F 13

```
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
```

```
_$

Va
--
00
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48
7F
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```

```
**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
```

SAT
V04

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     64           .SBTTL  DECLARATIONS
                          0000     65   ;
                          0000     66   ; MACRO LIBRARY CALLS
                          0000     67   ;
                          0000     68           .LIBRARY /SYS$LIBRARY:STARLET.MLB/
                          0000     69           $ATRDEF                         ; attribute control block definitions
                          0000     70           $CCBDEF                         ; channel control block definitions
                          0000     71           $DCDEF                          ; device characteristics definitions
                          0000     72           $DEVDEF                         ; device definitions
                          0000     73           $DIBDEF                         ; device information block definitions
                          0000     74           $DVIDEF                         ; $GETDVI definitions
                          0000     75           $FIBDEF                         ; file information block definitions
                          0000     76           $PHDDEF                         ; process header offset definitions
                          0000     77           $PRDEF                          ; processor register definitions
                          0000     78           $PRVDEF                         ; privilege definitions
                          0000     79           $PSLDEF                         ; PSL definitions
                          0000     80           $SHR_MESSAGES UETP,116,<<TEXT,INFO>> ; UETP$_TEXT definition
                          0000     81           $SFDEF                          ; stack frame definitions
                          0000     82           $SSDEF                          ; system status code definitions
                          0000     83           $STSDEF                         ; STS definitions
                          0000     84           $UETPDEF                        ; UETP message definitions
                          0000     85   ;
                          0000     86   ; Equated symbols
                          0000     87   ;
                00000000  0000     88   WARNING         = 0                     ; warning severity value for msgs
                00000001  0000     89   SUCCESS         = 1                     ; success       ''      ''    ''  ''
                00000002  0000     90   ERROR           = 2                     ; error         ''      ''    ''  ''
                00000003  0000     91   INFO            = 3                     ; information   ''      ''    ''  ''
                00000004  0000     92   SEVERE          = 4                     ; fatal         ''      ''    ''  ''
                          0000     93   ;
                00040004  0000     94   MFD_FILE_ID     = <4@16>+4              ; MFD ID
                          0000     95   ;
                          0000     96   ; MACROS
                          0000     97   ;
```

```
                                     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\
                                      020A   163 SM:
      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    188 ;
                               02EC    189             .SBTTL  R/W PSECT
                           00000000    190             .PSECT  RWDATA,RD,WRT,NOEXE,LONG
                               0000    191 ;
                               0000    192 TPID:
                      00000000 0000    193             .LONG   0                       ; PID for this process
                               0004    194 CURRENT_TC:
                      00000000 0004    195             .LONG   0                       ; ptr to current test case
                               0008    196             .ALIGN LONG                     ; put it on a long word boundry
                               0008    197 REG_SAVE_AREA:
                      00000044 0008    198             .BLKL   15                      ; register save area
                               0044    199 MOD_MSG_CODE:
                      007480D9 0044    200             .LONG   UETP$_SATSMS            ; test module message code for putmsg
                               0048    201 TMN_ADDR:
                     00000000' 0048    202             .ADDRESS TEST_MOD_NAME
                               004C    203 TMD_ADDR:
                     00000019' 004C    204             .ADDRESS TEST_MOD_BEGIN
                               0050    205 PRVPRT:
                            00 0050    206             .BYTE   0                       ; protection return byte for SETPRT
                               0051    207 PRIVMASK:
             00000000 00000000 0051    208             .QUAD   0                       ; priv. mask
                               0059    209 CHM_CONT:
                      00000000 0059    210             .LONG   0                       ; change mode continue address
                               005D    211 RETADR:
                      00000065 005D    212             .BLKL   2                       ; returned address's from SETPRT
                               0065    213 STATUS:
                      00000000 0065    214             .LONG   0
                               0069    215 STAT:
                      00000071 0069    216             .BLKL   2                       ; IO status blk's
                               0071    217 STAT1:
                      00000079 0071    218             .BLKL   2
                               0079    219 ASGN:
                               0079    220             $ASSIGN MBNAM,CHAN2,PSL$C_USER,0 ; ASSIGN parameter list
                               008D    221 ALLO:
                               008D    222             $ALLOC MBNAM,ML,GETBUF,PSL$C_USER ; ALLOC parameter list
                               00A5    223 CANC:
                               00A5    224             $CANCEL MBCHAN                  ; CANCEL parameter list
                               00AD    225 DASS:
                               00AD    226             $DASSGN 0                       ; DASSGN parameter list
                               00B5    227 DALL:
                               00B5    228             $DALLOC MBNAM,PSL$C_USER        ; DALLOC parameter list
                               00C1    229 GETC:
                               00C1    230             $GETCHN 0,PL,PB,SL,SB           ; GETCHN parameter list
                               00D9    231 GETD:
                               00D9    232             $GETDEV MBNAM,PL,PB,SL,SB       ; GETDEV parameter list
                               00F1    233 QIOP:
                               00F1    234             $QIO    31,CHAN1,IO$_READVBLK,STAT1,0,0,GETBUF+8,80,0,0,0,0 ; QIO parameter'
                               0125    235 QIOWP:
                               0125    236             $QIOW   31,MBCHAN,IO$_READVBLK,STAT1,0,0,GETBUF+8,80,0,0,0,0 ; QIOW param's
                               0159    237 MODE:
                      00000000 0159    238             .LONG   0                       ; current mode string pointer
                               015D    239 REG:
74 73 69 67 65 72 00000165'010E0000' 015D    240       .ASCID  \register R\
                   52 20 72 65 016B
                               016F    241 REGNUM:
                      00000000 016F    242             .LONG   0                       ; register number
                               0173    243 MSGL:
```

```
                       00000050  0173   244              .LONG   80                              ; buffer desc.
                       0000017B' 0177   245              .ADDRESS BUF
                                 017B   246 BUF:
                       000001CB  017B   247              .BLKB   80
                                 01CB   248 ML:
                       00000000  01CB   249              .LONG   0                               ; desc. for BUF_CHECK routine
                       000001DB' 01CF   250              .ADDRESS GETBUF+8
                                 01D3   251 GETBUF:
                       00000084  01D3   252              .LONG   132                             ; same as above
                       000001DB' 01D7   253              .ADDRESS .+4
                       0000025F  01DB   254              .BLKB   132
                                 025F   255 CTRSTR:
                       00000084  025F   256              .LONG   132                             ; same as above
                       00000267' 0263   257              .ADDRESS .+4
                       000002EB  0267   258              .BLKB   132
                                 02EB   259 ARGLST1:                                             ; argument list for BUF_CHECK
                       00000236' 02EB   260              .ADDRESS MBA
                       000002FF  02EF   261              .BLKL   4
                                 02FF   262 MESSAGEL:
                       00000000  02FF   263              .LONG   0                               ; message desc.
                       0000017B' 0303   264              .ADDRESS BUF
                                 0307   265 SERV_NAME:
                       00000000  0307   266              .LONG   0                               ; service name pointer
                                 030B   267 PRVHND1:
                       00000000  030B   268              .LONG   0                               ; previous handler address 1
                                 030F   269 MBNAM:
4D 24 50 54 45 55 00000317'010E0000' 030F   270          .ASCID  /UETP$MB/                       ; logical name for mailbox
                              42 031D
                                 031E   271 MBCHAN:
                           0000  031E   272              .WORD   0                               ; mailbox channel number
                                 0320   273 CHAN1:
                           0000  0320   274              .WORD   0                               ; utility channel numbers
                                 0322   275 CHAN2:
                           0000  0322   276              .WORD   0
                                 0324   277 CHAN_SAVE:
                           0000  0324   278              .WORD   0                               ; channel count save location
                                 0326   279 MSGVEC1:                                             ; PUTMSG message vector
                       00000003  0326   280              .LONG   3
                       00741133  032A   281              .LONG   UETP$_TEXT
                       00000001  032E   282              .LONG   1
                       00000000  0332   283              .LONG   0
                                 0336   284 MB_DEV_CHAR:
                       0C150001  0336   285              .LONG   DEV$M_SHR!DEV$M_REC!DEV$M_AVL!DEV$M_IDV!DEV$M_ODV!DEV$M_MBX ;device
                             A0  033A   286              .BYTE   DC$_MAILBOX                     ; device class
                             01  033B   287              .BYTE   DT$_MBX                         ; device type
                           0100  033C   288              .WORD   256                             ; buffer size
                       00000000  033E   289              .LONG   0                               ; device dependent info.
                      0024 0000  0342   290              .WORD   0,36                            ; unit # & device name offset
                       00000000  0346   291              .LONG   0                               ; PID
                       00010007  034A   292              .LONG   ^X10007                         ; owner UIC
                       00000000  034E   293              .LONG   0                               ; volume protection & error cnt
                       00000000  0352   294              .LONG   0                               ; operation count
                       00000000  0356   295              .LONG   0                               ; volume name offset & record size
                   41 42 4D 00'  035A   296              .ASCIC  /MBA/                           ; device name
                             03  035A
                       00000028  035E   297              MB_CHAR_SIZE=.-MB_DEV_CHAR
                                 035E   298 PL:
```

```
                   00000000  035E                  .LONG   0
                             0362        SL:
                   00000000  0362                  .LONG   0
                             0366        PB:
                   00000074  0366                  .LONG   DIB$K_LENGTH
                   0000036E' 036A                  .ADDRESS .+4
                   000003E2  036E                  .BLKB   DIB$K_LENGTH
                             03E2        SB:
                   00000074  03E2                  .LONG   DIB$K_LENGTH
                   000003EA' 03E6                  .ADDRESS .+4
                   0000045E  03EA                  .BLKB   DIB$K_LENGTH
                             045E        FIBDES:
                   00000029' 045E                  .LONG   FIBSIZE                     ; file information block desc.
                   00000466' 0462                  .ADDRESS FIB
                             0466        FIB:
                   00000000  0466                  .LONG   0               ; ACCTL
                   00000470  046A                  .BLKW   3               ; FID
                   00040004  0470                  .LONG   MFD_FILE_ID     ; DID
                   0000048F  0474                  .BLKB   27                          ; leave room for add in fields
                   00000029  048F                 FIBSIZE=.-FIB                        ; set FIB size
                             048F        ATR:
                  0010 0056  048F                  .WORD   ATR$S_ASCNAME,ATR$C_ASCNAME ; attributes control block
                   000004E4' 0493                  .ADDRESS TOPSYS_DIR
                   00000000  0497                  .LONG   0
                             049B        FILENAME:
54 53 54 4F 49 51 000004A3'010E0000' 049B          .ASCID  /QIOTST.DAT;1/              ; qio test file name
          31 3B 54 41 44 2E  04A9
                             04AF        SYSTEST_DIR:
53 45 54 53 59 53 000004B7'010E0000' 04AF          .ASCID  /SYSTEST.DIR;1/             ; SYSTEST directory name
       31 3B 52 49 44 2E 54  04BD
                             04C4        DOT_DIR_SEMI:                                 ; Concatenates with TOPSYS_DIR
31 3B 52 49 44 2E 000004CC'010E0000' 04C4          .ASCID  /.DIR;1/
                   00000006  04D2        DOT_DIR_SEMI_LENGTH = .-DOT_DIR_SEMI-8        ; Length of ASCII string
                             04D2        TOPSYS:                                       ; Logical name of any top level...
4F 54 24 53 59 53 000004DA'010E0000' 04D2          .ASCID  /SYS$TOPSYS/                ; ...system directory name
                53 59 53 50  04E0
                             04E4        TOPSYS_DIR:                                   ; Receives file name of top level...
                   0000000F  04E4                  .LONG   9+DOT_DIR_SEMI_LENGTH       ; ...system directory...
                   000004EC' 04E8                  .ADDRESS .+4                        ; ...and gets converted to...
                   000004FB  04EC                  .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          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            MOVAL   W^ASSIGN,W^SERV_NAME            ; set service name
0159'CF   020A'CF    DE  00C2            MOVAL   W^SM,W^MODE                     ; set the mode
              01    BE  00C9            CHMS    #1                              ; do the super tests
      1AF2'CF    00    FB  00CB            CALLS   #0,W^ERLBUF_DUMP                ; dump any errors
                        00D0      ;+
                        00D0      ;
                        00D0      ; test exec mode
                        00D0      ;
                        00D0      ;-
                        00D0            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            MOVAL   W^EM,W^MODE                     ; set the mode
0307'CF   0031'CF    DE  00E3            MOVAL   W^ASSIGN,W^SERV_NAME            ; set service name
                        00EA            $CMEXEC_S B^10$                         ; get thee to exec mode
            000A   31  00F6            BRW     20$
                        00F9      10$:
            0000       00F9            .WORD   0
              01    DD  00FB            PUSHL   #PSL$C_EXEC                     ; push the access mode
      1BEF'CF    01    FB  00FD            CALLS   #1,W^ASSDAS_CHK                 ; do the assign/dassgn tests
              04       0102            RET                                     ; return to user
                        0103      20$:
      1AF2'CF    00    FB  0103            CALLS   #0,W^ERLBUF_DUMP                ; dump any errors
                        0108      ;+
                        0108      ;
                        0108      ; test kernel mode
                        0108      ;
                        0108      ;-
                        0108            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            MOVAL   W^ASSIGN,W^SERV_NAME            ; set service name
0159'CF   0228'CF    DE  011B            MOVAL   W^KM,W^MODE                     ; set the mode
0307'CF   0031'CF    DE  0122            MOVAL   W^ASSIGN,W^SERV_NAME            ; set service name
                        0129            $CMKRNL_S B^10$
            000A   31  0135            BRW     20$                             ; skip the routine
                        0138      10$:
            0000       0138            .WORD   0
              00    DD  013A            PUSHL   #PSL$C_KERNEL                   ; push the access mode
      1BEF'CF    01    FB  013C            CALLS   #1,W^ASSDAS_CHK                 ; do the assign/dassgn tests
                        0141
              04       0141            RET                                     ; return to user mode
                        0142      20$:
      1AF2'CF    00    FB  0142            CALLS #0,W^ERLBUF_DUMP                  ; report any errors
0159'CF   01FE'CF    DE  0147            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^A[LDAL_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$_READVBLK,@^QIOP+QIO$_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           .SBTTL INPUT AND OUTPUT TESTS
                             04E2   ;+
                             04E2   ;
                             04E2   ; $INPUT and $OUTPUT tests
                             04E2   ;
                             04E2   ; try $OUTPUT with small transfer and a local EFN
                             04E2   ;
                             04E2   ;-
                             04E2           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           MOVAL   W^OUTPUT,W^SERV_NAME            ; set service name
    0159'CF   01FE'CF    DE  04F5           MOVAL   W^UM,W^MODE                     ; set the mode
                             04FC           $QIO_S  CHAN=W^MBCHAN,-
                             04FC                   FUNC=#IO$_READVBLK,-
                             04FC                   P1  =W^GETBUF+8,-
                             04FC                   P2  =#1                         ; let the output finish
                             051D           $OUTPUT CHAN=W^MBCHAN,-
                             051D                   LENGTH=#1,-
                             051D                   BUFFER=W^TEST_DATA,-
                             051D                   IOSB=W^STAT,-
                             051D                   EFN=#2                          ; try output,small, & local EFN
                             0540           FAIL_CHECK SS$_NORMAL                   ; check for success
                   01    DD  0540                   PUSHL   #SS$_NORMAL
         138F'CF   01    FB  0542                   CALLS   #1,W^REG_CHECK
         56   01DB'CF    DE  0547           MOVAL   W^GETBUF+8,R6                   ; set input address
         57   0250'CF    DE  054C           MOVAL   W^TEST_DATA,R7                  ; set good data address
              58   01    D0  0551           MOVL    #1,R8                           ; set the byte count
0071'CF   00010001 8F    D0  0554           MOVL    #1@16!SS$_NORMAL,W^STAT1        ; set dummy status
          00010001 8F    DD  055D           PUSHL   #1@16!SS$_NORMAL                ; set expected IO status
         1287'CF   01    FB  0563           CALLS   #1,W^BUF_CHECK                  ; check the results
              01DB'CF    D4  0568           CLRL    W^GETBUF+8                      ; init the buffer
                             056C   ;+
                             056C   ;
                             056C   ; test $INPUT with small transfer and local EFN
                             056C   ;
                             056C   ;-
                             056C           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           MOVAL   W^INPUT,W^SERV_NAME             ; set service name
                             057F           $QIO_S  CHAN=W^MBCHAN,-
                             057F                   FUNC=#IO$_WRITEVBLK,-
                             057F                   P1  =W^TEST_DATA,-
                             057F                   P2  =#1                         ; put data there to read
                             059E           $INPUT  CHAN=W^MBCHAN,-
                             059E                   LENGTH=#1,-
                             059E                   BUFFER=W^GETBUF+8,-
                             059E                   IOSB=W^STAT,-
                             059E                   EFN=#2                          ; try input,small, & local EFN
                             05BF           FAIL_CHECK SS$_NORMAL                   ; check for success
```

```
                          01   DD  05BF                     PUSHL   #SS$_NORMAL
                 138F'CF  01   FB  05C1                     CALLS   #1,W^REG_CHECK
                00010001  8F   DD  05C6           PUSHL   #1@16!SS$_NORMAL              ; set expected IO status
                 1287'CF  01   FB  05CC           CALLS #1,W^BUF_CHECK                  ; check transfered data
                   01DB'CF     D4  05D1           CLRL    W^GETBUF+8                    ; init the buffer
         58     00000084  8F   D0  05D5           MOVL    #132,R8                       ; set new byte count
                               05DC      ;+
                               05DC      ;
                               05DC      ; test $OUTPUT with large transfer and common EFN
                               05DC      ;
                               05DC      ;-
                               05DC                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           MOVAL   W^OUTPUT,W^SERV_NAME          ; set service name
                                   05EF           $ASCEFC_S #65,W^EFCNAM                ; make EFN 65
                                   0604           $QIO_S  CHAN=W^MBCHAN,-
                                   0604                   FUNC=#IO$_READVBLK,-
                                   0604                   P1  =W^GETBUF+8,-
                                   0604                   P2  =#132                     ; let the $OUTPUT complete
                                   0627           $OUTPUT CHAN=W^MBCHAN,-
                                   0627                   LENGTH=#132,-
                                   0627                   BUFFER=W^TEST_DATA,-
                                   0627                   IOSB=W^STAT,-
                                   0627                   EFN=#65                       ; try output, large with common EFN
                                   0652           FAIL_CHECK SS$_NORMAL                 ; check for success
                          01   DD  0652                     PUSHL   #SS$_NORMAL
                 138F'CF  01   FB  0654                     CALLS   #1,W^REG_CHECK
      0071'CF   00840001  8F   D0  0659           MOVL    #132@16!SS$_NORMAL,W^STAT1    ; set dummy status
                00840001  8F   DD  0662           PUSHL   #132@16!SS$_NORMAL            ; set expected IO status
                 1287'CF  01   FB  0668           CALLS   #1,W^BUF_CHECK                ; check the buffer
 0084 8F   00    01DB'CF  00   2C  066D           MOVC5   #0,W^GETBUF+8,#0,#132,W^GETBUF+8 ; init the buffer
                 01DB'CF           0676
                                   0679      ;+
                                   0679      ;
                                   0679      ; test $INPUT with large transfer and common EFN
                                   0679      ;
                                   0679      ;-
                                   0679           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           MOVAL   W^INPUT,W^SERV_NAME           ; set service name
                                   068C           $QIO_S  CHAN=W^MBCHAN,=
                                   068C                   FUNC=#IO$_WRITEVBLK,-
                                   068C                   P1  =W^TEST_DATA,-
                                   068C                   P2  =#132                     ; put data out to read
                                   06AF           $INPUT  CHAN=W^MBCHAN,-
                                   06AF                   LENGTH=#132,-
                                   06AF                   BUFFER=W^GETBUF+8,-
                                   06AF                   IOSB=W^STAT,-
                                   06AF                   EFN=#65                       ; try input, large with common EFN
                                   06D8   766         FAIL_CHECK SS$_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           .SBTTL  QIO TESTS
                            06F6   ;+
                            06F6   ;
                            06F6   ; $QIO tests
                            06F6   ;
                            06F6   ; test local EFN = 3, IO$_WRITEVBLK, _S, 1 byte transfer
                            06F6   ;
                            06F6   ;-
            58   01   D0   06F6           MOVL    #1,R8                                      ; set byte count
                            06F9           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           MOVAL   W^QIO,W^SERV_NAME                          ; set service name
                            070C           $QIO_S  EFN =#3,-
                            070C                   CHAN=W^MBCHAN,-
                            070C                   FUNC=#IO$_WRITEVBLK,-
                            070C                   IOSB=W^STAT,-
                            070C                   P1  =W^TEST_DATA,-
                            070C                   P2  =#1                                    ; try _S local bc = 1 writevblk
                            072D           FAIL_CHECK SS$_NORMAL                              ; check success
                 01   DD   072D                        PUSHL   #SS$_NORMAL
       138F'CF   01   FB   072F                        CALLS   #1,W^REG_CHECK
                            0734   ;+
                            0734   ;
                            0734   ; test local EFN = 31, IO$_READVBLK, _G, 1 byte transfer
                            0734   ;
                            0734   ;-
                            0734           NEXT_TEST
                            0734
                            0734   STP21:
       0004'CF   15   D0   0734                        MOVL    #21,W^CURRENT_TC
                 00   DD   0739                        PUSHL   #0
       1385'CF   01   FB   073B                        CALLS   #1,W^REG_SAVE
          0105'CF     D4   0740           CLRL    W^QIOP+QIO$_ASTADR                         ; disable AST's
                            0744           $QIO_G  W^QIOP                                     ; try _G local bc = 1 readvblk
                            074D           FAIL_CHECK SS$_NORMAL                              ; check success
                 01   DD   074D                        PUSHL   #SS$_NORMAL
       138F'CF   01   FB   074F                        CALLS   #1,W^REG_CHECK
                            0754           $WAITFR_S EFN=#3                                   ; wait for the writevblk
                            075D           $WAITFR_S EFN=#31                                  ; wait for the readvblk
       00010001 8F    DD   0766           PUSHL   #1@16!SS$_NORMAL                           ; set expected IO status
       1287'CF   01   FB   076C           CALLS   #1,W^BUF_CHECK                             ; check the results
          01DB'CF     D4   0771           CLRL    W^GETBUF+8                                 ; init the buffer
            58   02   D0   0775           MOVL    #2,R8                                      ; set byte count
                            0778   ;+
                            0778   ;
                            0778   ; test common EFN = 65, IO$_READLBLK, _S, 2 byte transfer
                            0778   ;
                            0778   ;-
                            0778           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           $QIO_S  EFN=#65,-
                               0784                   CHAN=W^MBCHAN,-
                               0784                   FUNC=#IO$_READLBLK,-
                               0784                   IOSB=W^STAT,-
                               0784                   P1   =W^GETBUF+8,-
                               0784                   P2   =#2                         ; try common EFN READLBLK
                               07A9           FAIL_CHECK SS$_NORMAL                      ; check success
                     01    DD  07A9                       PUSHL    #SS$_NORMAL
         138F'CF     01    FB  07AB                       CALLS    #1,W^REG_CHECK
                               07B0     ;+
                               07B0     ;
                               07B0     ; test common EFN = 92, IO$_WRITELBLK, _G, 2 byte transfer
                               07B0     ;
                               07B0     ;-
                               07B0           NEXT_TEST
                               07B0
                               07B0     STP23:
         0004'CF     17    D0  07B0                       MOVL     #23,W^CURRENT_TC
                     00    DD  07B5                       PUSHL    #0
         1385'CF     01    FB  07B7                       CALLS    #1,W^REG_SAVE
 00F5'CF   0000005C  8F    D0  07BC           MOVL    #92,W^QIOP+QIO$_EFN                ; set EFN
         00FD'CF     20    D0  07C5           MOVL    #IO$_WRITELBLK,W^QIOP+QIO$_FUNC   ; set FUNC
   010D'CF   0250'CF       DE  07CA           MOVAL   W^TEST_DATA,W^QIOP+QIO$_P1         ; set transfer address
         0111'CF     02    D0  07D1           MOVL    #2,W^QIOP+QIO$_P2                  ; set byte count
                               07D6           $QIO_G  W^QIOP                             ; try common EFN writelblk
                               07DF           FAIL_CHECK SS$_NORMAL                      ; check success
                     01    DD  07DF                       PUSHL    #SS$_NORMAL
         138F'CF     01    FB  07E1                       CALLS    #1,W^REG_CHECK
                               07E6           $WAITFR_S EFN=#65                          ; wait for readlblk
                               07F3           $WAITFR_S EFN=#92                          ; wait for writlblk
        00020001 8F        DD  0800           PUSHL    #2@16!SS$_NORMAL                  ; set expected IO status
         1287'CF     01    FB  0806           CALLS    #1,W^BUF_CHECK                    ; check transfer
            01DB'CF        D4  080B           CLRL     W^GETBUF+8                        ; init the buffer
     58   00000084 8F      D0  080F           MOVL     #132,R8                           ; set byte count
                               0816     ;+
                               0816     ;
                               0816     ; test AST, IO$_WRITEPBLK, _S, 132 byte transfer
                               0816     ;
                               0816     ;-
                               0816           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           $QIO_S  CHAN=W^MBCHAN,-
                               0822                   FUNC=#IO$_WRITEPBLK,-
                               0822                   IOSB=W^STAT,-
                               0822                   ASTADR=W^AST1,-
                               0822                   ASTPRM=#1,-
                               0822                   P1   =W^TEST_DATA,-
                               0822                   P2   =#132                       ; try AST writepblk
                     50    DD  084B           PUSHL    R0                                ; save the QIO status
                               084D           $SETAST_S ENBFLG=#0                        ; let things get checked
                     50  8ED0  0856           POPL     R0                                ; reset the QIO status
                               0859                                                      ; before the AST's start
```

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

```
                        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          CMPL    4(AP),#3                        ; correct AST?
                 0E   13  0991          BEQL    10$                             ; br if OK
              04 AC   DD  0993          PUSHL   4(AP)                           ; push receeived
                 03   DD  0996          PUSHL   #3                              ; push expected
           0193'CF    DF  0998          PUSHAL  W^ASTEXP                        ; push the string variable
       13D1'CF   03   FB  099C          CALLS   #3,W^PRINT_FAIL                 ; print the failure
                          09A1     10$:
       00FD'CF   30   D0  09A1          MOVL    #IO$_WRITEVBLK,W^QIOP+QIO$_FUNC ; set the new mode
                          09A6          $QIO_G  W^QIOP                          ; and eat the read pending
                          09AF          FAIL_CHECK SS$_NORMAL                   ; check success
                 01   DD  09AF                     PUSHL   #SS$_NORMAL
       138F'CF   01   FB  09B1                     CALLS   #1,W^REG_CHECK
                          09B6          $WAITFR_S EFN=#92                       ; wait for it to digest.
                      04  09C3          RET                                     ; carry on
                          09C4     ;+
                          09C4     ;
                          09C4     ; test IO$_SETMODE, _G, WRTATTN
                          09C4     ;
                          09C4     ;-
                          09C4     NEXT1:
                          09C4          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          MOVL    #IO$_SETMODE!IO$M_WRTATTN,-
            00FD'CF       09D6                  W^QIOP+QIO$_FUNC                ; set new function
010D'CF   0A3A'CF     DE  09D9          MOVAL   W^AST4,W^QIOP+QIO$_P1           ; set new P1
       0111'CF   04   D0  09E0          MOVL    #4,W^QIOP+QIO$_P2               ; set new P2
       0115'CF   03   D0  09E5          MOVL    #PSL$C_USER,W^QIOP+QIO$_P3      ; set new P3
                          09EA          $QIO_G  W^QIOP                          ; try _G setmode
                          09F3          FAIL_CHECK SS$_NORMAL                   ; check success
                 01   DD  09F3                     PUSHL   #SS$_NORMAL
       138F'CF   01   FB  09F5                     CALLS   #1,W^REG_CHECK
                          09FA          $WAITFR_S EFN=#92                       ; wait for it to complete
                          0A07          $SETAST_S ENBFLG=#0                     ; hold back on the reins
  000000FD'EF    30   D0  0A10          MOVL    #IO$_WRITEVBLK,QIOP+QIO$_FUNC   ; set new function
010D'CF   0250'CF     DE  0A17          MOVAL   W^TEST_DATA,W^QIOP+QIO$_P1      ; set new P1
                          0A1E          $QIO_G  W^QIOP                          ; kick off WRTATTN AST
                          0A27          FAIL_CHECK SS$_NORMAL                   ; check success
                 01   DD  0A27                     PUSHL   #SS$_NORMAL
       138F'CF   01   FB  0A29                     CALLS   #1,W^REG_CHECK
                          0A2E          $SETAST_S ENBFLG=#1                     ; let it fly
            004C     31   0A37          BRW     NEXT2                           ; skip AST routine
                          0A3A     ;+
                          0A3A     ;
                          0A3A     ; service WRTATTN AST
                          0A3A     ;
                          0A3A     ;-
                          0A3A     AST4:
                    0000  0A3A          .WORD   0
                          0A3C          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   977             CMPL    4(AP),#4                           ; is it the right one?
                   0E    13   0A4C   978             BEQL    10$                                ; br if it's OK
                04 AC    DD   0A4E   979             PUSHL   4(AP)                              ; save received
                   04    DD   0A51   980             PUSHL   #4                                 ; save expected
           0193'CF       DF   0A53   981             PUSHAL  W^ASTEXP                           ; save string variable
       13D1'CF     03    FB   0A57   982             CALLS   #3,W^PRINT_FAIL                    ; print the error
                              0A5C   983 10$:
       00FD'CF     31    D0   0A5C   984             MOVL    #IO$_READVBLK,W^QIOP+QIO$_FUNC     ; set new function code
  010D'CF     01DB'CF    DE   0A61   985             MOVAL   W^GETBUF+8,W^QIOP+QIO$_P1          ; set new read address
                              0A68   986             $QIO_G  W^QIOP                             ; eat the write pending
                              0A71   987             FAIL_CHECK SS$_NORMAL                      ; check for success
                   01    DD   0A71                          PUSHL    #SS$_NORMAL
       138F'CF     01    FB   0A73                          CALLS    #1,W^REG_CHECK
                              0A78   988             $WAITFR_S EFN=#92                          ; and wait for it to digest
                         04   0A85   989             RET                                        ; bail out
                              0A86   990 ;+
                              0A86   991 ;
                              0A86   992 ; test IO$_SETCHAR, _S
                              0A86   993 ;
                              0A86   994 ; This function is not tested because of the lack of a device that is
                              0A86   995 ; allocatable and char. setable on the minimum configuration.
                              0A86   996 ;
                              0A86   997 ;-
                              0A86   998 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
       01CB'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                         CHAN=W^CHAN1,-
                             0DF2                         FUNC=#IO$_READVBLK,-
                             0DF2                         IOSB=W^STAT1,-
                             0DF2                         P1  =W^GETBUF+8,-
                             0DF2                         P2  =#132,-
                             0DF2                         P3  =#1                      ; read 132 bytes from VBN 1
                             0E19              FAIL_CHECK SS$_NORMAL                   ; check success
                   01    DD  0E19                         PUSHL   #SS$_NORMAL
          138F'CF  01    FB  0E1B                         CALLS   #1,W*REG_CHECK
                             0E20              $WAITFR_S EFN=#10                       ; wait here til done
       56  01DB'CF       DE  0E29              MOVAL   W^GETBUF+8,R6                   ; set buffer address
       57  0250'CF       DE  0E2E              MOVAL   W^TEST_DATA,R7                  ; set good data address
  58    00000084 8F      D0  0E33              MOVL    #132,R8                         ; set byte count
        00840001 8F      DD  0E3A              PUSHL   #132@16!SS$_NORMAL              ; push expected status return
          11CB'CF  01    FB  0E40              CALLS   #1,W^DISK_BUF_CHECK             ; check the transfer
                             0E45      ;+
                             0E45      ;
                             0E45      ; test IO$_DEACCESS, _S
                             0E45      ;
                             0E45      ;-
                             0E45              NEXT_TEST
                             0E45
                             0E45      STP37:
          0004'CF  25    D0  0E45                         MOVL    #37,W^CURRENT_TC
                   00    DD  0E4A                         PUSHL   #0
          1385'CF  01    FB  0E4C                         CALLS   #1,W^REG_SAVE
             0069'CF     D4  0E51              CLRL    W^STAT                          ; clear IO status blks
             0071'CF     D4  0E55              CLRL    W^STAT1
  18    00  01D3'CF  00  2C  0E59              MOVC5   #0,W^GETBUF,#0,#FIB$L_LOC_ADDR-
             0476'CF         0E60
                             0E63                      -FIB$L_WCC,W^FIB+FIB$L_WCC      ; clear unneeded stuff in FIB
                   00    DD  0E63              PUSHL   #0                              ; push a dummy parameter
          1385'CF  01    FB  0E65              CALLS   #1,W^REG_SAVE                   ; save a snapshot of regs
                             0E6A              $QIO_S  EFN =#5,=
                             0E6A                         CHAN=W^CHAN1,-
                             0E6A                         FUNC=#IO$_DEACCESS,-
                             0E6A                         IOSB=W^STAT1,-
                             0E6A                         P5  =#ATR,-
                             0E6A                         P1  =W^FIBDES                ; try _S deaccess
                             0E91              FAIL_CHECK SS$_NORMAL                   ; check success
                   01    DD  0E91                         PUSHL   #SS$_NORMAL
          138F'CF  01    FB  0E93                         CALLS   #1,W*REG_CHECK
                             0E98              $WAITFR_S EFN=#5                        ; wait for completion
          0071'CF  01    D1  0EA1              CMPL    #SS$_NORMAL,W^STAT1             ; check IO status
                   0F    13  0EA6              BEQL    10$                             ; br if OK
             0071'CF     DD  0EA8              PUSHL   W^STAT1                         ; push recieved
                   01    DD  0EAC              PUSHL   #SS$_NORMAL                     ; push expected
             0182'CF     DF  0EAE              PUSHAL  W^IOEXP                         ; push string variable
          13D1'CF  03    FB  0EB2              CALLS   #3,W^PRINT_FAIL                 ; print the failure
                             0EB7      10$:
                             0EB7      ;+
                             0EB7      ;
                             0EB7      ; test IO$_DELETE, _S
                             0EB7      ;
                             0EB7      ;-
                             0EB7              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   1233           CLRL    W^STAT                          ; init IO status
                          0EC7   1234           $QIO_S  EFN =#11,-
                          0EC7   1235                   CHAN=W^CHAN1,-
                          0EC7   1236                   FUNC=#IO$_DELETE!IO$M_DELETE,-
                          0EC7   1237                   IOSB=W^STAT,-
                          0EC7   1238                   P1  =W^FIBDES,-
                          0EC7   1239                   P2  =#FILENAME                  ; delete the file
                          0EEE   1240           FAIL_CHECK SS$_NORMAL                   ; check for success
                  01  DD  0EEE                          PUSHL   #SS$_NORMAL
        138F'CF   01  FB  0EF0                          CALLS   #1,W^REG_CHECK
                          0EF5   1241           $WAITFR_S EFN=#11                       ; wait for completion
        0069'CF   01  D1  0EFE   1242           CMPL    #SS$_NORMAL,W^STAT              ; check IO status
                  0F  13  0F03   1243           BEQL    10$                             ; br if OK
           0069'CF    DD  0F05   1244           PUSHL   W^STAT                          ; push recieved
                  01  DD  0F09   1245           PUSHL   #SS$_NORMAL                     ; push expected
           0182'CF    DF  0F0B   1246           PUSHAL  W^IOEXP                         ; push string variable
        13D1'CF   03  FB  0F0F   1247           CALLS   #3,W^PRINT_FAIL                 ; print the failure
                          0F14   1248 10$:
                          0F14   1249           $DASSGN_S CHAN=W^CHAN1                  ; deassign the disk
```

```
                                 0F20          .SBTTL  QIOW TESTS
                                 0F20    ;+
                                 0F20    ;
                                 0F20    ; $QIOW tests
                                 0F20    ;
                                 0F20    ; The $QIO tests check most of the functionality of the QIO services.
                                 0F20    ; The purpose of these tests is to check the differences between
                                 0F20    ; $QIO and $QIOW.
                                 0F20    ;
                                 0F20    ; test _S and local EFN
                                 0F20    ;
                                 0F20    ;-
                                 0F20          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          MOVAL W^QIOW,W^SERV_NAME                      ; set service name
                                 0F33          $QIO_S   CHAN=W^MBCHAN,-
                                 0F33                   FUNC=#IO$_READVBLK,-
                                 0F33                   P1   =W^GETBUF+8,-
                                 0F33                   P2   =#80                            ; set up the mailbox
                                 0F56          $QIOW_S EFN =#16,-
                                 0F56                   CHAN=W^MBCHAN,-
                                 0F56                   FUNC=#IO$_WRITEVBLK,-
                                 0F56                   IOSB=W^STAT,-
                                 0F56                   P1   =W^TEST_DATA,-
                                 0F56                   P2   =#80                            ; try _S with local EFN
                                 0F7B          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          MOVAL    W^GETBUF+8,R6                        ; set buffer address
          57     0250'CF     DE  0F87          MOVAL    W^TEST_DATA,R7                       ; set good data address
            58   00000050 8F D0  0F8C          MOVL     #80,R8                               ; set the byte count
     0071'CF     00500001 8F D0  0F93          MOVL     #80@16!SS$_NORMAL,W^STAT1            ; set dummy status
                 00500001 8F DD  0F9C          PUSHL    #80@16!SS$_NORMAL                    ; set expected IO status
          1287'CF     01     FB  0FA2          CALLS    #1,W^BUF_CHECK                       ; check the data
0050 8F    00    01DB'CF     00  2C  0FA7      MOVC5    #0,W^GETBUF+8,#0,#80,W^GETBUF+8 ; init the buffer
                 01DB'CF         0FB0
                                 0FB3    ;+
                                 0FB3    ;
                                 0FB3    ; test _G with local EFN
                                 0FB3    ;
                                 0FB3    ;-
                                 0FB3          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          MOVL     W^MBCHAN,W^QIOWP+QIOW$_CHAN          ; set the channel number
                                 0FC6          $QIO_S   CHAN=W^MBCHAN,-
                                 0FC6                   FUNC=#IO$_WRITEVBLK,-
                                 0FC6                   P1   =W^TEST_DATA,-
                                 0FC6                   P2   =#80                            ; set up the mailbox
                                 0FE9          $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          $QIO_S  CHAN=W^MBCHAN,-
                                    10A5  1328                  FUNC=#IO$_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
             004C'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  .SBTTL SUPER_MODE
                           118B  ;++
                           118B  ; FUNCTIONAL DESCRIPTION:
                           118B  ;       Routine to handle the CHMS instructions.
                           118B  ;
                           118B  ; CALLING SEQUENCE:
                           118B  ;       CHMS    #N
                           118B  ;
                           118B  ; INPUT PARAMETERS:
                           118B  ;          SP=>  CHMS parameter
                           118B  ;                PC
                           118B  ;                PSL
                           118B  ;
                           118B  ;          The CHMS parameter can be one of the following:
                           118B  ;
                           118B  ;                1 = execute $ASSIGN and $DASSGN service tests
                           118B  ;                2 = execute a $DCLCMH_S to reset the CHMS handler to DCL
                           118B  ;                3 = execute $ALLOC and $DALLOC service tests
                           118B  ;
                           118B  ; OUTPUT PARAMETERS:
                           118B  ;       NONE
                           118B  ;--
                           118B
                           118B  SUPER_MODE:
            50    8E    D0 118B          MOVL    (SP)+,R0                              ; get CHM parameter off the stack
      03    01    50    8F 118E          CASEB   R0,#1,#3                              ; do the right thing
                           1192  10$:
                     0006' 1192          .WORD   20$-10$
                     0010' 1194          .WORD   A30-10$
                     0031' 1196          .WORD   A40-10$
                           1198  20$:
                  02    DD 1198          PUSHL   #PSL$C_SUPER                          ; push the mode
       1BEF'CF    01    FB 119A          CALLS   #1,W^ASSDAS_CHK                       ; do the tests
                0028    31 119F          BRW     A50                                   ; get back to user mode
                           11A2  A30:
   0307'CF    0077'CF   DE 11A2          MOVAL   W^DCLCMH,W^SERV_NAME                  ; set service name pointer
                           11A9          $DCLCMH_S @PRVHND1,,#0                        ; reset the CHMS handler for DCL
                           11BA          FAIL_CHECK SS$_NORMAL                         ; check for success
                  01    DD 11BA                  PUSHL   #SS$_NORMAL
       138F'CF    01    FB 11BC                  CALLS   #1,W^REG_CHECK
                  07    11 11C1          BRB     A50                                   ; get back to user mode
                           11C3  A40:
                  02    DD 11C3          PUSHL   #PSL$C_SUPER                          ; push the mode
       1B5C'CF    01    FB 11C5          CALLS   #1,W^ALLDAL_CHK                       ; do the tests
                           11CA  A50:
                        02 11CA          REI                                           ; return to user mode
```

```
                              11CB  1484          .SBTTL BUF_CHECK
                              11CB  1485  ;++
                              11CB  1486  ; FUNCTIONAL DESCRIPTION:
                              11CB  1487  ;       Routine to check the contents of a buffer against known good
                              11CB  1488  ;       data and check the IO status return.
                              11CB  1489  ;
                              11CB  1490  ; CALLING SEQUENCE:
                              11CB  1491  ;       PUSHL   #EXPECTED_IOSTATUS      ; set expected IO status
                              11CB  1492  ;       CALLS #1,W^BUF_CHECK            ; check buffer
                              11CB  1493  ;
                              11CB  1494  ; INPUT PARAMETERS:
                              11CB  1495  ;       R6 = buffer address
                              11CB  1496  ;       R7 = good data address
                              11CB  1497  ;       R8 = byte count
                              11CB  1498  ;       STAT = IO status #1
                              11CB  1499  ;       STAT1 = IO status #2
                              11CB  1500  ;
                              11CB  1501  ; OUTPUT PARAMETERS:
                              11CB  1502  ;       NONE
                              11CB  1503  ;
                              11CB  1504  ;--
                              11CB  1505
                              11CB  1506  DISK_BUF_CHECK:
                        0FFC  11CB  1507          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
                              11CD  1508          $GETDVI_S CHAN = CHAN1,-        ; Get characteristics for our disk
                              11CD  1509                  ITMLST = DISK_ITMLST
          7E  0000037A'EF   B0  11EB  1510          MOVW    PB+8+DIB$W_UNIT,-(SP)   ; Save old device unit number...
 0000037A'EF  00001283'EF   B0  11F2  1511          MOVW    DISK_UNIT,PB+8+DIB$W_UNIT ; ...and substitute our own
              000002EB'EF   DD  11FD  1512          PUSHL   ARGLST1                 ; Save ptr to old device name desc...
 000002EB'EF  00001227'EF   DE  1203  1513          MOVAL   DISK_NAME,ARGLST1       ; ...and substitute our own
                     04 AC  DD  120E  1514          PUSHL   4(AP)
     00001287'EF     01     FB  1211  1515          CALLS   #1,BUF_CHECK            ; Check that we got good data
          000002EB'EF  8ED0     1218  1516          POPL    ARGLST1                 ; Restore old device name desc...
     0000037A'EF     8E     B0  121F  1517          MOVW    (SP)+,PB+8+DIB$W_UNIT   ; ...and unit number
                            04  1226  1518          RET
                              1227  1519
                              1227  1520  DISK_ITMLST:                            ; ITMLST for $GETDVI
                              1227  1521  DISK_NAME:                              ; Note that this becomes desc for name
                   0020 0040  1227  1522          .WORD   64,DVI$_DEVNAM          ; Our disk name
                   00001243'  122B  1523          .ADDRESS DISK_NAME_BUF
                   00001227'  122F  1524          .ADDRESS DISK_NAME              ; Note that we overwrite length!
                   000C 0004  1233  1525          .WORD   4,DVI$_UNIT             ; The unit number of the spindle
                   00001283'  1237  1526          .ADDRESS DISK_UNIT
                    00000000  123B  1527          .LONG   0
                    00000000  123F  1528          .LONG   0                       ; End of $GETDVI ITMLST
                              1243  1529
                              1243  1530  DISK_NAME_BUF:                          ; String giving our disk name
                    00001283  1243  1531          .BLKB   64
                              1283  1532
                              1283  1533  DISK_UNIT:                              ; Unit number of the spindle
                    00001287  1283  1534          .BLKB   4
                              1287  1535
                              1287  1536  BUF_CHECK:
                        03FC  1287  1537          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9>
                  59  56  D0  1289  1538          MOVL    R6,R9                   ; save a copy of the buffer address
          66  67  58  29      128C  1539          CMPC3   R8,(R7),(R6)            ; check the buffer
                  50  13      1290  1540          BEQL    10$                     ; 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  1568          .SBTTL IONC
                             1309  1569  ;++
                             1309  1570  ; FUNCTIONAL DESCRIPTION:
                             1309  1571  ;       AST routine to service IO AST's for the CANCEL service
                             1309  1572  ;
                             1309  1573  ; CALLING SEQUENCE:
                             1309  1574  ;       Entered via an AST
                             1309  1575  ;
                             1309  1576  ; INPUT PARAMETERS:
                             1309  1577  ;       STAT = CANCEL status return
                             1309  1578  ;
                             1309  1579  ; OUTPUT PARAMETERS:
                             1309  1580  ;       NONE
                             1309  1581  ;
                             1309  1582  ;--
                             1309  1583
                             1309  1584  IONC:
                       03FC  1309  1585          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9>
        1B'AF    00      FB  130B  1586          CALLS   #0,B^CAN_CHECK                          ; check the cancel
                             130F  1587          $WAKE_S                                         ; tell the test to wake up!
                         04  131A  1588          RET                                             ; return
                             131B  1589          .SBTTL CAN_CHECK
                             131B  1590  ;++
                             131B  1591  ; FUNCTIONAL DESCRIPTION:
                             131B  1592  ;       Routine to check the results of a CANCELLED IO.
                             131B  1593  ;
                             131B  1594  ; CALLING SEQUENCE:
                             131B  1595  ;       CALLS #0,W^CAN_CHECK    ; check results
                             131B  1596  ;
                             131B  1597  ; INPUT PARAMETERS:
                             131B  1598  ;       NONE
                             131B  1599  ;
                             131B  1600  ; OUTPUT PARAMETERS:
                             131B  1601  ;       NONE
                             131B  1602  ;
                             131B  1603  ;--
                             131B  1604
                             131B  1605  CAN_CHECK:
                       03FC  131B  1606          .WORD^M<R2,R3,R4,R5,R6,R7,R8,R9>
     2C    0071'CF       B1  131D  1607          CMPW    W^STAT1,#SS$_ABORT                      ; check IO status blk
                 0F      13  1322  1608          BEQL    10$                                     ; br if OK
           0071'CF       DD  1324  1609          PUSHL   W^STAT1                                 ; push received
                 2C      DD  1328  1610          PUSHL   #SS$_ABORT                              ; push expected
           0174'CF       DF  132A  1611          PUSHAL  W^EXP                                   ; push string variable
     13D1'CF     03      FB  132E  1612          CALLS   #3,W^PRINT_FAIL                         ; print the failure
                             1333  1613  10$:
           0069'CF       D4  1333  1614          CLRL    W^STAT                                  ; setup for next CANCEL
                         04  1337  1615          RET                                             ; return
```

```
                              1338          .SBTTL  COUNT_CHAN
                              1338  ;++
                              1338  ; FUNCTIONAL DESCRIPTION:
                              1338  ;       Routine to count the number of assigned channels.
                              1338  ;
                              1338  ; CALLING SEQUENCE:
                              1338  ;       CALLS #0,W^COUNT_CHAN   ; count the number of assigned channels
                              1338  ;
                              1338  ; INPUT PARAMETERS:
                              1338  ;       NONE
                              1338  ;
                              1338  ; OUTPUT PARAMETERS:
                              1338  ;       TOTAL_CHAN = count of all assigned channels
                              1338  ;
                              1338  ;--
                              1338
                              1338  TOTAL_CHAN:
                   00000000   1338          .LONG   0                               ; assigned channel count
                              133C  COUNT_CHAN:
                       001C   133C          .WORD   ^M<R2,R3,R4>
   52     09  00000000'EF  C1 133E          ADDL3   CTL$GL_CCBBASE,#CCB$B_AMOD,R2   ; get base and offset to test assign
              53     10  CE   1346          MNEGL   #CCB$C_LENGTH,R3                ; set starting channel index
   54         00000000'9F  3C 1349          MOVZWL  @#CTL$GW_NMIOCH,R4              ; get number of I/O channels
                  FFE4 CF  D4 1350          CLRL    W^TOTAL_CHAN                    ; init the # of channels
                              1354  10$:
                     6243  95 1354          TSTB    (R2)[R3]                        ; is channel assigned?
                       04  13 1357          BEQL    20$                             ; br if not assigned
                  FFDB CF  D6 1359          INCL    W^TOTAL_CHAN                    ; else bump chan count
                              135D  20$:
              53     10  C2   135D          SUBL2   #CCB$C_LENGTH,R3                ; calc next channel index
                  F1 54  F5   1360          SOBGTR  R4,10$                          ; any more CCB's?
                         04   1363          RET                                     ; return
                              1364          .SBTTL STORE_STEP
                              1364  ;++
                              1364  ; FUNCTIONAL DESCRIPTION:
                              1364  ;       Routine to store step information in the error log buffer.
                              1364  ;
                              1364  ; CALLING SEQUENCE:
                              1364  ;       CALLS #0,W^STORE_STEP
                              1364  ;
                              1364  ; INPUT PARAMETERS:
                              1364  ;       ELBP = current errlog buffer pointer
                              1364  ;
                              1364  ; OUTPUT PARAMETERS:
                              1364  ;       FLAG = error logged flag
                              1364  ;
                              1364  ;--
                              1364
                              1364  STORE_STEP:
                       0004   1364          .WORD   ^M<R2>
       1495'CF     01  88     1366          BISB2   #1,W^FLAG                       ; set the error logged flag
       52    1496'CF   D0     136B          MOVL    W^ELBP,R2                       ; get errlog buf pntr
       82    0307'CF   D0     1370          MOVL    W^SERV_NAME,(R2)+               ; save the service name
       82    0004'CF   D0     1375          MOVL    W^CURRENT_TC,(R2)+              ; save the step number
       82    0159'CF   D0     137A          MOVL    W^MODE,(R2)+                    ; save the mode
       1496'CF     52  D0     137F          MOVL    R2,W^ELBP                       ; reset the errlog buf pntr
                       04     1384          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              PUSHL   (R1)                              ; push received data
                   63   DD  13C5              PUSHL   (R3)                              ; push expected data
              015D'CF   DF  13C7              PUSHAL  W^REG                             ; set string pntr param.
     13D1'CF       04   FB  13CB              CALLS   #4,W^PRINT_FAIL                   ; print the error message
                            13D0        20$:
                        04  13D0              RET
                            13D1              .SBTTL  PRINT_FAIL
                            13D1        ;++
                            13D1        ; FUNCTIONAL DESCRIPTION:
                            13D1        ;       Subroutine to report failures using $PUTMSG
                            13D1        ;
                            13D1        ; CALLING SEQUENCE:
                            13D1        ; Mode  #1          PUSHL EXPECTED  Mode   #2        PUSHL REG NUMBER
                            13D1        ;                   PUSHL RECEIVED                   PUSHL EXPECTED
                            13D1        ;                   PUSHAL STRING_VAR                PUSHL RECEIVED
                            13D1        ;                   CALLS #3,W^PRINT_FAIL            PUSHAL STRING_VAR
                            13D1        ;                                                    CALLS #4,W^PRINT_FAIL
                            13D1        ; Mode  #3          PUSHAL STRING_VAR
                            13D1        ;                   CALLS #1,W^PRINT_FAIL
                            13D1        ;
                            13D1        ; INPUT PARAMETERS:
                            13D1        ;       listed above
                            13D1        ;
                            13D1        ; OUTPUT PARAMETERS:
                            13D1        ;       an error message is printed using $PUTMSG
                            13D1        ;
                            13D1        ;--
                            13D1
                            13D1        PRINT_FAIL:
                      003C  13D1              .WORD   ^M<R2,R3,R4,R5>
                            13D3              $FAO_S  W^CS1,W^MESSAGEL,W^MSGL,#TEST_MOD_NAME,W^SERV_NAME,W^CURRENT_TC
                            13F4              $PUTMSG_S W^MSGVEC                        ; print the message
              04   6C   91  1405              CMPB    (AP),#4                           ; is this a register message?
                   26   13  1408              BEQL    10$                               ; br if yes
              01   6C   91  140A              CMPB    (AP),#1                           ; is this just a message?
                   48   13  140D              BEQL    20$                               ; br if yes
                            140F              $FAO_S  W^CS2,W^MESSAGEL,W^MSGL,4(AP),8(AP),4(AP),12(AP)
                   40   11  142E              BRB     30$                               ; goto output message
                            1430        10$:
                            1430              $FAO_S  W^CS3,W^MESSAGEL,W^MSGL,4(AP),16(AP),8(AP),4(AP),16(AP),12(AP)
                   19   11  1455              BRB     30$                               ; goto output message
                            1457        20$:
    0332'CF     04 AC   D0  1457              MOVL    4(AP),W^MSGVEC1+12                ; save string address
                            145D              $PUTMSG_S W^MSGVEC1                       ; print the message
                   11   11  146E              BRB     40$                               ; skip the other message
                            1470        30$:
                            1470              $PUTMSG_S W^MSGVEC                        ; print the message
                            1481        40$:
      1B2F'CF      00   FB  1481              CALLS   #0,W^MODE_ID                      ; identify the mode
    004C'CF   002A'CF   DE  1486              MOVAL   W^TEST_MOD_FAIL,W^TMD_ADDR        ; set failure message address
 0044'CF    03    00    02  F0  148D          INSV    #ERROR,#0,#3,W^MOD_MSG_CODE       ; set severity code
                        04  1494              RET
                        1495  1786          .SBTTL REG_CHECKNP
                        1495  1787  ;++
                        1495  1788  ; FUNCTIONAL DESCRIPTION:
                        1495  1789  ;       Subroutine to test R0 & R2-R11 for proper content after a service
                        1495  1790  ;       execution without printing it. A snapshot is taken by the REG_SAVE routine a
                        1495  1791  ;       beginning of each step and this routine is executed after the
                        1495  1792  ;       services have been executed. This routine collects the error
                        1495  1793  ;       information in buffer ERLB instead of printing it.
                        1495  1794  ;
                        1495  1795  ; CALLING SEQUENCE:
                        1495  1796  ;       PUSHL   #SS$_XXXXXX       ; push expected R0 contents
                        1495  1797  ;       CALLS   #1,W^REG_CHECK    ; execute this routine
                        1495  1798  ;
                        1495  1799  ; INPUT PARAMETERS:
                        1495  1800  ;       expected R0 contents on the stack
                        1495  1801  ;
                        1495  1802  ; OUTPUT PARAMETERS:
                        1495  1803  ;       possible error messages logged in buffer ERLB which are printed
                        1495  1804  ;       using routine ERLBUF_DUMP.
                        1495  1805  ;
                        1495  1806  ;       Error packets are in the following form:
                        1495  1807  ;
                        1495  1808  ;               !-----------------!
                        1495  1809  ;               !Service name pntr!
                        1495  1810  ;               !-----------------!
                        1495  1811  ;               !     Step #      !
                        1495  1812  ;               !-----------------!
                        1495  1813  ;               !Mode name pointer!
                        1495  1814  ;               !-----------------!
                        1495  1815  ;               !           !     !  long word count
                        1495  1816  ;               !-----------------!
                        1495  1817  ;               !\/\/\/\/\/\/\/\/\!  3-4 parameter long words
                        1495  1818  ;
                        1495  1819  ;--
                        1495  1820
                        1495  1821  FLAG:
                  00    1495  1822          .BYTE 0                 ; error flags are BIT0 = 0 means no errors in the bu
                        1496  1823                                  ;                 BIT0 = 1 means errors in the buffe
                        1496  1824  ELBP:
           0000149A'    1496  1825          .ADDRESS ERLB           ; error log buffer pointer
                        149A  1826  ERLB:
            00001A76    149A  1827          .BLKB   1500            ; error log buffer
                        1A76  1828  ;
                        1A76  1829  REG_CHECKNP:
                0FFC    1A76  1830          .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
      50    04 AC   D1  1A78  1831          CMPL    4(AP),R0        ; is this the right fail code
               2E   13  1A7C  1832          BEQL    10$             ; br if yes
    F8E1 CF    00   FB  1A7E  1833          CALLS #0,W^STORE_STEP   ; store step information
      52  FA0F CF   D0  1A83  1834          MOVL    ELBP,R2         ; get the current error log pointer
            82 03   90  1A88  1835          MOVB    #3,(R2)+        ; save the long word count
            82 50   D0  1A8B  1836          MOVL    R0,(R2)+        ; save received status
      82    04 AC   D0  1A8E  1837          MOVL    4(AP),(R2)+     ; save expected status
      82  0174'CF   DE  1A92  1838          MOVAL   W^EXP,(R2)+     ; save the string variable
               62   D4  1A97  1839          CLRL    (R2)            ; set the terminator
    F9F8 CF    52   D0  1A99  1840          MOVL    R2,ELBP         ; reset the buffer pointer
  004C'CF  002A'CF  DE  1A9E  1841          MOVAL   W^TEST_MOD_FAIL,W^TMD_ADDR ; set failure message address
0044'CF  03  00  02 F0  1AA5  1842          INSV    #ERROR,#0,#3,W^MOD_MSG_CODE ; set severity code
```

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

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

```
                              1B2F          .SBTTL  MODE_ID
                              1B2F  ;++
                              1B2F  ; FUNCTIONAL DESCRIPTION:
                              1B2F  ;       Subroutine to identify the mode that an exit handler is in.
                              1B2F  ;
                              1B2F  ; CALLING SEQUENCE:
                              1B2F  ;       CALLS   #0,W^MODE_ID
                              1B2F  ;
                              1B2F  ; INPUT PARAMETERS:
                              1B2F  ;       MODE contains an address pointing to an ascii string desc.
                              1B2F  ;       of the current CPU mode.
                              1B2F  ;
                              1B2F  ; OUTPUT PARAMETERS:
                              1B2F  ;       NONE
                              1B2F  ;
                              1B2F  ;--
                              1B2F
                              1B2F  MODE_ID:
                        003C  1B2F          .WORD   ^M<R2,R3,R4,R5>
                              1B31          $FAO_S  W^CS5,W^MESSAGEL,W^MSGL,MODE ; format the error message
                              1B4A          $PUTMSG_S W^MSGVEC                   ; print the mode message
                          04  1B5B          RET
                              1B5C  ;
                              1B5C          .SBTTL  ALLDAL_CHK
                              1B5C  ;++
                              1B5C  ; FUNCTIONAL DESCRIPTION:
                              1B5C  ;       Subroutine to do the $ALLOC and $DALLOC tests
                              1B5C  ;
                              1B5C  ; CALLING SEQUENCE:
                              1B5C  ;       PUSHL   #ACCESS_MODE
                              1B5C  ;       CALLS   #1,W^ALLDAL_CHK
                              1B5C  ;
                              1B5C  ; INPUT PARAMETERS:
                              1B5C  ;       4(AP) = the access mode for the test
                              1B5C  ;
                              1B5C  ; OUTPUT PARAMETERS:
                              1B5C  ;       NONE
                              1B5C  ;
                              1B5C  ;--
                              1B5C
                              1B5C  ALLDAL_CHK:
                        003C  1B5C          .WORD   ^M<R2,R3,R4,R5>
                     00   DD  1B5E          PUSHL   #0                      ; push a dummy parameter
           F820 CF   01   FB  1B60          CALLS   #1,W^REG_SAVE           ; save a register snapshot
                              1B65          $ALLOC_S DEVNAM=@^MBNAM,-
                              1B65                  PHYLEN=W^ML,-
                              1B65                  PHYBUF=W^GETBUF,-
                              1B65                  ACMODE=4(AP)            ; try _S mode
                              1B7D          FAIL_CHECKNP SS$_NORMAL         ; check for success
                     01   DD  1B7D                  PUSHL   #SS$_NORMAL
           FEF2 CF   01   FB  1B7F                  CALLS   #1,W^REG_CHECKNP
        009D'CF   04 AC   D0  1B84          MOVL    4(AP),W^ALLO+ALLOC$_ACMODE ; set the new access mode
                              1B8A          $ALLOC_G W^ALLO                 ; try _G mode
                              1B93          FAIL_CHECKNP SS$_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          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^ALLOC,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  2040 MOD_MSG_PRINT:
                          1CE9  2041 ;
                          1CE9  2042 ;  *****************************************************************
                          1CE9  2043 ;  *                                                               *
                          1CE9  2044 ;  *  PRINTS THE TEST MODULE BEGUN/SUCCESSFUL/FAILED MESSAGES      *
                          1CE9  2045 ;  *       (USING THE PUTMSG MACRO).                               *
                          1CE9  2046 ;  *                                                               *
                          1CE9  2047 ;  *****************************************************************
                          1CE9  2048 ;
                          1CE9  2049          PUTMSG  <MOD_MSG_CODE,#2,TMN_ADDR,TMD_ADDR> ; PRINT MSG
                      05  1D04  2050          RSB                               ; ... AND RETURN TO CALLER
                          1D05  2051 ;
                          1D05  2052 CHMRTN:
                          1D05  2053 ; *****************************************************************
                          1D05  2054 ; *                                                               *
                          1D05  2055 ; *       CHANGE MODE ROUTINE. THIS ROUTINE GETS CONTROL WHENEVER *
                          1D05  2056 ; *       A CMKRNL, CMEXEC, OR CMSUP SYSTEM SERVICE IS ISSUED     *
                          1D05  2057 ; *       BY THE MODE MACRO ('TO' OPTION).  IT MERELY DOES        *
                          1D05  2058 ; *       A JUMP INDIRECT ON A FIELD SET UP BY MODE. IT HAS       *
                          1D05  2059 ; *       THE EFFECT OF RETURNING TO THE END OF THE MODE          *
                          1D05  2060 ; *       MACRO EXPANSION.                                        *
                          1D05  2061 ; *                                                               *
                          1D05  2062 ; *****************************************************************
                          1D05  2063 ;
                    0000  1D05  2064          .WORD   0                         ; ENTRY MASK
        00000059'FF   17  1D07  2065          JMP     @CHM_CONT                 ; RETURN TO MODE MACRO IN NEW MODE
                          1D0D  2066 ;
                          1D0D  2067 ; *    RET INSTR WILL BE ISSUED IN EXPANSION OF 'MODE FROM, ....' MACRO
                          1D0D  2068 ;
                          1D0D  2069          .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$_MAILBOX                 = 000000A0
ALLOC$_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                     DISALC                        000001A5 R     02
ASSIGN$_DEVNAM                 = 00000004                     DISK                          00000097 R     02
ASSIGN$_MBXNAM                 = 00000010                     DISK_BUF_CHECK                000011CB R     04
ASSIGN$_NARGS                  = 00000004                     DISK_ITMLST                   00001227 R     04
AST1                             000008CD R     04            DISK_NAME                     00001227 R     04
AST2                             000008F0 R     04            DISK_NAME_BUF                 00001243 R     04
AST3                             0000097F R     04            DISK_UNIT                     00001283 R     04
AST4                             00000A3A R     04            DOT_DIR_SEMI                  000004C4 R     03
ASTEXP                           00000193 R     02            DOT_DIR_SEMI_LENGTH         = 00000006
ATR                              0000048F R     03            DT$_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$W_NMCTL                 = 00000014             MODE                          00000159 R     03
FIBDES                        0000045E R     03    MODE_ID                       00001B2F R     04
FIBSIZE                     = 00000029             MOD_MSG_CODE                  00000044 R     03
FILENAME                      0000049B R     03    MOD_MSG_PRINT                 00001CE9 R     04
FILNOTMOD                     000001CB R     02    MSGL                          00000173 R     03
FLAG                          00001495 R     04    MSGVEC                        000002DC R     02
GETBUF                        000001D3 R     03    MSGVEC1                       00000326 R     03
GETC                          000000C1 R     03    NEXT                          00000913 R     04
GETCHN                        00000059 R     02    NEXT1                         000009C4 R     04
GETCHN$_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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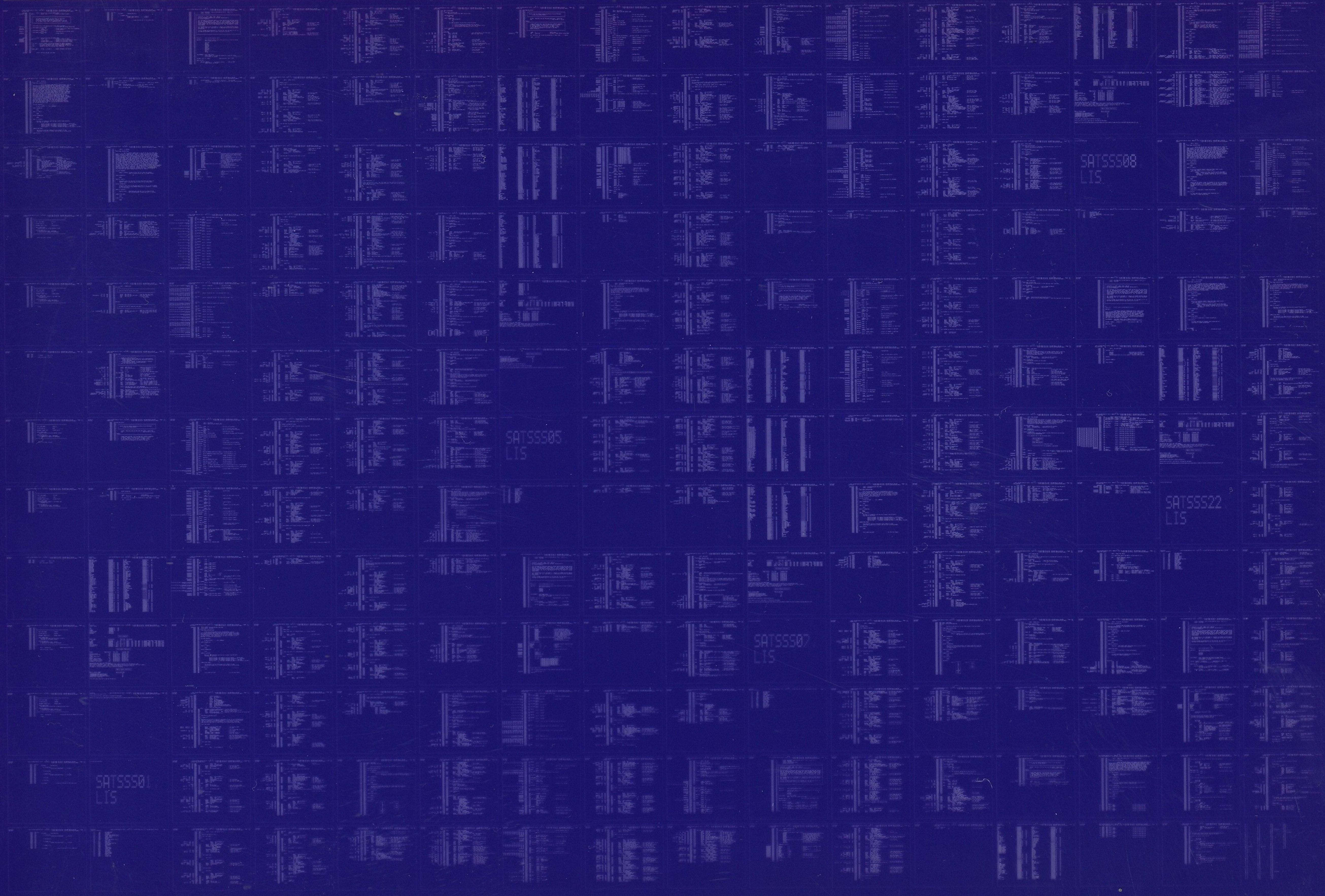

SATSSS08
LIS

SATSSS05
LIS

SATSSS22
LIS

SATSSS07
LIS

SATSSS01
LIS