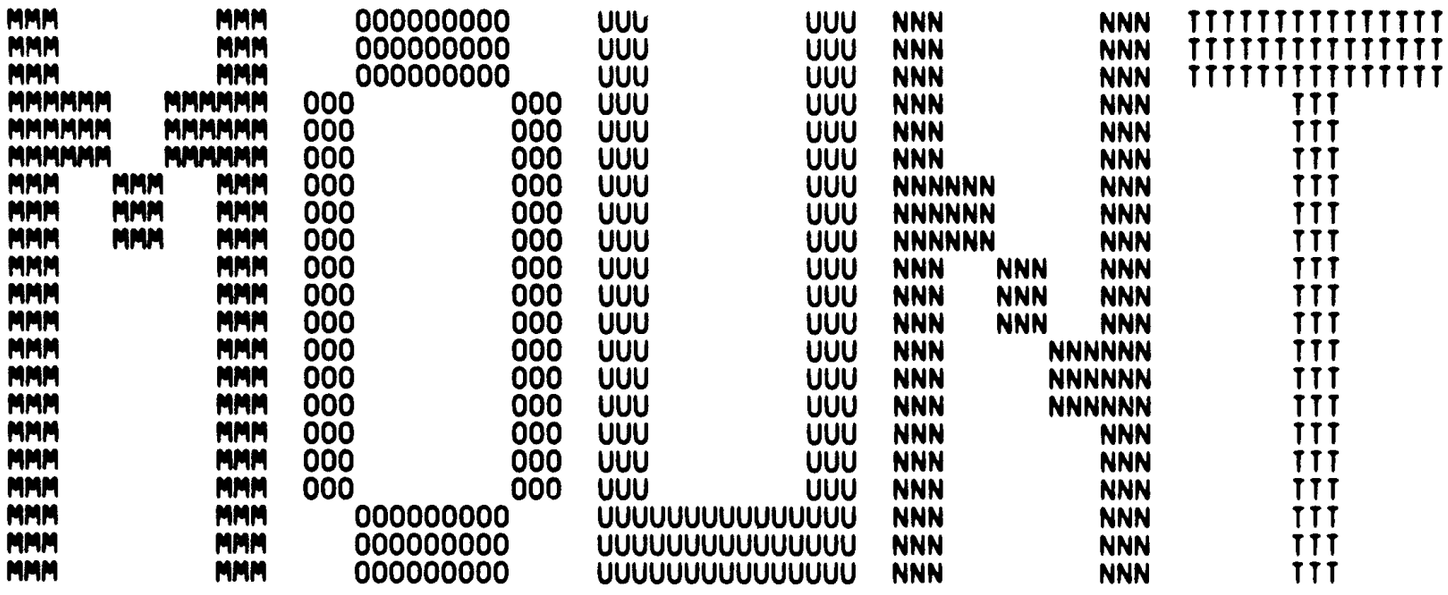
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MMMMMMM MMMMMMM 000 000 UUU UUU NNN NNN TTT
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MMMMMMM MMMMMMM 000 000 UUU UUU NNN NNN TTT
MMM MMM MMM 000 000 UUU UUU NNNNNN NNN TTT
MMM MMM MMM 000 000 UUU UUU NNNNNN NNN TTT
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MMM MMM 000 000 UUU UUU NNN NNNNNN TTT
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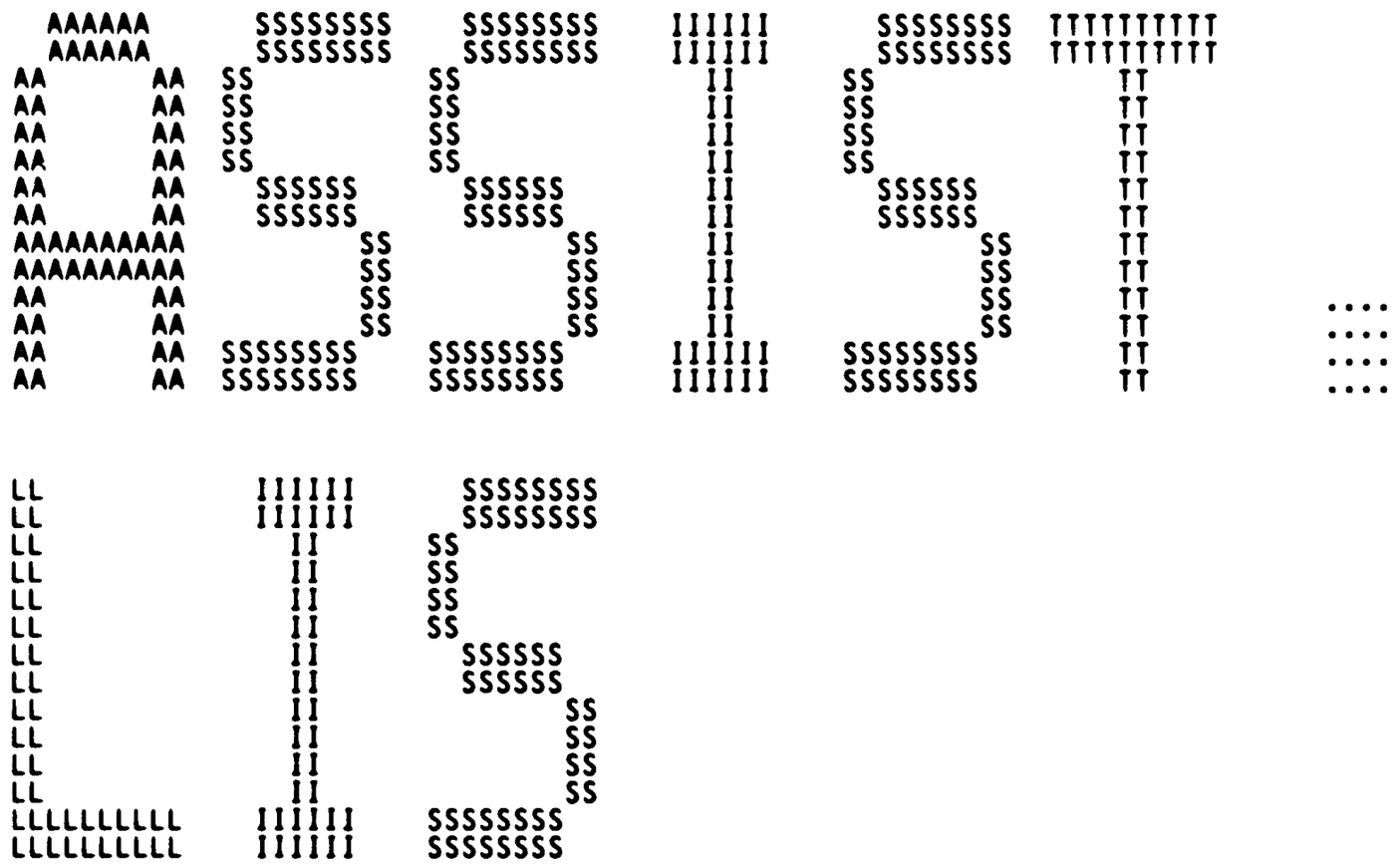

```
;     1          0001  0 MODULE ASSIST   (
;     2          0002  0                  LANGUAGE (BLISS32),
;     3          0003  0                  IDENT = 'V04-001'
;     4          0004  0                 ) =
;     5          0005  0
;     6          0006  1 BEGIN
;     7          0007  1
;     8          0008  1 !**************************************************************************
;     9          0009  1 !*                                                                        *
;    10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                               *
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;    22          0022  1 !*  AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT       *
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;    26          0026  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                *
;    27          0027  1 !*                                                                        *
;    28          0028  1 !*                                                                        *
;    29          0029  1 !**************************************************************************
;    30          0030  1
;    31          0031  1 !++
;    32          0032  1 !
;    33          0033  1 ! FACILITY.
;    34          0034  1 !
;    35          0035  1 !       MOUNT
;    36          0036  1 !
;    37          0037  1 ! ABSTRACT:
;    38          0038  1 !
;    39          0039  1 !       This module contains the routines to
;    40          0040  1 !       implement operator assisted mount.
;    41          0041  1 !
;    42          0042  1 ! ENVIRONMENT:
;    43          0043  1 !
;    44          0044  1 !       VAX/VMS operating system.
;    45          0045  1 !
;    46          0046  1 ! AUTHOR:
;    47          0047  1 !
;    48          0048  1 !       Steven T. Jeffreys
;    49          0049  1 !
;                0050  1 ! CREATION DATE:
;    51          0051  1 !
;    52          0052  1 !       October 9, 1980
;    53          0053  1 !
;    54          0054  1 ! MODIFIED BY:
;    55          0055  1 !
;    56          0056  1 !       V04-001 HH0056          Hai Huang               11-Sep-1984
;    57          0057  1 !               Do limited number of retries on VOLINV error.
```

```
;    58          0058  1 !
;    59          0059  1 !       V03-007 HH0041          Hai Huang                       24-Jul-1984
;    60          0060  1 !               Remove REQUIRE  'LIBD$:[VMSLIB.OBJ]MOUNTMSG.B32'.
;    61          0061  1 !
;    62          0062  1 !       V03-006 CWH3001         CW Hobbs                        30-Jul-1983
;    63          0063  1 !               Various and sundry things to make OPCOM distributed
;    64          0064  1 !               across the cluster.
;    65          0065  1 !
;    66          0066  1 !       V03-005 TCM0002         Trudy C. Matthews       28-Jul-1983
;    67          0067  1 !               Add DEV_ACQUIRED flag that indicates whether mount interlock
;    68          0068  1 !               has been taken out for this device.  Remove DEALLOCATE_DEVICE
;    69          0069  1 !               routine, since devices mounted /SHARE, /SYSTEM or /GROUP are
;    70          0070  1 !               no longer allocated.  Remove temporary change introduced in
;    71          0071  1 !               TCM0001.
;    72          0072  1 !
;    73          0073  1 !       V03-004 TCM0001         Trudy C. Matthews       18-Jul-1983
;    74          0074  1 !               Make SS$_NOTQUEUED status (received from the $ENQ system
;    75          0075  1 !               service when we cannot take out a cluster-wide allocation
;    76          0076  1 !               lock on this device) one of the status codes acted on by
;    77          0077  1 !               operator-assisted mount.
;    78          0078  1 !
;    79          0079  1 !       V03-003 STJ50311        Steven T. Jeffreys      10-Feb-1983
;    80          0080  1 !               - Make all uses of PHYS_NAME indexed by DEVICE_INDEX.
;    81          0081  1 !               - Reset PREVIOUS_STATUS after an operator reply arrives.
;    82          0082  1 !               - If the mount failed with an operator request outstanding,
;    83          0083  1 !                 signal MOUN$_OPRQSTCAN instead of MOUN$_RQSTDON.
;    84          0084  1 !               - Define and use routine $DALLOC_DEVS.
;    85          0085  1 !
;    86          0086  1 !       V03-002 STJ0244         Steven T. Jeffreys      04-Apr-1982
;    87          0087  1 !               - Use common I/O routines, and make the code more
;    88          0088  1 !                 tolerant to random event flag setting and clearing.
;    89          0089  1 !               - Issue the MOUN$_RQSTDON status if the mount completes
;    90          0090  1 !                 successfully while we have an operator request outstanding.
;    91          0091  1 !
;    92          0092  1 !       V03-001 BLS0160         Benn Schreiber          18-Mar-1982
;    93          0093  1 !               Get OPCDEFTMP from SHRLIB$.
;    94          0094  1 !
;    95          0095  1 !       V02-011 STJ0229         Steven T. Jeffreys      01-Mar-1982
;    96          0096  1 !               - Set the inhibit message bit in the exit status
;    97          0097  1 !                 code if the message output via $PUTMSG.
;    98          0098  1 !
;    99          0099  1 !       V02-010 STJ0218         Steven T. Jeffreys      16-Feb-1982
;   100          0100  1 !               - Cancel exit handler before declaring it.
;   101          0101  1 !               - Clear system service failure exception mode and
;   102          0102  1 !                 restore it on exit.
;   103          0103  1 !
;   104          0104  1 !       V02-009 STJ0214         Steven T. Jeffreys      11-Feb-1982
;   105          0105  1 !               Add support for the /COMMENT switch.
;   106          0106  1 !
;   107          0107  1 !       V02-008 STJ0206         Steven T. Jeffreys      08-Feb-1982
;   108          0108  1 !               Set mailbox access rights to allow SYSTEM and OWNER
;   109          0109  1 !               read and write privileges.
;   110          0110  1 !
;   111          0111  1 !       V02-007 STJ0189         Steven T. Jeffreys      02-Feb-1982
;   112          0112  1 !               Initalize GLOBAL storage at run time, and fix various bugs.
;   113          0113  1 !
;   114          0114  1 !       V02-006 STJ174          Steven T. Jeffreys      19-Jan-1982
```

```
;   115          0115  1 !                 Made most of the GLOBAL routines in to local routines.
;   116          0116  1 !
;   117          0117  1 !       V02-005 STJ162          Steven T. Jeffreys      04-Jan-1982
;   118          0118  1 !               Removed copy of INTERCEPT_SIGNAL.
;   119          0119  1 !
;   120          0120  1 !       V02-004 STJ0150         Steven T. Jeffreys
;   121          0121  1 !               Extensive rewrite to support the $MOUNT system service.
;   122          0122  1 !
;   123          0123  1 !       V02-003 STJ0112         Steven T. Jeffreys
;   124          0124  1 !               - Use general addressing mode for library routines.
;   125          0125  1 !               - Fixed SET_TARGET_MASK.
;   126          0126  1 !               - Fixed SUBMIT_REQUEST to calculate actual message size.
;   127          0127  1 !               - Added support for alternate cancellation message.
;   128          0128  1 !               - Handle REPLY/BLANK_TAPE and REPLY/INITIALIZE_TAPE operator replies.
;   129          0129  1 !
;   130          0130  1 !       V02-002 STJ0083         Steven T. Jeffreys
;   131          0131  1 !               - Changed $DELMBX call in CANCEL_REQUEST to $DASSGN to properly
;   132          0132  1 !                 delete the mailbox and free up the channel.
;   133          0133  1 !               - Changed error recovery handlers to use the physical device
;   134          0134  1 !                  name string when referring to the device.
;   135          0135  1 !               - Added logic to recover from an SS$_INCVOLLABEL error, which
;   136          0136  1 !                 occurs when the label of the volume present in the drive does
;   137          0137  1 !                 not match the volume label specified by the user.
;   138          0138  1 !
;   139          0139  1 !--
;   140          0140  1
;   141          0141  1 LIBRARY 'SYS$LIBRARY:LIB.L32';
;   142          0142  1 LIBRARY 'SYS$LIBRARY:TPAMAC';
;   143          0143  1 REQUIRE 'LIBD$:[VMSLIB.OBJ]INITMSG.REQ';
;   144          0275  1 REQUIRE 'SHRLIB$:OPCDEFTMP';    ! *** TEMPORARY
;   145          0516  1 REQUIRE 'SRC$:MOUDEF.B32';
;   146          1048  1
;   147          1049  1 FORWARD ROUTINE
;   148          1050  1
;   149          1051  1         SYS$MOUNT,                      ! Main entry point of $MOUNT
;   150          1052  1         INTERCEPT_SIGNAL,               ! Main condition handler
;   151          1053  1         SUBMIT_REQUEST  : NOVALUE,      ! Send request to operator
;   152          1054  1         SET_TARGET_MASK : NOVALUE,      ! Sets operator target mask
;   153          1055  1         POST_READ_TO_MBX: NOVALUE,      ! Post read to reply mailbox
;   154          1056  1         INTERACTIVE_JOB,                ! Determines if we're a batch job
;   155          1057  1         PRINT_REPLY     : NOVALUE,      ! Print the operator reply
;   156          1058  1         PARSE_REPLY     : NOVALUE,      ! Parse the oprator's reply
;   157          1059  1         CANCEL_REQUEST  : NOVALUE,      ! Cancel the operator request
;   158          1060  1         CHECK_FOR_REPLY : NOVALUE,      ! Check for operator response
;   159          1061  1         ALLOCFAIL_HNDLR : NOVALUE,      ! Handle device allocation failures
;   160          1062  1         MEDOFL_HNDLR    : NOVALUE,      ! Handle SS$_MEDOFL condition
;   161          1063  1         WRONGVOL_HNDLR  : NOVALUE,      ! Handle SS$_INCVOLLABEL condition
;   162          1064  1         INVALID_COMMAND,                ! Notify user/operator of invalid reply
;   163          1065  1         EXIT_HANDLER    : NOVALUE;      ! Exit handler
;   164          1066  1
;   165          1067  1 FORWARD
;   166          1068  1
;   167          1069  1         STATE_TABLE     : VECTOR [0],           ! TPARSE state table
;   168          1070  1         KEY_TABLE       : VECTOR [0];           ! TPARSE key table
;   169          1071  1
;   170          1072  1 STRUCTURE
;   171          1073  1
```

```
;  172          1074  1          EXTERNAL_CTRL_BLK [I ; N] =                     ! exit handler descriptor
;  173          1075  1              [(4+N)*4]                                   ! N = # of arguments ( N <= 1)
;  174          1076  1              (EXIT_CTRL_BLK+I*4)<0,32,0>;                ! the block is a longword array
;  175          1077  1
;  176          1078  1 MACRO
;  177          1079  1          !
;  178          1080  1          ! Abort the mount operation.
;  179          1081  1          !
;  180        M 1082  1          ABORT_MOUNT (CODE) =
;  181        M 1083  1                  SIGNAL_STOP     (%IF NOT %NULL (CODE) %THEN CODE %ELSE 0 %FI
;  182        M 1084  1                                   %IF NOT %NULL (%REMAINING) %THEN , %REMAINING %FI
;  183          1085  1                                  )%;
;  184          1086  1
;  185          1087  1 MACRO
;  186          1088  1          !
;  187          1089  1          ! Generate a static string descriptor
;  188          1090  1          !
;  189        M 1091  1          DESCRIP (STRING) =
;  190        M 1092  1                  BBLOCK  [DSC$K_S_BLN]
;  191        M 1093  1                  INITIAL (WORD (%CHARCOUNT (STRING)),
;  192        M 1094  1                           BYTE (DSC$K_DTYPE_T),
;  193        M 1095  1                           BYTE (DSC$K_CLASS_S),
;  194        M 1096  1                           LONG (UPLIT_BYTE (STRING))
;  195          1097  1                          )%;
;  196          1098  1
;  197          1099  1 MACRO
;  198          1100  1          !
;  199          1101  1          ! 3 byte operator mask field definition.
;  200          1102  1          !
;  201          1103  1          TARGET_FIELD = $BYTEOFFSET(OPC$B_MS_TARGET), 0, 24, 0%;
;  202          1104  1
;  203          1105  1 MACRO
;  204          1106  1          !
;  205          1107  1          ! For documentation purposes, define a boolean variable
;  206          1108  1          ! that can only take on the values TRUE or FALSE.
;  207          1109  1          !
;  208          1110  1          BOOLEAN = LONG%;
;  209          1111  1
;  210          1112  1 LITERAL
;  211          1113  1          FAO_BUFFER_SIZE = 512,          ! Max length of FAO result string
;  212          1114  1          MAX_DEV_LENGTH  = 63,           ! Max length of device name
;  213          1115  1          !
;  214          1116  1          ! Create the reply mailbox protection mask.  Allow only
;  215          1117  1          ! OWNER(read) and SYSTEM(read,write) access.  See documentation
;  216          1118  1          ! of the $CREMBX system service for more info.
;  217          1119  1          !
;  218          1120  1          MAILBOX_PROTECTION = %X'FF00',
;  219          1121  1          !
;  220          1122  1          ! The following are boolean values that are used to make the
;  221          1123  1          ! code more readable.  They are used as input to CANCEL_REQUEST.
;  222          1124  1          !
;  223          1125  1          REQUEST_SATISFIED       = 1,    ! The request completed w/o opertor intervention
;  224          1126  1          REQUEST_NOT_SATISFIED   = 0,    ! The request is being cancled for some reason
;  225          1127  1          !
;  226          1128  1          ! The following are mask definitions used for retrieving specified
;  227          1129  1          ! portions of a message via the $GETMSG system service.
;  228          1130  1          !
```

```
;  229          1131  1          MSG_TEXT        = 1,            ! Include message text
;  230          1132  1          MSG_ID          = 2,            ! Include message identifier
;  231          1133  1          MSG_SEVERITY    = 4,            ! Include severity indicator
;  232          1134  1          MSG_FACILITY    = 8,            ! Include message facility name
;  233          1135  1          !
;  234          1136  1          ! The following are indexes into the Exit Handler Control Block
;  235          1137  1          !
;  236          1138  1          XHNDLR_ADDRESS  = 1,            ! exit handler address
;  237          1139  1          XHNDLR_ARGCNT   = 2,            ! exit handler argument count
;  238          1140  1          XHNDLR_STSADDR  = 3,            ! system exit status address
;  239          1141  1          !
;  240          1142  1          TRUE            = 1,            ! Boolean value
;  241          1143  1          FALSE           = 0,            ! Boolean value
;  242          1144  1          !
;  243          1145  1          WAIT            = 1,            ! Enable wait for reply
;  244          1146  1          NO_WAIT         = 0,            ! Disable wait for reply
;  245          1147  1          !
;  246          1148  1          REPLY_FLAG      = MOUNT_EFN,    ! A local event flag #
;  247          1149  1          TIMER_FLAG      = TIMER_EFN,    ! A local event flag #
;  248          1150  1          TIMER_ID        = 999,          ! Timer identification #
;  249          1151  1          !
;  250          1152  1          EXPECT_REPLY    = 1,            ! Indicates that we expect a reply
;  251          1153  1          NO_REPLY        = 0;            ! Indecates that we don't desire a reply
;  252          1154  1
;  253          1155  1  GLOBAL LITERAL
;  254          1156  1          VOLINV_LIMIT    = 20;           ! VOLINV retry limit
;  255          1157  1
;  256          1158  1  !
;  257          1159  1  ! Define the static storage used by this module.  Note that the
;  258          1160  1  ! virtual pages on which this data resides must be USER writable.
;  259          1161  1  ! It is important that this data start on a page boundary, so that
;  260          1162  1  ! the $SETPRT call does not make pages writable that were not meant
;  261          1163  1  ! to be.
;  262          1164  1  !
;  263          1165  1
;  264          1166  1  PSECT GLOBAL = $USER_DATA$ (WRITE, NOEXECUTE, NOSHARE, ALIGN (9));
;  265          1167  1
;  266          1168  1  GLOBAL
;  267          1169  1          VA_START        : VECTOR [0] ALIGN (9),             ! Start of 'user data'
;  268          1170  1          VOLINV_COUNT    : LONG,             ! VOLINV retry counter
;  269          1171  1          !
;  270          1172  1          ! Declare boolean variables.
;  271          1173  1          !
;  272          1174  1          REPLY_PENDING   : BOOLEAN VOLATILE,     ! Determines if response outstanding
;  273          1175  1          MOUNT_FAILED    : BOOLEAN VOLATILE,     ! Used in conjunction with MOUNT_STATUS
;  274          1176  1          OPERATOR_PRESENT: BOOLEAN VOLATILE,     ! Determines operator presence
;  275          1177  1          RETRY_COUNTER   : LONG VOLATILE,        ! Number of retries
;  276          1178  1          SS_FAIL_MODE    : BOOLEAN,              ! System service failure mode
;  277          1179  1          !
;  278          1180  1          ! Declare condition context variables.
;  279          1181  1          !
;  280          1182  1          MOUNT_STATUS    : BBLOCK[4] VOLATILE,   ! Primary condition
;  281          1183  1          PREVIOUS_STATUS : BBLOCK[4] VOLATILE,   ! Previous primary condition
;  282          1184  1          PREVIOUS_DEV_IDX: LONG VOLATILE,        ! Previous device index #
;  283          1185  1          OPERATOR_MASK   : LONG VOLATILE,        ! Mask of operators to receive requests
;  284          1186  1          REQUEST_ID      : LONG VOLATILE,        ! Operator request #
;  285          1187  1          !
```

```
;  286          1188  1          ! Declare exit handler control block.
;  287          1189  1          !
;  288          1190  1          EXIT_HNDLR_DSC  : EXIT_CTRL_BLK [0],    ! Define exit handler descriptor
;  289          1191  1          !
;  290          1192  1          ! Declare storge related to the operator reply message.
;  291          1193  1          !
;  292          1194  1          REPLY_CHANNEL   : LONG VOLATILE,        ! Channel of reply mailbox
;  293          1195  1          REPLY_IOSB      : BBLOCK [8] VOLATILE,  ! IOSB  for operator reply read
;  294          1196  1          REPLY_BUFFER    : BBLOCK [OPC$S_MS_OTEXT+8] VOLATILE,
;  295          1197  1          REPLY_DESC      : BBLOCK [DSC$K_S_BLN] VOLATILE
;  296          1198  1                            INITIAL (WORD (OPC$S_MS_OTEXT+8),
;  297          1199  1                                     BYTE (DSC$K_DTYPE_T),
;  298          1200  1                                     BYTE (DSC$K_CLASS_S),
;  299          1201  1                                     LONG (REPLY_BUFFER)
;  300          1202  1                                    ),
;  301          1203  1
;  302          1204  1          !
;  303          1205  1          ! Define the TPARSE control block.
;  304          1206  1          !
;  305          1207  1          TPARSE_BLOCK    : BBLOCK [TPA$K_LENGTH0]
;  306          1208  1                            INITIAL (TPA$R_COUNT0,TPA$M_ABBREV),
;  307          1209  1
;  308          1210  1          !
;  309          1211  1          ! Define the device name descriptor that is used as an implicit
;  310          1212  1          ! output to a TPARSE action routine.
;  311          1213  1          !
;  312          1214  1          DEVICE_DESC     : BBLOCK [DSC$K_S_BLN]  ! Descriptor for device name
;  313          1215  1                            INITIAL (WORD (MAX_DEV_LENGTH),
;  314          1216  1                                     BYTE (DSC$K_DTYPE_T),
;  315          1217  1                                     BYTE (DSC$K_CLASS_S),
;  316          1218  1                                     LONG (0)
;  317          1219  1                                    ),
;  318          1220  1          !
;  319          1221  1          ! Declare storage for operator message and its descriptor.
;  320          1222  1          !
;  321          1223  1          OP_MSG_BUF      : BBLOCK [OPC$S_MS_OTEXT] ! Buffer for op. request ms
;  322          1224  1                            INITIAL (BYTE (OPC$_RQ_RQST)),
;  323          1225  1
;  324          1226  1          OP_MSG_DESC     : BBLOCK [DSC$K_S_BLN]  ! Descriptor for op. request
;  325          1227  1                            INITIAL (WORD (OPC$S_MS_OTEXT),
;  326          1228  1                                     BYTE (DSC$K_DTYPE_T),
;  327          1229  1                                     BYTE (DSC$K_CLASS_S),
;  328          1230  1                                     LONG (OP_MSG_BUF)
;  329          1231  1                                    ),
;  330          1232  1
;  331          1233  1          CANCEL_MSG_BUF  : BBLOCK [OPC$K_HDR_SIZE]               ! Cancel message
;  332          1234  1                            INITIAL (BYTE (OPC$_X_CANCEL),       ! Set cancellation code
;  333          1235  1                                     BYTE (OPC$R_UNSPEC)         ! Set SCOPE unspecified
;  334          1236  1                                    ),
;  335          1237  1
;  336          1238  1          CANCEL_MSG_DESC : BBLOCK [DSC$K_S_BLN]  ! Cancel message descriptor
;  337          1239  1                            INITIAL (WORD (OPC$K_HDR_SIZE),
;  338          1240  1                                     BYTE (DSC$K_DTYPE_T),
;  339          1241  1                                     BYTE (DSC$K_CLASS_S),
;  340          1242  1                                     LONG (CANCEL_MSG_BUF)
;  341          1243  1                                    ),
;  342          1244  1          !
```

```
;  343          1245  1          ! Declare storage for FAO resultant string buffer and descriptor.
;  344          1246  1          !
;  345          1247  1          FAO_BUFFER      : BBLOCK [FAO_BUFFER_SIZE],
;  346          1248  1          FAO_RESULT_DESC : BBLOCK [DSC$K_S_BLN]
;  347          1249  1                            INITIAL (WORD (LOG$C_NAMLENGTH),
;  348          1250  1                                     BYTE (DSC$K_DTYPE_T),
;  349          1251  1                                     BYTE (DSC$K_CLASS_S),
;  350          1252  1                                     LONG (FAO_BUFFER)
;  351          1253  1                                    ),
;  352          1254  1          !
;  353          1255  1          ! Define the INADR vector used in the $SETPRT call.
;  354          1256  1          ! Note that VA_RANGE is on the next virtual page after VA_END.
;  355          1257  1          !
;  356          1258  1          VA_END          : VECTOR [0],           ! End of 'user data'
;  357          1259  1          VA_RANGE        : VECTOR [2] INITIAL (VA_START, VA_END) ALIGN (9);
;  358          1260  1
;  359          1261  1
;  360          1262  1 BIND
;  361          1263  1          !
;  362          1264  1          ! This is the delta-time value for all timers used.
;  363          1265  1          ! The time is a quadword value, is currently set for 5 seconds.
;  364          1266  1          !
;  365          1267  1          DELTA_TIME      = UPLIT (-5 * 10000000, -1);
```

```
;  367          1268  1 GLOBAL ROUTINE SYS$MOUNT  (ITEM_LIST) =
;  368          1269  1 !++
;  369          1270  1 ! Functional description:
;  370          1271  1 !
;  371          1272  1 !       This routine is the main entry point of the $MOUNT system service,
;  372          1273  1 !       and executes in the access mode of the caller.  Usually this will
;  373          1274  1 !       be USER mode.  This routine others defined in this module implement
;  374          1275  1 !       the logic for "operator assisted mount".  This code must execute
;  375          1276  1 !       in  USER mode, to allow users to CTRL\Y out of a mount request.
;  376          1277  1 !
;  377          1278  1 ! Input:
;  378          1279  1 !
;  379          1280  1 !       ITEM_LIST       : Address of a $GETJPI-like item list
;  380          1281  1 !
;  381          1282  1 ! Output:
;  382          1283  1 !
;  383          1284  1 !       None.
;  384          1285  1 !
;  385          1286  1 ! Implicit Inputs:
;  386          1287  1 !
;  387          1288  1 !       The MOUNT data base.
;  388          1289  1 !
;  389          1290  1 ! Implicit Outputs:                                                    ; F
;  390          1291  1 !
;  391          1292  1 !       The MOUNT data base may be altered as
;  392          1293  1 !       the result of operator intervention.                          ;
;  393          1294  1 !
;  394          1295  1 !--
;  395          1296  1
;  396          1297  2 BEGIN                                           ! Start of OPERATOR_ASSIST
;  397          1298  2
;  398          1299  2 BUILTIN
;  399          1300  2         FP,
;  400          1301  2         AP,
;  401          1302  2         CALLG;
;  402          1303  2
;  403          1304  2 LOCAL
;  404          1305  2         STATUS;
;  405          1306  2
;  406          1307  2 EXTERNAL
;  407          1308  2         MOUNT_OPTIONS   : BITVECTOR VOLATILE;   ! Mount options bit vector
;  408          1309  2
;  409          1310  2 EXTERNAL ROUTINE
;  410          1311  2         $DALLOC_DEVS$U  : ADDRESSING_MODE (GENERAL),    ! Address of transfer vector
;  411          1312  2         $CHANGE_PROT$U  : ADDRESSING_MODE (GENERAL),    ! Address of the transfer vector
;  412          1313  2         SYS$VMOUNT$U    : ADDRESSING_MODE (GENERAL);    ! Address of the transfer vector
;  413          1314  2
;  414          1315  2 !
;  415          1316  2 ! Enable a condition handler that will force the primary
;  416          1317  2 ! condition code facility-code to the MOUNT facility.
;  417          1318  2 !
;  418          1319  2 ENABLE INTERCEPT_SIGNAL;
;  419          1320  2
;  420          1321  2 !
;  421          1322  2 ! Set the page protection of this module's data to allow user
;  422          1323  2 ! mode read/write access.  This must be done here, since this
;  423          1324  2 ! image is INSTALLed as a protected shareable image, which has
```

```
;  424          1325  2 ! the effect of setting the protection to be USER read, EXEC write.
;  425          1326  2 ! Note that the data sits in a specail PSECT, to avoid changing
;  426          1327  2 ! the page protection on adjacent pages.
;  427          1328  2 !
;  428          1329  3 IF NOT (MOUNT_STATUS = $CHANGE_PROT$U ())
;  429          1330  2 THEN
;  430          1331  2     RETURN (.MOUNT_STATUS);
;  431          1332  2 !
;  432          1333  2 ! Initialize the necessary variables.  Most of the
;  433          1334  2 ! descriptors are not significantly changed, and do
;  434          1335  2 ! not have to be initialized at run time.
;  435          1336  2 !
;  436          1337  2 REPLY_PENDING = FALSE;
;  437          1338  2 MOUNT_FAILED = TRUE;
;  438          1339  2 OPERATOR_PRESENT = TRUE;
;  439          1340  2 PREVIOUS_STATUS = -1;
;  440          1341  2 PREVIOUS_DEV_IDX = -1;
;  441          1342  2 RETRY_COUNTER = 0;
;  442          1343  2 SS_FAIL_MODE = 0;
;  443          1344  2
;  444          1345  2 !
;  445          1346  2 ! Clear the system service failure exception flag, but save it's state.
;  446          1347  2 !
;  447          1348  2 STATUS = $SETSFM (ENBFLG=0);
;  448          1349  3 IF (.STATUS EQL SS$_WASSET)
;  449          1350  2 THEN
;  450          1351  2     SS_FAIL_MODE = 1;
;  451          1352  2
;  452          1353  2 !
;  453          1354  2 ! Set up the exit handler descriptor and declare the handler.
;  454          1355  2 !
;  455          1356  2 EXIT_HNDLR_DSC[XHNDLR_ADDRESS] = EXIT_HANDLER;
;  456          1357  2 EXIT_HNDLR_DSC[XHNDLR_ARGCNT]  = 1;
;  457          1358  2 EXIT_HNDLR_DSC[XHNDLR_STSADDR] = MOUNT_STATUS;
;  458          1359  2 $CANEXH (DESBLK = EXIT_HNDLR_DSC);
;  459          1360  2 $DCLEXH (DESBLK=EXIT_HNDLR_DSC);
;  460          1361  2
;  461          1362  2 !
;  462          1363  2 ! Perform the mount request.  If it fails, attempt to recover
;  463          1364  2 ! via some operator assistance.  If that is not possible, or the
;  464          1365  2 ! operator or user aborts the mount, die gracefully and return the
;  465          1366  2 ! status to the user.
;  466          1367  2 !
;  467          1368  2 MOUNT_STATUS = 0;
;  468          1369  2 VOLINV_COUNT = 0;
;  469          1370  2 WHILE NOT .MOUNT_STATUS DO
;  470          1371  3     BEGIN
;  471          1372  4     IF NOT (MOUNT_STATUS = CALLG (.AP, SYS$VMOUNT$U))
;  472          1373  3     THEN
;  473          1374  3         IF NOT .MOUNT_OPTIONS [OPT_ASSIST]
;  474          1375  3         THEN
;  475          1376  3
;  476          1377  4             BEGIN
;  477          1378  4             !
;  478          1379  4             ! If the mount operation failed for some reason other than VOLINV,
;  479          1380  4             ! exit loop with the error status. Else, do a limited number of
;  480          1381  4             ! retries. This automatic retry is implemented due to a race
```

```
;  481          1382  4              ! between mount and mount-verification. If mount is in progress
;  482          1383  4              ! and some event (e.g. cluster state transition) triggers mount-
;  483          1384  4              ! verification, mount-verification will clear the volume-valid
;  484          1385  4              ! bit in the UCB, causing mount to fail with a VOLINV error.
;  485          1386  4              !
;  486          1387  4              ! Not that the VOLINV error message will be suppressed (in module
;  487          1388  4              ! VMOUNT) unless the last retry fails with a VOLINV error.
;  488          1389  4              !
;  489          1390  5              IF (.MOUNT_STATUS AND STS$M_MSG_NO) NEQ (SS$_VOLINV AND STS$M_MSG_NO)
;  490          1391  4              THEN
;  491          1392  4                  EXITLOOP;
;  492          1393  4              VOLINV_COUNT = .VOLINV_COUNT + 1;
;  493          1394  4              IF .VOLINV_COUNT GEQ VOLINV_LIMIT
;  494          1395  4              THEN
;  495          1396  4                  EXITLOOP;
;  496          1397  4              END
;  497          1398  4
;  498          1399  3          ELSE
;  499          1400  3
;  500          1401  4              BEGIN
;  501          1402  4              !
;  502          1403  4              ! SELECT an error recovery handler based on the mount status value.
;  503          1404  4              ! Use only the message number and the facility code in the comparisons.
;  504          1405  4              !
;  505          1406  4              SELECTONEU (.MOUNT_STATUS AND STS$M_MSG_NO) OF
;  506          1407  4                  SET
;  507          1408  4                  [SS$_DEVALLOC    AND STS$M_MSG_NO]      : ALLOCFAIL_HNDLR ();
;  508          1409  4                  [SS$_MEDOFL      AND STS$M_MSG_NO]      : MEDOFL_HNDLR ();
;  509          1410  4                  [SS$_VOLINV      AND STS$M_MSG_NO]      : MEDOFL_HNDLR ();
;  510          1411  4                  [SS$_NODEVAVL    AND STS$M_MSG_NO]      : ALLOCFAIL_HNDLR ();
;  511          1412  4                  [SS$_NOSUCHDEV   AND STS$M_MSG_NO]      : ALLOCFAIL_HNDLR ();
;  512          1413  4                  [SS$_INCVOLLABEL AND STS$M_MSG_NO]      : WRONGVOL_HNDLR ();
;  513          1414  4                  [OTHERWISE]                             : EXITLOOP;
;  514          1415  4                  TES;
;  515          1416  4
;  516          1417  4                  !
;  517          1418  4                  ! Check for a reply to the operator request.  If it has
;  518          1419  4                  ! arrived, it will be processed.  If it hasn't, wait for
;  519          1420  4                  ! a few seconds and try again.
;  520          1421  4                  !
;  521          1422  4                  CHECK_FOR_REPLY ();
;  522          1423  3                  END;
;  523          1424  2          END;
;  524          1425  2
;  525          1426  2          !
;  526          1427  2          ! Attempt to deallocate devices that are not mounted and
;  527          1428  2          ! were not previously allocated.
;  528          1429  2          !
;  529          1430  2          ! If the mount interlock on this device is still in effect, dequeue it now.
;  530          1431  2          !
;  531          1432  2          ! Cancel the any outstanding requests and the exit handler.
;  532          1433  2          ! Also restore the system service failure exception flag to its
;  533          1434  2          ! original state, and disable the condition handler.
;  534          1435  2          !
;  535          1436  2          $DALLOC_DEVS$U (0);                             ! Attempt to deallocate devices
;  536          1437  2          CANCEL_REQUEST (REQUEST_SATISFIED);
;  537          1438  2          $SETSFM (ENBFLG = .SS_FAIL_MODE);
```

```
;  538          1439  2 .FP = 0;
;  539          1440  2 $CANEXH (DESBLK = EXIT_HNDLR_DSC);
;  540          1441  2
;  541          1442  3 RETURN (.MOUNT_STATUS)                    ! Return the status code
;  542          1443  3
;  543          1444  1 END;                                      ! End of SYS$MOUNT


                                        .TITLE  ASSIST
                                        .IDENT  \V04-001\

                                        .PSECT  $USER_DATA$,NOEXE,9

                                00000 VA_START::
                                                .BLKB   0
                                00000 VOLINV_COUNT::
                                                .BLKB   4
                                00004 REPLY_PENDING::
                                                .BLKB   4
                                00008 MOUNT_FAILED::
                                                .BLKB   4
                                0000C OPERATOR_PRESENT::
                                                .BLKB   4
                                00010 RETRY_COUNTER::
                                                .BLKB   4
                                00014 SS_FAIL_MODE::
                                                .BLKB   4
                                00018 MOUNT_STATUS::
                                                .BLKB   4
                                0001C PREVIOUS_STATUS::
                                                .BLKB   4
                                00020 PREVIOUS_DEV_IDX::
                                                .BLKB   4
                                00024 OPERATOR_MASK::
                                                .BLKB   4
                                00028 REQUEST_ID::
                                                .BLKB   4
                                0002C EXIT_HNDLR_DSC::
                                                .BLKB   16
                                0003C REPLY_CHANNEL::
                                                .BLKB   4
                                00040 REPLY_IOSB::
                                                .BLKB   8
                                00048 REPLY_BUFFER::
                                                .BLKB   136
                          0088  000D0 REPLY_DESC::
                                                .WORD   136                     ;
                            0E  000D2           .BYTE   14                      ;
                            01  000D3           .BYTE   1                       ;
                     00000000'  000D4           .ADDRESS REPLY_BUFFER           ;
                    00000002    00000008  000D8 TPARSE_BLOCK::
                                                .LONG   8, 2                    ;
                                000E0           .BLKB   28
                          003F  000FC DEVICE_DESC::
                                                .WORD   63                      ;
                            0E  000FE           .BYTE   14                      ;
                            01  000FF           .BYTE   1                       ;
```

```
                00000000  0C100          .LONG   0                                                       ;
                      03  00104 OP_MSG_BUF::
                                         .BYTE   3                                                       ;
                          00105          .BLKB   127
                    0080  00184 OP_MSG_DESC::
                                         .WORD   .28                                                     ;
                      0E  00186          .BYTE   14                                                      ;
                      01  00187          .BYTE   1                                                       ;
                00000000' 00188          .ADDRESS OP_MSG_BUF                                             ;
                      0E  0018C CANCEL_MSG_BUF::
                                         .BYTE   14                                                      ;
                      04  0018D          .BYTE   4                                                       ;
                          0018E          .BLKB   24
                          001A6          .BLKB   2
                    001A  001A8 CANCEL_MSG_DESC::
                                         .WORD   26                                                      ;
                      0E  001AA          .BYTE   14                                                      ;
                      01  001AB          .BYTE   1                                                       ;
                00000000' 001AC          .ADDRESS CANCEL_MSG_BUF                                         ;
                          001B0 FAO_BUFFER::
                                         .BLKB   512
                    0040  003B0 FAO_RESULT_DESC::
                                         .WORD   64                                                      ;
                      0E  003B2          .BYTE   14                                                      ;
                      01  003B3          .BYTE   1                                                       ;
                00000000' 003B4          .ADDRESS FAO_BUFFER                                             ;
                          003B8 VA_END::.BLKB   0
                          003B8          .BLKB   72
    00000000' 00000000' 00400 VA_RANGE::
                                         .ADDRESS VA_START, VA_END                                       ;

                                         .PSECT  $PLIT$,NOWRT,NOEXE,2

    FFFFFFFF  FD050F80  00000 P.AAA:     .LONG   -50000000, -1                                           ;

                                VOLINV_LIMIT==      20
                                DELTA_TIME=         P.AAA
                                         .EXTRN  MOUNT_OPTIONS, $DALLOC_DEVS$U
                                         .EXTRN  $CHANGE_PROT$U, SYS$VMOUNT$U
                                         .EXTRN  SYS$SETSFM, SYS$CANEXH
                                         .EXTRN  SYS$DCLEXH

                                         .PSECT  $CODE$,NOWRT,2

                          003C 00000             .ENTRY  SYS$MOUNT, Save R2,R3,R4,R5                     ; 1268
                55 00000000G   00  9E 00002      MOVAB   SYS$CANEXH, R5                                  ;
                54 00000000G   00  9E 00009      MOVAB   SYS$SETSFM, R4                                  ;
                53      0000'  CF  9E 00010      MOVAB   MOUNT_STATUS, R3                                ;
                6D      0108   CF  DE 00015      MOVAL   13$, (FP)                                       ; 1297
  00000000G     00             00  FB 0001A      CALLS   #0, $CHANGE_PROT$U                              ; 1329
                63             50  D0 00021      MOVL    R0, MOUNT_STATUS                                ;
                03             50  E8 00024      BLBS    R0, 1$                                          ;
                          00F3 31  00027          BRW     12$                                             ;
                      EC   A3  D4 0002A 1$:      CLRL    REPLY_PENDING                                   ; 1337
              F0      A3     01  D0 0002D        MOVL    #1, MOUNT_FAILED                                ; 1338
              F4      A3     01  D0 00031        MOVL    #1, OPERATOR_PRESENT                            ; 1339
              04      A3     01  CE 00035        MNEGL   #1, PREVIOUS_STATUS                             ; 1340
```

```
                08   A3                 01 CE 00039          MNEGL   #1, PREVIOUS_DEV_IDX                    ; 1341
                                   F8   A3 D4 0003D          CLRL    RETRY_COUNTER                           ; 1342
                                   FC   A3 D4 00040          CLRL    SS_FAIL_MODE                            ; 1343
                                        7E D4 00043          CLRL    -(SP)                                   ; 1348
                     64                 01 FB 00045          CALLS   #1, SYS$SETSFM
                     09                 50 D1 00048          CMPL    STATUS, #9                              ; 1349
                                        04 12 0004B          BNEQ    2$
                   FC   A3              01 D0 0004D          MOVL    #1, SS_FAIL_MODE                        ; 1351
                   18   A3       0000V  CF 9E 00051 2$:      MOVAB   EXIT_HANDLER, EXIT_HNDLR_DSC+4          ; 1356
                   1C   A3              01 D0 00057          MOVL    #1, EXIT_HNDLR_DSC+8                    ; 1357
                   20   A3              63 9E 0005B          MOVAB   MOUNT_STATUS, EXIT_HNDLR_DSC+12         ; 1358
                                   14   A3 9F 0005F          PUSHAB  EXIT_HNDLR_DSC                          ; 1359
                     65                 01 FB 00062          CALLS   #1, SYS$CANEXH
                                   14   A3 9F 00065          PUSHAB  EXIT_HNDLR_DSC                          ; 1360
       00000000G   00                   01 FB 00068          CALLS   #1, SYS$DCLEXH
                                        63 D4 0006F          CLRL    MOUNT_STATUS                            ; 1368
                                   E8   A3 D4 00071          CLRL    VOLINV_COUNT                            ; 1369
                     2D                 63 E8 00074 3$:      BLBS    MOUNT_STATUS, 4$                        ; 1370
       00000000G   00                   6C FA 00077          CALLG   (AP), SYS$VMOUNT$U                      ; 1372
                     63                 50 D0 0007E          MOVL    R0, MOUNT_STATUS
                     F0                 50 E8 00081          BLBS    R0, 3$
             1C      0000G    CF        02 E0 00084          BBS     #2, MOUNT_OPTIONS+6, 5$                 ; 1374
             50              63 FFFF0007 8F CB 0008A          BICL3   #-65529, MOUNT_STATUS, R0               ; 1390
       00000250   8F                    50 D1 00092          CMPL    R0, #592
                                        64 12 00099          BNEQ    11$
                                   E8   A3 D6 0009B          INCL    VOLINV_COUNT                            ; 1393
                     14            E8   A3 D1 0009E          CMPL    VOLINV_COUNT, #20                       ; 1394
                                        D0 19 000A2          BLSS    3$
                                        59 11 000A4 4$:      BRB     11$                                     ; 1396
             52              63 FFFF0007 8F CB 000A6 5$:      BICL3   #-65529, MOUNT_STATUS, R2               ; 1406
       00000840   8F                    52 D1 000AE          CMPL    R2, #2112                               ; 1408
                                        2B 13 000B5          BEQL    8$
       000001A0   8F                    52 D1 000B7          CMPL    R2, #416                                ; 1409
                                        09 13 000BE          BEQL    6$
       00000250   8F                    52 D1 000C0          CMPL    R2, #592                                ; 1410
                                        07 12 000C7          BNEQ    7$
            0000V   CF                  00 FB 000C9 6$:      CALLS   #0, MEDOFL_HNDLR
                                        27 11 000CE          BRB     10$
       000009B0   8F                    52 D1 000D0 7$:      CMPL    R2, #2480                               ; 1411
                                        09 13 000D7          BEQL    8$
       00000908   8F                    52 D1 000D9          CMPL    R2, #2312                               ; 1412
                                        07 12 000E0          BNEQ    9$
            0000V   CF                  00 FB 000E2 8$:      CALLS   #0, ALLOCFAIL_HNDLR
                                        0E 11 000E7          BRB     10$
       00000108   8F                    52 D1 000E9 9$:      CMPL    R2, #264                                ; 1413
                                        0D 12 000F0          BNEQ    11$
            0000V   CF                  00 FB 000F2          CALLS   #0, WRONGVOL_HNDLR
            0000V   CF                  00 FB 000F7 10$:     CALLS   #0, CHECK_FOR_REPLY                     ; 1422
                                  FF75  31 000FC             BRW     3$                                      ; 1374
                                        7E D4 000FF 11$:     CLRL    -(SP)                                   ; 1436
       00000000G   00                   01 FB 00101          CALLS   #1, $DALLOC_DEVS$U
                                        01 DD 00108          PUSHL   #1                                      ; 1437
            0000V   CF                  01 FB 0010A          CALLS   #1, CANCEL_REQUEST
                                   FC   A3 DD 0010F          PUSHL   SS_FAIL_MODE                            ; 1438
                     64                 01 FB 00112          CALLS   #1, SYS$SETSFM
                                        6D D4 00115          CLRL    (FP)                                    ; 1439
                                   14   A3 9F 00117          PUSHAB  EXIT_HNDLR_DSC                          ; 1440
```

```
                        65              01  FB 0011A           CALLS   #1, SYS$CANEXH                          ;
                        50              63  D0 0011D 12$:      MOVL    MOUNT_STATUS, R0                        ; 1442
                                            04 00120           RET                                             ; 1444
                                          0000 00121 13$:      .WORD   Save nothing                            ; 1297
                                        7E  D4 00123           CLRL    -(SP)                                   ;
                                        5E  DD 00125           PUSHL   SP                                      ;
                        7E      04      AC  7D 00127           MOVQ    4(AP), -(SP)                            ;
                  0000V CF              03  FB 0012B           CALLS   #3, INTERCEPT_SIGNAL                    ;
                                            04 00130           RET                                             ;

; Routine Size:  305 bytes,    Routine Base:  $CODE$ + 0000
```

```
;   545          1445  1 ROUTINE INTERCEPT_SIGNAL (SIGNAL, MECHANISM) =
;   546          1446  1
;   547          1447  1 !++
;   548          1448  1 ! Functional Description:
;   549          1449  1 !
;   550          1450  1 !       This routine is a conditon handler whose sole
;   551          1451  1 !       reason for existence is to force the primary
;   552          1452  1 !       conditon code's facility-code to that of the
;   553          1453  1 !       MOUNT facility.
;   554          1454  1 !
;   555          1455  1 ! Input:
;   556          1456  1 !
;   557          1457  1 !       SIGNAL    = Address of the signal array
;   558          1458  1 !       MECHANISM = Address of the mechanism array
;   559          1459  1 !
;   560          1460  1 ! Output:
;   561          1461  1 !
;   562          1462  1 !       The condition facility code is equal to MOUN$_FACILITY
;   563          1463  1 !--
;   564          1464  1
;   565          1465  2 BEGIN                                           ! Start of INTERCEPT_SIGNAL
;   566          1466  2
;   567          1467  2 MAP
;   568          1468  2
;   569          1469  2         SIGNAL          : REF BBLOCK,           ! Signal array
;   570          1470  2         MECHANISM       : REF BBLOCK;           ! Mechanism array
;   571          1471  2
;   572          1472  2 EXTERNAL
;   573          1473  2
;   574          1474  2         MOUNT_OPTIONS   : BITVECTOR VOLATILE,   ! parser option flags
;   575          1475  2         USER_STATUS     : VECTOR;               ! Status return of some routines
;   576          1476  2
;   577          1477  2
;   578          1478  2 IF .SIGNAL[CHF$L_SIG_NAME] NEQ SS$_UNWIND
;   579          1479  2 THEN
;   580          1480  3     BEGIN
;   581          1481  3     !
;   582          1482  3     ! Make the facility code MOUN$_FCILITY.
;   583          1483  3     !
;   584          1484  3     IF .BBLOCK [SIGNAL[CHF$L_SIG_NAME], STS$V_FAC_NO] EQL 0
;   585          1485  3     OR .BBLOCK [SIGNAL[CHF$L_SIG_NAME], STS$V_FAC_NO] EQL INIT$_FACILITY
;   586          1486  3     THEN
;   587          1487  3         BBLOCK [SIGNAL[CHF$L_SIG_NAME], STS$V_FAC_NO] = MOUN$_FACILITY;
;   588          1488  3
;   589          1489  3     IF .BBLOCK [SIGNAL[CHF$L_SIG_NAME], STS$V_MSG_NO] EQL 0
;   590          1490  3     THEN
;   591          1491  3         BBLOCK [SIGNAL[CHF$L_SIG_NAME], STS$V_MSG_NO] = .USER_STATUS [0] ^ (-$BITPOSITION (STS$V_MSG_NO));
;   592          1492  3
;   593          1493  3     !
;   594          1494  3     ! If the caller requested it, print the message text associated with the message code.
;   595          1495  3     !
;   596          1496  3     IF .MOUNT_OPTIONS [OPT_MESSAGE]
;   597          1497  3     THEN
;   598          1498  4         BEGIN
;   599          1499  4         SIGNAL [CHF$L_SIG_ARGS] = .SIGNAL [CHF$L_SIG_ARGS] - 2;
;   600          1500  4         $PUTMSG (MSGVEC = SIGNAL [CHF$L_SIG_ARGS], ACTRTN=0, FACNAM=0);
;   601          1501  4         SIGNAL [CHF$L_SIG_ARGS] = .SIGNAL [CHF$L_SIG_ARGS] + 2;
```

```
;   602          1502  4          BBLOCK [SIGNAL [CHF$L_SIG_NAME], STS$V_INHIB_MSG] = 1;
;   603          1503  3          END;
;   604          1504  3
;   605          1505  3      !
;   606          1506  3      ! If the condition severity code is SEVERE or ERROR, then unwind the
;   607          1507  3      ! stack back to the caller of the frame that established this handler.
;   608          1508  3      ! Return the condition code in R0.
;   609          1509  3      !
;   610          1510  3      IF .BBLOCK [SIGNAL [CHF$L_SIG_NAME], STS$V_SEVERITY] EQL STS$K_SEVERE
;   611          1511  3      OR .BBLOCK [SIGNAL [CHF$L_SIG_NAME], STS$V_SEVERITY] EQL STS$K_ERROR
;   612          1512  3      THEN
;   613          1513  4          BEGIN
;   614          1514  4          MECHANISM [CHF$L_MCH_SAVR0] = .SIGNAL [CHF$L_SIG_NAME];
;   615          1515  4          $UNWIND ();
;   616          1516  3          END;
;   617          1517  2      END;
;   618          1518  2
;   619          1519  2 !
;   620          1520  2 ! Attempt to continue the operation.
;   621          1521  2 !
;   622          1522  2 RETURN (SS$_CONTINUE);
;   623          1523  2
;   624          1524  1 END;                                    ! End of INTERCEPT_SIGNAL


                                                                .EXTRN  USER_STATUS, SYS$PUTMSG
                                                                .EXTRN  SYS$UNWIND

                                                    000C 00000 INTERCEPT_SIGNAL:
                                                                .WORD   Save R2,R3                      ; 1445
                                                    52      04 AC  D0 00002         MOVL    SIGNAL, R2  ; 1478
                                                    53      04 A2  9E 00006         MOVAB   4(R2), R3   ;
                                          00000920  8F         63  D1 0000A         CMPL    (R3), #2336 ;
                                                               6D  13 00011         BEQL    6$          ;
                                              0FFF  8F      02 A3  B3 00013         BITW    2(R3), #4095; 1484
                                                               0C  13 00019         BEQL    1$          ;
00000075  8F      02  A3                      0C               00  ED 0001B         CMPZV   #0, #12, 2(R3), #117; 1485
                                                               0A  12 00025         BNEQ    2$          ;
      02  A3                                0C               00  8F  F0 00027 1$: INSV    #114, #0, #12, 2(R3); 1487
                                              FFF8  8F         63  B3 00031 2$: BITW    (R3), #65528; 1489
                                                               0C  12 00036         BNEQ    3$          ;
                                    50        0000G CF      FD 8F  78 00038         ASHL    #-3, USER_STATUS, R0; 1491
          63                        0D              03         50  F0 0003F         INSV    R0, #3, #13, (R3)
                                    17        0000G CF         03  E1 00044 3$: BBC     #3, MOUNT_OPTIONS+6, 4$; 1496
                                              62               02  C2 0004A         SUBL2   #2, (R2)    ; 1499
                                                               7E  7C 0004D         CLRQ    -(SP)       ; 1500
                                                               7E  D4 0004F         CLRL    -(SP)       ;
                                                               52  DD 00051         PUSHL   R2          ;
                                    00000000G 00               04  FB 00053         CALLS   #4, SYS$PUTMSG;
                                              62               02  C0 0005A         ADDL2   #2, (R2)    ; 1501
                                        03    A3               10  88 0005D         BISB2   #16, 3(R3)  ; 1502
          04                        63        03               00  ED 00061 4$: CMPZV   #0, #3, (R3), #4; 1510
                                                               07  13 00066         BEQL    5$          ;
          02                        63        03               00  ED 00068         CMPZV   #0, #3, (R3), #2; 1511
                                                               11  12 0006D         BNEQ    6$          ;
                                              50        08 AC  D0 0006F 5$: MOVL    MECHANISM, R0       ; 1514
```

```
                        0C   A0          63  D0 00073          MOVL    (R3), 12(R0)                                ;
                                         7E  7C 00077          CLRQ    -(SP)                                       ; 1515
                00000000G    00          02  FB 00079          CALLS   #2, SYS$UNWIND                              ;
                             50          01  D0 00080 6$:      MOVL    #1, R0                                      ; 1522
                                             04 00083          RET                                                 ; 1524

; Routine Size:  132 bytes,    Routine Base:  $CODE$ + 0131
```

```
;  626          1525  1 ROUTINE POST_READ_TO_MBX (MBX_CHANNEL) : NOVALUE =
;  627          1526  1
;  628          1527  1 !++
;  629          1528  1 ! Functional description:
;  630          1529  1 !
;  631          1530  1 !       This routine will post a read to the reply mailbox.
;  632          1531  1 !       Instead of waiting for the I/O to complete, request
;  633          1532  1 !       that an event flag be set when the I/O is finally done.
;  634          1533  1 !
;  635          1534  1 ! Input:
;  636          1535  1 !
;  637          1536  1 !       None.
;  638          1537  1 !
;  639          1538  1 ! Implicit Input:
;  640          1539  1 !
;  641          1540  1 !       REPLY_CHANNEL   : Channel # of channel to the reply mailbox.
;  642          1541  1 !
;  643          1542  1 ! Output:
;  644          1543  1 !
;  645          1544  1 !       None.
;  646          1545  1 !
;  647          1546  1 ! Implict output:
;  648          1547  1 !
;  649          1548  1 !       REPLY_IOSB      : Address of an I/O status block to receive the status of the I/O.
;  650          1549  1 !       REPLY_BUFFER    : Address of buffer to receive the operator's reply.
;  651          1550  1 !
;  652          1551  1 ! Side effects:
;  653          1552  1 !
;  654          1553  1 !       If the $QIO fails, the user will be notified
;  655          1554  1 !       of the failure and the mount will be aborted.
;  656          1555  1 !
;  657          1556  1 ! Routine value:
;  658          1557  1 !
;  659          1558  1 !       None.
;  660          1559  1 !--
;  661          1560  1
;  662          1561  2 BEGIN                                           ! Start of POST_READ_TO_MBX
;  663          1562  2
;  664          1563  2 LOCAL
;  665          1564  2         STATUS          : LONG;                ! Hold status of $QIO call
;  666          1565  2
;  667        P 1566  3 IF NOT (STATUS = $QIO   (FUNC = IO$_READVBLK,
;  668        P 1567  3                          EFN  = REPLY_FLAG,
;  669        P 1568  3                          CHAN = .REPLY_CHANNEL,
;  670        P 1569  3                          IOSB = REPLY_IOSB,
;  671        P 1570  3                          P1   = REPLY_BUFFER,
;  672        P 1571  3                          P2   = ($BYTEOFFSET (OPC$S_MS_OTEXT) + $BYTEOFFSET (OPC$L_MS_TEXT))
;  673          1572  3                         ))
;  674          1573  2 THEN
;  675          1574  2     ABORT_MOUNT (MOUN$_MBXRDERR, 0, .STATUS);
;  676          1575  2
;  677          1576  1 END;                                           ! End of POST_READ_TO_MBX


                                                  .EXTRN  SYS$QIO
```

```
                                        0000 00000 POST_READ_TO_MBX:
                                                           .WORD   Save nothing                                    ; 1525
                                             7E  7C 00002          CLRQ    -(SP)                                  ; 1572
                                             7E  7C 00004          CLRQ    -(SP)                                  ;
                                    7E        88  8F  9A 00006          MOVZBL  #136, -(SP)                            ;
                                          0000' CF  9F 0000A          PUSHAB  REPLY_BUFFER                           ;
                                             7E  7C 0000E          CLRQ    -(SP)                                  ;
                                          0000' CF  9F 00010          PUSHAB  REPLY_IOSB                             ;
                                             31  DD 00014          PUSHL   #49                                    ;
                                          0000' CF  DD 00016          PUSHL   REPLY_CHANNEL                          ;
                                             1A  DD 0001A          PUSHL   #26                                    ;
                        00000000G         00     0C  FB 0001C          CALLS   #12, SYS$QIO                           ;
                                          11     50  E8 00023          BLBS    STATUS, 1$                             ;
                                                 50  DD 00026          PUSHL   STATUS                                 ; 1574
                                                 7E  D4 00028          CLRL    -(SP)                                  ;
                                       007281DC  8F  DD 0002A          PUSHL   #7504348                               ;
                        00000000G         00     03  FB 00030          CALLS   #3, LIB$STOP                           ;
                                                     04 00037 1$:      RET                                            ; 1576

; Routine Size:  56 bytes,    Routine Base:  $CODE$ + 01B5
```

```
;  679          1577  1 ROUTINE INTERACTIVE_JOB =
;  680          1578  1
;  681          1579  1 !++
;  682          1580  1 ! Functional Description:
;  683          1581  1 !
;  684          1582  1 !       This routine will determine if the current process is an
;  685          1583  1 !       interactive process, and return that information to the
;  686          1584  1 !       caller.  By definition, a process is interactive if it
;  687          1585  1 !       has a terminal associated with it.
;  688          1586  1 !
;  689          1587  1 ! Input:
;  690          1588  1 !
;  691          1589  1 !       None.
;  692          1590  1 !
;  693          1591  1 ! Output:
;  694          1592  1 !
;  695          1593  1 !       None.
;  696          1594  1 !
;  697          1595  1 ! Routine Value:
;  698          1596  1 !
;  699          1597  1 !       1 if current process is an interactive process
;  700          1598  1 !       0 if current process is not an interactive process
;  701          1599  1 !--
;  702          1600  1
;  703          1601  2 BEGIN                                           ! Start of INTERACTIVE_JOB
;  704          1602  2
;  705          1603  2 LOCAL
;  706          1604  2         ITEM_LIST       : BBLOCK [16],          ! Item list for $GETJPI
;  707          1605  2         DEVICE_NAME     : BBLOCK [16],          ! Device name buffer
;  708          1606  2         NAME_LENGTH     : LONG;                 ! Cell for device name length
;  709          1607  2
;  710          1608  2 !
;  711          1609  2 ! Build the $GETJPI item list and get the terminal name.
;  712          1610  2 !
;  713          1611  2 NAME_LENGTH = 0;                                ! Zero the output cell
;  714          1612  2 ITEM_LIST [0, 0, 16, 0] = 16;                  ! Set buffer length
;  715          1613  2 ITEM_LIST [2, 0, 16, 0] = JPI$_TERMINAL;       ! Set item code
;  716          1614  2 ITEM_LIST [4, 0, 32, 0] = DEVICE_NAME;        ! Set buffer address
;  717          1615  2 ITEM_LIST [8, 0, 32, 0] = NAME_LENGTH;        ! Set result length address
;  718          1616  2 ITEM_LIST [12,0, 32, 0] = 0;                  ! Set list terminator
;  719          1617  2 $GETJPI (ITMLST = ITEM_LIST);
;  720          1618  2
;  721          1619  2 !
;  722          1620  2 ! If a terminal is associated with the process, the terminal name
;  723          1621  2 ! length should be nonzero.
;  724          1622  2 !
;  725          1623  2 IF .NAME_LENGTH NEQ 0
;  726          1624  2 THEN
;  727          1625  2     1                                          ! Return TRUE
;  728          1626  2 ELSE
;  729          1627  2     0                                          ! Return FALSE
;  730          1628  2
;  731          1629  1 END;                                           ! End of INTERACTIVE_JOB


                                                .EXTRN  SYS$GETJPI
```

```
                                        0000 00000 INTERACTIVE_JOB:
                                                   .WORD   Save nothing                                ; 1577
                         5E                 20  C2 00002          SUBL2   #32, SP                     ;
                                            7E  D4 00005          CLRL    NAME_LENGTH                 ; 1611
                   14    AE 031D0010        8F  D0 00007          MOVL    #52232208, ITEM_LIST        ; 1612
                   18    AE         04      AE  9E 0000F          MOVAB   DEVICE_NAME, ITEM_LIST+4    ; 1614
                   1C    AE                 6E  9E 00014          MOVAB   NAME_LENGTH, ITEM_LIST+8    ; 1615
                                       20   AE  D4 00018          CLRL    ITEM_LIST+12                ; 1616
                                            7E  7C 0001B          CLRQ    -(SP)                       ; 1617
                                            7E  D4 0001D          CLRL    -(SP)                       ;
                                       20   AE  9F 0001F          PUSHAB  ITEM_LIST                   ;
                                            7E  7C 00022          CLRQ    -(SP)                       ;
                                            7E  D4 00024          CLRL    -(SP)                       ;
             00000000G                  00   07  FB 00026          CALLS   #7, SYS$GETJPI              ;
                                            6E  D5 0002D          TSTL    NAME_LENGTH                 ; 1623
                                            04  13 0002F          BEQL    1$                          ;
                         50                 01  D0 00031          MOVL    #1, R0                      ;
                                            04  00034          RET                                 ;
                                            50  D4 00035 1$:      CLRL    R0                          ;
                                                04 00037          RET                                 ; 1629

; Routine Size:  56 bytes,    Routine Base:  $CODE$ + 01ED

;  732          1630  1
```

```
;  734     1631  1 ROUTINE SUBMIT_REQUEST (MSG_DESC,REPLY_EXPECTED) : NOVALUE =
;  735     1632  1
;  736     1633  1 !++
;  737     1634  1 ! Functional Description:
;  738     1635  1 !
;  739     1636  1 !       This routine will send a request to all operators enabled
;  740     1637  1 !       to receive disk and tape messages.  All requests that are
;  741     1638  1 !       issued to the operator are echoed to the user.  Also, the
;  742     1639  1 !       request context is saved so that when the operator replies
;  743     1640  1 !       we can parse the reply in the context of the request.
;  744     1641  1 !
;  745     1642  1 ! Input:
;  746     1643  1 !
;  747     1644  1 !       MSG_DESC        = Address of a quadword string descriptor.
;  748     1645  1 !                         The string is the operator request.
;  749     1646  1 !
;  750     1647  1 !       REPLY_EXPECTED  = Boolean value.  If true then an operator
;  751     1648  1 !                         response is expected.
;  752     1649  1 !
;  753     1650  1 ! Output:
;  754     1651  1 !
;  755     1652  1 !       None.
;  756     1653  1 !
;  757     1654  1 ! Implicit Inputs:
;  758     1655  1 !
;  759     1656  1 !       MOUNT_STATUS    = status from current mount attempt
;  760     1657  1 !
;  761     1658  1 ! Implicit Outputs:
;  762     1659  1 !
;  763     1660  1 !       The request context is saved, the request is made.
;  764     1661  1 !--
;  765     1662  1
;  766     1663  2 BEGIN                                           ! Start of SUBMIT_REQUEST
;  767     1664  2
;  768     1665  2 MAP
;  769     1666  2
;  770     1667  2         MSG_DESC        : REF BBLOCK;           ! Address of request descriptor
;  771     1668  2
;  772     1669  2 EXTERNAL
;  773     1670  2
;  774     1671  2         DEVICE_INDEX    : LONG VOLATILE;        ! Index into device list
;  775     1672  2
;  776     1673  2 LITERAL
;  777     1674  2
;  778     1675  2         BLANK           = %ASCII ' ',           ! Fill character
;  779     1676  2         ZERO            = 0;                    ! Handy literal
;  780     1677  2
;  781     1678  2 LOCAL
;  782     1679  2
;  783     1680  2         STATUS          : LONG,                 ! Return status
;  784     1681  2         MBX_CHAN        : LONG;                 ! Operator reply mailbox channel
;  785     1682  2
;  786     1683  2
;  787     1684  2 !
;  788     1685  2 ! If no mailbox exists, create one.
;  789     1686  2 !
;  790     1687  2 IF .REPLY_CHANNEL EQL ZERO
```

```
;  791          1688  2 THEN
;  792          1689  3     IF NOT (STATUS = $CREMBX (CHAN = REPLY_CHANNEL, PROMSK = MAILBOX_PROTECTION))
;  793          1690  2     THEN
;  794          1691  2         ABORT_MOUNT (MOUN$_MBXCRERR, 0, .STATUS);
;  795          1692  2
;  796          1693  2 !
;  797          1694  2 ! Fill in the necessary fields in the request string.
;  798          1695  2 ! Copy the message string to the operator message buffer.
;  799          1696  2 !
;  800          1697  2 REQUEST_ID = .REQUEST_ID + 1;                    ! Inc reqeust #
;  801          1698  2 OP_MSG_BUF[OPC$L_MS_RQSTID]= .REQUEST_ID;        ! Set request #
;  802          1699  2 !
;  803          1700  2 CH$COPY (.MSG_DESC[DSC$W_LENGTH],                ! Source length
;  804          1701  2           .MSG_DESC[DSC$A_POINTER],              ! Source pointer
;  805          1702  2           BLANK,                                 ! Fill character
;  806          1703  2           OPC$S_MS_OTEXT-$BYTEOFFSET(OPC$L_MS_TEXT),! Destination length
;  807          1704  2           OP_MSG_BUF+$BYTEOFFSET(OPC$L_MS_TEXT)  ! Destination pointer
;  808          1705  2          );
;  809          1706  2 OP_MSG_DESC[DSC$W_LENGTH] = .MSG_DESC[DSC$W_LENGTH]+$BYTEOFFSET(OPC$L_MS_TEXT);
;  810          1707  2
;  811          1708  2 IF .REPLY_EXPECTED
;  812          1709  2 THEN
;  813          1710  3     BEGIN
;  814          1711  3     !
;  815          1712  3     ! An operator reply is expected.  Save the condition
;  816          1713  3     ! context and set up the reply mailbox channel.
;  817          1714  3     !
;  818          1715  3     PREVIOUS_STATUS  = .MOUNT_STATUS;
;  819          1716  3     PREVIOUS_DEV_IDX = .DEVICE_INDEX;
;  820          1717  3     REPLY_PENDING    =  TRUE;
;  821          1718  3     MBX_CHAN         = .REPLY_CHANNEL;
;  822          1719  3     END
;  823          1720  2 ELSE
;  824          1721  2     !
;  825          1722  2     ! An operator reply is not expected.
;  826          1723  2     ! Indicate this to OPCOM by specifying a mailbox channel of zero.
;  827          1724  2     !
;  828          1725  2     MBX_CHAN = ZERO;
;  829          1726  2
;  830          1727  2 !
;  831          1728  2 ! Set the operator target mask.
;  832          1729  2 !
;  833          1730  2 SET_TARGET_MASK ();
;  834          1731  2 OP_MSG_BUF[TARGET_FIELD] = .OPERATOR_MASK;
;  835          1732  2 !
;  836          1733  2 ! Send the request to the operator.
;  837          1734  2 !
;  838          1735  3 IF NOT (STATUS = $SNDOPR (MSGBUF=OP_MSG_DESC, CHAN=.MBX_CHAN))
;  839          1736  2 THEN
;  840          1737  2     ABORT_MOUNT (MOUN$_OPRSNDERR, 0, .STATUS);
;  841          1738  2 !
;  842          1739  2 ! Echo the operator request to the user.  If no operator is
;  843          1740  2 ! present, do not echo the request.  This interlock is necessary
;  844          1741  2 ! to prevent repeatedly issuing the request if no OPCOM process
;  845          1742  2 ! is present.
;  846          1743  2 !
;  847          1744  2 IF .OPERATOR_PRESENT
```

```
;  848     1745  2 THEN
;  849     1746  2     SIGNAL (MOUN$_OPRQST, 1, .MSG_DESC);
;  850     1747  2 !
;  851     1748  2 ! An alternate request status returned by $SNDOPR is SS$_NOPERATOR,
;  852     1749  2 ! which indicates that there is no operator present to service the
;  853     1750  2 ! request.  Taken in this context, it means that there is no OPCOM
;  854     1751  2 ! process present on the system.
;  855     1752  2 !
;  856     1753  2 IF .STATUS EQL OPC$_NOPERATOR
;  857     1754  2 THEN
;  858     1755  3     BEGIN
;  859     1756  3     REPLY_PENDING = FALSE;
;  860     1757  3     IF NOT INTERACTIVE_JOB ()
;  861     1758  3     THEN
;  862     1759  3         !
;  863     1760  3         ! Abort the mount, as no one can service the request.
;  864     1761  3         !
;  865     1762  3         ABORT_MOUNT (MOUN$_BATCHNOOPR)
;  866     1763  3     ELSE
;  867     1764  4         BEGIN
;  868     1765  4         !
;  869     1766  4         ! Inform the user that no operator is available to service
;  870     1767  4         ! the request.  The user then has three courses of action:
;  871     1768  4         !   - Abort the mount via CTRL-C
;  872     1769  4         !   - Wait for an operator to enable himself to service the request
;  873     1770  4         !   - Service the request himself.  (Hands-on environment)
;  874     1771  4         !
;  875     1772  4         ! Since the problem may go away in time, wait a short while after
;  876     1773  4         ! informing the user before continuing the MOUNT operation.
;  877     1774  4         !
;  878     1775  4         IF .OPERATOR_PRESENT
;  879     1776  4         THEN
;  880     1777  4             SIGNAL (MOUN$_NOOPR);
;  881     1778  4         OPERATOR_PRESENT = FALSE;
;  882     1779  5         IF NOT (STATUS = $SETIMR (EFN=TIMER_FLAG, REQIDT=TIMER_ID, DAYTIM=DELTA_TIME))
;  883     1780  4         THEN
;  884     1781  4             ABORT_MOUNT (.STATUS);
;  885     1782  4         $WAITFR (EFN = TIMER_FLAG);
;  886     1783  4         $CANTIM (REQIDT = TIMER_ID);
;  887     1784  4         $SETEF  (EFN = TIMER_FLAG);
;  888     1785  3         END;
;  889     1786  2     END;
;  890     1787  2 !
;  891     1788  2 ! If an operator reply is expected, then issue a read to the reply mailbox.
;  892     1789  2 !
;  893     1790  2 REPLY_IOSB = 0;
;  894     1791  2 IF .REPLY_PENDING
;  895     1792  2 THEN
;  896     1793  2     POST_READ_TO_MBX ();
;  897     1794  2
;  898     1795  1 END;                                   ! End of SUBMIT_REQUEST


                                                        .EXTRN  DEVICE_INDEX, SYS$CREMBX
                                                        .EXTRN  SYS$SNDOPR, SYS$SETIMR
                                                        .EXTRN  SYS$WAITFR, SYS$CANTIM
```

```
                                                        .EXTRN  SYS$SETEF

                                                07FC 00000 SUBMIT_REQUEST:
                                                           .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10                ; 1631
                                        5A 00000000G   00   9E 00002           MOVAB   LIB$SIGNAL, R10
                                        59 00000000G   00   9E 00009           MOVAB   LIB$STOP, R9
                                        58      0000'  CF   9E 00010           MOVAB   REPLY_CHANNEL, R8
                                                       68   D5 00015           TSTL    REPLY_CHANNEL               ; 1687
                                                       27   12 00017           BNEQ    1$
                                                       7E   7C 00019           CLRQ    -(SP)                       ; 1689
                                        7E      FF00   8F   3C 0001B           MOVZWL  #65280, -(SP)
                                                       7E   7C 00020           CLRQ    -(SP)
                                                       58   DD 00022           PUSHL   R8
                                                       7E   D4 00024           CLRL    -(SP)
                                00000000G   00         07   FB 00026           CALLS   #7, SYS$CREMBX
                                        57             50   D0 0002D           MOVL    R0, STATUS
                                        0D             57   E8 00030           BLBS    STATUS, 1$
                                                       57   DD 00033           PUSHL   STATUS                      ; 1691
                                                       7E   D4 00035           CLRL    -(SP)
                                    007281D4           8F   DD 00037           PUSHL   #7504340
                                        69             03   FB 0003D           CALLS   #3, LIB$STOP
                                          EC           A8   D6 00040 1$:       INCL    REQUEST_ID                  ; 1697
                                00CC      C8           EC   A8 D0 00043        MOVL    REQUEST_ID, OP_MSG_BUF+4    ; 1698
                                          56           04   AC D0 00049        MOVL    MSG_DESC, R6                ; 1700
    0078    8F          20        04      B6                 66   2C 0004D    MOVC5   (R6), @4(R6), #32, #120, OP_MSG_BUF+8  ; 1704
                                    00D0   C8                 00055
                0148    C8                 66                 08   A1 00058    ADDW3   #8, (R6), OP_MSG_DESC       ; 1706
                                          14           08   AC E9 0005E        BLBC    REPLY_EXPECTED, 2$          ; 1708
                                    E0    A8           DC   A8 D0 00062        MOVL    MOUNT_STATUS, PREVIOUS_STATUS  ; 1715
                                    E4    A8      0000G  CF   D0 00067         MOVL    DEVICE_INDEX, PREVIOUS_DEV_IDX  ; 1716
                                    C8    A8                 01   D0 0006D    MOVL    #1, REPLY_PENDING           ; 1717
                                          52                 68   D0 00071    MOVL    REPLY_CHANNEL, MBX_CHAN     ; 1718
                                                             02   11 00074    BRB     3$                          ; 1708
                                                             52   D4 00076 2$: CLRL    MBX_CHAN                    ; 1725
                                    0000V  CF                00   FB 00078 3$: CALLS   #0, SET_TARGET_MASK       ; 1730
    00C9    C8          18                 00        E8      A8   F0 0007D    INSV    OPERATOR_MASK, #0, #24, OP_MSG_BUF+1  ; 1731
                                                             52   DD 00085    PUSHL   MBX_CHAN                    ; 1735
                                              0148         C8   9F 00087    PUSHAB  OP_MSG_DESC
                                00000000G   00             02   FB 0008B    CALLS   #2, SYS$SNDOPR
                                        57                 50   D0 00092    MOVL    R0, STATUS
                                        0D                 57   E8 00095    BLBS    STATUS, 4$
                                                           57   DD 00098    PUSHL   STATUS                      ; 1737
                                                           7E   D4 0009A    CLRL    -(SP)
                                    007281EC               8F   DD 0009C    PUSHL   #7504364
                                        69                 03   FB 000A2    CALLS   #3, LIB$STOP
                                        0D        D0       A8   E9 000A5 4$: BLBC    OPERATOR_PRESENT, 5$        ; 1744
                                                           56   DD 000A9    PUSHL   R6                          ; 1746
                                                           01   DD 000AB    PUSHL   #1
                                    0072A023               8F   DD 000AD    PUSHL   #7512099
                                        6A                 03   FB 000B3    CALLS   #3, LIB$SIGNAL
                                00058061   8F              57   D1 000B6 5$: CMPL    STATUS, #360545             ; 1753
                                                           65   12 000BD    BNEQ    9$
                                              C8           A8   D4 000BF    CLRL    REPLY_PENDING               ; 1756
                                    FF01   CF              00   FB 000C2    CALLS   #0, INTERACTIVE_JOB         ; 1757
                                        0B                 50   E8 000C7    BLBS    R0, 6$
                                    007281FC               8F   DD 000CA    PUSHL   #7504380                    ; 1762
                                        69                 01   FB 000D0    CALLS   #1, LIB$STOP
```

```
                                 4F  11 000D3          BRB     9$
                           09     D0  A8  E9 000D5 6$:  BLBC    OPERATOR_PRESENT, 7$                    ;1775
                       0072A03B       8F  DD 000D9          PUSHL   #7512123                            ;1777
                           6A         01  FB 000DF          CALLS   #1, LIB$SIGNAL
                           D0         A8  D4 000E2 7$:  CLRL    OPERATOR_PRESENT                        ;1778
                       7E  03E7       8F  3C 000E5          MOVZWL  #999, -(SP)                         ;1779
                                      7E  D4 000EA          CLRL    -(SP)
                           0000'      CF  9F 000EC          PUSHAB  DELTA_TIME
                                      19  DD 000F0          PUSHL   #25
                 00000000G 00         04  FB 000F2          CALLS   #4, SYS$SETIMR
                           57         50  D0 000F9          MOVL    R0, STATUS
                           05         57  E8 000FC          BLBS    STATUS, 8$
                                      57  DD 000FF          PUSHL   STATUS                              ;1781
                           69         01  FB 00101          CALLS   #1, LIB$STOP
                                      19  DD 00104 8$:      PUSHL   #25                                 ;1782
                 00000000G 00         01  FB 00106          CALLS   #1, SYS$WAITFR
                                      7E  D4 0010D          CLRL    -(SP)                               ;1783
                       7E  03E7       8F  3C 0010F          MOVZWL  #999, -(SP)
                 00000000G 00         02  FB 00114          CALLS   #2, SYS$CANTIM
                                      19  DD 0011B          PUSHL   #25                                 ;1784
                 00000000G 00         01  FB 0011D          CALLS   #1, SYS$SETEF
                           04         A8  D4 00124 9$:      CLRL    REPLY_IOSB                          ;1790
                           05     C8  A8  E9 00127          BLBC    REPLY_PENDING, 10$                  ;1791
                       FE60   CF      00  FB 0012B          CALLS   #0, POST_READ_TO_MBX                ;1793
                                          04 00130 10$:     RET                                         ;1795

; Routine Size:  305 bytes,    Routine Base:  $CODE$ + 0225

;  899          1796  1
```

```
;  901          1797  1 ROUTINE SET_TARGET_MASK : NOVALUE =
;  902          1798  1
;  903          1799  1 !++
;  904          1800  1 ! Functional description:
;  905          1801  1 !
;  906          1802  1 !       Get the device characteristics and figure out which class
;  907          1803  1 !       of operator is to receive the request.  If the device is a
;  908          1804  1 !       tape, send the request to tape class operators.  If the
;  909          1805  1 !       device is a disk, send the request to disk class operators.
;  910          1806  1 !       If the device is neither tape or disk (ie. the user screwed
;  911          1807  1 !       up the device name on the command line) then send the
;  912          1808  1 !       request to both disk and tape class operators.  We remember
;  913          1809  1 !       the operator class mask in case we later have to cancel
;  914          1810  1 !       the request.
;  915          1811  1 !
;  916          1812  1 ! Input:
;  917          1813  1 !
;  918          1814  1 !       None.
;  919          1815  1 !
;  920          1816  1 ! Output:
;  921          1817  1 !
;  922          1818  1 !       None.
;  923          1819  1 !
;  924          1820  1 ! Implicit Input:
;  925          1821  1 !
;  926          1822  1 !       The MOUNT data base.  Note that:
;  927          1823  1 !       DEVICE_STRING[.DEVICE_INDEX*2] = the address of string descriptor
;  928          1824  1 !                                        of the device currently being mounted.
;  929          1825  1 !
;  930          1826  1 ! Implicit Output:
;  931          1827  1 !
;  932          1828  1 !       OPERATOR_MASK = mask of target operators.  Only
;  933          1829  1 !                       the low 3 bytes are significant.
;  934          1830  1 !
;  935          1831  1 !--
;  936          1832  1
;  937          1833  2 BEGIN                                           ! Start of SET_TARGET_MASK
;  938          1834  2
;  939          1835  2 EXTERNAL
;  940          1836  2         DEVICE_INDEX    : LONG VOLATILE,       ! Index into aforementioned vector
;  941          1837  2         PHYS_NAME       : VECTOR VOLATILE;     ! Vector of device descriptors
;  942          1838  2
;  943          1839  2 LOCAL
;  944          1840  2         DEVICE_CHAR     : BBLOCK [DIB$K_LENGTH],! Primary characteristics buffer
;  945          1841  2         DEVICE_CHAR2    : BBLOCK [DIB$K_LENGTH],! Secondary characteristics buffer
;  946          1842  2         DEVCHAR_DESC    : BBLOCK [DSC$K_S_BLN], ! Descriptor of primary char. buffer
;  947          1843  2         DEVCHAR_DESC2   : BBLOCK [DSC$K_S_BLN], ! Descriptor of secondary char. buffer
;  948          1844  2         STATUS          : LONG;
;  949          1845  2
;  950          1846  2 !
;  951          1847  2 ! Set up the device characteristic buffer descriptors.
;  952          1848  2 !
;  953          1849  2 DEVCHAR_DESC [DSC$W_LENGTH]  = DIB$K_LENGTH;
;  954          1850  2 DEVCHAR_DESC [DSC$B_DTYPE]   = DSC$K_DTYPE_T;
;  955          1851  2 DEVCHAR_DESC [DSC$B_CLASS]   = DSC$K_CLASS_S;
;  956          1852  2 DEVCHAR_DESC [DSC$A_POINTER] = DEVICE_CHAR;
;  957          1853  2 DEVCHAR_DESC2 [DSC$W_LENGTH]  = DIB$K_LENGTH;
```

```
;  958          1854  2 DEVCHAR_DESC2 [DSC$B_DTYPE]   = DSC$K_DTYPE_T;
;  959          1855  2 DEVCHAR_DESC2 [DSC$B_CLASS]   = DSC$K_CLASS_S;
;  960          1856  2 DEVCHAR_DESC2 [DSC$A_POINTER] = DEVICE_CHAR2;
;  961          1857  2 OPERATOR_MASK = 0;                              ! Zero the operator targt mask.
;  962          1858  2 !
;  963          1859  2 ! Get the device characteristics and perform some sanity checking.
;  964          1860  2 ! If this device is not mountable, don't worry, the operator will be
;  965          1861  2 ! notified and he'll think of something.
;  966          1862  2 !
;  967        P 1863  2 STATUS = $GETDEV (DEVNAM = PHYS_NAME [.DEVICE_INDEX *2],
;  968        P 1864  2                   PRIBUF=DEVCHAR_DESC,
;  969        P 1865  2                   SCDBUF = DEVCHAR_DESC2
;  970          1866  2                  );
;  971          1867  3 IF (NOT .DEVICE_CHAR[DEV$V_FOD]) OR  (.STATUS EQL SS$_NOSUCHDEV)
;  972          1868  2 THEN
;  973          1869  3     OPERATOR_MASK = (OPC$M_NM_DISKS OR OPC$M_NM_TAPES)  ! Send to tape and disk operators
;  974          1870  2 ELSE
;  975          1871  2     !
;  976          1872  2     ! Set the operator mask according to device class.  That is, tape
;  977          1873  2     ! requests go to TAPE operators, disk requests go to DISK operators.
;  978          1874  2     !
;  979          1875  3     OPERATOR_MASK = (IF .DEVICE_CHAR[DEV$V_SQD]
;  980          1876  3                      THEN
;  981          1877  3                          OPC$M_NM_TAPES
;  982          1878  3                      ELSE
;  983          1879  2                          OPC$M_NM_DISKS);
;  984          1880  1 END;                                             ! End of SET_TARGET_MASK


                                                .EXTRN  PHYS_NAME, SYS$GETDEV

                                0004 00000 SET_TARGET_MASK:
                                           .WORD   Save R2                                  ; 1797
                         52      0000'  CF  9E 00002       MOVAB   OPERATOR_MASK, R2        ;
                         5E      FF0C   CE  9E 00007       MOVAB   -244(SP), SP             ;
                      04 AE  010E0074   8F  D0 0000C       MOVL    #17694836, DEVCHAR_DESC  ; 1849
                      08 AE        8C   AD  9E 00014       MOVAB   DEVICE_CHAR, DEVCHAR_DESC+4 ; 1852
                             010E0074   8F  DD 00019       PUSHL   #17694836                ; 1853
                      04 AE        10   AE  9E 0001F       MOVAB   DEVICE_CHAR2, DEVCHAR_DESC2+4 ; 1856
                                        62  D4 00024       CLRL    OPERATOR_MASK            ; 1857
                                        5E  DD 00026       PUSHL   SP                       ; 1866
                                        7E  D4 00028       CLRL    -(SP)                    ;
                                     10 AE  9F 0002A       PUSHAB  DEVCHAR_DESC             ;
                                        7E  D4 0002D       CLRL    -(SP)                    ;
                50      0000G   CF          01  78 0002F       ASHL    #1, DEVICE_INDEX, R0     ;
                                     0000GCF40  DF 00035       PUSHAL  PHYS_NAME[R0]            ;
                   00000000G    00          05  FB 0003A       CALLS   #5, SYS$GETDEV           ;
                09       8D   AD          06  E1 00041       BBC     #6, DEVICE_CHAR+1, 1$    ; 1867
                   00000908   8F          50  D1 00046       CMPL    STATUS, #2312            ;
                                           04  12 0004D       BNEQ    2$                       ;
                              62           0C  D0 0004F 1$:    MOVL    #12, OPERATOR_MASK       ; 1869
                                           04  00052         RET                              ;
                05       8C   AD          05  E1 00053 2$:    BBC     #5, DEVICE_CHAR, 3$      ; 1875
                              50           04  D0 00058       MOVL    #4, R0                   ;
                                           03  11 0005B       BRB     4$                       ;
                              50           08  D0 0005D 3$:    MOVL    #8, R0                   ;
```

```
                          62          50  D0 00060 4$:    MOVL    R0, OPERATOR_MASK                       ;
                                          04 00063        RET                                             ; 1880

; Routine Size:  100 bytes,    Routine Base:  $CODE$ + 0356
```

```
;  986          1881  1 ROUTINE CANCEL_REQUEST (REQUEST_STATUS) : NOVALUE =
;  987          1882  1
;  988          1883  1 !++
;  989          1884  1 ! Functional Description:
;  990          1885  1 !
;  991          1886  1 !       This routine will cancel an outstanding operator request.
;  992          1887  1 !       The reply mailbox is deleted after the cancelation message
;  993          1888  1 !       is sent so there will be no stale messages lying around to
;  994          1889  1 !       confuse things later on.  The user is notified of the cancelation.
;  995          1890  1 !
;  996          1891  1 ! Input:
;  997          1892  1 !
;  998          1893  1 !       REQUEST_STATUS  : A boolean value that describes the status of the
;  999          1894  1 !                         operator request.  A value of 1 indicates the request
; 1000          1895  1 !                         has been successfully completed without  operator
; 1001          1896  1 !                         intervention, and the reason for the request no
; 1002          1897  1 !                         longer exists.  A value of 0 indicates that the
; 1003          1898  1 !                         request has not been satisfied, but is being canceled
; 1004          1899  1 !                         for some reason.
; 1005          1900  1 !
; 1006          1901  1 ! Output:
; 1007          1902  1 !
; 1008          1903  1 !       None.
; 1009          1904  1 !
; 1010          1905  1 ! Implicit Input:
; 1011          1906  1 !
; 1012          1907  1 !       REPLY_PENDING = TRUE if there is an outstanding operater request.
; 1013          1908  1 !
; 1014          1909  1 ! Implicit Outputs:
; 1015          1910  1 !
; 1016          1911  1 !       REPLY_PENDING = FALSE
; 1017          1912  1 !--
; 1018          1913  1
; 1019          1914  2 BEGIN                                           ! Start of CANCEL_REQUEST
; 1020          1915  2
; 1021          1916  2
; 1022          1917  2 IF .REPLY_PENDING
; 1023          1918  2 THEN
; 1024          1919  3     BEGIN
; 1025          1920  3     !
; 1026          1921  3     ! Send cancelation notice to operator
; 1027          1922  3     !
; 1028          1923  3     BBLOCK [CANCEL_MSG_BUF [OPC$L_RQ_OPTIONS], OPC$V_RQSTDONE] = .REQUEST_STATUS;
; 1029          1924  3     CANCEL_MSG_BUF[OPC$L_RQSTID] = .REQUEST_ID;
; 1030          1925  3     CANCEL_MSG_BUF[OPC$L_ATTNMASK1] = .OPERATOR_MASK;
; 1031          1926  3     $SNDOPR (MSGBUF=CANCEL_MSG_DESC, CHAN=.REPLY_CHANNEL);
; 1032          1927  3     !
; 1033          1928  3     ! Deassign the channel to the reply mailbox.  Since it
; 1034          1929  3     ! is a temporary mailbox, it will be deleted.
; 1035          1930  3     !
; 1036          1931  3     $DASSGN (CHAN = .REPLY_CHANNEL);
; 1037          1932  3     REPLY_CHANNEL = 0;
; 1038          1933  3     REPLY_PENDING = FALSE;
; 1039          1934  3     !
; 1040          1935  3     ! Clear the reply event flag.
; 1041          1936  3     !
; 1042          1937  3     $CLREF (EFN=REPLY_FLAG);
```

```
;  1043          1938  3      !
;  1044          1939  3      ! Notify the user of the cancelation.
;  1045          1940  3      !
;  1046          1941  4      IF .REQUEST_STATUS AND (NOT .MOUNT_FAILED)
;  1047          1942  4      THEN
;  1048          1943  5          SIGNAL (MOUN$_RQSTDON)
;  1049          1944  4      ELSE
;  1050          1945  5          SIGNAL (MOUN$_OPRQSTCAN);
;  1051          1946  2      END;
;  1052          1947  2
;  1053          1948  1 END;                                    ! End of CANCEL_REQUEST


                                                               .EXTRN  SYS$DASSGN, SYS$CLREF

                                                0004 00000 CANCEL_REQUEST:
                                                               .WORD   Save R2                                         ; 1881
                                      52     0000'  CF  9E 00002      MOVAB   REPLY_CHANNEL, R2
                                      55       C8   A2  E9 00007      BLBC    REPLY_PENDING, 3$                       ; 1917
    0156   C2              01                00       04   AC  F0 0000B      INSV    REQUEST_STATUS, #0, #1, CANCEL_MSG_BUF+6  ; 1923
                                0162   C2       EC   A2  D0 00013      MOVL    REQUEST_ID, CANCEL_MSG_BUF+18           ; 1924
                                015A   C2       E8   A2  D0 00019      MOVL    OPERATOR_MASK, CANCEL_MSG_BUF+10        ; 1925
                                               62   DD  0001F      PUSHL   REPLY_CHANNEL                           ; 1926
                                       016C    C2   9F  00021      PUSHAB  CANCEL_MSG_DESC
                          00000000G    00             02   FB  00025      CALLS   #2, SYS$SNDOPR
                                               62   DD  0002C      PUSHL   REPLY_CHANNEL                           ; 1931
                          00000000G    00             01   FB  0002E      CALLS   #1, SYS$DASSGN
                                               62   D4  00035      CLRL    REPLY_CHANNEL                           ; 1932
                                         C8    A2   D4  00037      CLRL    REPLY_PENDING                           ; 1933
                                               1A   DD  0003A      PUSHL   #26                                     ; 1937
                          00000000G    00             01   FB  0003C      CALLS   #1, SYS$CLREF
                                       0C        04   AC  E9 00043      BLBC    REQUEST_STATUS, 1$                      ; 1941
                                       08        CC   A2  E8 00047      BLBS    MOUNT_FAILED, 1$
                                          0072A073   8F  DD  0004B      PUSHL   #7512T79                                ; 1943
                                               06   11  00051      BRB     2$
                                          0072A033   8F  DD  00053 1$:  PUSHL   #7512115                               ; 1945
                          00000000G    00             01   FB  00059 2$:  CALLS   #1, LIB$SIGNAL
                                                    04   00060 3$:  RET                                             ; 1948

; Routine Size:  97 bytes,    Routine Base:  $CODE$ + 03BA
```

```
;  1055     1949  1 ROUTINE CHECK_FOR_REPLY : NOVALUE =
;  1056     1950  1
;  1057     1951  1 !++
;  1058     1952  1 ! Functional Description:
;  1059     1953  1 !
;  1060     1954  1 !       This routine will check to see if the operator
;  1061     1955  1 !       replied to a request after DELTA_TIME expired.
;  1062     1956  1 !       If so, the response must be parsed and acted upon.
;  1063     1957  1 !       Note that this might require undoing a successful mount.
;  1064     1958  1 !       If the request is still outstanding and the mount
;  1065     1959  1 !       completed successfully, then cancel the request.
;  1066     1960  1 !
;  1067     1961  1 ! Input:
;  1068     1962  1 !
;  1069     1963  1 !       WAIT_ENABLED = TRUE if we are to wait, FALSE if not.
;  1070     1964  1 !
;  1071     1965  1 ! Output:
;  1072     1966  1 !
;  1073     1967  1 !       None.
;  1074     1968  1 !
;  1075     1969  1 ! Implicit Inputs:
;  1076     1970  1 !
;  1077     1971  1 !       REPLY_PENDING = 1 if there is an outstanding request.
;  1078     1972  1 !       REPLY_DESC = string descriptor of the operator's reply.
;  1079     1973  1 !       REPLY_BUFFER = buffer holding the operator's reply.
;  1080     1974  1 !       MOUNT data base.
;  1081     1975  1 !
;  1082     1976  1 ! Implicit Outputs:
;  1083     1977  1 !
;  1084     1978  1 !       The MOUNT data base may be updated as a result of the operator's reply.
;  1085     1979  1 !--
;  1086     1980  1
;  1087     1981  2 BEGIN                                           ! Start of CHECK_FOR_REPLY
;  1088     1982  2
;  1089     1983  2 LOCAL
;  1090     1984  2
;  1091     1985  2         EF_STATE        : LONG,                 ! State of Event flags
;  1092     1986  2         STATUS          : LONG;
;  1093     1987  2
;  1094     1988  2 IF NOT .MOUNT_FAILED
;  1095     1989  2 THEN
;  1096     1990  2     !
;  1097     1991  2     ! The mount succeeded.  Operator intervention is
;  1098     1992  2     ! no longer necessary, so cancel the request.
;  1099     1993  2     !
;  1100     1994  2     CANCEL_REQUEST (REQUEST_SATISFIED)
;  1101     1995  2 ELSE
;  1102     1996  3     BEGIN
;  1103     1997  3     !
;  1104     1998  3     ! The mount failed (again).
;  1105     1999  3     !
;  1106     2000  3     ! If a reply was pending, wait for either the timer to go off or
;  1107     2001  3     ! for the reply to arrive, whichever comes first.  If no reply is
;  1108     2002  3     ! pending, then simply wait for the timer to go off.  Cancel the
;  1109     2003  3     ! timer on the way out, just to be thourough.
;  1110     2004  3     !
;  1111     2005  3     ! If no operator is present, only attempt to read the reply mailbox
```

```
;  1112          2006  3     ! every tenth time through this routine.  This is necessaray to prevent
;  1113          2007  3     ! prevent mount from looping rapidly through this code.
;  1114          2008  3     !
;  1115          2009  4     IF NOT (STATUS = $SETIMR (EFN=TIMER_FLAG, REQIDT=TIMER_ID, DAYTIM=DELTA_TIME))
;  1116          2010  3     THEN
;  1117          2011  3         ABORT_MOUNT (.STATUS, 0, .MOUNT_STATUS);
;  1118          2012  3
;  1119          2013  4     IF (.REPLY_PENDING AND .OPERATOR_PRESENT)
;  1120          2014  4     OR ((NOT .OPERATOR_PRESENT) AND (.RETRY_COUNTER/10) GEQ 1)
;  1121          2015  3     THEN
;  1122          2016  4         BEGIN
;  1123          2017  4         RETRY_COUNTER = 0;
;  1124          2018  5         IF (.REPLY_IOSB [0,0,16,0] NEQ 0)
;  1125          2019  4         THEN
;  1126          2020  4             PARSE_REPLY ()
;  1127          2021  4         ELSE
;  1128          2022  4             $WAITFR (EFN = TIMER_FLAG);
;  1129          2023  4         END
;  1130          2024  3     ELSE
;  1131          2025  3         $WAITFR (EFN = TIMER_FLAG);
;  1132          2026  3
;  1133          2027  3     $CANTIM (REQIDT = TIMER_ID);                ! Cancel the timer
;  1134          2028  3     $SETEF (EFN = TIMER_FLAG);                  ! Set timer flag
;  1135          2029  2     END;
;  1136          2030  2 RETRY_COUNTER = .RETRY_COUNTER + 1;
;  1137          2031  1 END;                                            ! End of CHECK_FOR_REPLY



                                0004 00000 CHECK_FOR_REPLY:
                                           .WORD   Save R2                                          ; 1949
                    52    0000'  CF  9E 00002    MOVAB   RETRY_COUNTER, R2
                    08      F8   A2  E8 00007    BLBS    MOUNT_FAILED, 1$                         ; 1988
                                 01  DD 0000B    PUSHL   #1                                       ; 1994
                 8E AF           01  FB 0000D    CALLS   #1, CANCEL_REQUEST
                                 65  11 00011    BRB     7$
                    7E    03E7   8F  3C 00013 1$: MOVZWL  #999, -(SP)                              ; 2009
                                 7E  D4 00018    CLRL    -(SP)
                          0000'  CF  9F 0001A    PUSHAB  DELTA_TIME
                                 19  DD 0001E    PUSHL   #25
             00000000G    00          04  FB 00020    CALLS   #4, SYS$SETIMR
                          0E          50  E8 00027    BLBS    STATUS, 2$
                            08        A2  DD 0002A    PUSHL   MOUNT_STATUS                         ; 2011
                                      7E  D4 0002D    CLRL    -(SP)
                                      50  DD 0002F    PUSHL   STATUS
             00000000G    00          03  FB 00031    CALLS   #3, LIB$STOP
                          04      F4  A2  E9 00038 2$: BLBC    REPLY_PENDING, 3$                   ; 2013
                          0A      FC  A2  E8 0003C    BLBS    OPERATOR_PRESENT, 4$
                          14      FC  A2  E8 00040 3$: BLBS    OPERATOR_PRESENT, 5$                ; 2014
              50          62          0A  C7 00044    DIVL3   #10, RETRY_COUNTER, R0
                                      0E  15 00048    BLEQ    5$
                                      62  D4 0004A 4$: CLRL    RETRY_COUNTER                       ; 2017
                            30        A2  B5 0004C    TSTW    REPLY_IOSB                          ; 2018
                                      07  13 0004F    BEQL    5$
                 0000V    CF              00  FB 00051    CALLS   #0, PARSE_REPLY                 ; 2020
```

```
                                        09  11 00056           BRB     6$                                      ;
                                        19  DD 00058 5$:       PUSHL   #25                                     ; 2025
                    00000000G   00      01  FB 0005A           CALLS   #1, SYS$WAITFR                          ;
                                        7E  D4 00061 6$:       CLRL    -(SP)                                   ; 2027
                                7E  03E7    8F  3C 00063       MOVZWL  #999, -(SP)                             ;
                    00000000G   00      02  FB 00068           CALLS   #2, SYS$CANTIM                          ;
                                        19  DD 0006F           PUSHL   #25                                     ; 2028
                    00000000G   00      01  FB 00071           CALLS   #1, SYS$SETEF                           ;
                                        62  D6 00078 7$:       INCL    RETRY_COUNTER                           ; 2030
                                            04 0007A           RET                                             ; 2031

; Routine Size:  123 bytes,    Routine Base:  $CODE$ + 041B
```

```
;  1139     2032  1 ROUTINE ALLOCFAIL_HNDLR : NOVALUE =
;  1140     2033  1
;  1141     2034  1 !++
;  1142     2035  1 ! Functional Description:
;  1143     2036  1 !
;  1144     2037  1 !       This routine will attempt to recover from a device
;  1145     2038  1 !       allocation failure.  This means that the device
;  1146     2039  1 !       specified by the user (or operator) cannot be
;  1147     2040  1 !       successfully allocated.  Notify the operator and
;  1148     2041  1 !       try again.  Current allocation failures handled are:
;  1149     2042  1 !
;  1150     2043  1 !               SS$_DEVALLOC    - device allocated to another user
;  1151     2044  1 !               SS$_NODEVAVL    - no devices of generic type are available
;  1152     2045  1 !               SS$_NOSUCHDEV   - incorrect device specifier
;  1153     2046  1 !
;  1154     2047  1 ! Input:
;  1155     2048  1 !
;  1156     2049  1 !       None.
;  1157     2050  1 !
;  1158     2051  1 ! Output:
;  1159     2052  1 !
;  1160     2053  1 !       None.
;  1161     2054  1 !
;  1162     2055  1 ! Implicit Input:
;  1163     2056  1 !
;  1164     2057  1 !       MOUNT_STATUS  = status of current mount attempt
;  1165     2058  1 !       REPLY_PENDING = TRUE if an operator request is outstanding
;  1166     2059  1 !       The MOUNT data base.
;  1167     2060  1 !
;  1168     2061  1 ! Implict Output:
;  1169     2062  1 !
;  1170     2063  1 !       The MOUNT data base may be changed as
;  1171     2064  1 !       the result of operator intervention.
;  1172     2065  1 !--
;  1173     2066  1
;  1174     2067  2 BEGIN                                           ! Start of ALLOCFAIL_HNDLR
;  1175     2068  2
;  1176     2069  2 EXTERNAL
;  1177     2070  2
;  1178     2071  2         COMMENT_STRING  : BBLOCK,               ! User comment string
;  1179     2072  2         DEVICE_INDEX    : LONG VOLATILE,        ! Index into device name vector
;  1180     2073  2         PHYS_NAME       : VECTOR VOLATILE;      ! Physical device name descriptor
;  1181     2074  2 LITERAL
;  1182     2075  2
;  1183     2076  2         FAO_CTRL_SIZ    = FAO_BUFFER_SIZE/2;    ! Maximum size for FAO control string
;  1184     2077  2
;  1185     2078  2 LOCAL
;  1186     2079  2
;  1187     2080  2         ALLOCFAIL_FAO   : BBLOCK [DSC$K_S_BLN], ! FAO control string descriptor
;  1188     2081  2         FAO_CTRL_BUF    : BBLOCK [FAO_CTRL_SIZ],! Buffer for FAO control string
;  1189     2082  2         STATUS          : LONG;
;  1190     2083  2
;  1191     2084  2
;  1192     2085  2 !
;  1193     2086  2 ! If this condition is different from the one signaled previously,
;  1194     2087  2 ! cancel any outstanding requests before handling this condition.
;  1195     2088  2 ! Otherwise do nothing.
```

```
;  1196          2089  2 !
;  1197          2090  3 IF (.MOUNT_STATUS NEQ .PREVIOUS_STATUS)
;  1198          2091  3 OR (.DEVICE_INDEX NEQ .PREVIOUS_DEV_IDX)
;  1199          2092  2 THEN
;  1200          2093  3     BEGIN
;  1201          2094  3     CANCEL_REQUEST (REQUEST_NOT_SATISFIED);
;  1202          2095  3     OPERATOR_PRESENT = TRUE;                    ! Assume operator present
;  1203          2096  3     !
;  1204          2097  3     ! Set up the output descriptor and get the FAO control string.
;  1205          2098  3     !
;  1206          2099  3     ALLOCFAIL_FAO [DSC$W_LENGTH]  = FAO_CTRL_SIZ;
;  1207          2100  3     ALLOCFAIL_FAO [DSC$B_DTYPE]   = DSC$K_DTYPE_T;
;  1208          2101  3     ALLOCFAIL_FAO [DSC$B_CLASS]   = DSC$K_CLASS_S;
;  1209          2102  3     ALLOCFAIL_FAO [DSC$A_POINTER] = FAO_CTRL_BUF;
;  1210        P 2103  4     IF NOT (STATUS = $GETMSG    (MSGID  = MOUN$_NODEVAVL,
;  1211        P 2104  4                                 MSGLEN = ALLOCFAIL_FAO [DSC$W_LENGTH],
;  1212        P 2105  4                                 BUFADR = ALLOCFAIL_FAO,
;  1213        P 2106  4                                 FLAGS  = MSG_TEXT
;  1214          2107  4                                ))
;  1215          2108  3     THEN
;  1216          2109  3         ABORT_MOUNT (.STATUS, 0, .MOUNT_STATUS);
;  1217          2110  3     !
;  1218          2111  3     ! Set up the output descriptor and format the operator request.
;  1219          2112  3     !
;  1220          2113  3     FAO_RESULT_DESC[DSC$A_POINTER] = FAO_BUFFER;
;  1221          2114  3     FAO_RESULT_DESC[DSC$W_LENGTH]  = FAO_BUFFER_SIZE;
;  1222        P 2115  3     $FAO (ALLOCFAIL_FAO,
;  1223        P 2116  3           FAO_RESULT_DESC [DSC$W_LENGTH],
;  1224        P 2117  3           FAO_RESULT_DESC,
;  1225        P 2118  3           PHYS_NAME [.DEVICE_INDEX*2],
;  1226        P 2119  3           COMMENT_STRING
;  1227          2120  3          );
;  1228          2121  3     !
;  1229          2122  3     ! Send the request to the operator.
;  1230          2123  3     !
;  1231          2124  3     SUBMIT_REQUEST (FAO_RESULT_DESC,EXPECT_REPLY);
;  1232          2125  2     END;
;  1233          2126  2
;  1234          2127  1 END;                                          ! End of ALLOCFAIL_HNDLR


                                                    .EXTRN  COMMENT_STRING, SYS$GETMSG
                                                    .EXTRN  SYS$FAO

                                        0004 00000 ALLOCFAIL_HNDLR:
                                                    .WORD   Save R2                                 ; 2032
                              52      0000'  CF  9E 00002           MOVAB   FAO_RESULT_DESC, R2
                              5E      FEF8   CE  9E 00007           MOVAB   -264(SP), SP
                        FC6C  C2      FC68   C2  D1 0000C           CMPL    MOUNT_STATUS, PREVIOUS_STATUS   ; 2090
                                             09  12 00013           BNEQ    1$
                        FC70  C2      0000G  CF  D1 00015           CMPL    DEVICE_INDEX, PREVIOUS_DEV_IDX  ; 2091
                                             71  13 0001C           BEQL    3$
                                             7E  D4 0001E 1$:      CLRL    -(SP)                           ; 2094
                        FEFF  CF              01  FB 00020           CALLS   #1, CANCEL_REQUEST
                        FC5C  C2              01  D0 00025           MOVL    #1, OPERATOR_PRESENT            ; 2095
                          F8  AD 010E0100     8F  D0 0002A           MOVL    #17694976, ALLOCFAIL_FAO        ; 2099
```

```
                          FC    AD              6E  9E 00032          MOVAB   FAO_CTRL_BUF, ALLOCFAIL_FAO+4          ; 2102
                                7E              01  7D 00036          MOVQ    #1, -(SP)                             ; 2107
                                          F8    AD  9F 00039          PUSHAB  ALLOCFAIL_FAO                         ;
                                          F8    AD  9F 0003C          PUSHAB  ALLOCFAIL_FAO                         ;
                                   0072A05B     8F  DD 0003F          PUSHL   #7512155                              ;
                    00000000G     00                05  FB 00045          CALLS   #5, SYS$GETMSG                        ;
                                  0F                50  E8 0004C          BLBS    STATUS, 2$                            ;
                                          FC68  C2  DD 0004F          PUSHL   MOUNT_STATUS                          ; 2109
                                                7E  D4 00053          CLRL    -(SP)                                 ;
                                                50  DD 00055          PUSHL   STATUS                                ;
                    00000000G     00                03  FB 00057          CALLS   #3, LIB$STOP                          ;
                          04      A2        FE00    C2  9E 0005E  2$:     MOVAB   FAO_BUFFER, FAO_RESULT_DESC+4         ; 2113
                                  62        0200    8F  B0 00064          MOVW    #512, FAO_RESULT_DESC                 ; 2114
                                            0000G   CF  9F 00069          PUSHAB  COMMENT_STRING                        ; 2120
                    50      0000G     CF              01  78 0006D          ASHL    #1, DEVICE_INDEX, R0                  ;
                                            0000GCF40   DF 00073          PUSHAL  PHYS_NAME[R0]                         ;
                                                52  DD 00078          PUSHL   R2                                    ;
                                                52  DD 0007A          PUSHL   R2                                    ;
                                          F8    AD  9F 0007C          PUSHAB  ALLOCFAIL_FAO                         ;
                    00000000G     00                05  FB 0007F          CALLS   #5, SYS$FAO                           ;
                                                01  DD 00086          PUSHL   #1                                    ; 2124
                                                52  DD 00088          PUSHL   R2                                    ;
                          FD00    CF              02  FB 0008A          CALLS   #2, SUBMIT_REQUEST                    ;
                                                    04  0008F  3$:     RET                                           ; 2127

; Routine Size:  144 bytes,    Routine Base:  $CODE$ + 0496
```

```
;  1236          2128  1 ROUTINE MEDOFL_HNDLR : NOVALUE =
;  1237          2129  1
;  1238          2130  1 !++
;  1239          2131  1 ! Functional Description:
;  1240          2132  1 !
;  1241          2133  1 !       This routine will attempt to recover from a medium
;  1242          2134  1 !       offline condition.  This usually means that the disk is
;  1243          2135  1 !       not spun up.  Notify the operator that the device
;  1244          2136  1 !       needs to be put online.
;  1245          2137  1 !
;  1246          2138  1 ! Input:
;  1247          2139  1 !
;  1248          2140  1 !       None.
;  1249          2141  1 !
;  1250          2142  1 ! Output:
;  1251          2143  1 !
;  1252          2144  1 !       None.
;  1253          2145  1 !
;  1254          2146  1 ! Implicit Input:
;  1255          2147  1 !
;  1256          2148  1 !       MOUNT_STATUS  = status of the current mount attempt
;  1257          2149  1 !       REPLY_PENDING = TRUE if an operator request is outstanding
;  1258          2150  1 !       The MOUNT data base.
;  1259          2151  1 !
;  1260          2152  1 ! Implict Output:
;  1261          2153  1 !
;  1262          2154  1 !       The MOUNT data base may be changed as
;  1263          2155  1 !       the result of operator intervention.
;  1264          2156  1 !--
;  1265          2157  1
;  1266          2158  2 BEGIN                                           ! Start of MEDOFL_HNDLR
;  1267          2159  2
;  1268          2160  2 EXTERNAL
;  1269          2161  2
;  1270          2162  2         COMMENT_STRING  : BBLOCK,              ! User comment string
;  1271          2163  2         LABEL_STRING    : VECTOR VOLATILE,     ! Vector of label descriptors
;  1272          2164  2         PHYS_NAME       : VECTOR VOLATILE,     ! Physical device name descriptor
;  1273          2165  2         DEVICE_INDEX    : LONG VOLATILE;       ! Index into DEVICE_STRING vector
;  1274          2166  2
;  1275          2167  2 LITERAL
;  1276          2168  2
;  1277          2169  2         FAO_CTRL_SIZ    = FAO_BUFFER_SIZE/2;   ! FAO control string size
;  1278          2170  2
;  1279          2171  2 LOCAL
;  1280          2172  2
;  1281          2173  2         MEDOFL_FAO      : BBLOCK [DSC$K_S_BLN],
;  1282          2174  2         MEDOFL_BUF      : BBLOCK [FAO_CTR[_SIZ],
;  1283          2175  2         VOLUME_FAO      : BBLOCK [DSC$K_S_BLN],
;  1284          2176  2         VOLUME_BUF      : BBLOCK [FAO_CTR[_SIZ],
;  1285          2177  2         VOLUME_DESC     : BBLOCK [DSC$K_S_BLN],
;  1286          2178  2         VOLUME_BUFFER   : BBLOCK [FAO_CTR[_SIZ],
;  1287          2179  2         STATUS          : LONG;
;  1288          2180  2
;  1289          2181  2
;  1290          2182  2
;  1291          2183  2 !
;  1292          2184  2 ! If this condition is different from the one signaled previously,
```

```
;  1293          2185  2 ! cancel any outstanding requests before handling this condition.
;  1294          2186  2 ! Note that if the previous condition was SS$_INCVOLLABEL, we do
;  1295          2187  2 ! not cancel the request and issue another one.  This is to give
;  1296          2188  2 ! the operator a chance to remove the incorrect volume from the drive
;  1297          2189  2 ! and to (hopefully) insert the correct volume.
;  1298          2190  2 !
;  1299          2191  3 IF  ((.MOUNT_STATUS AND STS$M_COND_ID) NEQ (SS$_INCVOLLABEL AND STS$M_COND_ID))
;  1300          2192  3 AND ((.PREVIOUS_STATUS AND STS$M_COND_ID) EQL (SS$_INCVOLLABEL AND STS$M_COND_ID))
;  1301          2193  3 AND (.DEVICE_INDEX  EQL .PREVIOUS_DEV_IDX)
;  1302          2194  2 THEN
;  1303          2195  3     BEGIN
;  1304          2196  3     PREVIOUS_STATUS = .MOUNT_STATUS;
;  1305          2197  2     END;
;  1306          2198  2
;  1307          2199  3 IF (.DEVICE_INDEX NEQ .PREVIOUS_DEV_IDX)
;  1308          2200  3 OR (.MOUNT_STATUS NEQ .PREVIOUS_STATUS)
;  1309          2201  2 THEN
;  1310          2202  3     BEGIN
;  1311          2203  3     CANCEL_REQUEST (REQUEST_NOT_SATISFIED);
;  1312          2204  3     OPERATOR_PRESENT = TRUE;                    ! Assume operator present
;  1313          2205  2     END;
;  1314          2206  2 !
;  1315          2207  2 ! If there is no outstanding request, then submit a request.
;  1316          2208  2 !
;  1317          2209  2 IF NOT .REPLY_PENDING
;  1318          2210  2 THEN
;  1319          2211  3     BEGIN
;  1320          2212  3     !
;  1321          2213  3     ! Set up the output descriptor and format the volume label string.
;  1322          2214  3     !
;  1323          2215  3     VOLUME_DESC [DSC$W_LENGTH]  = FAO_CTRL_SIZ;
;  1324          2216  3     VOLUME_DESC [DSC$B_DTYPE]   = DSC$K_DTYPE_T;
;  1325          2217  3     VOLUME_DESC [DSC$B_CLASS]   = DSC$K_CLASS_S;
;  1326          2218  3     VOLUME_DESC [DSC$A_POINTER] = VOLUME_BUFFER;
;  1327          2219  3     IF .LABEL_STRING[.DEVICE_INDEX*2] GTR 0
;  1328          2220  3     THEN
;  1329          2221  4         BEGIN
;  1330          2222  4         !
;  1331          2223  4         ! Set up the output descriptor and get the FAO control string.
;  1332          2224  4         !
;  1333          2225  4         VOLUME_FAO [DSC$W_LENGTH] = FAO_CTRL_SIZ;
;  1334          2226  4         VOLUME_FAO [DSC$B_DTYPE]  = DSC$K_DTYPE_T;
;  1335          2227  4         VOLUME_FAO [DSC$B_CLASS]  = DSC$K_CLASS_S;
;  1336          2228  4         VOLUME_FAO [DSC$A_POINTER] = VOLUME_BUF;
;  1337        P 2229  5         IF NOT (STATUS = $GETMSG (MSGID  = MOUN$_VOLNAME,
;  1338        P 2230  5                                 MSGLEN = VOLUME_FAO [DSC$W_LENGTH],
;  1339        P 2231  5                                 BUFADR = VOLUME_FAO,
;  1340        P 2232  5                                 FLAGS  = MSG_TEXT
;  1341          2233  5                                ))
;  1342          2234  4         THEN
;  1343          2235  4             ABORT_MOUNT (.STATUS, 0, .MOUNT_STATUS);
;  1344          2236  4         !
;  1345          2237  4         ! Format the volume label string,
;  1346          2238  4         !
;  1347        P 2239  4         $FAO    (VOLUME_FAO,
;  1348        P 2240  4                  VOLUME_DESC [DSC$W_LENGTH],
;  1349        P 2241  4                  VOLUME_DESC,
```

```
;  1350        P 2242  4                    LABEL_STRING [.DEVICE_INDEX*2]
;  1351          2243  4                   );
;  1352          2244  4        END
;  1353          2245  3    ELSE
;  1354          2246  3        VOLUME_DESC [DSC$W_LENGTH] = 0;          ! Set volume name null
;  1355          2247  3    !
;  1356          2248  3    ! Set up the desctiptors and get the FAO control string for the message.
;  1357          2249  3    !
;  1358          2250  3    MEDOFL_FAO [DSC$W_LENGTH]   = FAO_CTRL_SIZ;
;  1359          2251  3    MEDOFL_FAO [DSC$B_DTYPE]    = DSC$K_DTYPE_T;
;  1360          2252  3    MEDOFL_FAO [DSC$B_CLASS]    = DSC$K_CLASS_S;
;  1361          2253  3    MEDOFL_FAO [DSC$A_POINTER]  = MEDOFL_BUF;
;  1362        P 2254  3    $GETMSG     (MSGID  = MOUN$_MOUNTDEV,
;  1363        P 2255  3                 MSGLEN = MEDOFL_FAO [DSC$W_LENGTH],
;  1364        P 2256  3                 BUFADR = MEDOFL_FAO,
;  1365        P 2257  3                 FLAGS  = MSG_TEXT
;  1366          2258  3                );
;  1367          2259  3    !
;  1368          2260  3    ! Set up the output descriptor and format the operator request.
;  1369          2261  3    !
;  1370          2262  3    FAO_RESULT_DESC [DSC$W_LENGTH]  = FAO_BUFFER_SIZE;
;  1371          2263  3    FAO_RESULT_DESC [DSC$A_POINTER] = FAO_BUFFER;
;  1372        P 2264  3    $FAO (MEDOFL_FAO,
;  1373        P 2265  3          FAO_RESULT_DESC[DSC$W_LENGTH],
;  1374        P 2266  3          FAO_RESULT_DESC,
;  1375        P 2267  3          VOLUME_DESC,
;  1376        P 2268  3          PHYS_NAME [.DEVICE_INDEX*2],
;  1377        P 2269  3          COMMENT_STRING
;  1378          2270  3         );
;  1379          2271  3    !
;  1380          2272  3    ! Send the request to the operator.
;  1381          2273  3    !
;  1382          2274  3    SUBMIT_REQUEST (FAO_RESULT_DESC,EXPECT_REPLY);
;  1383          2275  2    END;
;  1384          2276  2
;  1385          2277  1 END;                                    ! End of MEDOFL_HNDLR


                                                    .EXTRN  LABEL_STRING

                                        003C 00000 MEDOFL_HNDLR:
                                                    .WORD   Save R2,R3,R4,R5                    ; 2128
                          55 00000000G   00  9E 00002       MOVAB   SYS$FAO, R5
                          54 00000000G   00  9E 00009       MOVAB   SYS$GETMSG, R4
                          53      0000G  CF  9E 00010       MOVAB   DEVICE_INDEX, R3
                          52      0000'  CF  9E 00015       MOVAB   MOUNT_STATUS, R2
                          5E      FCE8   CE  9E 0001A       MOVAB   -792(SP), SP
                50        62 F0000007   8F  CB 0001F       BICL3   #-268435449, MOUNT_STATUS, R0   ; 2191
                   00000108   8F              50  D1 00027       CMPL    R0, #264
                                              1C  13 0002E       BEQL    1$
                50        04   A2 F0000007   8F  CB 00030       BICL3   #-268435449, PREVIOUS_STATUS, R0 ; 2192
                   00000108   8F              50  D1 00039       CMPL    R0, #264
                                              0A  12 00040       BNEQ    1$
                         08   A2              63  D1 00042       CMPL    DEVICE_INDEX, PREVIOUS_DEV_IDX  ; 2193
                                              04  12 00046       BNEQ    1$
                         04   A2              62  D0 00048       MOVL    MOUNT_STATUS, PREVIOUS_STATUS   ; 2196
```

```
                08   A2              63   D1 0004C 1$:    CMPL    DEVICE_INDEX, PREVIOUS_DEV_IDX                  ; 2199
                                     06   12 00050        BNEQ    2$
                04   A2              62   D1 00052        CMPL    MOUNT_STATUS, PREVIOUS_STATUS                   ; 2200
                                     0B   13 00056        BEQL    3$
                                     7E   D4 00058 2$:     CLRL    -(SP)                                           ; 2203
              FE35   CF              01   FB 0005B        CALLS   #1, CANCEL_REQUEST
                F4   A2              01   D0 0005F        MOVL    #1, OPERATOR_PRESENT                            ; 2204
                     01        EC    A2   E9 00063 3$:     BLBC    REPLY_PENDING, 4$                               ; 2209
                                     04   00067           RET
              0100   CE 010E0100     8F   D0 00068 4$:     MOVL    #17694976, VOLUME_DESC                          ; 2215
              0104   CE              6E   9E 00071        MOVAB   VOLUME_BUFFER, VOLUME_DESC+4                    ; 2218
        50          63              01   78 00076        ASHL    #1, DEVICE_INDEX, R0                            ; 2219
                          0000GCF40  D5   0007A           TSTL    LABEL_STRING[R0]
                                     4E   15 0007F        BLEQ    6$
              FEF0   CD 010E0100     8F   D0 00081        MOVL    #17694976, VOLUME_FAO                           ; 2225
              FEF4   CD      0108    CE   9E 0008A        MOVAB   VOLUME_BUF, VOLUME_FAO+4                        ; 2228
                     7E              01   7D 00091        MOVQ    #1, -(SP)                                       ; 2233
                               FEF0  CD   9F 00094        PUSHAB  VOLUME_FAO
                               FEF0  CD   9F 00098        PUSHAB  VOLUME_FAO
                          0072A053   8F   DD 0009C        PUSHL   #7512147
                               64          05   FB 000A2        CALLS   #5, SYS$GETMSG
                               0D          50   E8 000A5        BLBS    STATUS, 5$
                                           62   DD 000A8        PUSHL   MOUNT_STATUS                            ; 2235
                                           7E   D4 000AA        CLRL    -(SP)
                                           50   DD 000AC        PUSHL   STATUS
           000000000G          00          03   FB 000AF        CALLS   #3, LIB$STOP
        50          63              01   78 000B5 5$:     ASHL    #1, DEVICE_INDEX, R0                            ; 2243
                          0000GCF40  DF   000B9           PUSHAL  LABEL_STRING[R0]
                               0104  CE   9F 000BE        PUSHAB  VOLUME_DESC
                               0108  CE   9F 000C2        PUSHAB  VOLUME_DESC
                               FEF0  CD   9F 000C6        PUSHAB  VOLUME_FAO
                               65          04   FB 000CA        CALLS   #4, SYS$FAO
                                           04   11 000CD        BRB     7$                                      ; 2219
                          0100   CE   B4   000CF 6$:     CLRW    VOLUME_DESC                                     ; 2246
                    F8    AD 010E0100     8F   D0 000D3 7$:     MOVL    #17694976, MEDOFL_FAO                   ; 2250
                    FC    AD      FEF8    CD   9E 000DB        MOVAB   MEDOFL_BUF, MEDOFL_FAO+4                ; 2253
                          7E              01   7D 000E1        MOVQ    #1, -(SP)                               ; 2258
                                    F8    AD   9F 000E4        PUSHAB  MEDOFL_FAO
                                    F8    AD   9F 000E7        PUSHAB  MEDOFL_FAO
                               0072A04B   8F   DD 000EA        PUSHL   #7512139
                               64          05   FB 000F0        CALLS   #5, SYS$GETMSG
                    0398   C2        0200  8F   B0 000F3        MOVW    #512, FAO_RESULT_DESC                   ; 2262
                    039C   C2        0198  C2   9E 000FA        MOVAB   FAO_BUFFER, FAO_RESULT_DESC+4           ; 2263
                                      0000G CF   9F 00101        PUSHAB  COMMENT_STRING                          ; 2270
                  50          63              01   78 00105        ASHL    #1, DEVICE_INDEX, R0
                                    0000GCF40  DF   00109        PUSHAL  PHYS_NAME[R0]
                                    0108   CE   9F 0010E        PUSHAB  VOLUME_DESC
                                    0398   C2   9F 00112        PUSHAB  FAO_RESULT_DESC
                                    0398   C2   9F 00116        PUSHAB  FAO_RESULT_DESC
                                      F8   AD   9F 0011A        PUSHAB  MEDOFL_FAO
                                    65          06   FB 0011D        CALLS   #6, SYS$FAO
                                                01   DD 00120        PUSHL   #1                                      ; 2274
                                    0398   C2   9F 00122        PUSHAB  FAO_RESULT_DESC
                    FBD4   CF               02   FB 00126        CALLS   #2, SUBMIT_REQUEST                      ;
                                                04   0012B        RET                                             ; 2277

; Routine Size:  300 bytes,    Routine Base:  $CODE$ + 0526
```

```
;  1387     2278  1 ROUTINE WRONGVOL_HNDLR : NOVALUE =
;  1388     2279  1
;  1389     2280  1 !++
;  1390     2281  1 ! Functional Description:
;  1391     2282  1 !
;  1392     2283  1 !       This routine will attempt to recover from an SS$_INCVOLLABEL
;  1393     2284  1 !       condition, which implies that the label of the volume presently
;  1394     2285  1 !       in the drive does not match the volume label specified by the user.
;  1395     2286  1 !
;  1396     2287  1 ! Input:
;  1397     2288  1 !
;  1398     2289  1 !       None.
;  1399     2290  1 !
;  1400     2291  1 ! Output:
;  1401     2292  1 !
;  1402     2293  1 !       None.
;  1403     2294  1 !
;  1404     2295  1 ! Implicit Input:
;  1405     2296  1 !
;  1406     2297  1 !       MOUNT_STATUS  = status of the current mount attempt
;  1407     2298  1 !       REPLY_PENDING = TRUE if an operator request is outstanding
;  1408     2299  1 !       The MOUNT data base.
;  1409     2300  1 !
;  1410     2301  1 ! Implict Output:
;  1411     2302  1 !
;  1412     2303  1 !       The MOUNT data base may be changed as
;  1413     2304  1 !       the result of operator intervention.
;  1414     2305  1 !--
;  1415     2306  1
;  1416     2307  2 BEGIN                                           ! Start of WRONGVOL_HNDLR
;  1417     2308  2
;  1418     2309  2 EXTERNAL
;  1419     2310  2
;  1420     2311  2         PHYS_NAME       : VECTOR VOLATILE,      ! Physical device name descriptor
;  1421     2312  2         DEVICE_INDEX    : LONG VOLATILE,        ! Index into DEVICE_STRING vector
;  1422     2313  2         LABEL_STRING    : VECTOR VOLATILE;      ! Vector of volume labels
;  1423     2314  2
;  1424     2315  2 LITERAL
;  1425     2316  2
;  1426     2317  2         FAO_CTRL_SIZ    = FAO_BUFFER_SIZE/2;    ! FAO control string size
;  1427     2318  2
;  1428     2319  2 LOCAL
;  1429     2320  2
;  1430     2321  2         WRONGVOL_FAO    : BBLOCK [DSC$K_S_BLN],
;  1431     2322  2         WRONGVOL_BUF    : BBLOCK [FAO_CTRL_SIZ],
;  1432     2323  2         STATUS          : LONG;
;  1433     2324  2
;  1434     2325  2
;  1435     2326  2 !
;  1436     2327  2 ! If this condition is different from the one signaled previously,
;  1437     2328  2 ! cancel any outstanding requests before handling this condition.
;  1438     2329  2 ! Otherwise do nothing.
;  1439     2330  2 !
;  1440     2331  3 IF (.MOUNT_STATUS NEQ .PREVIOUS_STATUS)
;  1441     2332  3 OR (.DEVICE_INDEX NEQ .PREVIOUS_DEV_IDX)
;  1442     2333  2 THEN
;  1443     2334  3     BEGIN
```

```
;  1444          2335  3      CANCEL_REQUEST (REQUEST_NOT_SATISFIED);
;  1445          2336  3      OPERATOR_PRESENT = TRUE;                        ! Assume operator present
;  1446          2337  3      !
;  1447          2338  3      ! Set up the output descriptor and get the FAO control string.
;  1448          2339  3      !
;  1449          2340  3      WRONGVOL_FAO [DSC$W_LENGTH]  = FAO_CTRL_SIZ;
;  1450          2341  3      WRONGVOL_FAO [DSC$B_DTYPE]   = DSC$K_DTYPE_T;
;  1451          2342  3      WRONGVOL_FAO [DSC$B_CLASS]   = DSC$K_CLASS_S;
;  1452          2343  3      WRONGVOL_FAO [DSC$A_POINTER] = WRONGVOL_BUF;
;  1453        P 2344  4      IF NOT (STATUS = $GETMSG    (MSGID  = MOUN$_WRONGVOL,
;  1454        P 2345  4                                   MSGLEN = WRONGVOL_FAO [DSC$W_LENGTH],
;  1455        P 2346  4                                   BUFADR = WRONGVOL_FAO,
;  1456        P 2347  4                                   FLAGS  = MSG_TEXT
;  1457          2348  4                                  ))
;  1458          2349  3      THEN
;  1459          2350  3          ABORT_MOUNT (.STATUS, 0, .MOUNT_STATUS);
;  1460          2351  3      !
;  1461          2352  3      ! Set up the output descriptor and format the operator request.
;  1462          2353  3      !
;  1463          2354  3      FAO_RESULT_DESC[DSC$A_POINTER] = FAO_BUFFER;
;  1464          2355  3      FAO_RESULT_DESC[DSC$W_LENGTH]  = FAO_BUFFER_SIZE;
;  1465        P 2356  3      $FAO (WRONGVOL_FAO,
;  1466        P 2357  3            FAO_RESULT_DESC [DSC$W_LENGTH],
;  1467        P 2358  3            FAO_RESULT_DESC,
;  1468        P 2359  3            PHYS_NAME [.DEVICE_INDEX*2]
;  1469          2360  3           );
;  1470          2361  3      !
;  1471          2362  3      ! Inform the user and all interested operators that the drive contains
;  1472          2363  3      ! the wrong volume.  Note that this is just a message, and that no
;  1473          2364  3      ! reply is expected.
;  1474          2365  3      !
;  1475          2366  3      SUBMIT_REQUEST (FAO_RESULT_DESC,NO_REPLY);
;  1476          2367  3      !
;  1477          2368  3      ! Call the medium offline handler to request that the correct volume
;  1478          2369  3      ! be mounted in the specified drive.  The previous condition context
;  1479          2370  3      ! must be reset manually, as SUBMIT_REQUEST will not do so when sending
;  1480          2371  3      ! messages (instead of requests).
;  1481          2372  3      !
;  1482          2373  3      PREVIOUS_STATUS = .MOUNT_STATUS;
;  1483          2374  3      MEDOFL_HNDLR ();
;  1484          2375  2      END;
;  1485          2376  2
;  1486          2377  1 END;                                                  ! End of WRONGVOL_HNDLR


                                        0004 00000 WRONGVOL_HNDLR:
                                                   .WORD   Save R2                                          ; 2278
                              52  0000'  CF  9E 00002      MOVAB   FAO_RESULT_DESC, R2
                              5E  FEF8   CE  9E 00007      MOVAB   -264(SP), SP
                        FC6C  C2  FC68   C2  D1 0000C      CMPL    MOUNT_STATUS, PREVIOUS_STATUS            ; 2331
                                         09  12 00013      BNEQ    1$
                        FC70  C2  0000G  CF  D1 00015      CMPL    DEVICE_INDEX, PREVIOUS_DEV_IDX           ; 2332
                                         79  13 0001C      BEQL    3$
                                         7E  D4 0001E 1$:   CLRL    -(SP)                                    ; 2335
```

```
                FD43   CF                  01   FB 00020          CALLS   #1, CANCEL_REQUEST                          ;
                FC5C   C2                  01   D0 00025          MOVL    #1, OPERATOR_PRESENT                       ; 2336
                  F8   AD 010E0100         8F   D0 0002A          MOVL    #17694976, WRONGVOL_FAO                    ; 2340
                  FC   AD                  6E   9E 00032          MOVAB   WRONGVOL_BUF, WRONGVOL_FAO+4               ; 2343
                       7E                  01   7D 00036          MOVQ    #1, -(SP)                                  ; 2348
                             F8   AD       9F   00039          PUSHAB  WRONGVOL_FAO                               ;
                             F8   AD       9F   0003C          PUSHAB  WRONGVOL_FAO                               ;
                          0072A06B   8F    DD   0003F          PUSHL   #7512171                                   ;
          00000000G       00               05   FB 00045          CALLS   #5, SYS$GETMSG                             ;
                          0F               50   E8 0004C          BLBC    STATUS, 2$                                 ;
                                FC68       C2   DD 0004F          PUSHL   MOUNT_STATUS                               ; 2350
                                           7E   D4 00053          CLRL    -(SP)                                      ;
                                           50   DD 00055          PUSHL   STATUS                                     ;
          00000000G       00               03   FB 00057          CALLS   #3, LIB$STOP                               ;
                  04      A2       FE00    C2   9E 0005E  2$:     MOVAB   FAO_BUFFER, FAO_RESULT_DESC+4              ; 2354
                          62       0200    8F   B0 00064          MOVW    #512, FAO_RESULT_DESC                      ; 2355
              50      0000G    CF          01   78 00069          ASHL    #1, DEVICE_INDEX, R0                       ; 2360
                                0000GCF40    DF   0006F          PUSHAL  PHYS_NAME[R0]                              ;
                                           52   DD 00074          PUSHL   R2                                         ;
                                           52   DD 00076          PUSHL   R2                                         ;
                                     F8    AD   9F   00078          PUSHAB  WRONGVOL_FAO                               ;
          00000000G       00               04   FB 0007B          CALLS   #4, SYS$FAO                                ;
                                           7E   D4 00082          CLRL    -(SP)                                      ; 2366
                                           52   DD 00084          PUSHL   R2                                         ;
                FB48   CF                  02   FB 00086          CALLS   #2, SUBMIT_REQUEST                         ;
                FC6C   C2        FC68      C2   D0 0008B          MOVL    MOUNT_STATUS, PREVIOUS_STATUS              ; 2373
                FE3D   CF                  00   FB 00092          CALLS   #0, MEDOFL_HNDLR                           ; 2374
                                           04   00097  3$:       RET                                                ; 2377

; Routine Size:  152 bytes,    Routine Base:  $CODE$ + 0652
```

```
;  1488          2378  1 ROUTINE PRINT_REPLY : NOVALUE =
;  1489          2379  1
;  1490          2380  1 !++
;  1491          2381  1 ! Funtional description:
;  1492          2382  1 !
;  1493          2383  1 !       This routine is a local utility routine used by PARSE_REPLY
;  1494          2384  1 !       to output the operator reply the user (SYS$OUTPUT).
;  1495          2385  1 !
;  1496          2386  1 ! Input:
;  1497          2387  1 !
;  1498          2388  1 !       None.
;  1499          2389  1 !
;  1500          2390  1 ! Output:
;  1501          2391  1 !
;  1502          2392  1 !       None.
;  1503          2393  1 !
;  1504          2394  1 ! Implicit input:
;  1505          2395  1 !
;  1506          2396  1 !       None.
;  1507          2397  1 !
;  1508          2398  1 ! Implicit output:
;  1509          2399  1 !
;  1510          2400  1 !       The operator reply, if any, is written to SYS$OUTPUT.
;  1511          2401  1 !
;  1512          2402  1 ! Side effects:
;  1513          2403  1 !
;  1514          2404  1 !       None.
;  1515          2405  1 !
;  1516          2406  1 ! Routine value:
;  1517          2407  1 !
;  1518          2408  1 !       None.
;  1519          2409  1 !
;  1520          2410  1 !--
;  1521          2411  1
;  1522          2412  2 BEGIN                                           ! Start of PRINT_REPLY
;  1523          2413  2
;  1524          2414  2 LOCAL
;  1525          2415  2         TEXT_DESC       : BBLOCK [DSC$K_S_BLN]; ! String descriptor
;  1526          2416  2
;  1527          2417  2 !
;  1528          2418  2 ! If the operator reply is greater than 8 bytes, then
;  1529          2419  2 ! it had some text to it.  If this is the case, inform
;  1530          2420  2 ! the user of the operator reply.  Note that the 8 bytes
;  1531          2421  2 ! of message overhead are not printed.  A temporary string
;  1532          2422  2 ! descriptor must be used so that $FAO will not replace
;  1533          2423  2 ! the any nonprinting ASCII characters with blanks.
;  1534          2424  2 !
;  1535          2425  2 IF .REPLY_IOSB[2,0,16,0] GTR $BYTEOFFSET (OPC$L_MS_TEXT)
;  1536          2426  2 THEN
;  1537          2427  3     BEGIN
;  1538          2428  3     TEXT_DESC [DSC$W_LENGTH]    = .REPLY_IOSB [2,0,16,0] - $BYTEOFFSET (OPC$L_MS_TEXT);
;  1539          2429  3     TEXT_DESC [DSC$B_DTYPE]     = DSC$K_DTYPE_T;
;  1540          2430  3     TEXT_DESC [DSC$B_CLASS]     = DSC$K_CLASS_S;
;  1541          2431  3     TEXT_DESC [DSC$A_POINTER]   = .REPLY_DESC [DSC$A_POINTER] + $BYTEOFFSET (OPC$L_MS_TEXT);
;  1542          2432  3     SIGNAL (MOUN$_OPREPLY, 1, TEXT_DESC);
;  1543          2433  2     END;
;  1544          2434  2
```

```
; 1545          2435  1 END;                                    ! End of PRINT_REPLY



                                                0000 00000 PRINT_REPLY:
                                                           .WORD   Save nothing                                    ; 2378
                                          5E            08  C2 00002          SUBL2   #8, SP                      ;
                                          08      0000' CF  B1 00005          CMPW    REPLY_IOSB+2, #8            ; 2425
                                                        24  1B 0000A          BLEQU   1$                          ;
                                    6E      0000' CF          08  A3 0000C    SUBW3   #8, REPLY_IOSB+2, TEXT_DESC ; 2428
                                      02    AE      010E      8F  B0 00012    MOVW    #270, TEXT_DESC+2           ; 2429
                                04    AE      0000' CF          08  C1 00018    ADDL3   #8, REPLY_DESC+4, TEXT_DESC+4 ; 2431
                                                        5E  DD 0001F          PUSHL   SP                          ; 2432
                                                        01  DD 00021          PUSHL   #1                          ;
                                              0072A02B  8F  DD 00023          PUSHL   #7512107                    ;
                                  00000000G   00            03  FB 00029    CALLS   #3, LIB$SIGNAL              ;
                                                        04  00030 1$:         RET                                 ; 2435

; Routine Size:  49 bytes,    Routine Base:  $CODE$ + 06EA
```

```
;1547     2436  1 ROUTINE PARSE_REPLY : NOVALUE =
;1548     2437  1
;1549     2438  1 !++
;1550     2439  1 ! Functional Description:
;1551     2440  1 !
;1552     2441  1 !       This routine will parse the operator reply in the context
;1553     2442  1 !       of the conditon that spawned it, and then do the appropriate
;1554     2443  1 !       thing, based on the operator's reply.
;1555     2444  1 !
;1556     2445  1 ! Input:
;1557     2446  1 !
;1558     2447  1 !       None.
;1559     2448  1 !
;1560     2449  1 ! Output:
;1561     2450  1 !
;1562     2451  1 !       None.
;1563     2452  1 !
;1564     2453  1 ! Implicit Inputs:
;1565     2454  1 !
;1566     2455  1 !       REPLY_DESC = string descriptor of the operator's reply.
;1567     2456  1 !       REPLY_BUFFER = buffer holding the operator's reply.
;1568     2457  1 !       MOUNT data base.
;1569     2458  1 !
;1570     2459  1 ! Implicit Outputs:
;1571     2460  1 !
;1572     2461  1 !       The MOUNT data base may be updated as a result of the operator's reply.
;1573     2462  1 !--
;1574     2463  1
;1575     2464  2 BEGIN                                           ! Start of PARSE_REPLY
;1576     2465  2
;1577     2466  2 EXTERNAL ROUTINE
;1578     2467  2
;1579     2468  2         LIB$TPARSE      : ADDRESSING_MODE (GENERAL);    ! Used to parse operator reply
;1580     2469  2
;1581     2470  2 PSECT   GLOBAL = $GLOBAL$;
;1582     2471  2 GLOBAL
;1583     2472  2         NEWLINE         : DESCRIP (%CHAR (13,10));      ! Descriptor for newline string
;1584     2473  2
;1585     2474  2 BIND
;1586     2475  2         !
;1587     2476  2         ! Create the character translation table that will be used by the
;1588     2477  2         ! CH$TRANSLATE function.  he table is st up so that all lower-cag
;1589     2478  2         ! alphabetic characters are translated to their upper-case equivalent.
;1590     2479  2         !
;1591     2480  2         TRANS_TABLE     = CH$TRANSTABLE
;1592     2481  2                           (0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,
;1593     2482  2                            20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,
;1594     2483  2                            37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,
;1595     2484  2                            54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,
;1596     2485  2                            71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,
;1597     2486  2                            88,89,90,91,92,93,94,95,96,65,66,67,68,69,70,71,72,
;1598     2487  2                            73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,
;1599     2488  2                            90,123,124,125,126,127
;1600     2489  2                           );
;1601     2490  2
;1602     2491  2 LOCAL
;1603     2492  2
```

```
;  1604     2493  2          PTR             : LONG,                         ! Character pointer
;  1605     2494  2          STATUS          : LONG;
;  1606     2495  2
;  1607     2496  2  !
;  1608     2497  2  ! Check the status of the mailbox read.  If
;  1609     2498  2  ! not successful, then abort the mount.
;  1610     2499  2  !
;  1611     2500  2  IF NOT .REPLY_IOSB[0,0,16,0]
;  1612     2501  2  THEN
;  1613     2502  3      BEGIN
;  1614     2503  3      REPLY_PENDING = FALSE;
;  1615     2504  3      ABORT_MOUNT (MOUN$_MBXRDERR, 0, .REPLY_IOSB[0,0,16,0]);
;  1616     2505  2      END;
;  1617     2506  2
;  1618     2507  2  !
;  1619     2508  2  ! Decide what to do based on the type of operator reply.
;  1620     2509  2  ! The OPC$_xxxxx status codes are longer than a word, so
;  1621     2510  2  ! they are masked off to word size befor comparing them
;  1622     2511  2  ! to the reply status.
;  1623     2512  2  !
;  1624     2513  2  SELECTONEU .REPLY_BUFFER[OPC$W_MS_STATUS] OF
;  1625     2514  2      SET
;  1626     2515  3      [(OPC$_NOPERATOR AND %X'0FFFF')]    : BEGIN
;  1627     2516  3                                            !
;  1628     2517  3                                            ! No operator was enabled to receive the request.
;  1629     2518  3                                            !
;  1630     2519  3                                            REPLY_PENDING = FALSE;
;  1631     2520  3                                            IF NOT INTERACTIVE_JOB ()
;  1632     2521  3                                            THEN
;  1633     2522  3                                                !
;  1634     2523  3                                                ! Abort the mount, as no one is can service the request.
;  1635     2524  3                                                !
;  1636     2525  3                                                ABORT_MOUNT (MOUN$_BATCHNOOPR)
;  1637     2526  3                                            ELSE
;  1638     2527  4                                                BEGIN
;  1639     2528  4                                                !
;  1640     2529  4                                                ! If this is the first time through this code for this conditi
;  1641     2530  4                                                ! for this device, then inform the user that no operator is en
;  1642     2531  4                                                ! to receive the request.
;  1643     2532  4                                                !
;  1644     2533  4                                                IF .OPERATOR_PRESENT
;  1645     2534  4                                                THEN
;  1646     2535  4                                                    SIGNAL (MOUN$_NOOPR);
;  1647     2536  4                                                OPERATOR_PRESENT = FALSE;
;  1648     2537  4                                                !
;  1649     2538  4                                                ! Re-issue the request, in the hope that an operator will even
;  1650     2539  4                                                ! be enabled to receive and service the request.
;  1651     2540  4                                                !
;  1652     2541  5                                                IF NOT (STATUS = $SNDOPR (MSGBUF=OP_MSG_DESC, CHAN=.REPLY_CHAN
;  1653     2542  4                                                THEN
;  1654     2543  4                                                    ABORT_MOUNT (MOUN$_OPRSNDERR, 0, .STATUS);
;  1655     2544  4                                                !
;  1656     2545  4                                                ! If the request was sent, re-issue a read to the reply mailbo
;  1657     2546  4                                                !
;  1658     2547  4                                                IF .STATUS NEQ OPC$_NOPERATOR
;  1659     2548  4                                                THEN
;  1660     2549  5                                                    BEGIN
```

```
;  1661     2550  5                                                    POST_READ_TO_MBX ();
;  1662     2551  5                                                    REPLY_PENDING = TRUE;
;  1663     2552  4                                                    END;
;  1664     2553  3                                                END;
;  1665     2554  2                                            END;
;  1666     2555  2
;  1667     2556  3        [(OPC$_RQSTCMPLTE AND %X'0FFFF')]   : BEGIN
;  1668     2557  3                                            !
;  1669     2558  3                                            ! The operator replied to our request.
;  1670     2559  3                                            !
;  1671     2560  3                                            PRINT_REPLY ();
;  1672     2561  3                                            PREVIOUS_STATUS = -1;
;  1673     2562  3                                            REPLY_PENDING = FALSE;
;  1674     2563  3                                            OPERATOR_PRESENT = TRUE;
;  1675     2564  3                                            !
;  1676     2565  3                                            ! If there is no operator reply text, then return.
;  1677     2566  3                                            !
;  1678     2567  4                                            IF (.REPLY_IOSB [2,0,16,0] EQL $BYTEOFFSET (OPC$L_MS_TEXT))
;  1679     2568  3                                            THEN
;  1680     2569  3                                                RETURN;
;  1681     2570  3                                            !
;  1682     2571  3                                            ! Create a string descriptor for the operator reply text.
;  1683     2572  3                                            !
;  1684     2573  3                                            TPARSE_BLOCK [TPA$L_STRINGCNT] = .REPLY_IOSB [2,0,16,0] - $BYTEOFF
;  1685     2574  3                                            TPARSE_BLOCK [TPA$L_STRINGPTR] = .REPLY_DESC [DSC$A_POINTER]+$BYTE
;  1686     2575  3                                            !
;  1687     2576  3                                            ! The reply text may contain a NEWLINE character.  If so, the inte
;  1688     2577  3                                            ! is BEFORE  the NEWLINE character.  Note that the NEWLINE charact
;  1689     2578  3                                            ! two characters, a carriage-return followed by a line-feed (<cr><
;  1690     2579  3                                            !
;  1691     2580  3                                            PTR   = CH$FIND_SUB   (.TPARSE_BLOCK [TPA$L_STRINGCNT],
;  1692     2581  3                                                                   .TPARSE_BLOCK [TPA$L_STRINGPTR],
;  1693     2582  3                                                                   .NEWLINE [DSC$W_LENGTH],
;  1694     2583  3                                                                   .NEWLINE [DSC$A_POINTER]
;  1695     2584  3                                                                  );
;  1696     2585  3                                            !
;  1697     2586  3                                            ! If a NEWLINE was found, set the string descriptor
;  1698     2587  3                                            ! so that the text BEFORE the NEWLINE is parsed.
;  1699     2588  3                                            !
;  1700     2589  3                                            IF NOT CH$FAIL (.PTR)
;  1701     2590  3                                            THEN
;  1702     2591  3                                                TPARSE_BLOCK [TPA$L_STRINGCNT] = .PTR - .TPARSE_BLOCK [TPA$L_S
;  1703     2592  3                                            !
;  1704     2593  3                                            ! If there is no text before the NEWLINE, then there is no operato
;  1705     2594  3                                            !
;  1706     2595  3                                            IF .TPARSE_BLOCK [TPA$L_STRINGCNT] EQL 0
;  1707     2596  3                                            THEN
;  1708     2597  3                                                RETURN;
;  1709     2598  3                                            !
;  1710     2599  3                                            ! Convert the reply to upper case, so TPARSE will work correctly.
;  1711     2600  3                                            !
;  1712     2601  3                                            CH$TRANSLATE  (TRANS_TABLE,
;  1713     2602  3                                                           .TPARSE_BLOCK [TPA$L_STRINGCNT],
;  1714     2603  3                                                           .TPARSE_BLOCK [TPA$L_STRINGPTR],
;  1715     2604  3                                                           0,
;  1716     2605  3                                                           .TPARSE_BLOCK [TPA$L_STRINGCNT],
;  1717     2606  3                                                           .TPARSE_BLOCK [TPA$L_STRINGPTR]
```

```
;  1718     2607  3                                                    );
;  1719     2608  3                                                !
;  1720     2609  3                                                ! Parse the operator response and perform whatever action is neces
;  1721     2610  3                                                !
;  1722     2611  4                                                IF NOT (STATUS = LIB$TPARSE (TPARSE_BLOCK, STATE_TABLE, KEY_TABLE)
;  1723     2612  3                                                THEN
;  1724     2613  3                                                    ABORT_MOUNT (.STATUS, 0, .MOUNT_STATUS);
;  1725     2614  2                                                END;
;  1726     2615  2
;  1727     2616  3      [(OPC$_RQSTPEND AND %X'0FFFF')]           : BEGIN
;  1728     2617  3                                                !
;  1729     2618  3                                                ! The operator did a REPLY/PENDING.  The orginal
;  1730     2619  3                                                ! request is still active, so issue another read
;  1731     2620  3                                                ! to the reply mailbox.
;  1732     2621  3                                                !
;  1733     2622  3                                                PRINT_REPLY ();
;  1734     2623  3                                                OPERATOR_PRESENT = TRUE;
;  1735     2624  3                                                POST_READ_TO_MBX ();
;  1736     2625  2                                                END;
;  1737     2626  2
;  1738     2627  3      [(OPC$_RQSTABORT AND %X'0FFFF')]          : BEGIN
;  1739     2628  3                                                !
;  1740     2629  3                                                ! The operator has aborted the mount request.
;  1741     2630  3                                                !
;  1742     2631  3                                                PRINT_REPLY ();
;  1743     2632  3                                                REPLY_PENDING = FALSE;
;  1744     2633  3                                                OPERATOR_PRESENT = TRUE;
;  1745     2634  3                                                ABORT_MOUNT (MOUN$_OPRABORT);
;  1746     2635  2                                                END;
;  1747     2636  2
;  1748     2637  2      [(OPC$_RQSTCAN  AND %X'0FFFF'),
;  1749     2638  3       (OPC$_RQSTDONE AND %X'0FFFF')]           : BEGIN
;  1750     2639  3                                                !
;  1751     2640  3                                                ! The user has canceled the requst, and
;  1752     2641  3                                                ! the operator is acknowledging it.
;  1753     2642  3                                                !
;  1754     2643  3                                                PREVIOUS_STATUS = -1;
;  1755     2644  3                                                REPLY_PENDING = FALSE;
;  1756     2645  3                                                OPERATOR_PRESENT = TRUE;
;  1757     2646  2                                                END;
;  1758     2647  2
;  1759     2648  2      [(OPC$_BLANKTAPE AND %X'0FFFF'),
;  1760     2649  3       (OPC$_INITAPE   AND %X'0FFFF')]          : BEGIN
;  1761     2650  3                                                !
;  1762     2651  3                                                ! These messages may be sent by mistake.  Notify
;  1763     2652  3                                                ! the interested parties, and let MOUNT try again.
;  1764     2653  3                                                !
;  1765     2654  3                                                PREVIOUS_STATUS = -1;
;  1766     2655  3                                                REPLY_PENDING = FALSE;
;  1767     2656  3                                                OPERATOR_PRESENT = TRUE;
;  1768     2657  3                                                INVALID_COMMAND ();
;  1769     2658  2                                                END;
;  1770     2659  2
;  1771     2660  3      [OTHERWISE]                               : BEGIN
;  1772     2661  3                                                !
;  1773     2662  3                                                ! This is an unknown response type.
;  1774     2663  3                                                ! Abort the mount and print the bad message.
```

```
;  1775          2664  3
;  1776          2665  3
;  1777          2666  3
;  1778        P 2667  3
;  1779        P 2668  3
;  1780        P 2669  3
;  1781        P 2670  3
;  1782        P 2671  3
;  1783        P 2672  3
;  1784        P 2673  3
;  1785          2674  3
;  1786          2675  2
;  1787          2676  2     TES;
;  1788          2677  2
;  1789          2678  1 END;
```

```
                !
                REPLY_PENDING = FALSE;
                OPERATOR_PRESENT = TRUE;
                ABORT_MOUNT   (MOUN$_BADREPLY,                  ! Error code
                               5,                               ! FAO count
                               .REPLY_BUFFER[OPC$B_MS_TYPE],    ! Message type
                               .REPLY_BUFFER[OPC$W_MS_STATUS],  ! Message status
                               .REPLY_BUFFER[OPC$L_MS_RPLYID],  ! Message Ident
                               .REPLY_DESC[DSC$W_LENGTH]  - $BYTEOFFSET (OPC$L_MS_
                               .REPLY_DESC[DSC$A_POINTER] + $BYTEOFFSET (OPC$L_MS_
                              );
                END;

                     ! End of PARSE_REPLY


                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                                                    0A  0D  00008 P.AAB:  .ASCII  <13><10>                                ;
                                                                0000A         .BLKB   2
0E  0D  0C  0B  0A  09  08  07  06  05  04  03  02  01  00  0000C P.AAC:  .BYTE   0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, - ;
1D  1C  1B  1A  19  18  17  16  15  14  13  12  11  10  0F  0001B                13, 14, 15, 16, 17, 18, 19, 20, 21, 22, -   ;
2C  2B  2A  29  28  27  26  25  24  23  22  21  20  1F  1E  0002A                23, 24, 25, 26, 27, 28, 29, 30, 31, 32, -   ;
3B  3A  39  38  37  36  35  34  33  32  31  30  2F  2E  2D  00039                33, 34, 35, 36, 37, 38, 39, 40, 41, 42, -   ;
4A  49  48  47  46  45  44  43  42  41  40  3F  3E  3D  3C  00048                43, 44, 45, 46, 47, 48, 49, 50, 51, 52, -   ;
59  58  57  56  55  54  53  52  51  50  4F  4E  4D  4C  4B  00057                53, 54, 55, 56, 57, 58, 59, 60, 61, 62, -   ;
48  47  46  45  44  43  42  41  60  5F  5E  5D  5C  5B  5A  00066                63, 64, 65, 66, 67, 68, 69, 70, 71, 72, -   ;
57  56  55  54  53  52  51  50  4F  4E  4D  4C  4B  4A  49  00075                73, 74, 75, 76, 77, 78, 79, 80, 81, 82, -   ;
                        7F  7E  7D  7C  7B  5A  59  58  00084                83, 84, 85, 86, 87, 88, 89, 90, 91, 92, -   ;
                                                                                    93, 94, 95, 96, 65, 66, 67, 68, 69, 70, -   ;
                                                                                    71, 72, 73, 74, 75, 76, 77, 78, 79, 80, -   ;
                                                                                    81, 82, 83, 84, 85, 86, 87, 88, 89, 90, -   ;
                                                                                    123, 124, 125, 126, 127                     ;

                                                .PSECT  $GLOBAL$,NOEXE,2

                                            0002  00000 NEWLINE::
                                                        .WORD   2                                                       ;
                                              0E  00002         .BYTE   14                                             ;
                                              01  00003         .BYTE   1                                              ;
                                      00000000'   00004         .ADDRESS P.AAB                                        ;

                                                    TRANS_TABLE=        P.AAC
                                                        .EXTRN  LIB$TPARSE

                                                        .PSECT  $CODE$,NOWRT,2

                                            03FC  00000 PARSE_REPLY:
                                                        .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9                            ; 2436
                                    59        CA    AF  9E  00002         MOVAB   PRINT_REPLY, R9                       ;
                                    58 00000000G    00  9E  00006         MOVAB   LIB$STOP, R8                          ;
                                    57      0000'   CF  9E  0000D         MOVAB   REPLY_PENDING, R7                     ;
                                    11        3C    A7  E8  00012         BLBS    REPLY_IOSB, 1$                        ; 2500
                                                    67  D4  00016         CLRL    REPLY_PENDING                         ; 2503
                                    7E        3C    A7  3C  00018         MOVZWL  REPLY_IOSB, -(SP)                     ; 2504
```

```
                                7E  D4 0001C          CLRL    -(SP)                                                                   ;
                     007281DC   8F  DD 0001E          PUSHL   #7504348                                                                ;
                             68  03  FB 00024          CALLS   #3, LIB$STOP                                                            ;
                             52      46  A7  3C 00027 1$:      MOVZWL  REPLY_BUFFER+2, R2                                              ; 2513
                           8061  8F      52  B1 0002B          CMPW    R2, #32865                                                      ; 2515
                                         5A  12 00030          BNEQ    5$                                                              ;
                                         67  D4 00032          CLRL    REPLY_PENDING                                                   ; 2519
                           FB03  C9      00  FB 00034          CALLS   #0, INTERACTIVE_JOB                                             ; 2520
                                 09      50  E8 00039          BLBS    R0, 2$                                                          ;
                                    007281FC 8F  DD 0003C      PUSHL   #7504380                                                        ; 2525
                                       00FD  31  00042         BRW     14$                                                             ;
                                 0D      08  A7  E9 00045 2$:  BLBC    OPERATOR_PRESENT, 3$                                            ; 2533
                                    0072A03B 8F  DD 00049      PUSHL   #7512123                                                        ; 2535
                        00000000G    00      01  FB 0004F     CALLS   #1, LIB$SIGNAL                                                  ;
                                         08  A7  D4 00056 3$:  CLRL    OPERATOR_PRESENT                                                ; 2536
                                         38  A7  DD 00059      PUSHL   REPLY_CHANNEL                                                   ; 2541
                                       0180  C7  9F 0005C      PUSHAB  OP_MSG_DESC                                                     ;
                        00000000G    00      02  FB 00060     CALLS   #2, SYS$SNDOPR                                                  ;
                                 56      50  D0 00067          MOVL    R0, STATUS                                                      ;
                                 0D      56  E8 0006A          BLBS    STATUS, 4$                                                      ;
                                         56  DD 0006D          PUSHL   STATUS                                                          ; 2543
                                         7E  D4 0006F          CLRL    -(SP)                                                           ;
                                    007281EC 8F  DD 00071      PUSHL   #7504364                                                        ;
                                 68      03  FB 00077          CALLS   #3, LIB$STOP                                                    ;
                        00058061 8F      56  D1 0007A 4$:      CMPL    STATUS, #360545                                                 ; 2547
                                         60  13 00081          BEQL    9$                                                              ;
                           FACB  C9      00  FB 00083          CALLS   #0, POST_READ_TO_MBX                                            ; 2550
                                 67      01  D0 00088          MOVL    #1, REPLY_PENDING                                               ; 2551
                                         04  00088B           RET                                                                     ; 2513
                           8029  8F          52  B1 0008C 5$:  CMPW    R2, #32809                                                      ; 2556
                                             03  13 00091      BEQL    6$                                                              ;
                                           0082  31 00093      BRW     12$                                                             ;
                                 69          00  FB 00096 6$:  CALLS   #0, PRINT_REPLY                                                ; 2560
                                     18      A7  01  CE 00099  MNEGL   #1, PREVIOUS_STATUS                                             ; 2561
                                             67  D4 0009D      CLRL    REPLY_PENDING                                                   ; 2562
                                     08      A7  01  D0 0009F  MOVL    #1, OPERATOR_PRESENT                                            ; 2563
                                         08      3E  A7  B1 000A3  CMPW    REPLY_IOSB+2, #8                                            ; 2567
                                                 3A  13 000A7      BEQL    9$                                                          ;
                                   00DC  C7      3E  A7  3C 000A9  MOVZWL  REPLY_IOSB+2, TPARSE_BLOCK+8                                ; 2573
                                   00DC  C7          08  C2 000AF  SUBL2   #8, TPARSE_BLOCK+8                                          ;
                             00E0  C7    00D0  C7      08  C1 000B4  ADDL3   #8, REPLY_DESC+4, TPARSE_BLOCK+12                        ; 2574
                                         54  0000'     CF  3C 000BC  MOVZWL  NEWLINE, R4                                             ; 2582
                        00E0  D7   00DC  C7  0000'     DF      54  39 000C1  MATCHC  R4, @NEWLINE+4, TPARSE_BLOCK+8, -                 ; 2583
                                                                                 @TPARSE_BLOCK+12                                       ;
                                             03  13 000CC      BEQL    7$                                                          ;
                                         53      54  D0 000CE  MOVL    R4, R3                                                      ;
                                         53      54  C2 000D1  7$.     SUBL2   R4, R3                                              ;
                                             08  13 000D4      BEQL    8$                                                          ; 2589
                                   00DC  C7      53  C3 000D6  SUBL3   TPARSE_BLOCK+12, PTR, TPARSE_BLOCK+8                        ; 2591
                                         50  00DC  C7  D0 000DE  8$:     MOVL    TPARSE_BLOCK+8, R0                                  ; 2595
                                             01  12 000E3  9$:     BNEQ    10$                                                         ;
                                                 04 000E5       RET                                                                     ;
                        0000'  CF        00  00E0  D7      50  2E 000E6  10$:    MOVTC   R0, @TPARSE_BLOCK+12, #0, TRANS_TABLE, R0, - ; 2606
                                                 00E0  D7      50      000EF                  @TPARSE_BLOCK+12                        ;
                                                         0000V CF  9F 000F3  PUSHAB  KEY_TABLE                                       ; 2611
                                                         0000V CF  9F 000F7  PUSHAB  STATE_TABLE                                     ;
                                                         00D4  C7  9F 000FB  PUSHAB  TPARSE_BLOCK                                    ;
```

```
                00000000G  00              03  FB 000FF          CALLS   #3, LIB$TPARSE                          ;
                           56              50  D0 00106          MOVL    R0, STATUS                             ;
                           01              56  E9 00109          BLBC    STATUS, 11$                            ;
                                           04  0010C           RET                                            ;
                                    14     A7  DD 0010D 11$:     PUSHL   MOUNT_STATUS                           ; 2613
                                           7E  D4 00110          CLRL    -(SP)                                  ;
                                           56  DD 00112          PUSHL   STATUS                                 ;
                           68              03  FB 00114          CALLS   #3, LIB$STOP                           ;
                                           04  00117           RET                                            ; 2513
                      8021 8F              52  B1 00118 12$:     CMPW    R2, #32801                             ; 2616
                                           0D  12 0011D          BNEQ    13$                                    ;
                           69              00  FB 0011F          CALLS   #0, PRINT_REPLY                        ; 2622
                        08 A7              01  D0 00122          MOVL    #1, OPERATOR_PRESENT                   ; 2623
                      FACB C9              00  FB 00126          CALLS   #0, POST_READ_TO_MBX                   ; 2624
                                           04  0012B           RET                                            ; 2513
                      801C 8F              52  B1 0012C 13$:     CMPW    R2, #32796                             ; 2627
                                           13  12 00131          BNEQ    15$                                    ;
                           69              00  FB 00133          CALLS   #0, PRINT_REPLY                        ; 2631
                                           67  D4 00136          CLRL    REPLY_PENDING                          ; 2632
                        08 A7              01  D0 00138          MOVL    #1, OPERATOR_PRESENT                   ; 2633
                                 007281F4  8F  DD 0013C          PUSHL   #7504372                               ; 2634
                           68              01  FB 00142 14$:     CALLS   #1, LIB$STOP                           ;
                                           04  00145           RET                                            ; 2513
                      8084 8F              52  B1 00146 15$:     CMPW    R2, #32900                             ; 2637
                                           07  13 0014B          BEQL    16$                                    ;
                      81DB 8F              52  B1 0014D          CMPW    R2, #33243                             ; 2638
                                           0B  12 00152          BNEQ    17$                                    ;
                        18 A7              01  CE 00154 16$:     MNEGL   #1, PREVIOUS_STATUS                    ; 2643
                                           67  D4 00158          CLRL    REPLY_PENDING                          ; 2644
                        08 A7              01  D0 0015A          MOVL    #1, OPERATOR_PRESENT                   ; 2645
                                           04  0015E           RET                                            ; 2513
                      81D3 8F              52  B1 0015F 17$:     CMPW    R2, #33235                             ; 2649
                                           07  13 00164          BEQL    18$                                    ;
                      81E3 8F              52  B1 00166          CMPW    R2, #33251                             ; 2648
                                           10  12 0016B          BNEQ    19$                                    ;
                        18 A7              01  CE 0016D 18$:     MNEGL   #1, PREVIOUS_STATUS                    ; 2654
                                           67  D4 00171          CLRL    REPLY_PENDING                          ; 2655
                        08 A7              01  D0 00173          MOVL    #1, OPERATOR_PRESENT                   ; 2656
                      0000V CF             00  FB 00177          CALLS   #0, INVALID_COMMAND                    ; 2657
                                           04  0017C           RET                                            ; 2513
                                           67  D4 0017D 19$:     CLRL    REPLY_PENDING                          ; 2665
                        08 A7              01  D0 0017F          MOVL    #1, OPERATOR_PRESENT                   ; 2666
                   7E   00D0 C7            1A  C1 00183          ADDL3   #26, REPLY_DESC+4, -(SP)               ; 2674
                             7E      00CC  C7  3C 00189          MOVZWL  REPLY_DESC, -(SP)                      ;
                             6E            1A  C2 0018E          SUBL2   #26, (SP)                              ;
                                     48    A7  DD 00191          PUSHL   REPLY_BUFFER+4                         ;
                             7E      46    A7  3C 00194          MOVZWL  REPLY_BUFFER+2, -(SP)                  ;
                             7E      44    A7  9A 00198          MOVZBL  REPLY_BUFFER, -(SP)                    ;
                                           05  DD 0019C          PUSHL   #5                                     ;
                                 007281E4  8F  DD 0019E          PUSHL   #7504356                               ;
                           68              07  FB 001A4          CALLS   #7, LIB$STOP                           ;
                                           04  001A7           RET                                            ; 2678

; Routine Size:  424 bytes,    Routine Base:  $CODE$ + 071B
```

```
;  1791          2679  1 ROUTINE SAVE_DEVICE =
;  1792          2680  1
;  1793          2681  1 !++
;  1794          2682  1 ! Functional description:
;  1795          2683  1 !
;  1796          2684  1 !       This is a TPARSE action routine that is called
;  1797          2685  1 !       to create a string descriptor for the token
;  1798          2686  1 !       just parsed.  The token is a device name.
;  1799          2687  1 !
;  1800          2688  1 ! Input:
;  1801          2689  1 !
;  1802          2690  1 !       None.
;  1803          2691  1 !
;  1804          2692  1 ! Output:
;  1805          2693  1 !
;  1806          2694  1 !       None.
;  1807          2695  1 !
;  1808          2696  1 ! Implicit Inputs:
;  1809          2697  1 !
;  1810          2698  1 !       TPARSE_BLOCK = data structure defining TPARSE context.
;  1811          2699  1 !
;  1812          2700  1 ! Implicit outputs:
;  1813          2701  1 !
;  1814          2702  1 !       DEVICE_DESC = string descriptor of device name.
;  1815          2703  1 !
;  1816          2704  1 ! Routine Value:
;  1817          2705  1 !
;  1818          2706  1 !       1 If the device name length is within tolerance,
;  1819          2707  1 !       0 if not.
;  1820          2708  1 !
;  1821          2709  1 !--
;  1822          2710  1
;  1823          2711  2 BEGIN                                           ! Start of SAVE_DEVICE
;  1824          2712  2
;  1825          2713  2
;  1826          2714  2 EXTERNAL
;  1827          2715  2
;  1828          2716  2         DEVICE_DESC     : BBLOCK,               ! Device string descriptor
;  1829          2717  2         TPARSE_BLOCK    : BBLOCK;               ! TPARSE context data structure
;  1830          2718  2
;  1831          2719  2 IF .TPARSE_BLOCK[TPA$L_TOKENCNT] GTR MAX_DEV_LENGTH          ! Check for device name too long
;  1832          2720  2 THEN
;  1833          2721  2     0                                                       ! Return failure
;  1834          2722  2 ELSE
;  1835          2723  3     BEGIN
;  1836          2724  3     DEVICE_DESC[DSC$W_LENGTH]  = .TPARSE_BLOCK[TPA$L_TOKENCNT];
;  1837          2725  3     DEVICE_DESC[DSC$A_POINTER] = .TPARSE_BLOCK[TPA$L_TOKENPTR];
;  1838          2726  3     1                                                       ! Return success
;  1839          2727  3     END
;  1840          2728  3
;  1841          2729  1 END;                                           ! End of SAVE_DEVICE


                                0000 00000 SAVE_DEVICE:
```

```
                                                        .WORD   Save nothing                                    ; 2679
                        3F      0000G   CF      D1 00002        CMPL    TPARSE_BLOCK+16, #63                    ; 2719
                                        03      15 00007        BLEQ    1$                                      ;
                                        50      D4 00009        CLRL    R0                                      ;
                                                04 0000B        RET                                             ;
                0000G   CF      0000G   CF      B0 0000C 1$:    MOVW    TPARSE_BLOCK+16, DEVICE_DESC            ; 2724
                0000G   CF      0000G   CF      D0 00013        MOVL    TPARSE_BLOCK+20, DEVICE_DESC+4          ; 2725
                        50              01      D0 0001A        MOVL    #1, R0                                  ; 2723
                                                04 0001D        RET                                             ; 2729

; Routine Size:  30 bytes,    Routine Base:  $CODE$ + 08C3
```

```
;  1843          2730  1 ROUTINE DO_SUBSTITUTE =
;  1844          2731  1
;  1845          2732  1 !++
;  1846          2733  1 ! Funtional desctiption:
;  1847          2734  1 !
;  1848          2735  1 !       This routine is merely a shell so that $COPY_INFO may be
;  1849          2736  1 !       called during the TPARSE operation to copy the new device
;  1850          2737  1 !       name to the mount data base.
;  1851          2738  1 !
;  1852          2739  1 !       Note that the previous device must be deallocated before
;  1853          2740  1 !       we copy the new device name into the data base.
;  1854          2741  1 !
;  1855          2742  1 ! Input:
;  1856          2743  1 !
;  1857          2744  1 !       None.
;  1858          2745  1 !
;  1859          2746  1 ! Output:
;  1860          2747  1 !
;  1861          2748  1 !       None.
;  1862          2749  1 !
;  1863          2750  1 ! Implict input:
;  1864          2751  1 !
;  1865          2752  1 !       DEVICE_DESC     : a device name descriptor
;  1866          2753  1 !       DEVICE_INDEX    : the current device index into the DEVICE_STRING vector
;  1867          2754  1 !
;  1868          2755  1 ! Implict output:
;  1869          2756  1 !
;  1870          2757  1 !       The mount data base may be modified.
;  1871          2758  1 !
;  1872          2759  1 ! Routine value:
;  1873          2760  1 !
;  1874          2761  1 !       See the description of $COPY_INFO.
;  1875          2762  1 !--
;  1876          2763  1
;  1877          2764  2 BEGIN                                             ! Start of DO_SUBSTITUE
;  1878          2765  2
;  1879          2766  2 EXTERNAL
;  1880          2767  2         DEVICE_INDEX    : LONG,
;  1881          2768  2         DEVICE_DESC     : BBLOCK;
;  1882          2769  2
;  1883          2770  2 EXTERNAL ROUTINE
;  1884          2771  2         $DALLOC_DEVS$U  : ADDRESSING_MODE (GENERAL),    ! Address of the transfer vector
;  1885          2772  2         $COPY_INFO$U    : ADDRESSING_MODE (GENERAL);    ! Address of the transfer vector
;  1886          2773  2
;  1887          2774  2 $DALLOC_DEVS$U (1);                                 ! Deallocate old device
;  1888          2775  2 $COPY_INFO$U (.DEVICE_INDEX, DEVICE_DESC)          ! Copy string and return status
;  1889          2776  2
;  1890          2777  1 END;                                               ! End of DO_SUBSTITUTE


                                                        .EXTRN  $COPY_INFO$U

                                        0000 00000 DO_SUBSTITUTE:
                                                        .WORD   Save nothing                    ; 2730
                                        01  DD 00002         PUSHL   #1                      ; 2774
                    00000000G   00      01  FB 00004         CALLS   #1, $DALLOC_DEVS$U      ;
```

```
                          0000G  CF  9F 0000B         PUSHAB  DEVICE_DESC                              ; 2775
                          0000G  CF  DD 0000F         PUSHL   DEVICE_INDEX                             ;
                00000000G  00        02  FB 00013    CALLS   #2, $COPY_INFO$U                         ;
                                     04  0001A       RET                                              ; 2777

; Routine Size:  27 bytes,    Routine Base:  $CODE$ + 08E1
```

```
;  1892          2778  1 ROUTINE INVALID_COMMAND =
;  1893          2779  1
;  1894          2780  1 !++
;  1895          2781  1 ! Functional Description:
;  1896          2782  1 !
;  1897          2783  1 !       This routine is the TPARSE action routine that implements
;  1898          2784  1 !       invalid command handling and reporting.  If we get here,
;  1899          2785  1 !       it means that TPARSE has detected a bogus operator reply.
;  1900          2786  1 !       The user is notified that the operator response was invalid,
;  1901          2787  1 !       and the mount operation continues.  If the condition that
;  1902          2788  1 !       caused the initial error still exists, then MOUNT will issue
;  1903          2789  1 !       another request to the operator.  The reason the operator is
;  1904          2790  1 !       not notified of his mistake is that there is no way to target
;  1905          2791  1 !       a message to specific operator.
;  1906          2792  1 !
;  1907          2793  1 ! Input:
;  1908          2794  1 !
;  1909          2795  1 !       None.
;  1910          2796  1 !
;  1911          2797  1 ! Output:
;  1912          2798  1 !
;  1913          2799  1 !       None.
;  1914          2800  1 !
;  1915          2801  1 ! Implicit Inputs:
;  1916          2802  1 !
;  1917          2803  1 !       None.
;  1918          2804  1 !
;  1919          2805  1 ! Implicit Outputs:
;  1920          2806  1 !
;  1921          2807  1 !       The user is informed of the operator's mistake.
;  1922          2808  1 !
;  1923          2809  1 ! Routine value:
;  1924          2810  1 !
;  1925          2811  1 !       Always 1.
;  1926          2812  1 !--
;  1927          2813  1
;  1928          2814  2 BEGIN                                     ! Start of INVALID_COMMAND
;  1929          2815  2
;  1930          2816  2 SIGNAL (MOUN$_INVLDRESP);
;  1931          2817  2
;  1932          2818  2 1
;  1933          2819  1 END;                                     ! End of INVALID_COMMAND



                                        0000 00000 INVALID_COMMAND:
                                                   .WORD   Save nothing                 ; 2778
                              0072A043   8F  DD 00002          PUSHL   #7512131          ; 2816
                   00000000G  00         01  FB 00008          CALLS   #1, LIB$SIGNAL    ;
                              50         01  D0 0000F          MOVL    #1, R0            ; 2819
                                         04 00012            RET                       ;

; Routine Size:  19 bytes,    Routine Base:  $CODE$ + 08FC
```

```
;  1935     2820  1 GLOBAL ROUTINE $COPY_INFO (DEV_INDEX, DEV_DESC) =
;  1936     2821  1
;  1937     2822  1 !++
;  1938     2823  1 ! Functional description:
;  1939     2824  1 !
;  1940     2825  1 !       This routine provides a secure way of copying a device name
;  1941     2826  1 !       string from the caller (in user mode) to MOUNT's protected
;  1942     2827  1 !       data base (in EXEC mode).
;  1943     2828  1 !
;  1944     2829  1 ! Input:
;  1945     2830  1 !
;  1946     2831  1 !       DEV_INDEX       : A number from 0 to .DEVICE_COUNT
;  1947     2832  1 !       DEV_DESC        : Address of a device name descriptor
;  1948     2833  1 !
;  1949     2834  1 ! Output:
;  1950     2835  1 !
;  1951     2836  1 !       None.
;  1952     2837  1 !
;  1953     2838  1 ! Implicit input:
;  1954     2839  1 !
;  1955     2840  1 !       DEVICE_STRING   : A vector of device name descriptors
;  1956     2841  1 !       DEVICE_COUNT    : The number of devices specified by the user.
;  1957     2842  1 !
;  1958     2843  1 ! Implicit output:
;  1959     2844  1 !
;  1960     2845  1 !       The DEVICE_STRING vector may be modified.
;  1961     2846  1 !
;  1962     2847  1 ! Routine value:
;  1963     2848  1 !
;  1964     2849  1 !       SS$_NORMAL      : Normal successful completion
;  1965     2850  1 !       SS$_ACCVIO      : The specified device name cannot be read.
;  1966     2851  1 !       SS$_BADPARAM    : The specified device name has a zero length,
;  1967     2852  1 !                         or is longer than LOG$C_NAMLENGTH bytes, or
;  1968     2853  1 !                         DEV_INDEX is not a reasonable value.
;  1969     2854  1 !--
;  1970     2855  1
;  1971     2856  2 BEGIN                                           ! Start of $COPY_INFO
;  1972     2857  2
;  1973     2858  2 EXTERNAL
;  1974     2859  2         DEVICE_COUNT    : LONG,                 ! # of drives
;  1975     2860  2         DEVICE_STRING   : VECTOR VOLATILE;      ! Descriptor list
;  1976     2861  2
;  1977     2862  2 BUILTIN
;  1978     2863  2         PROBER;                                 ! Probe for read access
;  1979     2864  2
;  1980     2865  2 LOCAL
;  1981     2866  2         DEV_NAME        : BBLOCK [DSC$K_S_BLN]; ! Local descriptor
;  1982     2867  2
;  1983     2868  2 !
;  1984     2869  2 ! Make sure DEV_INDEX is within a reasonable range.
;  1985     2870  2 !
;  1986     2871  3 IF (.DEV_INDEX LSS 0) OR (.DEV_INDEX GTR (.DEVICE_COUNT - 1))
;  1987     2872  2 THEN
;  1988     2873  2     RETURN (SS$_BADPARAM);
;  1989     2874  2
;  1990     2875  2 !
;  1991     2876  2 ! Probe the actual descriptor for read access.
```

```
;  1992          2877  2 !
;  1993          2878  2 IF NOT PROBER (%REF (0), %REF (DSC$K_S_BLN), .DEV_DESC)
;  1994          2879  2 THEN
;  1995          2880  2     RETURN (SS$_ACCVIO);
;  1996          2881  2
;  1997          2882  2 !
;  1998          2883  2 ! Copy the descriptor to internal storage and then probe the
;  1999          2884  2 ! device name for read access, and make sure that the device
;  2000          2885  2 ! name length is reasonable.
;  2001          2886  2 !
;  2002          2887  2 CH$MOVE (DSC$K_S_BLN, .DEV_DESC, DEV_NAME);
;  2003          2888  3 IF (.DEV_NAME [DSC$W_LENGTH] LEQ 0)
;  2004          2889  3 OR (.DEV_NAME [DSC$W_LENGTH] GTR 63)
;  2005          2890  2 THEN
;  2006          2891  2     RETURN (SS$_BADPARAM);
;  2007          2892  2 IF NOT PROBER (%REF (0), DEV_NAME [DSC$W_LENGTH], .DEV_NAME [DSC$A_POINTER])
;  2008          2893  2 THEN
;  2009          2894  2     RETURN (SS$_ACCVIO);
;  2010          2895  2
;  2011          2896  2 !
;  2012          2897  2 ! Copy the new device name to the mount data base,
;  2013          2898  2 ! and update the descriptor in DEVICE_STRING.
;  2014          2899  2 !
;  2015          2900  2 DEVICE_STRING [(.DEV_INDEX*2)] = .DEV_NAME [DSC$W_LENGTH];
;  2016          2901  2 CH$MOVE (.DEV_NAME [DSC$W_LENGTH],
;  2017          2902  2           .DEV_NAME [DSC$A_POINTER],
;  2018          2903  2           .DEVICE_STRING [(.DEV_INDEX*2)+1]
;  2019          2904  2          );
;  2020          2905  2
;  2021          2906  2 SS$_NORMAL
;  2022          2907  2
;  2023          2908  1 END;                                    ! End of $COPY_INFO


                                                .EXTRN  DEVICE_COUNT, DEVICE_STRING

                                 007C 00000     .ENTRY  $COPY_INFO, Save R2,R3,R4,R5,R6        ;  2820
                          5E     08   C2 00002  SUBL2   #8, SP                                 ;
                          56  04 AC   D0 00005  MOVL    DEV_INDEX, R6                          ;  2871
                              21   19 00009     BLSS    1$                                     ;
                    50    0000G CF    01   C3 0000B  SUBL3   #1, DEVICE_COUNT, R0             ;
                          50    56   D1 00011  CMPL    R6, R0                                 ;
                                16   14 00014  BGTR    1$                                     ;
                08  BC    08    00   0C 00016  PROBER  #0, #8, @DEV_DESC                      ;  2878
                                1A   13 0001B  BEQL    3$                                     ;
                    6E    08 BC   08   28 0001D  MOVC3   #8, @DEV_DESC, DEV_NAME              ;  2887
                          51    6E   3C 00022  MOVZWL  DEV_NAME, R1                           ;  2888
                                05   15 00025  BLEQ    1$                                     ;
                          3F    51   B1 00027  CMPW    R1, #63                                ;  2889
                                04   1B 0002A  BLEQU   2$                                     ;
                          50    14   D0 0002C  1$:    MOVL    #20, R0                        ;  2891
                                     04 0002F  RET                                           ;
                04  BE    6E    00   0C 00030  2$:    PROBER  #0, DEV_NAME, @DEV_NAME+4      ;  2892
                                04   12 00035  BNEQ    4$                                     ;
                          50    0C   D0 00037  3$:    MOVL    #12, R0                        ;  2894
                                     04 0003A  RET                                           ;
```

```
                50              56          01  78 0003B 4$:    ASHL    #1, R6, R0                          ; 2900
                          0000GCF40          51  D0 0003F        MOVL    R1, DEVICE_STRING[R0]               ;
                                50    0000GCF40  D0 00045        MOVL    DEVICE_STRING+4[R0], P0             ; 2903
                60        04    BE          51  28 0004B        MOVC3   R1, @DEV_NAME+4, (R0)               ;
                                50          01  D0 00050        MOVL    #1, R0                              ; 2908
                                                04 00053        RET                                         ;

; Routine Size:  84 bytes,    Routine Base:  $CODE$ + 090F
```

```
;  2025     2909  1 GLOBAL ROUTINE $CHANGE_PROT =
;  2026     2910  1
;  2027     2911  1 !++
;  2028     2912  1 ! Functional description:
;  2029     2913  1 !
;  2030     2914  1 !       This routine will change the page protection of this module's
;  2031     2915  1 !       OWN storage so that it may be written to in USER mode.
;  2032     2916  1 !
;  2033     2917  1 ! Input:
;  2034     2918  1 !
;  2035     2919  1 !       None.
;  2036     2920  1 !
;  2037     2921  1 ! Output:
;  2038     2922  1 !
;  2039     2923  1 !       None.
;  2040     2924  1 !
;  2041     2925  1 ! Implicit input:
;  2042     2926  1 !
;  2043     2927  1 !       1) The current access mode is EXEC or KERNEL.
;  2044     2928  1 !       2) VA_RANGE is a vector of two longword elements, containing the starting
;  2045     2929  1 !          and ending virtual addresses of the range of pages to work on.
;  2046     2930  1 !
;  2047     2931  1 ! Implicit output:
;  2048     2932  1 !
;  2049     2933  1 !       The pages are made USER readable.
;  2050     2934  1 !
;  2051     2935  1 ! Routine value:
;  2052     2936  1 !
;  2053     2937  1 !       Whatever status value is returned by $SETPRT.
;  2054     2938  1 !--
;  2055     2939  1
;  2056     2940  2 BEGIN                                           ! Start of $CHANGE_PROT
;  2057     2941  2
;  2058     2942  2 EXTERNAL
;  2059     2943  2         DEVICE_INDEX,                           ! Index into PHYS_NAME bblock
;  2060     2944  2         DATA_BASE_READY,                        ! Boolean
;  2061     2945  2         STORED_CONTEXT;                         ! Bit vector
;  2062     2946  2
;  2063     2947  2
;  2064     2948  2 !
;  2065     2949  2 ! Initialize three important variables referenced in VMOUNT.  This
;  2066     2950  2 ! must be done here as they are zeroed only once per $MOUNT call,
;  2067     2951  2 ! and must be written while in EXEC mode.
;  2068     2952  2 !
;  2069     2953  2 DEVICE_INDEX = 0;
;  2070     2954  2 DATA_BASE_READY = 0;
;  2071     2955  2 STORED_CONTEXT = 0;
;  2072     2956  2
;  2073     2957  2 !
;  2074     2958  2 ! Set the page protection of this module's data to allow user
;  2075     2959  2 ! mode read/write access.  This must be done here, in EXEC mode, since
;  2076     2960  2 ! this image is INSTALLed as a protected shareable image, which has
;  2077     2961  2 ! the effect of setting the protection to be USER read, EXEC write.
;  2078     2962  2 ! Note that the data sits in a special PSECT, to avoid changing
;  2079     2963  2 ! the page protection on adjacent pages.
;  2080     2964  2 !
;  2081     2965  3 $SETPRT (INADR=VA_RANGE, PROT=PRT$C_UW)
```

```
; 2082          2966  3
; 2083          2967  1 END;                                    ! End of $CHANGE_PROT


                                                               .EXTRN  DATA_BASE_READY
                                                               .EXTRN  STORED_CONTEXT, SYS$SETPRT

                                                 0000 00000    .ENTRY  $CHANGE_PROT, Save nothing                      ; 2909
                                          0000G  CF   D4 00002 CLRL    DEVICE_INDEX                                    ; 2953
                                          0000G  CF   D4 00006 CLRL    DATA_BASE_READY                                 ; 2954
                                          0000G  CF   D4 0000A CLRL    STORED_CONTEXT                                  ; 2955
                                     7E          04   7D 0000E MOVQ    #4, -(SP)                                       ; 2965
                                                 7E   7C 00011 CLRQ    -(SP)                                           ;
                                          0000'  CF   9F 00013 PUSHAB  VA_RANGE                                        ;
                              00000000G  00          05   FB 00017 CALLS   #5, SYS$SETPRT                             ;
                                                     04 0001E    RET                                                   ; 2967

; Routine Size:  31 bytes,    Routine Base:  $CODE$ + 0963
```

```
;  2085          2968  1 GLOBAL ROUTINE $DALLOC_DEVS (SINGLE_DEVICE) =
;  2086          2969  1
;  2087          2970  1 !++
;  2088          2971  1 ! Functional description:
;  2089          2972  1 !
;  2090          2973  1 !       This routine will attempt to dealocate all devices that were
;  2091          2974  1 !       specified by the user that were not previously allocated.
;  2092          2975  1 !
;  2093          2976  1 ! Input:
;  2094          2977  1 !
;  2095          2978  1 !       SINGLE_DEVICE   : a longword boolean to  control whether all
;  2096          2979  1 !                         drives or just a single one is to be deallocated.
;  2097          2980  1 !                         If the latter, use DEVICE_INDEX to select the
;  2098          2981  1 !                         drive name from the PHYS_NAME vector.
;  2099          2982  1 !
;  2100          2983  1 ! Output:
;  2101          2984  1 !
;  2102          2985  1 !       None.
;  2103          2986  1 !
;  2104          2987  1 ! Implicit input:
;  2105          2988  1 !
;  2106          2989  1 !       CLEANUP_ALLOC   : a bit vector where each bit represents an
;  2107          2990  1 !                         an entry in PHYS_NAME that was not previously
;  2108          2991  1 !                         allocated by the user.
;  2109          2992  1 !       DEVICE_INDEX    : index into PHYS_NAME vector
;  2110          2993  1 !       PHYS_NAME       : a vector of device name descriptors for all
;  2111          2994  1 !                         devices specified by the user.
;  2112          2995  1 !       PHYS_COUNT      : a high-water mark that indicates the number
;  2113          2996  1 !                         of devices actually used in the mount.
;  2114          2997  1 !
;  2115          2998  1 ! Implicit output:
;  2116          2999  1 !
;  2117          3000  1 !       All devices not mounted or not previously allocated are deallocated.
;  2118          3001  1 !
;  2119          3002  1 ! Routine value:
;  2120          3003  1 !
;  2121          3004  1 !       SS$_NORMAL      : Normal successful completion
;  2122          3005  1 !--
;  2123          3006  1
;  2124          3007  2 BEGIN                                           ! Start of $DALLOC_DEVS
;  2125          3008  2
;  2126          3009  2 EXTERNAL
;  2127          3010  2         CLEANUP_ALLOC   : BITVECTOR VOLATILE,  ! cleanup bit vector
;  2128          3011  2         DEV_ALLOCATED   : BITVECTOR VOLATILE,  ! device allready allocated
;  2129          3012  2         DEV_ACQUIRED    : BITVECTOR VOLATILE,  ! device is interlocked
;  2130          3013  2         DEVICE_INDEX    : LONG,                ! current device
;  2131          3014  2         PHYS_COUNT      : LONG,                ! count of physical devices
;  2132          3015  2         PHYS_NAME       : VECTOR VOLATILE,     ! device descriptor array
;  2133          3016  2         MOUNT_OPTIONS   : BITVECTOR,           ! mount options and modifiers
;  2134          3017  2         STORED_CONTEXT  : BITVECTOR;           ! special mount context
;  2135          3018  2
;  2136          3019  2
;  2137          3020  2 IF .SINGLE_DEVICE
;  2138          3021  2 THEN
;  2139          3022  2     !
;  2140          3023  2     ! Deallocate a specific device.  This is used to deallocate a
;  2141          3024  2     ! previously allocated device when the operator instructs us to
```

```
;  2142          3025  2      ! substitute another device in its place.
;  2143          3026  2      !
;  2144          3027  3      BEGIN
;  2145          3028  3      IF .CLEANUP_ALLOC[.DEVICE_INDEX]
;  2146          3029  3      THEN
;  2147          3030  4          BEGIN
;  2148          3031  4          $DALLOC(DEVNAM = PHYS_NAME[.DEVICE_INDEX*2]);
;  2149          3032  4          CLEANUP_ALLOC[.DEVICE_INDEX] = 0;
;  2150          3033  3          END;
;  2151          3034  3      DEV_ALLOCATED[.DEVICE_INDEX] = 0;
;  2152          3035  3      DEV_ACQUIRED[.DEVICE_INDEX] = 0;
;  2153          3036  3      PHYS_COUNT = .DEVICE_INDEX;
;  2154          3037  3      END
;  2155          3038  2  ELSE
;  2156          3039  3      BEGIN
;  2157          3040  3      !
;  2158          3041  3      ! Deallocate every device listed in the PHYS_NAME device name descriptor
;  2159          3042  3      ! array, that was not previously allocated by the user.  If the device is
;  2160          3043  3      ! mounted, it will not be deallocated (this check is done in the $DALLOC
;  2161          3044  3      ! system service).
;  2162          3045  3      !
;  2163          3046  3      INCR I FROM 0 TO .PHYS_COUNT-1 DO
;  2164          3047  3          IF .CLEANUP_ALLOC[.I]
;  2165          3048  3          THEN
;  2166          3049  4              BEGIN
;  2167          3050  4              $DALLOC(DEVNAM = PHYS_NAME[.I*2]);
;  2168          3051  4              DEV_ALLOCATED[.I] = 0;
;  2169          3052  4              DEV_ACQUIRED[.I] = 0;
;  2170          3053  4              CLEANUP_ALLOC[.I] = 0;
;  2171          3054  3              END;
;  2172          3055  2      END;
;  2173          3056  2
;  2174          3057  2  SS$_NORMAL
;  2175          3058  2
;  2176          3059  1  END;                                    ! End of $DALLOC_DEVS


                                                                .EXTRN  CLEANUP_ALLOC, DEV_ALLOCATED
                                                                .EXTRN  DEV_ACQUIRED, PHYS_COUNT
                                                                .EXTRN  SYS$DALLOC

                                                007C 00000      .ENTRY  $DALLOC_DEVS, Save R2,R3,R4,R5,R6       ; 2968
                                    56      0000G   CF   9E 00002  MOVAB   DEVICE_INDEX, R6                    ;
                                    55  00000000G   00   9E 00007  MOVAB   SYS$DALLOC, R5                      ;
                                    54      0000G   CF   9E 0000E  MOVAB   CLEANUP_ALLOC, R4                   ;
                                    2C        04    AC   E9 00013  BLBC    SINGLE_DEVICE, 4$                  ; 3020
                              12            64          66   E1 00017  BBC     DEVICE_INDEX, CLEANUP_ALLOC, 1$    ; 3028
                                                        7E   D4 0001B  CLRL    -(SP)                              ; 3031
                              50            66          01   78 0001D  ASHL    #1, DEVICE_INDEX, R0               ;
                                                0000GCF 40   DF 00021  PUSHAL  PHYS_NAME[R0]                      ;
                                    65                  02   FB 00026  CALLS   #2, SYS$DALLOC                  ;
                              00            64          66   E5 00029  BBCC    DEVICE_INDEX, CLEANUP_ALLOC, 1$    ; 3032
                                    50                  66   D0 0002D  1$:    MOVL    DEVICE_INDEX, R0           ; 3034
                              00    0000G   CF          50   E5 00030  BBCC    R0, DEV_ALLOCATED, 2$              ;
                              00    0000G   CF          50   E5 00036  2$:    BBCC    R0, DEV_ACQUIRED, 3$       ; 3035
                                    0000G   CF          50   D0 0003C  3$:    MOVL    R0, PHYS_COUNT             ; 3036
```

```
                                        30  11 00041          BRB     9$                                      ; 3020
                                53      CF  D0 00043 4$:      MOVL    PHYS_COUNT, R3                          ; 3046
                                52      01  CE 00048          MNEGL   #1, I
                                        22  11 0004B          BRB     8$
                        1E              52  E1 0004D 5$:      BBC     I, CLEANUP_ALLOC, 8$                    ; 3047
                                64      7E  D4 00051          CLRL    -(SP)                                   ; 3050
                        50              01  78 00053          ASHL    #1, I, R0
                                0000GCF 40  DF 00057          PUSHAL  PHYS_NAME[R0]
                                65      02  FB 0005C          CALLS   #2, SYS$DALLOC
                        00      0000G   CF  52 E5 0005F          BBCC    I, DEV_ALLOCATED, 6$                ; 3051
                        00      0000G   CF  52 E5 00065 6$:      BBCC    I, DEV_ACQUIRED, 7$                 ; 3052
                        00              64  52 E5 0006B 7$:      BBCC    I, CLEANUP_ALLOC, 8$                ; 3053
                        DA              52  53 F2 0006F 8$:      AOBLSS  R3, I, 5$                           ; 3047
                                50      01  D0 00073 9$:      MOVL    #1, R0                                  ; 3059
                                        04  00076          RET                                             ;

; Routine Size:  119 bytes,    Routine Base:  $CODE$ + 0982
```

```
;  2178     3060  1 ROUTINE EXIT_HANDLER : NOVALUE =
;  2179     3061  1
;  2180     3062  1 !++
;  2181     3063  1 ! Fucntional Description:
;  2182     3064  1 !
;  2183     3065  1 !       This routine is called by the OS on exit (for whatever reason) from
;  2184     3066  1 !       the MOUNT facility.  This routine will clean up any mess left by MOUNT.
;  2185     3067  1 !
;  2186     3068  1 ! Input Parameters:
;  2187     3069  1 !       none
;  2188     3070  1 !
;  2189     3071  1 ! Implicit Inputs:
;  2190     3072  1 !       none
;  2191     3073  1 !
;  2192     3074  1 ! Output Parameters:
;  2193     3075  1 !       none
;  2194     3076  1 !
;  2195     3077  1 ! Implicit Outputs:
;  2196     3078  1 !       none
;  2197     3079  1 !
;  2198     3080  1 !--
;  2199     3081  1
;  2200     3082  2 BEGIN                                           ! Start of EXIT_HANDLER
;  2201     3083  2
;  2202     3084  2 EXTERNAL ROUTINE
;  2203     3085  2         $DALLOC_DEVS$U  : ADDRESSING_MODE (GENERAL);    ! Address of transfer vector
;  2204     3086  2
;  2205     3087  2 !
;  2206     3088  2 ! Attempt to deallocate devices that are not mounted and
;  2207     3089  2 ! were not previously allocated.
;  2208     3090  2 !
;  2209     3091  2 $DALLOC_DEVS$U (0);                             ! Attempt to deallocate devices
;  2210     3092  2
;  2211     3093  2 IF .REPLY_PENDING
;  2212     3094  2 THEN
;  2213     3095  2     !
;  2214     3096  2     ! Cancel any outstanding operator requests.
;  2215     3097  2     !
;  2216     3098  2     CANCEL_REQUEST (REQUEST_NOT_SATISFIED);
;  2217     3099  2
;  2218     3100  2 $SETSFM (ENBFLG = .SS_FAIL_MODE);
;  2219     3101  2
;  2220     3102  1 END;                                           ! End of EXIT_HANDLER


                                0000 00000 EXIT_HANDLER:
                                           .WORD   Save nothing                    ;3060
                                7E  D4 00002           CLRL    -(SP)                    ;3091
00000000G   00                  01  FB 00004           CALLS   #1, $DALLOC_DEVS$U       ;
                07      0000'   CF  E9 0000B           BLBC    REPLY_PENDING, 1$        ;3093
                                7E  D4 00010           CLRL    -(SP)                    ;3098
    F9AA        CF              01  FB 00012           CALLS   #1, CANCEL_REQUEST       ;
                        0000'   CF  DD 00017 1$:       PUSHL   SS_FAIL_MODE             ;3100
00000000G   00                  01  FB 0001B           CALLS   #1, SYS$SETSFM           ;
```

```
                        04 00022          RET                                   ; 3102

; Routine Size:  35 bytes,    Routine Base:  $CODE$ + 09F9
```

```
;  2222          3103  1 !
;  2223          3104  1 ! The TPARSE tables are here because they mangle
;  2224          3105  1 ! PSECT definitions.
;  2225          3106  1 !
;  2226          3107  1
;  2227          3108  1 !
;  2228          3109  1 ! Define the TPARSE grammar of the possible operator replies.
;  2229          3110  1 !
;  2230          3111  1 $INIT_STATE     (STATE_TABLE,KEY_TABLE);
;  2231          3112  1
;  2232          3113  1 !
;  2233          3114  1 ! Initial state
;  2234          3115  1 !
;  2235        P 3116  1 $STATE  (START,
;  2236        P 3117  1          ((SUBSTITUTE_COMMAND),  TPA$_EXIT,      DO_SUBSTITUTE),
;  2237        P 3118  1          (TPA$_LAMBDA,           TPA$_EXIT,      INVALID_COMMAND)
;  2238          3119  1          );
;  2239          3120  1
;  2240          3121  1 !
;  2241          3122  1 ! SUBSTITUTE command.  'SUBSTITUTE'<TPA$_BLANK><DEVICE><TEXT>
;  2242          3123  1 !
;  2243        P 3124  1 $STATE  (SUBSTITUTE_COMMAND,
;  2244        P 3125  1          ('SUBSTITUTE')
;  2245          3126  1          );
;  2246          3127  1
;  2247          3128  1 !$STATE (,
;  2248          3129  1 !        (TPA$_BLANK)
;  2249          3130  1 !        );
;  2250          3131  1
;  2251        P 3132  1 $STATE  (,
;  2252        P 3133  1          ((DEVICE),              TPA$_EXIT,      SAVE_DEVICE)
;  2253          3134  1          );
;  2254          3135  1
;  2255          3136  1 !$STATE (,
;  2256          3137  1 !        ((TEXT),                TPA$_EXIT)
;  2257          3138  1 !        );
;  2258          3139  1
;  2259          3140  1 !
;  2260          3141  1 ! Device name.  It may be a device spec or a logical name string.
;  2261          3142  1 !
;  2262        P 3143  1 $STATE  (DEVICE,
;  2263        P 3144  1          (TPA$_SYMBOL)
;  2264          3145  1          );
;  2265          3146  1
;  2266        P 3147  1 $STATE  (,
;  2267        P 3148  1          (':',                   TPA$_EXIT),
;  2268        P 3149  1          (TPA$_LAMBDA,           TPA$_EXIT)
;  2269          3150  1          );
;  2270          3151  1 !
;  2271          3152  1 ! Text.  The remainder of the operator response is treated
;  2272          3153  1 ! as a comment, and has no effect on the mount.  If there is
;  2273          3154  1 ! a comment, at least one blank must separate it from the
;  2274          3155  1 ! previous section of the operator response.
;  2275          3156  1 !
;  2276        P 3157  1 $STATE  (TEXT,
;  2277        P 3158  1          (TPA$_BLANK,            MORE_TEXT),
;  2278        P 3159  1          (TPA$_EOS,              TPA$_EXIT)
```

```
;  2279          3160  1          );
;  2280          3161  1
;  2281        P 3162  1 $STATE   (MORE_TEXT,
;  2282        P 3163  1          (TPA$_ANY,              MORE_TEXT),
;  2283        P 3164  1          (TPA$_EOS,              TPA$_EXIT)
;  2284          3165  1          );
;  2285          3166  1 END
;  2286          3167  0 ELUDOM


                                                .PSECT  _LIB$KEY1$,NOWRT,  SHR,  PIC,1

                                          00000 ;TPA$KEYSTO
                                                U.10:   .BLKB   0
                45  54  55  54  49  54  53  42  55  53  00000 ;TPA$KEYST
                                                U.12:   .ASCII  \SUBSTITUTE\                    ;
                                            FF  0000A           .BYTE   -1                      ;
                                            FF  0000B ;TPA$KEYFILL
                                                U.14:   .BYTE   -1                              ;

                                                .PSECT  _LIB$STATE$,NOWRT,  SHR,  PIC,1

                                          00000 STATE_TABLE::
                                                .BLKB   0
                                          00000 START:  .BLKB   0
                                        99F8  00000 ;TPA$TYPE
                                                U.2:    .WORD   -26120                          ;
                                        0000* 00002 ;TPA$SUBEXP
                                                U.4:    .WORD   <<U.3-U.4>-2>                   ;
                                    00000000* 00004 ;TPA$ACTION
                                                U.5:    .LONG   <<DO_SUBSTITUTE-U.5>-4>         ;
                                        FFFF  00008 ;TPA$TARGET
                                                U.6:    .WORD   -1                              ;
                                        95F6  0000A ;TPA$TYPE
                                                U.7:    .WORD   -27146                          ;
                                    00000000* 0000C ;TPA$ACTION
                                                U.8:    .LONG   <<INVALID_COMMAND-U.8>-4>       ;
                                        FFFF  00010 ;TPA$TARGET
                                                U.9:    .WORD   -1                              ;
                                              00012 ;SUBSTITUTE_COMMAND
                                                U.3:    .BLKB   0
                                        0500  00012 ;TPA$TYPE
                                                U.13:   .WORD   1280                            ;
                                        9DF8  00014 ;TPA$TYPE
                                                U.15:   .WORD   -25096                          ;
                                        0000* 00016 ;TPA$SUBEXP
                                                U.17:   .WORD   <<U.16-U.17>-2>                 ;
                                    00000000* 00018 ;TPA$ACTION
                                                U.18:   .LONG   <<SAVE_DEVICE-U.18>-4>          ;
                                        FFFF  0001C ;TPA$TARGET
                                                U.19:   .WORD   -1                              ;
                                              0001E ;DEVICE
                                                U.16:   .BLKB   0
                                        05F1  0001E ;TPA$TYPE
                                                U.20:   .WORD   1521                            ;
                                        103A  00020 ;TPA$TYPE
```

```
                        U.21:   .WORD   4154                                    ;
FFFF    00022 ;TPA$TARGET
                        U.22:   .WORD   -1                                      ;
15F6    00024 ;TPA$TYPE
                        U.23:   .WORD   5622                                    ;
FFFF    00026 ;TPA$TARGET
                        U.24:   .WORD   -1                                      ;
              00028 TEXT:   .BLKB   0
11F2    00028 ;TPA$TYPE
                        U.25:   .WORD   4594                                    ;
0000*   0002A ;TPA$TARGET
                        U.27:   .WORD   <<U.26-U.27>-2>                         ;
15F7    0002C ;TPA$TYPE
                        U.28:   .WORD   5623                                    ;
FFFF    0002E ;TPA$TARGET
                        U.29:   .WORD   -1                                      ;
              00030 ;MORE_TEXT
                        U.26:   .BLKB   0
11ED    00030 ;TPA$TYPE
                        U.30:   .WORD   4589                                    ;
0000*   00032 ;TPA$TARGET
                        U.31:   .WORD   <<U.26-U.31>-2>                         ;
15F7    00034 ;TPA$TYPE
                        U.32:   .WORD   5623                                    ;
FFFF    00036 ;TPA$TARGET
                        U.33:   .WORD   -1                                      ;

                                .PSECT  _LIB$KEY0$,NOWRT,  SHR,  PIC,1

                    00000 KEY_TABLE::
                                .BLKB   0
                    00000 ;TPA$KEY0
                        U.1:    .BLKB   0
                0000*   00000 ;TPA$KEY
                        U.11:   .WORD   <U.10-U.1>                              ;

                                .EXTRN  LIB$SIGNAL, LIB$STOP

;                               PSECT SUMMARY
;
;       Name                    Bytes                   Attributes
;
;   $USER_DATA$                 1032  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(9)
;   $PLIT$                       140  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $CODE$                      2588  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   . ABS .                        0  NOVEC,NOWRT,NORD ,NOEXE,NOSHR,  LCL,  ABS,  CON,NOPIC,ALIGN(0)
;   $GLOBAL$                       8  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   _LIB$KEY0$                     2  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(1)
;   _LIB$STATE$                   56  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(1)
;   _LIB$KEY1$                    12  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(1)


;                           Library Statistics
;
```

```
;                                  -------- Symbols --------      Pages       Processing
;       File                       Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]LIB.L32;1    18619       113         0        1000        00:02.0
;  _$255$DUA28:[SYSLIB]TPAMAC.L32;1    42        27        64          14        00:00.2
```

```
;                                  COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:ASSIST/OBJ=OBJ$:ASSIST MSRC$:ASSIST/UPDATE=(ENH$:ASSIST)

; Size:         2588 code + 1250 data bytes
; Run Time:        01:01.8
; Elapsed Time:    02:09.2
; Lines/CPU Min:    3077
; Lexemes/CPU-Min: 33437
; Memory Used:  233 pages
; Compilation Complete
```

BINDVL
LIS

MOUNT

SYSFAO
LIS

MOUNTSHR
MAP

TEMPLATE
LIS

VMOUNT
MAP

ASSIST
LIS

ALLOCM
LIS

MOUDEF
B32