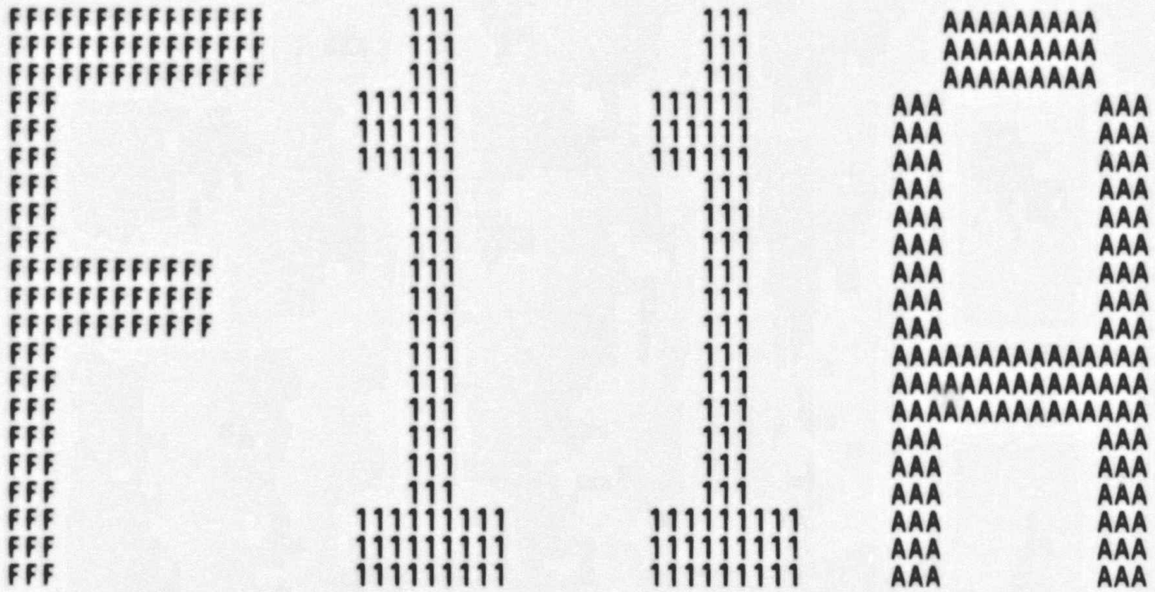
FFFFFFFFFFFFFFF
FFFFFFFFFFFFFFF
FFFFFFFFFFFFFFF
FFF
FFF
FFF
FFF
FFF
FFF
FFFFFFFFFFFF
FFFFFFFFFFFF
FFFFFFFFFFFF
FFF
FFF
FFF
FFF
FFF
FFF
FFF
FFF
111
111
111
111111
111111
111111
111
111
111
111
111
111
111
111
111
111
111
111111111
111111111
111111111
111
111
111
111111
111111
111111
111
111
111
111
111
111
111
111
111
111
111
111111111
111111111
111111111
AAAAAAAAA
AAAAAAAAA
AAAAAAAAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAAAAAAAAAAAAAA
AAAAAAAAAAAAAAA
AAAAAAAAAAAAAAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA

FILEID**RWATTR

```
RRRRRRRR    WW      WW    AAAAAA    TTTTTTTTTT  TTTTTTTTTT  RRRRRRRR
RRRRRRRR    WW      WW    AAAAAA    TTTTTTTTTT  TTTTTTTTTT  RRRRRRRR
RR      RR  WW      WW   AA    AA       TT          TT      RR      RR
RR      RR  WW      WW   AA    AA       TT          TT      RR      RR
RR      RR  WW      WW   AA    AA       TT          TT      RR      RR
RR      RR  WW      WW   AA    AA       TT          TT      RR      RR
RRRRRRRR    WW      WW   AA    AA       TT          TT      RRRRRRRR
RRRRRRRR    WW      WW   AA    AA       TT          TT      RRRRRRRR
RR  RR      WW  WW  WW   AAAAAAAAAA     TT          TT      RR  RR
RR  RR      WW  WW  WW   AAAAAAAAAA     TT          TT      RR  RR
RR    RR    WWWW  WWWW   AA    AA       TT          TT      RR    RR      ....
RR    RR    WWWW  WWWW   AA    AA       TT          TT      RR    RR      ....
RR      RR  WW      WW   AA    AA       TT          TT      RR      RR    ....
RR      RR  WW      WW   AA    AA       TT          TT      RR      RR    ....

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

```
;     1          0001  0 MODULE RWATTR (
;     2          0002  0                 LANGUAGE (BLISS32),
;     3          0003  0                 IDENT = 'V04-000'
;     4          0004  0                 ) =
;     5          0005  1 BEGIN
;     6          0006  1
;     7          0007  1 !
;     8          0008  1 !**********************************************************************************
;     9          0009  1 !*                                                                                *
;    10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                       *
;    11          0011  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                         *
;    12          0012  1 !*  ALL RIGHTS RESERVED.                                                           *
;    13          0013  1 !*                                                                                *
;    14          0014  1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED          *
;    15          0015  1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE        *
;    16          0016  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER         *
;    17          0017  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY         *
;    18          0018  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY         *
;    19          0019  1 !*  TRANSFERRED.                                                                   *
;    20          0020  1 !*                                                                                *
;    21          0021  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE         *
;    22          0022  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT         *
;    23          0023  1 !*  CORPORATION.                                                                   *
;    24          0024  1 !*                                                                                *
;    25          0025  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS         *
;    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:  F11ACP Structure Level 1
;    34          0034  1 !
;    35          0035  1 ! ABSTRACT:
;    36          0036  1 !
;    37          0037  1 !       This module contains the code and tables to process the read
;    38          0038  1 !       and write attributes functions.
;    39          0039  1 !
;    40          0040  1 ! ENVIRONMENT:
;    41          0041  1 !
;    42          0042  1 !       STARLET operating system, including privileged system services
;    43          0043  1 !       and internal exec routines. This routine must be executed
;    44          0044  1 !       in kernel mode.
;    45          0045  1 !
;    46          0046  1 !--
;    47          0047  1 !
;    48          0048  1 !
;    49          0049  1 ! AUTHOR:  Andrew C. Goldstein,  CREATION DATE:  6-Jan-1977  21:05
;    50          0050  1 !
;    51          0051  1 ! MODIFIED BY:
;    52          0052  1 !
;    53          0053  1 !       V03-008 LMP0241         L. Mark Pilant,         26-Apr-1984  10:47
;    54          0054  1 !               Include the FIB in the MAKE_NAMEBLOCK routine call.
;    55          0055  1 !
;    56          0056  1 !       V03-007 ACG0415         Andrew C. Goldstein,    9-Apr-1984  16:26
;    57          0057  1 !               Fix probing of access mode ATR's; extend ascii file name to
```

```
;    58          0058  1 !                       86 bytes
;    59          0059  1 !
;    60          0060  1 !               V03-006 ACG0410         Andrew C. Goldstein,    22-Mar-1984  22:31
;    61          0061  1 !                       Add support for access mode attribute
;    62          0062  1 !
;    63          0063  1 !               V03-005 LMP0154         L. Mark Pilant,         14-Sep-1983  11:21
;    64          0064  1 !                       Bring the attribute table up to the same level as the
;    65          0065  1 !                       attribute definition macro ($ATRDEF).
;    66          0066  1 !
;    67          0067  1 !               V03-004 ACG0355         Andrew C. Goldstein,    30-Aug-1983  15:21
;    68          0068  1 !                       Fix bug in high order UIC test in ACG0329
;    69          0069  1 !
;    70          0070  1 !               V03-003 ACG0329         Andrew C. Goldstein,    12-Apr-1983  14:18
;    71          0071  1 !                       Fold long UIC's into [377,377] for 16 bit UIC
;    72          0072  1 !
;    73          0073  1 !               V03-002 STJ3079         Steven T. Jeffreys,     26-Mar-1983
;    74          0074  1 !                       Add dummy HIGHWATER attribute.
;    75          0075  1 !
;    76          0076  1 !               V03-001 LMP0066         L. Mark Pilant,         15-Dec-1982  10:04
;    77          0077  1 !                       Handle ACL attributes gracefully rather than blowing away
;    78          0078  1 !                       with a bad attribute error.
;    79          0079  1 !
;    80          0080  1 !               V02-008 ACG0253         Andrew C. Goldstein,    18-Jan-1982  16:23
;    81          0081  1 !                       Add dummy HDR1 accessibility attribute
;    82          0082  1 !
;    83          0083  1 !               V02-007 ACG0232         Andrew C. Goldstein,    4-Dec-1981  16:47
;    84          0084  1 !                       Protect HIBLK during write attributes
;    85          0085  1 !
;    86          0086  1 !               V02-006 ACG0229         Andrew C. Goldstein,    1-Dec-1981  13:40
;    87          0087  1 !                       Extend statistics block to include full counts
;    88          0088  1 !
;    89          0089  1 !               V02-005 ACG0221         Andrew C. Goldstein,    30-Oct-1981  18:07
;    90          0090  1 !                       Add file attribute for journal flags
;    91          0091  1 !
;    92          0092  1 !               V02-004 MLJ0029         Martin L. Jack, 11-Jul-1981  23:40
;    93          0093  1 !                       Clean up file header to quadword time conversion so that
;    94          0094  1 !                       hundredths of seconds are taken as zero rather than
;    95          0095  1 !                       propagating from current time, and ensure that zero is
;    96          0096  1 !                       returned for an invalid time string.
;    97          0097  1 !
;    98          0098  1 !               A0103   ACG0097         Andrew C. Goldstein,    18-Dec-1979  19:15
;    99          0099  1 !                       Protect SPOOL, BAD, DELETE, etc., file char's
;   100          0100  1 !
;   101          0101  1 !               A0102   ACG0093         Andrew C. Goldstein,    6-Dec-1979  19:58
;   102          0102  1 !                       Add dummy backlink attribute, fix user char format
;   103          0103  1 !
;   104          0104  1 !               A0101   ACG0023         Andrew C. Goldstein,  19-Feb-1979  13:23
;   105          0105  1 !               Fix max attribute code to include DIRSEQ
;   106          0106  1 !
;   107          0107  1 !               A0100   ACG00001        Andrew C. Goldstein,  10-Oct-1978  20:03
;   108          0108  1 !               Previous revision history moved to F11A.REV
;   109          0109  1 !**
;   110          0110  1
;   111          0111  1
;   112          0112  1 LIBRARY 'SYS$LIBRARY:LIB.L32';
;   113          0113  1 REQUIRE 'SRC$:FCPDEF.B32';
;   114          0428  1
```

```
;  115     0429  1
;  116     0430  1 FORWARD ROUTINE
;  117     0431  1         READ_ATTRIB,                    ! read attributes
;  118     0432  1         FID_TO_SPEC     : NOVALUE,      ! convert FID to file-spec
;  119     0433  1         WRITE_ATTRIB    : NOVALUE;      ! write attributes
```

```
;  121     0434  1 !++
;  122     0435  1 !
;  123     0436  1 ! Attribute control table. The table is indexed by attribute number.
;  124     0437  1 ! The first byte contains random flags.  The second byte contains
;  125     0438  1 ! the attribute location code.  The third byte contains the offset
;  126     0439  1 ! of the attribute from its location origin. The fourth byte contains
;  127     0440  1 ! the index of the action routine to process the attribute.  The fifth
;  128     0441  1 ! and sixth bytes (a word value) contains the maximum size of the
;  129     0442  1 ! attribute.
;  130     0443  1 !
;  131     0444  1 !--
;  132     0445  1
;  133     0446  1 ! Macros and literals to access the table entries.
;  134     0447  1 !
;  135     0448  1
;  136     0449  1 MACRO
;  137     0450  1         ATC_READ_ONLY   = 0,0,1,0%,     ! read only attribute
;  138     0451  1         ATC_PROTECTED   = 0,1,1,0%,     ! writable by file owner only
;  139     0452  1         ATC_LOCKED      = 0,2,1,0%,     ! subject to file access locks
;  140     0453  1         ATC_LOCATION    = 1,0,8,0%,     ! 3 bit location code
;  141     0454  1         ATC_OFFSET      = 2,0,8,0%,     ! location offset
;  142     0455  1         ATC_ACTION      = 3,0,8,0%,     ! action routine
;  143     0456  1         ATC_MAX_SIZE    = 4,0,16,0%;    ! max attribute size
;  144     0457  1
;  145     0458  1
;  146     0459  1 ! Masks for the flags.
;  147     0460  1 !
;  148     0461  1
;  149     0462  1 LITERAL
;  150     0463  1         M_READ_ONLY     = 1,
;  151     0464  1         M_PROTECTED     = 2,
;  152     0465  1         M_LOCKED        = 4;
;  153     0466  1
;  154     0467  1
;  155     0468  1 ! Attribute location codes.
;  156     0469  1 !
;  157     0470  1
;  158     0471  1 LITERAL
;  159     0472  1         ATC_ZERO        = 0,            ! zero - no location
;  160     0473  1         ATC_FCB         = 1,            ! in file control block
;  161     0474  1         ATC_HEADER      = 2,            ! file header header area
;  162     0475  1         ATC_IDENT       = 3,            ! file header ident area
;  163     0476  1         ATC_MAP         = 4,            ! file header map area
;  164     0477  1         ATC_ACL         = 5,            ! file header Access Control List area
;  165     0478  1         ATC_ACPGBL      = 6,            ! ACP global storage
;  166     0479  1         ATC_FID2NAME    = 7,            ! Convert FID to file spec
;  167     0480  1
;  168     0481  1         ATC_LASTATC     = 7;            ! last location code
;  169     0482  1
;  170     0483  1
;  171     0484  1 ! ACP global storage index codes.
;  172     0485  1 !
;  173     0486  1
;  174     0487  1 LITERAL
;  175     0488  1         GBL_PRV         = 0,            ! Privileges used to gain access
;  176     0489  1         GBL_ACE         = 1,            ! ACE used to gain access
;  177     0490  1
```

```
;  178          0491  1          GBL_LASTGBL     = 1;            ! Last index code
;  179          0492  1
;  180          0493  1
;  181          0494  1 ! Attribute processing action routines.
;  182          0495  1 !
;  183          0496  1
;  184          0497  1 LITERAL
;  185          0498  1          ACT_NOP         = 0,            ! ignore attribute
;  186          0499  1          ACT_ILLEGAL     = 1,            ! illegal attribute code
;  187          0500  1          ACT_COPY        = 2,            ! simple copy
;  188          0501  1          ACT_STATBLK     = 3,            ! build statistics block
;  189          0502  1          ACT_ZERO        = 4,            ! zero valued attribute
;  190          0503  1          ACT_BLOCKSIZE   = 5,            ! medium block size
;  191          0504  1          ACT_ASCNAME     = 6,            ! ASCII file name
;  192          0505  1          ACT_DATIME      = 7,            ! 64 bit date and time
;  193          0506  1          ACT_UIC         = 8,            ! 4 byte file owner UIC
;  194          0507  1          ACT_UCHAR       = 9,            ! user controlled characteristics
;  195          0508  1          ACT_BLANK       = 10,           ! blank character attribute
;  196          0509  1          ACT_ACL         = 11,           ! Access Control List
;  197          0510  1          ACT_ACMODE      = 12,           ! buffer access mode
;  198          0511  1
;  199          0512  1          ACT_LASTACT     = 12;           ! highest action routine code
;  200          0513  1
;  201          0514  1
;  202          0515  1 ! Macro to build table entry.
;  203          0516  1 !
;  204          0517  1
;  205          0518  1 MACRO
;  206        M 0519  1          ATTRIBUTE (CODE, FLAGS, LOC, OFF1, OFF2, OFF3, OFF4, SIZE, ACTION) =
;  207        M 0520  1                  BYTE    (FLAGS,
;  208        M 0521  1                           LOC,
;  209        M 0522  1                           $BYTEOFFSET (OFF1, OFF2, OFF3, OFF4),
;  210        M 0523  1                           ACTION),
;  211        M 0524  1                  WORD    (SIZE,
;  212        M 0525  1                           0)
;  213          0526  1                  %;
;  214          0527  1
;  215          0528  1 MACRO
;  216          0529  1          NULL_FIELD      = 0,0,0,0%;
;  217          0530  1
;  218          0531  1
;  219          0532  1 ! The attribute control table itself.
;  220          0533  1 !
;  221          0534  1
;  222          0535  1 BIND
;  223          0536  1          ATC     = UPLIT BYTE (
;  224          0537  1
;  225          0538  1 ATTRIBUTE (0,                   M_PROTECTED,    ATC_HEADER,     FH1$W_FILEOWNER,5,      ACT_COPY),
;  226          0539  1 ATTRIBUTE (0,                   M_PROTECTED,    ATC_HEADER,     FH1$W_FILEPROT, 3,      ACT_COPY),
;  227          0540  1 ATTRIBUTE (ATR$C_UCHAR,         M_LOCKED,       ATC_HEADER,     FH1$B_USERCHAR, 4,      ACT_UCHAR),
;  228          0541  1 ATTRIBUTE (ATR$C_RECATTR,       M_LOCKED,       ATC_HEADER,     FH1$W_RECATTR,  32,     ACT_COPY),
;  229          0542  1 ATTRIBUTE (ATR$C_FILNAM,        0,              ATC_IDENT,      FI1$W_FILENAME, 10,     ACT_COPY),
;  230          0543  1 ATTRIBUTE (ATR$C_FILTYP,        0,              ATC_IDENT,      FI1$W_FILETYPE, 4,      ACT_COPY),
;  231          0544  1 ATTRIBUTE (ATR$C_FILVER,        0,              ATC_IDENT,      FI1$W_VERSION,  2,      ACT_COPY),
;  232          0545  1 ATTRIBUTE (ATR$C_EXPDAT,        M_PROTECTED,    ATC_IDENT,      FI1$T_EXPDATE,  7,      ACT_COPY),
;  233          0546  1 ATTRIBUTE (ATR$C_STATBLK,       M_READ_ONLY,    ATC_FCB,        NULL_FIELD,     32,     ACT_STATBLK),
;  234          0547  1 ATTRIBUTE (ATR$C_HEADER,        M_READ_ONLY,    ATC_HEADER,     NULL_FIELD,     512,    ACT_COPY),
```

```
;  235     0548  1 ATTRIBUTE (ATR$C_BLOCKSIZE,  0,           ATC_ZERO,     NULL_FIELD,      2,   ACT_BLOCKSIZE),
;  236     0549  1 ATTRIBUTE (ATR$C_USERLABEL,  0,           ATC_ZERO,     NULL_FIELD,     80,   ACT_ZERO),
;  237     0550  1 ATTRIBUTE (ATR$C_ASCDATES,   M_PROTECTED, ATC_IDENT,    FI1$Q_REVISION, 35,   ACT_COPY),
;  238     0551  1 ATTRIBUTE (ATR$C_ALCONTROL,  0,           ATC_ZERO,     NULL_FIELD,     14,   ACT_NOP),
;  239     0552  1 ATTRIBUTE (ATR$C_ENDLBLAST,  0,           ATC_ZERO,     NULL_FIELD,     1,    ACT_NOP),
;  240     0553  1 ATTRIBUTE (ATR$C_ASCNAME,    0,           ATC_IDENT,    FI1$Q_FILENAME, 86,   ACT_ASCNAME),
;  241     0554  1 ATTRIBUTE (ATR$C_CREDATE,    M_PROTECTED, ATC_IDENT,    FI1$T_CREDATE,  8,    ACT_DATIME),
;  242     0555  1 ATTRIBUTE (ATR$C_REVDATE,    M_PROTECTED, ATC_IDENT,    FI1$T_REVDATE,  8,    ACT_DATIME),
;  243     0556  1 ATTRIBUTE (ATR$C_EXPDATE,    M_PROTECTED, ATC_IDENT,    FI1$T_EXPDATE,  8,    ACT_DATIME),
;  244     0557  1 ATTRIBUTE (ATR$C_BAKDATE,    M_PROTECTED, ATC_ZERO,     NULL_FIELD,     8,    ACT_ZERO),
;  245     0558  1 ATTRIBUTE (ATR$C_UIC,        M_PROTECTED, ATC_HEADER,   FH1$Q_FILEOWNER,4,   ACT_UIC),
;  246     0559  1 ATTRIBUTE (ATR$C_FPRO,       M_PROTECTED, ATC_HEADER,   FH1$W_FILEPROT, 2,   ACT_COPY),
;  247     0560  1 ATTRIBUTE (ATR$C_RPRO,       M_PROTECTED, ATC_ZERO,     NULL_FIELD,     2,   ACT_ZERO),
;  248     0561  1 ATTRIBUTE (ATR$C_ACLEVEL,    M_PROTECTED, ATC_ZERO,     NULL_FIELD,     2,   ACT_ZERO),
;  249     0562  1 ATTRIBUTE (ATR$C_SEMASK,     M_PROTECTED, ATC_ZERO,     NULL_FIELD,     8,   ACT_ZERO),
;  250     0563  1 ATTRIBUTE (ATR$C_UIC_RO,     M_READ_ONLY, ATC_HEADER,   FH1$Q_FILEOWNER,4,   ACT_UIC),
;  251     0564  1 ATTRIBUTE (ATR$C_DIRSEQ,     M_READ_ONLY, ATC_ZERO,     NULL_FIELD,     2,   ACT_ZERO),
;  252     0565  1 ATTRIBUTE (ATR$C_BACKLINK,   M_PROTECTED, ATC_ZERO,     NULL_FIELD,     6,   ACT_ZERO),
;  253     0566  1 ATTRIBUTE (ATR$C_JOURNAL,    M_PROTECTED, ATC_ZERO,     NULL_FIELD,     2,   ACT_ZERO),
;  254     0567  1 ATTRIBUTE (ATR$C_HDR1_ACC,   M_PROTECTED, ATC_ZERO,     NULL_FIELD,     1,   ACT_BLANK),
;  255     0568  1 ATTRIBUTE (ATR$C_ADDACLENT,  M_LOCKED,    ATC_ZERO,     NULL_FIELD,     255, ACT_ACL),
;  256     0569  1 ATTRIBUTE (ATR$C_DELACLENT,  M_LOCKED,    ATC_ACL,      NULL_FIELD,     255, ACT_ACL),
;  257     0570  1 ATTRIBUTE (ATR$C_MODACLENT,  M_LOCKED,    ATC_ACL,      NULL_FIELD,     255, ACT_ACL),
;  258     0571  1 ATTRIBUTE (ATR$C_FNDACLENT,  M_READ_ONLY, ATC_ACL,      NULL_FIELD,     255, ACT_ACL),
;  259     0572  1 ATTRIBUTE (ATR$C_FNDACETYP,  M_READ_ONLY, ATC_ACL,      NULL_FIELD,     255, ACT_ACL),
;  260     0573  1 ATTRIBUTE (ATR$C_DELETEACL,  M_LOCKED,    ATC_ACL,      NULL_FIELD,     255, ACT_ACL),
;  261     0574  1 ATTRIBUTE (ATR$C_READACL,    M_READ_ONLY, ATC_ACL,      NULL_FIELD,     512, ACT_ACL),
;  262     0575  1 ATTRIBUTE (ATR$C_ACLLENGTH,  M_READ_ONLY, ATC_ACL,      NULL_FIELD,     4,   ACT_ACL),
;  263     0576  1 ATTRIBUTE (ATR$C_READACE,    M_READ_ONLY, ATC_ACL,      NULL_FIELD,     255, ACT_ACL),
;  264     0577  1 ATTRIBUTE (ATR$C_RESERVED,   M_PROTECTED, ATC_ZERO,     NULL_FIELD,     380, ACT_ZERO),
;  265     0578  1 ATTRIBUTE (ATR$C_HIGHWATER,  M_READ_ONLY, ATC_HEADER,   NULL_FIELD,     4,   ACT_ZERO),
;  266     0579  1 ATTRIBUTE (ATR$C_ACCESS_MASK, M_READ_ONLY, ATC_ACPGBL,  NULL_FIELD,     4,   ACT_ILLEGAL),
;  267     0580  1 ATTRIBUTE (ATR$C_PRIVS_USED, M_READ_ONLY, ATC_ACPGBL,  GBL_PRV,0,0,0,  4,   ACT_COPY),
;  268     0581  1 ATTRIBUTE (ATR$C_MATCHING_ACE, M_READ_ONLY, ATC_ACPGBL, GBL_ACE,0,0,0, 255, ACT_ZERO),
;  269     0582  1 ATTRIBUTE (ATR$C_ACCESS_MODE, M_READ_ONLY, ATC_ZERO,    NULL_FIELD,     1,   ACT_ACMODE),
;  270     0583  1 ATTRIBUTE (ATR$C_FILE_SPEC,  M_READ_ONLY, ATC_FID2NAME, NULL_FIELD,     512, ACT_COPY),
;  271     0584  1 ATTRIBUTE (ATR$C_CLASS_MASK, 0,           ATC_ZERO,     NULL_FIELD,     0,   ACT_ZERO),
;  272     0585  1 ATTRIBUTE (ATR$C_BUFFER_OFFSET, 0,        ATC_ZERO,     NULL_FIELD,     0,   ACT_NOP)
;  273     0586  1
;  274     0587  1                 ) : BBLOCKVECTOR [,8];
;  275     0588  1
;  276     0589  1 LITERAL
;  277     0590  1         MAX_CODE        = ATR$C_MAX_CODE; ! highest attribute code
;  278     0591  1
;  279     0592  1
;  280     0593  1 ! Storage for the converted file specification.
;  281     0594  1
;  282     0595  1 OWN
;  283     0596  1
;  284     0597  1 ! ***** The following must be adjacent. *****
;  285     0598  1
;  286     0599  1         FILE_SPEC_LEN   : VECTOR [1,WORD] ALIGN (0),    ! File spec length
;  287     0600  1         FULL_FILE_SPEC  : VECTOR [510,BYTE] ALIGN (0);  ! File spec storage
;  288     0601  1
;  289     0602  1 ! ***** The preceeding must be adjacent. *****
;  290     0603  1
;  291     0604  1 !
```

```
1 ! Protected bits in the file characteristics longword. These may not be
1 ! modified by write attributes calls.
1 !
1 LITERAL
2         PROTECTED_CHAR  =  $FIELDMASK (FH1$V_CONTIG)
1                         OR $FIELDMASK (FH1$V_SPOOL)^8
1                         OR $FIELDMASK (FH1$V_BADBLOCK)^8
1                         OR $FIELDMASK (FH1$V_MARKDEL)^8;
```

```
;   301     0613  1 GLOBAL ROUTINE READ_ATTRIB (HEADER, ABD) =
;   302     0614  1
;   303     0615  1 !++
;   304     0616  1 !
;   305     0617  1 ! FUNCTIONAL DESCRIPTION:
;   306     0618  1 !
;   307     0619  1 !       This routine performs the read attributes function. The
;   308     0620  1 !       requested attributes are assembled into the buffer packet.
;   309     0621  1 !
;   310     0622  1 ! CALLING SEQUENCE:
;   311     0623  1 !       READ_ATTRIB (ARG1, ARG2)
;   312     0624  1 !
;   313     0625  1 ! INPUT PARAMETERS:
;   314     0626  1 !       ARG1: address of file header
;   315     0627  1 !       ARG2: address of buffer descriptors
;   316     0628  1 !
;   317     0629  1 ! IMPLICIT INPUTS:
;   318     0630  1 !       IO_PACKET: I/O packet for this operation
;   319     0631  1 !       PRIMARY_FCB: FCB of file
;   320     0632  1 !
;   321     0633  1 ! OUTPUT PARAMETERS:
;   322     0634  1 !       ARG2: address of buffer descriptors
;   323     0635  1 !
;   324     0636  1 ! IMPLICIT OUTPUTS:
;   325     0637  1 !       NONE
;   326     0638  1 !
;   327     0639  1 ! ROUTINE VALUE:
;   328     0640  1 !       1 if successful
;   329     0641  1 !       0 if error
;   330     0642  1 !
;   331     0643  1 ! SIDE EFFECTS:
;   332     0644  1 !       attribute data written into buffer packet
;   333     0645  1 !
;   334     0646  1 !--
;   335     0647  1
;   336     0648  2 BEGIN
;   337     0649  2
;   338     0650  2 MAP
;   339     0651  2         HEADER          : REF BBLOCK,   ! file header arg
;   340     0652  2         ABD             : REF BBLOCKVECTOR [,ABD$C_LENGTH];
;   341     0653  2                                         ! buffer descriptor arg
;   342     0654  2
;   343     0655  2 LITERAL
;   344     0656  2         DATLEN          = 23;           ! length of date string buffer
;   345     0657  2
;   346     0658  2 LOCAL
;   347     0659  2         LOCAL_HEADER    : REF BBLOCK,   ! Local copy of header address
;   348     0660  2         ACCESS_MODE,                    ! access mode to set for attribute buffer
;   349     0661  2         P,                              ! pointer to attribute text
;   350     0662  2         COUNT,                          ! attribute size desired
;   351     0663  2         ADDRESS         : REF BBLOCK,   ! address of attribute
;   352     0664  2         CODE,                           ! attribute code
;   353     0665  2         MAX_COUNT,                      ! max size of attribute
;   354     0666  2         DATBUF          : VECTOR [DATLEN, BYTE], ! buffer to build date string
;   355     0667  2         DATDESC         : VECTOR [2],   ! string descriptor for date string
;   356     0668  2         ACTION          : BYTE,         ! code of action routine
;   357     0669  2         ATT_BUFFER      : BBLOCK [86],  ! buffer to build reformatted attribute text
```

```
;  358     0670  2          ACE_POINTER     : REF BBLOCK,   ! address of user ACE
;  359     0671  2          STATUS;                         ! routine exit status
;  360     0672  2
;  361     0673  2  EXTERNAL
;  362     0674  2          IO_PACKET       : REF BBLOCK,   ! I/O packet in process
;  363     0675  2          PRIMARY_FCB     : REF BBLOCK,   ! FCB of file
;  364     0676  2          CURRENT_WINDOW  : REF BBLOCK,   ! window of file
;  365     0677  2          FILE_HEADER     : REF BBLOCK;   ! address of current file header
;  366     0678  2
;  367     0679  2  EXTERNAL ROUTINE
;  368     0680  2          PMS_START_SUB,                  ! start subfunction metering
;  369     0681  2          PMS_END_SUB,                    ! end subfunction metering
;  370     0682  2          MAKE_STRING,                    ! convert file name block to string
;  371     0683  2          SYS$BINTIM      : ADDRESSING_MODE (ABSOLUTE),
;  372     0684  2                                          ! convert string to binary time
;  373     0685  2          READ_HEADER;                    ! Read a file header
;  374     0686  2
;  375     0687  2
;  376     0688  2  ! Start metering for this subfunction.
;  377     0689  2  !
;  378     0690  2
;  379     0691  2  PMS_START_SUB (PMS_RWATT);
;  380     0692  2
;  381     0693  2  STATUS = 1;                            ! assume success
;  382     0694  2  LOCAL_HEADER = .HEADER;          ! Copy header address
;  383     0695  2
;  384     0696  2  ! Set the buffered read bit in the I/O packet to indicate to IO_DONE that
;  385     0697  2  ! the attribute buffers are valid.
;  386     0698  2  !
;  387     0699  2
;  388     0700  2  IO_PACKET[IRP$V_FUNC] = 1;
;  389     0701  2  ACCESS_MODE = .IO_PACKET[IRP$V_MODE];
;  390     0702  2
;  391     0703  2  ! Scan the buffer packet, picking up each entry. The first byte of the
;  392     0704  2  ! text is the attribute code, and must be overwritten with the access
;  393     0705  2  ! mode of the request for the I/O completion processing.
;  394     0706  2  !
;  395     0707  2
;  396     0708  2  INCR I FROM ABD$C_ATTRIB TO .IO_PACKET[IRP$W_BCNT]-1 DO                    ;
;  397     0709  3      BEGIN
;  398     0710  3      P = .ABD[.I, ABD$W_TEXT] + ABD[.I, ABD$W_TEXT];
;  399     0711  3      COUNT = .ABD[.I, ABD$W_COUNT];
;  400     0712  3      CODE = .(.P)<0,8> - 1;
;  401     0713  3      (.P)<0,8> = .ACCESS_MODE;
;  402     0714  3      P = .P + 1;
;  403     0715  3
;  404     0716  3  ! Check the attribute code for legality, and then check the requested
;  405     0717  3  ! size against the limit. If an error exit is made, first truncate the
;  406     0718  3  ! descriptor count to inhibit return of the unprocessed descriptors.
;  407     0719  3  !
;  408     0720  3
;  409     0721  3      IF .CODE GTR MAX_CODE - 1
;  410     0722  3      THEN
;  411     0723  4          BEGIN
;  412     0724  4          IO_PACKET[IRP$W_BCNT] = .I;
;  413     0725  4          (ERR_STATUS (SS$_BADATTRIB); RETURN 0);
;  414     0726  3          END;
```

```
;  415     0727  3
;  416     0728  3      MAX_COUNT = .ATC[.CODE, ATC_MAX_SIZE];
;  417     0729  3      IF .COUNT GTR .MAX_COUNT
;  418     0730  3      THEN
;  419     0731  4          BEGIN
;  420     0732  4          IO_PACKET[IRP$W_BCNT] = .I;
;  421     0733  4          (ERR_STATUS (SS$_BADATTRIB); RETURN 0);
;  422     0734  4          END;
;  423     0735  3
;  424     0736  3
;  425     0737  3      ! Get the action routine code first.
;  426     0738  3      !
;  427     0739  3
;  428     0740  3      ACTION = .ATC[.CODE, ATC_ACTION];
;  429     0741  3
;  430     0742  3      ! Compute the address of the attribute.
;  431     0743  3      !
;  432     0744  3
;  433     0745  3      ADDRESS =
;  434     0746  4          (
;  435     0747  4          CASE .ATC[.CODE, ATC_LOCATION] FROM 0 TO ATC_LASTATC OF
;  436     0748  4              SET
;  437     0749  4              [ATC_ZERO]:         ATT_BUFFER;
;  438     0750  4              [ATC_FCB]:          .PRIMARY_FCB;
;  439     0751  4              [ATC_HEADER]:       .LOCAL_HEADER;
;  440     0752  4              [ATC_IDENT]:        .LOCAL_HEADER + .LOCAL_HEADER[FH1$B_IDOFFSET]*2;
;  441     0753  4              [ATC_MAP]:          .LOCAL_HEADER + .LOCAL_HEADER[FH1$B_MPOFFSET]*2;
;  442     0754  4              [ATC_ACL]:          .LOCAL_HEADER;
;  443     0755  5              [ATC_ACPGBL]:       BEGIN
;  444     0756  5                                  ACTION = ACT_ZERO;
;  445     0757  5                                  ATT_BUFFER
;  446     0758  4                                  END;
;  447     0759  5              [ATC_FID2NAME]:     BEGIN
;  448     0760  5                                  FID_TO_SPEC ();
;  449     0761  5                                  LOCAL_HEADER = .FILE_HEADER;
;  450     0762  5                                  FILE_SPEC_LEN
;  451     0763  4                                  END;
;  452     0764  4              TES
;  453     0765  4          )
;  454     0766  3          + .ATC[.CODE, ATC_OFFSET];
;  455     0767  3
;  456     0768  3
;  457     0769  3      ! Finally execute the action routine.
;  458     0770  3      !
;  459     0771  3
;  460     0772  3      CASE .ACTION FROM 0 TO ACT_LASTACT OF
;  461     0773  3          SET
;  462     0774  3
;  463     0775  3          [ACT_NOP]:          COUNT = 0;
;  464     0776  3
;  465     0777  4          [ACT_ILLEGAL]:      BEGIN
;  466     0778  4                              IO_PACKET[IRP$W_BCNT] = .I;
;  467     0779  4                              (ERR_STATUS (SS$_BADATTRIB); RETURN 0);
;  468     0780  3                              END;
;  469     0781  3
;  470     0782  3          [ACT_COPY]:         0;
;  471     0783  3
```

```
;  472     0784  4          [ACT_UCHAR]:    BEGIN
;  473     0785  4                          (ATT_BUFFER)<0,32> = .(.ADDRESS)<0,16>;
;  474     0786  4                          ADDRESS = ATT_BUFFER;
;  475     0787  3                          END;
;  476     0788  3
;  477     0789  4          [ACT_STATBLK]:  BEGIN
;  478     0790  4                          ATT_BUFFER[SBK$L_STLBN] = ROT (.ADDRESS[FCB$L_STLBN], 16);
;  479     0791  4                          ATT_BUFFER[SBK$L_FILESIZE] = ROT (.ADDRESS[FCB$L_FILESIZE], 16);
;  480     0792  4                          ATT_BUFFER[SBK$B_ACNT]  = .ADDRESS[FCB$W_ACNT];
;  481     0793  4                          ATT_BUFFER[SBK$B_LCNT]  = .ADDRESS[FCB$W_LCNT];
;  482     0794  4                          ATT_BUFFER[SBK$L_FCB] = .ADDRESS;
;  483     0795  4                          (ATT_BUFFER[SBK$L_FCB]+4)<0,16> = 0; ! unused field
;  484     0796  4                          ATT_BUFFER[SBK$W_ACNT] = .ADDRESS[FCB$W_ACNT];
;  485     0797  4                          ATT_BUFFER[SBK$W_LCNT] = .ADDRESS[FCB$W_LCNT];
;  486     0798  4                          ATT_BUFFER[SBK$W_WCNT] = .ADDRESS[FCB$W_WCNT];
;  487     0799  4                          ATT_BUFFER[SBK$W_TCNT] = .ADDRESS[FCB$W_TCNT];
;  488     0800  4                          ATT_BUFFER[SBK$L_READS] = 0;
;  489     0801  4                          ATT_BUFFER[SBK$L_WRITES] = 0;
;  490     0802  4                          IF .CURRENT_WINDOW NEQ 0
;  491     0803  4                          THEN
;  492     0804  5                              BEGIN
;  493     0805  5                              ATT_BUFFER[SBK$L_READS] = .CURRENT_WINDOW[WCB$L_READS];
;  494     0806  5                              ATT_BUFFER[SBK$L_WRITES] = .CURRENT_WINDOW[WCB$L_WRITES];
;  495     0807  4                              END;
;  496     0808  4                          ADDRESS = ATT_BUFFER;
;  497     0809  3                          END;
;  498     0810
;  499     0811  3          [ACT_BLOCKSIZE]: ADDRESS = UPLIT (512);
;  500     0812  3
;  501     0813  4          [ACT_ZERO]:     BEGIN
;  502     0814  4                          CH$FILL (0, .COUNT, .P);
;  503     0815  4                          COUNT = 0;
;  504     0816  3                          END;
;  505     0817  3
;  506     0818  4          [ACT_BLANK]:    BEGIN
;  507     0819  4                          ADDRESS = UPLIT BYTE (' ');
;  508     0820  3                          END;
;  509     0821  3
;  510     0822  4          [ACT_UIC]:      BEGIN
;  511     0823  4                          MAP ATT_BUFFER : VECTOR [,WORD];
;  512     0824  4                          ATT_BUFFER[0] = .(.ADDRESS)<0,8>;
;  513     0825  4                          ATT_BUFFER[1] = .(.ADDRESS)<8,8>;
;  514     0826  4                          ADDRESS = ATT_BUFFER;
;  515     0827  3                          END;
;  516     0828  3
;  517     0829  4          [ACT_ASCNAME]:  BEGIN
;  518     0830  4                          CH$FILL (' ', 86, ATT_BUFFER);
;  519     0831  4                          MAKE_STRING (.ADDRESS-6, ATT_BUFFER);
;  520     0832  4                          ADDRESS = ATT_BUFFER;
;  521     0833  3                          END;
;  522     0834  3
;  523     0835  4          [ACT_DATIME]:   BEGIN
;  524     0836  4                          (DATBUF+00)<0,16> = .(.ADDRESS);
;  525     0837  4                          (DATBUF+02)<0,8>  = '-';
;  526     0838  4                          (DATBUF+03)<0,24> = .(.ADDRESS+2);
;  527     0839  4                          (DATBUF+06)<0,24> = '-19';
;  528     0840  4                          (DATBUF+09)<0,16> = .(.ADDRESS+5);
```

```
;   529     0841  4                     (DATBUF+11)<0,8>  = ' ';
;   530     0842  4                     IF .(.ADDRESS+7)<0,8> NEQ 0
;   531     0843  4                     THEN
;   532     0844  5                         BEGIN
;   533     0845  5                         (DATBUF+12)<0,16> = .(.ADDRESS+7);
;   534     0846  5                         (DATBUF+14)<0,8>  = ':';
;   535     0847  5                         (DATBUF+15)<0,16> = .(.ADDRESS+9);
;   536     0848  5                         (DATBUF+17)<0,8>  = ':';
;   537     0849  5                         (DATBUF+18)<0,16> = .(.ADDRESS+11);
;   538     0850  5                         END
;   539     0851  4                     ELSE
;   540     0852  5                         BEGIN
;   541     0853  5                         (DATBUF+12)<0,32> = '00:0';
;   542     0854  5                         (DATBUF+16)<0,32> = '0:00';
;   543     0855  4                         END;
;   544     0856  4                     (DATBUF+20)<0,24> = '.00';
;   545     0857  4                     (ATT_BUFFER) = (ATT_BUFFER+4) = 0;
;   546     0858  4                     DATDESC[0] = DATLEN;
;   547     0859  4                     DATDESC[1] = DATBUF;
;   548     0860  4                     SYS$BINTIM (DATDESC, ATT_BUFFER);
;   549     0861  4                     ADDRESS = ATT_BUFFER;
;   550     0862  3                     END;
;   551     0863  3
;   552     0864  4           [ACT_ACL]:    BEGIN
;   553     0865  4                     ACE_POINTER = .P;
;   554     0866  4                     CASE .CODE + 1 FROM ATR$C_ADDACLENT TO ATR$C_READACE OF
;   555     0867  4                     SET
;   556     0868  4                         [ATR$C_ADDACLENT,
;   557     0869  4                          ATR$C_DELACLENT,
;   558     0870  4                          ATR$C_MODACLENT,
;   559     0871  4                          ATR$C_DELETEACL]:  0;
;   560     0872  4
;   561     0873  4                         [ATR$C_FNDACLENT,
;   562     0874  4                          ATR$C_FNDACETYP,
;   563     0875  4                          ATR$C_READACL,
;   564     0876  5                          ATR$C_READACE]:    BEGIN
;   565     0877  5                                             CH$FILL (0, .COUNT, .ACE_POINTER);
;   566     0878  5                                             ACE_POINTER[ACE$W_FLAGS] = SS$_ACLEMPTY;
;   567     0879  4                                             END;
;   568     0880  4
;   569     0881  5                         [ATR$C_ACLLENGTH]: BEGIN
;   570     0882  5                                             CH$FILL (0, .COUNT, .P);
;   571     0883  4                                             END;
;   572     0884  4
;   573     0885  4                     TES;
;   574     0886  4                     COUNT = 0;
;   575     0887  3                     END;
;   576     0888  3
;   577     0889  4           [ACT_ACMODE]: BEGIN
;   578     0890  4                     (.P-1)<0,8> = .IO_PACKET[IRP$V_MODE];
;   579     0891  4                     ACCESS_MODE = MAXU (.IO_PACKET[IRP$V_MODE], .(.P)<0,8>);
;   580     0892  4                     COUNT = 0;
;   581     0893  3                     END;
;   582     0894  3
;   583     0895  3               TES;
;   584     0896  3               CH$MOVE (.COUNT, .ADDRESS, .P); ! finally copy the attribute
;   585     0897  3
```

```
;  586          0898  3
;  587          0899  3
;  588          0900  2      END;                                    ! end of loop
;  589          0901  2
;  590          0902  2  ! Stop metering of this subfunction
;  591          0903  2  !
;  592          0904  2
;  593          0905  2  PMS_END_SUB ();
;  594          0906  2
;  595          0907  2  RETURN .STATUS;                             ! return success
;  596          0908  2
;  597          0909  1  END;                                        ! end of routine READ_ATTRIB

                                                        .TITLE  RWATTR
                                                        .IDENT  \V04-000\

                                                        .PSECT  $CODE$,NOWRT,2

                                    02  08  02  02  00000 P.AAA:  .BYTE   2, 2, 8, 2                  ;
                                        0000  0005  00004          .WORD   5, 0
                                    02  0A  02  02  00008          .BYTE   2, 2, 10, 2             ;
                                        0000  0003  0000C          .WORD   3, 0
                                    09  0C  02  04  00010          .BYTE   4, 2, 12, 9             ;
                                        0000  0004  00014          .WORD   4, 0
                                    02  0E  02  04  00018          .BYTE   4, 2, 14, 2             ;
                                        0000  0020  0001C          .WORD   32, 0
                                    02  00  03  00  00020          .BYTE   0, 3, 0, 2              ;
                                        0000  000A  00024          .WORD   10, 0
                                    02  06  03  00  00028          .BYTE   0, 3, 6, 2              ;
                                        0000  0004  0002C          .WORD   4, 0
                                    02  08  03  00  00030          .BYTE   0, 3, 8, 2              ;
                                        0000  0002  00034          .WORD   2, 0
                                    02  26  03  02  00038          .BYTE   2, 3, 38, 2             ;
                                        0000  0007  0003C          .WORD   7, 0
                                    03  00  01  01  00040          .BYTE   1, 1, 0, 3              ;
                                        0000  0020  00044          .WORD   32, 0
                                    02  00  02  01  00048          .BYTE   1, 2, 0, 2              ;
                                        0000  0200  0004C          .WORD   512, 0
                                    05  00  00  00  00050          .BYTE   0, 0, 0, 5              ;
                                        0000  0002  00054          .WORD   2, 0
                                    04  00  00  00  00058          .BYTE   0, 0, 0, 4              ;
                                        0000  0050  0005C          .WORD   80, 0
                                    02  0A  03  02  00060          .BYTE   2, 3, 10, 2             ;
                                        0000  0023  00064          .WORD   35, 0
                                    00  00  00  00  00068          .BYTE   0, 0, 0, 0              ;
                                        0000  000E  0006C          .WORD   14, 0
                                    00  00  00  00  00070          .BYTE   0, 0, 0, 0              ;
                                        0000  0001  00074          .WORD   1, 0
                                    06  00  03  00  00078          .BYTE   0, 3, 0, 6              ;
                                        0000  0056  0007C          .WORD   86, 0
                                    07  19  03  02  00080          .BYTE   2, 3, 25, 7             ;
                                        0000  0008  00084          .WORD   8, 0
                                    07  0C  03  02  00088          .BYTE   2, 3, 12, 7             ;
                                        0000  0008  0008C          .WORD   8, 0
                                    07  26  03  02  00090          .BYTE   2, 3, 38, 7             ;
                                        0000  0008  00094          .WORD   8, 0
```

```
04  00   00   02   00098          .BYTE   2, 0, 0, 4                  ;
    0000   0008    0009C          .WORD   8, 0                        ;
08  08   02   02   000A0          .BYTE   2, 2, 8, 8                  ;
    0000   0004    000A4          .WORD   4, 0                        ;
02  0A   02   02   000A8          .BYTE   2, 2, 10, 2                 ;
    0000   0002    000AC          .WORD   2, 0                        ;
04  00   00   02   000B0          .BYTE   2, 0, 0, 4                  ;
    0000   0002    000B4          .WORD   2, 0                        ;
04  00   00   02   000B8          .BYTE   2, 0, 0, 4                  ;
    0000   0002    000BC          .WORD   2, 0                        ;
04  00   00   02   000C0          .BYTE   2, 0, 0, 4                  ;
    0000   0008    000C4          .WORD   8, 0                        ;
08  08   02   01   000C8          .BYTE   1, 2, 8, 8                  ;
    0000   0004    000CC          .WORD   4, 0                        ;
04  00   00   01   000D0          .BYTE   1, 0, 0, 4                  ;
    0000   0002    000D4          .WORD   2, 0                        ;
04  00   00   02   000D8          .BYTE   2, 0, 0, 4                  ;
    0000   0006    000DC          .WORD   6, 0                        ;
04  00   00   02   000E0          .BYTE   2, 0, 0, 4                  ;
    0000   0002    000E4          .WORD   2, 0                        ;
0A  00   00   02   000E8          .BYTE   2, 0, 0, 10                 ;
    0000   0001    000EC          .WORD   1, 0                        ;
0B  00   00   04   000F0          .BYTE   4, 0, 0, 11                 ;
    0000   00FF    000F4          .WORD   255, 0                      ;
0B  00   05   04   000F8          .BYTE   4, 5, 0, 11                 ;
    0000   00FF    000FC          .WORD   255, 0                      ;
0B  00   05   04   00100          .BYTE   4, 5, 0, 11                 ;
    0000   00FF    00104          .WORD   255, 0                      ;
0B  00   05   01   00108          .BYTE   1, 5, 0, 11                 ;
    0000   00FF    0010C          .WORD   255, 0                      ;
0B  00   05   01   00110          .BYTE   1, 5, 0, 11                 ;
    0000   00FF    00114          .WORD   255, 0                      ;
0B  00   05   04   00118          .BYTE   4, 5, 0, 11                 ;
    0000   00FF    0011C          .WORD   255, 0                      ;
0B  00   05   01   00120          .BYTE   1, 5, 0, 11                 ;
    0000   0200    00124          .WORD   512, 0                      ;
0B  00   05   01   00128          .BYTE   1, 5, 0, 11                 ;
    0000   0004    0012C          .WORD   4, 0                        ;
0B  00   05   01   00130          .BYTE   1, 5, 0, 11                 ;
    0000   00FF    00134          .WORD   255, 0                      ;
04  00   00   02   00138          .BYTE   2, 0, 0, 4                  ;
    0000   017C    0013C          .WORD   380, 0                      ;
04  00   02   01   00140          .BYTE   1, 2, 0, 4                  ;
    0000   0004    00144          .WORD   4, 0                        ;
01  00   06   01   00148          .BYTE   1, 6, 0, 1                  ;
    0000   0004    0014C          .WORD   4, 0                        ;
02  00   06   01   00150          .BYTE   1, 6, 0, 2                  ;
    0000   0004    00154          .WORD   4, 0                        ;
04  01   06   01   00158          .BYTE   1, 6, 1, 4                  ;
    0000   00FF    0015C          .WORD   255, 0                      ;
0C  00   00   01   00160          .BYTE   1, 0, 0, 12                 ;
    0000   0001    00164          .WORD   1, 0                        ;
02  00   07   01   00168          .BYTE   1, 7, 0, 2                  ;
    0000   0200    0016C          .WORD   512, 0                      ;
04  00   00   00   00170          .BYTE   0, 0, 0, 4                  ;
    0000   0000    00174          .WORD   0, 0                        ;
00  00   00   00   00178          .BYTE   0, 0, 0, 0                  ;
```

```
                              0000  0000  0017C          .WORD   0, 0                                    ;
                                 00000200  00180 P.AAB:   .LONG   512                                     ;
                                       20  00184 P.AAC:   .ASCII  \ \                                     ;

                                                          .PSECT  $LOCKEDD1$,NOEXE,2

                                           00000 FILE_SPEC_LEN:
                                                          .BLKB   2
                                           00002 FULL_FILE_SPEC:
                                                          .BLKB   510

                                                 ATC=             P.AAA
                                                          .EXTRN  IO_PACKET, PRIMARY_FCB
                                                          .EXTRN  CURRENT_WINDOW, FILE_HEADER
                                                          .EXTRN  PMS_START_SUB, PMS_END_SUB
                                                          .EXTRN  MAKE_STRING, SYS$BINTIM
                                                          .EXTRN  READ_HEADER, USER_STATUS

                                                          .PSECT  $CODE$,NOWRT,2

                                     0FFC  00000          .ENTRY  READ_ATTRIB, Save R2,R3,R4,R5,R6,R7,R8,R9,- ; 0613
                                                                  R10,R11                                 ;
                   5E     FF70   CE   9E  00002           MOVAB   -144(SP), SP                            ;
                                 09   DD  00007           PUSHL   #9                                      ; 0691
            0000G  CF            01   FB  00009           CALLS   #1, PMS_START_SUB                       ;
               14  AE            01   D0  0000E           MOVL    #1, STATUS                              ; 0693
                   56       04   AC   D0  00012           MOVL    HEADER, LOCAL_HEADER                    ; 0694
                   50    0000G   CF   D0  00016           MOVL    IO_PACKET, R0                           ; 0700
               2A  A0            02   88  0001B           BISB2   #2, 42(R0)                              ;
10   AE      0B    A0  02        00   EF  0001F           EXTZV   #0, #2, 11(R0), ACCESS_MODE             ; 0701
               0C  AE       32   A0   3C  00026           MOVZWL  50(R0), 12(SP)                          ; 0708
                   5A            04   D0  0002B           MOVL    #4, I                                   ; 0710
                               021B   31  0002E           BRW     37$                                     ;
                   50    08 BC4A      7E  00031 1$:       MOVAQ   @ABD[I], R0                             ;
                   59            60   3C  00036           MOVZWL  (R0), P                                 ;
                   59            50   C0  00039           ADDL2   R0, P                                   ;
                   5B       02   A0   3C  0003C           MOVZWL  2(R0), COUNT                            ; 0711
                   58            69   9A  00040           MOVZBL  (P), CODE                               ; 0712
                                 58   D7  00043           DECL    CODE                                    ;
                   89       10   AE   90  00045           MOVB    ACCESS_MODE, (P)+                       ; 0713
                   2F            58   D1  00049           CMPL    CODE, #47                               ; 0721
                                 0B   14  0004C           BGTR    2$                                      ;
                          FE2C CF48   7F  0004E           PUSHAQ  ATC+4[CODE]                             ; 0728
                   6E            9E   3C  00053           MOVZWL  @(SP)+, MAX_COUNT                       ;
                   6E            5B   D1  00056           CMPL    COUNT, MAX_COUNT                        ; 0729
                                 03   15  00059 2$:       BLEQ    3$                                      ;
                               0085   31  0005B           BRW     15$                                     ;
                          FE1B CF48   7F  0005E 3$:       PUSHAQ  ATC+3[CODE]                             ; 0740
               04  AE            9E   90  00063           MOVB    @(SP)+, ACTION                          ;
                          FE10 CF48   7F  00067           PUSHAQ  ATC+1[CODE]                             ; 0747
         07           00         9E   8F  0006C           CASEB   @(SP)+, #0, #7                          ;
  0019       0028       0012       0031       00070 4$:   .WORD   11$-4$,-                                ;
  0037       002D       0028       001E       00078               5$-4$,-                                 ;
                                                                  9$-4$,-                                 ;
                                                                  6$-4$,-                                 ;
                                                                  7$-4$,-                                 ;
                                                                  9$-4$,-                                 ;
```

```
                                                                 10$-4$,-                                   ;
                                                                 12$-4$                                     ;
                              1F   11 00080          BRB         11$                                        ;
           50         0000G   CF   D0 00082 5$:      MOVL        PRIMARY_FCB, R0                            ; 0750
                              2D   11 00087          BRB         13$                                        ;
           50                 66   9A 00089 6$:      MOVZBL      (LOCAL_HEADER), R0                         ; 0752
                              04   11 0008C          BRB         8$                                         ;
           50           01    A6   9A 0008E 7$:      MOVZBL      1(LOCAL_HEADER), R0                        ; 0753
           50               6640   3E 00092 8$:      MOVAW       (LOCAL_HEADER)[R0], R0                     ;
                              1E   11 00096          BRB         13$                                        ;
           50                 56   D0 00098 9$:      MOVL        LOCAL_HEADER, R0                           ; 0754
                              19   11 0009B          BRB         13$                                        ;
      04   AE                 04   90 0009D 10$:     MOVB        #4, ACTION                                 ; 0756
           50           18    AE   9E 000A1 11$:     MOVAB       ATT_BUFFER, R0                             ; 0755
                              0F   11 000A5          BRB         13$                                        ;
   0000V   CF                 00   FB 000A7 12$:     CALLS       #0, FID_TO_SPEC                            ; 0760
           56         0000G   CF   D0 000AC          MOVL        FILE_HEADER, LOCAL_HEADER                  ; 0761
           50         0000'   CF   9E 000B1          MOVAB       FILE_SPEC_LEN, R0                          ; 0759
                      FDC2  CF48   7F 000B6 13$:     PUSHAQ      ATC+2[CODE]                                ; 0766
           57                 9E   9A 000BB          MOVZBL      @(SP)+, ADDRESS                            ;
           57                 50   C0 000BE          ADDL2       R0, ADDRESS                                ;
      0C   00           04    AE   8F 000C1          CASEB       ACTION, #0, #12                            ; 0772
003D    0182    001D        0180      000C6 14$:     .WORD       35$-14$,-                                  ;
00AF    0099    007F        0157      000CE                      15$-14$,-                                  ;
0128    0086    0037        008E      000D6                      36$-14$,-                                  ;
                            015F      000DE                      18$-14$,-                                  ;
                                                                 32$-14$,-                                  ;
                                                                 19$-14$,-                                  ;
                                                                 23$-14$,-                                  ;
                                                                 25$-14$,-                                  ;
                                                                 22$-14$,-                                  ;
                                                                 17$-14$,-                                  ;
                                                                 20$-14$,-                                  ;
                                                                 29$-14$,-                                  ;
                                                                 33$-14$                                    ;
                            0163   31 000E0          BRW         35$                                        ; 0775
           50         0000G   CF   D0 000E3 15$:     MOVL        IO_PACKET, R0                              ; 0778
      32   A0                 5A   B0 000E8          MOVW        I, 50(R0)                                  ;
      07 00000000G            00   E9 000EC          BLBC        USER_STATUS, 16$                           ; 0779
00000000G  00                 34   B0 000F3          MOVW        #52, USER_STATUS                           ;
                            0163   31 000FA 16$:     BRW         40$                                        ;
      18   AE                 67   3C 000FD 17$:     MOVZWL      (ADDRESS), ATT_BUFFER                      ; 0785
                              70   11 00101          BRB         24$                                        ; 0786
18   AE    30   A7            10   9C 00103 18$:     ROTL        #16, 48(ADDRESS), ATT_BUFFER               ; 0790
1C   AE    38   A7            10   9C 00109          ROTL        #16, 56(ADDRESS), ATT_BUFFER+4             ; 0791
           20   AE      1A    A7   90 0010F          MOVB        26(ADDRESS), ATT_BUFFER+8                  ; 0792
           21   AE      1E    A7   90 00114          MOVB        30(ADDRESS), ATT_BUFFER+9                  ; 0793
           22   AE            57   D0 00119          MOVL        ADDRESS, ATT_BUFFER+10                     ; 0794
                        26    AE   B4 0011D          CLRW        ATT_BUFFER+14                              ; 0795
           28   AE      1A    A7   B0 00120          MOVW        26(ADDRESS), ATT_BUFFER+16                 ; 0796
           2A   AE      1E    A7   B0 00125          MOVW        30(ADDRESS), ATT_BUFFER+18                 ; 0797
           2C   AE      1C    A7   B0 0012A          MOVW        28(ADDRESS), ATT_BUFFER+20                 ; 0798
           2E   AE      20    A7   B0 0012F          MOVW        32(ADDRESS), ATT_BUFFER+22                 ; 0799
                        30    AE   7C 00134          CLRQ        ATT_BUFFER+24                              ; 0800
           50         0000G   CF   D0 00137          MOVL        CURRENT_WINDOW, R0                         ; 0802
                              35   13 0013C          BEQL        24$                                        ;
      30   AE           24    A0   7D 0013E          MOVQ        36(R0), ATT_BUFFER+24                      ; 0805
```

```
                                   2E  11 00143          BRB     24$                                   ; 0808
                 57      FEB2      CF  9E 00145 19$:     MOVAB   P.AAB, ADDRESS                        ; 0811
                                   05  11 0014A          BRB     21$                                   ;
                 57      FEAF      CF  9E 0014C 20$:     MOVAB   P.AAC, ADDRESS                        ; 0819
                                 00F4  31 00151 21$:     BRW     36$                                   ; 0772
             18  AE                67  9B 00154 22$:     MOVZBW  (ADDRESS), ATT_BUFFER                 ; 0824
             1A  AE        01      A7  9B 00158          MOVZBW  1(ADDRESS), ATT_BUFFER+2              ; 0825
                                   14  11 0015D          BRB     24$                                   ; 0826
  0056   8F         20     6E      00  2C 0015F 23$:     MOVC5   #0, (SP), #32, #86, ATT_BUFFER        ; 0830
                              18   AE     00166                                                        ;
                              18   AE  9F 00168          PUSHAB  ATT_BUFFER                            ; 0831
                              FA   A7  9F 0016B          PUSHAB  -6(ADDRESS)                           ;
          0000G  CF                02  FB 0016E          CALLS   #2, MAKE_STRING                       ;
                                   73  11 00173 24$:     BRB     28$                                   ; 0832
             78  AE                67  B0 00175 25$:     MOVW    (ADDRESS), DATBUF                     ; 0836
             7A  AE                2D  90 00179          MOVB    #45, DATBUF+2                         ; 0837
  7B     AE         18     00      02  A7  F0 0017D      INSV    2(ADDRESS), #0, #24, DATBUF+3         ; 0838
  7E     AE         18     00 0039312D 8F  F0 00184      INSV    #3748141, #0, #24, DATBUF+6           ; 0839
             F1  AD        05      A7  B0 0018E          MOVW    5(ADDRESS), DATBUF+9                  ; 0840
             F3  AD                20  90 00193          MOVB    #32, DATBUF+11                        ; 0841
                           07      A7  95 00197          TSTB    7(ADDRESS)                            ; 0842
                                   19  13 0019A          BEQL    26$                                   ;
             F4  AD        07      A7  B0 0019C          MOVW    7(ADDRESS), DATBUF+12                 ; 0845
             F6  AD                3A  90 001A1          MOVB    #58, DATBUF+14                        ; 0846
             F7  AD        09      A7  B0 001A5          MOVW    9(ADDRESS), DATBUF+15                 ; 0847
             F9  AD                3A  90 001AA          MOVB    #58, DATBUF+17                        ; 0848
             FA  AD        0B      A7  B0 001AE          MOVW    11(ADDRESS), DATBUF+18                ; 0849
                                   10  11 001B3          BRB     27$                                   ; 0842
             F4  AD  303A3030      8F  D0 001B5 26$:     MOVL    #809119792, DATBUF+12                 ; 0853
             F8  AD  30303A30      8F  D0 001BD          MOVL    #808466992, DATBUF+16                 ; 0854
  FC     AD         18     00 0030302E 8F  F0 001C5 27$: INSV    #3158062, #0, #24, DATBUF+20          ; 0856
                              18   AE  7C 001CF          CLRQ    ATT_BUFFER                            ; 0857
             70  AE                17  D0 001D2          MOVL    #23, DATDESC                          ; 0858
             74  AE        78      AE  9E 001D6          MOVAB   DATBUF, DATDESC+4                     ; 0859
                           18      AE  9F 001DB          PUSHAB  ATT_BUFFER                            ; 0860
                           74      AE  9F 001DE          PUSHAB  DATDESC                               ;
      00000000G  9F                02  FB 001E1          CALLS   #2, @#SYS$BINTIM                      ;
                 57        18      AE  9E 001E8 28$:     MOVAB   ATT_BUFFER, ADDRESS                   ; 0861
                                   5A  11 001EC          BRB     36$                                   ; 0772
             08  AE                59  D0 001EE 29$:     MOVL    P, ACE_POINTER                        ; 0865
                    08     1E      58  CF 001F2          CASEL   CODE, #30, #8                         ; 0866
    0014          0050   0050    0050     001F6 30$:     .WORD   35$-30$,-                             ;
    0027          0014   0050    0014     001FE                  35$-30$,-                             ;
                                 0014     00206                  35$-30$,-                             ;
                                                                 31$-30$,-                             ;
                                                                 31$-30$,-                             ;
                                                                 35$-30$,-                             ;
                                                                 31$-30$,-                             ;
                                                                 32$-30$,-                             ;
                                                                 31$-30$                               ;
                                   3C  11 00208          BRB     35$                                   ;
         5B         00     6E      00  2C 0020A 31$:     MOVC5   #0, (SP), #0, COUNT, @ACE_POINTER     ; 0877
                           08      BE     0020F                                                        ;
                    50     08      AE                                                                  
                                   02  C1 00211          ADDL3   #2, ACE_POINTER, R0                   ; 0878
                    60   09D0      8F  B0 00216          MOVW    #2512, (R0)                           ;
                                   29  11 0021B          BRB     35$                                   ; 0866
         5B         00     6E      00  2C 0021D 32$:     MOVC5   #0, (SP), #0, COUNT, (P)              ; 0882
```

```
                                        69       00222                                                   ;
                                        21    11 00223          BRB     35$                              ; 0886
                            50   0000G  CF    D0 00225 33$:     MOVL    IO_PACKET, R0                    ; 0890
     51      0B    A0       02          00    EF 0022A          EXTZV   #0, #2, 11(R0), R1               ;
                     FF     A9          51    90 00230          MOVB    R1, -1(P)                        ;
     50      0B    A0       02          00    EF 00234          EXTZV   #0, #2, 11(R0), R0               ; 0891
                            50          69    91 0023A          CMPB    (P), R0                          ;
                                        03    1B 0023D          BLEQU   34$                              ;
                            50          69    9A 0023F          MOVZBL  (P), R0                          ;
                     10     AE          50    D0 00242 34$:     MOVL    R0, ACCESS_MODE                  ;
                                        5B    D4 00246 35$:     CLRL    COUNT                            ; 0892
                   69       67          5B    28 00248 36$:     MOVC3   COUNT, (ADDRESS), (P)            ; 0896
                   02       5A     0C   AE    F2 0024C 37$:     AOBLSS  12(SP), I, 38$                   ; 0708
                                        03    11 00251          BRB     39$                              ;
                                      FDDB    31 00253 38$:     BRW     1$                               ;
                          0000G     CF  00    FB 00256 39$:     CALLS   #0, PMS_END_SUB                  ; 0905
                                50  14  AE    D0 0025B          MOVL    STATUS, R0                       ; 0907
                                              04 0025F          RET                                      ;
                                        50    D4 00260 40$:     CLRL    R0                               ; 0909
                                              04 00262          RET                                      ;

; Routine Size:  611 bytes,    Routine Base:  $CODE$ + 0185
```

```
;  599     0910  1 ROUTINE FID_TO_SPEC : NOVALUE =
;  600     0911  1
;  601     0912  1 !++
;  602     0913  1 !
;  603     0914  1 ! FUNCTIONAL DESCRIPTION:
;  604     0915  1 !
;  605     0916  1 !       This routine converts the specified file-ID (contained in the header
;  606     0917  1 !       supplied) to a full file specification.  If the directory-ID in
;  607     0918  1 !       the FIB is non-zero, the directory portion of the spec is filled
;  608     0919  1 !       in.  Otherwise, it is left blank (e.g., []).
;  609     0920  1 !
;  610     0921  1 ! CALLING SEQUENCE:
;  611     0922  1 !       FID_TO_SPEC ()
;  612     0923  1 !
;  613     0924  1 ! INPUT PARAMETERS:
;  614     0925  1 !       none
;  615     0926  1 !
;  616     0927  1 ! IMPLICIT INPUTS:
;  617     0928  1 !       none
;  618     0929  1 !
;  619     0930  1 ! OUTPUT PARAMETERS:
;  620     0931  1 !       none
;  621     0932  1 !
;  622     0933  1 ! IMPLICIT OUTPUTS:
;  623     0934  1 !       none
;  624     0935  1 !
;  625     0936  1 ! ROUTINE VALUE:
;  626     0937  1 !       none
;  627     0938  1 !
;  628     0939  1 ! SIDE EFFECTS:
;  629     0940  1 !       none
;  630     0941  1 !
;  631     0942  1 !--
;  632     0943  1
;  633     0944  2 BEGIN
;  634     0945  2
;  635     0946  2 LINKAGE
;  636     0947  2         L_CVT_DEVNAM    = JSB (REGISTER = 0,    ! Buffer length
;  637     0948  2                                REGISTER = 1,    ! Buffer address
;  638     0949  2                                REGISTER = 4,    ! Cluster node conversion flag
;  639     0950  2                                REGISTER = 5;    ! UCB address
;  640     0951  2                                REGISTER = 1);   ! Length of converted name
;  641     0952  2
;  642     0953  2 LITERAL
;  643     0954  2         NODE_LEN        = 15,                   ! Maximum cluster node name length
;  644     0955  2         DEVNAME_LEN     = 15,                   ! Maximum device name length
;  645     0956  2         UNIT_LEN        = 5,                    ! Maximum unit number length
;  646     0957  2         FILENAME_LEN    = 9,                    ! Maximun file name length
;  647     0958  2         FILETYPE_LEN    = 3,                    ! Maximum file type length
;  648     0959  2         FILEVER_LEN     = 5,                    ! Maximum version length
;  649     0960  2
;  650     0961  2         FULLDEV_LEN     = NODE_LEN + 1 +        ! Full device spec length
;  651     0962  2                           DEVNAME_LEN + UNIT_LEN + 1,
;  652     0963  2         FULLDIR_LEN     = 1 + FILENAME_LEN + 1, ! Max dir spec length
;  653     0964  2         FULLFILE_LEN    = FILENAME_LEN + 1 +    ! Max file name length
;  654     0965  2                           FILETYPE_LEN + 1 +    !   including type & version
;  655     0966  2                           FILEVER_LEN,
```

```
;  656     0967  2          FULLSPEC_LEN    = 2 + FULLDEV_LEN +     ! Maximum file spec length
;  657     0968  2                            FULLDIR_LEN +         ! Includes word size prefix
;  658     0969  2                            FULLFILE_LEN;
;  659     0970  2
;  660     0971  2 LOCAL
;  661     0972  2          DEVICE_LEN,                              ! Length of the device name
;  662     0973  2          DIR_HEADER      : REF BBLOCK,            ! Current directory file header
;  663     0974  2          IDENT_AREA      : REF BBLOCK;            ! Address of header ident area
;  664     0975  2
;  665     0976  2 EXTERNAL
;  666     0977  2          FILE_HEADER     : REF BBLOCK,            ! Address of current file header
;  667     0978  2          IO_PACKET       : REF BBLOCK,            ! Address of current I/O packet
;  668     0979  2          LOCAL_FIB       : BBLOCK,                ! Copy of user's FIB
;  669     0980  2          PRIMARY_FCB     : REF BBLOCK;            ! Address of primary FCB
;  670     0981  2
;  671     0982  2 EXTERNAL ROUTINE
;  672     0983  2          READ_HEADER,                             ! Read & validate file header
;  673     0984  2          MAKE_STRING,                             ! Convert file name block to string
;  674     0985  2          IOC$CVT_DEVNAM  : L_CVT_DEVNAM ADDRESSING_MODE (GENERAL);
;  675     0986  2
;  676     0987  2 BIND
;  677     0988  2          DEVICE_NAME     = FULL_FILE_SPEC        : VECTOR [,BYTE],       ! Device name spec
;  678     0989  2          DIR_NAME        = FULL_FILE_SPEC[FULLDEV_LEN + 1]       : VECTOR [,BYTE],       ! Directory name sto
;  679     0990  2          FILE_NAME       = FULL_FILE_SPEC[FULLDEV_LEN + 1 +      ! File name storage
;  680     0991  2                                          FULLDIR_LEN]    : VECTOR [,BYTE];
;  681     0992  2
;  682     0993  2 ! Initialize all of the necessary storage.
;  683     0994  2
;  684     0995  2 CH$FILL (0, FULLSPEC_LEN, FULL_FILE_SPEC);
;  685     0996  2
;  686     0997  2 ! Get the device name.
;  687     0998  2
;  688     0999  2 IOC$CVT_DEVNAM (FULLDEV_LEN, DEVICE_NAME, 0, .IO_PACKET[IRP$L_UCB]; DEVICE_LEN);
;  689     1000  2 FILE_SPEC_LEN[0] = .DEVICE_LEN;
;  690     1001  2
;  691     1002  2 ! Start building the directory specification.
;  692     1003  2
;  693     1004  2 FULL_FILE_SPEC[.FILE_SPEC_LEN[0]] = '[';
;  694     1005  2 FILE_SPEC_LEN[0] = .FILE_SPEC_LEN[0] + 1;
;  695     1006  2
;  696     1007  2 ! If a directory-ID has been given in the FIB, return the diretory spec
;  697     1008  2 ! also.  Otherwise, leave it blank.
;  698     1009  2
;  699     1010  2 IF .LOCAL_FIB[FIB$W_DID_NUM] NEQ 0
;  700     1011  2 THEN
;  701     1012  3     BEGIN
;  702     1013  3     DIR_HEADER = READ_HEADER (LOCAL_FIB[FIB$W_DID], 0);
;  703     1014  3     IDENT_AREA = .DIR_HEADER + .DIR_HEADER[FHT$B_IDOFFSET]*2;
;  704     1015  3     MAKE_STRING (IDENT_AREA[FI1$W_FILENAME] - $BYTEOFFSET (NMB$W_NAME),
;  705     1016  3                  FULL_FILE_SPEC[.FILE_SPEC_LEN[0]]);
;  706     1017  3     INCR K FROM 0 TO FILENAME_LEN - 1
;  707     1018  3     DO
;  708     1019  4         BEGIN
;  709     1020  4         IF .FULL_FILE_SPEC[.FILE_SPEC_LEN[0]] EQL '.' THEN EXITLOOP;
;  710     1021  4         IF .K EQL FILENAME_LEN - 1
;  711     1022  4         THEN
;  712     1023  5             BEGIN
```

```
5                  FULL_FILE_SPEC[.FILE_SPEC_LEN[0]] = '?';
5                  EXITLOOP;
4                  END;
4              FILE_SPEC_LEN[0]= .FILE_SPEC_LEN[0] + 1;
3              END;
3          READ_HEADER (LOCAL_FIB[FIB$W_FID], .PRIMARY_FCB);
2          END;
2
2      ! Tie off the directory specification.
2
2      FULL_FILE_SPEC[.FILE_SPEC_LEN[0]] = ']';
2      FILE_SPEC_LEN[0] = .FILE_SPEC_LEN[0] + 1;
2
2      ! Now add in the file name.
2
2      IDENT_AREA = .FILE_HEADER + .FILE_HEADER[FH1$B_IDOFFSET]*2;
2      MAKE_STRING (IDENT_AREA[FI1$W_FILENAME] - $BYTEOFFSET (NMB$W_NAME),
2                  FULL_FILE_SPEC[.FILE_SPEC_LEN[0]]);
2      INCR J FROM 0 TO FULLFILE_LEN
2      DO
3          BEGIN
3          IF .FULL_FILE_SPEC[.FILE_SPEC_LEN[0]] EQL ' '
3          OR .FULL_FILE_SPEC[.FILE_SPEC_LEN[0]] EQL 0 THEN EXITLOOP;
3          FILE_SPEC_LEN[0] = .FILE_SPEC_LEN[0] + 1;
2          END;
2
2      RETURN;
2
1      END;                                                 ! End of routine FID_TO_SPEC


                                       DEVICE_NAME=           FULL_FILE_SPEC
                                       DIR_NAME=              FULL_FILE_SPEC+38
                                       FILE_NAME=             FULL_FILE_SPEC+49
                                                      .EXTRN  LOCAL_FIB, IOC$CVT_DEVNAM

                              0FFC 00000 FID_TO_SPEC:
                                                      .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11         ; 0910
                  56      0000'   CF   9E 00002       MOVAB   FILE_SPEC_LEN, R6                            ;
 0045   8F     00 6E              00   2C 00007       MOVC5   #0, (SP), #0, #69, FULL_FILE_SPEC            ; 0995
                            02    A6      0000E
                  52      0000G   CF   D0 00010       MOVL    IO_PACKET, R2                                ; 0999
                  51         02   A6   9E 00015       MOVAB   DEVICE_NAME, R1                              ;
                  55         1C   A2   D0 00019       MOVL    28(R2), R5                                   ;
                                  54   D4 0001D       CLRL    R4                                           ;
                  50              25   D0 0001F       MOVL    #37, R0                                      ;
                       00000000G  00   16 00022       JSB     IOC$CVT_DEVNAM                               ;
                  66              51   B0 00028       MOVW    DEVICE_LEN, FILE_SPEC_LEN                    ; 1000
                  50              66   3C 0002B       MOVZWL  FILE_SPEC_LEN, R0                            ; 1004
         02 A640             5B   8F   90 0002E       MOVB    #91, FULL_FILE_SPEC[R0]                      ;
                                  66   B6 00034       INCW    FILE_SPEC_LEN                                ; 1005
                          0000G   CF   B5 00036       TSTW    LOCAL_FIB+10                                 ; 1010
                                  4C   13 0003A       BEQL    4$                                           ;
                                  7E   D4 0003C       CLRL    -(SP)                                        ; 1013
                          0000G   CF   9F 0003E       PUSHAB  LOCAL_FIB+10                                 ;
         0000G   CF               02   FB 00042       CALLS   #2, READ_HEADER                              ;
```

```
                 51         60  9A 00047        MOVZBL  (DIR_HEADER), R1                              ; 1014
                 52       6041  3E 0004A        MOVAW   (DIR_HEADER)[R1], IDENT_AREA                  ;
                 50         66  3C 0004E        MOVZWL  FILE_SPEC_LEN, R0                             ; 1016
                       02 A640  9F 00051        PUSHAB  FULL_FILE_SPEC[R0]                            ;
                       FA   A2  9F 00055        PUSHAB  -6(IDENT_AREA)                                ; 1015
          0000G  CF         02  FB 00058        CALLS   #2, MAKE_STRING                               ; 1016
                            51  D4 0005D        CLRL    K                                             ; 1017
                 50         66  3C 0005F 1$:    MOVZWL  FILE_SPEC_LEN, R0                             ; 1020
                 2E    02 A640  91 00062        CMPB    FULL_FILE_SPEC[R0], #46                       ;
                            12  13 00067        BEQL    3$                                            ;
                 08         51  D1 00069        CMPL    K, #8                                         ; 1021
                            07  12 0006C        BNEQ    2$                                            ;
            02 A640         3F  90 0006E        MOVB    #63, FULL_FILE_SPEC[R0]                       ; 1024
                            06  11 00073        BRB     3$                                            ; 1023
                            66  B6 00075 2$:    INCW    FILE_SPEC_LEN                                 ; 1027
      E4         51         08  F3 00077        AOBLEQ  #8, K, 1$                                     ; 1017
                       0000G CF DD 0007B 3$:    PUSHL   PRIMARY_FCB                                   ; 1029
                       0000G CF 9F 0007F        PUSHAB  LOCAL_FIB+4                                   ;
          0000G  CF         02  FB 00083        CALLS   #2, READ_HEADER                               ;
                 50         66  3C 00088 4$:    MOVZWL  FILE_SPEC_LEN, R0                             ; 1034
            02 A640    5D   8F  90 0008B        MOVB    #93, FULL_FILE_SPEC[R0]                       ;
                            66  B6 00091        INCW    FILE_SPEC_LEN                                 ; 1035
                 50    0000G DF 9A 00093        MOVZBL  @FILE_HEADER, R0                              ; 1039
                 52  0000GDF40  3E 00098        MOVAW   @FILE_HEADER[R0], IDENT_AREA                  ;
                 50         66  3C 0009E        MOVZWL  FILE_SPEC_LEN, R0                             ; 1041
                       02 A640  9F 000A1        PUSHAB  FULL_FILE_SPEC[R0]                            ;
                       FA   A2  9F 000A5        PUSHAB  -6(IDENT_AREA)                                ; 1040
          0000G  CF         02  FB 000A8        CALLS   #2, MAKE_STRING                               ; 1041
                            51  D4 000AD        CLRL    J                                             ; 1042
                 50         66  3C 000AF 5$:    MOVZWL  FILE_SPEC_LEN, R0                             ; 1045
                 20    02 A640  91 000B2        CMPB    FULL_FILE_SPEC[R0], #32                       ;
                            0C  13 000B7        BEQL    6$                                            ;
                       02 A640  95 000B9        TSTB    FULL_FILE_SPEC[R0]                            ; 1046
                            06  13 000BD        BEQL    6$                                            ;
                            66  B6 000BF        INCW    FILE_SPEC_LEN                                 ; 1047
      EA         51         13  F3 000C1        AOBLEQ  #19, J, 5$                                    ; 1042
                            04     000C5 6$:    RET                                                   ; 1052

; Routine Size:  198 bytes,    Routine Base:  $CODE$ + 03E8
```

```
;  743          1053  1 GLOBAL ROUTINE WRITE_ATTRIB (HEADER, ABD, CONTROL_ACCESS) : NOVALUE =
;  744          1054  1
;  745          1055  1 !++
;  746          1056  1 !
;  747          1057  1 ! FUNCTIONAL DESCRIPTION:
;  748          1058  1 !
;  749          1059  1 !       This routine performs the write attributes function. The
;  750          1060  1 !       requested attributes are taken from the buffer packet.
;  751          1061  1 !
;  752          1062  1 ! CALLING SEQUENCE:
;  753          1063  1 !       WRITE_ATTRIB (ARG1, ARG2, ARG3)
;  754          1064  1 !
;  755          1065  1 ! INPUT PARAMETERS:
;  756          1066  1 !       ARG1: address of file header
;  757          1067  1 !       ARG2: address of buffer descriptors
;  758          1068  1 !       ARG3: 1 = check for control access to the file
;  759          1069  1 !             0 = no control access check
;  760          1070  1 !
;  761          1071  1 ! IMPLICIT INPUTS:
;  762          1072  1 !       IO_PACKET: I/O packet for this operation
;  763          1073  1 !       PRIMARY_FCB: FCB of file
;  764          1074  1 !
;  765          1075  1 ! OUTPUT PARAMETERS:
;  766          1076  1 !       NONE
;  767          1077  1 !
;  768          1078  1 ! IMPLICIT OUTPUTS:
;  769          1079  1 !       NONE
;  770          1080  1 !
;  771          1081  1 ! ROUTINE VALUE:
;  772          1082  1 !       NONE
;  773          1083  1 !
;  774          1084  1 ! SIDE EFFECTS:
;  775          1085  1 !       attribute data written into appropriate places
;  776          1086  1 !
;  777          1087  1 !--
;  778          1088  1
;  779          1089  2 BEGIN
;  780          1090  2
;  781          1091  2 MAP
;  782          1092  2         HEADER          : REF BBLOCK,   ! file header arg
;  783          1093  2         ABD             : REF BBLOCKVECTOR [,ABD$C_LENGTH];
;  784          1094  2                                         ! buffer descriptor arg
;  785          1095  2
;  786          1096  2 LOCAL
;  787          1097  2         CTL_ACC_GRANTED,                ! Flag indicating control access granted
;  788          1098  2         SAVE_HIBLK,                     ! saved copy of file's HIBLK
;  789          1099  2         SAVE_CHAR,                      ! initial state of protected attributes
;  790          1100  2         ACE_POINTER     : REF BBLOCK;   ! address of user ACE
;  791          1101  2
;  792          1102  2 EXTERNAL
;  793          1103  2         USER_STATUS     : VECTOR,       ! user request status
;  794          1104  2         CLEANUP_FLAGS   : BITVECTOR,    ! cleanup action flags
;  795          1105  2         IO_PACKET       : REF BBLOCK,   ! I/O packet in process
;  796          1106  2         CURRENT_WINDOW  : REF BBLOCK,   ! window of open file
;  797          1107  2         LOCAL_FIB       : BBLOCK,       ! Copy of user's FIB
;  798          1108  2         PRIMARY_FCB     : REF BBLOCK;   ! FCB of file
;  799          1109  2
```

```
;  800     1110  2 EXTERNAL ROUTINE
;  801     1111  2         PMS_START_SUB,                  ! start subfunction metering
;  802     1112  2         PMS_END_SUB,                    ! end subfunction metering
;  803     1113  2         CHECK_PROTECT,                  ! check file protection
;  804     1114  2         CHECKSUM,                       ! checksum a file header
;  805     1115  2         MARK_DIRTY,                     ! mark buffer for write-back
;  806     1116  2         MAKE_NAMEBLOCK,                 ! convert file string to RAD-50 name block
;  807     1117  2         GET_TIME;                       ! get date/time string
;  808     1118  2
;  809     1119  2
;  810     1120  2 ! Start metering for this subfunction.
;  811     1121  2 !
;  812     1122  2
;  813     1123  2 PMS_START_SUB (PMS_RWATT);
;  814     1124  2
;  815     1125  2 CTL_ACC_GRANTED = 0;
;  816     1126  2
;  817     1127  2 ! Set the appropriate cleanup flags and save the initial state of the
;  818     1128  2 ! protected file characteristics.
;  819     1129  2 !
;  820     1130  2
;  821     1131  2 CHECKSUM (.HEADER);
;  822     1132  2 MARK_DIRTY (.HEADER);
;  823     1133  2 CLEANUP_FLAGS[CLF_FIXFCB] = 1;
;  824     1134  2
;  825     1135  2 SAVE_CHAR = .HEADER[FH1$W_FILECHAR] AND PROTECTED_CHAR;
;  826     1136  2 SAVE_HIBLK = .BBLOCK [HEADER[FH1$W_RECATTR], FAT$[_HIBLK];
;  827     1137  2
;  828     1138  2
;  829     1139  2 ! Scan the buffer packet, picking up each entry. The first byte of the
;  830     1140  2 ! text is the attribute code.
;  831     1141  2 !
;  832     1142  2
;  833     1143  2 INCR I FROM ABD$C_ATTRIB TO .IO_PACKET[IRP$W_BCNT]-1 DO
;  834     1144  3     BEGIN
;  835     1145  3
;  836     1146  3     LOCAL
;  837     1147  3         ACTION          : BYTE,         ! action routine code
;  838     1148  3         P,                              ! pointer to attribute text
;  839     1149  3         COUNT,                          ! attribute size desired
;  840     1150  3         ADDRESS         : REF BBLOCK,   ! address of attribute
;  841     1151  3         CODE,                           ! attribute code
;  842     1152  3         MAX_COUNT,                      ! max size of attribute
;  843     1153  3         ATT_BUFFER      : BBLOCK [20],  ! attribute copy buffer
;  844     1154  3         DATBUF          : VECTOR [13, BYTE]; ! buffer to build date string
;  845     1155  3
;  846     1156  3     P = .ABD[.I, ABD$W_TEXT] + ABD[.I, ABD$W_TEXT];
;  847     1157  3     COUNT = .ABD[.I, ABD$W_COUNT];
;  848     1158  3     CODE = .(.P)<0,8> - 1;
;  849     1159  3     P = .P + 1;
;  850     1160  3
;  851     1161  3 ! Check the attribute code for legality, and then check the requested
;  852     1162  3 ! size against the limit.
;  853     1163  3 !
;  854     1164  3
;  855     1165  3     IF .CODE GTR MAX_CODE - 1
;  856     1166  3         THEN ERR_EXIT (SS$_BADATTRIB);
```

```
;  857          1167  3
;  858          1168  3      MAX_COUNT = .ATC[.CODE, ATC_MAX_SIZE];
;  859          1169  3      IF .COUNT GTR .MAX_COUNT
;  860          1170  3          THEN ERR_EXIT (SS$_BADATTRIB);
;  861          1171  3
;  862          1172  3      IF .ATC[.CODE, ATC_PROTECTED]
;  863          1173  3      THEN
;  864          1174  4          BEGIN
;  865          1175  4          IF NOT .CTL_ACC_GRANTED
;  866          1176  4          THEN
;  867          1177  5              BEGIN
;  868          1178  5              BBLOCK [HEADER[FH1$W_RECATTR], FAT$L_HIBLK] = .SAVE_HIBLK;
;  869          1179  5              CHECK_PROTECT (WRATT_ACCESS, .HEADER, .PRIMARY_FCB);
;  870          1180  5              CTL_ACC_GRANTED = 1;
;  871          1181  5              END;
;  872          1182  4          END;
;  873          1183  3
;  874          1184  3  ! Compute the action routine code.
;  875          1185  3  !
;  876          1186  3
;  877          1187  3      ACTION = .ATC[.CODE, ATC_ACTION];
;  878          1188  3      IF .ATC[.CODE, ATC_READ_ONLY]
;  879          1189  3      THEN ACTION = ACT_NOP;
;  880          1190  3
;  881          1191  3  ! Compute the address of the attribute.
;  882          1192  3  !
;  883          1193  3
;  884          1194  3      ADDRESS =
;  885          1195  4          (
;  886          1196  4          CASE .ATC[.CODE, ATC_LOCATION] FROM 0 TO ATC_LASTATC OF
;  887          1197  4              SET
;  888          1198  4              [ATC_ZERO,
;  889          1199  4               ATC_ACL,
;  890          1200  4               ATC_ACPGBL,
;  891          1201  4               ATC_FID2NAME]:     ATT_BUFFER;
;  892          1202  4              [ATC_FCB]:          .PRIMARY_FCB;
;  893          1203  4              [ATC_HEADER]:       .HEADER;
;  894          1204  4              [ATC_IDENT]:        .HEADER + .HEADER[FH1$B_IDOFFSET]*2;
;  895          1205  4              [ATC_MAP]:          .HEADER + .HEADER[FH1$B_MPOFFSET]*2;
;  896          1206  4              TES
;  897          1207  4          )
;  898          1208  3          + .ATC[.CODE, ATC_OFFSET];
;  899          1209  3
;  900          1210  3
;  901          1211  3  ! Finally execute the action routine.
;  902          1212  3  !
;  903          1213  3
;  904          1214  3      CASE .ACTION FROM 0 TO ACT_LASTACT OF
;  905          1215  3          SET
;  906          1216  3
;  907          1217  3          [ACT_NOP,
;  908          1218  3           ACT_BLOCKSIZE,
;  909          1219  3           ACT_ZERO,
;  910          1220  3           ACT_BLANK,
;  911          1221  3           ACT_ACMODE,
;  912          1222  3           ACT_STATBLK]:  0;
;  913          1223  3
```

```
;  914     1224  3          [ACT_ILLEGAL]:  ERR_EXIT (SS$_BADATTRIB);
;  915     1225  3
;  916     1226  4          [ACT_UIC]:      BEGIN
;  917     1227  4                          IF .COUNT GEQU 4
;  918     1228  4                          THEN
;  919     1229  5                              BEGIN
;  920     1230  5                              (.ADDRESS)<0,8> = ..P;
;  921     1231  5                              (.ADDRESS)<8,8> = .(.P+2);
;  922     1232  5                              IF .(.P+1)<0,8> NEQ 0
;  923     1233  5                              OR .(.P+3)<0,8> NEQ 0
;  924     1234  5                              THEN (.ADDRESS)<0,16> = -1;
;  925     1235  4                              END;
;  926     1236  3                          END;
;  927     1237  3
;  928     1238  4          [ACT_UCHAR]:    BEGIN
;  929     1239  4                          (.ADDRESS)<0,8> = ..P;
;  930     1240  4                          IF .COUNT GEQ 2
;  931     1241  4                          THEN (.ADDRESS)<8,8> = .(.P+1);
;  932     1242  3                          END;
;  933     1243  3
;  934     1244  4          [ACT_ASCNAME]:  BEGIN
;  935     1245  4                          MAKE_NAMEBLOCK (LOCAL_FIB, .COUNT, .P, ATT_BUFFER);
;  936     1246  4                          CH$MOVE (10, ATT_BUFFER[NMB$W_NAME], .ADDRESS);
;  937     1247  3                          END;
;  938     1248  3
;  939     1249  4          [ACT_DATIME]:   BEGIN
;  940     1250  4                          CH$COPY (.COUNT, .P, 0, 8, ATT_BUFFER);
;  941     1251  4                          GET_TIME (DATBUF, ATT_BUFFER);
;  942     1252  4                          COUNT =
;  943     1253  5                              (CASE .CODE FROM ATR$C_CREDATE-1 TO ATR$C_BAKDATE-1 OF
;  944     1254  5                              SET
;  945     1255  5                              [ATR$C_CREDATE-1]:  13;
;  946     1256  5                              [ATR$C_REVDATE-1]:  13;
;  947     1257  5                              [ATR$C_EXPDATE-1]:  7;
;  948     1258  5                              [ATR$C_BAKDATE-1]:  0;
;  949     1259  4                              TES);
;  950     1260  4                          CH$MOVE (.COUNT, DATBUF, .ADDRESS);
;  951     1261  3                          END;
;  952     1262  3
;  953     1263  3          [ACT_COPY]:     CH$MOVE (.COUNT, .P, .ADDRESS);
;  954     1264  3
;  955     1265  4          [ACT_ACL]:      BEGIN
;  956     1266  4                          ACE_POINTER = .P;
;  957     1267  4                          CASE .CODE + 1 FROM ATR$C_ADDACLENT TO ATR$C_READACE OF
;  958     1268  4                          SET
;  959     1269  4                              [ATR$C_ADDACLENT]:  0;
;  960     1270  4                              [ATR$C_DELACLENT,
;  961     1271  4                               ATR$C_MODACLENT,
;  962     1272  4                               ATR$C_DELETEACL,
;  963     1273  4                               ATR$C_FNDACLENT,
;  964     1274  4                               ATR$C_FNDACLTYP,
;  965     1275  4                               ATR$C_READACL,
;  966     1276  5                               ATR$C_READACE]:    BEGIN
;  967     1277  5                                                  CH$FILL (0, .COUNT, .ACE_POINTER);
;  968     1278  5                                                  ACE_POINTER[ACE$W_FLAGS] = SS$_ACLEMPTY;
;  969     1279  4                                                  END;
;  970     1280  5                              [ATR$C_ACLLENGTH]:  BEGIN
```

```
5                                          CH$FILL (0, .COUNT, .ACE_POINTER);
4                                          END;
4
4                     TES;
3                     END;
3
3        TES;
3
2     END;                              ! end of loop
2
2 ! Restore the state of the protected file characteristics bits.
2 !
2
3 HEADER[FH1$W_FILECHAR] = (.HEADER[FH1$W_FILECHAR] AND NOT PROTECTED_CHAR)
2                          OR .SAVE_CHAR;
2 BBLOCK [HEADER[FH1$W_RECATTR], FAT$L_HIBLK] = .SAVE_HIBLK;
2
2 ! Checksum the modified header.
2 !
2
2 CHECKSUM (.HEADER);
2 MARK_DIRTY (.HEADER);
2
2 ! Stop metering of this subfunction
2 !
2
2 PMS_END_SUB ();
2
1 END;                                  ! end of routine WRITE_ATTRIB


                                                        .EXTRN   CLEANUP_FLAGS, CHECK_PROTECT
                                                        .EXTRN   CHECKSUM, MARK_DIRTY
                                                        .EXTRN   MAKE_NAMEBLOCK, GET_TIME

                                     0FFC 00000         .ENTRY   WRITE_ATTRIB, Save R2,R3,R4,R5,R6,R7,R8,R9,-; 1053
                                                                 R10,R11                                      ;
                 5E            34  C2 00002             SUBL2    #52, SP                                      ;
                               09  DD 00005             PUSHL    #9                                           ; 1123
            0000G CF           01  FB 00007             CALLS    #1, PMS_START_SUB                            ;
                      0C  AE   D4     0000C             CLRL     CTL_ACC_GRANTED                              ; 1125
                 52   04  AC   D0     0000F             MOVL     HEADER, R2                                   ; 1131
                               52  DD 00013             PUSHL    R2                                           ;
            0000G CF           01  FB 00015             CALLS    #1, CHECKSUM                                 ;
                               52  DD 0001A             PUSHL    R2                                           ; 1132
            0000G CF           01  FB 0001C             CALLS    #1, MARK_DIRTY                               ;
            0000G CF           02  88 00021             BISB2    #2, CLEANUP_FLAGS                            ; 1133
                 50   0C  A2   3C     00026             MOVZWL   12(R2), R0                                   ; 1135
   08    AE      50 FFFF2F7F  8F  CB 0002A             BICL3    #-53377, R0, SAVE_CHAR                       ;
               04 AE      12  A2  D0 00033             MOVL     18(R2), SAVE_HIBLK                           ; 1136
                 50     0000G CF  D0 00038             MOVL     IO_PACKET, R0                                ; 1143
                 6E       32  A0  3C 0003D             MOVZWL   50(R0), (SP)                                 ;
                 5A           04  D0 00041             MOVL     #4, I                                        ;
                            017D  31 00044             BRW      33$                                          ;
                 50   08 BC4A  7E    00047 1$:         MOVAQ    @ABD[I], R0                                  ; 1156
                 57           60  3C 0004C             MOVZWL   (R0), P                                      ;
```

```
                     57        50  C0 0004F            ADDL2    R0, P                                    ;
                     59   02   A0  3C 00052            MOVZWL   2(R0), COUNT                             ; 1157
                     56        87  9A 00056            MOVZBL   (P)+, CODE                               ; 1158
                               56  D7 00059            DECL     CODE                                     ;
                     2F        56  D1 0005B            CMPL     CODE, #47                                ; 1165
                               0B  14 0005E            BGTR     2$                                       ;
                     FAF1    CF46  7F 00060            PUSHAQ   ATC+4[CODE]                              ; 1168
                     50        9E  3C 00065            MOVZWL   @(SP)+, MAX_COUNT                        ;
                     50        59  D1 00068            CMPL     COUNT, MAX_COUNT                         ; 1169
                               03  15 0006B  2$:       BLEQ     3$                                       ;
                             00A9  31 0006D            BRW      14$                                      ;
                     FADD    CF46  7F 00070  3$:       PUSHAQ   ATC[CODE]                                ; 1172
          1F         9E        01  E1 00075            BBC      #1, @(SP)+, 4$                           ;
                     1B   0C   AE  E8 00079            BLBS     CTL_ACC_GRANTED, 4$                      ; 1175
                     50   04   AC  D0 0007D            MOVL     HEADER, R0                               ; 1178
               12    A0   04   AE  D0 00081            MOVL     SAVE_HIBLK, 18(R0)                       ;
                        0000G  CF  DD 00086            PUSHL    PRIMARY_FCB                              ; 1179
                          04   AC  DD 0008A            PUSHL    HEADER                                   ;
                               05  DD 0008D            PUSHL    #5                                       ;
            0000G    CF        03  FB 0008F            CALLS    #3, CHECK_PROTECT                        ;
               0C    AE        01  D0 00094            MOVL     #1, CTL_ACC_GRANTED                      ; 1180
                     FAB8    CF46  7F 00098  4$:       PUSHAQ   ATC+3[CODE]                              ; 1187
                     52        9E  90 0009D            MOVB     @(SP)+, ACTION                           ;
                     FAAD    CF46  7F 000A0            PUSHAQ   ATC[CODE]                                ; 1188
          02         9E        00  E1 000A5            BBC      #0, @(SP)+, 5$                           ;
                               52  94 000A9            CLRB     ACTION                                   ; 1189
                     FAA3    CF46  7F 000AB  5$:       PUSHAQ   ATC+1[CODE]                              ; 1196
          07         00        9E  8F 000B0            CASEB    @(SP)+, #0, #7                           ;
0023      001D       0016    0010     000B4  6$:       .WORD    7$-6$,-                                  ;
0010      0010       0010    002E     000BC                     8$-6$,-                                  ;
                                                                9$-6$,-                                  ;
                                                                10$-6$,-                                 ;
                                                                11$-6$,-                                 ;
                                                                7$-6$,-                                  ;
                                                                7$-6$,-                                  ;
                                                                7$-6$                                    ;
                     50   20   AE  9E 000C4  7$:       MOVAB    ATT_BUFFER, R0                           ;
                               24  11 000C8            BRB      12$                                      ;
                     50 0000G  CF  D0 000CA  8$:       MOVL     PRIMARY_FCB, R0                          ; 1202
                               1D  11 000CF            BRB      12$                                      ;
                     50   04   AC  D0 000D1  9$:       MOVL     HEADER, R0                               ; 1203
                               17  11 000D5            BRB      12$                                      ;
                     50   04   BC  9A 000D7  10$:      MOVZBL   @HEADER, R0                              ; 1204
                     50   04 BC40  3E 000DB            MOVAW    @HEADER[R0], R0                          ;
                               0C  11 000E0            BRB      12$                                      ;
                     51   04   AC  D0 000E2  11$:      MOVL     HEADER, R1                               ; 1205
                     50   01   A1  9A 000E6            MOVZBL   1(R1), R0                                ;
                     50      6140  3E 000EA            MOVAW    (R1)[R0], R0                             ;
                     FA61    CF46  7F 000EE  12$:      PUSHAQ   ATC+2[CODE]                              ; 1208
                     58        9E  9A 000F3            MOVZBL   @(SP)+, ADDRESS                          ;
                     58        50  C0 000F6            ADDL2    R0, ADDRESS                              ;
          0C         00        52  8F 000F9            CASEB    ACTION, #0, #12                          ; 1214
00C7      0092       001C    00C7     000FD  13$:      .WORD    33$-13$,-                                ;
0061      004A       00C7    00C7     00105                     14$-13$,-                                ;
0098      00C7       003B    001F     0010D                     25$-13$,-                                ;
                             00C7     00115                     33$-13$,-                                ;
                                                                33$-13$,-                                ;
```

```
                                                                        33$-13$,-                        ;
                                                                        18$-13$,-                        ;
                                                                        19$-13$,-                        ;
                                                                        15$-13$,-                        ;
                                                                        17$-13$,-                        ;
                                                                        33$-13$,-                        ;
                                                                        27$-13$,-                        ;
                                                                        33$-13$                          ;
                                      7A  11 00117         BRB          26$                              ;
                                      34  BF 00119 14$:    CHMU         #52                              ; 1224
                                          04 0011B         RET                                           ;
                 04                   59  D1 0011C 15$:    CMPL         COUNT, #4                        ; 1227
                                      72  1F 0011F         BLSSU        26$                              ;
                 68                   67  90 00121         MOVB         (P), (ADDRESS)                   ; 1230
          01     A8          02       A7  90 00124         MOVB         2(P), 1(ADDRESS)                 ; 1231
                             01       A7  95 00129         TSTB         1(P)                             ; 1232
                                      05  12 0012C         BNEQ         16$                              ;
                             03       A7  95 0012E         TSTB         3(P)                             ; 1233
                                      7B  13 00131         BEQL         29$                              ;
                 68                   01  AE 00133 16$:    MNEGW        #1, (ADDRESS)                    ; 1234
                                      76  11 00136         BRB          29$                              ; 1214
                 68                   67  90 00138 17$:    MOVB         (P), (ADDRESS)                   ; 1239
                 02                   59  D1 0013B         CMPL         COUNT, #2                        ; 1240
                                      7C  19 0013E         BLSS         31$                              ;
          01     A8          01       A7  90 00140         MOVB         1(P), 1(ADDRESS)                 ; 1241
                                      7D  11 00145         BRB          33$                              ; 1214
                             20       AE  9F 00147 18$:    PUSHAB       ATT_BUFFER                       ; 1245
                                      57  DD 0014A         PUSHL        P                                ;
                                      59  DD 0014C         PUSHL        COUNT                            ;
                          0000G       CF  9F 0014E         PUSHAB       LOCAL_FIB                        ;
                0000G    CF           04  FB 00152         CALLS        #4, MAKE_NAMEBLOCK               ;
                 68      26   AE      0A  28 00157         MOVC3        #10, ATT_BUFFER+6, (ADDRESS)     ; 1246
                                      66  11 0015C         BRB          33$                              ; 1214
   08            00           67      59  2C 0015E 19$:    MOVC5        COUNT, (P), #0, #8, ATT_BUFFER   ; 1250
                             20       AE     00163                                                       ;
                             20       AE  9F 00165         PUSHAB       ATT_BUFFER                       ; 1251
                             14       AE  9F 00168         PUSHAB       DATBUF                           ;
                0000G    CF           02  FB 0016B         CALLS        #2, GET_TIME                     ;
                 03      10           56  CF 00170         CASEL        CODE, #16, #3                    ; 1253
  0012          000D         0008   0008     00174 20$:    .WORD        21$-20$,-                        ;
                                                                        21$-20$,-                        ;
                                                                        22$-20$,-                        ;
                                                                        23$-20$                          ;
                 59                   0D  D0 0017C 21$:    MOVL         #13, COUNT                       ;
                                      07  11 0017F         BRB          24$                              ;
                 59                   07  D0 00181 22$:    MOVL         #7, COUNT                        ;
                                      02  11 00184         BRB          24$                              ;
                                      59  D4 00186 23$:    CLRL         COUNT                            ;
                 68      10   AE      59  28 00188 24$:    MOVC3        COUNT, DATBUF, (ADDRESS)         ; 1260
                                      35  11 0018D         BRB          33$                              ; 1214
                 68           67      59  28 0018F 25$:    MOVC3        COUNT, (P), (ADDRESS)            ; 1263
                                      2F  11 00193 26$:    BRB          33$                              ;
                              5B      57  D0 00195 27$:    MOVL         P, ACE_POINTER                   ; 1266
                 08           1E      56  CF 00198         CASEL        CODE, #30, #8                    ; 1267
  0014          0014         0014   0028     0019C 28$:    .WORD        33$-28$,-                        ;
  0022          0014         0014   0014     001A4                      30$-28$,-                        ;
                                    0014     001AC                      30$-28$,-                        ;
```

```
                                                                    30$-28$,-                                    ;
                                                                    30$-28$,-                                    ;
                                                                    30$-28$,-                                    ;
                                                                    30$-28$,-                                    ;
                                                                    32$-28$,-                                    ;
                                                                    30$-28$                                      ;
                                          14  11 001AE 29$:   BRB    33$                                         ;
      59          00          6E          00  2C 001B0 30$:   MOVC5  #0, (SP), #0, COUNT, (ACE_POINTER)          ; 1277
                                          6B     001B5                                                           ;
                        02    AB    09D0  8F  B0 001B6        MOVW   #2512, 2(ACE_POINTER)                       ; 1278
                                          06  11 001BC 31$:   BRB    33$                                         ; 1267
      59          00          6E          00  2C 001BE 32$:   MOVC5  #0, (SP), #0, COUNT, (ACE_POINTER)          ; 1281
                                          6B     001C3                                                           ;
                  02          5A          6E  F2 001C4 33$:   AOBLSS (SP), I, 34$                                ; 1143
                                          03  11 001C8        BRB    35$                                         ;
                                        FE7A  31 001CA 34$:   BRW    1$                                          ;
                              52      04  AC  D0 001CD 35$:   MOVL   HEADER, R2                                  ; 1294
                              50      0C  A2  3C 001D1        MOVZWL 12(R2), R0                                  ;
                              50 0000D080 8F  CA 001D5        BICL2  #53376, R0                                  ;
             0C   A2          50      08  AE  A9 001DC        BISW3  SAVE_CHAR, R0, 12(R2)                       ; 1295
                        12    A2      04  AE  D0 001E2        MOVL   SAVE_HIBLK, 18(R2)                          ; 1296
                                          52  DD 001E7        PUSHL  R2                                          ; 1301
                     0000G    CF          01  FB 001E9        CALLS  #1, CHECKSUM                                ;
                                          52  DD 001EE        PUSHL  R2                                          ; 1302
                     0000G    CF          01  FB 001F0        CALLS  #1, MARK_DIRTY                              ;
                     0000G    CF          00  FB 001F5        CALLS  #0, PMS_END_SUB                             ; 1307
                                              04 001FA        RET                                                ; 1309

; Routine Size:  507 bytes,    Routine Base:  $CODE$ + 04AE


; 1000         1310  1
; 1001         1311  1 END
; 1002         1312  0 ELUDOM




;                                    PSECT SUMMARY
;
;      Name                         Bytes                        Attributes
;
;   $CODE$                           1705  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $LOCKEDD1$                        512  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)



;                              Library Statistics
;
;                                              -------- Symbols --------      Pages       Processing
;      File                                    Total    Loaded   Percent      Mapped      Time
;
;   _$255$DUA28:[SYSLIB]LIB.L32;1              18619      103        0        1000        00:02.0
```

```
;                                       COMMAND QUALIFIERS

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

; Size:         1316 code + 901 data bytes
; Run Time:       00:35.1
; Elapsed Time:   01:10.5
; Lines/CPU Min:   2241
; Lexemes/CPU-Min: 19337
; Memory Used:  256 pages
; Compilation Complete
```

REQUEU
LIS

RWATTR
LIS

MODIFY
LIS

SCHFCB
LIS

MAKAEC
LIS

MPWIND
LIS

MAPVBN
LIS

PMS
LIS

RDHEDR
LIS

RWVB
LIS

RETDIR
LIS

RDBLOK
LIS

SMALOC
LIS

MOUNT
LIS

MAKNMB
LIS

MAKSTR
LIS

MXTHDR
LIS