
                         00D0   430 ;+
                         00D0   431 ;
                         00D0   432 ; test exec mode
                         00D0   433 ;
                         00D0   434 ;-
                         00D0   435          NEXT_TEST
                         00D0
                         00D0       STP2:
      0004'CF  02    D0  00D0                          MOVL    #2,W^CURRENT_TC
              00    DD  00D5                          PUSHL   #0
      1385'CF  01    FB  00D7                          CALLS   #1,W^REG_SAVE
0159'CF   0217'CF    DE  00DC   436          MOVAL    W^EM,W^MODE                   ; set the mode
0307'CF   0031'CF    DE  00E3   437          MOVAL    W^ASSIGN,W^SERV_NAME          ; set service name
                         00EA   438          $CMEXEC_S B^10$                        ; get thee to exec mode
         000A    31  00F6   439          BRW      20$
                         00F9   440 10$:
            0000     00F9   441          .WORD    0
              01    DD  00FB   442          PUSHL    #PSL$C_EXEC                   ; push the access mode
      1BEF'CF  01    FB  00FD   443          CALLS    #1,W^ASSDAS_CHK               ; do the assign/dassgn tests
              04     0102   444          RET                                    ; return to user
                         0103   445 20$:
      1AF2'CF  00    FB  0103   446          CALLS    #0,W^ERLBUF_DUMP              ; dump any errors
                         0108   447 ;+
                         0108   448 ;
                         0108   449 ; test kernel mode
                         0108   450 ;
                         0108   451 ;-
                         0108   452          NEXT_TEST
                         0108
                         0108       STP3:
      0004'CF  03    D0  0108                          MOVL    #3,W^CURRENT_TC
              00    DD  010D                          PUSHL   #0
      1385'CF  01    FB  010F                          CALLS   #1,W^REG_SAVE
0307'CF   0031'CF    DE  0114   453          MOVAL    W^ASSIGN,W^SERV_NAME          ; set service name
0159'CF   0228'CF    DE  011B   454          MOVAL    W^KM,W^MODE                   ; set the mode
0307'CF   0031'CF    DE  0122   455          MOVAL    W^ASSIGN,W^SERV_NAME          ; set service name
                         0129   456          $CMKRNL_S B^10$
         000A    31  0135   457          BRW      20$                           ; skip the routine
                         0138   458 10$:
            0000     0138   459          .WORD    0
              00    DD  013A   460          PUSHL    #PSL$C_KERNEL                 ; push the access mode
      1BEF'CF  01    FB  013C   461          CALLS    #1,W^ASSDAS_CHK               ; do the assign/dassgn tests
                         0141   462
              04     0141   463          RET                                    ; return to user mode
                         0142   464 20$:
      1AF2'CF  00    FB  0142   465          CALLS #0,W^ERLBUF_DUMP                 ; report any errors
0159'CF   01FE'CF    DE  0147   466          MOVAL    W^UM,W^MODE                   ; reset the mode
```

```
                        014E     468            .SBTTL  ALLOC  AND DALLOC TESTS
                        014E     469    ;+
                        014E     470    ;
                        014E     471    ; $ALLOC and $DALLOC tests
                        014E     472    ;
                        014E     473    ; test user mode
                        014E     474    ;
                        014E     475    ;-
                        014E     476            NEXT_TEST
                        014E
                        014E         STP4:
      0004'CF    04  D0  014E                        MOVL    #4,W^CURRENT_TC
                 00  DD  0153                        PUSHL   #0
      1385'CF    01  FB  0155                        CALLS   #1,W^REG_SAVE
 0307'CF   0038'CF   DE  015A    477        MOVAL   W^ALLOC,W^SERV_NAME            ; set service name
 0159'CF   01FE'CF   DE  0161    478        MOVAL   W^UM,W^MODE                    ; set the mode
                         0168    479        $CREMBX_S CHAN  =W^MBCHAN,-
                         0168    480                LOGNAM=W^MBNAM,-
                         0168    481                PRMFLG=#1                      ; create an allocatable device
                         017F    482        $DASSGN_S CHAN=W^MBCHAN                ; make it allocatable
                 03  DD  018B    483        PUSHL   #PSL$C_USER                    ; push the mode
      1B5C'CF    01  FB  018D    484        CALLS   #1,W^ALLDAL_CHK                ; check the services
      1AF2'CF    00  FB  0192    485        CALLS   #0,W^ERLBUF_DUMP               ; dump any errors
                         0197    486    ;+
                         0197    487    ;
                         0197    488    ; test super mode
                         0197    489    ;
                         0197    490    ;-
                         0197    491            NEXT_TEST
                         0197
                         0197        STP5:
      0004'CF    05  D0  0197                        MOVL    #5,W^CURRENT_TC
                 00  DD  019C                        PUSHL   #0
      1385'CF    01  FB  019E                        CALLS   #1,W^REG_SAVE
 0307'CF   0038'CF   DE  01A3    492        MOVAL   W^ALLOC,W^SERV_NAME            ; set service name
 0159'CF   020A'CF   DE  01AA    493        MOVAL   W^SM,W^MODE                    ; set the mode
                 03  BE  01B1    494        CHMS    #3                             ; do the super mode tests
                         01B3    495    ;+
                         01B3    496    ;
                         01B3    497    ; test exec mode
                         01B3    498    ;
                         01B3    499    ;-
                         01B3    500            NEXT_TEST
                         01B3
                         01B3        STP6:
      0004'CF    06  D0  01B3                        MOVL    #6,W^CURRENT_TC
                 00  DD  01B8                        PUSHL   #0
      1385'CF    01  FB  01BA                        CALLS   #1,W^REG_SAVE
 0307'CF   0038'CF   DE  01BF    501        MOVAL   W^ALLOC,W^SERV_NAME            ; set service name
 0159'CF   0217'CF   DE  01C6    502        MOVAL   W^EM,W^MODE                    ; set the mode
                         01CD    503        $CMEXEC_S B^10$                        ; get to exec mode
                 0A  11  01D9    504        BRB     20$                            ; skip the routine
                         01DB    505    10$:
                   0000  01DB    506        .WORD   0
                 01  DD  01DD    507        PUSHL   #PSL$C_EXEC                    ; push the mode
      1B5C'CF    01  FB  01DF    508        CALLS   #1,W^ALLDAL_CHK                ; do the tests
                     04  01E4    509        RET                                    ; return to user mode
```

```
                                   01E5  20$:
                                   01E5  ;+
                                   01E5  ;
                                   01E5  ; test kernel mode
                                   01E5  ;
                                   01E5  ;-
                                   01E5          NEXT_TEST
                                   01E5
                                   01E5      STP7:
               0004'CF    07   D0  01E5                  MOVL    #7,W^CURRENT_TC
                          00   DD  01EA                  PUSHL   #0
               1385'CF    01   FB  01EC                  CALLS   #1,W^REG_SAVE
          0307'CF    0038'CF   DE  01F1          MOVAL   W^ALLOC,W^SERV_NAME         ; set the service name
          0159'CF    0228'CF   DE  01F8          MOVAL   W^KM,W^MODE                 ; set the mode
                                   01FF          $CMKRNL_S B^10$                     ; get into kernel mode
                          0A   11  020B          BRB     20$                         ; skip the routine
                                   020D  10$:
                             0000  020D          .WORD   0
                          00   DD  020F          PUSHL   #PSL$C_KERNEL               ; push the mode
               1B5C'CF    01   FB  0211          CALLS   #1,W^ALLDAL_CHK             ; do the tests
                               04  0216          RET                                 ; return
                                   0217  20$:
                                   0217          $ASSIGN_S DEVNAM=W^MBNAM,-
                                   0217                 CHAN  =W^MBCHAN              ; get the device back
                                   0228          $DELMBX_S CHAN  =W^MBCHAN           ; and get rid of it!
  0084 8F     00  01D3'CF    00   2C  0234          MOVC5   #0,W^GETBUF,#0,#132,W^GETBUF+8  ; clean up the buffer
                  01DB'CF             023D
```

```
                         0240   532             .SBTTL  CANCEL TESTS
                         0240   533     ;+
                         0240   534     ;
                         0240   535     ; $CANCEL tests
                         0240   536     ;
                         0240   537     ; test EF wait IO cancellation with _S form
                         0240   538     ;
                         0240   539     ;-
                         0240   540             NEXT_TEST
                         0240
                         0240           STP8:
      0004'CF   08   D0  0240                           MOVL    #8,W^CURRENT_TC
                00   DD  0245                           PUSHL   #0
      1385'CF   01   FB  0247                           CALLS   #1,W^REG_SAVE
 0307'CF   003E'CF   DE  024C   541             MOVAL   W^CANCEL,W^SERV_NAME            ; set service name
 0159'CF   01FE'CF   DE  0253   542             MOVAL   W^UM,W^MODE                     ; set the mode
                         025A   543             $CREMBX_S CHAN = W^CHAN1,-
                         025A   544                     LOGNAM = W^MBNAM                ; make a MBX
 00F9'CF   0320'CF   3C  0271   545             MOVZWL  W^CHAN1,W^QIOP+QIO$_CHAN        ; set the channel up
 00A9'CF   0320'CF   3C  0278   546             MOVZWL  W^CHAN1,W^CANC+CANCEL$_CHAN     ; in QIO and CANCEL
                         027F   547             $QIO_G  W^QIOP                          ; do a read on the MBX
                         0288   548             $CANCEL_S CHAN=W^CHAN1                  ; cancel the IO
                         0294   549             FAIL_CHECK SS$_NORMAL                   ; check for success
                01   DD  0294                           PUSHL   #SS$_NORMAL
      138F'CF   01   FB  0296                           CALLS   #1,W^REG_CHECK
                         029B   550             $WAITFR_S EFN=#31                       ; wait for IO completion
      131B'CF   00   FB  02A4   551             CALLS   #0,W^CAN_CHECK                  ; check IO status block
                         02A9   552     ;+
                         02A9   553     ;
                         02A9   554     ; test EF wait IO cancellation with _S form
                         02A9   555     ;
                         02A9   556     ;-
                         02A9   557             NEXT_TEST
                         02A9
                         02A9           STP9:
      0004'CF   09   D0  02A9                           MOVL    #9,W^CURRENT_TC
                00   DD  02AE                           PUSHL   #0
      1385'CF   01   FB  02B0                           CALLS   #1,W^REG_SAVE
                         02B5   558             $QIO_G  W^QIOP                          ; do a read on the MBX
                         02BE   559             $CANCEL_G W^CANC                        ; try _G
                         02C7   560             FAIL_CHECK SS$_NORMAL                   ; check for success
                01   DD  02C7                           PUSHL   #SS$_NORMAL
      138F'CF   01   FB  02C9                           CALLS   #1,W^REG_CHECK
                         02CE   561             $WAITFR_S EFN=#31                       ; wait for IO completion
      131B'CF   00   FB  02D7   562             CALLS   #0,W^CAN_CHECK                  ; check the IO status block
                         02DC   563     ;+
                         02DC   564     ;
                         02DC   565     ; test AST wait IO cancellation with _S form
                         02DC   566     ;
                         02DC   567     ;-
                         02DC   568             NEXT_TEST
                         02DC
                         02DC           STP10:
      0004'CF   0A   D0  02DC                           MOVL    #10,W^CURRENT_TC
                00   DD  02E1                           PUSHL   #0
      1385'CF   01   FB  02E3                           CALLS   #1,W^REG_SAVE
 0105'CF   1309'CF   DE  02E8   569             MOVAL   W^IONC,W^QIOP+QIO$_ASTADR       ; set AST address
```

```
                                02EF   570           $QIO_G  W^QIOP                              ; issue read on the MBX
                                02F8   571           $CANCEL_S CHAN=W^CHAN1                      ; cancel it
                                0304   572           FAIL_CHECK SS$_NORMAL                       ; check success
                      01    DD  0304                         PUSHL   #SS$_NORMAL
             138F'CF  01    FB  0306                         CALLS   #1,W^REG_CHECK
                                030B   573           $HIBER_S                                    ; wait for AST
                                0312   574  ;+
                                0312   575  ;
                                0312   576  ; test AST wait IO cancellation with _G form
                                0312   577  ;
                                0312   578  ;-
                                0312   579           NEXT_TEST
                                0312
                                0312        STP11:
             0004'CF  0B    D0  0312                         MOVL    #11,W^CURRENT_TC
                      00    DD  0317                         PUSHL   #0
             1385'CF  01    FB  0319                         CALLS   #1,W^REG_SAVE
                                031E   580           $QIO_G  W^QIOP                              ; issue read to the MBX
                                0327   581           $CANCEL_G W^CANC                            ; cancel it
                                0330   582           FAIL_CHECK      SS$_NORMAL                  ; check for success
                      01    DD  0330                         PUSHL   #SS$_NORMAL
             138F'CF  01    FB  0332                         CALLS   #1,W^REG_CHECK
                                0337   583           $HIBER_S                                    ; wait for AST
             0111'CF  01    D0  033E   584           MOVL    #1,W^QIOP+QIO$_P2                   ; reset QIO parameters
    00FD'CF  00000031'8F    D0  0343   585           MOVL    #IO$_READVBLK,W^QIOP+QIO$_FUNC
                 0105'CF    D4  034C   586           CLRL    W^QIOP+QIO$_ASTADR
                                0350   587           $DASSGN_S CHAN = W^CHAN1                    ; drop the MBX
```

```
                                     035C   589             .SBTTL  GETCHN TESTS
                                     035C   590     ;+
                                     035C   591     ;
                                     035C   592     ; $GETCHN tests
                                     035C   593     ;
                                     035C   594     ; test _S form
                                     035C   595     ;
                                     035C   596     ;-
                                     035C   597             NEXT_TEST
                                     035C
                                     035C       STP12:
                  0004'CF   0C   D0  035C                        MOVL    #12,W^CURRENT_TC
                            00   DD  0361                        PUSHL   #0
                  1385'CF   01   FB  0363                        CALLS   #1,W^REG_SAVE
              0307'CF   0059'CF  DE  0368   598         MOVAL   W^GETCHN,W^SERV_NAME            ; set service name
              0159'CF   01FE'CF  DE  036F   599         MOVAL   W^UM,W^MODE                     ; set the mode
                        0069'CF  D4  0376   600         CLRL    W^STAT                          ; set dummy status
                        0071'CF  D4  037A   601         CLRL    W^STAT1                         ; in #1 & #2
                                     037E   602         $CREMBX_S   CHAN=W^MBCHAN,-
                                     037E   603                 PRMFLG=#0,-
                                     037E   604                 LOGNAM=W^MBNAM                  ; make a device to look at
              00F9'CF   031E'CF  3C  0395   605         MOVZWL  W^MBCHAN,W^QIOP+QIO$_CHAN       ; save the channel number
                                     039C   606         $GETCHN_S CHAN  =W^MBCHAN,-
                                     039C   607                 PRILEN=W^PL,-
                                     039C   608                 PRIBUF=W^PB,-
                                     039C   609                 SCDLEN=W^SL,-
                                     039C   610                 SCDBUF=W^SB                     ; try the _S
                                     03B8   611         FAIL_CHECK SS$_NORMAL                   ; check success
                            01   DD  03B8                        PUSHL   #SS$_NORMAL
                  138F'CF   01   FB  03BA                        CALLS   #1,W^REG_CHECK
                  037A'CF        B0  03BF   612         MOVW    W^PB+DIB$W_UNIT+8,-
                  0342'CF            03C3   613                 W^MB_DEV_CHAR+DIB$W_UNIT        ; the unit # is a variable
                                     03C6   614                                                 ; and must be filled in
              56    036E'CF      DE  03C6   615         MOVAL   W^PB+8,R6                       ; set buffer address
              57    0336'CF      DE  03CB   616         MOVAL   W^MB_DEV_CHAR,R7                ; set good data address
                    58   28      D0  03D0   617         MOVL    #MB_CHAR_SIZE,R8                ; set the byte count
                         00      DD  03D3   618         PUSHL   #0                              ; push expected IO status
                  1287'CF   01   FB  03D5   619         CALLS   #1,W^BUF_CHECK                  ; check the resulting buffer
              56    03EA'CF      DE  03DA   620         MOVAL   W^SB+8,R6                       ; set buffer address
                            00   DD  03DF   621         PUSHL   #0                              ; push expected IO status
                  1287'CF   01   FB  03E1   622         CALLS   #1,W^BUF_CHECK                  ; check the secondary buf
   035E'CF    00  036E'CF   00   2C  03E6   623         MOVC5   #0,W^PB+8,#0,W^PL,W^PB+8        ; init the buffers
                  036E'CF            03EF
   0362'CF    00  03EA'CF   00   2C  03F2   624         MOVC5   #0,W^SB+8,#0,W^SL,W^SB+8
                  03EA'CF            03FB
                                     03FE   625     ;+
                                     03FE   626     ;
                                     03FE   627     ; test _G form
                                     03FE   628     ;
                                     03FE   629     ;-
                                     03FE   630             NEXT_TEST
                                     03FE
                                     03FE       STP13:
                  0004'CF   0D   D0  03FE                        MOVL    #13,W^CURRENT_TC
                            00   DD  0403                        PUSHL   #0
                  1385'CF   01   FB  0405                        CALLS   #1,W^REG_SAVE
              00C5'CF   031E'CF  B0  040A   631         MOVW    W^MBCHAN,W^GETC+GETCHN$_CHAN    ; set the channel #
```

```
                                0411   632          $GETCHN_G W^GETC                         ; try _G form
                                041A   633          FAIL_CHECK SS$_NORMAL                    ; check for success
                        01  DD  041A                        PUSHL   #SS$_NORMAL
              138F'CF   01  FB  041C                        CALLS   #1,W^REG_CHECK
                        00  DD  0421   634          PUSHL   #0                               ; push expected IO status
              1287'CF   01  FB  0423   635          CALLS   #1,W^BUF_CHECK                   ; check the returned buffer
              56   036E'CF  DE  0428   636          MOVAL   W^PB+8,R6                        ; check the primary buffer
                        00  DD  042D   637          PUSHL   #0                               ; push expected IO status
              1287'CF   01  FB  042F   638          CALLS   #1,W^BUF_CHECK                   ; for failures
  035E'CF   00  036E'CF 00  2C  0434   639          MOVC5   #0,W^PB+8,#0,W^PL,W^PB+8         ; init the buffers
                  036E'CF       043D
  0362'CF   00  03EA'CF 00  2C  0440   640          MOVC5   #0,W^SB+8,#0,W^SL,W^SB+8
                  03EA'CF       0449
```

```
                             044C   642          .SBTTL  GETDEV
                             044C   643 ;+
                             044C   644 ;
                             044C   645 ; $GETDEV tests
                             044C   646 ;
                             044C   647 ;
                             044C   648 ;-
                             044C   649          NEXT_TEST
                             044C
                             044C       STP14:
       0004'CF   0E    D0    044C                    MOVL    #14,W^CURRENT_TC
                 00    DD    0451                    PUSHL   #0
       1385'CF   01    FB    0453                    CALLS   #1,W^REG_SAVE
  0307'CF   0060'CF    DE    0458   650          MOVAL   W^GETDEV,W^SERV_NAME                  ; set service name
  0159'CF   01FE'CF    DE    045F   651          MOVAL   W^UM,W^MODE                           ; set the mode
                             0466   652          $GETDEV_S DEVNAM=W^MBNAM,-
                             0466   653                    PRILEN=W^PL,-
                             0466   654                    PRIBUF=W^PB,-
                             0466   655                    SCDLEN=W^SL,-
                             0466   656                    SCDBUF=W^SB                   ; try the _S
                             0481   657          FAIL_CHECK SS$_NORMAL                         ; check success
                 01    DD    0481                    PUSHL   #SS$_NORMAL
       138F'CF   01    FB    0483                    CALLS   #1,W^REG_CHECK
                 00    DD    0488   658          PUSHL   #0                                    ; push expected IO status
       1287'CF   01    FB    048A   659          CALLS   #1,W^BUF_CHECK                        ; check the resulting buffer
       56   03EA'CF    DE    048F   660          MOVAL   W^SB+8,R6                             ; set buffer address
                 00    DD    0494   661          PUSHL   #0                                    ; push expected IO status
       1287'CF   01    FB    0496   662          CALLS   #1,W^BUF_CHECK                        ; check secondary buffer
035E'CF    00  036E'CF   00    2C    049B   663          MOVC5   #0,W^PB+8,#0,W^PL,W^PB+8              ; init the buffers
               036E'CF       04A4
0362'CF    00  03EA'CF   00    2C    04A7   664          MOVC5   #0,W^SB+8,#0,W^SL,W^SB+8
               03EA'CF       04B0
                             04B3   665 ;+
                             04B3   666 ;
                             04B3   667 ; test _G form
                             04B3   668 ;
                             04B3   669 ;-
                             04B3   670          NEXT_TEST
                             04B3
                             04B3       STP15:
       0004'CF   0F    D0    04B3                    MOVL    #15,W^CURRENT_TC
                 00    DD    04B8                    PUSHL   #0
       1385'CF   01    FB    04BA                    CALLS   #1,W^REG_SAVE
                             04BF   671          $GETDEV_G W^GETD                              ; try _G form
                             04C8   672          FAIL_CHECK SS$_NORMAL                         ; check for success
                 01    DD    04C8                    PUSHL   #SS$_NORMAL
       138F'CF   01    FB    04CA                    CALLS   #1,W^REG_CHECK
                 00    DD    04CF   673          PUSHL   #0                                    ; push expected IO status
       1287'CF   01    FB    04D1   674          CALLS   #1,W^BUF_CHECK                        ; check the returned buffer
       56   036E'CF    DE    04D6   675          MOVAL   W^PB+8,R6                             ; set the buffer address
                 00    DD    04DB   676          PUSHL   #0                                    ; set expected IO status
       1287'CF   01    FB    04DD   677          CALLS   #1,W^BUF_CHECK                        ; check the primary buffer
```

```
                            04E2   679          .SBTTL INPUT AND OUTPUT TESTS
                            04E2   680  ;+
                            04E2   681  ;
                            04E2   682  ; $INPUT and $OUTPUT tests
                            04E2   683  ;
                            04E2   684  ; try $OUTPUT with small transfer and a local EFN
                            04E2   685  ;
                            04E2   686  ;-
                            04E2   687          NEXT_TEST
                            04E2
                            04E2        STP16:
    0004'CF   10      D0    04E2                    MOVL    #16,W^CURRENT_TC
              00      DD    04E7                    PUSHL   #0
    1385'CF   01      FB    04E9                    CALLS   #1,W^REG_SAVE
  0307'CF   0067'CF   DE    04EE   688          MOVAL   W^OUTPUT,W^SERV_NAME                ; set service name
  0159'CF   01FE'CF   DE    04F5   689          MOVAL   W^UM,W^MODE                         ; set the mode
                            04FC   690          $QIO_S  CHAN=W^MBCHAN,-
                            04FC   691                  FUNC=#IO$_READVBLK,-
                            04FC   692                  P1  =W^GETBUF+8,-
                            04FC   693                  P2  =#1                             ; let the output finish
                            051D   694          $OUTPUT CHAN=W^MBCHAN,-
                            051D   695                  LENGTH=#1,-
                            051D   696                  BUFFER=W^TEST_DATA,-
                            051D   697                  IOSB=W^STAT,-
                            051D   698                  EFN=#2                              ; try output,small, & local EFN
                            0540   699          FAIL_CHECK SS$_NORMAL                       ; check for success
              01      DD    0540                    PUSHL   #SS$_NORMAL
    138F'CF   01      FB    0542                    CALLS   #1,W^REG_CHECK
     56   01DB'CF     DE    0547   700          MOVAL   W^GETBUF+8,R6                       ; set input address
     57   0250'CF     DE    054C   701          MOVAL   W^TEST_DATA,R7                      ; set good data address
          58  01      D0    0551   702          MOVL    #1,R8                               ; set the byte count
0071'CF   00010001 8F     D0    0554   703          MOVL    #1@16!SS$_NORMAL,W^STAT1            ; set dummy status
          00010001 8F     DD    055D   704          PUSHL   #1@16!SS$_NORMAL                    ; set expected IO status
    1287'CF   01      FB    0563   705          CALLS   #1,W^BUF_CHECK                      ; check the results
        01DB'CF       D4    0568   706          CLRL    W^GETBUF+8                          ; init the buffer
                            056C   707  ;+
                            056C   708  ;
                            056C   709  ; test $INPUT with small transfer and local EFN
                            056C   710  ;
                            056C   711  ;-
                            056C   712          NEXT_TEST
                            056C
                            056C        STP17:
    0004'CF   11      D0    056C                    MOVL    #17,W^CURRENT_TC
              00      DD    0571                    PUSHL   #0
    1385'CF   01      FB    0573                    CALLS   #1,W^REG_SAVE
  0307'CF   0053'CF   DE    0578   713          MOVAL   W^INPUT,W^SERV_NAME                 ; set service name
                            057F   714          $QIO_S  CHAN=W^MBCHAN,-
                            057F   715                  FUNC=#IO$_WRITEVBLK,-
                            057F   716                  P1  =W^TEST_DATA,-
                            057F   717                  P2  =#1                             ; put data there to read
                            059E   718          $INPUT  CHAN=W^MBCHAN,-
                            059E   719                  LENGTH=#1,-
                            059E   720                  BUFFER=W^GETBUF+8,-
                            059E   721                  IOSB=W^STAT,-
                            059E   722                  EFN=#2                              ; try input,small, & local EFN
                            05BF   723          FAIL_CHECK SS$_NORMAL                       ; check for success
```

```
                       01   DD  05BF                      PUSHL    #SS$_NORMAL
              138F'CF  01   FB  05C1                      CALLS    #1,W^REG_CHECK
             00010001  8F   DD  05C6   724          PUSHL    #1@16!SS$_NORMAL                  ; set expected IO status
              1287'CF  01   FB  05CC   725          CALLS #1,W^BUF_CHECK                       ; check transfered data
                  01DB'CF   D4  05D1   726          CLRL     W^GETBUF+8                        ; init the buffer
         58  00000084  8F   D0  05D5   727          MOVL     #132,R8                           ; set new byte count
                                05DC   728 ;+
                                05DC   729 ;
                                05DC   730 ; test $OUTPUT with large transfer and common EFN
                                05DC   731 ;
                                05DC   732 ;-
                                05DC   733          NEXT_TEST
                                05DC
                                05DC       STP18:
              0004'CF  12   D0  05DC                      MOVL     #18,W^CURRENT_TC
                       00   DD  05E1                      PUSHL    #0
              1385'CF  01   FB  05E3                      CALLS    #1,W^REG_SAVE
        0307'CF   0067'CF   DE  05E8   734          MOVAL    W^OUTPUT,W^SERV_NAME              ; set service name
                                05EF   735          $ASCEFC_S #65,W^EFCNAM                     ; make EFN 65
                                0604   736          $QIO_S   CHAN=W^MBCHAN,-
                                0604   737                   FUNC=#IO$_READVBLK,-
                                0604   738                   P1  =W^GETBUF+8,-
                                0604   739                   P2  =#132                         ; let the $OUTPUT complete
                                0627   740          $OUTPUT  CHAN=W^MBCHAN,-
                                0627   741                   LENGTH=#132,-
                                0627   742                   BUFFER=W^TEST_DATA,-
                                0627   743                   IOSB=W^STAT,-
                                0627   744                   EFN=#65                           ; try output, large with common EFN
                                0652   745          FAIL_CHECK SS$_NORMAL                      ; check for success
                       01   DD  0652                      PUSHL    #SS$_NORMAL
              138F'CF  01   FB  0654                      CALLS    #1,W^REG_CHECK
    0071'CF  00840001  8F   D0  0659   746          MOVL     #132@16!SS$_NORMAL,W^STAT1        ; set dummy status
             00840001  8F   DD  0662   747          PUSHL    #132@16!SS$_NORMAL                ; set expected IO status
              1287'CF  01   FB  0668   748          CALLS    #1,W^BUF_CHECK                    ; check the buffer
 0084 8F   00  01DB'CF  00  2C  066D   749          MOVC5    #0,W^GETBUF+8,#0,#132,W^GETBUF+8 ; init the buffer
                  01DB'CF       0676
                                0679   750 ;+
                                0679   751 ;
                                0679   752 ; test $INPUT with large transfer and common EFN
                                0679   753 ;
                                0679   754 ;-
                                0679   755          NEXT_TEST
                                0679
                                0679       STP19:
              0004'CF  13   D0  0679                      MOVL     #19,W^CURRENT_TC
                       00   DD  067E                      PUSHL    #0
              1385'CF  01   FB  0680                      CALLS    #1,W^REG_SAVE
        0307'CF   0053'CF   DE  0685   756          MOVAL    W^INPUT,W^SERV_NAME               ; set service name
                                068C   757          $QIO_S   CHAN=W^MBCHAN,-
                                068C   758                   FUNC=#IO$_WRITEVBLK,-
                                068C   759                   P1  =W^TEST_DATA,-
                                068C   760                   P2  =#132                         ; put data out to read
                                06AF   761          $INPUT   CHAN=W^MBCHAN,-
                                06AF   762                   LENGTH=#132,-
                                06AF   763                   BUFFER=W^GETBUF+8,-
                                06AF   764                   IOSB=W^STAT,-
                                06AF   765                   EFN=#65                           ; try input, large with common EFN
```

```
                                   06D8   766          FAIL_CHECK SS$_NORMAL                    ; check for success
                         01   DD   06D8                        PUSHL   #SS$_NORMAL
               138F'CF   01   FB   06DA                        CALLS   #1,W^REG_CHECK
              00840001 8F     DD   06DF   767          PUSHL   #132@16!SS$_NORMAL               ; set expected IO status
               1287'CF   01   FB   06E5   768          CALLS #1,W^BUF_CHECK                     ; check transfered data
  0084 8F    00  01DB'CF 00   2C   06EA   769          MOVC5   #0,W^GETBUF+8,#0,#132,W^GETBUF+8 ; init the buffer
                  01DB'CF          06F3
```

```
                              06F6   771          .SBTTL  QIO TESTS
                              06F6   772  ;+
                              06F6   773  ;
                              06F6   774  ; $QIO tests
                              06F6   775  ;
                              06F6   776  ; test local EFN = 3, IO$_WRITEVBLK, _S, 1 byte transfer
                              06F6   777  ;
                              06F6   778  ;-
           58     01     D0   06F6   779          MOVL    #1,R8                           ; set byte count
                              06F9   780          NEXT_TEST
                              06F9
                              06F9        STP20:
      0004'CF     14     D0   06F9                        MOVL    #20,W^CURRENT_TC
                  00     DD   06FE                        PUSHL   #0
      1385'CF     01     FB   0700                        CALLS   #1,W^REG_SAVE
0307'CF   006E'CF        DE   0705   781          MOVAL   W^QIO,W^SERV_NAME               ; set service name
                              070C   782          $QIO_S  EFN =#3,-
                              070C   783                  CHAN=W^MBCHAN,-
                              070C   784                  FUNC=#IO$_WRITEVBLK,-
                              070C   785                  IOSB=W^STAT,-
                              070C   786                  P1  =W^TEST_DATA,-
                              070C   787                  P2  =#1                         ; try _S local bc = 1 writevblk
                              072D   788          FAIL_CHECK SS$_NORMAL                   ; check success
                  01     DD   072D                        PUSHL   #SS$_NORMAL
      138F'CF     01     FB   072F                        CALLS   #1,W^REG_CHECK
                              0734   789  ;+
                              0734   790  ;
                              0734   791  ; test local EFN = 31, IO$_READVBLK, _G, 1 byte transfer
                              0734   792  ;
                              0734   793  ;-
                              0734   794          NEXT_TEST
                              0734
                              0734        STP21:
      0004'CF     15     D0   0734                        MOVL    #21,W^CURRENT_TC
                  00     DD   0739                        PUSHL   #0
      1385'CF     01     FB   073B                        CALLS   #1,W^REG_SAVE
         0105'CF         D4   0740   795          CLRL    W^QIOP+QIO$_ASTADR              ; disable AST's
                              0744   796          $QIO_G  W^QIOP                          ; try _G local bc = 1 readvblk
                              074D   797          FAIL_CHECK SS$_NORMAL                   ; check success
                  01     DD   074D                        PUSHL   #SS$_NORMAL
      138F'CF     01     FB   074F                        CALLS   #1,W^REG_CHECK
                              0754   798          $WAITFR_S EFN=#3                        ; wait for the writevblk
                              075D   799          $WAITFR_S EFN=#31                       ; wait for the readvblk
       00010001   8F     DD   0766   800          PUSHL   #1@16!SS$_NORMAL                ; set expected IO status
      1287'CF     01     FB   076C   801          CALLS   #1,W^BUF_CHECK                  ; check the results
         01DB'CF         D4   0771   802          CLRL    W^GETBUF+8                      ; init the buffer
           58     02     D0   0775   803          MOVL    #2,R8                           ; set byte count
                              0778   804  ;+
                              0778   805  ;
                              0778   806  ; test common EFN = 65, IO$_READLBLK, _S, 2 byte transfer
                              0778   807  ;
                              0778   808  ;-
                              0778   809          NEXT_TEST
                              0778
                              0778        STP22:
      0004'CF     16     D0   0778                        MOVL    #22,W^CURRENT_TC
                  00     DD   077D                        PUSHL   #0
```

```
          1385'CF     01    FB  077F                            CALLS   #1,W^REG_SAVE
                                0784    810          $QIO_S  EFN=#65,-
                                0784    811                  CHAN=W^MBCHAN,-
                                0784    812                  FUNC=#IO$_READLBLK,-
                                0784    813                  IOSB=W^STAT,-
                                0784    814                  P1  =W^GETBUF+8,-
                                0784    815                  P2  =#2                         ; try common EFN READLBLK
                                07A9    816          FAIL_CHECK SS$_NORMAL                   ; check success
                      01    DD  07A9                            PUSHL   #SS$_NORMAL
          138F'CF     01    FB  07AB                            CALLS   #1,W^REG_CHECK
                                07B0    817 ;+
                                07B0    818 ;
                                07B0    819 ; test common EFN = 92, IO$_WRITELBLK, _G, 2 byte transfer
                                07B0    820 ;
                                07B0    821 ;-
                                07B0    822          NEXT_TEST
                                07B0
                                07B0        STP23:
          0004'CF     17    D0  07B0                            MOVL    #23,W^CURRENT_TC
                      00    DD  07B5                            PUSHL   #0
          1385'CF     01    FB  07B7                            CALLS   #1,W^REG_SAVE
 00F5'CF   0000005C 8F    D0  07BC    823          MOVL    #92,W^QIOP+QIO$_EFN             ; set EFN
          00FD'CF     20    D0  07C5    824          MOVL    #IO$_WRITELBLK,W^QIOP+QIO$_FUNC ; set FUNC
     010D'CF    0250'CF    DE  07CA    825          MOVAL   W^TEST_DATA,W^QIOP+QIO$_P1      ; set transfer address
          0111'CF     02    D0  07D1    826          MOVL    #2,W^QIOP+QIO$_P2               ; set byte count
                                07D6    827          $QIO_G  W^QIOP                          ; try common EFN writelblk
                                07DF    828          FAIL_CHECK SS$_NORMAL                   ; check success
                      01    DD  07DF                            PUSHL   #SS$_NORMAL
          138F'CF     01    FB  07E1                            CALLS   #1,W^REG_CHECK
                                07E6    829          $WAITFR_S EFN=#65                       ; wait for readlblk
                                07F3    830          $WAITFR_S EFN=#92                       ; wait for writlblk
           00020001 8F    DD  0800    831          PUSHL   #2@16!SS$_NORMAL                ; set expected IO status
          1287'CF     01    FB  0806    832          CALLS   #1,W^BUF_CHECK                  ; check transfer
              01DB'CF    D4  080B    833          CLRL    W^GETBUF+8                      ; init the buffer
      58   00000084 8F    D0  080F    834          MOVL    #132,R8                         ; set byte count
                                0816    835 ;+
                                0816    836 ;
                                0816    837 ; test AST, IO$_WRITEPBLK, _S, 132 byte transfer
                                0816    838 ;
                                0816    839 ;-
                                0816    840          NEXT_TEST
                                0816
                                0816        STP24:
          0004'CF     18    D0  0816                            MOVL    #24,W^CURRENT_TC
                      00    DD  081B                            PUSHL   #0
          1385'CF     01    FB  081D                            CALLS   #1,W^REG_SAVE
                                0822    841          $QIO_S  CHAN=W^MBCHAN,-
                                0822    842                  FUNC=#IO$_WRITEPBLK,-
                                0822    843                  IOSB=W^STAT,-
                                0822    844                  ASTADR=W^AST1,-
                                0822    845                  ASTPRM=#1,-
                                0822    846                  P1  =W^TEST_DATA,-
                                0822    847                  P2  =#132                       ; try AST writepblk
                      50    DD  084B    848          PUSHL   R0                              ; save the QIO status
                                084D    849          $SETAST_S ENBFLG=#0                     ; let things get checked
                      50 8ED0  0856    850          POPL    R0                              ; reset the QIO status
                                0859    851                                                  ; before the AST's start
```

```
                              0859   852                                                          ; to fly!
                              0859   853          FAIL_CHECK SS$_NORMAL                           ; check success
                  01     DD   0859                         PUSHL   #SS$_NORMAL
         138F'CF  01     FB   085B                         CALLS   #1,W^REG_CHECK
                              0860   854 ;+
                              0860   855 ;
                              0860   856 ; test AST, IO$_READPBLK, _G, byte count 132
                              0860   857 ;
                              0860   858 ;-
                              0860   859          NEXT_TEST
                              0860
                              0860       STP25:
         0004'CF  19     D0   0860                         MOVL    #25,W^CURRENT_TC
                  00     DD   0865                         PUSHL   #0
         1385'CF  01     FB   0867                         CALLS   #1,W^REG_SAVE
         00FD'CF  0C     D0   086C   860          MOVL     #IO$_READPBLK,W^QIOP+QIO$_FUNC  ; set FUNC
     0105'CF   08F0'CF   DE   0871   861          MOVAL    W^AST2,W^QIOP+QIO$_ASTADR       ; set ASTADR
         0109'CF  02     D0   0878   862          MOVL     #2,W^QIOP+QIO$_ASTPRM           ; set ASTPRM
     010D'CF   01DB'CF   DE   087D   863          MOVAL    W^GETBUF+8,W^QIOP+QIO$_P1       ; set read buffer adr
   0111'CF   00000084 8F D0   0884   864          MOVL     #132,W^QIOP+QIO$_P2             ; set byte count
                              088D   865          $QIO_G  W^QIOP                           ; try AST delivery _G
                              0896   866          FAIL_CHECK SS$_NORMAL                    ; check success
                  01     DD   0896                         PUSHL   #SS$_NORMAL
         138F'CF  01     FB   0898                         CALLS   #1,W^REG_CHECK
                              089D   867          $SETAST_S ENBFLG=#1                      ; let all heck break loose
                              08A6   868          $WAITFR_S EFN=#92                        ; let the dust settle
        00840001 8F      DD   08B3   869          PUSHL    #132@16!SS$_NORMAL              ; set expected IO status
         1287'CF  01     FB   08B9   870          CALLS    #1,W^BUF_CHECK                  ; check transfer
 0084 8F    00   01DB'CF  00  2C  08BE  871       MOVC5    #0,W^GETBUF+8,#0,#132,W^GETBUF+8 ; init the buffer
               01DB'CF        08C7
                  0046   31   08CA   872          BRW      NEXT                            ; skip over AST routines
                              08CD   873 ;+
                              08CD   874 ;
                              08CD   875 ; service writelblk AST
                              08CD   876 ;
                              08CD   877 ;-
                              08CD   878 AST1:
                      001C    08CD   879          .WORD    ^M<R2,R3,R4>
                              08CF   880          NEXT_TEST
                              08CF
                              08CF       STP26:
         0004'CF  1A     D0   08CF                         MOVL    #26,W^CURRENT_TC
                  00     DD   08D4                         PUSHL   #0
         1385'CF  01     FB   08D6                         CALLS   #1,W^REG_SAVE
           01    04 AC   D1   08DB   881          CMPL     4(AP),#1                        ; right AST parameter?
                  0E     13   08DF   882          BEQL     10$                             ; br if yes
               04 AC     DD   08E1   883          PUSHL    4(AP)                           ; push received
                  01     DD   08E4   884          PUSHL    #1                              ; push expected
             0193'CF     DF   08E6   885          PUSHAL   W^ASTEXP                        ; push string variable
         13D1'CF  03     FB   08EA   886          CALLS    #3,W^PRINT_FAIL                 ; print the failure
                              08EF   887 10$:
                         04   08EF   888          RET                                      ; return
                              08F0   889 ;+
                              08F0   890 ;
                              08F0   891 ; test the readlblk AST
                              08F0   892 ;
                              08F0   893 ;-
```

```
                                08F0   894 AST2:
                        001C    08F0   895          .WORD   ^M<R2,R3,R4>
                                08F2   896          NEXT_TEST
                                08F2
                                08F2       STP27:
            0004'CF    1B   D0  08F2                         MOVL    #27,W^CURRENT_TC
                       00   DD  08F7                         PUSHL   #0
            1385'CF    01   FB  08F9                         CALLS   #1,W^REG_SAVE
              02    04 AC   D1  08FE   897          CMPL    4(AP),#2                        ; right AST parameter?
                       0E   13  0902   898          BEQL    10$                             ; br if yes
                    04 AC   DD  0904   899          PUSHL   4(AP)                           ; push received
                       02   DD  0907   900          PUSHL   #2                              ; push expected
               0193'CF      DF  0909   901          PUSHAL  W^ASTEXP                        ; push string variable
            13D1'CF    03   FB  090D   902          CALLS   #3,W^PRINT_FAIL                 ; print the error
                                0912   903 10$:
                            04  0912   904          RET                                     ; return
                                0913   905 ;+
                                0913   906 ;
                                0913   907 ; test IO$_SETMODE, _S, READATTN
                                0913   908 ;
                                0913   909 ;-
                                0913   910 NEXT:
                                0913   911          NEXT_TEST
                                0913
                                0913       STP28:
            0004'CF    1C   D0  0913                         MOVL    #28,W^CURRENT_TC
                       00   DD  0918                         PUSHL   #0
            1385'CF    01   FB  091A                         CALLS   #1,W^REG_SAVE
                                091F   912          $QIO_S  CHAN=W^MBCHAN,-
                                091F   913                  FUNC=#IO$_SETMODE!IO$M_READATTN,-
                                091F   914                  EFN =#2,-
                                091F   915                  P1  =W^AST3,-
                                091F   916                  P2  =#3,-
                                091F   917                  P3  =#PSL$C_USER                ; try _S SETMODE
                                0942   918          FAIL_CHECK SS$_NORMAL                   ; check success
                       01   DD  0942                         PUSHL   #SS$_NORMAL
            138F'CF    01   FB  0944                         CALLS   #1,W^REG_CHECK
                                0949   919          $WAITFR_S EFN=#2                        ; let it finish
               0105'CF      D4  0952   920          CLRL    W^QIOP+QIO$_ASTADR              ; disable AST's for this one
               0109'CF      D4  0956   921          CLRL    W^QIOP+QIO$_ASTPRM
                                095A   922          $SETAST_S ENBFLG=#0                     ; hold back on the reins
                                0963   923          $QIO_G  W^QIOP                          ; force the READATTN AST
                                096C   924          FAIL_CHECK SS$_NORMAL                   ; check success
                       01   DD  096C                         PUSHL   #SS$_NORMAL
            138F'CF    01   FB  096E                         CALLS   #1,W^REG_CHECK
                                0973   925          $SETAST_S ENBFLG=#1                     ; let it fly
                  0045      31  097C   926          BRW     NEXT1                           ; skip over AST routine
                                097F   927 ;+
                                097F   928 ;
                                097F   929 ; service READATTN AST
                                097F   930 ;
                                097F   931 ;-
                                097F   932 AST3:
                        0000    097F   933          .WORD   0
                                0981   934          NEXT_TEST
                                0981
                                0981       STP29:
```

```
       0004'CF    1D   D0  0981                    MOVL    #29,W^CURRENT_TC
                  00   DD  0986                    PUSHL   #0
       1385'CF    01   FB  0988                    CALLS   #1,W^REG_SAVE
        03    04 AC    D1  098D   935        CMPL    4(AP),#3                        ; correct AST?
                  0E   13  0991   936        BEQL    10$                             ; br if OK
              04 AC    DD  0993   937        PUSHL   4(AP)                           ; push receeived
                  03   DD  0996   938        PUSHL   #3                              ; push expected
            0193'CF    DF  0998   939        PUSHAL  W^ASTEXP                        ; push the string variable
       13D1'CF    03   FB  099C   940        CALLS   #3,W^PRINT_FAIL                 ; print the failure
                           09A1   941 10$:
       00FD'CF    30   D0  09A1   942        MOVL    #IO$_WRITEVBLK,W^QIOP+QIO$_FUNC ; set the new mode
                           09A6   943        $QIO_G  W^QIOP                          ; and eat the read pending
                           09AF   944        FAIL_CHECK SS$_NORMAL                   ; check success
                  01   DD  09AF                    PUSHL   #SS$_NORMAL
       138F'CF    01   FB  09B1                    CALLS   #1,W^REG_CHECK
                           09B6   945        $WAITFR_S EFN=#92                       ; wait for it to digest.
                       04  09C3   946        RET                                     ; carry on
                           09C4   947 ;+
                           09C4   948 ;
                           09C4   949 ; test IO$_SETMODE, _G, WRTATTN
                           09C4   950 ;
                           09C4   951 ;-
                           09C4   952 NEXT1:
                           09C4   953        NEXT_TEST
                           09C4
                           09C4       STP30:
       0004'CF    1E   D0  09C4                    MOVL    #30,W^CURRENT_TC
                  00   DD  09C9                    PUSHL   #0
       1385'CF    01   FB  09CB                    CALLS   #1,W^REG_SAVE
        00000123 8F    D0  09D0   954        MOVL    #IO$_SETMODE!IO$M_WRTATTN,-
            00FD'CF        09D6   955                W^QIOP+QIO$_FUNC                ; set new function
  010D'CF   0A3A'CF    DE  09D9   956        MOVAL   W^AST4,W^QIOP+QIO$_P1           ; set new P1
       0111'CF    04   D0  09E0   957        MOVL    #4,W^QIOP+QIO$_P2               ; set new P2
       0115'CF    03   D0  09E5   958        MOVL    #PSL$C_USER,W^QIOP+QIO$_P3      ; set new P3
                           09EA   959        $QIO_G  W^QIOP                          ; try _G setmode
                           09F3   960        FAIL_CHECK SS$_NORMAL                   ; check success
                  01   DD  09F3                    PUSHL   #SS$_NORMAL
       138F'CF    01   FB  09F5                    CALLS   #1,W^REG_CHECK
                           09FA   961        $WAITFR_S EFN=#92                       ; wait for it to complete
                           0A07   962        $SETAST_S ENBFLG=#0                     ; hold back on the reins
   000000FD'EF    30   D0  0A10   963        MOVL    #IO$_WRITEVBLK,QIOP+QIO$_FUNC   ; set new function
  010D'CF   0250'CF    DE  0A17   964        MOVAL   W^TEST_DATA,W^QIOP+QIO$_P1      ; set new P1
                           0A1E   965        $QIO_G  W^QIOP                          ; kick off WRTATTN AST
                           0A27   966        FAIL_CHECK SS$_NORMAL                   ; check success
                  01   DD  0A27                    PUSHL   #SS$_NORMAL
       138F'CF    01   FB  0A29                    CALLS   #1,W^REG_CHECK
                           0A2E   967        $SETAST_S ENBFLG=#1                     ; let it fly
              004C    31   0A37   968        BRW     NEXT2                           ; skip AST routine
                           0A3A   969 ;+
                           0A3A   970 ;
                           0A3A   971 ; service WRTATTN AST
                           0A3A   972 ;
                           0A3A   973 ;-
                           0A3A   974 AST4:
                     0000  0A3A   975        .WORD   0
                           0A3C   976        NEXT_TEST
                           0A3C
```

```
                               0A3C      STP31:
        0004'CF    1F    D0    0A3C                       MOVL    #31,W^CURRENT_TC
                   00    DD    0A41                       PUSHL   #0
        1385'CF    01    FB    0A43                       CALLS   #1,W^REG_SAVE
          04    04 AC    D1    0A48                CMPL    4(AP),#4                        ; is it the right one?
                   0E    13    0A4C                BEQL    10$                             ; br if it's OK
                04 AC    DD    0A4E                PUSHL   4(AP)                           ; save received
                   04    DD    0A51                PUSHL   #4                              ; save expected
            0193'CF      DF    0A53                PUSHAL  W^ASTEXP                        ; save string variable
        13D1'CF    03    FB    0A57                CALLS   #3,W^PRINT_FAIL                 ; print the error
                               0A5C      10$:
        00FD'CF    31    D0    0A5C                MOVL    #IO$_READVBLK,W^QIOP+QIO$_FUNC  ; set new function code
  010D'CF    01DB'CF     DE    0A61                MOVAL   W^GETBUF+8,W^QIOP+QIO$_P1       ; set new read address
                               0A68                $QIO_G  W^QIOP                          ; eat the write pending
                               0A71                FAIL_CHECK SS$_NORMAL                   ; check for success
                   01    DD    0A71                       PUSHL   #SS$_NORMAL
        138F'CF    01    FB    0A73                       CALLS   #1,W^REG_CHECK
                               0A78                $WAITFR_S EFN=#92                       ; and wait for it to digest
                         04    0A85                RET                                     ; bail out
                               0A86      ;+
                               0A86      ;
                               0A86      ; test IO$_SETCHAR, _S
                               0A86      ;
                               0A86      ; This function is not tested because of the lack of a device that is
                               0A86      ; allocatable and char. setable on the minimum configuration.
                               0A86      ;
                               0A86      ;-
                               0A86      NEXT2:
                                 0A86  1000 ;+
                                 0A86  1001 ;
                                 0A86  1002 ; test IO$_WRITEOF, _G
                                 0A86  1003 ;
                                 0A86  1004 ;-
                                 0A86  1005         NEXT_TEST
                                 0A86
                                 0A86       STP32:
        0004'CF     20     D0    0A86                       MOVL    #32,W^CURRENT_TC
                    00     DD    0A8B                       PUSHL   #0
        1385'CF     01     FB    0A8D                       CALLS   #1,W^REG_SAVE
                                 0A92  1006         $QIO_S  CHAN=W^MBCHAN,-
                                 0A92  1007                 FUNC=#IO$_WRITEOF,-
                                 0A92  1008                 EFN =#10                        ; issue the WRITEOF
                                 0AAF  1009         FAIL_CHECK SS$_NORMAL                   ; check success
                    01     DD    0AAF                       PUSHL   #SS$_NORMAL
        138F'CF     01     FB    0AB1                       CALLS   #1,W^REG_CHECK
   00F9'CF    031E'CF      3C    0AB6  1010         MOVZWL  W^MBCHAN,W^QIOP+QIO$_CHAN       ; reset the channel
      00FD'CF       31     D0    0ABD  1011         MOVL    #IO$_READVBLK,W^QIOP+QIO$_FUNC  ; set for the read
  010D'CF    01DB'CF       DE    0AC2  1012         MOVAL   W^GETBUF+8,W^QIOP+QIO$_P1       ; set dummy address
  00000111'EF       02     D0    0AC9  1013         MOVL    #2,QIOP+QIO$_P2                 ; set any byte count
                                 0AD0  1014         $QIO_G  W^QIOP                          ; issue a read
                                 0AD9  1015         FAIL_CHECK SS$_NORMAL                   ; check success
                    01     DD    0AD9                       PUSHL   #SS$_NORMAL
        138F'CF     01     FB    0ADB                       CALLS   #1,W^REG_CHECK
                                 0AE0  1016         $WAITFR_S EFN=#92                       ; wait for completion
00000870 8F   0071'CF      D1    0AED  1017         CMPL    W^STAT1,#SS$_ENDOFFILE          ; right status code?
                    13     13    0AF6  1018         BEQL    10$                             ; br if OK
            0071'CF        DD    0AF8  1019         PUSHL   W^STAT1                         ; push received
          00000870 8F      DD    0AFC  1020         PUSHL   #SS$_ENDOFFILE                  ; push expected
            0182'CF        DF    0B02  1021         PUSHAL  W^IOEXP                         ; push string variable
        13D1'CF     03     FB    0B06  1022         CALLS   #3,W^PRINT_FAIL                 ; print the failure
                                 0B0B  1023 10$:
                                 0B0B  1024 ;+
                                 0B0B  1025 ;
                                 0B0B  1026 ; test IO$_ACCESS, _G
                                 0B0B  1027 ;
                                 0B0B  1028 ; Start testing disk files.  We first want to find the FID of [SYSTEST],
                                 0B0B  1029 ; which may be in a top level system directory.  Save that FID as the DID
                                 0B0B  1030 ; for further testing.
                                 0B0B  1031 ;
                                 0B0B  1032 ;-
                                 0B0B  1033         NEXT_TEST
                                 0B0B
                                 0B0B       STP33:
        0004'CF     21     D0    0B0B                       MOVL    #33,W^CURRENT_TC
                    00     DD    0B10                       PUSHL   #0
        1385'CF     01     FB    0B12                       CALLS   #1,W^REG_SAVE
                                 0B17  1034         $ASSIGN_S W^DISK,W^CHAN1                ; assign the disk channel
                                 0B28  1035         $TRNLOG_S LOGNAM = W^TOPSYS,-           ; See if there is...
                                 0B28  1036                   RSLLEN = W^TOPSYS_DIR,-       ; ...a top level...
                                 0B28  1037                   RSLBUF = W^TOPSYS_DIR,-       ; ...system directory...
                                 0B28  1038                   DSBMSK = #6                   ; ...defined system-wide
        50    0629 8F      B1    0B41  1039         CMPW    #SS$_NOTRAN,R0                  ; If there's no translation...
                    72     13    0B46  1040         BEQL    10$                             ; ...
            04E4'CF        B5    0B48  1041         TSTW    W^TOPSYS_DIR                    ; ...or the trans is null...
                    6C     13    0B4C  1042         BEQL    10$                             ; ...we have no top level dirs
```

```
                       007C 8F   BB  0B4E  1043         PUSHR   #^M<R2,R3,R4,R5,R6>               ; Save these over MOVC, etc.
                  56   04E4'CF   3C  0B52  1044         MOVZWL  W^TOPSYS_DIR,R6                   ; Get top level dir name length
             04CC'CF   04C4'CF   28  0B57  1045         MOVC3   W^DOT_DIR_SEMI,W^DOT_DIR_SEMI+8,- ; Form a file spec for...
                       04EC'C6       0B5E  1046                 TOPSYS_DIR+8(R6)                  ; ...the dir name...
             04E4'CF   04C4'CF   A0  0B61  1047         ADDW2   W^DOT_DIR_SEMI,W^TOPSYS_DIR       ; ...
                       007C 8F   BA  0B68  1048         POPR    #^M<R2,R3,R4,R5,R6>               ; Clean up after MOVC, etc.
                                     0B6C  1049         $QIOW_S EFN=#16,-                         ; Get the top level...
                                     0B6C  1050                 CHAN=W^CHAN1,-                    ; ...system directory FID
                                     0B6C  1051                 FUNC=#IO$_ACCESS,-
                                     0B6C  1052                 IOSB=W^STAT,-
                                     0B6C  1053                 P1  =W^FIBDES,-
                                     0B6C  1054                 P2  =#TOPSYS_DIR,-
                                     0B6C  1055                 P5  =#ATR
                                     0B97  1056         FAIL_CHECK SS$_NORMAL                     ; Check success of call...
                            01   DD  0B97                       PUSHL   #SS$_NORMAL
                  138F'CF   01   FB  0B99                       CALLS   #1,W^REG_CHECK
                  0069'CF   01   D1  0B9E  1057         CMPL    #SS$_NORMAL,W^STAT                ; ...and its results
                            5E   12  0BA3  1058         BNEQ    20$                               ; BR if error occurred
                            3C   BB  0BA5  1059         PUSHR   #^M<R2,R3,R4,R5>                  ; Save these over MOVC, etc.
        0470'CF   046A'CF   06   28  0BA7  1060         MOVC3   #6,W^FIB+FIB$W_FID,W^FIB+FIB$W_DID ; Get the new DID...
046A'CF   06    00     00 8F    00   2C  0BAF  1061         MOVC5   #0,#0,#0,#6,W^FIB+FIB$W_FID       ; ...and reset the FID
                            3C   BA  0BB8  1062         POPR    #^M<R2,R3,R4,R5>                  ; Restore after MOVC, etc.
                                     0BBA  1063 10$:
             0493'CF   04AF'CF   DE  0BBA  1064         MOVAL   W^SYSTEST_DIR,W^ATR+4             ; Point to SYSTEST dir name
                                     0BC1  1065         $QIO_S  EFN=#16,-
                                     0BC1  1066                 CHAN=W^CHAN1,-
                                     0BC1  1067                 FUNC=#IO$_ACCESS,-
                                     0BC1  1068                 IOSB=W^STAT,-
                                     0BC1  1069                 P1  =W^FIBDES,-
                                     0BC1  1070                 P2  =#SYSTEST_DIR,-
                                     0BC1  1071                 P5  =#ATR                         ; access file to get DID
                                     0BEC  1072         FAIL_CHECK SS$_NORMAL                     ; check success
                            01   DD  0BEC                       PUSHL   #SS$_NORMAL
                  138F'CF   01   FB  0BEE                       CALLS   #1,W^REG_CHECK
                                     0BF3  1073         $WAITFR_S EFN=#16                         ; wait for completion
                  01   0069'CF   D1  0BFC  1074         CMPL    W^STAT,#SS$_NORMAL                ; check IO status
                            0F   13  0C01  1075         BEQL    30$                               ; br if no error
                                     0C03  1076 20$:
                       0069'CF   DD  0C03  1077         PUSHL   W^STAT                            ; push recieved
                            01   DD  0C07  1078         PUSHL   #SS$_NORMAL                       ; push expected
                       0182'CF   DF  0C09  1079         PUSHAL  W^IOEXP                           ; push string variable
                  13D1'CF   03   FB  0C0D  1080         CALLS   #3,W^PRINT_FAIL                   ; print the failure
                                     0C12  1081 30$:
        0470'CF   046A'CF   06   28  0C12  1082         MOVC3   #6,W^FIB+FIB$W_FID,W^FIB+FIB$W_DID ; get the new DID
                                     0C1A  1083 ;+
                                     0C1A  1084 ;
                                     0C1A  1085 ; test IO$_CREATE, _S
                                     0C1A  1086 ;
                                     0C1A  1087 ; After ensuring that we have SYSPRV, set up access control and extension
                                     0C1A  1088 ; control.  Set up a test file, superseding any old one which may be present.
                                     0C1A  1089 ;
                                     0C1A  1090 ;-
                                     0C1A  1091         NEXT_TEST
                                     0C1A
                                     0C1A       STP34:
                  0004'CF   22   D0  0C1A                       MOVL    #34,W^CURRENT_TC
                            00   DD  0C1F                       PUSHL   #0
        1385'CF    01   FB  0C21                  CALLS   #1,W^REG_SAVE
                            0C26        MODE      TO,10$,KRNL,NOREGS              ; kernal mode to access PHD
    59   00000000'9F   D0  0C43        MOVL      @#CTL$GL_PHD,R9                 ; get process header address
        0051'CF    69   DE  0C4A        MOVAL     PHD$Q_PRIVMSK(R9),W^PRIVMASK    ; get priv mask address
                            0C4F        MODE      FROM,TO$                        ; get back to user mode
                            0C50        PRIV      ADD,SYSPRV                      ; add SYSPRV priv.
             046A'CF    D4  0C70        CLRL      W^FIB+FIB$W_FID                 ; clear out the FID
             046E'CF    B4  0C74        CLRW      W^FIB+FIB$W_FID_RVN
  0466'CF   00000501 8F  D0  0C78        MOVL      #FIB$M_WRITE!FIB$M_NOREAD!-
                            0C81                    FIB$M_NOWRITE,W^FIB+FIB$L_ACCTL ; set new ACCTL
     047C'CF    0085 8F  B0  0C81        MOVW      #FIB$M_EXTEND!FIB$M_ALCON!-
                            0C88                    FIB$M_FILCON,W^FIB+FIB$W_EXCTL ; set new EXCTL
     047A'CF    0400 8F  B0  0C88        MOVW      #FIB$M_SUPERSEDE,W^FIB+FIB$W_NMCTL ; on top of file if there
        047E'CF    0F   D0  0C8F        MOVL      #15,W^FIB+FIB$L_EXSZ            ; set extend size to 15
                   00   DD  0C94        PUSHL     #0                              ; push a dummy parameter
        1385'CF    01   FB  0C96        CALLS     #1,W^REG_SAVE                   ; save a register snapshot
                            0C9B        $QIO_S     EFN = #6,-
                            0C9B                  CHAN = W^CHAN1,-
                            0C9B                  FUNC = #IO$_CREATE!IO$M_CREATE!IO$M_ACCESS,-
                            0C9B                  IOSB = W^STAT,-
                            0C9B                    P1 = W^FIBDES,-
                            0C9B                    P2 = #FILENAME                ; create the file
                            0CC2        FAIL_CHECK SS$_NORMAL                     ; check for success
                   01   DD  0CC2                  PUSHL   #SS$_NORMAL
        138F'CF    01   FB  0CC4                  CALLS   #1,W^REG_CHECK
                            0CC9        $WAITFR_S EFN=#6                          ; wait until done
        0F    006D'CF   D1  0CD2        CMPL      W^STAT+4,#15                    ; was it extended?
                   0F   18  0CD7        BGEQ      20$                             ; br if OK
             006D'CF    DD  0CD9        PUSHL     W^STAT+4                        ; push received
                   0F   DD  0CDD        PUSHL     #15                             ; push expected
             01A5'CF    DF  0CDF        PUSHAL    W^DISALL                        ; push string variable
        13D1'CF    03   FB  0CE3        CALLS     #3,W^PRINT_FAIL                 ; print the failure
                            0CE8  20$:
        01    0069'CF   D1  0CE8        CMPL      W^STAT,#SS$_NORMAL              ; check the IO status
                   0F   13  0CED        BEQL      25$                             ; br if no errors
             0069'CF    DD  0CEF        PUSHL     W^STAT                          ; push recieved
                   01   DD  0CF3        PUSHL     #SS$_NORMAL                     ; push expected
             0182'CF    DF  0CF5        PUSHAL    W^IOEXP                         ; push string variable
        13D1'CF    03   FB  0CF9        CALLS     #3,W^PRINT_FAIL                 ; print the failure
                            0CFE  25$:
                            0CFE  ;+
                            0CFE  ;
                            0CFE  ; test IO$_MODIFY, _S
                            0CFE  ;
                            0CFE  ; Specify that our test file need not be contiguous and extend it by an
                            0CFE  ; amount equal to its original size.  Check that we've successfully modified
                            0CFE  ; the file.
                            0CFE  ;
                            0CFE  ;-
                            0CFE              NEXT_TEST
                            0CFE
                            0CFE  STP35:
        0004'CF    23   D0  0CFE                  MOVL    #35,W^CURRENT_TC
                   00   DD  0D03                  PUSHL   #0
        1385'CF    01   FB  0D05                  CALLS   #1,W^REG_SAVE
        047C'CF    04   AA  0D0A        BICW2     #FIB$M_FILCON,W^FIB+FIB$W_EXCTL ; remove contiguous mark
             0482'CF    D4  0D0F        CLRL      W^FIB+FIB$L_EXVBN               ; allow the modify to work
```

```
                        0D13         $QIO_S  EFN=#7,-
                        0D13                 CHAN=W^CHAN1,-
                        0D13                 FUNC=#IO$_MODIFY,-
                        0D13                 IOSB=W^STAT,-
                        0D13                 P1  =W^FIBDES,-
                        0D13                 P2  =#FILENAME                    ; try to truncate with IO$_MODIFY
                        0D38         FAIL_CHECK SS$_NORMAL
             01    DD   0D38                 PUSHL   #SS$_NORMAL
   138F'CF   01    FB   0D3A                 CALLS   #1,W^REG_CHECK
                        0D3F         $WAITFR_S EFN=#7                          ; wait for completion
   01    0069'CF   D1   0D48         CMPL    W^STAT,#SS$_NORMAL                ; check IO status
             0F    13   0D4D         BEQL    10$                               ; br if no error
        0069'CF    DD   0D4F         PUSHL   W^STAT                            ; push recieved
             01    DD   0D53         PUSHL   #SS$_NORMAL                       ; push expected
        0182'CF    DF   0D55         PUSHAL  W^IOEXP                           ; push string variable
   13D1'CF   03    FB   0D59         CALLS   #3,W^PRINT_FAIL                   ; print the failure
                        0D5E    10$:
   047C'CF   04    A8   0D5E         BISW2   #FIB$M_FILCON,W^FIB+FIB$W_EXCTL ; set a value to be over written
                        0D63         $QIO_S  EFN=#5,-
                        0D63                 CHAN=W^CHAN1,-
                        0D63                 FUNC=#IO$_ACCESS,-
                        0D63                 IOSB=W^STAT,-
                        0D63                 P1  =W^FIBDES,-
                        0D63                 P2  =#FILENAME
                        0D88         FAIL_CHECK SS$_NORMAL                     ; check for success
             01    DD   0D88                 PUSHL   #SS$_NORMAL
   138F'CF   01    FB   0D8A                 CALLS   #1,W^REG_CHECK
                        0D8F         $WAITFR_S EFN=#5                          ; wait for completion
09 047C'CF   04    E1   0D98         BBC     #FIB$M_FILCON,W^FIB+FIB$W_EXCTL,20$ ; if cleared then OK
        01.B'CF    DF   0D9E         PUSHAL W^FILNOTMOD                        ; push string variable
   13D1'CF   01    FB   0DA2         CALLS   #1,W^PRINT_FAIL                   ; print the failure
                        0DA7    20$:
                        0DA7    ;+
                        0DA7    ;
                        0DA7    ; Check that we may read and write the file with IO$_WRITEVBLK & IO$_READVBLK.
                        0DA7    ;
                        0DA7    ;-
                        0DA7         NEXT_TEST
                        0DA7
                        0DA7    STP36:
   0004'CF   24    D0   0DA7                 MOVL    #36,W^CURRENT_TC
             00    DD   0DAC                 PUSHL   #0
   1385'CF   01    FB   0DAE                 CALLS   #1,W^REG_SAVE
        0069'CF    D4   0DB3         CLRL    W^STAT                            ; clean the IO status blk
        0071'CF    D4   0DB7         CLRL    W^STAT1
                        0DBB         $QIO_S  EFN =#9,-
                        0DBB                 CHAN=W^CHAN1,-
                        0DBB                 FUNC=#IO$_WRITEVBLK,-
                        0DBB                 IOSB=W^STAT,-
                        0DBB                 P1  =W^TEST_DATA,-
                        0DBB                 P2  =#132,-
                        0DBB                 P3  =#1                           ; write 132 bytes to VBN 1
                        0DE2         FAIL_CHECK SS$_NORMAL                     ; check success
             01    DD   0DE2                 PUSHL   #SS$_NORMAL
   138F'CF   01    FB   0DE4                 CALLS   #1,W^REG_CHECK
                        0DE9         $WAITFR_S EFN=#9                          ; wait here til done
                        0DF2         $QIO_S  EFN =#10,-
```

```
                         0DF2  1187                          CHAN=W^CHAN1,-
                         0DF2  1188                          FUNC=#IO$_READVBLK,-
                         0DF2  1189                          IOSB=W^STAT1,-
                         0DF2  1190                          P1  =W^GETBUF+8,-
                         0DF2  1191                          P2  =#132,-
                         0DF2  1192                          P3  =#1                      ; read 132 bytes from VBN 1
                         0E19  1193                FAIL_CHECK SS$_NORMAL                  ; check success
                01   DD  0E19                                PUSHL   #SS$_NORMAL
        138F'CF 01   FB  0E1B                                CALLS   #1,W^REG_CHECK
                         0E20  1194                $WAITFR_S EFN=#10                      ; wait here til done
     56  01DB'CF     DE  0E29  1195                MOVAL   W^GETBUF+8,R6                  ; set buffer address
     57  0250'CF     DE  0E2E  1196                MOVAL   W^TEST_DATA,R7                 ; set gocd data address
 58   00000084 8F    D0  0E33  1197                MOVL    #132,R8                        ; set byte count
      00840001 8F    DD  0E3A  1198                PUSHL   #132@16!SS$_NORMAL             ; push expected status return
        11CB'CF 01   FB  0E40  1199                CALLS   #1,W^DISK_BUF_CHECK            ; check the transfer
                         0E45  1200 ;+
                         0E45  1201 ;
                         0E45  1202 ; test IO$_DEACCESS, _S
                         0E45  1203 ;
                         0E45  1204 ;-
                         0E45  1205                NEXT_TEST
                         0E45
                         0E45       STP37:
        0004'CF 25   D0  0E45                                MOVL    #37,W^CURRENT_TC
                00   DD  0E4A                                PUSHL   #0
        1385'CF 01   FB  0E4C                                CALLS   #1,W^REG_SAVE
           0069'CF   D4  0E51  1206                CLRL    W^STAT                         ; clear IO status blks
           0071'CF   D4  0E55  1207                CLRL    W^STAT1
 18   00  01D3'CF 00 2C  0E59  1208                MOVC5   #0,W^GETBUF,#0,#FIB$L_LOC_ADDR-
           0476'CF       0E60
                         0E63  1209                        -FIB$L_WCC,W^FIB+FIB$L_WCC     ; clear unneeded stuff in FIB
                00   DD  0E63  1210                PUSHL   #0                             ; push a dummy parameter
        1385'CF 01   FB  0E65  1211                CALLS   #1,W^REG_SAVE                  ; save a snapshot of regs
                         0E6A  1212                $QIO_S  EFN =#5,-
                         0E6A  1213                        CHAN=W^CHAN1,-
                         0E6A  1214                        FUNC=#IO$_DEACCESS,-
                         0E6A  1215                        IOSB=W^STAT1,-
                         0E6A  1216                        P5  =#ATR,-
                         0E6A  1217                        P1  =W^FIBDES                  ; try _S deaccess
                         0E91  1218                FAIL_CHECK SS$_NORMAL                  ; check success
                01   DD  0E91                                PUSHL   #SS$_NORMAL
        138F'CF 01   FB  0E93                                CALLS   #1,W^REG_CHECK
                         0E98  1219                $WAITFR_S EFN=#5                       ; wait for completion
        0071'CF 01   D1  0EA1  1220                CMPL    #SS$_NORMAL,W^STAT1            ; check IO status
                0F   13  0EA6  1221                BEQL    10$                            ; br if OK
           0071'CF   DD  0EA8  1222                PUSHL   W^STAT1                        ; push recieved
                01   DD  0EAC  1223                PUSHL   #SS$_NORMAL                    ; push expected
           0182'CF   DF  0EAE  1224                PUSHAL  W^IOEXP                        ; push string variable
        13D1'CF 03   FB  0EB2  1225                CALLS   #3,W^PRINT_FAIL                ; print the failure
                         0EB7  1226 10$:
                         0EB7  1227 ;+
                         0EB7  1228 ;
                         0EB7  1229 ; test IO$_DELETE, _S
                         0EB7  1230 ;
                         0EB7  1231 ;-
                         0EB7  1232                NEXT_TEST
                         0EB7
```

```
                        0EB7       STP38:
0004'CF    26   D0   0EB7                          MOVL    #38,W^CURRENT_TC
           00   DD   0EBC                          PUSHL   #0
1385'CF    01   FB   0EBE                          CALLS   #1,W^REG_SAVE
   0069'CF      D4   0EC3               CLRL     W^STAT                          ; init IO status
                     0EC7               $QIO_S   EFN =#11,-
                     0EC7                        CHAN=W^CHAN1,-
                     0EC7                        FUNC=#IO$_DELETE!IO$M_DELETE,-
                     0EC7                        IOSB=W^STAT,-
                     0EC7                        P1  =W^FIBDES,-
                     0EC7                        P2  =#FILENAME                  ; delete the file
                     0EEE               FAIL_CHECK SS$_NORMAL                    ; check for success
           01   DD   0EEE                          PUSHL   #SS$_NORMAL
138F'CF    01   FB   0EF0                          CALLS   #1,W^REG_CHECK
                     0EF5               $WAITFR_S EFN=#11                        ; wait for completion
0069'CF    01   D1   0EFE               CMPL     #SS$_NORMAL,W^STAT              ; check IO status
           0F   13   0F03               BEQL     10$                             ; br if OK
   0069'CF      DD   0F05               PUSHL    W^STAT                          ; push recieved
           01   DD   0F09               PUSHL    #SS$_NORMAL                     ; push expected
   0182'CF      DF   0F0B               PUSHAL   W^IOEXP                         ; push string variable
13D1'CF    03   FB   0F0F               CALLS    #3,W^PRINT_FAIL                 ; print the failure
                     0F14       10$:
                     0F14               $DASSGN_S CHAN=W^CHAN1                   ; deassign the disk
```

```
                                   0F20  1251          .SBTTL  QIOW TESTS
                                   0F20  1252  ;+
                                   0F20  1253  ;
                                   0F20  1254  ; $QIOW tests
                                   0F20  1255  ;
                                   0F20  1256  ; The $QIO tests check most of the functionality of the QIO services.
                                   0F20  1257  ; The purpose of these tests is to check the differences between
                                   0F20  1258  ; $QIO and $QIOW.
                                   0F20  1259  ;
                                   0F20  1260  ; test _S and local EFN
                                   0F20  1261  ;
                                   0F20  1262  ;-
                                   0F20  1263          NEXT_TEST
                                   0F20
                                   0F20        STP39:
          0004'CF    27      D0    0F20                        MOVL    #39,W^CURRENT_TC
                     00      DD    0F25                        PUSHL   #0
          1385'CF    01      FB    0F27                        CALLS   #1,W^REG_SAVE
      0307'CF    0072'CF     DE    0F2C  1264          MOVAL W^QIOW,W^SERV_NAME                  ; set service name
                                   0F33  1265          $QIO_S  CHAN=W^MBCHAN,-
                                   0F33  1266                  FUNC=#IO$_READVBLK,-
                                   0F33  1267                  P1  =W^GETBUF+8,-
                                   0F33  1268                  P2  =#80                          ; set up the mailbox
                                   0F56  1269          $QIOW_S EFN =#16,-
                                   0F56  1270                  CHAN=W^MBCHAN,-
                                   0F56  1271                  FUNC=#IO$_WRITEVBLK,-
                                   0F56  1272                  IOSB=W^STAT,-
                                   0F56  1273                  P1  =W^TEST_DATA,-
                                   0F56  1274                  P2  =#80                          ; try _S with local EFN
                                   0F7B  1275          FAIL_CHECK SS$_NORMAL                     ; check for success
                     01      DD    0F7B                        PUSHL   #SS$_NORMAL
          138F'CF    01      FB    0F7D                        CALLS   #1,W^REG_CHECK
          56    01DB'CF      DE    0F82  1276          MOVAL   W^GETBUF+8,R6                     ; set buffer address
          57    0250'CF      DE    0F87  1277          MOVAL   W^TEST_DATA,R7                    ; set good data address
        58   00000050 8F     D0    0F8C  1278          MOVL    #80,R8                            ; set the byte count
    0071'CF  00500001 8F     D0    0F93  1279          MOVL    #80@16!SS$_NORMAL,W^STAT1         ; set dummy status
             00500001 8F     DD    0F9C  1280          PUSHL   #80@16!SS$_NORMAL                 ; set expected IO status
          1287'CF    01      FB    0FA2  1281          CALLS   #1,W^BUF_CHECK                    ; check the data
0050 8F    00   01DB'CF    00  2C  0FA7  1282          MOVC5   #0,W^GETBUF+8,#0,#80,W^GETBUF+8 ; init the buffer
                01DB'CF            0FB0
                                   0FB3  1283  ;+
                                   0FB3  1284  ;
                                   0FB3  1285  ; test _G with local EFN
                                   0FB3  1286  ;
                                   0FB3  1287  ;-
                                   0FB3  1288          NEXT_TEST
                                   0FB3
                                   0FB3        STP40:
          0004'CF    28      D0    0FB3                        MOVL    #40,W^CURRENT_TC
                     00      DD    0FB8                        PUSHL   #0
          1385'CF    01      FB    0FBA                        CALLS   #1,W^REG_SAVE
      012D'CF    031E'CF     D0    0FBF  1289          MOVL    W^MBCHAN,W^QIOWP+QIOW$_CHAN       ; set the channel number
                                   0FC6  1290          $QIO_S  CHAN=W^MBCHAN,-
                                   0FC6  1291                  FUNC=#IO$_WRITEVBLK,-
                                   0FC6  1292                  P1  =W^TEST_DATA,-
                                   0FC6  1293                  P2  =#80                          ; set up the mailbox
                                   0FE9  1294          $QIOW_G W^QIOWP                           ; try _G with local EFN
```

```
                                  0FF2  1295        FAIL_CHECK SS$_NORMAL                         ; check for success
                     01   DD      0FF2                    PUSHL   #SS$_NORMAL
           138F'CF   01   FB      0FF4                    CALLS   #1,W^REG_CHECK
          00500001   8F   DD      0FF9  1296        PUSHL   #80@16!SS$_NORMAL[                    ; set expected IO status
           1287'CF   01   FB      0FFF  1297        CALLS   #1,W^BUF_CHECK                        ; check the data
0050 8F    00      01DB'CF   00   2C      1004  1298        MOVC5   #0,W^GETBUF+8,#0,#80,W^GETBUF+8 ; init the buffer
               01DB'CF            100D
                                  1010  1299  ;+
                                  1010  1300  ;
                                  1010  1301  ; test _S with common EFN
                                  1010  1302  ;
                                  1010  1303  ;-
                                  1010  1304        NEXT_TEST
                                  1010
                                  1010        STP41:
           0004'CF   29   D0      1010                    MOVL    #41,W^CURRENT_TC
                     00   DD      1015                    PUSHL   #0
           1385'CF   01   FB      1017                    CALLS   #1,W^REG_SAVE
                                  101C  1305        $QIO_S  CHAN=W^MBCHAN,-
                                  101C  1306                FUNC=#IO$_WRITEVBLK,-
                                  101C  1307                P1  =W^TEST_DATA,-
                                  101C  1308                P2  =#80                      ; set up mailbox
                                  103F  1309        $QIOW_S CHAN=W^MBCHAN,-
                                  103F  1310                EFN =#65,-
                                  103F  1311                FUNC=#IO$_READVBLK,-
                                  103F  1312                P1  =W^GETBUF+8,-
                                  103F  1313                P2  =#80                      ; try _S with common EFC
                                  1066  1314        FAIL_CHECK SS$_NORMAL                 ; check for success
                     01   DD      1066                    PUSHL   #SS$_NORMAL
           138F'CF   01   FB      1068                    CALLS   #1,W^REG_CHECK
          00500001   8F   DD      106D  1315        PUSHL   #80@16!SS$_NORMAL[                    ; set expected IO status
           1287'CF   01   FB      1073  1316        CALLS   #1,W^BUF_CHECK                        ; check the data
0050 8F    00      01DB'CF   00   2C      1078  1317        MOVC5   #0,W^GETBUF+8,#0,#80,W^GETBUF+8 ; init the buffer
               01DB'CF            1081
                                  1084  1318  ;+
                                  1084  1319  ;
                                  1084  1320  ; test _G with common EFC
                                  1084  1321  ;
                                  1084  1322  ;-
                                  1084  1323        NEXT_TEST
                                  1084
                                  1084        STP42:
           0004'CF   2A   D0      1084                    MOVL    #42,W^CURRENT_TC
                     00   DD      1089                    PUSHL   #0
           1385'CF   01   FB      108B                    CALLS   #1,W^REG_SAVE
      0129'CF   00000041   8F   D0      1090  1324        MOVL    #65,W^QIOWP+QIOW$_EFN                ; set EFN
           0131'CF   30   D0      1099  1325        MOVL    #IO$_WRITEVBLK,W^QIOWP+QIOW$_FUNC ; set function
     0141'CF      0250'CF   DE      109E  1326        MOVAL   W^TEST_DATA,W^QIOWP+QIOW$_P1     ; set new P1 parameter
                                  10A5  1327        $QIO_S  CHAN=W^MBCHAN,-
                                  1CA5  1328                FUNC=#IO$_READVBLK,-
                                  10A5  1329                P1  =W^GETBUF+8,-
                                  10A5  1330                P2  =#80                      ; set up mailbox
                                  10C8  1331        $QIOW_G W^QIOWP                       ; try _G with common EFN
                                  10D1  1332        FAIL_CHECK SS$_NORMAL                 ; check for success
                     01   DD      10D1                    PUSHL   #SS$_NORMAL
           138F'CF   01   FB      10D3                    CALLS   #1,W^REG_CHECK
          00500001   8F   DD      10D8  1333        PUSHL   #80@16!SS$_NORMAL[                    ; set expected IO status
          1287'CF    01    FB  10DE         CALLS   #1,W^BUF_CHECK                 ; check the data
                               10E3    ;+
                               10E3    ;
                               10E3    ; reset super mode handler to the original address and
                               10E3    ; dump any errors on the terminal that occured at AST disable time.
                               10E3    ;
                               10E3    ;-
                               10E3    CLEAN_UP:
                               10E3             $DLCEFC_S W^EFCNAM                    ; get rid of the cluster
                               10EE             $DASSGN_S CHAN=W^MBCHAN               ; waste the MBXp^/^
     0307'CF    0077'CF    DE  10FA             MOVAL   W^DCLCMH,W^SERV_NAME          ; set service name
                     02    BE  1101             CHMS    #2                            ; reset the CHMS handler
          1AF2'CF    00    FB  1103             CALLS #0,W^ERLBUF_DUMP                ; dump any errors
                               1108             TEST_END
                0044C'CF   DD  1108                     PUSHL   W^TMD_ADDR
                0048'CF    DD  110C                     PUSHL   W^TMN_ADDR
                     02    DD  1110                     PUSHL   #2
                0044'CF    DD  1112                     PUSHL   W^MOD_MSG_CODE
       00000000'GF   04    FB  1116                     CALLS   #$$T1,G^LIB$SIGNAL
 0044'CF    01    1C    01 F0  111D                     INSV    #1,#STS$V_INHIB_MSG,#1,W^MOD_MSG_CODE
                0044'CF    DD  1124                     PUSHL   W^MOD_MSG_CODE
       00000000'GF   01    FB  1128                     CALLS   #1,G^SYS$EXIT
```

```
112F  .SBTTL  ROUTINES
112F  .SBTTL SETUP_SUPER ROUTINE
112F  ;++
112F  ;
112F  ;          Routine to declare an initial CHMS handler from user mode.
112F  ;
112F  ; FUNCTIONAL DESCRIPTION:
112F  ;
112F  ; CALLING SEQUENCE:
112F  ;
112F  ;          $CMKRNL_S W^SETUP_SUPER,ARGLST
112F  ;
112F  ;                  ARGLST = address of a pointer to a one parameter argument list conta
112F  ;                           the address of the entry mask of the CHMS handler
112F  ;
112F  ; INPUT PARAMETERS:
112F  ;
112F  ;          ARGLST
112F  ;
112F  ; IMPLICIT INPUTS
112F  ;
112F  ;          NONE
112F  ;
112F  ; OUTPUT PARAMETERS:
112F  ;
112F  ;          Declares a change mode handler for super mode which must be
112F  ;          reset to DCL in the users handler routine when the handler is
112F  ;          no longer needed.
112F  ;
112F  ; IMPLICIT OUTPUTS:
112F  ;
112F  ;          NONE
112F  ;
112F  ; COMPLETION CODES:
112F  ;
112F  ;          NONE
112F  ;
112F  ; SIDE EFFECTS:
112F  ;
112F  ;          NONE
112F  ;
112F  ; ON ENTRY:
112F  ;                            ---------               ---------
112F  ;                   KSP => !    0    !       USP => !         !
112F  ;                          !    0    !              !  USER   !
112F  ;                          !   AP    !              !         !
112F  ;                          !   FP    !              !  CALL   !
112F  ;                          !   PC    !              !         !
112F  ;                          !    0    !              ! FRAME   !
112F  ;                          !    0    !              !         !
112F  ;                          !   AP    !               ---------
112F  ;                          !   FP    !
112F  ;                          !SRVEXIT  !
112F  ;                          !   PC    !
112F  ;                          !  PSL    !
112F  ;                            ---------
112F  ;--
```

```
                          112F  1407 RETURN_PC:
             00000000     112F  1408           .LONG    0                              ; storage for user return PC
                          1133  1409 HANDLER_PC:
             00000000     1133  1410           .LONG    0                              ; storage for handler PC
                          1137  1411 ;
                          1137  1412 SETUP_SUPER:
                    000C  1137  1413           .WORD    ^M<R2,R3>
        53    03      DB  1139  1414           MFPR     #PR$_USP,R3                    ; get the user call frame address
  EE AF     10 A3     D0  113C  1415           MOVL     SF$L_SAVE_PC(R3),B^RETURN_PC ; get the user return PC
  ED AF     04 AC     D0  1141  1416           MOVL     4(AP),HANDLER_PC             ; save the handler address
     52     0C AD     D0  1146  1417           MOVL     SF$L_SAVE_FP(FP),R2          ; get saved FP
        52     00'    C0  114A  1418           ADDL     S^#EXE$C_CMSTKSZ,R2          ; back over change mode stack frame
     62    5B'AF      9E  114D  1419           MOVAB    B^20$,(R2)                   ; set return address
              0A      F0  1151  1420           INSV     #<<PSL$C_SUPER@PSL$S_CURMOD>+PSL$C_SUPER>,-
              16          1153  1421                    #PSL$V_PRVMOD,-
     04 A2    04          1154  1422                    #PSL$S_CURMOD*2,4(R2)        ; set current and previous mode to super
        50    01      D0  1157  1423           MOVL     S^#SS$_NORMAL,R0             ; set correct return code
                      04  115A  1424           RET                                   ; enter super mode
                          115B  1425 20$:
              7E      D4  115B  1426           CLRL     -(SP)                          ; set up dummy PSL
     61'AF    6E      FA  115D  1427           CALLG    (SP),B^30$                     ; create initial call frame
                          1161  1428 30$:
                    0000  1161  1429           .WORD    ^M<>                           ; entry mask
              00      DD  1163  1430           PUSHL    #0                             ; push a dummy parameter
   1385'CF    01      FB  1165  1431           CALLS    #1,W^REG_SAVE                  ; save the registers
                          116A  1432           $DCLCMH_S @HANDLER_PC,W^PRVHND1,#0 ; set real handler
                          117A  1433           FAIL_CHECKNP SS$_NORMAL                 ; check for success
              01      DD  117A                          PUSHL    #SS$_NORMAL
   1A76'CF    01      FB  117C                          CALLS    #1,W^REG_CHECKNP
  03C00000 8F         DD  1181  1434           PUSHL    #<<PSL$C_USER@PS[$V_CURMOD>-
                          1187  1435                    !<PSL$C_USER@PSL$V_PRVMOD>>; set return to user
         A5 AF        DD  1187  1436           PUSHL    RETURN_PC                      ; set the return PC
                      02  118A  1437           REI                                   ; return to user mode
```

```
                                  118B  1439 .SBTTL SUPER_MODE
                                  118B  1440 ;++
                                  118B  1441 ; FUNCTIONAL DESCRIPTION:
                                  118B  1442 ;       Routine to handle the CHMS instructions.
                                  118B  1443 ;
                                  118B  1444 ; CALLING SEQUENCE:
                                  118B  1445 ;       CHMS    #N
                                  118B  1446 ;
                                  118B  1447 ; INPUT PARAMETERS:
                                  118B  1448 ;         SP=>  CHMS parameter
                                  118B  1449 ;               PC
                                  118B  1450 ;               PSL
                                  118B  1451 ;
                                  118B  1452 ;         The CHMS parameter can be one of the following:
                                  118B  1453 ;
                                  118B  1454 ;               1 = execute $ASSIGN and $DASSGN service tests
                                  118B  1455 ;               2 = execute a $DCLCMH_S to reset the CHMS handler to DCL
                                  118B  1456 ;               3 = execute $ALLOC and $DALLOC service tests
                                  118B  1457 ;
                                  118B  1458 ; OUTPUT PARAMETERS:
                                  118B  1459 ;       NONE
                                  118B  1460 ;--
                                  118B  1461
                                  118B  1462 SUPER_MODE:
                   50    8E    D0 118B  1463        MOVL    (SP)+,R0                        ; get CHM parameter off the stack
            03     01    50    8F 118E  1464        CASEB   R0,#1,#3                        ; do the right thing
                                  1192  1465 10$:
                           0006'  1192  1466        .WORD   20$-10$
                           0010'  1194  1467        .WORD   A30-10$
                           0031'  1196  1468        .WORD   A40-10$
                                  1198  1469 20$:
                         02    DD 1198  1470        PUSHL   #PSL$C_SUPER                    ; push the mode
            1BEF'CF      01    FB 119A  1471        CALLS   #1,W^ASSDAS_CHK                 ; do the tests
                       0028    31 119F  1472        BRW     A50                             ; get back to user mode
                                  11A2  1473 A30:
   0307'CF     0077'CF         DE 11A2  1474        MOVAL   W^DCLCMH,W^SERV_NAME            ; set service name pointer
                                  11A9  1475        $DCLCMH_S @PRVHND1,,#0                  ; reset the CHMS handler for DCL
                                  11BA  1476        FAIL_CHECK SS$_NORMAL                   ; check for success
                         01    DD 11BA                      PUSHL   #SS$_NORMAL
            138F'CF      01    FB 11BC                      CALLS   #1,W^REG_CHECK
                         07    11 11C1  1477        BRB     A50                             ; get back to user mode
                                  11C3  1478 A40:
                         02    DD 11C3  1479        PUSHL   #PSL$C_SUPER                    ; push the mode
            1B5C'CF      01    FB 11C5  1480        CALLS   #1,W^ALLDAL_CHK                 ; do the tests
                                  11CA  1481 A50:
                               02 11CA  1482        REI                                     ; return to user mode
```

```
                                 11CB          .SBTTL BUF_CHECK
                                 11CB  ;++
                                 11CB  ; FUNCTIONAL DESCRIPTION:
                                 11CB  ;       Routine to check the contents of a buffer against known good
                                 11CB  ;       data and check the IO status return.
                                 11CB  ;
                                 11CB  ; CALLING SEQUENCE:
                                 11CB  ;       PUSHL   #EXPECTED_IOSTATUS      ; set expected IO status
                                 11CB  ;       CALLS #1,W^BUF_CHECK            ; check buffer
                                 11CB  ;
                                 11CB  ; INPUT PARAMETERS:
                                 11CB  ;       R6 = buffer address
                                 11CB  ;       R7 = good data address
                                 11CB  ;       R8 = byte count
                                 11CB  ;       STAT = IO status #1
                                 11CB  ;       STAT1 = IO status #2
                                 11CB  ;
                                 11CB  ; OUTPUT PARAMETERS:
                                 11CB  ;       NONE
                                 11CB  ;
                                 11CB  ;--
                                 11CB
                                 11CB  DISK_BUF_CHECK:
                           0FFC  11CB          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
                                 11CD          $GETDVI_S CHAN = CHAN1,-        ; Get characteristics for our disk
                                 11CD                  ITMLST = DISK_ITMLST
          7E   0000037A'EF   B0  11EB          MOVW    PB+8+DIB$W_UNIT,-(SP)    ; Save old device unit number...
 0000037A'EF   00001283'EF   B0  11F2          MOVW    DISK_UNIT,PB+8+DIB$W_UNIT ; ...and substitute our own
               000002EB'EF   DD  11FD          PUSHL   ARGLST1                  ; Save ptr to old device name desc...
 000002EB'EF   00001227'EF   DE  1203          MOVAL   DISK_NAME,ARGLST1        ; ...and substitute our own
                     04 AC   DD  120E          PUSHL   4(AP)
      00001287'EF       01   FB  1211          CALLS   #1,BUF_CHECK             ; Check that we got good data
            000002EB'EF   8ED0   1218          POPL    ARGLST1                  ; Restore old device name desc...
      0000037A'EF      8E    B0  121F          MOVW    (SP)+,PB+8+DIB$W_UNIT    ; ...and unit number
                             04  1226          RET
                                 1227
                                 1227  DISK_ITMLST:                             ; ITMLST for $GETDVI
                                 1227  DISK_NAME:                               ; Note that this becomes desc for name
                      0020 0040  1227          .WORD   64,DVI$_DEVNAM           ; Our disk name
                      00001243'  122B          .ADDRESS DISK_NAME_BUF
                      00001227'  122F          .ADDRESS DISK_NAME               ; Note that we overwrite length!
                      000C 0004  1233          .WORD   4,DVI$_UNIT              ; The unit number of the spindle
                      00001283'  1237          .ADDRESS DISK_UNIT
                       00000000  123B          .LONG   0
                       00000000  123F          .LONG   0                        ; End of $GETDVI ITMLST
                                 1243
                                 1243  DISK_NAME_BUF:                           ; String giving our disk name
                       00001283  1243          .BLKB   64
                                 1283
                                 1283  DISK_UNIT:                               ; Unit number of the spindle
                       00001287  1283          .BLKB   4
                                 1287
                                 1287  BUF_CHECK:
                           03FC  1287          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9>
                  59    56   D0  1289          MOVL    R6,R9                         ; save a copy of the buffer address
         66       67    58   29  128C          CMPC3   R8,(R7),(R6)                  ; check the buffer
                        50   13  1290          BEQL    10$                           ; br if good
 02F3'CF.  53    59   C3  1292        SUBL3   R9,R3,W^ARGLST1+8               ; get buffer offset
 02EF'CF   037A'CF    3C  1298        MOVZWL  W^PB+DIB$W_UNIT+8,W^ARGLST1+4   ; get the unit number
    02F7'CF      61   9A  129F        MOVZBL  (R1),W^ARG[ST1+12               ; get the good data
    02FB'CF      63   9A  12A4        MOVZBL  (R3),W^ARGLST1+16               ; get the bad data
                          12A9        $GETMSG_S MSGID=#UETP$_DATAER,-
                          12A9                  MSGLEN=W^ML,-
                          12A9                  BUFADR=W^CTRSTR,-
                          12A9                  FLAGS =#1                     ; get the ctrstr
                          12C2        $FAOL_S W^CTRSTR,W^ML,W^GETBUF,W^ARGLST1 ; make it readable
        01CB'CF       DF  12D9        PUSHA[  W^ML                            ; push the desc. address
     13D1'CF     01   FB  12DD        CALLS #1,W^PRINT_FAIL                   ; print the failure
                          12E2   10$:
   0069'CF    04 AC   D1  12E2        CMPL    4(AP),W^STAT                    ; check status #1
                 06   13  12E8        BEQL    20$                             ; br if OK
        0069'CF       DD  12EA        PUSHL   W^STAT                          ; else save it
                 0C   11  12EE        BRB     30$                             ; and continue in common
                          12F0   20$:
   0071'CF    04 AC   D1  12F0        CMPL    4(AP),W^STAT1                   ; check IO status #2
                 10   13  12F6        BEQL    40$                             ; br if OK
        0071'CF       DD  12F8        PUSHL   W^STAT1                         ; else save it
                          12FC   30$:
              04 AC   DD  12FC        PUSHL   4(AP)                           ; save expected
        0182'CF       DF  12FF        PUSHAL  W^IOEXP                         ; push string variable
     13D1'CF     03   FB  1303        CALLS   #3,W^PRINT_FAIL                 ; print the failure
                          1308   40$:
                      04  1308        RET                                     ; return
```

```
                              1309        .SBTTL IONC
                              1309  ;++
                              1309  ; FUNCTIONAL DESCRIPTION:
                              1309  ;       AST routine to service IO AST's for the CANCEL service
                              1309  ;
                              1309  ; CALLING SEQUENCE:
                              1309  ;       Entered via an AST
                              1309  ;
                              1309  ; INPUT PARAMETERS:
                              1309  ;       STAT = CANCEL status return
                              1309  ;
                              1309  ; OUTPUT PARAMETERS:
                              1309  ;       NONE
                              1309  ;
                              1309  ;--
                              1309
                              1309  IONC:
                        03FC  1309        .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9>
         1B'AF    00      FB  130B        CALLS   #0,B^CAN_CHECK                  ; check the cancel
                              130F        $WAKE_S                                 ; tell the test to wake up!
                          04  131A        RET                                     ; return
                              131B        .SBTTL CAN_CHECK
                              131B  ;++
                              131B  ; FUNCTIONAL DESCRIPTION:
                              131B  ;       Routine to check the results of a CANCELLED IO.
                              131B  ;
                              131B  ; CALLING SEQUENCE:
                              131B  ;       CALLS #0,W^CAN_CHECK    ; check results
                              131B  ;
                              131B  ; INPUT PARAMETERS:
                              131B  ;       NONE
                              131B  ;
                              131B  ; OUTPUT PARAMETERS:
                              131B  ;       NONE
                              131B  ;
                              131B  ;--
                              131B
                              131B  CAN_CHECK:
                        03FC  131B        .WORD^M<R2,R3,R4,R5,R6,R7,R8,R9>
      2C   0071'CF        B1  131D        CMPW    W^STAT1,#SS$_ABORT              ; check IO status blk
                  0F      13  1322        BEQL    10$                             ; br if OK
           0071'CF        DD  1324        PUSHL   W^STAT1                         ; push received
                  2C      DD  1328        PUSHL   #SS$_ABORT                      ; push expected
           0174'CF        DF  132A        PUSHAL  W^EXP                           ; push string variable
      13D1'CF     03      FB  132E        CALLS   #3,W^PRINT_FAIL                 ; print the failure
                              1333  10$:
           0069'CF        D4  1333        CLRL    W^STAT                          ; setup for next CANCEL
                          04  1337        RET                                     ; return
```

```
                                  1338  1617          .SBTTL  COUNT_CHAN
                                  1338  1618  ;++
                                  1338  1619  ; FUNCTIONAL DESCRIPTION:
                                  1338  1620  ;       Routine to count the number of assigned channels.
                                  1338  1621  ;
                                  1338  1622  ; CALLING SEQUENCE:
                                  1338  1623  ;       CALLS #0,W^COUNT_CHAN    ; count the number of assigned channels
                                  1338  1624  ;
                                  1338  1625  ; INPUT PARAMETERS:
                                  1338  1626  ;       NONE
                                  1338  1627  ;
                                  1338  1628  ; OUTPUT PARAMETERS:
                                  1338  1629  ;       TOTAL_CHAN = count of all assigned channels
                                  1338  1630  ;
                                  1338  1631  ; -
                                  1338  1632
                                  1338  1633  TOTAL_CHAN:
                        00000000  1338  1634          .LONG   0                               ; assigned channel count
                                  133C  1635  COUNT_CHAN:
                            001C  133C  1636          .WORD   ^M<R2,R3,R4>
    52   09   00000000'EF     C1  133E  1637          ADDL3   CTL$GL_CCBBASE,#CCB$B_AMOD,R2   ; get base and offset to test assign
                    53   10   CE  1346  1638          MNEGL   #CCB$C_LENGTH,R3                ; set starting channel index
         54   00000000'9F     3C  1349  1639          MOVZWL  @#CTL$GW_NMIOCH,R4              ; get number of I/O channels
                 FFE4 CF      D4  1350  1640          CLRL    W^TOTAL_CHAN                    ; init the # of channels
                                  1354  1641  10$:
                      6243    95  1354  1642          TSTB    (R2)[R3]                        ; is channel assigned?
                        04    13  1357  1643          BEQL    20$                             ; br if not assigned
                 FFDB CF      D6  1359  1644          INCL    W^TOTAL_CHAN                    ; else bump chan count
                                  135D  1645  20$:
                    53   10   C2  135D  1646          SUBL2   #CCB$C_LENGTH,R3                ; calc next channel index
                     F1 54    F5  1360  1647          SOBGTR  R4,10$                          ; any more CCB's?
                              04  1363  1648          RET                                     ; return
                                  1364  1649          .SBTTL STORE_STEP
                                  1364  1650  ;++
                                  1364  1651  ; FUNCTIONAL DESCRIPTION:
                                  1364  1652  ;       Routine to store step information in the error log buffer.
                                  1364  1653  ;
                                  1364  1654  ; CALLING SEQUENCE:
                                  1364  1655  ;       CALLS #0,W^STORE_STEP
                                  1364  1656  ;
                                  1364  1657  ; INPUT PARAMETERS:
                                  1364  1658  ;       ELBP = current errlog buffer pointer
                                  1364  1659  ;
                                  1364  1660  ; OUTPUT PARAMETERS:
                                  1364  1661  ;       FLAG = error logged flag
                                  1364  1662  ;
                                  1364  1663  ;--
                                  1364  1664
                                  1364  1665  STORE_STEP:
                            0004  1364  1666          .WORD   ^M<R2>
       1495'CF      01        88  1366  1667          BISB2   #1,W^FLAG                       ; set the error logged flag
       52      1496'CF        D0  136B  1668          MOVL    W^ELBP,R2                       ; get errlog buf pntr
       82      0307'CF        D0  1370  1669          MOVL    W^SERV_NAME,(R2)+               ; save the service name
       82      0004'CF        D0  1375  1670          MOVL    W^CURRENT_TC,(R2)+              ; save the step number
       82      0159'CF        D0  137A  1671          MOVL    W^MODE,(R2)+                    ; save the mode
       1496'CF      52        D0  137F  1672          MOVL    R2,W^ELBP                       ; reset the errlog buf pntr
                              04  1384  1673          RET                                     ; return
```

```
                                1385          .SBTTL REG_SAVE
                                1385  ;++
                                1385  ; FUNCTIONAL DESCRIPTION:
                                1385          Subroutine to save R2-R11 in the register save location.
                                1385  ;
                                1385  ; CALLING SEQUENCE:
                                1385  ;       PUSHL   #0                 ; save a dummy parameter
                                1385  ;       CALLS   #1,W^REG_SAVE      ; save R2-R11
                                1385  ;
                                1385  ; INPUT PARAMETERS:
                                1385  ;       NONE
                                1385  ;
                                1385  ; OUTPUT PARAMETERS:
                                1385  ;       NONE
                                1385  ;
                                1385  ;--
                                1385
                                1385  REG_SAVE:
                          0FFC  1385          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
 0008'CF    14 AD    28     28  1387          MOVC3   #4*10,^X14(FP),W^REG_SAVE_AREA  ; save the registers in the program
                            04  138E          RET
                                138F          .SBTTL  REG_CHECK
                                138F  ;++
                                138F  ; FUNCTIONAL DESCRIPTION:
                                138F          Subroutine to test R0 & R2-R11 for proper content after a service
                                138F  ;       execution. A snapshot is taken by the REG_SAVE routine at the
                                138F  ;       beginning of each step and this routine is executed after the
                                138F  ;       services have been executed.
                                138F  ;
                                138F  ; CALLING SEQUENCE:
                                138F  ;       PUSHL   #SS$_XXXXXX        ; push expected R0 contents
                                138F  ;       CALLS   #1,W^REG_CHECK     ; execute this routine
                                138F  ;
                                138F  ; INPUT PARAMETERS:
                                138F  ;       expected R0 contents on the stack
                                138F  ;
                                138F  ; OUTPUT PARAMETERS:
                                138F  ;       possible error messages printed using $PUTMSG
                                138F  ;
                                138F  ;--
                                138F
                                138F  REG_CHECK:
                          0FFC  138F          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
            50    04 AC     D1  1391          CMPL    4(AP),R0                          ; is this the right fail code?
                     0E     13  1395          BEQL    10$                               ; br if yes
                     50     DD  1397          PUSHL   R0                                ; push received data
                  04 AC     DD  1399          PUSHL   4(AP)                             ; push expected data
                0174'CF     DF  139C          PUSHAL  W^EXP                             ; push the string variable
          13D1'CF    03     FB  13A0          CALLS   #3,W^PRINT_FAIL                   ; print the error message
                                13A5  10$:
 0008'CF    14 AD    28     29  13A5          CMPC3   #4*10,^X14(FP),W^REG_SAVE_AREA    ; check all but R0
                     22     13  13AC          BEQL    20$                               ; br if O.K.
    56   53   00000008'8F   C3  13AE          SUBL3   #REG_SAVE_AREA,R3,R6              ; calculate the register number
               56    04     C6  13B6          DIVL2   #4,R6
         7E    56    02     81  13B9          ADDB3   #^X2,R6,-(SP)                     ; set number past R0-R1 and save
               51    03     CA  13BD          BICL2   #3,R1                             ; backup to register boundrys
               53    03     CA  13C0          BICL2   #3,R3
```

```
                     61  DD  13C3  1732          PUSHL   (R1)                                  ; push received data
                     63  DD  13C5  1733          PUSHL   (R3)                                  ; push expected data
              015D'CF    DF  13C7  1734          PUSHAL  W^REG                                 ; set string pntr param.
        13D1'CF      04  FB  13CB  1735          CALLS   #4,W^PRINT_FAIL                       ; print the error message
                             13D0  1736 20$:
                         04  13D0  1737          RET
                             13D1  1738          .SBTTL  PRINT_FAIL
                             13D1  1739 ;++
                             13D1  1740 ; FUNCTIONAL DESCRIPTION:
                             13D1  1741 ;        Subroutine to report failures using $PUTMSG
                             13D1  1742 ;
                             13D1  1743 ; CALLING SEQUENCE:
                             13D1  1744 ; Mode  #1       PUSHL EXPECTED  Mode    #2      PUSHL REG_NUMBER
                             13D1  1745 ;                PUSHL RECEIVED                  PUSHL EXPECTED
                             13D1  1746 ;                PUSHAL STRING_VAR               PUSHL RECEIVED
                             13D1  1747 ;                CALLS #3,W^PRINT_FAIL           PUSHAL STRING_VAR
                             13D1  1748 ;                                                CALLS #4,W^PRINT_FAIL
                             13D1  1749 ; Mode  #3       PUSHAL STRING_VAR
                             13D1  1750 ;                CALLS #1,W^PRINT_FAIL
                             13D1  1751 ;
                             13D1  1752 ; INPUT PARAMETERS:
                             13D1  1753 ;        listed above
                             13D1  1754 ;
                             13D1  1755 ; OUTPUT PARAMETERS:
                             13D1  1756 ;        an error message is printed using $PUTMSG
                             13D1  1757 ;
                             13D1  1758 ;--
                             13D1  1759
                             13D1  1760 PRINT_FAIL:
                       003C  13D1  1761          .WORD   ^M<R2,R3,R4,R5>
                             13D3  1762          $FAO_S  W^CS1,W^MESSAGEL,W^MSGL,#TEST_MOD_NAME,W^SERV_NAME,W^CURRENT_TC
                             13F4  1763          $PUTMSG_S W^MSGVEC                            ; print the message
               04    6C  91  1405  1764          CMPB    (AP),#4                               ; is this a register message?
                     26  13  1408  1765          BEQL    10$                                   ; br if yes
               01    6C  91  140A  1766          CMPB    (AP),#1                               ; is this just a message?
                     48  13  140D  1767          BEQL    20$                                   ; br if yes
                             140F  1768          $FAO_S  W^CS2,W^MESSAGEL,W^MSGL,4(AP),8(AP),4(AP),12(AP)
                     40  11  142E  1769          BRB     30$                                   ; goto output message
                             1430  1770 10$:
                             1430  1771          $FAO_S  W^CS3,W^MESSAGEL,W^MSGL,4(AP),16(AP),8(AP),4(AP),16(AP),12(AP)
                     19  11  1455  1772          BRB     30$                                   ; goto output message
                             1457  1773 20$:
      0332'CF     04 AC  D0  1457  1774          MOVL    4(AP),W^MSGVEC1+12                    ; save string address
                             145D  1775          $PUTMSG_S W^MSGVEC1                           ; print the message
                     11  11  146E  1776          BRB     40$                                   ; skip the other message
                             1470  1777 30$:
                             1470  1778          $PUTMSG_S W^MSGVEC                            ; print the message
                             1481  1779 40$:
        1B2F'CF      00  FB  1481  1780          CALLS   #0,W^MODE_ID                          ; identify the mode
   004C'CF     002A'CF   DE  1486  1781          MOVAL   W^TEST_MOD_FAIL,W^TMD_ADDR            ; set failure message address
0044'CF    03    00  02  F0  148D  1782          INSV    #ERROR,#0,#3,W^MOD_MSG_CODE           ; set severity code
                         04  1494  1783          RET
```

```
                                  1495          .SBTTL REG_CHECKNP
                                  1495   ;++
                                  1495   ; FUNCTIONAL DESCRIPTION:
                                  1495   ;      Subroutine to test R0 & R2-R11 for proper content after a service
                                  1495   ;      execution without printing it. A snapshot is taken by the REG_SAVE routine a
                                  1495   ;      beginning of each step and this routine is executed after the
                                  1495   ;      services have been executed. This routine collects the error
                                  1495   ;      information in buffer ERLB instead of printing it.
                                  1495   ;
                                  1495   ; CALLING SEQUENCE:
                                  1495   ;      PUSHL   #SS$_XXXXXX     ; push expected R0 contents
                                  1495   ;      CALLS   #1,W^REG_CHECK  ; execute this routine
                                  1495   ;
                                  1495   ; INPUT PARAMETERS:
                                  1495   ;      expected R0 contents on the stack
                                  1495   ;
                                  1495   ; OUTPUT PARAMETERS:
                                  1495   ;      possible error messages logged in buffer ERLB which are printed
                                  1495   ;      using routine ERLBUF_DUMP.
                                  1495   ;
                                  1495   ;      Error packets are in the following form:
                                  1495   ;
                                  1495   ;              !-----------------!
                                  1495   ;              !Service name pntr!
                                  1495   ;              !-----------------!
                                  1495   ;              !     Step #      !
                                  1495   ;              !-----------------!
                                  1495   ;              !Mode name pointer!
                                  1495   ;              !-----------------!
                                  1495   ;              !           !     ! long word count
                                  1495   ;              !-----------------!
                                  1495   ;              !\/\/\/\/\/\/\/\/\! 3-4 parameter long words
                                  1495   ;
                                  1495   ;--
                                  1495
                                  1495   FLAG:
                          00      1495          .BYTE 0                 ; error flags are BIT0 = 0 means no errors in the bu
                                  1496                                  ;                 BIT0 = 1 means errors in the buffe
                                  1496   ELBP:
                    0000149A'     1496          .ADDRESS ERLB           ; error log buffer pointer
                                  149A   ERLB:
                    00001A76      149A          .BLKB   1500            ; error log buffer
                                  1A76   ;
                                  1A76   REG_CHECKNP:
                        0FFC      1A76          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
          50    04 AC   D1        1A78          CMPL    4(AP),R0        ; is this the right fail code
                   2E   13        1A7C          BEQL    10$             ; br if yes
        F8E1 CF    00   FB        1A7E          CALLS #0,W^STORE_STEP   ; store step information
        52   FA0F CF    D0        1A83          MOVL    ELBP,R2         ; get the current error log pointer
             82    03   90        1A88          MOVB    #3,(R2)+        ; save the long word count
             82    50   D0        1A8B          MOVL    R0,(R2)+        ; save received status
          82    04 AC   D0        1A8E          MOVL    4(AP),(R2)+     ; save expected status
        82   0174'CF    DE        1A92          MOVAL   W^EXP,(R2)+     ; save the string variable
                   62   D4        1A97          CLRL    (R2)            ; set the terminator
        F9F8 CF    52   D0        1A99          MOVL    R2,ELBP         ; reset the buffer pointer
     004C'CF   002A'CF  DE        1A9E          MOVAL   W^TEST_MOD_FAIL,W^TMD_ADDR ; set failure message address
0044'CF   03   00   02  F0        1AA5          INSV    #ERROR,#0,#3,W^MOD_MSG_CODE ; set severity code
```

```
                                1AAC   1843 10$:
 0008'CF    14 AD    28    29   1AAC   1844          CMPC3   #4*10,^X14(FP),W^REG_SAVE_AREA ; check all but R0 and R1
                     3C    13   1AB3   1845          BEQL    20$                ; br if OK
        F8AA CF      00    FB   1AB5   1846          CALLS #0,W^STORE_STEP      ; store step information
        52   F9D8 CF       D0   1ABA   1847          MOVL    ELBP,R2            ; get current error log buf pointer
             82      04    90   1ABF   1848          MOVB    S^#4,(R2)+         ; set longword count
         00000008'8F       C3   1AC2   1849          SUBL3   #REG_SAVE_AREA,-
             56      53         1AC8   1850          R3,R6                      ; calc reg number
             56      04    C6   1ACA   1851          DIVL2   S^#4,R6            ; make it a longword count
        82   56      02    C1   1ACD   1852          ADDL3   S^#2,R6,(R2)+      ; correct for R0-R1 and save
             82      61    D0   1AD1   1853          MOVL    (R1),(R2)+         ; save received results
             82      63    D0   1AD4   1854          MOVL    (R3),(R2)+         ; save expected results
        82   015D'CF       DE   1AD7   1855          MOVAL   W^REG,(R2)+        ; save string variable
                     62    D4   1ADC   1856          CLRL    (R2)               ; set the terminator
        F9B3 CF      52    D0   1ADE   1857          MOVL    R2,ELBP            ; reset the buffer pointer
   004C'CF   002A'CF       DE   1AE3   1858          MOVAL   W^TEST_MOD_FAIL,W^TMD_ADDR      ; set failure message address
0044'CF  03  00      02    F0   1AEA   1859          INSV    #ERROR,#0,#3,W^MOD_MSG_CODE     ; set severity code
                                1AF1   1860 20$:
                           04   1AF1   1861          RET                        ; bail out
```

```
                                   1AF2  1863         .SBTTL  ERLBUF_DUMP
                                   1AF2  1864 ;++
                                   1AF2  1865 ; FUNCTIONAL DESCRIPTION:
                                   1AF2  1866 ;       Routine to check for errors in the error log buffer and
                                   1AF2  1867 ;       report any that are there.
                                   1AF2  1868 ;
                                   1AF2  1869 ; CALLING SEQUENCE:
                                   1AF2  1870 ;       CALLS #0,W^ERLBUF_DUMP
                                   1AF2  1871 ;
                                   1AF2  1872 ; INPUT PARAMETERS:
                                   1AF2  1873 ;       FLAG bit 0 = 0 for no errors logged
                                   1AF2  1874 ;       FLAG bit 0 = 1 for errors logged
                                   1AF2  1875 ;       if errors logged then buffer ERLB must contain legal format errors
                                   1AF2  1876 ;
                                   1AF2  1877 ; OUTPUT PARAMETERS:
                                   1AF2  1878 ;       NONE
                                   1AF2  1879 ;
                                   1AF2  1880 ;--
                                   1AF2  1881
                                   1AF2  1882 ERLBUF_DUMP:
                             001C  1AF2  1883         .WORD   ^M<R2,R3,R4>
           2A F99D CF          E9  1AF4  1884         BLBC    FLAG,30$            ; br if no errors to report
        52    F99D CF          DE  1AF9  1885         MOVAL   ERLB,R2             ; set up buffer pointer
                                   1AFE  1886 10$:
                        62     D5  1AFE  1887         TSTL    (R2)                ; any more errors?
                        21     13  1B00  1888         BEQL    30$                 ; br if not
             0307'CF    82     D0  1B02  1889         MOVL    (R2)+,W^SERV_NAME   ; reset service name
             0004'CF    82     D0  1B07  1890         MOVL    (R2)+,W^CURRENT_TC  ; reset step #
             0159'CF    82     D0  1B0C  1891         MOVL    (R2)+,W^MODE        ; reset the mode
                  53    82     9A  1B11  1892         MOVZBL  (R2)+,R3            ; get the longword count
                  54    53     D0  1B14  1893         MOVL    R3,R4               ; and save it
                                   1B17  1894 20$:
                        82     DD  1B17  1895         PUSHL   (R2)+               ; push a parameter
                     FB 53     F5  1B19  1896         SOBGTR  R3,20$              ; and push them all
             F8B0 CF    54     FB  1B1C  1897         CALLS   R4,W^PRINT_FAIL     ; print the failure
                        DB     11  1B21  1898         BRB     10$                 ; do the next one
                                   1B23  1899 30$:
    F96C CF     F973 CF        DE  1B23  1900         MOVAL   W^ERLB,W^ELBP       ; reset the buffer pointer
                F96C CF        D4  1B2A  1901         CLRL    W^ERLB              ; set fresh terminater
                               04  1B2E  1902         RET                         ; bail out
```

```
                      1B2F  1905          .SBTTL  MODE_ID
                      1B2F  1906 ;++
                      1B2F  1907 ; FUNCTIONAL DESCRIPTION:
                      1B2F  1908 ;        Subroutine to identify the mode that an exit handler is in.
                      1B2F  1909 ;
                      1B2F  1910 ; CALLING SEQUENCE:
                      1B2F  1911 ;        CALLS   #0,W^MODE_ID
                      1B2F  1912 ;
                      1B2F  1913 ; INPUT PARAMETERS:
                      1B2F  1914 ;        MODE contains an address pointing to an ascii string desc.
                      1B2F  1915 ;        of the current CPU mode.
                      1B2F  1916 ;
                      1B2F  1917 ; OUTPUT PARAMETERS:
                      1B2F  1918 ;        NONE
                      1B2F  1919 ;
                      1B2F  1920 ;--
                      1B2F  1921
                      1B2F  1922 MODE_ID:
                003C  1B2F  1923          .WORD   ^M<R2,R3,R4,R5>
                      1B31  1924          $FAO_S  W^CS5,W^MESSAGEL,W^MSGL,MODE ; format the error message
                      1B4A  1925          $PUTMSG_S W^MSGVEC               ; print the mode message
                  04  1B5B  1926          RET
                      1B5C  1927 ;
                      1B5C  1928          .SBTTL  ALLDAL_CHK
                      1B5C  1929 ;++
                      1B5C  1930 ; FUNCTIONAL DESCRIPTION:
                      1B5C  1931 ;        Subroutine to do the $ALLOC and $DALLOC tests
                      1B5C  1932 ;
                      1B5C  1933 ; CALLING SEQUENCE:
                      1B5C  1934 ;        PUSHL   #ACCESS_MODE
                      1B5C  1935 ;        CALLS   #1,W^ALLDAL_CHK
                      1B5C  1936 ;
                      1B5C  1937 ; INPUT PARAMETERS:
                      1B5C  1938 ;        4(AP) = the access mode for the test
                      1B5C  1939 ;
                      1B5C  1940 ; OUTPUT PARAMETERS:
                      1B5C  1941 ;        NONE
                      1B5C  1942 ;
                      1B5C  1943 ;--
                      1B5C  1944
                      1B5C  1945 ALLDAL_CHK:
                003C  1B5C  1946          .WORD   ^M<R2,R3,R4,R5>
             00   DD  1B5E  1947          PUSHL   #0                       ; push a dummy parameter
    F820 CF  01   FB  1B60  1948          CALLS   #1,W^REG_SAVE            ; save a register snapshot
                      1B65  1949          $ALLOC_S DEVNAM=@^MBNAM,-
                      1B65  1950                   PHYLEN=W^ML,-
                      1B65  1951                   PHYBUF=W^GETBUF,-
                      1B65  1952                   ACMODE=4(AP)            ; try  S mode
                      1B7D  1953          FAIL_CHECKNP SS$_NORMAL          ; check for success
             01   DD  1B7D                        PUSHL   #SS$_NORMAL
    FEF2 CF  01   FB  1B7F                        CALLS   #1,W^REG_CHECKNP
  009D'CF   04 AC  D0  1B84  1954          MOVL    4(AP),W^ALLO+ALLOC$_ACMODE ; set the new access mode
                      1B8A  1955          $ALLOC_G W^ALLO                  ; try  G mode
                      1B93  1956          FAIL_CHECKNP SS$_DEVALRALLOC     ; check for proper failure
      00000641 8F  DD  1B93                        PUSHL   #SS$_DEVALRALLOC
    FED8 CF  01   FB  1B99                        CALLS   #1,W^REG_CHECKNP
0307'CF   004C'CF  DE  1B9E  1957          MOVAL   W^DALLOC,W^SERV_NAME     ; set new service name
```

```
                          1BA5  1958          $DALLOC_S DEVNAM=W^MBNAM,-
                          1BA5  1959                  ACMODE=4(AP)              ; try _S mode
                          1BB3  1960          FAIL_CHECKNP SS$_NORMAL           ; check for success
                  01  DD  1BB3                        PUSHL   #SS$_NORMAL
      FEBC CF     01  FB  1BB5                        CALLS   #1,W^REG_CHECKNP
 0307'CF    0038'CF   DE  1BBA  1961          MOVAL W^A_LOC,W^SERV_NAME         ; set new service name
                          1BC1  1962          $ALLOC_G W^ALLO                   ; try successful _G form
                          1BCA  1963          FAIL_CHECKNP SS$_NORMAL           ; check for success
                  01  DD  1BCA                        PUSHL   #SS$_NORMAL
      FEA5 CF     01  FB  1BCC                        CALLS   #1,W^REG_CHECKNP
 0307'CF    004C'CF   DE  1BD1  1964          MOVAL   W^DALLOC,W^SERV_NAME      ; set new service name
   00BD'CF     04 AC  D0  1BD8  1965          MOVL    4(AP),W^DALL+DALLOC$_ACMODE ; set new access mode
                          1BDE  1966          $DALLOC_G W^DALL                  ; try _G mode
                          1BE7  1967          FAIL_CHECKNP SS$_NORMAL           ; check for success
                  01  DD  1BE7                        PUSHL   #SS$_NORMAL
      FE88 CF     01  FB  1BE9                        CALLS   #1,W^REG_CHECKNP
                      04  1BEE  1968          RET                               ; return
                          1BEF  1969 ;
                          1BEF  1970          .SBTTL  ASSDAS_CHK
                          1BEF  1971 ;++
                          1BEF  1972 ; FUNCTIONAL DESCRIPTION:
                          1BEF  1973 ;        Subroutine to do the $ASSIGN and $DASSGN tests
                          1BEF  1974 ;
                          1BEF  1975 ; CALLING SEQUENCE:
                          1BEF  1976 ;        PUSHL   #ACCESS_MODE
                          1BEF  1977 ;        CALLS   #1,W^ASSDAS_CHK
                          1BEF  1978 ;
                          1BEF  1979 ; INPUT PARAMETERS:
                          1BEF  1980 ;        4(AP) = the access mode for the test
                          1BEF  1981 ;        CHAN_SAVE = correct number of channels
                          1BEF  1982 ;
                          1BEF  1983 ; OUTPUT PARAMETERS:
                          1BEF  1984 ;        NONE
                          1BEF  1985 ;
                          1BEF  1986 ;--
                          1BEF  1987
                          1BEF  1988 ASSDAS_CHK:
                    003C  1BEF  1989          .WORD   ^M<R2,R3,R4,R5>
                  00  DD  1BF1  1990          PUSHL   #0                        ; push a dummy parameter
      F78D CF     01  FB  1BF3  1991          CALLS   #1,W^REG_SAVE             ; save a register snapshot
                          1BF8  1992          $CREMBX_S CHAN=W^MBCHAN,-
                          1BF8  1993                  LOGNAM=W^MBNAM,-
                          1BF8  1994                  PRMFLG=#0,-
                          1BF8  1995                  ACMODE=#PSL$C_USER        ; create temp mailbox
                          1C0F  1996          $ASSIGN_S DEVNAM=W^MBNAM,-
                          1C0F  1997                  CHAN  =W^CHAN1,-
                          1C0F  1998                  ACMODE=4(AP)              ; try _S mode
                          1C23  1999          FAIL_CHECKNP SS$_NORMAL           ; check success
                  01  DD  1C23                        PUSHL   #SS$_NORMAL
      FE4C CF     01  FB  1C25                        CALLS   #1,W^REG_CHECKNP
   0085'CF     04 AC  D0  1C2A  2000          MOVL    4(AP),W^ASGN+ASSIGN$_ACMODE ; set the new mode
                          1C30  2001          $ASSIGN_G W^ASGN                  ; try the _G form
                          1C39  2002          FAIL_CHECKNP SS$_NORMAL           ; check success
                  01  DD  1C39                        PUSHL   #SS$_NORMAL
      FE36 CF     01  FB  1C3B                        CALLS   #1,W^REG_CHECKNP
 0307'CF    0045'CF   DE  1C40  2003          MOVAL   W^DASSGN,W^SERV_NAME      ; set service name
                          1C47  2004          $DASSGN_S CHAN=W^CHAN1            ; release channel
```

```
                                1C53  2005         FAIL_CHECKNP SS$_NORMAL          ; check success
                     01   DD    1C53                       PUSHL   #SS$_NORMAL
          FE1C CF    01   FB    1C55                       CALLS   #1,W^REG_CHECKNP
     00B1'CF    0322'CF   D0    1C5A  2006         MOVL    W^CHAN2,W^DASS+DASSGN$_CHAN ; set channel number
                                1C61  2007         $DASSGN_G W^DASS                 ; try _G form
                                1C6A  2008         FAIL_CHECKNP SS$_NORMAL          ; check success
                     01   DD    1C6A                       PUSHL   #SS$_NORMAL
          FE05 CF    01   FB    1C6C                       CALLS   #1,W^REG_CHECKNP
                                1C71  2009         $DASSGN_S CHAN=W^MBCHAN          ; get rid of the mailbox
                                1C7D  2010         FAIL_CHECKNP SS$_NORMAL          ; check success
                     01   DD    1C7D                       PUSHL   #SS$_NORMAL
          FDF2 CF    01   FB    1C7F                       CALLS   #1,W^REG_CHECKNP
                0320'CF   B5    1C84  2011         TSTW    W^CHAN1                  ; is there a channel #1
                     06   13    1C88  2012         BEQL    10$                      ; br if error
                0322'CF   B5    1C8A  2013         TSTW    W^CHAN2                  ; is there a channel #2
                     20   12    1C8E  2014         BNEQ    20$                      ; br if no error
                                1C90  2015 10$:
     0307'CF    0031'CF   DE    1C90  2016         MOVAL   W^ASSIGN,W^SERV_NAME     ; set service name
          F6C8 CF    00   FB    1C97  2017         CALLS   #0,W^STORE_STEP          ; save the step information
          52    F7F6 CF   D0    1C9C  2018         MOVL    W^ELBP,R2                ; get error log buf pntr
                82   01   90    1CA1  2019         MOVB    #1,(R2)+                 ; save longword count
          82    0139'CF   DE    1CA4  2020         MOVAL   W^CS4,(R2)+              ; save string variable
                     62   D4    1CA9  2021         CLRL    (R2)                     ; set new terminator
          F7E6 CF    52   D0    1CAB  2022         MOVL    R2,W^ELBP                ; reset the buffer pointer
                                1CB0  2023 20$:
          F687 CF    00   FB    1CB0  2024         CALLS   #0,W^COUNT_CHAN          ; check the number of assigned channels
     0324'CF    F67F CF   D1    1CB5  2025         CMPL    W^TOTAL_CHAN,W^CHAN_SAVE ; correct # of channels?
                     2A   13    1CBC  2026         BEQL    30$                      ; br if OK
     0307'CF    0045'CF   DE    1CBE  2027         MOVAL   W^DASSGN,W^SERV_NAME     ; set service name
          F69A CF    00   FB    1CC5  2028         CALLS   #0,W^STORE_STEP          ; save the step information
          52    F7C8 CF   D0    1CCA  2029         MOVL    W^ELBP,R2                ; get error log buf pointer
                82   03   90    1CCF  2030         MOVB    #3,(R2)+                 ; save long word count
          82    F662 CF   3C    1CD2  2031         MOVZWL  W^TOTAL_CHAN,(R2)+       ; save the received count
          82    0324'CF   D0    1CD7  2032         MOVL    W^CHAN_SAVE,(R2)+        ; save expected count
          82    01B8'CF   DE    1CDC  2033         MOVAL   W^IOCC,(R2)+             ; save string variable
                     62   D4    1CE1  2034         CLRL    (R2)                     ; set a new terminator
          F7AE CF    52   D0    1CE3  2035         MOVL    R2,W^ELBP                ; reset buffer pointer
                                1CE8  2036 30$:
                          04    1CE8  2037         RET                              ; return
```

```
                        1CE9  MOD_MSG_PRINT:
                        1CE9  ;
                        1CE9  ;    ****************************************************************
                        1CE9  ;    *                                                              *
                        1CE9  ;    *  PRINTS THE TEST MODULE BEGUN/SUCCESSFUL/FAILED MESSAGES     *
                        1CE9  ;    *      (USING THE PUTMSG MACRO).                               *
                        1CE9  ;    *                                                              *
                        1CE9  ;    ****************************************************************
                        1CE9  ;
                        1CE9          PUTMSG  <MOD_MSG_CODE,#2,TMN_ADDR,TMD_ADDR> ; PRINT MSG
                   05   1D04          RSB                                 ; ... AND RETURN TO CALLER
                        1D05  ;
                        1D05  CHMRTN:
                        1D05  ; ******************************************************************
                        1D05  ; *                                                                *
                        1D05  ; *     CHANGE MODE ROUTINE. THIS ROUTINE GETS CONTROL WHENEVER    *
                        1D05  ; *     A CMKRNL, CMEXEC, OR CMSUP SYSTEM SERVICE IS ISSUED        *
                        1D05  ; *     BY THE MODE MACRO ('TO' OPTION).  IT MERELY DOES           *
                        1D05  ; *     A JUMP INDIRECT ON A FIELD SET UP BY MODE. IT HAS          *
                        1D05  ; *     THE EFFECT OF RETURNING TO THE END OF THE MODE             *
                        1D05  ; *     MACRO EXPANSION.                                           *
                        1D05  ; *                                                                *
                        1D05  ; ******************************************************************
                        1D05  ;
                 0000   1D05          .WORD   0                           ; ENTRY MASK
     00000059'FF   17   1D07          JMP     @CHM_CONT                   ; RETURN TO MODE MACRO IN NEW MODE
                        1D0D  ;
                        1D0D  ; *     RET INSTR WILL BE ISSUED IN EXPANSION OF 'MODE FROM, ....' MACRO
                        1D0D  ;
                        1D0D          .END    SATSSS01
```

```
$$ARGS                = 0000000C              CTL$GW_NMIOCH           ********    X  04
$$T1                  = 00000004              CTRSTR                  0000025F R     03
$$T2                  = 00000004              CURRENT_TC              00000004 R     03
A                     = 00000084              DALL                    000000B5 R     03
A30                     000011A2 R     04     DALLOC                  0000004C R     02
A40                     000011C3 R     04     DALLOC$_ACMODE        = 00000008
A50                     000011CA R     04     DALLOC$_DEVNAM        = 00000004
ALLDAL_CHK              00001B5C R     04     DALLOC$_NARGS         = 00000002
ALLO                    0000008D R     03     DASS                    000000AD R     03
ALLOC                   00000038 R     02     DASSGN                  00000045 R     02
ALLOC$_ACMODE         = 00000010              DASSGN$_CHAN          = 00000004
ALLOC$_DEVNAM         = 00000004              DASSGN$_NARGS         = 00000001
ALLOC$_FLAGS          = 00000014              DC$_MAI[BOX           = 000000A0
ALLOC$_NARGS          = 00000005              DCLCMH                  00000077 R     02
ALLOC$_PHYBUF         = 0000000C              DEV$M_AVL             = 00040000
ALLOC$_PHYLEN         = 00000008              DEV$M_IDV             = 04000000
ARGLST                  000002D4 R     02     DEV$M_MBX             = 00100000
ARGLST1                 000002EB R     03     DEV$M_ODV             = 08000000
ASGN                    00000079 R     03     DEV$M_REC             = 00000001
ASSDAS_CHK              00001BEF R     04     DEV$M_SHR             = 00010000
ASSIGN                  00000031 R     02     DIB$K_LENGTH          = 00000074
ASSIGN$_ACMODE        = 0000000C              DIB$W_UNIT            = 0000000C
ASSIGN$_CHAN          = 00000008              DISAL[                  000001A5 R     02
ASSIGN$_DEVNAM        = 00000004              DISK                    00000097 R     02
ASSIGN$_MBXNAM        = 00000010              DISK_BUF_CHECK          000011CB R     04
ASSIGN$_NARGS         = 00000004              DISK_ITM[ST             00001227 R     04
AST1                    000008CD R     04     DISK_NAME               00001227 R     04
AST2                    000008F0 R     04     DISK_NAME_BUF           00001243 R     04
AST3                    0000097F R     04     DISK_UNIT               00001283 R     04
AST4                    00000A3A R     04     DOT_DIR_SEMI            000004C4 R     03
ASTEXP                  00000193 R     02     DOT_DIR_SEMI_LENGTH   = 00000006
ATR                     0000048F R     03     DT$_MBX               = 00000001
ATR$C_ASCNAME         = 00000010              DVI$_DEVNAM           = 00000020
ATR$S_ASCNAME         = 00000056              DVI$_UNIT             = 0000000C
BUF                     0000017B R     03     EFCNAM                  00000241 R     02
BUF_CHECK               00001287 R     04     ELBP                    00001496 R     04
CANC                    000000A5 R     03     EM                      00000217 R     02
CANCEL                  0000003E R     02     ERLB                    0000149A R     04
CANCEL$_CHAN          = 00000004              ERLBUF_DUMP             00001AF2 R     04
CANCEL$_NARGS         = 00000001              ERROR                 = 00000002
CAN_CHECK               0000131B R     04     EXE$C_CMSTKSZ           ********    X  04
CCB$B_AMOD            = 00000009              EXP                     00000174 R     02
CCB$C_LENGTH          = 00000010              FIB                     00000466 R     03
CHAN1                   00000320 R     03     FIB$L_ACCTL           = 00000000
CHAN2                   00000322 R     03     FIB$L_EXSZ            = 00000018
CHAN_SAVE               00000324 R     03     FIB$L_EXVBN           = 0000001C
CHMRTN                  00001D05 R     04     FIB$L_LOC_ADDR        = 00000028
CHM_CONT                00000059 R     03     FIB$L_WCC             = 00000010
CLEAN_UP                000010E3 R     04     FIB$M_ALCON           = 00000001
COUNT_CHAN              0000133C R     04     FIB$M_EXTEND          = 00000080
CS1                     000000A7 R     02     FIB$M_FILCON          = 00000004
CS2                     000000D9 R     02     FIB$M_NOREAD          = 00000400
CS3                     00000106 R     02     FIB$M_NOWRITE         = 00000001
CS4                     00000139 R     02     FIB$M_SUPERSEDE       = 00000400
CS5                     0000015F R     02     FIB$M_WRITE           = 00000100
CTL$GL_CCBBASE          ********    X  04     FIB$W_DID             = 0000000A
CTL$GL_PHD              ********    X  04     FIB$W_EXCTL           = 00000016
```

```
FIB$W_FID       = 00000004              MFD_FILE_ID     = 00040004
FIB$W_FID_RVN   = 00000008              ML                000001CB R      03
FIB$W_NMCTL     = 00000014              MODE              00000159 R      03
FIBDES            0000045E R      03    MODE_ID           00001B2F R      04
FIBSIZE         = 00000029              MOD_MSG_CODE      00000044 R      03
FILENAME          0000049B R      03    MOD_MSG_PRINT     00001CE9 R      04
FILNOTMOD         000001CB R      02    MSGC              00000173 R      03
FLAG              00001495 R      04    MSGVEC            000002DC R      02
GETBUF            000001D3 R      03    MSGVEC1           00000326 R      03
GETC              000000C1 R      03    NEXT              00000913 R      04
GETCHN            00000059 R      02    NEXT1             000009C4 R      04
GETCHN$_CHAN    = 00000004              NEXT2             00000A86 R      04
GETCHN$_NARGS   = 00000005              OUTPUT            00000067 R      02
GETCHN$_PRIBUF  = 0000000C              PB                00000366 R      03
GETCHN$_PRILEN  = 00000008              PHD$Q_PRIVMSK   = 00000000
GETCHN$_SCDBUF  = 00000014              PL                0000035E R      03
GETCHN$_SCDLEN  = 00000010              PR$_USP         = 00000003
GETD              000000D9 R      03    PRINT_FAIL        000013D1 R      04
GETDEV            00000060 R      02    PRIVMASK          00000051 R      03
GETDEV$_DEVNAM  = 00000004              PRIV_ARGS       = 00000002
GETDEV$_NARGS   = 00000005              PRV$V_SYSPRV    = 0000001C
GETDEV$_PRIBUF  = 0000000C              PRVHND1           0000030B R      03
GETDEV$_PRILEN  = 00000008              PRVPRT            00000050 R      03
GETDEV$_SCDBUF  = 00000014              PSL$C_EXEC      = 00000001
GETDEV$_SCDLEN  = 00000010              PSL$C_KERNEL    = 00000000
HANDLER_PC        00001133 R      04    PSL$C_SUPER     = 00000002
INFO            = 00000003              PSL$C_USER      = 00000003
INPUT             00000053 R      02    PSL$S_CURMOD    = 00000002
IO$M_ACCESS     = 00000040              PSL$V_CURMOD    = 00000018
IO$M_CREATE     = 00000080              PSL$V_PRVMOD    = 00000016
IO$M_DELETE     = 00000100              QIO               0000006E R      02
IO$M_READATTN   = 00000080              QIO$_ASTADR     = 00000014
IO$M_WRTATTN    = 00000100              QIO$_ASTPRM     = 00000018
IO$_ACCESS      = 00000032              QIO$_CHAN       = 00000008
IO$_CREATE      = 00000033              QIO$_EFN        = 00000004
IO$_DEACCESS    = 00000034              QIO$_FUNC       = 0000000C
IO$_DELETE      = 00000035              QIO$_IOSB       = 00000010
IO$_MODIFY      = 00000036              QIO$_NARGS      = 0000000C
IO$_READLBLK    = 00000021              QIO$_P1         = 0000001C
IO$_READPBLK    = 0000000C              QIO$_P2         = 00000020
IO$_READVBLK    = 00000031              QIO$_P3         = 00000024
IO$_SETMODE     = 00000023              QIO$_P4         = 00000028
IO$_WRITELBLK   = 00000020              QIO$_P5         = 0000002C
IO$_WRITEOF     = 00000028              QIO$_P6         = 00000030
IO$_WRITEPBLK   = 0000000B              QIOP              000000F1 R      03
IO$_WRITEVBLK   = 00000030              QIOW              00000072 R      02
IOCC              000001B8 R      02    QIOW$_ASTADR    = 00000014
IOEXP             00000182 R      02    QIOW$_ASTPRM    = 00000018
IONC              00001309 R      04    QIOW$_CHAN      = 00000008
KM                00000228 R      02    QIOW$_EFN       = 00000004
LIB$SIGNAL        ********   X    04    QIOW$_FUNC      = 0000000C
MBA               00000236 R      02    QIOW$_IOSB      = 00000010
MBCHAN            0000031E R      03    QIOW$_NARGS     = 0000000C
MBNAM             0000030F R      03    QIOW$_P1        = 0000001C
MB_CHAR_SIZE    = 00000028              QIOW$_P2        = 00000020
MB_DEV_CHAR       00000336 R      03    QIOW$_P3        = 00000024
MESSAGEL          000002FF R      03    QIOW$_P4        = 00000028
```

```
QIOW$_P5              = 0000002C                 STP3                    00000108 R     04
QIOW$_P6              = 00000030                 STP30                   000009C4 R     04
QIOWP                   00000125 R      03       STP31                   00000A3C R     04
REG                     0000015D R      03       STP32                   00000A86 R     04
REGNUM                  0000016F R      03       STP33                   00000B0B R     04
REG_CHECK               0000138F R      04       STP34                   00000C1A R     04
REG_CHECKNP             00001A76 R      04       STP35                   00000CFE R     04
REG_SAVE                00001385 R      04       STP36                   00000DA7 R     04
REG_SAVE_AREA           00000008 R      03       STP37                   00000E45 R     04
RENAST                  0000007E R      02       STP38                   00000EB7 R     04
RETADR                  0000005D R      03       STP39                   00000F20 R     04
RETURN_PC               0000112F R      04       STP4                    0000014E R     04
SATSSS01                00000000 RG     04       STP40                   00000FB3 R     04
SB                      000003E2 R      03       STP41                   00001010 R     04
SERV_NAME               00000307 R      03       STP42                   00001084 R     04
SETUP_SUPER             00001137 R      04       STP5                    00000197 R     04
SEVERE                = 00000004                 STP6                    000001B3 R     04
SF$L_SAVE_FP          = 0000000C                 STP7                    000001E5 R     04
SF$L_SAVE_PC          = 00000010                 STP8                    00000240 R     04
SHR$K_SHRDEF          = 00000001                 STP9                    000002A9 R     04
SHR$_TEXT             = 00001130                 STS$V_INHIB_MSG       = 0000001C
SL                      00000362 R      03       SUCCESS               = 00000001
SM                      0000020A R      02       SUPER_MODE              0000118B R     04
SS$_ABORT             = 0000002C                 SYS$ALLOC               ********   GX  04
SS$_DEVALRALLOC       = 00000641                 SYS$ASCEFC              ********   GX  04
SS$_ENDOFFILE         = 00000870                 SYS$ASSIGN              ********   GX  04
SS$_NORMAL            = 00000001                 SYS$CANCEL              ********   GX  04
SS$_NOSUCHDEV         = 00000908                 SYS$CMEXEC              ********   GX  04
SS$_NOTRAN            = 00000629                 SYS$CMKRNL              ********   GX  04
STAT                    00000069 R      03       SYS$CREMBX              ********   GX  04
STAT1                   00000071 R      03       SYS$DALLOC              ********   GX  04
STATUS                  00000065 R      03       SYS$DASSGN              ********   GX  04
STEP                  = 0000002A                 SYS$DCLCMH              ********   GX  04
STORE_STEP              00001364 R      04       SYS$DELMBX              ********   GX  04
STP0                    0000003D R      04       SYS$DLCEFC              ********   GX  04
STP1                    000000AF R      04       SYS$EXIT                ********   GX  04
STP10                   000002DC R      04       SYS$FAO                 ********    X  04
STP11                   00000312 R      04       SYS$FAOL                ********   GX  04
STP12                   0000035C R      04       SYS$GETCHN              ********   GX  04
STP13                   000003FE R      04       SYS$GETDEV              ********   GX  04
STP14                   0000044C R      04       SYS$GETDVI              ********   GX  04
STP15                   000004B3 R      04       SYS$GETMSG              ********   GX  04
STP16                   000004E2 R      04       SYS$HIBER               ********   GX  04
STP17                   0000056C R      04       SYS$PUTMSG              ********   GX  04
STP18                   000005DC R      04       SYS$QIO                 ********   GX  04
STP19                   00000679 R      04       SYS$QIOW                ********   GX  04
STP2                    000000D0 R      04       SYS$SETAST              ********   GX  04
STP20                   000006F9 R      04       SYS$SETPRN              ********   GX  04
STP21                   00000734 R      04       SYS$SETPRV              ********   GX  04
STP22                   00000778 R      04       SYS$TRNLOG              ********   GX  04
STP23                   000007B0 R      04       SYS$WAITFR              ********   GX  04
STP24                   00000816 R      04       SYS$WAKE                ********   GX  04
STP25                   00000860 R      04       SYSTEST_DIR             000004AF R     03
STP26                   000008CF R      04       TEST_DATA               00000250 R     02
STP27                   000008F2 R      04       TEST_MOD_BEGIN          00000019 R     02
STP28                   00000913 R      04       TEST_MOD_FAIL           0000002A R     02
STP29                   00000981 R      04       TEST_MOD_NAME           00000000 R     02
```

```
TEST_MOD_NAME_D                 00000009 R     02
TEST_MOD_SUCC                   0000001F R     02
TMD_ADDR                        0000004C R     03
TMN_ADDR                        00000048 R     03
TOPSYS                          000004D2 R     03
TOPSYS_DIR                      000004E4 R     03
TOTAL_CHAN                      00001338 R     04
TPID                            00000000 R     03
UETP$_DATAER                  = 00748010
UETP$_SATSMS                  = 007480D9
UETP$_TEXT                    = 00741133
UM                              000001FE R     02
WARNING                       = 00000000

                                               +----------------+
                                               ! Psect synopsis !
                                               +----------------+

PSECT name                     Allocation          PSECT No.  Attributes
----------                     ----------          ---------  ----------
.  ABS  .                      00000000  (     0.)  00 (  0.)  NOPIC    USR    CON    ABS    LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
$ABS$                          00000000  (     0.)  01 (  1.)  NOPIC    USR    CON    ABS    LCL NOSHR   EXE   RD     WRT NOVEC BYTE
RODATA                         000002EC  (   748.)  02 (  2.)  NOPIC    USR    CON    REL    LCL NOSHR NOEXE   RD   NOWRT NOVEC LONG
RWDATA                         000004FB  (  1275.)  03 (  3.)  NOPIC    USR    CON    REL    LCL NOSHR NOEXE   RD     WRT NOVEC LONG
SATSSS01                       00001D0D  (  7437.)  04 (  4.)  NOPIC    USR    CON    REL    LCL NOSHR   EXE   RD     WRT NOVEC LONG

                                            +------------------------+
                                            ! Performance indicators !
                                            +------------------------+

Phase                        Page faults    CPU Time       Elapsed Time
-----                        -----------    --------       ------------
Initialization                        33    00:00:00.09    00:00:00.48
Command processing                   112    00:00:00.63    00:00:01.54
Pass 1                              1286    00:00:34.12    00:01:00.91
Symbol table sort                      0    00:00:03.70    00:00:04.43
Pass 2                               846    00:00:08.61    00:00:10.90
Symbol table output                   18    00:00:00.28    00:00:00.78
Psect synopsis output                  3    00:00:00.03    00:00:00.04
Cross-reference output                 0    00:00:00.00    00:00:00.00
Assembler run totals                2301    00:00:47.47    00:01:19.09

The working set limit was 1800 pages.
210140 bytes (411 pages) of virtual memory were used to buffer the intermediate code.
There were 120 pages of symbol table space allocated to hold 2297 non-local and 50 local symbols.
2069 source lines were read in Pass 1, producing 48 object records in Pass 2.
105 pages of virtual memory were used to define 100 macros.
```

```
                                         +---------------------------+
                                         ! Macro library statistics !
                                         +---------------------------+

Macro library name                        Macros defined
------------------                        --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2                     82
_$255$DUA28:[SHRLIB]UETP.MLB;1                        13
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                         2
_$255$DUA28:[SYSLIB]STARLET.MLB;2                      0
TOTALS (all libraries)                                97

2752 GETS were required to define 97 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:SATSSS01/OBJ=OBJ$:SATSSS01 MSRC$:SATSSS01/UPDATE=(ENH$:SATSSS01)+EXECML$/LIB+SHRLIB$:UETP/LIB
```

0421 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
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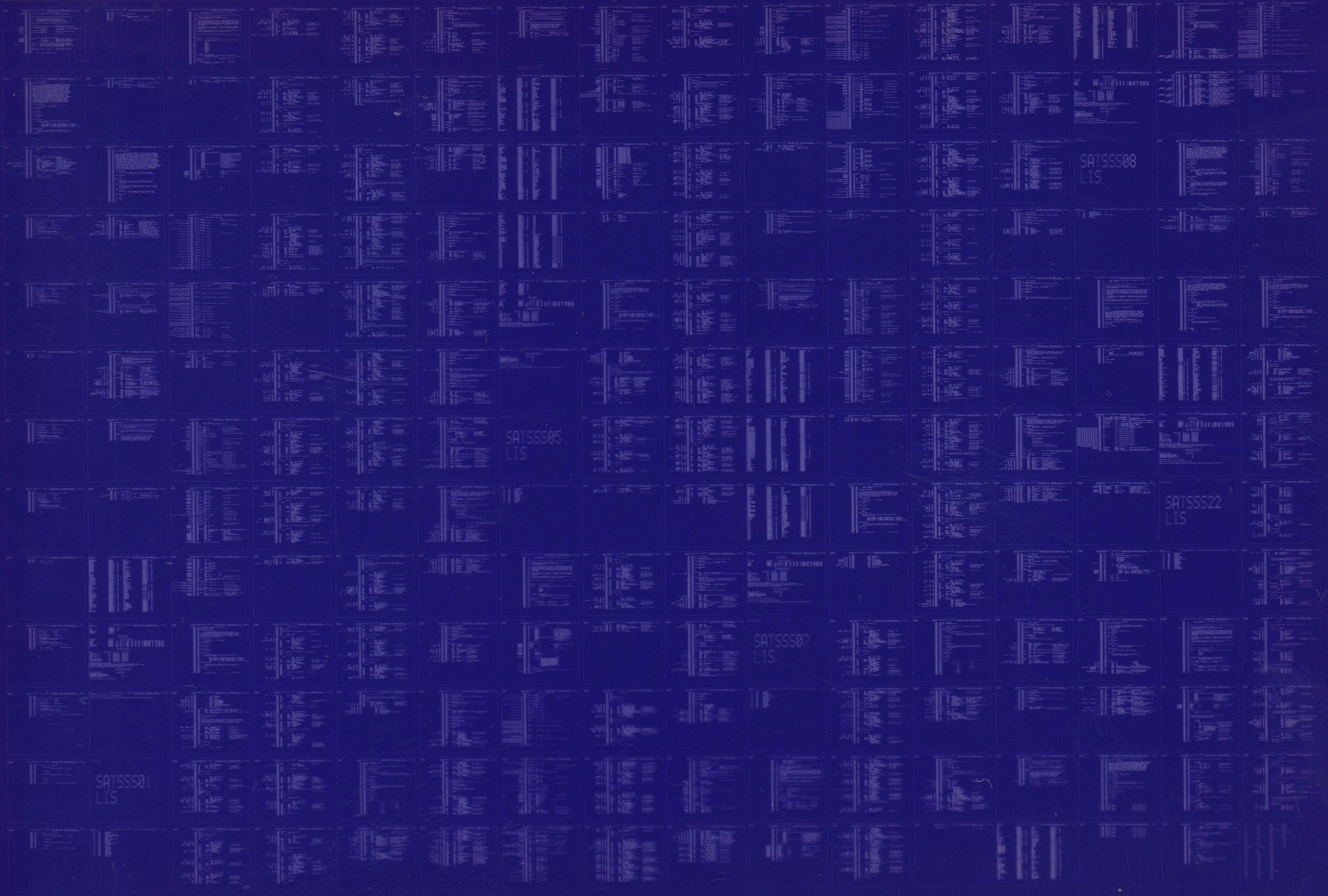

SATSSS08
LIS

SATSSS05
LIS

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