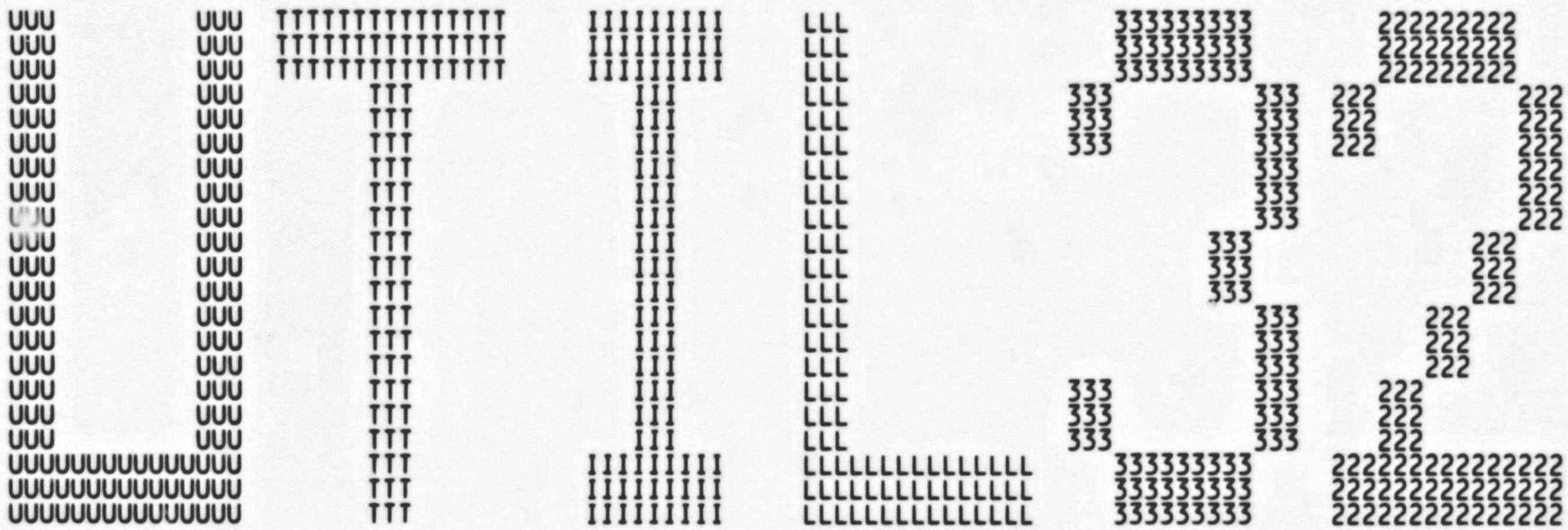
UUU UUU TTTTTTTTTTTTTTT IIIIIIIII LLL 333333333 222222222
UUU UUU TTTTTTTTTTTTTTT IIIIIIIII LLL 333333333 222222222
UUU UUU TTTTTTTTTTTTTTT IIIIIIIII LLL 333333333 222222222
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UUUUUUUUUUUUUUU TTT IIIIIIIII LLLLLLLLLLLLLLL 333333333 222222222222222
UUUUUUUUUUUUUUU TTT IIIIIIIII LLLLLLLLLLLLLLL 333333333 222222222222222
UUUUUUUUUUUUUUU TTT IIIIIIIII LLLLLLLLLLLLLLL 333333333 222222222222222

```
  SSSSSSSS  EEEEEEEEEE    AAAAAA    RRRRRRRR      CCCCCCCC  HH      HH
  SSSSSSSS  EEEEEEEEEE    AAAAAA    RRRRRRRR      CCCCCCCC  HH      HH
SS          EE          AA      AA  RR      RR  CC          HH      HH
SS          EE          AA      AA  RR      RR  CC          HH      HH
SS          EE          AA      AA  RR      RR  CC          HH      HH
SS          EE          AA      AA  RR      RR  CC          HH      HH
  SSSSSS    EEEEEEEE    AA      AA  RRRRRRRR    CC          HHHHHHHHHH
  SSSSSS    EEEEEEEE    AA      AA  RRRRRRRR    CC          HHHHHHHHHH
        SS  EE          AAAAAAAAAA  RR  RR      CC          HH      HH
        SS  EE          AAAAAAAAAA  RR  RR      CC          HH      HH
        SS  EE          AA      AA  RR    RR    CC          HH      HH      ....
        SS  EE          AA      AA  RR    RR    CC          HH      HH      ....
SSSSSSSS    EEEEEEEEEE  AA      AA  RR      RR    CCCCCCCC  HH      HH      ....
SSSSSSSS    EEEEEEEEEE  AA      AA  RR      RR    CCCCCCCC  HH      HH      ....

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 search (                ! Search file(s) for a string utility
;     2          0002  0                                 IDENT = 'V04-000',
;     3          0003  0                                 MAIN = main
;     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.                *
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;    18          0018  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
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;    22          0022  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT  *
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;    24          0024  1 !*                                                                        *
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;    26          0026  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                *
;    27          0027  1 !*                                                                        *
;    28          0028  1 !*                                                                        *
;    29          0029  1 !**************************************************************************
;    30          0030  1
;    31          0031  1 !++
;    32          0032  1 ! FACILITY:  SEARCH
;    33          0033  1 !
;    34          0034  1 ! ABSTRACT:
;    35          0035  1 !
;    36          0036  1 !       This utility program searchs a file or files for a specified
;    37          0037  1 !       string and lists all occurrences.
;    38          0038  1 !
;    39          0039  1 ! ENVIRONMENT:
;    40          0040  1 !
;    41          0041  1 !       VAX/VMS operating system, unprivileged user mode utility,
;    42          0042  1 !       operates at non-AST level.
;    43          0043  1 !
;    44          0044  1 ! AUTHOR:  Len Kawell,  CREATION DATE:  22 Dec 1978
;    45          0045  1 !
;    46          0046  1 ! Modified by:
;    47          0047  1 !
;    48          0048  1 !       V03-004 CWH3004         CW Hobbs                9-Aug-1984
;    49          0049  1 !               Change output formatting routines to support eight-
;    50          0050  1 !               bit characters.
;    51          0051  1 !
;    52          0052  1 !       V03-003 AEW0001         Anne E. Warner          1-May-1984
;    53          0053  1 !               Add support for search lists.
;    54          0054  1 !                 - remove related name block from RMS definitions.
;    55          0055  1 !                 - add argument SCAN_CONTEXT to LIB$FILE_SCAN for
;    56          0056  1 !                   sticky search lists.
;    57          0057  1 !
```

```
;    58          0058  1 !       V03-002 CWH0015         CW Hobbs                8-Sep-1982
;    59          0059  1 !               Enable /STATISTICS
;    60          0060  1 !
;    61          0061  1 !       V03-001 CWH0014         CW Hobbs                22-Mar-1982
;    62          0062  1 !               Change WRITEERR to SEVERE so that only one message is
;    63          0063  1 !               printed when unable to write the output.
;    64          0064  1 !
;    65          0065  1 !       V02-013 CWH0013         CW Hobbs                20-Feb-1982
;    66          0066  1 !               Add nambufs for output file so that the file name is
;    67          0067  1 !               available for error messages.  Change output segmenting
;    68          0068  1 !               to avoid record too big errors.
;    69          0069  1 !
;    70          0070  1 !       V02-012 CWH0012         CW Hobbs                2-Feb-1982
;    71          0071  1 !               Use LIB$FILE_SCAN instead of $PARSE and $SEARCH to
;    72          0072  1 !               perform like other DCL commands.
;    73          0073  1 !
;    74          0074  1 !       V02-011 CWH0009         CW Hobbs                25-Jan-1982
;    75          0075  1 !               Make error messages for insufficient virtual memory
;    76          0076  1 !               more meaningful.
;    77          0077  1 !
;    78          0078  1 !       V02-010 CWH0008         CW Hobbs                18-Jan-1982
;    79          0079  1 !               Use shared messages where possible, add WRITEERR message.
;    80          0080  1 !
;    81          0081  1 !       V02-009 CWH0007         CW Hobbs                14-Dec-1981
;    82          0082  1 !               Fix loop if no directory in resultant string for EXCLUDE.
;    83          0083  1 !
;    84          0084  1 !       V02-008 CWH0006         CW Hobbs                13-Dec-1981
;    85          0085  1 !               Remove dummy routine.  Do $TRNLOG on /EXCLUDE file
;    86          0086  1 !               names.  Correct problem with /WINDOW=0.  Remove
;    87          0087  1 !               some code for testing.
;    88          0088  1 !
;    89          0089  1 !       V02-007 CWH0004         CW Hobbs                30-Nov-1981
;    90          0090  1 !               Speedups, make /STATISTICS a conditional assembly
;    91          0091  1 !               option.  Restructure for expression matches.
;    92          0092  1 !
;    93          0093  1 !       V02-006 CWH0002         CW Hobbs                28-Oct-1981
;    94          0094  1 !                 Change FOR$CNV_IN_I to OTS$CVT_TI_L entry.  Add more
;    95          0095  1 !               error codes.  Remove MBC from input FAB, use process
;    96          0096  1 !               defaults.  Remove filename header from between windows and
;    97          0097  1 !               change window separator to '********'.  Put output record in
;    98          0098  1 !               several segments if longer than mrs of output file, also
;    99          0099  1 !               check status of rms_put operation.
;   100          0100  1 !                 Make search-string input parameter a list, move match
;   101          0101  1 !               check to separate routine, add /MATCH qualifier to
;   102          0102  1 !               set sense of match.
;   103          0103  1 !                 Redo windowing.  Save vector of RFA's rather than records.
;   104          0104  1 !               Use locate mode exclusively, set SQO only if no prev recs.
;   105          0105  1 !               Replace /ADDITIONAL and /PREVIOUS with /WINDOW qualifier.
;   106          0106  1 !               Print filename only if /WINDOW=0 is specified.
;   107          0107  1 !                 Improve error messages, especially I/O error signalling.
;   108          0108  1 !               Change truncate error to one per file, not one per record.
;   109          0109  1 !                 Other new qualifiers:
;   110          0110  1 !                       /EXACT      - use exact case matches
;   111          0111  1 !                       /EXCLUDE    - omit list of files from search
;   112          0112  1 !                       /FORMAT     - convert control chars unless disabled
;   113          0113  1 !                       /HEADING    - give control of printing of heading
;   114          0114  1 !                       /LOG        - signal filenames searched
```

```
;  115          0115  1 ;                    /NUMBERS    - print source line #'s
;  116          0116  1 ;                    /REMAINING  - print from match to EOF
;  117          0117  1 ;                    /STATISTICS - print some access information
;  118          0118  1 ;
;  119          0119  1 ;       V02-005 CWH0001         CW Hobbs                24-Aug-1981
;  120          0120  1 ;               Define external routines as general addressing mode.
;  121          0121  1 ;               Display the filespec header whenever a list of
;  122          0122  1 ;               input filenames is given.
;  123          0123  1 ;
;  124          0124  1 ;       V004    TMH0004         Tim Halvorsen           29-Jun-1981
;  125          0125  1 ;               Increase size of input buffer.  Open input file for
;  126          0126  1 ;               shared read/write access.  Do not display the filespec
;  127          0127  1 ;               header if non-wild search.
;  128          0128  1 ;
;  129          0129  1 ;       V02-003 CNH0032         Chris Hume              16-Apr-1980
;  130          0130  1 ;               Added windowing and (new) CLI callback.
;  131          0131  1 ;
;  132          0132  1 ;       V02-002                 Len Kawell              14-Mar-1980
;  133          0133  1 ;               General cleanup, fixups, and added command line parameters.
;  134          0134  1 ;
;  135          0135  1 ;       V02-001                 B.L. Schreiber          18-May-1979
;  136          0136  1 ;               Add LIB$SIGNAL to external routines.
;  137          0137  1 ;
;  138          0138  1 ;--
```

```
;  140          0139  1 !
;  141          0140  1 ! Include files
;  142          0141  1 !
;  143          0142  1 LIBRARY
;  144          0143  1     'SYS$LIBRARY:STARLET';                  ! VAX/VMS common definitions
;  145          0144  1
;  146          0145  1 !
;  147          0146  1 ! Define the compile-time switches used for conditional assemblies
;  148          0147  1 !
;  149          0148  1 LITERAL
;  150          0149  1     switch_statistics   = 1;                ! Include the /STATISTICS code
;  151          0150  1 !
;  152          0151  1 ! Structure declarations
;  153          0152  1 !
;  154          0153  1 STRUCTURE
;  155          0154  1
;  156          0155  1         bblockvector [I, O, P, S, E; N, BS] =
;  157          0156  1                 [N*BS]
;  158          0157  1                 ((bblockvector+I*BS)+O)<P,S,E>;
;  159          0158  1 !
;  160          0159  1 ! Macros
;  161          0160  1 !
;  162          0161  1 MACRO
;  163          0162  1
;  164          0163  1     dsc_long1 = 0,0,32,0 %,                 ! First longword of descriptor
;  165          0164  1     dsc_dynam = dsc$k_class_d^24 OR dsc$k_dtype_t^16 %,  ! dynamic desc
;  166          0165  1
;  167          0166  1     ! Define shorthand for a single initialized dynamic string desc
;  168          0167  1     !
;  169        M 0168  1     dyn_str_desc = BLOCK [dsc$k_d_bln,BYTE]
;  170        M 0169  1                    PRESET( [dsc$b_class] = dsc$k_class_d,
;  171          0170  1                            [dsc$b_dtype] = dsc$k_dtype_t) %,
;  172          0171  1
;  173          0172  1     ! Define macro for a single initialized static string desc.
;  174          0173  1     !
;  175        M 0174  1     stat_str_desc (L, A) = BLOCK [dsc$k_s_bln,BYTE]
;  176        M 0175  1                    PRESET( [dsc$b_class]   = dsc$k_class_s,
;  177        M 0176  1                            [dsc$b_dtype]   = dsc$k_dtype_t,
;  178        M 0177  1                            [dsc$w_length]  = (L),
;  179          0178  1                            [dsc$a_pointer] = (A) ) %,
;  180          0179  1
;  181          0180  1     ! Define different psects for initialized and demand-zero storage.
;  182          0181  1     !
;  183          0182  1     OWN_CRF     = PSECT OWN    = $OWN$_CRF     (WRITE); OWN    %,
;  184          0183  1     OWN_DZRO    = PSECT OWN    = $OWN$_DZRO    (WRITE); OWN    %;
;  185          0184  1 !
;  186          0185  1 ! Define special linkages for very frequently called routines
;  187          0186  1 !
;  188          0187  1 LINKAGE
;  189          0188  1     JSB_FORACTDUM = JSB (REGISTER=2,REGISTER=3,REGISTER=0)
;  190          0189  1                         : NOPRESERVE(2,3,4,5)   PRESERVE(6,7,8,9)  NOTUSED(10,11),
;  191          0190  1     JSB_FORACTTEX = JSB (REGISTER=4,REGISTER=5,REGISTER=2)
;  192          0191  1                         : NOPRESERVE(2,3,4,5)   PRESERVE(6,7,8,9)  NOTUSED(10,11),
;  193          0192  1     JSB_FORPUT    = JSB (REGISTER=2,REGISTER=3,REGISTER=4)
;  194          0193  1                         : NOPRESERVE(2,3,4)   PRESERVE(5,6,7,8,9)  NOTUSED(10,11),
;  195          0194  1     JSB_GETNEXREC = JSB (REGISTER=3,REGISTER=4)
;  196          0195  1                         : NOPRESERVE(2)          NOTUSED(5,6,7,8,9,10,11),
```

```
;  197     0196  1     JSB_PUTOUT    = JSB (REGISTER=2,REGISTER=3)
;  198     0197  1                     : NOPRESERVE(2,3)          NOTUSED(6,7,8,9,10,11),
;  199     0198  1     JSB_STDMAT    = JSB (REGISTER=4,REGISTER=5)
;  200     0199  1                     : NOPRESERVE(2,3)          NOTUSED(9,10,11),
;  201     0200  1     JSB_UPCASE    = JSB (REGISTER=1, REGISTER=2, REGISTER=3)
;  202     0201  1                     : NOPRESERVE(2,3)          NOTUSED(4,5,6,7,8,9,10,11);
;  203     0202  1 !
;  204     0203  1 ! Table of contents
;  205     0204  1 !
;  206     0205  1 FORWARD ROUTINE
;  207     0206  1     main,                                      ! Main entry
;  208     0207  1     scan_success          : NOVALUE,           ! Action routine for file found
;  209     0208  1     scan_failure          : NOVALUE,           !    "       "      "  file error
;  210     0209  1     exclude_file,                              ! Check exclude list
;  211     0210  1     validate_exclude_file : NOVALUE,           ! Verify that filename is OK
;  212     0211  1     locate_filename,                           ! Find filename field in name
;  213     0212  1     locate_version,                            ! Find version in filename
;  214     0213  1     match_file,                                ! Compare filename strings
;  215     0214  1     search_one_file       : NOVALUE,           ! Open and search a file
;  216     0215  1     get_next_record       : JSB_GETNEXREC,     ! Read a record from the file
;  217     0216  1     advance_window        : NOVALUE,           ! Scroll the viewing window
;  218     0217  1     std_search_file       : NOVALUE,           ! Standard string matches
;  219     0218  1     std_match             : JSB_STDMAT,        ! See if search string present
;  220     0219  1     file_error,                                ! Signal file I/O error
;  221     0220  1     upcase                : NOVALUE JSB_UPCASE,! Convert string to uppercase
;  222     0221  1     format_n_put          : NOVALUE JSB_FORPUT,! Format and put to output
;  223     0222  1     format_action_text    : JSB_FORACTTEX,     ! /FORMAT=TEXT routine
;  224     0223  1     format_action_dump    : JSB_FORACTDUM,     ! /FORMAT=DUMP & NONULLS
;  225     0224  1     srh$put_output        : NOVALUE JSB_PUTOUT;! Put record to output file
;  226     0225  1
;  227     0226  1 !
;  228     0227  1 ! External references
;  229     0228  1 !
;  230     0229  1 EXTERNAL ROUTINE
;  231     0230  1     lib$file_scan : addressing_mode(general),  ! Wildcard file searches
;  232     0231  1     lib$lookup_key: addressing_mode(general),  ! Keyword table lookup
;  233     0232  1     lib$put_output: addressing_mode(general),  ! Put stat to sys$output
;  234     0233  1     cli$get_value : addressing_mode(general),  ! Get qualifier value
;  235     0234  1     cli$present   : addressing_mode(general),  ! Get qualifier presence
;  236     0235  1     ots$cvt_ti_l  : addressing_mode(general),  ! ASCII decimal to longword
;  237     0236  1     str$get1_dx   : addressing_mode(general),  ! Allocate Dynamic String
;  238     0237  1     str$copy_dx   : addressing_mode(general),  ! Copy any class string
;  239     0238  1     lib$get_vm    : addressing_mode(general);  ! Gets memory
;  240     0239  1
;  241     0240  1 !
;  242     0241  1 ! Equated symbols
;  243     0242  1 !
;  244     0243  1 LITERAL
;  245     0244  1     true                  = 1,                 ! Routine value of TRUE
;  246     0245  1     false                 = 0,                 ! Routine value of FALSE
;  247     0246  1     max_infiles           = 136,               ! Max files in SOURCE list
;  248     0247  1     max_srhstr            = 136,               ! Max strings in STRING list
;  249     0248  1     max_exclude           = 136,               ! Max files in EXCLUDE list
;  250     0249  1     io_buff_sz            = 2048,              ! Input buffer size
;  251     0250  1     form_text             = 0,                 ! Default format
;  252     0251  1     form_passall          = 1,                 ! Pass all characters
;  253     0252  1     form_dump             = 2,                 ! Reformat, flag 8 bit chars
```

```
;  254          0253  1      form_nonulls        = 3;                    ! Like DUMP, but no nulls
;  255          0254  1
;  256          0255  1  EXTERNAL LITERAL                                ! Facility-specific message definitions
;  257          0256  1      srh$_badexcl,
;  258          0257  1      srh$_badexclnam,
;  259          0258  1      srh$_badform,
;  260          0259  1      srh$_badmatch,
;  261          0260  1      srh$_matched,
;  262          0261  1      srh$_nomatch,
;  263          0262  1      srh$_nofile,
;  264          0263  1      srh$_nomatches,
;  265          0264  1      srh$_nostring,
;  266          0265  1      srh$_nullfile,
;  267          0266  1      srh$_rfaerr,
;  268          0267  1      srh$_truncate,
;  269          0268  1      srh$_wdw_maxprev,
;  270          0269  1      srh$_wdw_maxprm;
;  271          0270  1
;  272          0271  1                                                  ! Shared message definitions
;  273        P 0272  1  $SHR_MSGDEF
;  274        P 0273  1      (srh, 215, local,
;  275        P 0274  1          (badlogic, error),
;  276        P 0275  1          (badvalue, error),
;  277        P 0276  1          (insvirmem, error),
;  278        P 0277  1          (openin, warning),
;  279        P 0278  1          (openout, error),
;  280        P 0279  1          (readerr, warning),
;  281          0280  1          (writeerr, severe));
;  282          0281  1
;  283          0282  1
;  284          0283  1  !
;  285          0284  1  ! OWN storage, initialized and demand-zero variables are defined
;  286          0285  1  ! in separate groups so that the linker will give us a demand-zero
;  287          0286  1  ! section rather than storing a bunch of zeroes in the image file
;  288          0287  1  !
;  289          0288  1  OWN_DZRO
;  290          0289  1      exp_name    : VECTOR [nam$c_maxrss, BYTE],  ! RMS expanded name buffer
;  291          0290  1      res_name    : VECTOR [nam$c_maxrss, BYTE],  ! RMS result name buffer
;  292          0291  1      out_exp_nam : VECTOR [nam$c_maxrss, BYTE],  ! RMS expanded name buffer
;  293          0292  1      out_res_nam : VECTOR [nam$c_maxrss, BYTE];  ! RMS result name buffer
;  294          0293  1
;  295          0294  1  OWN_CRF
;  296          0295  1      string_desc : dyn_str_desc,                 ! Input search string desc
;  297          0296  1      mod_desc    : dyn_str_desc,                 ! Modifier string descriptor
;  298          0297  1      tmp_desc    : stat_str_desc(0, 0),          ! Kosher desc for misc fcns
;  299          0298  1
;  300        P 0299  1      nam_block   : $NAM (                        ! File name block
;  301        P 0300  1                           RSA = res_name,        !  Result name addr
;  302        P 0301  1                           RSS = nam$c_maxrss,    !  Result name size
;  303        P 0302  1                           ESA = exp_name,        !  Expanded name addr
;  304          0303  1                           ESS = nam$c_maxrss),   !  Expanded name size
;  305        P 0304  1      fab         : $FAB(                         ! Input file FAB
;  306        P 0305  1                           FOP = NAM,             !  Open by name block
;  307        P 0306  1                           SHR = (GET,PUT,UPI),   !  Allow other readers/writers
;  308        P 0307  1                           DNA = UPLIT BYTE('*.*'),!  Default file spec.
;  309        P 0308  1                           DNS = 3,               !   (DNM doesn't like *'s)
;  310          0309  1                           NAM = nam_block),      !  Name block
```

```
;   311          P 0310  1      rab          : $RAB(                          ! Input file RAB
;   312          P 0311  1                        MBF = 3,                   !  Multi-buffer count
;   313          P 0312  1                        RAC = SEQ,                 !  Will also use RFA as needed
;   314          P 0313  1                        ROP = (RAH,LOC),           !  Read-ahead, locate mode
;   315          P 0314  1                        USZ = io_buff_sz,          !  User buffer size
;   316            0315  1                        FAB = fab),                !  FAB addr
;   317          P 0316  1      out_nam_blk  : $NAM (                        ! File name block
;   318          P 0317  1                        RSA = out_res_nam,         !  Result name addr
;   319          P 0318  1                        RSS = nam$c_maxrss,        !  Result name size
;   320          P 0319  1                        ESA = out_exp_nam,         !  Expanded name addr
;   321            0320  1                        ESS = nam$c_maxrss),       !  Expanded name size
;   322          P 0321  1      outfab       : $FAB(                          ! Output file FAB
;   323          P 0322  1                        RAT = CR,                  !  Record attributes
;   324          P 0323  1                        DNA = UPLIT BYTE('SEARCH.LIS'), !  Default file spec.
;   325          P 0324  1                        DNS = 10,
;   326            0325  1                        NAM = out_nam_blk),        !  Name block
;   327          P 0326  1      outrab       : $RAB(                          ! Output file RAB
;   328          P 0327  1                        ROP = WBH,                 !  Write-behind
;   329            0328  1                        FAB = outfab),             !  FAB addr
;   330            0329  1      !
;   331            0330  1      ! Build a keyword table for the FORMAT qualifier
;   332            0331  1      !
;   333            0332  1      format_keytbl        : VECTOR [9, LONG] PRESET (
;   334            0333  1                     [0] = 8,                                ! Entries + values
;   335            0334  1                     [1] = UPLIT BYTE (%ASCIC 'TEXT'),       ! String for TEXT
;   336            0335  1                     [2] = form_text,                        ! Value for TEXT
;   337            0336  1                     [3] = UPLIT BYTE (%ASCIC 'PASSALL'),    ! String
;   338            0337  1                     [4] = form_passall,                     ! Value
;   339            0338  1                     [5] = UPLIT BYTE (%ASCIC 'DUMP'),       ! String
;   340            0339  1                     [6] = form_dump,                        ! Value
;   341            0340  1                     [7] = UPLIT BYTE (%ASCIC 'NONULLS'),    ! String
;   342            0341  1                     [8] = form_nonulls),                    ! Value
;   343            0342  1      !
;   344            0343  1      ! Build a keyword table for the MATCH qualifier
;   345            0344  1      !
;   346            0345  1      match_keytbl         : VECTOR [9, LONG] PRESET (
;   347            0346  1                     [0] = 8,                                ! Entries + values
;   348            0347  1                     [1] = UPLIT BYTE (%ASCIC 'OR'),         ! String for OR
;   349            0348  1                     [2] = 0,                                ! Value for OR
;   350            0349  1                     [3] = UPLIT BYTE (%ASCIC 'NOR'),        ! String
;   351            0350  1                     [4] = 1,                                ! Value
;   352            0351  1                     [5] = UPLIT BYTE (%ASCIC 'AND'),        ! String
;   353            0352  1                     [6] = 2,                                ! Value
;   354            0353  1                     [7] = UPLIT BYTE (%ASCIC 'NAND'),       ! String
;   355            0354  1                     [8] = 3);                               ! Value
;   356            0355  1
;   357            0356  1  !
;   358            0357  1  ! Now define all the non-initialized variables
;   359            0358  1  !
;   360            0359  1  OWN_DZRO
;   361            0360  1      wdw_pre_recs,                  ! Previous records requested
;   362            0361  1      wdw_sub_recs,                  ! Subsequent records requested
;   363            0362  1      wdw_pre_cntr,                  ! Previous records available
;   364            0363  1      wdw_sub_cntr,                  ! Subsequent records to list
;   365            0364  1      wdw_pre_buff,                  ! Current io_buff index
;   366            0365  1      cnt_infile,                    ! Actual # of input files
;   367            0366  1      cnt_srhstr,                    ! Actual # of search strings
```

```
;  368          0367  1      cnt_exclude,                                ! Actual # of exclude files
;  369          0368  1      max_rec        : VOLATILE,                  ! Actual output max rec size
;  370          0369  1      format,                                     ! Code for output format
;  371          0370  1      fil_totmat,                                 ! Total matches in one file
;  372          0371  1      fil_linenum,                                ! Total lines in one file
;  373          0372  1      out_file_open : BYTE,                       ! An output file is open
;  374          0373  1      out_printing  : BYTE,                       ! Matched records to output
;  375          0374  1      wdw_previous  : BYTE,                       ! RFA windowing active
;  376          0375  1      wdw_zero     : BYTE,                        ! We have /WINDOW=0
;  377          0376  1      wdw_frame    : BYTE,                        ! Frame discontiguous windows
;  378          0377  1      wdw_ovfl     : BYTE,                        ! Window discontiguity flag
;  379          0378  1      qua_exact    : BYTE,                        ! Exact case match flag
;  380          0379  1      qua_log      : BYTE,                        ! Log filenames searched
;  381          0380  1      qua_numbers  : BYTE,                        ! Output line number
;  382          0381  1      qua_heading  : BYTE,                        ! Display names of files
;  383          0382  1      new_file     : BYTE,                        ! Just opened a new file
;  384          0383  1      found_file   : BYTE,                        ! Found at least one file flag
;  385          0384  1      found_any    : BYTE,                        ! Any matches found boolean
;  386          0385  1      fil_found    : BYTE,                        ! Match found in this file
;  387          0386  1      mat_and      : BYTE,                        ! Match is AND if true, OR if false
;  388          0387  1      mat_negate   : BYTE,                        ! Turns above to NAND and NOR
;  389          0388  1
;  390          0389  1      rfa_vec      : REF bblockvector [,rab$s_rfa],! RFA's for previous records
;  391          0390  1
;  392          0391  1      output_buff : REF VECTOR [,BYTE],           ! For reformatting
;  393          0392  1
;  394          0393  1      infile_desc :                               ! Array of input filenames
;  395          0394  1                   bblockvector [max_infiles, dsc$k_d_bln],
;  396          0395  1      srhstr_desc :                               ! Array of search strings
;  397          0396  1                   bblockvector [max_srhstr,  dsc$k_d_bln],
;  398          0397  1      exclude_desc :                              ! Array of exclude filenames
;  399          0398  1                   bblockvector [max_exclude, dsc$k_d_bln];
;  400          0399  1
;  401        L 0400  1  %IF switch_statistics
;  402          0401  1  %THEN
;  403          0402  1      OWN_DZRO
;  404          0403  1          !
;  405          0404  1          ! define the block for the GETJPI for statistics
;  406          0405  1          !
;  407          0406  1          qua_statistics,                 ! Give statistics
;  408          0407  1          stat_totchr,                        ! Total characters in all files
;  409          0408  1          stat_totrec,                        ! Total records in all files
;  410          0409  1          stat_totfil,                        ! Total files searched
;  411          0410  1          stat_totmat,                        ! Total matches found
;  412          0411  1          stat_totput,                        ! Total records put to output
;  413          0412  1          stat_jpi_bufio,                     ! $GETJPI deposits them here
;  414          0413  1          stat_jpi_cputim,
;  415          0414  1          stat_jpi_dirio,
;  416          0415  1          stat_jpi_pagefIts,
;  417          0416  1          stat_bufio,                         ! Saved from startup getjpi
;  418          0417  1          stat_cputim,
;  419          0418  1          stat_dirio,
;  420          0419  1          stat_pagefIts,
;  421          0420  1          stat_starttime : VECTOR [2, LONG];
;  422          0421  1
;  423          0422  1      OWN_CRF
;  424          0423  1          stat_jpi_block : VECTOR [13, LONG] INITIAL (
```

```
;  425          0424  1                          (JPI$_BUFIO^16 OR 4),   stat_jpi_bufio, 0,
;  426          0425  1                          (JPI$_CPUTIM^16 OR 4),  stat_jpi_cputim, 0,
;  427          0426  1                          (JPI$_DIRIO^16 OR 4),   stat_jpi_dirio, 0,
;  428          0427  1                          (JPI$_PAGEFLTS^16 OR 4),stat_jpi_pagefIts, 0,
;  429          0428  1                          0);
;  430          0429  1  %FI ! switch_statistics
;  431          0430  1
;  432          0431  1  BIND
;  433          0432  1      stars_30 = UPLIT BYTE ('********************************'),
;  434          0433  1      null_str = %ASCID '';                          ! The null string
```

```
;  436     0434  1 ROUTINE main =
;  437     0435  1
;  438     0436  1 !++
;  439     0437  1 ! Functional description
;  440     0438  1 !
;  441     0439  1 !       This routine is the transfer point and central loop for the
;  442     0440  1 !       utility.  It retrieves filename(s), search string(s) and qualifiers
;  443     0441  1 !       from DCL, and looks up the files and calls the search routines.
;  444     0442  1 !
;  445     0443  1 ! Calling sequence
;  446     0444  1 !
;  447     0445  1 !       main ()
;  448     0446  1 !
;  449     0447  1 ! Input parameters
;  450     0448  1 !
;  451     0449  1 !       none
;  452     0450  1 !
;  453     0451  1 ! Routine value
;  454     0452  1 !
;  455     0453  1 !       Most severe error encountered during processing or SS$_NORMAL
;  456     0454  1 !
;  457     0455  1 !--
;  458     0456  2 BEGIN
;  459     0457  2
;  460     0458  2 LOCAL
;  461     0459  2     !
;  462     0460  2     ! Obtain memory for the input buffer and the output buffer
;  463     0461  2     ! Worst case size of output buffer is 6*input + 8 (when full
;  464     0462  2     ! length input is all -1's, /FORM=DUMP/NUMBERS)
;  465     0463  2     !
;  466     0464  2     out_buffer  : BLOCK [io_buff_sz*6+8, BYTE], ! For reformatting
;  467     0465  2     inp_buffer  : BLOCK [io_buff_sz, BYTE];     ! Input buffer
;  468     0466  2
;  469     0467  2 LOCAL
;  470     0468  2     wdw_1,                          ! Flag that first window parm
;  471     0469  2     wdw_2,                          ! Flag that 2 window parameters
;  472     0470  2     window_1,                       ! Value of window parm 1
;  473     0471  2     window_2,                       ! Value of window parm 2
;  474     0472  2     status,                         ! Error status
;  475     0473  2     keyval,                         ! Will receive keyword value
;  476     0474  2     scan_context;                   ! Sticky context argument for LIB$FILE_SCAN
;  477     0475  2
;  478     0476  2 BIND
;  479     0477  2     window_str = %ASCID 'WINDOW',               ! Qualifier keywords
;  480     0478  2     string_str = %ASCID 'STRING',
;  481     0479  2     source_str = %ASCID 'SOURCE';
;  482     0480  2
;  483     0481  2 !
;  484     0482  2 ! Get initial run statistics
;  485     0483  2 !
;  486   L 0484  2 %IF switch_statistics
;  487     0485  2 %THEN
;  488     0486  2     IF qua_statistics = cli$present(%ASCID 'STATISTICS')
;  489     0487  2     THEN
;  490     0488  3         BEGIN
;  491     0489  3
;  492     0490  4         IF NOT (status = $GETJPI (ITMLST=stat_jpi_block))
```

```
;  493     0491  3          THEN
;  494     0492  3              RETURN .status;
;  495     0493  3          IF NOT (status = $GETTIM (TIMADR=stat_starttime))
;  496     0494  3          THEN
;  497     0495  3              RETURN .status;
;  498     0496  3
;  499     0497  3          stat_bufio    = .stat_jpi_bufio;        ! copy from the JPI return variables
;  500     0498  3          stat_cputim   = .stat_jpi_cputim;
;  501     0499  3          stat_dirio    = .stat_jpi_dirio;
;  502     0500  3          stat_pageflts = .stat_jpi_pageflts;
;  503     0501  3          END;
;  504     0502  2      %FI
;  505     0503  2      !
;  506     0504  2      ! Set some pointers to the local data for this procedure
;  507     0505  2      !
;  508     0506  2
;  509     0507  2      rab [rab$l_ubf] = inp_buffer;                 ! Address of user buffer
;  510     0508  2      output_buff = out_buffer;                     ! Buffer for reformatting
;  511     0509  2
;  512     0510  2      !
;  513     0511  2      ! Get the simple qualifiers
;  514     0512  2      !
;  515     0513  2      qua_exact      = cli$present(%ASCID 'EXACT');   ! Want lower case matches?
;  516     0514  2      qua_log        = cli$present(%ASCID 'LOG');     ! Show filenames?
;  517     0515  2      qua_numbers    = cli$present(%ASCID 'NUMBERS'); ! Want line numbers?
;  518     0516  2      qua_heading    = cli$present(%ASCID 'HEADING'); ! Print file headings?
;  519     0517  2
;  520     0518  2      !
;  521     0519  2      ! Get the window size parameters
;  522     0520  2      !
;  523     0521  2      IF wdw_1 = cli$get_value(window_str, mod_desc)
;  524     0522  2      THEN
;  525     0523  3          BEGIN
;  526     0524  3          IF NOT ots$cvt_ti_l(mod_desc,window_1)
;  527     0525  3          THEN
;  528     0526  4              BEGIN
;  529     0527  4              SIGNAL (srh$_badvalue, 1, mod_desc);
;  530     0528  4              RETURN (srh$_badvalue OR %X'10000000');  ! Inhibit DCL PUTMSG
;  531     0529  3              END;
;  532     0530  3          IF .window_1 LSS 0                ! BLISS will optimize these together
;  533     0531  3          THEN
;  534     0532  4              BEGIN
;  535     0533  4              SIGNAL (srh$_badvalue, 1, mod_desc);
;  536     0534  4              RETURN (srh$_badvalue OR %X'10000000');
;  537     0535  3              END;
;  538     0536  2          END;
;  539     0537  2
;  540     0538  2      ! Try to get the second window parameter
;  541     0539  2      !
;  542     0540  2      IF wdw_2 = cli$get_value(window_str, mod_desc)
;  543     0541  2      THEN
;  544     0542  3          BEGIN
;  545     0543  3          IF NOT ots$cvt_ti_l(mod_desc, window_2)
;  546     0544  3          THEN
;  547     0545  4              BEGIN
;  548     0546  4              SIGNAL (srh$_badvalue, 1, mod_desc);
;  549     0547  4              RETURN (srh$_badvalue OR %X'10000000');
```

```
;  550     0548  3          END;
;  551     0549  3      IF .window_2 LSS 0              ! BLISS will optimize these together
;  552     0550  3      THEN
;  553     0551  4          BEGIN
;  554     0552  4          SIGNAL (srh$_badvalue, 1, mod_desc);
;  555     0553  4          RETURN (srh$_badvalue OR %X'10000000');
;  556     0554  3          END;
;  557     0555  2      END;
;  558     0556  2
;  559     0557  2 IF cli$get_value(window_str, mod_desc) ! Make sure no more in list.
;  560     0558  2 THEN
;  561     0559  2     RETURN srh$_wdw_maxprm;
;  562     0560  2
;  563     0561  2 ! Set the appropriate values for previous recs and subsequent records.  We
;  564     0562  2 ! assume that WDW_PRE_RECS and WDW_SUB_RECS are initially zero.
;  565     0563  2 !
;  566     0564  2 IF .wdw_1                           ! If /NOWINDOW we have nothing to do.
;  567     0565  2 THEN
;  568     0566  3     BEGIN
;  569     0567  3     IF .wdw_2                       ! We have /WINDOW=(pre,sub) format.
;  570     0568  3     THEN
;  571     0569  4         BEGIN
;  572     0570  4         wdw_pre_recs = .window_1;
;  573     0571  4         wdw_sub_recs = .window_2;
;  574     0572  4         END
;  575     0573  3     ELSE                            ! We have /WINDOW=total format
;  576     0574  4         BEGIN
;  577     0575  4         IF .window_1 EQL 0
;  578     0576  4         THEN
;  579     0577  4             wdw_zero = 1            ! Set flag for /WINDOW=0 option
;  580     0578  4         ELSE
;  581     0579  5             BEGIN
;  582     0580  5             LOCAL                   ! Help BLISS optimize
;  583     0581  5                 tmp;
;  584     0582  5             tmp = .window_1 -1; ! Count the matched line as one of them
;  585     0583  5             wdw_pre_recs = .tmp / 2;
;  586     0584  5             wdw_sub_recs = .tmp - .wdw_pre_recs;
;  587     0585  4             END;
;  588     0586  3         END;
;  589     0587  2     END;
;  590     0588  2
;  591     0589  3 IF      (.wdw_pre_recs GTR 0)
;  592     0590  3     OR  (.wdw_sub_recs GTR 0)
;  593     0591  2 THEN
;  594     0592  2     wdw_frame = true;               ! Don't say "***************" for /WINDOW=1
;  595     0593  2
;  596     0594  2 IF cli$present(%ASCID 'REMAINING')      ! Do we want match to end of file?
;  597     0595  2 THEN
;  598     0596  2     wdw_sub_recs = 2^31 - 1;            ! Set to something akin to infinity
;  599     0597  2
;  600     0598  2 !
;  601     0599  2 ! Open the output file
;  602     0600  2 !
;  603     0601  2 IF out_file_open = cli$get_value(%ASCID 'OUTPUT', mod_desc)
;  604     0602  2 THEN
;  605     0603  3         BEGIN
;  606     0604  3         outfab [fab$b_fns] = .mod_desc [dsc$w_length];
```

```
;  607     0605  3          outfab [fab$l_fna] = .mod_desc [dsc$a_pointer];
;  608     0606  4          IF NOT (status = $CREATE(FAB = outfab))
;  609     0607  3          THEN
;  610     0608  3              RETURN file_error (srh$_openout,.status,outfab,.outfab [fab$l_stv]);
;  611     0609  4          IF NOT (status = $CONNECT(RAB = outrab))
;  612     0610  3          THEN
;  613     0611  3              RETURN file_error (srh$_openout,.status,outfab,.outrab [rab$l_stv]);
;  614     0612  3          max_rec = .outfab [fab$w_mrs];
;  615     0613  3          IF .max_rec EQL 0 THEN max_rec = 2^15-1;
;  616     0614  2          END;
;  617     0615  2
;  618     0616  2  out_printing = (NOT .wdw_zero) AND .out_file_open; ! Do we print matched lines?
;  619     0617  2
;  620     0618  2  !
;  621     0619  2  ! Get the /MATCH qualifier value, set the bit vector
;  622     0620  2  !
;  623     0621  2  cli$get_value(%ASCID 'MATCH', string_desc);      ! Get the string
;  624     0622  2  upcase(.string_desc [dsc$w_length], .string_desc [dsc$a_pointer],
;  625     0623  2                                     .string_desc [dsc$a_pointer]);
;  626     0624  3  IF NOT (status = lib$lookup_key (string_desc, match_keytbl, keyval))
;  627     0625  2  THEN
;  628     0626  2      SIGNAL_STOP (srh$_badmatch, 0, .status, 1, string_desc);
;  629     0627  2
;  630     0628  2  CASE .keyval FROM 0 TO 3 OF
;  631     0629  2      SET
;  632     0630  2          [0] :   ;                          ! 'OR' - No action, both zero already
;  633     0631  2          [1] :   mat_negate = true;         ! 'NOR' - mat_and is already zero
;  634     0632  2          [2] :   mat_and = true;            ! 'AND' - mat_negate is already zero
;  635     0633  3          [3] :   BEGIN                      ! 'NAND' - We have to set them both
;  636     0634  3                  mat_and = true;
;  637     0635  3                  mat_negate = true;
;  638     0636  2                  END;
;  639     0637  2      TES;
;  640     0638  2
;  641     0639  2  !
;  642     0640  2  ! If there are no previous records we can set for sequential only
;  643     0641  2  !
;  644     0642  2
;  645     0643  2  IF .wdw_pre_recs EQL 0
;  646     0644  2  THEN
;  647     0645  2      fab [fab$v_sqo] = true                                              2A
;  648     0646  2  ELSE
;  649     0647  3      BEGIN
;  650     0648  3      wdw_previous = true;
;  651     0649  3      !
;  652     0650  3      ! Obtain memory for the vector of RFA's
;  653     0651  3      !
;  654     0652  4      IF NOT (status = lib$get_vm(%REF((.wdw_pre_recs + 1)*rab$s_rfa), rfa_vec))
;  655     0653  3      THEN
;  656     0654  3          SIGNAL_STOP (srh$_wdw_maxprev, 0, .status);     ! Buffer max exceeded.
;  657     0655  2      END;
;  658     0656  2
;  659     0657  2  !
;  660     0658  2  ! Get the /FORMAT qualifier value, set the variable
;  661     0659  2  !
;  662     0660  2  cli$get_value(%ASCID 'FORMAT', string_desc);     ! Get the string
;  663     0661  2  upcase(.string_desc [dsc$w_length], .string_desc [dsc$a_pointer],
```

```
;  664     0662  2                                        .string_desc [dsc$a_pointer]);
;  665     0663  3 IF NOT (status = lib$lookup_key (string_desc, format_keytbl, format))
;  666     0664  2 THEN
;  667     0665  2     SIGNAL_STOP (srh$_badform, 0, .status, 1, string_desc);
;  668     0666  2
;  669     0667  2 !
;  670     0668  2 ! DCL parameter P1, SOURCE
;  671     0669  2 !
;  672     0670  2 ! Get all the input file names so that we will know if a list is specified.
;  673     0671  2 ! Max_infiles is large enough so that is is IMPOSSIBLE to overflow
;  674     0672  2 !
;  675     0673  2 WHILE .cnt_infile LSS max_infiles
;  676     0674  2 DO
;  677     0675  3     BEGIN
;  678     0676  3     infile_desc [.cnt_infile, dsc_long1] = dsc_dynam;   ! Init to dynamic desc
;  679     0677  4     IF NOT (status = cli$get_value(source_str,
;  680     0678  4                                    infile_desc [.cnt_infile, dsc$w_length]) )
;  681     0679  3     THEN
;  682     0680  3         EXITLOOP;
;  683     0681  3     cnt_infile = .cnt_infile+1;
;  684     0682  2     END;
;  685     0683  2
;  686     0684  2 !
;  687     0685  2 ! The command requires SOURCE, but just in case someone mungs the CLD file
;  688     0686  2 !
;  689     0687  2 IF .cnt_infile LEQ 0
;  690     0688  2 THEN
;  691     0689  2     RETURN srh$_nofile;
;  692     0690  2
;  693     0691  2 !
;  694     0692  2 ! DCL parameter P2, STRING
;  695     0693  2 !
;  696     0694  2 ! Get the all the search string entries
;  697     0695  2 ! Max_srhstr is large enough so that is is IMPOSSIBLE to overflow
;  698     0696  2 !
;  699     0697  2 WHILE .cnt_srhstr LSS max_srhstr
;  700     0698  2 DO
;  701     0699  3     BEGIN
;  702     0700  4     IF NOT (status = cli$get_value(string_str, string_desc))
;  703     0701  3     THEN
;  704     0702  3         EXITLOOP;
;  705     0703  3         !
;  706     0704  3         ! Copy or upcase the search string
;  707     0705  3         !
;  708     0706  3     srhstr_desc [.cnt_srhstr, dsc_long1] = dsc_dynam;   ! Init to dynamic desc
;  709     0707  3
;  710     0708  3     IF .qua_exact THEN                  ! Copy to descriptor array
;  711     0709  3         str$copy_dx (srhstr_desc [.cnt_srhstr,dsc$w_length],
;  712     0710  3                      string_desc [dsc$w_length])
;  713     0711  3     ELSE
;  714     0712  4         BEGIN                           ! Upcase into the descriptor array
;  715     0713  4         str$get1_dx (string_desc [dsc$w_length], ! Allocate Destination String
;  716     0714  4                      srhstr_desc [.cnt_srhstr,dsc$w_length]);
;  717     0715  4         upcase(                                 ! Uppercase search string
;  718     0716  4                .srhstr_desc [.cnt_srhstr, dsc$w_length],   !  Length of source
;  719     0717  4                .string_desc [dsc$a_pointer],               !  Source addr
;  720     0718  4                .srhstr_desc [.cnt_srhstr, dsc$a_pointer]); !  Destination addr
```

```
;   721     0719  3          END;
;   722     0720  3
;   723     0721  3      cnt_srhstr = .cnt_srhstr+1;
;   724     0722  2      END;
;   725     0723  2
;   726     0724  2  !
;   727     0725  2  ! The command requires STRING, but just in case someone changes the CLD file
;   728     0726  2  !
;   729     0727  2  IF .cnt_srhstr LEQ 0
;   730     0728  2  THEN
;   731     0729  2      RETURN srh$_nostring;
;   732     0730  2
;   733     0731  2  !
;   734     0732  2  ! DCL qualifier /EXCLUDE
;   735     0733  2  !
;   736     0734  2  ! Get the all the exclude filenames
;   737     0735  2  ! Max_exclude is large enough so that is is IMPOSSIBLE to overflow
;   738     0736  2  !
;   739     0737  2  WHILE .cnt_exclude LSS max_exclude
;   740     0738  2  DO
;   741     0739  3      BEGIN
;   742     0740  3      LOCAL
;   743     0741  3          buf : VECTOR [nam$c_maxrss, BYTE],
;   744     0742  3          inter_desc : BLOCK [8, BYTE],          ! Intermediate name
;   745     0743  3          result_desc : BLOCK [8, BYTE];
;   746     0744  3
;   747     0745  4      IF NOT (status = cli$get_value(%ASCID 'EXCLUDE', string_desc))
;   748     0746  3      THEN
;   749     0747  3          EXITLOOP;
;   750     0748  3
;   751     0749  3      ! Don't let device and directory sneak in with a logical name
;   752     0750  3      !
;   753     0751  3      CH$MOVE (8, string_desc, inter_desc);       ! Start with the given name
;   754     0752  3      CH$MOVE (4, tmp_desc, result_desc);         ! Static string desc info
;   755     0753  3      DO
;   756     0754  4          BEGIN
;   757     0755  4          result_desc [dsc$w_length] = nam$c_maxrss;
;   758     0756  4          result_desc [dsc$a_pointer] = buf;
;   759     0757  4          status = $trnlog (lognam = inter_desc, rsllen = result_desc, rslbuf = result_desc);
;   760     0758  4          IF NOT .status
;   761     0759  4          THEN
;   762     0760  4              SIGNAL_STOP (.status);
;   763     0761  4          CH$MOVE (8, result_desc, inter_desc);   ! Ready to translate again
;   764     0762  4          END
;   765     0763  3      UNTIL .status EQL ss$_notran;
;   766     0764  3
;   767     0765  3      !
;   768     0766  3      ! Make sure that the filename has no device or directory.  Allow for
;   769     0767  3      ! alternate directory syntax of <dir>
;   770     0768  3      !
;   771     0769  3      IF     CH$FIND_CH(.result_desc [dsc$w_length],
;   772     0770  3                       .result_desc [dsc$a_pointer], ':') NEQ 0
;   773     0771  3          OR CH$FIND_CH(.result_desc [dsc$w_length],
;   774     0772  3                       .result_desc [dsc$a_pointer], ']') NEQ 0
;   775     0773  3          OR CH$FIND_CH(.result_desc [dsc$w_length],
;   776     0774  3                       .result_desc [dsc$a_pointer], '>') NEQ 0
;   777     0775  3      THEN
```

```
;  778          0776  3          SIGNAL_STOP (srh$_badexcl,1,result_desc);       ! Scream and shout
;  779          0777  3
;  780          0778  3      !
;  781          0779  3      ! Copy, upcase and validate the exclude filename
;  782          0780  3      !
;  783          0781  3      exclude_desc [.cnt_exclude, dsc_long1] = dsc_dynam; ! Init to dynamic desc
;  784          0782  3      validate_exclude_file (result_desc,exclude_desc [.cnt_exclude, dsc$w_length]);
;  785          0783  3      cnt_exclude = .cnt_exclude+1;
;  786          0784  2      END;
```

```
;   788          0785  2 !
;   789          0786  2 ! Search the input files
;   790          0787  2 !
;   791          0788  2 found_file = false;                          ! Nothing found yet
;   792          0789  2 found_any = false;
;   793          0790  2 scan_context = 0;                           ! Sticky context argument must be zero
;   794          0791  2 INCR ifx FROM 0 TO .cnt_infile-1                    ! Try all of out
;   795          0792  2 DO                                                  ! file spec.
;   796          0793  3         BEGIN
;   797          0794  3         fab [fab$l_fna] = .infile_desc [.ifx, dsc$a_pointer];    ! Set name addr
;   798          0795  3         fab [fab$b_fns] = .infile_desc [.ifx, dsc$w_length];     ! Set name size
;   799          0796  3         lib$file_scan (fab,                                      ! Do full wildcard scan
;   800          0797  3                        scan_success,                             ! Go here on success
;   801          0798  3                        scan_failure,                             ! Go here on failure
;   802          0799  3                        scan_context);                            ! Sticky context argument
;   803          0800  3         fab [fab$l_dna] = 0;                                     ! Allow sticky type
;   804          0801  2         END;
```

```
;   806        L 0802  2 %IF switch_statistics
;   807          0803  2 %THEN
;   808          0804  2 !
;   809          0805  2 ! Display the statistics if desired.
;   810          0806  2 !
;   811          0807  2 IF .qua_statistics
;   812          0808  2 THEN
;   813          0809  3     BEGIN
;   814          0810  3     BUILTIN
;   815          0811  3         SUBM;
;   816          0812  3     LOCAL
;   817          0813  3         quadtime : VECTOR [2, LONG],
;   818          0814  3         tim,
;   819          0815  3         tim_buf : VECTOR [16, BYTE],
;   820          0816  3         tim_desc : VECTOR [2, LONG],
;   821          0817  3         stat,
;   822          0818  3         out_buf : VECTOR [80,BYTE];
;   823          0819  3
;   824          0820  4     IF NOT (stat = $GETJPI (ITMLST=stat_jpi_block))
;   825          0821  3     THEN
;   826          0822  3         RETURN .stat;
;   827          0823  3
;   828          0824  3     tmp_desc [dsc$a_pointer] = out_buf;
;   829          0825  3     lib$put_output(null_str);
;   830          0826  3
;   831          0827  3     tmp_desc [dsc$w_length] = 80;
;   832        P 0828  4     IF NOT (stat = $FAO( %ASCID 'Files searched:        !10UL       Buffered I/O count:!10UL',
;   833          0829  4                 tmp_desc, tmp_desc, .stat_totfil, .stat_jpi_bufio-.stat_bufio))
;   834          0830  3     THEN
;   835          0831  3         RETURN .stat;   ! Signal the error
;   836          0832  3     lib$put_output(tmp_desc);
;   837          0833  3
;   838          0834  3     tmp_desc [dsc$w_length] = 80;
;   839        P 0835  4     IF NOT (stat = $FAO( %ASCID 'Records searched:      !10UL       Direct I/O count:  !10UL',
;   840          0836  4                 tmp_desc, tmp_desc, .stat_totrec, .stat_jpi_dirio-.stat_dirio))
;   841          0837  3     THEN
;   842          0838  3         RETURN .stat;   ! Signal the error
;   843          0839  3     lib$put_output(tmp_desc);
;   844          0840  3
;   845          0841  3     tmp_desc [dsc$w_length] = 80;
;   846        P 0842  4     IF NOT (stat = $FAO( %ASCID 'Characters searched:   !10UL       Page faults:       !10UL',
;   847          0843  4                 tmp_desc, tmp_desc, .stat_totchr, .stat_jpi_pagefIts-.stat_pagefIts))
;   848          0844  3     THEN
;   849          0845  3         RETURN .stat;   ! Signal the error
;   850          0846  3     lib$put_output(tmp_desc);
;   851          0847  3
;   852          0848  3     tmp_desc [dsc$w_length] = 80;
;   853          0849  3     tim = .stat_jpi_cputim-.stat_cputim;              ! get the elapsed CPU time
;   854        P 0850  4     IF NOT (stat = $FAO( %ASCID 'Records matched:      !10UL       Elapsed CPU time:!3UL !2ZL:!2ZL:!2ZL.!2Z
;   855        P 0851  4                 tmp_desc, tmp_desc, .stat_totmat,
;   856        P 0852  4                 (.tim/(100*60*60*24)),              ! days
;   857        P 0853  4                 (.tim/(100*60*60)) MOD 24,          ! hours
;   858        P 0854  4                 (.tim/(100*60)) MOD 60,             ! minutes
;   859        P 0855  4                 (.tim/100) MOD 60,                  ! seconds
;   860          0856  4                 .tim MOD 100))                      ! hundredths of seconds
;   861          0857  3     THEN
;   862          0858  3         RETURN .stat;   ! Signal the error
```

```
;  863          0859  3     lib$put_output(tmp_desc);
```

```
;  865          0860  3      tim_desc [0] = 16;
;  866          0861  3      tim_desc [1] = tim_buf;
;  867          0862  4      IF NOT (stat = $GETTIM (TIMADR=quadtime))
;  868          0863  3      THEN
;  869          0864  3          RETURN .stat;   ! Signal the error
;  870          0865  3      SUBM (2, quadtime, stat_starttime, quadtime);
;  871          0866  4      IF NOT (stat = $ASCTIM (TIMLEN=tim_desc, TIMBUF=tim_desc, TIMADR=quadtime))
;  872          0867  3      THEN
;  873          0868  3          RETURN .stat;   ! Signal the error
;  874          0869  3
;  875          0870  3      tmp_desc [dsc$w_length] = 80;
;  876        P 0871  4      IF NOT (stat = $FAO( %ASCID 'Lines printed:         !10UL       Elapsed time:   !AS',
;  877          0872  4                  tmp_desc, tmp_desc, .stat_totput, tim_desc))
;  878          0873  3      THEN
;  879          0874  3          RETURN .stat;   ! Signal the error
;  880          0875  3      lib$put_output(tmp_desc);
;  881          0876  3
;  882          0877  2      END;
;  883          0878  2  %FI ! switch_statistics
;  884          0879  2
;  885          0880  2  IF .out_file_open                          ! All through writing
;  886          0881  2  THEN
;  887          0882  2      $CLOSE(FAB = outfab);
;  888          0883  2
;  889          0884  2  status = ss$_normal;
;  890          0885  2  IF NOT .found_any                          ! If no matches were found
;  891          0886  2  THEN
;  892          0887  2          IF .found_file                     ! set non-success status.
;  893          0888  2          THEN
;  894          0889  2                  SIGNAL (status = srh$_nomatches)
;  895          0890  2          ELSE
;  896          0891  2                  status = srh$_nofile;
;  897          0892  2
;  898          0893  2  RETURN .status;
;  899          0894  1  END;


                                        .TITLE  SEARCH
                                        .IDENT  \V04-000\

                                        .PSECT  $OWN$_CRF,NOEXE,2

                             00# 00000 STRING_DESC:
                                        .BYTE   0[2]
                          02  0E  00002        .BYTE   14, 2                                   ;
                                   00004        .BLKB   4
                             00# 00008 MOD_DESC:
                                        .BYTE   0[2]
                          02  0E  0000A        .BYTE   14, 2                                   ;
                                   0000C        .BLKB   4
                            0000  00010 TMP_DESC:
                                        .WORD   0
                           01  0E  00012        .BYTE   14, 1                                   ;
                        00000000  00014        .LONG   0                                       ;
                             02  00018 NAM_BLOCK:
                                        .BYTE   2
                             60  00019        .BYTE   96                                      ;
```

```
                FF  0001A          .BYTE   -1                                      ;
                00  0001B          .BYTE   0                                       ;
00000000'       0001C          .ADDRESS RES_NAME                                   ;
                00  00020          .BYTE   0                                       ;
                00  00021          .BYTE   0                                       ;
                FF  00022          .BYTE   -1                                      ;
                00  00023          .BYTE   0                                       ;
00000000'       00024          .ADDRESS EXP_NAME                                   ;
00000000        00028          .LONG   0                                       ;
            0000#   0002C          .WORD   0[8]                                    ;
            0000#   0003C          .WORD   0[3]                                    ;
            0000#   00042          .WORD   0[3]                                    ;
00000000        00048          .LONG   0                                       ;
00000000        0004C          .LONG   0                                       ;
                00  00050          .BYTE   0                                       ;
                00  00051          .BYTE   0                                       ;
                00  00052          .BYTE   0                                       ;
                00  00053          .BYTE   0                                       ;
                00  00054          .BYTE   0                                       ;
                00  00055          .BYTE   0                                       ;
                00# 00056          .BYTE   0[2]                                    ;
00000000        00058          .LONG   0                                       ;
00000000        0005C          .LONG   0                                       ;
00000000        00060          .LONG   0                                       ;
00000000        00064          .LONG   0                                       ;
00000000        00068          .LONG   0                                       ;
00000000        0006C          .LONG   0                                       ;
00000000#       00070          .LONG   0[2]                                    ;
                03  00078 FAB:     .BYTE   3                                       ;
                50  00079          .BYTE   80                                      ;
              0000  0007A          .WORD   0                                       ;
01000000        0007C          .LONG   16777216                                ;
00000000        00080          .LONG   0                                       ;
00000000        00084          .LONG   0                                       ;
00000000        00088          .LONG   0                                       ;
              0000  0008C          .WORD   0                                       ;
                02  0008E          .BYTE   2                                       ;
                43  0008F          .BYTE   67                                      ;
00000000        00090          .LONG   0                                       ;
                00  00094          .BYTE   0                                       ;
                00  00095          .BYTE   0                                       ;
                00  00096          .BYTE   0                                       ;
                02  00097          .BYTE   2                                       ;
00000000        00098          .LONG   0                                       ;
00000000        0009C          .LONG   0                                       ;
00000000'       000A0          .ADDRESS NAM_BLOCK                              ;
00000000        000A4          .LONG   0                                       ;
00000000'       000A8          .ADDRESS P.AAA                                  ;
                00  000AC          .BYTE   0                                       ;
                03  000AD          .BYTE   3                                       ;
              0000  000AE          .WORD   0                                       ;
00000000        000B0          .LONG   0                                       ;
              0000  000B4          .WORD   0                                       ;
                00  000B6          .BYTE   0                                       ;
                00  000B7          .BYTE   0                                       ;
00000000        000B8          .LONG   0                                       ;
00000000        000BC          .LONG   0                                       ;
```

```
    0000  000C0          .WORD    0
      00  000C2          .BYTE    0
      00  000C3          .BYTE    0
00000000  000C4          .LONG    0
      01  000C8 RAB:     .BYTE    1
      44  000C9          .BYTE    68
    0000  000CA          .WORD    0
00010200  000CC          .LONG    66048
00000000  000D0          .LONG    0
00000000  000D4          .LONG    0
   0000#  000D8          .WORD    0[3]
    0000  000DE          .WORD    0
00000000  000E0          .LONG    0
    0000  000E4          .WORD    0
      00  000E6          .BYTE    0
      00  000E7          .BYTE    0
    0800  000E8          .WORD    2048
    0000  000EA          .WORD    0
00000000  000EC          .LONG    0
00000000  000F0          .LONG    0
00000000  000F4          .LONG    0
00000000  000F8          .LONG    0
      00  000FC          .BYTE    0
      00  000FD          .BYTE    0
      03  000FE          .BYTE    3
      00  000FF          .BYTE    0
00000000  00100          .LONG    0
00000000' 00104          .ADDRESS FAB
00000000  00108          .LONG    0
      02  0010C OUT_NAM_BLK:
                         .BYTE    2
      60  0010D          .BYTE    96
      FF  0010E          .BYTE    -1
      00  0010F          .BYTE    0
00000000' 00110          .ADDRESS OUT_RES_NAM
      00  00114          .BYTE    0
      00  00115          .BYTE    0
      FF  00116          .BYTE    -1
      00  00117          .BYTE    0
00000000' 00118          .ADDRESS OUT_EXP_NAM
00000000  0011C          .LONG    0
   0000#  00120          .WORD    0[8]
   0000#  00130          .WORD    0[3]
   0000#  00136          .WORD    0[3]
00000000  0013C          .LONG    0
00000000  00140          .LONG    0
      00  00144          .BYTE    0
      00  00145          .BYTE    0
      00  00146          .BYTE    0
      00  00147          .BYTE    0
      00  00148          .BYTE    0
      00  00149          .BYTE    0
     00#  0014A          .BYTE    0[2]
00000000  0014C          .LONG    0
00000000  00150          .LONG    0
00000000  00154          .LONG    0
00000000  00158          .LONG    0
```

```
00000000  0015C          .LONG    0
00000000  00160          .LONG    0
00000000# 00164          .LONG    0[2]
      03  0016C OUTFAB:  .BYTE    3
      50  0016D          .BYTE    80
    0000  0016E          .WORD    0
00000000  00170          .LONG    0
00000000  00174          .LONG    0
00000000  00178          .LONG    0
00000000  0017C          .LONG    0
    0000  00180          .WORD    0
      02  00182          .BYTE    2
      00  00183          .BYTE    0
00000000  00184          .LONG    0
      00  00188          .BYTE    0
      00  00189          .BYTE    0
      02  0018A          .BYTE    2
      02  0018B          .BYTE    2
00000000  0018C          .LONG    0
00000000  00190          .LONG    0
00000000' 00194          .ADDRESS OUT_NAM_BLK
00000000  00198          .LONG    0
00000000' 0019C          .ADDRESS P.AAB
      00  001A0          .BYTE    0
      0A  001A1          .BYTE    10
    0000  001A2          .WORD    0
00000000  001A4          .LONG    0
    0000  001A8          .WORD    0
      00  001AA          .BYTE    0
      00  001AB          .BYTE    0
00000000  001AC          .LONG    0
00000000  001B0          .LONG    0
    0000  001B4          .WORD    0
      00  001B6          .BYTE    0
      00  001B7          .BYTE    0
00000000  001B8          .LONG    0
      01  001BC OUTRAB:  .BYTE    1
      44  001BD          .BYTE    68
    0000  001BE          .WORD    0
00000400  001C0          .LONG    1024
00000000  001C4          .LONG    0
00000000  001C8          .LONG    0
    0000# 001CC          .WORD    0[3]
    0000  001D2          .WORD    0
00000000  001D4          .LONG    0
    0000  001D8          .WORD    0
      00  001DA          .BYTE    0
      00  001DB          .BYTE    0
    0000  001DC          .WORD    0
    0000  001DE          .WORD    0
00000000  001E0          .LONG    0
00000000  001E4          .LONG    0
00000000  001E8          .LONG    0
00000000  001EC          .LONG    0
      00  001F0          .BYTE    0
      00  001F1          .BYTE    0
      00  001F2          .BYTE    0
```

```
                                    00  001F3          .BYTE   0
                                00000000  001F4          .LONG   0
                                00000000' 001F8          .ADDRESS OUTFAB
                                00000000  001FC          .LONG   0
                                00000008  00200 FORMAT_KEYTBL:
                                                         .LONG   8
                                00000000' 00204          .ADDRESS P.AAC
                                00000000  00208          .LONG   0
                                00000000' 0020C          .ADDRESS P.AAD
                                00000001  00210          .LONG   1
                                00000000' 00214          .ADDRESS P.AAE
                                00000002  00218          .LONG   2
                                00000000' 0021C          .ADDRESS P.AAF
                                00000003  00220          .LONG   3
                                00000008  00224 MATCH_KEYTBL:
                                                         .LONG   8
                                00000000' 00228          .ADDRESS P.AAG
                                00000000  0022C          .LONG   0
                                00000000' 00230          .ADDRESS P.AAH
                                00000001  00234          .LONG   1
                                00000000' 00238          .ADDRESS P.AAI
                                00000002  0023C          .LONG   2
                                00000000' 00240          .ADDRESS P.AAJ
                                00000003  00244          .LONG   3
                                040C0004  00248 STAT_JPI_BLOCK:
                                                         .LONG   67895300
                                00000000' 0024C          .ADDRESS STAT_JPI_BUFIO
                        04070004 00000000  00250         .LONG   0, 67567620
                                00000000' 00258          .ADDRESS STAT_JPI_CPUTIM
                        040B0004 00000000  0025C         .LONG   0, 67829764
                                00000000' 00264          .ADDRESS STAT_JPI_DIRIO
                        040A0004 00000000  00268         .LONG   0, 67764228
                                00000000' 00270          .ADDRESS STAT_JPI_PAGEFLTS
                        00000000 00000000  00274         .LONG   0, 0

                                                         .PSECT  $OWN$_DZRO,NOEXE,2

                                00000 EXP_NAME:
                                                         .BLKB   255
                                000FF                    .BLKB   1
                                00100 RES_NAME:
                                                         .BLKB   255
                                001FF                    .BLKB   1
                                00200 OUT_EXP_NAM:
                                                         .BLKB   255
                                002FF                    .BLKB   1
                                00300 OUT_RES_NAM:
                                                         .BLKB   255
                                003FF                    .BLKB   1
                                00400 WDW_PRE_RECS:
                                                         .BLKB   4
                                00404 WDW_SUB_RECS:
                                                         .BLKB   4
                                00408 WDW_PRE_CNTR:
                                                         .BLKB   4
                                0040C WDW_SUB_CNTR:
                                                         .BLKB   4
```

```
00410 WDW_PRE_BUFF:
                .BLKB   4
00414 CNT_INFILE:
                .BLKB   4
00418 CNT_SRHSTR:
                .BLKB   4
0041C CNT_EXCLUDE:
                .BLKB   4
00420 MAX_REC:.BLKB     4
00424 FORMAT: .BLKB     4
00428 FIL_TOTMAT:
                .BLKB   4
0042C FIL_LINENUM:
                .BLKB   4
00430 OUT_FILE_OPEN:
                .BLKB   1
00431 OUT_PRINTING:
                .BLKB   1
00432 WDW_PREVIOUS:
                .BLKB   1
00433 WDW_ZERO:
                .BLKB   1
00434 WDW_FRAME:
                .BLKB   1
00435 WDW_OVFL:
                .BLKB   1
00436 QUA_EXACT:
                .BLKB   1
00437 QUA_LOG:.BLKB     1
00438 QUA_NUMBERS:
                .BLKB   1
00439 QUA_HEADING:
                .BLKB   1
0043A NEW_FILE:
                .BLKB   1
0043B FOUND_FILE:
                .BLKB   1
0043C FOUND_ANY:
                .BLKB   1
0043D FIL_FOUND:
                .BLKB   1
0043E MAT_AND:.BLKB     1
0043F MAT_NEGATE:
                .BLKB   1
00440 RFA_VEC:.BLKB     4
00444 OUTPUT_BUFF:
                .BLKB   4
00448 INFILE_DESC:
                .BLKB   1088
00888 SRHSTR_DESC:
                .BLKB   1088
00CC8 EXCLUDE_DESC:
                .BLKB   1088
01108 QUA_STATISTICS:
                .BLKB   4
0110C STAT_TOTCHR:
                .BLKB   4
```

```
                        01110 STAT_TOTREC:
                                .BLKB   4
                        01114 STAT_TOTFIL:
                                .BLKB   4
                        01118 STAT_TOTMAT:
                                .BLKB   4
                        0111C STAT_TOTPUT:
                                .BLKB   4
                        01120 STAT_JPI_BUFIO:
                                .BLKB   4
                        01124 STAT_JPI_CPUTIM:
                                .BLKB   4
                        01128 STAT_JPI_DIRIO:
                                .BLKB   4
                        0112C STAT_JPI_PAGEFLTS:
                                .BLKB   4
                        01130 STAT_BUFIO:
                                .BLKB   4
                        01134 STAT_CPUTIM:
                                .BLKB   4
                        01138 STAT_DIRIO:
                                .BLKB   4
                        0113C STAT_PAGEFLTS:
                                .BLKB   4
                        01140 STAT_STARTTIME:
                                .BLKB   8

                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                                                2A  2E  2A  00000 P.AAA:  .ASCII  \*.*\                                 ;
                                            53  49  4C  2E  48  43  52  41  45  53  00003 P.AAB:  .ASCII  \SEARCH.LIS\
                                                        54  58  45  54  04  0000D P.AAC:  .ASCII  <4>\TEXT\
                                                    4C  4C  41  53  53  41  50  07  00012 P.AAD:  .ASCII  <7>\PASSALL\
                                                        50  4D  55  44  04  0001A P.AAE:  .ASCII  <4>\DUMP\
                                                    53  4C  4C  55  4E  4F  4E  07  0001F P.AAF:  .ASCII  <7>\NONULLS\
                                                                    52  4F  02  00027 P.AAG:  .ASCII  <2>\OR\
                                                                52  4F  4E  03  0002A P.AAH:  .ASCII  <3>\NOR\
                                                                44  4E  41  03  0002E P.AAI:  .ASCII  <3>\AND\
                                                            44  4E  41  4E  04  00032 P.AAJ:  .ASCII  <4>\NAND\
2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  00037 P.AAK:  .ASCII  \********************************\
2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  2A  00046                                                    ;
                                                                    00055       .BLKB   3
                                                                    00058 P.AAM:  .BLKB   0
                                                          010E0000  00058 P.AAL:  .LONG   17694720
                                                          00000000' 0005C        .ADDRESS P.AAM
                                                    00  00  57  4F  44  4E  49  57  00060 P.AAO:  .ASCII  \WINDOW\<0><0>
                                                          010E0006  00068 P.AAN:  .LONG   17694726
                                                          00000000' 0006C        .ADDRESS P.AAO
                                                    00  00  47  4E  49  52  54  53  00070 P.AAQ:  .ASCII  \STRING\<0><0>
                                                          010E0006  00078 P.AAP:  .LONG   17694726
                                                          00000000' 0007C        .ADDRESS P.AAQ
                                                    00  00  45  43  52  55  4F  53  00080 P.AAS:  .ASCII  \SOURCE\<0><0>
                                                          010E0006  00088 P.AAR:  .LONG   17694726
                                                          00000000' 0008C        .ADDRESS P.AAS
                                        00  00  53  43  49  54  53  49  54  41  54  53  00090 P.AAU:  .ASCII  \STATISTICS\<0><0>
                                                          010E000A  0009C P.AAT:  .LONG   17694730
                                                          00000000' 000A0        .ADDRESS P.AAU
```

```
                                00  00  00  54  43  41  58  45  000A4 P.AAW:   .ASCII  \EXACT\<0><0><0>
                                                    010E0005    000AC P.AAV:   .LONG   17694725
                                                    00000000'   000B0          .ADDRESS P.AAW
                                            00  47  4F  4C  4F  000B4 P.AAY:   .ASCII  \LOG\<0>
                                                    010E0003    000B8 P.AAX:   .LONG   17694723
                                                    00000000'   000BC          .ADDRESS P.AAY
                                00  53  52  45  42  4D  55  4E  000C0 P.ABA:   .ASCII  \NUMBERS\<0>
                                                    010E0007    000C8 P.AAZ:   .LONG   17694727
                                                    00000000'   000CC          .ADDRESS P.ABA
                                00  47  4E  49  44  41  45  48  000D0 P.ABC:   .ASCII  \HEADING\<0>
                                                    010E0007    000D8 P.ABB:   .LONG   17694727
                                                    00000000'   000DC          .ADDRESS P.ABC
            00  00  00  47  4E  49  4E  49  41  4D  45  52  000E0 P.ABE:   .ASCII  \REMAINING\<0><0><0>
                                                    010E0009    000EC P.ABD:   .LONG   17694729
                                                    00000000'   000F0          .ADDRESS P.ABE
                                00  00  54  55  50  54  55  4F  000F4 P.ABG:   .ASCII  \OUTPUT\<0><0>
                                                    010E0006    000FC P.ABF:   .LONG   17694726
                                                    00000000'   00100          .ADDRESS P.ABG
                                00  00  00  48  43  54  41  4D  00104 P.ABI:   .ASCII  \MATCH\<0><0><0>
                                                    010E0005    0010C P.ABH:   .LONG   17694725
                                                    00000000'   00110          .ADDRESS P.ABI
                                00  00  54  41  4D  52  4F  46  00114 P.ABK:   .ASCII  \FORMAT\<0><0>
                                                    010E0006    0011C P.ABJ:   .LONG   17694726
                                                    00000000'   00120          .ADDRESS P.ABK
                                00  45  44  55  4C  43  58  45  00124 P.ABM:   .ASCII  \EXCLUDE\<0>
                                                    010E0007    0012C P.ABL:   .LONG   17694727
                                                    00000000'   00130          .ADDRESS P.ABM
3A  64  65  68  63  72  61  65  73  20  73  65  6C  69  46  00134 P.ABO:   .ASCII  \Files searched:        !10UL       Buffe\
20  20  4C  55  30  31  21  20  20  20  20  20  20  20  20  00143
                    65  66  66  75  42  20  20  20  20  20  00152
21  3A  74  6E  75  6F  63  20  4F  2F  49  20  64  65  72  0015C          .ASCII  \red I/O count:!10UL\<0>
                                    00  4C  55  30  31  00168
                                                    010E003B    00170 P.ABN:   .LONG   17694779
                                                    00000000'   00174          .ADDRESS P.ABO
65  68  63  72  61  65  73  20  73  64  72  6F  63  65  52  00178 P.ABQ:   .ASCII  \Records searched:       !10UL       Direc\
20  20  4C  55  30  31  21  20  20  20  20  20  20  3A  64  00187
                    63  65  72  69  44  20  20  20  20  20  00196
21  20  20  3A  74  6E  75  6F  63  20  4F  2F  49  20  74  001A0          .ASCII  \t I/O count:  !10UL\<0>
                                    00  4C  55  30  31  001AF
                                                    010E003B    001B4 P.ABP:   .LONG   17694779
                                                    00000000'   001B8          .ADDRESS P.ABQ
72  61  65  73  20  73  72  65  74  63  61  72  61  68  43  001BC P.ABS:   .ASCII  \Characters searched:   !10UL       Page \
20  20  4C  55  30  31  21  20  20  20  3A  64  65  68  63  001CB
                    20  65  67  61  50  20  20  20  20  20  001DA
21  20  20  20  20  20  20  20  3A  73  74  6C  75  61  66  001E4          .ASCII  \faults:        !10UL\<0>
                                    00  4C  55  30  31  001F3
                                                    010E003B    001F8 P.ABR:   .LONG   17694779
                                                    00000000'   001FC          .ADDRESS P.ABS
64  65  68  63  74  61  6D  20  73  64  72  6F  63  65  52  00200 P.ABU:   .ASCII  \Records matched:        !10UL       Elaps\
20  20  4C  55  30  31  21  20  20  20  20  20  20  3A  20  0020F
                    73  70  61  6C  45  20  20  20  20  20  0021E
55  33  21  3A  65  6D  69  74  20  55  50  43  20  64  65  00228          .ASCII  \ed CPU time:!3UL !2ZL:!2ZL:!2ZL.!2ZL\
5A  32  21  3A  4C  5A  32  21  3A  4C  5A  32  21  20  4C  00237
                                4C  5A  32  21  2E  4C  00246
                                                    010E004C    0024C P.ABT:   .LONG   17694796
                                                    00000000'   00250          .ADDRESS P.ABU
20  3A  64  65  74  6E  69  72  70  20  73  65  6E  69  4C  00254 P.ABW:   .ASCII  \Lines printed:         !10UL       Elaps\
```

```
20 20 4C 55 30 31 21 20 20 20 20 20 20 20 20 20 00263
                73 70 61 6C 45 20 20 20 20 20 00272
00 53 41 21 20 20 20 3A 65 6D 69 74 20 64 65 00027C          .ASCII  \ed time:   !AS\<0><0>                    ;
                                              00 00028B                                                       ;
                                  010E0036. 0028C P.ABV:  .LONG   17694774                                    ;
                                  00000000' 00290         .ADDRESS P.ABW                                      ;

                                                STARS_30=           P.AAK
                                                NULL_STR=           P.AAL
                                                WINDOW_STR=         P.AAN
                                                STRING_STR=         P.AAP
                                                SOURCE_STR=         P.AAR
                                                        .EXTRN  LIB$FILE_SCAN, LIB$LOOKUP_KEY
                                                        .EXTRN  LIB$PUT_OUTPUT, CLI$GET_VALUE
                                                        .EXTRN  CLI$PRESENT, OTS$CVT_TI_L
                                                        .EXTRN  STR$GET1_DX, STR$COPY_DX
                                                        .EXTRN  LIB$GET_VM, SRH$_BADEXCL
                                                        .EXTRN  SRH$_BADEXCLNAM
                                                        .EXTRN  SRH$_BADFORM, SRH$_BADMATCH
                                                        .EXTRN  SRH$_MATCHED, SRH$_NOMATCH
                                                        .EXTRN  SRH$_NOFILE, SRH$_NOMATCHES
                                                        .EXTRN  SRH$_NOSTRING, SRH$_NULLFILE
                                                        .EXTRN  SRH$_RFAERR, SRH$_TRUNCATE
                                                        .EXTRN  SRH$_WDW_MAXPREV
                                                        .EXTRN  SRH$_WDW_MAXPRM
                                                        .EXTRN  SYS$GETJPI, SYS$GETTIM
                                                        .EXTRN  SYS$CREATE, SYS$CONNECT
                                                        .EXTRN  SYS$TRNLOG, SYS$FAO
                                                        .EXTRN  SYS$ASCTIM, SYS$CLOSE

                                                        .PSECT  $CODE$,NOWRT,2

                                          0FFC 00000 MAIN:  .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11     ; 0434
                5B 00000000G   00   9E 00002             MOVAB   CLI$GET_VALUE, R11                          ;
                5A     0000'   CF   9E 00009             MOVAB   WINDOW_STR, R10                             ;
                59     0000'   CF   9E 0000E             MOVAB   TMP_DESC, R9                                ;
                58     0000'   CF   9E 00013             MOVAB   WDW_PRE_RECS, R8                            ;
                5E     C6D4    CE   9E 00018             MOVAB   -14636(SP), SP                              ;
                         34    AA   9F 0001D             PUSHAB  P.AAT                                       ; 0486
00000000G       00             01   FB 00020             CALLS   #1, CLI$PRESENT                             ;
    0D08        C8             50   D0 00027             MOVL    R0, QUA_STATISTICS                          ;
                3B             50   E9 0002C             BLBC    R0, 3$                                      ;
                               7E   7C 0002F             CLRQ    -(SP)                                       ; 0490
                               7E   D4 00031             CLRL    -(SP)                                       ;
                     0238      C9   9F 00033             PUSHAB  STAT_JPI_BLOCK                              ;
                               7E   7C 00037             CLRQ    -(SP)                                       ;
                               7E   D4 00039             CLRL    -(SP)                                       ;
00000000G       00             07   FB 0003B             CALLS   #7, SYS$GETJPI                              ;
                56             50   D0 00042             MOVL    R0, STATUS                                  ;
                0E             56   E9 00045             BLBC    STATUS, 1$                                  ;
                     0D40      C8   9F 00048             PUSHAB  STAT_STARTTIME                              ; 0493
00000000G       00             01   FB 0004C             CALLS   #1, SYS$GETTIM                              ;
                56             50   D0 00053             MOVL    R0, STATUS                                  ;
                03             56   E8 00056 1$:         BLBS    STATUS, 2$                                  ;
                           05FD 31   00059               BRW     55$                                         ;
    0D30        C8     0D20    C8   7D 0005C 2$:         MOVQ    STAT_JPI_BUFIO, STAT_BUFIO                  ; 0497
    0D38        C8     0D28    C8   7D 00063             MOVQ    STAT_JPI_DIRIO, STAT_DIRIO                  ; 0499
```

```
                00DC   C9      0124   CE   9E 0006A 3$:     MOVAB   INP_BUFFER, RAB+36                ; 0507
                  44   A8      0924   CE   9E 00071         MOVAB   OUT_BUFFER, OUTPUT_BUFF           ; 0508
                               44   AA   9F 00077         PUSHAB  P.AAV                             ; 0513
                00000000G      00        01   FB 0007A         CALLS   #1, CLI$PRESENT
                  36   A8              50   90 00081         MOVB    R0, QUA_EXACT
                               50   AA   9F 00085         PUSHAB  P.AAX                             ; 0514
                00000000G      00        01   FB 00088         CALLS   #1, CLI$PRESENT
                  37   A8              50   90 0008F         MOVB    R0, QUA_LOG
                               60   AA   9F 00093         PUSHAB  P.AAZ                             ; 0515
                00000000G      00        01   FB 00096         CALLS   #1, CLI$PRESENT
                  38   A8              50   90 0009D         MOVB    R0, QUA_NUMBERS
                               70   AA   9F 000A1         PUSHAB  P.ABB                             ; 0516
                00000000G      00        01   FB 000A4         CALLS   #1, CLI$PRESENT
                  39   A8              50   90 000AB         MOVB    R0, QUA_HEADING
                               F8   A9   9F 000AF         PUSHAB  MOD_DESC                          ; 0521
                                         5A   DD 000B2         PUSHL   R10
                          6B             02   FB 000B4         CALLS   #2, CLI$GET_VALUE
                          53             50   D0 000B7         MOVL    R0, WDW_1
                          15             53   E9 000BA         BLBC    WDW_1, 4$
                               04   AE   9F 000BD         PUSHAB  WINDOW_1                          ; 0524
                               F8   A9   9F 000C0         PUSHAB  MOD_DESC
                00000000G      00        02   FB 000C3         CALLS   #2, OTS$CVT_TI_L
                          28             50   E9 000CA         BLBC    R0, 5$
                               04   AE   D5 000CD         TSTL    WINDOW_1                          ; 0530
                                         23   19 000D0         BLSS    5$
                               F8   A9   9F 000D2 4$:     PUSHAB  MOD_DESC                          ; 0540
                                         5A   DD 000D5         PUSHL   R10
                          6B             02   FB 000D7         CALLS   #2, CLI$GET_VALUE
                          52             50   D0 000DA         MOVL    R0, WDW_2
                          2F             52   E9 000DD         BLBC    WDW_2, 6$
                                    08   AE   9F 000E0         PUSHAB  WINDOW_2                          ; 0543
                                    F8   A9   9F 000E3         PUSHAB  MOD_DESC
                     00000000G      00        02   FB 000E6         CALLS   #2, OTS$CVT_TI_L
                          05             50   E9 000ED         BLBC    R0, 5$
                                    08   AE   D5 000F0         TSTL    WINDOW_2                          ; 0549
                                         1A   18 000F3         BGEQ    6$
                                    F8   A9   9F 000F5 5$:     PUSHAB  MOD_DESC                          ; 0552
                                         01   DD 000F8         PUSHL   #1
                               00D71112       8F   DD 000FA         PUSHL   #14094610
                     00000000G      00        03   FB 00100         CALLS   #3, LIB$SIGNAL
                          50   10D71112       8F   D0 00107         MOVL    #282530066, R0            ; 0553
                                              04   00010E        RET
                                    F8   A9   9F 0010F 6$:     PUSHAB  MOD_DESC                          ; 0557
                                         5A   DD 00112         PUSHL   R10
                          6B             02   FB 00114         CALLS   #2, CLI$GET_VALUE
                          08             50   E9 00117         BLBC    R0, 7$
                          50   00000000G      8F   D0 0011A         MOVL    #SRH$_WDW_MAXPRM, R0      ; 0559
                                              04   00121        RET
                          22             53   E9 00122 7$:     BLBC    WDW_1, 10$                        ; 0564
                          06             52   E9 00125         BLBC    WDW_2, 8$                         ; 0567
                          68        04   AE   7D 00128         MOVQ    WINDOW_1, WDW_PRE_RECS            ; 0570
                                         11   11 0012C         BRB     10$                               ; 0567
                                    04   AE   D5 0012E 8$:     TSTL    WINDOW_1                          ; 0575
                                         12   12 00131         BNEQ    9$
                               33   A8             01   90 00133         MOVB    #1, WDW_ZERO              ; 0577
                                              0E   11 00137         BRB     10$
                50             04   AE             01   C3 00139 9$:     SUBL3   #1, WINDOW_1, TMP         ; 0582
```

```
                68              50              02  C7  0013E         DIVL3   #2, TMP, WDW_PRE_RECS                           ; 0583
          04    A8              50              68  C3  00142         SUBL3   WDW_PRE_RECS, TMP, WDW_SUB_RECS                 ; 0584
                                                68  D5  00147 10$:    TSTL    WDW_PRE_RECS                                    ; 0589
                                                05  14  00149         BGTR    11$
                                          04    A8  D5  0014B         TSTL    WDW_SUB_RECS                                    ; 0590
                                                04  15  0014E         BLEQ    12$
                         34     A8                01  90  00150 11$:    MOVB    #1, WDW_FRAME                                   ; 0592
                                          0084  CA  9F  00154 12$:    PUSHAB  P.ABD                                           ; 0594
                00000000G       00              01  FB  00158         CALLS   #1, CLI$PRESENT
                                04              50  E9  0015F         BLBC    R0, 13$
                         04     A8                01  CE  00162         MNEGL   #1, WDW_SUB_RECS                                ; 0596
                                          F8    A9  9F  00166 13$:    PUSHAB  MOD_DESC                                        ; 0601
                                          0094  CA  9F  00169         PUSHAB  P.ABF
                                6B              02  FB  0016D         CALLS   #2, CLI$GET_VALUE
                         30     A8              50  90  00170         MOVB    R0, OUT_FILE_OPEN
                                5B              50  E9  00174         BLBC    R0, 17$
                       0190     C9       F8     A9  90  00177         MOVB    MOD_DESC, OUTFAB+52                             ; 0604
                       0188     C9       FC     A9  D0  0017D         MOVL    MOD_DESC+4, OUTFAB+44                           ; 0605
                                          015C  C9  9F  00183         PUSHAB  OUTFAB                                          ; 0606
                00000000G       00              01  FB  00187         CALLS   #1, SYS$CREATE
                                56              50  D0  0018E         MOVL    R0, STATUS
                                06              56  E8  00191         BLBS    STATUS, 14$
                                          0168  C9  DD  00194         PUSHL   OUTFAB+12                                       ; 0608
                                                15  11  00198         BRB     15$
                                          01AC  C9  9F  0019A 14$:    PUSHAB  OUTRAB                                          ; 0609
                00000000G       00              01  FB  0019E         CALLS   #1, SYS$CONNECT
                                56              50  D0  001A5         MOVL    R0, STATUS
                                16              56  E8  001A8         BLBS    STATUS, 16$
                                          01B8  C9  DD  001AB         PUSHL   OUTRAB+12                                       ; 0611
                                          015C  C9  9F  001AF 15$:    PUSHAB  OUTFAB
                                                56  DD  001B3         PUSHL   STATUS
                                    00D710A2      8F  DD  001B5         PUSHL   #14094498
                         0000V  CF              04  FB  001BB         CALLS   #4, FILE_ERROR
                                                04  001C0         RET
                         20     A8       0192  C9  3C  001C1 16$:    MOVZWL  OUTFAB+54, MAX_REC                              ; 0612
                                           20   A8  D5  001C7         TSTL    MAX_REC                                         ; 0613
                                                06  12  001CA         BNEQ    17$
                         20     A8       FFFF  8F  3C  001CC         MOVZWL  #65535, MAX_REC
          31    A8       30     A8         33  A8  8B  001D2 17$:    BICB3   WDW_ZERO, OUT_FILE_OPEN, OUT_PRINTING            ; 0616
                                           F0   A9  9F  001D9         PUSHAB  STRING_DESC                                     ; 0621
                                          00A4  CA  9F  001DC         PUSHAB  P.ABH
                                6B              02  FB  001E0         CALLS   #2, CLI$GET_VALUE
                                53         F4   A9  D0  001E3         MOVL    STRING_DESC+4, R3                               ; 0622
                                52         F4   A9  D0  001E7         MOVL    STRING_DESC+4, R2
                                51         F0   A9  3C  001EB         MOVZWL  STRING_DESC, R1
                                         0000V      30  001EF         BSBW    UPCASE
                                           0C   AE  9F  001F2         PUSHAB  KEYVAL                                          ; 0624
                                          0214  C9  9F  001F5         PUSHAB  MATCH_KEYTBL
                                           F0   A9  9F  001F9         PUSHAB  STRING_DESC
                00000000G       00              03  FB  001FC         CALLS   #3, LIB$LOOKUP_KEY
                                56              50  D0  00203         MOVL    R0, STATUS
                                16              56  E8  00206         BLBS    STATUS, 18$
                                           F0   A9  9F  00209         PUSHAB  STRING_DESC                                     ; 0626
                                                01  DD  0020C         PUSHL   #1
                                                56  DD  0020E         PUSHL   STATUS
                                                7E  D4  00210         CLRL    -(SP)
                                    00000000G       8F  DD  00212         PUSHL   #SRH$_BADMATCH
```

```
                 00000000G  00              05  FB 00218      CALLS   #5, LIB$STOP                ;
              03            00        0C    AE  CF 0021F 18$: CASEL   KEYVAL, #0, #3              ; 0628
  0010      000A          0014            0018     00224 19$: .WORD   23$-19$,-                   ;
                                                                      22$-19$,-                   ;
                                                                      20$-19$,-                   ;
                                                                      21$-19$                     ;
                                            0E  11 0022C      BRB     23$                         ;
                        3E  A8              01  90 0022E 20$: MOVB    #1, MAT_AND                 ; 0632
                                            08  11 00232      BRB     23$                         ;
                        3E  A8              01  90 00234 21$: MOVB    #1, MAT_AND                 ; 0634
                        3F  A8              01  90 00238 22$: MOVB    #1, MAT_NEGATE              ; 0635
                            50              68  D0 0023C 23$: MOVL    WDW_PRE_RECS, R0            ; 0643
                                            07  12 0023F      BNEQ    24$                         ;
                        6C  A9        40    8F  88 00241      BISB2   #64, FAB+4                  ; 0645
                                            30  11 00246      BRB     25$                         ;
                        32  A8              01  90 00248 24$: MOVB    #1, WDW_PREVIOUS            ; 0648
                                      40    A8  9F 0024C      PUSHAB  RFA_VEC                     ; 0652
                            50              06  C4 0024F      MULL2   #6, R0                      ;
                        04  AE        06    A0  9E 00252      MOVAB   6(R0), 4(SP)                ;
                                      04    AE  9F 00257      PUSHAB  4(SP)                       ;
                 00000000G  00              02  FB 0025A      CALLS   #2, LIB$GET_VM              ;
                            56              50  D0 00261      MOVL    R0, STATUS                  ;
                            11              56  E8 00264      BLBS    STATUS, 25$                 ;
                                            56  DD 00267      PUSHL   STATUS                      ; 0654
                                            7E  D4 00269      CLRL    -(SP)                       ;
                                00000000G   8F  DD 0026B      PUSHL   #SRH$_WDW_MAXPREV           ;
                 00000000G  00              03  FB 00271      CALLS   #3, LIB$STOP                ;
                                      F0    A9  9F 00278 25$: PUSHAB  STRING_DESC                 ; 0660
                                    00B4    CA  9F 0027B      PUSHAB  P.ABJ                       ;
                            6B              02  FB 0027F      CALLS   #2, CLI$GET_VALUE           ;
                            53        F4    A9  D0 00282      MOVL    STRING_DESC+4, R3           ; 0661
                            52        F4    A9  D0 00286      MOVL    STRING_DESC+4, R2           ;
                            51        F0    A9  3C 0028A      MOVZWL  STRING_DESC, R1             ;
                                         0000V  30 0028E      BSBW    UPCASE                      ;
                                      24    A8  9F 00291      PUSHAB  FORMAT                      ; 0663
                                    01F0    C9  9F 00294      PUSHAB  FORMAT_KEYTBL               ;
                                      F0    A9  9F 00298      PUSHAB  STRING_DESC                 ;
                 00000000G  00              03  FB 0029B      CALLS   #3, LIB$LOOKUP_KEY          ;
                            56              50  D0 002A2      MOVL    R0, STATUS                  ;
                            16              56  E8 002A5      BLBS    STATUS, 26$                 ;
                                      F0    A9  9F 002A8      PUSHAB  STRING_DESC                 ; 0665
                                            01  DD 002AB      PUSHL   #1                          ;
                                            56  DD 002AD      PUSHL   STATUS                      ;
                                            7E  D4 002AF      CLRL    -(SP)                       ;
                                00000000G   8F  DD 002B1      PUSHL   #SRH$_BADFORM               ;
                 00000000G  00              05  FB 002B7      CALLS   #5, LIB$STOP                ;
                            50        14    A8  D0 002BE 26$: MOVL    CNT_INFILE, R0              ; 0673
                 00000088   8F              50  D1 002C2      CMPL    R0, #136                    ;
                                            20  18 002C9      BGEQ    27$                         ;
                                      48  A840  7F 002CB      PUSHAQ  INFILE_DESC[R0]             ; 0676
                        9E  020E0000        8F  D0 002CF      MOVL    #34471936, @(SP)+           ;
                                      48  A840  7F 002D6      PUSHAQ  INFILE_DESC[R0]             ; 0678
                                      20    AA  9F 002DA      PUSHAB  SOURCE_STR                  ; 0677
                            6B              02  FB 002DD      CALLS   #2, CLI$GET_VALUE           ; 0678
                            56              50  D0 002E0      MOVL    R0, STATUS                  ;
                            05              56  E9 002E3      BLBC    STATUS, 27$                 ;
                                      14    A8  D6 002E6      INCL    CNT_INFILE                  ; 0681
```

```
                              D3  11 002E9          BRB     26$                                   ; 0673
                    14        A8  D5 002EB  27$:    TSTL    CNT_INFILE                            ; 0687
                              08  14 002EE          BGTR    28$
           50 00000000G       8F  D0 002F0          MOVL    #SRH$_NOFILE, R0                      ; 0689
                              04  002F7             RET
    00000088      8F          18  A8  D1 002F8 28$: CMPL    CNT_SRHSTR, #136                      ; 0697
                              5E  18 00300          BGEQ    31$
                    F0        A9  9F 00302          PUSHAB  STRING_DESC                           ; 0700
                    10        AA  9F 00305          PUSHAB  STRING_STR
                    6B        02  FB 00308          CALLS   #2, CLI$GET_VALUE
                    56        50  D0 0030B          MOVL    R0, STATUS
                    4F        56  E9 0030E          BLBC    STATUS, 31$
                    50    18  A8  D0 00311          MOVL    CNT_SRHSTR, R0                        ; 0706
                    50  0488 C840 7E 00315          MOVAQ   SRHSTR_DESC[R0], R0
           60 020E0000        8F  D0 0031B          MOVL    #34471936, (R0)
                    0E    36  A8  E9 00322          BLBC    QUA_EXACT, 29$                        ; 0708
                    F0        A9  9F 00326          PUSHAB  STRING_DESC                           ; 0710
                              50  DD 00329          PUSHL   R0
    00000000G     00          02  FB 0032B          CALLS   #2, STR$COPY_DX
                              27  11 00332          BRB     30$
                              50  DD 00334  29$:    PUSHL   R0                                    ; 0714
                    F0        A9  9F 00336          PUSHAB  STRING_DESC                           ; 0713
    00000000G     00          02  FB 00339          CALLS   #2, STR$GET1_DX                       ; 0714
                    50    18  A8  D0 00340          MOVL    CNT_SRHSTR, R0                        ; 0718
                      048C C840 7F 00344            PUSHAQ  SRHSTR_DESC+4[R0]                     ; 0716
                    53        9E  D0 00349          MOVL    @(SP)+, R3
                    52    F4  A9  D0 0034C          MOVL    STRING_DESC+4, R2
                      0488 C840 7F 00350            PUSHAQ  SRHSTR_DESC[R0]
                    51        9E  3C 00355          MOVZWL  @(SP)+, R1
                         0000V 30 00358             BSBW    UPCASE
                    18        A8  D6 0035B  30$:    INCL    CNT_SRHSTR                            ; 0721
                              98  11 0035E          BRB     28$                                   ; 0697
                    18        A8  D5 00360  31$:    TSTL    CNT_SRHSTR                            ; 0727
                              08  14 00363          BGTR    32$
           50 00000000G       8F  D0 00365          MOVL    #SRH$_NOSTRING, R0                    ; 0729
                              04  0036C             RET
                    57    18  AE  9E 0036D  32$:    MOVAB   RESULT_DESC+4, R7                     ; 0752
    00000088      8F      1C  A8  D1 00371  33$:    CMPL    CNT_EXCLUDE, #136                     ; 0737
                              03  19 00379          BLSS    35$
                         00B6 31 0037B      34$:    BRW     43$
                    F0        A9  9F 0037E  35$:    PUSHAB  STRING_DESC                           ; 0745
                      00C4    CA  9F 00381          PUSHAB  P.ABL
                    6B        02  FB 00385          CALLS   #2, CLI$GET_VALUE
                    56        50  D0 00388          MOVL    R0, STATUS
                    ED        56  E9 0038B          BLBC    STATUS, 34$
  1C    AE       F0 A9        08  28 0038E          MOVC3   #8, STRING_DESC, INTER_DESC           ; 0751
                 14 AE        69  D0 00394          MOVL    TMP_DESC, RESULT_DESC                 ; 0752
                 14 AE    FF  8F  9B 00398  36$:    MOVZBW  #255, RESULT_DESC                     ; 0755
                 18 AE    24  AE  9E 0039D          MOVAB   BUF, RESULT_DESC+4                    ; 0756
                              7E  7C 003A2          CLRQ    -(SP)                                 ; 0757
                              7E  D4 003A4          CLRL    -(SP)
                    20        AE  9F 003A6          PUSHAB  RESULT_DESC
                    24        AE  9F 003A9          PUSHAB  RESULT_DESC
                    30        AE  9F 003AC          PUSHAB  INTER_DESC
    00000000G     00          06  FB 003AF          CALLS   #6, SYS$TRNLOG
                    56        50  D0 003B6          MOVL    R0, STATUS
                    09        56  E8 003B9          BLBS    STATUS, 37$                           ; 0758
```

```
                                                56  DD 003BC          PUSHL   STATUS                                          ; 0760
                    00000000G   00              01  FB 003BE          CALLS   #1, LIB$STOP                                    ;
            1C  AE        14    AE              08  28 003C5 37$:     MOVC3   #8, RESULT_DESC, INTER_DESC                     ; 0761
                    00000629    8F              56  D1 003CB          CMPL    STATUS, #1577                                   ; 0763
                                                C4  12 003D2          BNEQ    36$                                             ;
            18  BE        14    AE              3A  3A 003D4          LOCC    #58, RESULT_DESC, @RESULT_DESC+4                ; 0769
                                                02  12 003DA          BNEQ    38$                                             ;
                                                51  D4 003DC          CLRL    R1                                              ;
                                                51  D5 003DE 38$:     TSTL    R1                                              ; 0770
                                                1D  12 003E0          BNEQ    41$                                             ;
            18  BE        14    AE        5D    8F  3A 003E2          LOCC    #93, RESULT_DESC, @RESULT_DESC+4                ; 0771
                                                02  12 003E9          BNEQ    39$                                             ;
                                                51  D4 003EB          CLRL    R1                                              ;
                                                51  D5 003ED 39$:     TSTL    R1                                              ; 0772
                                                0E  12 003EF          BNEQ    41$                                             ;
            18  BE        14    AE              3E  3A 003F1          LOCC    #62, RESULT_DESC, @RESULT_DESC+4                ; 0773
                                                02  12 003F7          BNEQ    40$                                             ;
                                                51  D4 003F9          CLRL    R1                                              ;
                                                51  D5 003FB 40$:     TSTL    R1                                              ; 0774
                                                12  13 003FD          BEQL    42$                                             ;
                                          14    AE  9F 003FF 41$:     PUSHAB  RESULT_DESC                                     ; 0776
                                                01  DD 00402          PUSHL   #1                                              ;
                                    00000000G   8F  DD 00404          PUSHL   #SRH$_BADEXCL                                   ;
                    00000000G   00              03  FB 0040A          CALLS   #3, LIB$STOP                                    ;
                                50        1C    A8  D0 00411 42$:     MOVL    CNT_EXCLUDE, R0                                 ; 0781
                                        08C8  C840  7F 00415          PUSHAQ  EXCLUDE_DESC[R0]                                ;
                                    9E 020E0000     8F  D0 0041A      MOVL    #34471936, @(SP)+                               ;
                                        08C8  C840  7F 00421          PUSHAQ  EXCLUDE_DESC[R0]                                ; 0782
                                          18    AE  9F 00426          PUSHAB  RESULT_DESC                                     ;
                            0000V       CF        02  FB 00429          CALLS   #2, VALIDATE_EXCLUDE_FILE                       ;
                                          1C    A8  D6 0042E          INCL    CNT_EXCLUDE                                     ; 0783
                                        FF3D    31  00431             BRW     33$                                             ; 0737
                                          3B    A8  B4 00434 43$:     CLRW    FOUND_FILE                                      ; 0788
                                          10    AE  D4 00437          CLRL    SCAN_CONTEXT                                    ; 0790
                                50        14    A8  D0 0043A          MOVL    CNT_INFILE, R3                                  ; 0791
                                52              01  CE 0043E          MNEGL   #1, IFX                                         ;
                                              2B    11 00441          BRB     45$                                             ;
                                          4C  A842  7F 00443 44$:     PUSHAQ  INFILE_DESC+4[IFX]                              ; 0794
                            0094        C9        9E  D0 00447          MOVL    @(SP)+, FAB+44                                  ;
                                          48  A842  7F 0044C          PUSHAQ  INFILE_DESC[IFX]                                ; 0795
                            009C        C9        9E  90 00450          MOVB    @(SP)+, FAB+52                                  ;
                                          10    AE  9F 00455          PUSHAB  SCAN_CONTEXT                                    ; 0796
                                      0000V     CF  9F 00458          PUSHAB  SCAN_FAILURE                                    ;
                                      0000V     CF  9F 0045C          PUSHAB  SCAN_SUCCESS                                    ;
                                          68    A9  9F 00460          PUSHAB  FAB                                             ;
                        00000000G   00              04  FB 00463          CALLS   #4, LIB$FILE_SCAN                               ;
                                          0098  C9  D4 0046A          CLRL    FAB+48                                          ; 0800
                D1                50              53  F2 0046E 45$:     AOBLSS  R3, IFX, 44$                                    ; 0791
                                50              03    0D08  C8  E8 00472    BLBS    QUA_STATISTICS, 46$                       ; 0807
                                                  01AC    31  00477       BRW     52$                                       ;
                                                      7E  7C 0047A 46$:     CLRQ    -(SP)                                     ; 0820
                                                      7E  D4 0047C          CLRL    -(SP)                                     ;
                                                0238  C9  9F 0047E          PUSHAB  STAT_JPI_BLOCK                            ;
                                                      7E  7C 00482          CLRQ    -(SP)                                     ;
                                                      7E  D4 00484          CLRL    -(SP)                                     ;
                        00000000G   00                  07  FB 00486      CALLS   #7, SYS$GETJPI                            ;
                                50                      50  D0 0048D      MOVL    R0, STAT                                  ;
```

```
              60             52  E9 00490        BLBC    STAT, 47$                                    ;
        04    A9     00B4    CE  9E 00493        MOVAB   OUT_BUF, TMP_DESC+4                          ; 0824
                       F0    AA  9F 00499        PUSHAB  NULL_STR                                     ; 0825
     00000000G  00           01  FB 0049C        CALLS   #1, LIB$PUT_OUTPUT                           ;
              69       50    8F  9B 004A3        MOVZBW  #80, TMP_DESC                                ; 0827
 7E     0D20  C8     0D30    C8  C3 004A7        SUBL3   STAT_BUFIO, STAT_JPI_BUFIO, -(SP)            ; 0829
                     0D14    C8  DD 004AF        PUSHL   STAT_TOTFIL                                  ;
                             59  DD 004B3        PUSHL   R9                                           ;
                             59  DD 004B5        PUSHL   R9                                           ;
                     0108    CA  9F 004B7        PUSHAB  P.ABN                                        ;
     00000000G  00           05  FB 004BB        CALLS   #5, SYS$FAO                                  ;
              52             50  D0 004C2        MOVL    R0, STAT                                     ;
              59             52  E9 004C5        BLBC    STAT, 48$                                    ;
                             59  DD 004C8        PUSHL   R9                                           ; 0832
     00000000G  00           01  FB 004CA        CALLS   #1, LIB$PUT_OUTPUT                           ;
              69       50    8F  9B 004D1        MOVZBW  #80, TMP_DESC                                ; 0834
 7E     0D28  C8     0D38    C8  C3 004D5        SUBL3   STAT_DIRIO, STAT_JPI_DIRIO, -(SP)            ; 0836
                     0D10    C8  DD 004DD        PUSHL   STAT_TOTREC                                  ;
                             59  DD 004E1        PUSHL   R9                                           ;
                             59  DD 004E3        PUSHL   R9                                           ;
                     014C    CA  9F 004E5        PUSHAB  P.ABP                                        ;
     00000000G  00           05  FB 004E9        CALLS   #5, SYS$FAO                                  ;
              52             50  D0 004F0        MOVL    R0, STAT                                     ;
              2B             52  E9 004F3  47$:  BLBC    STAT, 48$                                    ;
                             59  DD 004F6        PUSHL   R9                                           ; 0839
     00000000G  00           01  FB 004F8        CALLS   #1, LIB$PUT_OUTPUT                           ;
              69       50    8F  9B 004FF        MOVZBW  #80, TMP_DESC                                ; 0841
 7E     0D2C  C8     0D3C    C8  C3 00503        SUBL3   STAT_PAGEFLTS, STAT_JPI_PAGEFLTS, -(SP)      ; 0843
                     0D0C    C8  DD 0050B        PUSHL   STAT_TOTCHR                                  ;
                             59  DD 0050F        PUSHL   R9                                           ;
                             59  DD 00511        PUSHL   R9                                           ;
                     0190    CA  9F 00513        PUSHAB  P.ABR                                        ;
     00000000G  00           05  FB 00517        CALLS   #5, SYS$FAO                                  ;
              52             50  D0 0051E        MOVL    R0, STAT                                     ;
              77             52  E9 00521  48$:  BLBC    STAT, 49$                                    ;
                             59  DD 00524        PUSHL   R9                                           ; 0846
     00000000G  00           01  FB 00526        CALLS   #1, LIB$PUT_OUTPUT                           ;
              69       50    8F  9B 0052D        MOVZBW  #80, TMP_DESC                                ; 0848
 50     0D24  C8     0D34    C8  C3 00531        SUBL3   STAT_CPUTIM, STAT_JPI_CPUTIM, TIM            ; 0849
 7E     00    50             01  7A 00539        EMUL    #1, TIM, #0, -(SP)                           ; 0856
 6E     7E    8E  00000064   8F  7B 0053E        EDIV    #100, (SP)+, -(SP), (SP)                     ;
        51    50  00000064   8F  C7 00547        DIVL3   #100, TIM, R1                                ;
 7E     00    51             01  7A 0054F        EMUL    #1, R1, #0, -(SP)                            ;
 6E     7E    8E             3C  7B 00554        EDIV    #60, (SP)+, -(SP), (SP)                      ;
        51    50  00001770   8F  C7 00559        DIVL3   #6000, TIM, R1                               ;
 7E     00    51             01  7A 00561        EMUL    #1, R1, #0, -(SP)                            ;
 6E     7E    8E             3C  7B 00566        EDIV    #60, (SP)+, -(SP), (SP)                      ;
        51    50  00057E40   8F  C7 0056B        DIVL3   #360000, TIM, R1                             ;
 7E     00    51             01  7A 00573        EMUL    #1, R1, #0, -(SP)                            ;
 6E     7E    8E             18  7B 00578        EDIV    #24, (SP)+, -(SP), (SP)                      ;
        7E    50  0083D600   8F  C7 0057D        DIVL3   #8640000, TIM, -(SP)                         ;
                     0D18    C8  DD 00585        PUSHL   STAT_TOTMAT                                  ;
                             59  DD 00589        PUSHL   R9                                           ;
                             59  DD 0058B        PUSHL   R9                                           ;
                     01E4    CA  9F 0058D        PUSHAB  P.ABT                                        ;
     00000000G  00           09  FB 00591        CALLS   #9, SYS$FAO                                  ;
              52             50  D0 00598        MOVL    R0, STAT                                     ;
```

```
                                7B              52  E9 0059B 49$:    BLBC    STAT, 50$                                       ;
                                                59  DD 0059E        PUSHL   R9                                              ; 0859
                     00000000G  00              01  FB 005A0        CALLS   #1, LIB$PUT_OUTPUT                              ;
                          0104  CE              10  D0 005A7        MOVL    #16, TIM_DESC                                   ; 0860
                          0108  CE      010C    CE  9E 005AC        MOVAB   TIM_BUF, TIM_DESC+4                             ; 0861
                                        011C    CE  9F 005B3        PUSHAB  QUADTIME                                        ; 0862
                     00000000G  00              01  FB 005B7        CALLS   #1, SYS$GETTIM                                  ;
                                52              50  D0 005BE        MOVL    R0, STAT                                        ;
                                55              52  E9 005C1        BLBC    STAT, 50$                                       ;
                011C    CE          0D40        C8  C3 005C4        SUBL3   QUADTIME, STAT_STARTTIME, QUADTIME               ; 0865
                                50      0D44    C8  D0 005CE        MOVL    STAT_STARTTIME+4, R0                            ;
                                50      0120    CE  D9 005D3        SBWC    QUADTIME, R0                                    ;
                                0120    CE          50  D0 005D8    MOVL    R0, QUADTIME                                    ;
                                                    7E  D4 005DD    CLRL    -(SP)                                           ; 0866
                                        0120    CE  9F 005DF        PUSHAB  QUADTIME                                        ;
                                        010C    CE  9F 005E3        PUSHAB  TIM_DESC                                        ;
                                        0110    CE  9F 005E7        PUSHAB  TIM_DESC                                        ;
                     00000000G  00              04  FB 005EB        CALLS   #4, SYS$ASCTIM                                  ;
                                52              50  D0 005F2        MOVL    R0, STAT                                        ;
                                21              52  E9 005F5        BLBC    STAT, 50$                                       ;
                                69          50  8F  9B 005F8        MOVZBW  #80, TMP_DESC                                   ; 0870
                                        0104    CE  9F 005FC        PUSHAB  TIM_DESC                                        ; 0872
                                        0D1C    C8  DD 00600        PUSHL   STAT_TOTPUT                                     ;
                                                59  DD 00604        PUSHL   R9                                              ;
                                                59  DD 00606        PUSHL   R9                                              ;
                                        0224    CA  9F 00608        PUSHAB  P.ABV                                           ;
                     00000000G  00              05  FB 0060C        CALLS   #5, SYS$FAO                                     ;
                                52              50  D0 00613        MOVL    R0, STAT                                        ;
                                04              52  E8 00616        BLBS    STAT, 51$                                       ;
                                50              52  D0 00619 50$:    MOVL    STAT, R0                                        ; 0874
                                                    04 0061C        RET                                                     ;
                                                59  DD 0061D 51$:    PUSHL   R9                                              ; 0875
                     00000000G  00              01  FB 0061F        CALLS   #1, LIB$PUT_OUTPUT                              ;
                                0B          30  A8  E9 00626 52$:    BLBC    OUT_FILE_OPEN, 53$                              ; 0880
                                        015C    C9  9F 0062A        PUSHAB  OUTFAB                                          ; 0882
                     00000000G  00              01  FB 0062E        CALLS   #1, SYS$CLOSE                                   ;
                                56              01  D0 00635 53$:    MOVL    #1, STATUS                                      ; 0884
                                1D          3C  A8  E8 00638        BLBS    FOUND_ANY, 55$                                  ; 0885
                                12          3B  A8  E9 0063C        BLBC    FOUND_FILE, 54$                                 ; 0887
                                56 00000000G    8F  D0 00640        MOVL    #SRH$_NOMATCHES, STATUS                         ; 0889
                                                56  DD 00647        PUSHL   STATUS                                          ;
                     00000000G  00              01  FB 00649        CALLS   #1, LIB$SIGNAL                                  ;
                                                07  11 00650        BRB     55$                                             ;
                                56 00000000G    8F  D0 00652 54$:    MOVL    #SRH$_NOFILE, STATUS                            ; 0891
                                50              56  D0 00659 55$:    MOVL    STATUS, R0                                      ; 0893
                                                    04 0065C        RET                                                     ; 0894

; Routine Size:  1629 bytes,    Routine Base:  $CODE$ + 0000
```

```
;  901          0895  1 ROUTINE scan_success : NOVALUE =
;  902          0896  2 BEGIN
;  903          0897  2
;  904          0898  2 ! Make sure that this file isn't being excluded
;  905          0899  2 !
;  906          0900  2 IF NOT exclude_file()                    ! Check exclude list
;  907          0901  2 THEN
;  908          0902  3     BEGIN
;  909          0903  3     found_file = true;
;  910          0904  3     search_one_file();                   ! Open & search a file
;  911          0905  2     END;
;  912          0906  2
;  913          0907  2 RETURN;
;  914          0908  1 END;


                                        0000 00000 SCAN_SUCCESS:
                                                   .WORD   Save nothing                    ; 0895
                0000V  CF                  00  FB 00002    CALLS   #0, EXCLUDE_FILE        ; 0900
                       0A                  50  E8 00007    BLBS    R0, 1$                  ;
                0000'  CF                  01  90 0000A    MOVB    #1, FOUND_FILE          ; 0903
                0000V  CF                  00  FB 0000F    CALLS   #0, SEARCH_ONE_FILE     ; 0904
                                           04 00014 1$:    RET                             ; 0908

; Routine Size:  21 bytes,    Routine Base:  $CODE$ + 065D
```

```
;  916          0909  1 ROUTINE scan_failure : NOVALUE =
;  917          0910  2 BEGIN
;  918          0911  2
;  919          0912  2     file_error (srh$_openin, .fab [fab$l_sts], fab, .fab [fab$l_stv]);
;  920          0913  2
;  921          0914  2 RETURN;
;  922          0915  1 END;


                                        0000 00000 SCAN_FAILURE:
                                                           .WORD   Save nothing                                    ; 0909
                                    0000'  CF   DD 00002   PUSHL   FAB+12                                         ; 0912
                                    0000'  CF   9F 00006   PUSHAB  FAB
                                    0000'  CF   DD 0000A   PUSHL   FAB+8
                                00D71098   8F   DD 0000E   PUSHL   #14094488
                          0000V  CF        04   FB 00014   CALLS   #4, FILE_ERROR
                                           04   00019     RET                                                     ; 0915

; Routine Size:  26 bytes,    Routine Base:  $CODE$ + 0672
```

```
;  924     0916  1 ROUTINE validate_exclude_file ( in_desc  : REF BLOCK [8, BYTE],
;  925     0917  1                                  out_desc : REF BLOCK [8, BYTE]) : NOVALUE =
;  926     0918  1
;  927     0919  1 !++
;  928     0920  1 ! Functional description
;  929     0921  1 !
;  930     0922  1 !       This routine checks to see if string_desc is a valid filename
;  931     0923  1 !
;  932     0924  1 ! Calling sequence
;  933     0925  1 !
;  934     0926  1 !       validate_exclude_file (in_desc, out_desc)
;  935     0927  1 !
;  936     0928  1 ! Input parameters
;  937     0929  1 !
;  938     0930  1 !       in_desc     - Address of any class string descriptor containing a
;  939     0931  1 !                     filename to be validated
;  940     0932  1 !
;  941     0933  1 ! Implicit inputs
;  942     0934  1 !
;  943     0935  1 !       none
;  944     0936  1 !
;  945     0937  1 ! Output parameters
;  946     0938  1 !
;  947     0939  1 !       out_desc - Address of any class descriptor to receive validated name.
;  948     0940  1 !                  This copy will NOT have node, device or directory.  Leading
;  949     0941  1 !                  zeroes will be stripped from version numbers.  If a name
;  950     0942  1 !                  of the form NAME.TYP; or NAME.TYP;0 is given, the version
;  951     0943  1 !                  will also be stripped.
;  952     0944  1 !
;  953     0945  1 ! Implicit outputs
;  954     0946  1 !
;  955     0947  1 !       none
;  956     0948  1 !
;  957     0949  1 ! Routine value
;  958     0950  1 !
;  959     0951  1 !       TRUE    - The filename is valid
;  960     0952  1 !       error   - The filename does not parse without errors, the RMS error
;  961     0953  1 !                 code is returned
;  962     0954  1 !
;  963     0955  1 ! Side effects
;  964     0956  1 !
;  965     0957  1 !       Errors will be signalled
;  966     0958  1 !
;  967     0959  1 !--
;  968     0960  1
;  969     0961  2 BEGIN
;  970     0962  2
;  971     0963  2 OWN_DZRO
;  972     0964  2     val_exp     : VECTOR [nam$c_maxrss, BYTE],  ! Expanded name string
;  973     0965  2     val_res     : VECTOR [nam$c_maxrss, BYTE];  ! Resultant name string
;  974     0966  2
;  975     0967  2 OWN_CRF
;  976   P 0968  2     val_nam     : $NAM (                        ! File name block
;  977   P 0969  2                          RSA = val_res,         !  Result name addr
;  978   P 0970  2                          RSS = nam$c_maxrss,    !  Result name size
;  979   P 0971  2                          ESA = val_exp,         !  Expanded name addr
;  980     0972  2                          ESS = nam$c_maxrss),   !  Expanded name size
```

```
;   981        P 0973  2     val_fab     : $FAB(                          ! Input file FAB
;   982        P 0974  2                          DNA = UPLIT BYTE('*.*'),!  Default file spec.
;   983        P 0975  2                          DNS = 3,                !   (DNM doesn't like *'s)
;   984          0976  2                          NAM = val_nam);         !  Name block
;   985          0977  2
;   986          0978  2     LOCAL
;   987          0979  2         lve,                ! Length from version to end
;   988          0980  2         len,                ! The current length
;   989          0981  2         adr,                ! The current start
;   990          0982  2         p,                  ! A pointer into the string
;   991          0983  2         status;
;   992          0984  2
;   993          0985  2     val_fab [fab$l_fna] = .in_desc [dsc$a_pointer]; ! Set name addr
;   994          0986  2     val_fab [fab$b_fns] = .in_desc [dsc$w_length];  ! Set name size
;   995          0987  2
;   996          0988  3     IF NOT (status = $PARSE(FAB = val_fab))         ! Parse the file spec
;   997          0989  2     THEN
;   998          0990  3         BEGIN
;   999          0991  3         file_error (srh$_badexclnam, .status, val_fab, .val_fab [fab$l_stv]);
;  1000          0992  3         RETURN;
;  1001          0993  2         END;
;  1002          0994  2
;  1003          0995  2     status = $SEARCH(FAB = val_fab);                ! Parse the file spec
;  1004          0996  3     IF (NOT .status ) AND (.status NEQ RMS$_FNF)
;  1005          0997  2     THEN
;  1006          0998  3         BEGIN
;  1007          0999  3         file_error (srh$_badexclnam, .status, val_fab, .val_fab [fab$l_stv]);
;  1008          1000  3         RETURN;
;  1009          1001  2         END;
;  1010          1002  2
;  1011          1003  2     len = .val_nam [nam$b_esl];                     ! Get length of expanded string
;  1012          1004  2     adr = .val_nam [nam$l_esa];                     ! Get address of expanded string
;  1013          1005  2     p = locate_filename (.len, .adr);               ! Skip device and directory
;  1014          1006  2     len = .len - (.p - .adr);                       ! Adjust the length
;  1015          1007  2     adr = .p;                                       ! And move the pointer
;  1016          1008  2     p = locate_version (.len, .adr);                ! Find the version number
;  1017          1009  2     lve = .len - (.p - .adr);                       ! Compute remaining length
;  1018          1010  2     WHILE 1                             ! Trim leading zeroes in length
;  1019          1011  2     DO
;  1020          1012  3         BEGIN
;  1021          1013  4         IF (.lve GTR 2) AND (CH$RCHAR(.p+1) EQL '0')
;  1022          1014  3         THEN
;  1023          1015  4             BEGIN
;  1024          1016  4             lve = .lve - 1;             ! Remove one from remaining length
;  1025          1017  4             len = .len - 1;             ! Also trim one from full length
;  1026          1018  4             CH$MOVE(.lve, .p+2, .p+1);      ! Slide it over one byte
;  1027          1019  4             END
;  1028          1020  3         ELSE
;  1029          1021  3             EXITLOOP;
;  1030          1022  2         END;
;  1031          1023  2
;  1032          1024  3     IF    (.lve LEQ 1)
;  1033          1025  3      OR ((.lve EQL 2) AND (CH$RCHAR(.p+1) EQL '0'))
;  1034          1026  2     THEN
;  1035          1027  2         len = .len - .lve;
;  1036          1028  2     tmp_desc [dsc$w_length]  = .len;
;  1037          1029  2     tmp_desc [dsc$a_pointer] = .adr;
```

```
; 1038          1030  2 str$copy_dx (.out_desc, tmp_desc);      ! Copy to the output descriptor
; 1039          1031  2
; 1040          1032  2 RETURN;
; 1041          1033  1 END;


                                                      .PSECT  $OWN$_CRF,NOEXE,2

                            02  0027C VAL_NAM:.BYTE   2
                            60  0027D         .BYTE   96
                            FF  0027E         .BYTE   -1
                            00  0027F         .BYTE   0
                     00000000'  00280         .ADDRESS VAL_RES
                            00  00284         .BYTE   0
                            00  00285         .BYTE   0
                            FF  00286         .BYTE   -1
                            00  00287         .BYTE   0
                     00000000'  00288         .ADDRESS VAL_EXP
                     00000000   0028C         .LONG   0
                         0000#  00290         .WORD   0[8]
                         0000#  002A0         .WORD   0[3]
                         0000#  002A6         .WORD   0[3]
                     00000000   002AC         .LONG   0
                     00000000   002B0         .LONG   0
                            00  002B4         .BYTE   0
                            00  002B5         .BYTE   0
                            00  002B6         .BYTE   0
                            00  002B7         .BYTE   0
                            00  002B8         .BYTE   0
                            00  002B9         .BYTE   0
                           00#  002BA         .BYTE   0[2]
                     00000000   002BC         .LONG   0
                     00000000   002C0         .LONG   0
                     00000000   002C4         .LONG   0
                     00000000   002C8         .LONG   0
                     00000000   002CC         .LONG   0
                     00000000   002D0         .LONG   0
                     00000000#  002D4         .LONG   0[2]
                            03  002DC VAL_FAB:.BYTE   3
                            50  002DD         .BYTE   80
                          0000  002DE         .WORD   0
                     00000000   002E0         .LONG   0
                     00000000   002E4         .LONG   0
                     00000000   002E8         .LONG   0
                     00000000   002EC         .LONG   0
                          0000  002F0         .WORD   0
                            02  002F2         .BYTE   2
                            00  002F3         .BYTE   0
                     00000000   002F4         .LONG   0
                            00  002F8         .BYTE   0
                            00  002F9         .BYTE   0
                            00  002FA         .BYTE   0
                            02  002FB         .BYTE   2
                     00000000   002FC         .LONG   0
                     00000000   00300         .LONG   0
                     00000000'  00304         .ADDRESS VAL_NAM
```

```
                00000000  00308          .LONG   0                                                       ;
                00000000' 0030C          .ADDRESS P.ABX                                                  ;
                       00 00310          .BYTE   0                                                       ;
                       03 00311          .BYTE   3                                                       ;
                     0000 00312          .WORD   0                                                       ;
                00000000  00314          .LONG   0                                                       ;
                     0000 00318          .WORD   0                                                       ;
                       00 0031A          .BYTE   0                                                       ;
                       00 0031B          .BYTE   0                                                       ;
                00000000  0031C          .LONG   0                                                       ;
                00000000  00320          .LONG   0                                                       ;
                     0000 00324          .WORD   0                                                       ;
                       00 00326          .BYTE   0                                                       ;
                       00 00327          .BYTE   0                                                       ;
                00000000  00328          .LONG   0                                                       ;

                                         .PSECT  $OWN$_DZRO,NOEXE,2

                          01148 VAL_EXP: .BLKB   255
                          01247          .BLKB   1
                          01248 VAL_RES: .BLKB   255

                                         .PSECT  $PLIT$,NOWRT,NOEXE,2

            2A  2E  2A    00294 P.ABX:   .ASCII  \*.*\                                                   ;

                                         .EXTRN  SYS$PARSE, SYS$SEARCH

                                         .PSECT  $CODE$,NOWRT,2

                          07FC 00000 VALIDATE_EXCLUDE_FILE:
                                         .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10                        ; 0916
                       5A      0000'  CF  9E 00002          MOVAB   VAL_FAB, R10                          ;
                       50        04   AC  D0 00007          MOVL    IN_DESC, R0                           ; 0985
                    2C AA        04   A0  D0 0000B          MOVL    4(R0), VAL_FAB+44                     ;
                    34 AA             60  90 00010          MOVB    (R0), VAL_FAB+52                      ; 0986
                                      5A  DD 00014          PUSHL   R10                                   ; 0988
                00000000G 00          01  FB 00016          CALLS   #1, SYS$PARSE                         ;
                       52             50  D0 0001D          MOVL    R0, STATUS                            ;
                       18             52  E9 00020          BLBC    STATUS, 1$                            ;
                                      5A  DD 00023          PUSHL   R10                                   ; 0995
                00000000G 00          01  FB 00025          CALLS   #1, SYS$SEARCH                        ;
                       52             50  D0 0002C          MOVL    R0, STATUS                            ;
                       1C             52  E8 0002F          BLBS    STATUS, 2$                            ; 0996
                00018292  8F           52  D1 00032          CMPL    STATUS, #98962                        ;
                                       13  13 00039          BEQL    2$                                    ;
                             0C        AA  DD 0003B 1$:      PUSHL   VAL_FAB+12                            ; 0999
                           0404        8F  BB 0003E          PUSHR   #^M<R2,R10>                           ;
                     00000000G         8F  DD 00042          PUSHL   #SRH$_BADEXCLNAM                      ;
                    0000V  CF              04  FB 00048          CALLS   #4, FILE_ERROR                        ;
                                           04  00 0004D          RET                                           ; 0998
                       58        AB    AA  9A 0004E 2$:      MOVZBL  VAL_NAM+11, LEN                       ; 1003
                       56        AC    AA  D0 00052          MOVL    VAL_NAM+12, ADR                       ; 1004
                                       56  DD 00056          PUSHL   ADR                                   ; 1005
                                       58  DD 00058          PUSHL   LEN                                   ;
                    0000V  CF              02  FB 0005A          CALLS   #2, LOCATE_FILENAME                   ;
                       57                  50  D0 0005F          MOVL    R0, P                                 ;
```

```
                50              56              57  C3 00062          SUBL3   P, ADR, R0                          ; 1006
                                58              50  C0 00066          ADDL2   R0, LEN                             ;
                                56              57  D0 00069          MOVL    P, ADR                              ; 1007
                                                56  DD 0006C          PUSHL   ADR                                 ; 1008
                                                58  DD 0006E          PUSHL   LEN                                 ;
                          0000V CF              02  FB 00070          CALLS   #2, LOCATE_VERSION                  ;
                                57              50  D0 00075          MOVL    R0, P                               ;
                50              56              57  C3 00078          SUBL3   P, ADR, R0                          ; 1009
                59              50              58  C1 0007C          ADDL3   LEN, R0, LVE                        ;
                                02              59  D1 00080 3$:      CMPL    LVE, #2                             ; 1013
                                                12  15 00083          BLEQ    4$                                  ;
                                30      01      A7  91 00085          CMPB    1(P), #48                           ;
                                                0C  12 00089          BNEQ    4$                                  ;
                                                59  D7 0008B          DECL    LVE                                 ; 1016
                                                58  D7 0008D          DECL    LEN                                 ; 1017
          01    A7      02      A7              59  28 0008F          MOVC3   LVE, 2(P), 1(P)                     ; 1018
                                                E9  11 00095          BRB     3$                                  ; 1013
                                01              59  D1 00097 4$:      CMPL    LVE, #1                             ; 1024
                                                0B  15 0009A          BLEQ    5$                                  ;
                                02              59  D1 0009C          CMPL    LVE, #2                             ; 1025
                                                09  12 0009F          BNEQ    6$                                  ;
                                30      01      A7  91 000A1          CMPB    1(P), #48                           ;
                                                03  12 000A5          BNEQ    6$                                  ;
                                58              59  C2 000A7 5$:      SUBL2   LVE, LEN                            ; 1027
                          FD34  CA              58  B0 000AA 6$:      MOVW    LEN, TMP_DESC                       ; 1028
                          FD38  CA              56  D0 000AF          MOVL    ADR, TMP_DESC+4                     ; 1029
                                          FD34  CA  9F 000B4          PUSHAB  TMP_DESC                            ; 1030
                                            08  AC  DD 000B8          PUSHL   OUT_DESC                            ;
                    00000000G   00              02  FB 000BB          CALLS   #2, STR$COPY_DX                     ;
                                                04  000C2          RET                                         ; 1033

; Routine Size:  195 bytes,    Routine Base:  $CODE$ + 068C
```

```
;  1043     1034  1 ROUTINE exclude_file =                    ! See if the file should be excluded
;  1044     1035  1
;  1045     1036  1 !++
;  1046     1037  1 ! Functional description
;  1047     1038  1 !
;  1048     1039  1 !       This routine checks to see if the current resultant filename in
;  1049     1040  1 !       nam_block matches any of the filenames in the exclude list
;  1050     1041  1 !
;  1051     1042  1 ! Calling sequence
;  1052     1043  1 !
;  1053     1044  1 !       exclude_file()
;  1054     1045  1 !
;  1055     1046  1 ! Input parameters
;  1056     1047  1 !
;  1057     1048  1 !       none
;  1058     1049  1 !
;  1059     1050  1 ! Implicit inputs
;  1060     1051  1 !
;  1061     1052  1 !       nam_block       - The NAMe block containing the resultant string
;  1062     1053  1 !       exclude_desc    - Array of filenames to exclude
;  1063     1054  1 !       cnt_exclude     - Count of items in use in the array
;  1064     1055  1 !
;  1065     1056  1 ! Output parameters
;  1066     1057  1 !
;  1067     1058  1 !       none
;  1068     1059  1 !
;  1069     1060  1 ! Implicit outputs
;  1070     1061  1 !
;  1071     1062  1 !       none
;  1072     1063  1 !
;  1073     1064  1 ! Routine value
;  1074     1065  1 !
;  1075     1066  1 !       TRUE    - The filename matches an item in the exclude list
;  1076     1067  1 !       FALSE   - The filename does not match any item
;  1077     1068  1 !
;  1078     1069  1 ! Side effects
;  1079     1070  1 !
;  1080     1071  1 !       none
;  1081     1072  1 !
;  1082     1073  1 !--
;  1083     1074  1
;  1084     1075  2 BEGIN
;  1085     1076  2
;  1086     1077  2 LOCAL
;  1087     1078  2     p,                  ! A local character pointer
;  1088     1079  2     lenf,               ! Length of file name from nam_block
;  1089     1080  2     adrf,               ! Address of     ''
;  1090     1081  2     lent,               ! Length of target name from exclude list
;  1091     1082  2     adrt;               ! Address of     ''
;  1092     1083  2
;  1093     1084  2 IF .cnt_exclude EQL 0 THEN RETURN false;! Don't bother doing anything more
;  1094     1085  2
;  1095     1086  2 !
;  1096     1087  2 ! Remove device and directory from the result name
;  1097     1088  2 !
;  1098     1089  2 lenf = .nam_block [nam$b_rsl];          ! Get the res length
;  1099     1090  2 adrf = .nam_block [nam$l_rsa];          ! Get the result address
```

```
;  1100          1091  2
;  1101          1092  2 p = locate_filename (.lenf, .adrf);      ! Look for end of directory
;  1102          1093  2 lenf = .lenf - (.p - .adrf);            ! Adjust the length
;  1103          1094  2 adrf = .p;                               ! Adjust the pointer
;  1104          1095  2
;  1105          1096  2 !
;  1106          1097  2 ! Now compare the file name against each file in the exclude list
;  1107          1098  2 !
;  1108          1099  2 INCR idx FROM 0 TO .cnt_exclude-1       ! No loop if it equals zero
;  1109          1100  2 DO
;  1110          1101  2     BEGIN
;  1111          1102  2     !
;  1112          1103  2     ! If the version is not explicitly given in the target, then remove
;  1113          1104  2     ! the version from both the input filename and the target
;  1114          1105  2     !
;  1115          1106  2     lent = .exclude_desc [.idx, dsc$w_length];  ! Length of target
;  1116          1107  2     adrt = .exclude_desc [.idx, dsc$a_pointer]; ! Address of target
;  1117          1108  2
;  1118          1109  2     p = locate_version (.lent, .adrt);          ! Look for version in target
;  1119          1110  2     IF .p EQL 0
;  1120          1111  2     THEN                            ! No version in target, strip from filename
;  1121          1112  4         BEGIN
;  1122          1113  4         p = locate_version (.lenf, .adrf);      ! Look for version in filename
;  1123          1114  4         IF .p NEQ 0                             ! If present
;  1124          1115  4         THEN
;  1125          1116  4             lenf = .p - .adrf;                  ! Set length without version
;  1126          1117  4         END;
;  1127          1118  3
;  1128          1119  3     IF match_file (.lenf, .adrf, .lent, .adrt)
;  1129          1120  3     THEN
;  1130          1121  3         RETURN true;                    ! We got a match, exclude this file
;  1131          1122  2     END;
;  1132          1123  2
;  1133          1124  2 RETURN false;                          ! Never matched, include this file
;  1134          1125  2
;  1135          1126  1 END;


                                01FC 00000 EXCLUDE_FILE:
                                           .WORD   Save R2,R3,R4,R5,R6,R7,R8                ;  1034
                          0000'  CF  D5 00002      TSTL    CNT_EXCLUDE                      ;  1084
                                 72  13 00006      BEQL    4$
                       54 0000'  CF  9A 00008      MOVZBL  NAM_BLOCK+3, LENF                ;  1089
                       52 0000'  CF  D0 0000D      MOVL    NAM_BLOCK+4, ADRF                ;  1090
                                 52  DD 00012      PUSHL   ADRF                             ;  1092
                                 54  DD 00014      PUSHL   LENF
                0000V  CF        02  FB 00016      CALLS   #2, LOCATE_FILENAME
                       55        50  D0 0001B      MOVL    R0, P
                50     52        55  C3 0001E      SUBL3   P, ADRF, R0                      ;  1093
                       54        50  C0 00022      ADDL2   R0, LENF
                       52        55  D0 00025      MOVL    P, ADRF                          ;  1094
                       58 0000'  CF  D0 00028      MOVL    CNT_EXCLUDE, R8                  ;  1099
                       53        01  CE 0002D      MNEGL   #1, IDX                          ;  1119
                                 44  11 00030      BRB     3$                               ;
```

```
                          0000'CF43   7F  00032 1$:     PUSHAQ  EXCLUDE_DESC[IDX]                ; 1106
                       57           9E  00037         MOVZWL  @(SP)+, LENT
                          0000'CF43   7F  0003A         PUSHAQ  EXCLUDE_DESC+4[IDX]             ; 1107
                       56           9E  0003F         MOVL    @(SP)+, ADRT
                                    56  00042         PUSHL   ADRT                            ; 1109
                                    57  00044         PUSHL   LENT
                 0000V CF                   02  00046         CALLS   #2, LOCATE_VERSION
                       55                   50  0004B         MOVL    R0, P
                                            12  0004E         BNEQ    2$                      ; 1110
                                            52  00050         PUSHL   ADRF                    ; 1113
                                            54  00052         PUSHL   LENF
                 0000V CF                   02  00054         CALLS   #2, LOCATE_VERSION
                       55                   50  00059         MOVL    R0, P
                                            04  0005C         BEQL    2$                      ; 1114
                    54 55                   52  C3  0005E         SUBL3   ADRF, P, LENF       ; 1116
                                            56  DD  00062 2$:     PUSHL   ADRT                ; 1119
                          0084              8F  BB  00064         PUSHR   #^M<R2,R7>
                                            54  DD  00068         PUSHL   LENF
                 0000V CF                   04  FB  0006A         CALLS   #4, MATCH_FILE
                       04                   50  E9  0006F         BLBC    R0, 3$
                       50                   01  D0  00072         MOVL    #1, R0              ; 1121
                                                04  00075         RET
                    B8 53                   58  F2  00076 3$:     AOBLSS  R8, IDX, 1$         ; 1099
                                            50  D4  0007A 4$:     CLRL    R0                  ; 1126
                                                04  0007C         RET                         ;

; Routine Size:  125 bytes,    Routine Base:  $CODE$ + 074F
```

```
;  1137     1127  1 ROUTINE locate_version (len, adr) =     ! Find version in filename
;  1138     1128  1
;  1139     1129  1 !++
;  1140     1130  1 ! Functional description
;  1141     1131  1 !
;  1142     1132  1 !       This routine finds the version number part of a file specification.
;  1143     1133  1 !       Both the standard syntax of NAME.TYP;1 and the alternate syntax of
;  1144     1134  1 !       NAME.TYP.1 are allowed.
;  1145     1135  1 !
;  1146     1136  1 ! Calling sequence
;  1147     1137  1 !
;  1148     1138  1 !       locate_version (.str [dsc$w_length], .str [dsc$a_pointer])
;  1149     1139  1 !
;  1150     1140  1 ! Input parameters
;  1151     1141  1 !
;  1152     1142  1 !       len - Length of filename string
;  1153     1143  1 !       adr - Address of filename string
;  1154     1144  1 !
;  1155     1145  1 ! Output parameters
;  1156     1146  1 !
;  1157     1147  1 !       none
;  1158     1148  1 !
;  1159     1149  1 ! Implicit inputs/outputs
;  1160     1150  1 !
;  1161     1151  1 !       none
;  1162     1152  1 !
;  1163     1153  1 ! Routine value
;  1164     1154  1 !
;  1165     1155  1 !       Address of the character delimiting the version number if found,
;  1166     1156  1 !       otherwise 0
;  1167     1157  1 !--
;  1168     1158  2 BEGIN
;  1169     1159  2
;  1170     1160  2 LOCAL
;  1171     1161  2     l,                              ! Remaining length for alternate syntax
;  1172     1162  2     p;                              ! Local character pointer
;  1173     1163  2
;  1174     1164  2 p = CH$FIND_CH (.len, .adr, ';');       ! Look for version in target
;  1175     1165  2 IF .p EQL 0
;  1176     1166  2 THEN
;  1177     1167  3     BEGIN
;  1178     1168  3     p = CH$FIND_CH (.len, .adr, '.');   ! Check for alternate syntax
;  1179     1169  3     IF .p EQL 0 THEN RETURN false;      ! No version
;  1180     1170  3     p = .p + 1;                         ! Bump past the dot
;  1181     1171  3     l = .len - (.p - .adr);             ! Length of remainder
;  1182     1172  3     IF .l LEQ 0 THEN RETURN false;      ! It was 'NAME.', no version
;  1183     1173  3     p = CH$FIND_CH (.l, .p, '.');       ! Look for second dot
;  1184     1174  2     END;
;  1185     1175  2
;  1186     1176  2 RETURN .p;                              ! Done, it is zero or pointer
;  1187     1177  2
;  1188     1178  1 END;
```

```
                                          0000 00000 LOCATE_VERSION:
                                                          .WORD   Save nothing                          ; 1127
        08  BC        04  AC             3B  3A 00002     LOCC    #59, LEN, @ADR                        ; 1164
                                         02  12 00008     BNEQ    1$                                    ;
                                         51  D4 0000A     CLRL    R1                                    ;
                                         51  D5 0000C 1$: TSTL    P                                     ; 1165
                                         23  12 0000E     BNEQ    3$                                    ;
        08  BC        04  AC             2E  3A 00010     LOCC    #46, LEN, @ADR                        ; 1168
                                         02  12 00016     BNEQ    2$                                    ;
                                         51  D4 00018     CLRL    R1                                    ;
                                         51  D5 0001A 2$: TSTL    P                                     ; 1169
                                         19  13 0001C     BEQL    4$                                    ;
                                         51  D6 0001E     INCL    P                                     ; 1170
            50        08  AC             51  C3 00020     SUBL3   P, ADR, R0                            ; 1171
                          50       04    AC  C0 00025     ADDL2   LEN, L                                ;
                                         0C  15 00029     BLEQ    4$                                    ; 1172
            61            50             2E  3A 0002B     LOCC    #46, L, (P)                           ; 1173
                                         02  12 0002F     BNEQ    3$                                    ;
                                         51  D4 00031     CLRL    R1                                    ;
                          50             51  D0 00033 3$: MOVL    P, R0                                 ; 1176
                                             04 00036     RET                                           ;
                                         50  D4 00037 4$: CLRL    R0                                    ; 1178
                                             04 00039     RET                                           ;

; Routine Size:  58 bytes,    Routine Base:  $CODE$ + 07CC
```

```
;  1190     1179  1 ROUTINE locate_filename (len, adr) =    ! Find version in filename
;  1191     1180  1
;  1192     1181  1 !++
;  1193     1182  1 ! Functional description
;  1194     1183  1 !
;  1195     1184  1 !       This routine finds the filename part of a file specification.
;  1196     1185  1 !       Node, device and directory are removed from the filespec.
;  1197     1186  1 !       Both the standard syntax of [DIR]NAME.TYP and the alternate
;  1198     1187  1 !       syntax of <DIR>NAME.TYP are allowed.
;  1199     1188  1 !
;  1200     1189  1 ! Calling sequence
;  1201     1190  1 !
;  1202     1191  1 !       locate_filename (.str [dsc$w_length], .str [dsc$a_pointer])
;  1203     1192  1 !
;  1204     1193  1 ! Input parameters
;  1205     1194  1 !
;  1206     1195  1 !       len - Length of filename string
;  1207     1196  1 !       adr - Address of filename string
;  1208     1197  1 !
;  1209     1198  1 ! Output parameters
;  1210     1199  1 !
;  1211     1200  1 !       none
;  1212     1201  1 !
;  1213     1202  1 ! Implicit inputs/outputs
;  1214     1203  1 !
;  1215     1204  1 !       none
;  1216     1205  1 !
;  1217     1206  1 ! Routine value
;  1218     1207  1 !
;  1219     1208  1 !       Address of the first character of the filename.  If no node, device
;  1220     1209  1 !       or directory is present, then .adr will be returned
;  1221     1210  1 !--
;  1222     1211  2 BEGIN
;  1223     1212  2
;  1224     1213  2 LOCAL
;  1225     1214  2     retval,                        ! Address to return
;  1226     1215  2     p;                             ! Local character pointer
;  1227     1216  2
;  1228     1217  2 retval = .adr;                              ! Assume nothing to remove
;  1229     1218  2
;  1230     1219  2 p = CH$FIND_CH (.len, .adr, ']');           ! Look for end of directory
;  1231     1220  2 IF .p NEQ 0
;  1232     1221  2 THEN
;  1233     1222  2     retval = .p + 1                        ! Move the pointer past the ']'
;  1234     1223  2 ELSE
;  1235     1224  3     BEGIN
;  1236     1225  3     p = CH$FIND_CH (.len, .adr, '>'); ! Alternate syntax for directory
;  1237     1226  3     IF .p NEQ 0
;  1238     1227  3     THEN
;  1239     1228  3         retval = .p + 1                    ! Move the pointer past the '>'
;  1240     1229  3     ELSE
;  1241     1230  4         BEGIN
;  1242     1231  4         LOCAL
;  1243     1232  4             l,
;  1244     1233  4             a;
;  1245     1234  4         l = .len;                          ! Get a temporary for the length
;  1246     1235  4         a = .adr;                          !  and the address
```

```
;  1247     1236  4          WHILE 1                                  ! Loop and remove colons
;  1248     1237  4          DO
;  1249     1238  5              BEGIN
;  1250     1239  5              p = CH$FIND_CH (.l, .a, ':');
;  1251     1240  5              IF .p EQL 0 THEN EXITLOOP;
;  1252     1241  5              l = .l - (.p - .a + 1);              ! Adjust the length
;  1253     1242  5              a = .p + 1;                          ! Move the pointer past the ':'
;  1254     1243  4              END;
;  1255     1244  4          retval = .a;
;  1256     1245  3          END;
;  1257     1246  2      END;
;  1258     1247  2
;  1259     1248  2  RETURN .retval;                                  ! Pass the address back
;  1260     1249  2
;  1261     1250  1  END;


                                        001C 00000 LOCATE_FILENAME:
                                                   .WORD   Save R2,R3,R4                    ; 1179
                          54      08    AC  D0 00002         MOVL    ADR, RETVAL           ; 1217
                08  BC        04  AC      5D  8F 3A 00006    LOCC    #93, LEN, @ADR        ; 1219
                                          02  12 0000D      BNEQ    1$                    ;
                                          51  D4 0000F      CLRL    R1                    ;
                          50              51  D0 00011 1$:  MOVL    R1, P                 ;
                                          0F  12 00014      BNEQ    3$                    ; 1220
                08  BC        04  AC      3E  3A 00016      LOCC    #62, LEN, @ADR        ; 1225
                                          02  12 0001C      BNEQ    2$                    ;
                                          51  D4 0001E      CLRL    R1                    ;
                          50              51  D0 00020 2$:  MOVL    R1, P                 ;
                                          06  13 00023      BEQL    4$                    ; 1226
                          54      01      A0  9E 00025 3$:  MOVAB   1(R0), RETVAL         ; 1228
                                          26  11 00029      BRB     8$                    ;
                          52      04      AC  7D 0002B 4$:  MOVQ    LEN, L                ; 1234
                    63    52              3A  3A 0002F 5$:  LOCC    #58, L, (A)           ; 1239
                                          02  12 00033      BNEQ    6$                    ;
                                          51  D4 00035      CLRL    R1                    ;
                          50              51  D0 00037 6$:  MOVL    R1, P                 ;
                                          12  13 0003A      BEQL    7$                    ; 1240
                    51    50              53  C3 0003C      SUBL3   A, P, R1              ; 1241
                    51    52              51  C3 00040      SUBL3   R1, L, R1             ;
                          52      FF      A1  9E 00044      MOVAB   -1(R1), L             ;
                          53      01      A0  9E 00048      MOVAB   1(R0), A              ; 1242
                                          E1  11 0004C      BRB     5$                    ; 1236
                          54              53  D0 0004E 7$:  MOVL    A, RETVAL             ; 1244
                          50              54  D0 00051 8$:  MOVL    RETVAL, R0            ; 1248
                                              04 00054      RET                           ; 1250

; Routine Size:  85 bytes,    Routine Base:  $CODE$ + 0806
```

```
;  1263     1251  1 ROUTINE match_file (lenf, adrf, lent, adrt) =   ! Find version in filename
;  1264     1252  1
;  1265     1253  1 !++
;  1266     1254  1 ! Functional description
;  1267     1255  1 !
;  1268     1256  1 !       This routine compares a filename (result string) with a target
;  1269     1257  1 !       filename.  The target filename may contain the wildcard characters
;  1270     1258  1 !       "*" and "%".
;  1271     1259  1 !
;  1272     1260  1 ! Calling sequence
;  1273     1261  1 !
;  1274     1262  1 !       match_file (.lenf, .adrf, .lent, .adrt)
;  1275     1263  1 !
;  1276     1264  1 ! Input parameters
;  1277     1265  1 !
;  1278     1266  1 !       lenf - Length of filename string
;  1279     1267  1 !       adrf - Address of filename string
;  1280     1268  1 !       lent - Length of target filename string
;  1281     1269  1 !       adrt - Address of target filename string
;  1282     1270  1 !
;  1283     1271  1 ! Output parameters
;  1284     1272  1 !
;  1285     1273  1 !       none
;  1286     1274  1 !
;  1287     1275  1 ! Implicit inputs/outputs
;  1288     1276  1 !
;  1289     1277  1 !       none
;  1290     1278  1 !
;  1291     1279  1 ! Routine value
;  1292     1280  1 !
;  1293     1281  1 !       TRUE (1) if the target name includes the filename, FALSE (0)
;  1294     1282  1 !       otherwise
;  1295     1283  1 !--
;  1296     1284  2 BEGIN
;  1297     1285  2
;  1298     1286  2 LOCAL
;  1299     1287  2     cht,                           ! The character from target
;  1300     1288  2     chf;                           ! The character from the filename
;  1301     1289  2
;  1302     1290  2 DECR k FROM .lent-1 TO 0
;  1303     1291  2 DO
;  1304     1292  3     BEGIN
;  1305     1293  3     lent = .lent-1;                        ! Decrement target length
;  1306     1294  3     IF .lent LSS 0 THEN SIGNAL_STOP (SS$_BADPARAM);     ! Temporary check
;  1307     1295  3     cht = CH$RCHAR_A(adrt);                ! Fetch char and bump pointer
;  1308     1296  3
;  1309     1297  3     IF .cht EQL '*'                ! Found a wildcard in target
;  1310     1298  3     THEN
;  1311     1299  4         BEGIN
;  1312     1300  4         IF .lent EQL 0             ! Wildcard at end of target string
;  1313     1301  4         THEN                       !  matches everything, return a
;  1314     1302  4             RETURN true;           !  match
;  1315     1303  4         DECR i FROM .lenf-1 TO 0   ! Look through rest of filename
;  1316     1304  4         DO
;  1317     1305  5             BEGIN
;  1318     1306  5             IF match_file (.lenf, .adrf, .lent, .adrt)  ! Recursively
;  1319     1307  5             THEN                       !  examine rest of filename from this
```

```
;  1320     1308  5                RETURN true;     !  point in target, return true if found
;  1321     1309  5            lenf = .lenf-1;      ! Advance one character in the filename
;  1322     1310  5            adrf = .adrf+1;      !  and repeat recursive call
;  1323     1311  4            END;
;  1324     1312  4        RETURN false;            ! We did not match from wildcard
;  1325     1313  4        END
;  1326     1314  3    ELSE                         ! No wildcard in target
;  1327     1315  4        BEGIN
;  1328     1316  4        lenf = .lenf-1;                ! Decrement the input string
;  1329     1317  4        IF .lenf LSS 0                 ! If we have exhausted the
;  1330     1318  4        THEN                           !  filename string then we did not
;  1331     1319  4            RETURN false;              !  match and we can return false
;  1332     1320  4        chf = CH$RCHAR_A (adrf);       ! Get filename char and bump pointer
;  1333     1321  5        IF NOT (                   ! If none of the successful tests
;  1334     1322  6                (.cht EQL .chf)        ! Did we match?
;  1335     1323  6                OR (.cht EQL '%')      ! Single character wildcard
;  1336     1324  6                OR ((.chf EQL ';') AND ! See if the alternate syntax is
;  1337     1325  6                    (.cht EQL '.')    ) !  in target (assume RMS gives ';')
;  1338     1326  5               )
;  1339     1327  4        THEN                       ! We did not match in any way, therefore
;  1340     1328  4            RETURN false;          !  we can return false from here.
;  1341     1329  3        END;
;  1342     1330  2    END;
;  1343     1331  2
;  1344     1332  2 IF .lenf EQL 0 THEN RETURN true;        ! Matched so far, filename exhausted
;  1345     1333  2
;  1346     1334  2 RETURN false;                  ! More characters in filename, no match
;  1347     1335  2
;  1348     1336  1 END;


                                007C 00000 MATCH_FILE:
                                           .WORD   Save R2,R3,R4,R5,R6                    ;  1251
                55              0C   AC    D0 00002         MOVL    LENT, K                ;  1290
                                     63    11 00006         BRB     6$                     ;
                                0C   AC    D7 00008 1$:     DECL    LENT                   ;  1293
                53              0C   AC    D0 0000B         MOVL    LENT, R3               ;  1294
                                     09    18 0000F         BGEQ    2$                     ;
                                     14    DD 00011         PUSHL   #20                    ;
00000000G       00                   01    FB 00013         CALLS   #1, LIB$STOP           ;
                54              10   BC    9A 0001A 2$:     MOVZBL  @ADRT, CHT             ;  1295
                                10   AC    D6 0001E         INCL    ADRT                   ;
                2A                   54    D1 00021         CMPL    CHT, #42               ;  1297
                                     25    12 00024         BNEQ    5$                     ;
                                     53    D5 00026         TSTL    R3                     ;  1300
                                     49    13 00028         BEQL    7$                     ;
                52              04   AC    D0 0002A         MOVL    LENF, I                ;  1306
                                     16    11 0002E         BRB     4$                     ;
                                10   AC    DD 00030 3$:     PUSHL   ADRT                   ;
                                     53    DD 00033         PUSHL   R3                     ;
                7E              04   AC    7D 00035         MOVQ    LENF, -(SP)            ;
        C3      AF                   04    FB 00039         CALLS   #4, MATCH_FILE         ;
                33                   50    E8 0003D         BLBS    R0, 7$                 ;
                                04   AC    D7 00040         DECL    LENF                   ;  1309
```

```
                    08   AC   D6 00043          INCL    ADRF                                    ; 1310
                E7       52   F4 00046 4$:       SOBGEQ  I, 3$                                   ; 1303
                         2C   11 00049           BRB     8$                                      ; 1312
                    04   AC   D7 0004B 5$:       DECL    LENF                                    ; 1316
                         27   19 0004E           BLSS    8$                                      ; 1317
                56  08   BC   9A 00050          MOVZBL  @ADRF, CHF                              ; 1320
                    08   AC   D6 00054          INCL    ADRF
                56       54   D1 00057          CMPL    CHT, CHF                                ; 1322
                         0F   13 0005A          BEQL    6$
                25       54   D1 0005C          CMPL    CHT, #37                                ; 1323
                         0A   13 0005F          BEQL    6$
                3B       56   D1 00061          CMPL    CHF, #59                                ; 1324
                         11   12 00064          BNEQ    8$
                2E       54   D1 00066          CMPL    CHT, #46                                ; 1325
                         0C   12 00069          BNEQ    8$
                9A       55   F4 0006B 6$:       SOBGEQ  K, 1$                                   ; 1290
                    04   AC   D5 0006E          TSTL    LENF                                    ; 1332
                         04   12 00071          BNEQ    8$
                50       01   D0 00073 7$:       MOVL    #1, R0
                              04 00076          RET
                         50   D4 00077 8$:       CLRL    R0                                      ; 1336
                              04 00079          RET                                             ;

; Routine Size:  122 bytes,    Routine Base:  $CODE$ + 085B
```

```
;  1350     1337  1 ROUTINE search_one_file : NOVALUE =     ! Open the file
;  1351     1338  1
;  1352     1339  1 !++
;  1353     1340  1 ! Functional description
;  1354     1341  1 !
;  1355     1342  1 !       This routine opens one file as described by the fab.  Control is then
;  1356     1343  1 !       passed to one of the routines which look for one of the search strings
;  1357     1344  1 !       and output any occurrences.
;  1358     1345  1 !
;  1359     1346  1 ! Calling sequence
;  1360     1347  1 !
;  1361     1348  1 !       search_one_file
;  1362     1349  1 !
;  1363     1350  1 ! Input parameters
;  1364     1351  1 !
;  1365     1352  1 !       none
;  1366     1353  1 !
;  1367     1354  1 ! Implicit inputs
;  1368     1355  1 !
;  1369     1356  1 !       fab             - The FAB  for the file specification
;  1370     1357  1 !       nam             - The related NAMe block
;  1371     1358  1 !       rab             - The RAB for the stream
;  1372     1359  1 !
;  1373     1360  1 ! Output parameters
;  1374     1361  1 !
;  1375     1362  1 !       none
;  1376     1363  1 !
;  1377     1364  1 ! Implicit outputs
;  1378     1365  1 !
;  1379     1366  1 !       none
;  1380     1367  1 !
;  1381     1368  1 ! Routine value
;  1382     1369  1 !
;  1383     1370  1 !       novalue
;  1384     1371  1 !
;  1385     1372  1 ! Side effects
;  1386     1373  1 !
;  1387     1374  1 !       Errors are signaled. Messages are put to SYS$OUTPUT.  Global variables
;  1388     1375  1 !       are updated.
;  1389     1376  1 !
;  1390     1377  1 !--
;  1391     1378  1
;  1392     1379  2 BEGIN
;  1393     1380  2
;  1394     1381  2 LOCAL
;  1395     1382  2     status;
;  1396     1383  2
;  1397     1384  3 IF NOT (status = $OPEN(FAB = fab))                ! Open the file
;  1398     1385  2 THEN
;  1399     1386  3         BEGIN
;  1400     1387  3         file_error (srh$_openin, .status, fab, .fab [fab$l_stv]);       ! Signal the error
;  1401     1388  3         RETURN;                                    ! Exit
;  1402     1389  2         END;
;  1403     1390  2
;  1404     1391  3 IF NOT (status = $CONNECT(RAB = rab))             ! Connect the rab
;  1405     1392  2 THEN
;  1406     1393  3         BEGIN
```

```
;1407     1394  3          $CLOSE(FAB = fab);                              ! Close the file
;1408     1395  3          file_error (srh$_openin, .status, fab, .rab [rab$l_stv]);       ! Signal the error
;1409     1396  3          RETURN                                          ! Exit
;1410     1397  2          END;
;1411     1398  2
;1412     1399  2 wdw_pre_buff = 0;                                        ! Initialize the display window
;1413     1400  2 wdw_pre_cntr = 0;
;1414     1401  2 wdw_sub_cntr = 0;
;1415     1402  2 fil_linenum = 0;
;1416     1403  2 fil_totmat = 0;
;1417     1404  2 fil_found = false;
;1418     1405  2 new_file = true;
;1419     1406  2
;1420     1407  2 !
;1421     1408  2 ! Search the opened file
;1422     1409  2 !
;1423     1410  2 std_search_file();
;1424     1411  2
;1425   L 1412  2 %IF switch_statistics
;1426     1413  2 %THEN
;1427     1414  2     stat_totfil = .stat_totfil+1;       ! Bump the count of files
;1428     1415  2 %FI
;1429     1416  2
;1430     1417  2 IF .qua_log
;1431     1418  2 THEN
;1432     1419  3     BEGIN
;1433     1420  3     tmp_desc [dsc$w_length] = .nam_block [nam$b_rsl];   ! Filename length
;1434     1421  3     tmp_desc [dsc$a_pointer] = .nam_block [nam$[_rsa];  ! Filename address
;1435     1422  3     IF .fil_found
;1436     1423  3     THEN
;1437     1424  4         BEGIN
;1438     1425  4         LOCAL
;1439     1426  4             m_sp;                                       ! Pointer to plural string
;1440     1427  4         IF .fil_totmat EQL 1
;1441     1428  4         THEN
;1442     1429  4             m_sp = null_str                             ! No plural
;1443     1430  4         ELSE
;1444     1431  4             m_sp = %ASCID 'es';                         ! For matches.
;1445     1432  4         SIGNAL (srh$_matched, 4, tmp_desc, .fil_linenum, .fil_totmat, .m_sp);
;1446     1433  4         END
;1447     1434  3     ELSE
;1448     1435  3         SIGNAL (srh$_nomatch, 2, tmp_desc, .fil_linenum);
;1449     1436  2     END;
;1450     1437  2
;1451     1438  2 $close(FAB = fab);                  ! Close the file
;1452     1439  2
;1453     1440  1 END;


                                                    .PSECT  $PLIT$,NOWRT,NOEXE,2

                                          00297     .BLKB   1
                                00  00  73  65  00298 P.ABZ: .ASCII  \es\<0><0>                          ;
                                      010E0002  0029C P.ABY: .LONG   17694722                           ;
                                      00000000' 002A0        .ADDRESS P.ABZ                             ;
```

```
                                        .EXTRN  SYS$OPEN

                                        .PSECT  $CODE$,NOWRT,2

                                007C 00000 SEARCH_ONE_FILE:
                                           .WORD   Save R2,R3,R4,R5,R6                  ; 1337
                    56 00000000G   00   9E 00002           MOVAB   LIB$SIGNAL, R6       ;
                    55 00000000G   00   9E 00009           MOVAB   SYS$CLOSE, R5        ;
                    54      0000'  CF   9E 00010           MOVAB   FIL_TOTMAT, R4       ;
                    53      0000'  CF   9E 00015           MOVAB   FAB, R3              ;
                                   53   DD 0001A           PUSHL   R3                   ; 1384
          00000000G 00             01   FB 0001C           CALLS   #1, SYS$OPEN         ;
                    52             50   D0 00023           MOVL    R0, STATUS           ;
                    05             52   E8 00026           BLBS    STATUS, 1$           ;
                              0C   A3   DD 00029           PUSHL   FAB+12               ; 1387
                                   18   11 0002C           BRB     2$                   ;
                              50   A3   9F 0002E 1$:       PUSHAB  RAB                  ; 1391
          00000000G 00             01   FB 00031           CALLS   #1, SYS$CONNECT      ;
                    52             50   D0 00038           MOVL    R0, STATUS           ;
                    16             52   E8 0003B           BLBS    STATUS, 3$           ;
                                   53   DD 0003E           PUSHL   R3                   ; 1394
                    65             01   FB 00040           CALLS   #1, SYS$CLOSE        ;
                              5C   A3   DD 00043           PUSHL   RAB+12               ; 1395
                                   0C   BB 00046 2$:       PUSHR   #^M<R2,R3>           ;
                         00D71098  8F   DD 00048           PUSHL   #14094488            ;
                0000V    CF             04   FB 0004E      CALLS   #4, FILE_ERROR       ;
                                        04   00053         RET                          ; 1393
                              E0   A4   D4 00054 3$:       CLRL    WDW_PRE_CNTR         ; 1400
                              E4   A4   7C 00057           CLRQ    WDW_SUB_CNTR         ; 1401
                                   64   7C 0005A           CLRQ    FIL_TOTMAT           ; 1403
                              15   A4   94 0005C           CLRB    FIL_FOUND            ; 1404
                        12    A4         01   90 0005F     MOVB    #1, NEW_FILE         ; 1405
                0000V   CF               00   FB 00063     CALLS   #0, STD_SEARCH_FILE  ; 1410
                              0CEC   C4   D6 00068           INCL    STAT_TOTFIL          ; 1414
                              47   0F   A4   E9 0006C       BLBC    QUA_LOG, 7$          ; 1417
                        98    A3   A3   A3   9B 00070       MOVZBW  NAM_BLOCK+3, TMP_DESC ; 1420
                        9C    A3   A4   A3   D0 00075       MOVL    NAM_BLOCK+4, TMP_DESC+4 ; 1421
                              28   15   A4   E9 0007A       BLBC    FIL_FOUND, 6$        ; 1422
                              01             64   D1 0007E  CMPL    FIL_TOTMAT, #1       ; 1427
                                             07   12 00081  BNEQ    4$                   ;
                              50       0000' CF   9E 00083  MOVAB   NULL_STR, M_SP       ; 1429
                                             05   11 00088  BRB     5$                   ;
                              50       0000' CF   9E 0008A 4$:      MOVAB   P.ABY, M_SP  ; 1431
                                             50   DD 0008F 5$:      PUSHL   M_SP         ; 1432
                                             64   DD 00091         PUSHL   FIL_TOTMAT   ;
                                        04   A4   DD 00093         PUSHL   FIL_LINENUM  ;
                                        98   A3   9F 00096         PUSHAB  TMP_DESC     ;
                                             04   DD 00099         PUSHL   #4           ;
                                   00000000G 8F   DD 0009B         PUSHL   #SRH$_MATCHED ;
                                   66             06   FB 000A1    CALLS   #6, LIB$SIGNAL ;
                                                  11   11 000A4    BRB     7$           ; 1422
                                        04   A4   DD 000A6 6$:      PUSHL   FIL_LINENUM  ; 1435
                                        98   A3   9F 000A9         PUSHAB  TMP_DESC     ;
                                             02   DD 000AC         PUSHL   #2           ;
                                   00000000G 8F   DD 000AE         PUSHL   #SRH$_NOMATCH ;
                                   66             04   FB 000B4    CALLS   #4, LIB$SIGNAL ;
                                                  53   DD 000B7 7$:      PUSHL   R3     ; 1438
```

```
                        65          01  FB 000B9          CALLS   #1, SYS$CLOSE                        ;
                                        04 000BC          RET                                         ; 1440

; Routine Size:  189 bytes,    Routine Base:  $CODE$ + 08D5
```

```
;  1455     1441  1 ROUTINE get_next_record (len, adr)  : JSB_GETNEXREC =
;  1456     1442  2 BEGIN
;  1457     1443  2
;  1458     1444  2 !++
;  1459     1445  2 ! Description:
;  1460     1446  2 !
;  1461     1447  2 !       This routine gets the next record from the current input stream.
;  1462     1448  2 !       It returns the length and address of the record.  The routine
;  1463     1449  2 !       returns "true" if a record is present, "false" if no record is
;  1464     1450  2 !       found.  Calling routines should treat all "false" returns as
;  1465     1451  2 !       End of File.  If an actual error occurs, it will be signaled.
;  1466     1452  2 !--
;  1467     1453  2
;  1468     1454  2 OWN_DZRO
;  1469     1455  2     trunc;
;  1470     1456  2
;  1471     1457  2 LOCAL
;  1472     1458  2     get_recsiz,
;  1473     1459  2     status;
;  1474     1460  2
;  1475     1461  2 IF .new_file
;  1476     1462  2 THEN
;  1477     1463  3     BEGIN
;  1478     1464  3     new_file = false;
;  1479     1465  3     trunc = false;
;  1480     1466  2     END;
;  1481     1467  2
;  1482     1468  2 status = $GET(RAB = rab);                    ! Get a record
;  1483     1469  2 get_recsiz = .rab [rab$w_rsz];               ! Copy length of record
;  1484     1470  2
;  1485     1471  2 IF (.status EQLU rms$_rtb) OR
;  1486     1472  3    (.status AND (.get_recsiz GTRU io_buff_sz))
;  1487     1473  2 THEN
;  1488     1474  3     BEGIN
;  1489     1475  3     get_recsiz = io_buff_sz;
;  1490     1476  3     IF NOT .trunc
;  1491     1477  3     THEN
;  1492     1478  4         BEGIN
;  1493     1479  4         trunc = true;
;  1494     1480  4         tmp_desc [dsc$w_length]  = .nam_block [nam$b_rsl];
;  1495     1481  4         tmp_desc [dsc$a_pointer] = .nam_block [nam$l_rsa];
;  1496     1482  4         SIGNAL (srh$_truncate,2,tmp_desc,io_buff_sz);
;  1497     1483  3         END;
;  1498     1484  3     END
;  1499     1485  2 ELSE
;  1500     1486  2     IF NOT .status                                 ! If error
;  1501     1487  2     THEN
;  1502     1488  3         BEGIN
;  1503     1489  3         IF .status NEQ RMS$_EOF          ! If not end-of-file
;  1504     1490  3         THEN
;  1505     1491  3             file_error (srh$_readerr, .status, fab, .rab [rab$l_stv]);
;  1506     1492  3         IF .fil_linenum EQL 0
;  1507     1493  3         THEN
;  1508     1494  4             BEGIN
;  1509     1495  4             tmp_desc [dsc$w_length]  = .nam_block [nam$b_rsl];
;  1510     1496  4             tmp_desc [dsc$a_pointer] = .nam_block [nam$l_rsa];
;  1511     1497  4             SIGNAL (srh$_nullfile, 1, tmp_desc);
```

```
;  1512      1498  3            END;
;  1513      1499  3        RETURN false;                   ! and exit
;  1514      1500  2        END;
;  1515      1501  2
;  1516      1502  2    !
;  1517      1503  2    ! Bump the statistics info
;  1518      1504  2    !
;  1519      1505  2    fil_linenum = .fil_linenum + 1;         ! Bump the line (record) cntr
;  1520    L 1506  2    %IF switch_statistics
;  1521      1507  2    %THEN
;  1522      1508  2        stat_totrec = .stat_totrec + 1;             ! Bump the total too
;  1523      1509  2        stat_totchr = .stat_totchr + .get_recsiz;   ! Add the character count
;  1524      1510  2    %FI
;  1525      1511  2
;  1526      1512  2    IF .wdw_previous                ! Save the window if windowing is active
;  1527      1513  2    THEN
;  1528      1514  2        advance_window();
;  1529      1515  2
;  1530      1516  2    !
;  1531      1517  2    ! return the length and address and RFA of the new record
;  1532      1518  2    !
;  1533      1519  2    .len = .get_recsiz;
;  1534      1520  2    .adr = .rab [rab$l_rbf];
;  1535      1521  2
;  1536      1522  2    RETURN true;
;  1537      1523  2
;  1538      1524  1    END;


                                        .PSECT  $OWN$_DZRO,NOEXE,2

                                01347           .BLKB   1
                                01348 TRUNC:    .BLKB   4

                                        .EXTRN  SYS$GET

                                        .PSECT  $CODE$,NOWRT,2

                    08    0000'  CF   E9 00000 GET_NEXT_RECORD:
                                               BLBC    NEW_FILE, 1$                    ;  1461
                          0000'  CF   94 00005         CLRB    NEW_FILE                ;  1464
                          0000'  CF   D4 00009         CLRL    TRUNC                   ;  1465
                          0000'  CF   9F 0000D 1$:     PUSHAB  RAB                     ;  1468
00000000G                 00          FB 00011         CALLS   #1, SYS$GET             ;
                          52  0000'  CF   3C 00018     MOVZWL  RAB+34, GET_RECSIZ      ;  1469
000181A8                  8F          50   D1 0001D    CMPL    STATUS, #98728          ;  1471
                                      0C   13 00024    BEQL    2$                      ;
                          43          50   E9 00026    BLBC    STATUS, 4$              ;  1472
00000800                  8F          52   D1 00029    CMPL    GET_RECSIZ, #2048       ;
                                      37   1B 00030    BLEQU   3$                      ;
                          52  0800    8F   3C 00032 2$:  MOVZWL  #2048, GET_RECSIZ      ;  1475
                          77  0000'  CF   E8 00037     BLBS    TRUNC, 6$               ;  1476
                0000'     CF          01   D0 0003C    MOVL    #1, TRUNC               ;  1479
                0000'     CF  0000'  CF   9B 00041     MOVZBW  NAM_BLOCK+3, TMP_DESC   ;  1480
                0000'     CF  0000'  CF   D0 00048     MOVL    NAM_BLOCK+4, TMP_DESC+4 ;  1481
                          7E  0800    8F   3C 0004F    MOVZWL  #2048, -(SP)            ;  1482
```

```
                        0000'  CF  9F 00054          PUSHAB  TMP_DESC                                        ;
                               02  DD 00058          PUSHL   #2                                              ;
                    00000000G  8F  DD 0005A          PUSHL   #SRH$_TRUNCATE                                  ;
00000000G             00        04  FB 00060          CALLS   #4, LIB$SIGNAL                                  ;
                              4A  11 00067          BRB     6$                                              ; 1471
                           47     50  E8 00069 3$:    BLBS    STATUS, 6$                                      ; 1486
0001827A                   8F     50  D1 0006C 4$:    CMPL    STATUS, #98938                                  ; 1489
                              15  13 00073          BEQL    5$                                              ;
                        0000'  CF  DD 00075          PUSHL   RAB+12                                          ; 1491
                        0000'  CF  9F 00079          PUSHAB  FAB                                             ;
                               50  DD 0007D          PUSHL   STATUS                                          ;
                    00D710B0   8F  DD 0007F          PUSHL   #14094512                                       ;
          0000V  CF             04  FB 00085          CALLS   #4, FILE_ERROR                                  ;
                        0000'  CF  D5 0008A 5$:     TSTL    FIL_LINENUM                                     ; 1492
                              46  12 0008E          BNEQ    8$                                              ;
0000'  CF       0000'  CF     9B  00090          MOVZBW  NAM_BLOCK+3, TMP_DESC                           ; 1495
0000'  CF       0000'  CF     D0  00097          MOVL    NAM_BLOCK+4, TMP_DESC+4                         ; 1496
                        0000'  CF  9F 0009E          PUSHAB  TMP_DESC                                        ; 1497
                               01  DD 000A2          PUSHL   #1                                              ;
                    00000000G  8F  DD 000A4          PUSHL   #SRH$_NULLFILE                                  ;
00000000G             00        03  FB 000AA          CALLS   #3, LIB$SIGNAL                                  ;
                              23  11 000B1          BRB     8$                                              ; 1499
                        0000'  CF  D6 000B3 6$:     INCL    FIL_LINENUM                                     ; 1505
                        0000'  CF  D6 000B7          INCL    STAT_TOTREC                                     ; 1508
          0000'  CF             52  C0 000BB          ADDL2   GET_RECSIZ, STAT_TOTCHR                         ; 1509
                        05     0000'  CF  E9 000C0          BLBC    WDW_PREVIOUS, 7$                        ; 1512
          0000V  CF             00  FB 000C5          CALLS   #0, ADVANCE_WINDOW                              ; 1514
                           63     52  D0 000CA 7$:     MOVL    GET_RECSIZ, (LEN)                               ; 1519
                           64     0000'  CF  DC 000CD          MOVL    RAB+40, (ADR)                           ; 1520
                           50     01  D0 000D2          MOVL    #1, R0                                          ; 1522
                                     05 000D5          RSB                                                     ;
                                  50  D4 000D6 8$:     CLRL    R0                                              ; 1524
                                     05 000D8          RSB                                                     ;

; Routine Size:  217 bytes,    Routine Base:  $CODE$ + 0992
```

```
; 1540      1525  1 ROUTINE advance_window : NOVALUE =
; 1541      1526  2 BEGIN
; 1542      1527  2 !
; 1543      1528  2 ! Increment the number of records available for display
; 1544      1529  2 !
; 1545      1530  2 IF .wdw_pre_cntr LEQU .wdw_pre_recs
; 1546      1531  2 THEN
; 1547      1532  3     BEGIN
; 1548      1533  3     wdw_pre_cntr = .wdw_pre_cntr + 1;
; 1549      1534  3     wdw_ovfl = false;
; 1550      1535  3     END
; 1551      1536  2 ELSE                                ! Window can't be contiguous
; 1552      1537  2     wdw_ovfl = true;                ! with previous window.
; 1553      1538  2 !
; 1554      1539  2 ! Scroll the window to accomodate the next record, wraparound if needed
; 1555      1540  2 !
; 1556      1541  2 IF .wdw_pre_buff GTRU .wdw_pre_recs       ! if we have hit the end
; 1557      1542  2 THEN                                     ! then
; 1558      1543  2     wdw_pre_buff = 1                     !  reset to top of array
; 1559      1544  2 ELSE                                     ! otherwise
; 1560      1545  2     wdw_pre_buff = .wdw_pre_buff + 1;    !   advance to next position
; 1561      1546  2 !
; 1562      1547  2 ! Save the RFA in the previous record vector
; 1563      1548  2 !
; 1564      1549  2 CH$MOVE(rab$s_rfa, rab [rab$w_rfa], rfa_vec [.wdw_pre_buff-1,0,0,0,0]);
; 1565      1550  2
; 1566      1551  2 RETURN;
; 1567      1552  1 END;



                                  007C 00000 ADVANCE_WINDOW:
                                                   .WORD   Save R2,R3,R4,R5,R6                 ; 1525
              56      0000'  CF   9E 00002         MOVAB   WDW_PRE_BUFF, R6                    ;
         F0   A6        F8   A6   D1 00007         CMPL    WDW_PRE_CNTR, WDW_PRE_RECS          ; 1530
                             08   1A 0000C         BGTRU   1$                                  ;
                        F8   A6   D6 0000E         INCL    WDW_PRE_CNTR                        ; 1533
                        25   A6   94 00011         CLRB    WDW_OVFL                            ; 1534
                             04   11 00014         BRB     2$                                  ; 1530
              25   A6        01   90 00016 1$:     MOVB    #1, WDW_OVFL                        ; 1537
         F0   A6             66   D1 0001A 2$:     CMPL    WDW_PRE_BUFF, WDW_PRE_RECS          ; 1541
                             05   1B 0001E         BLEQU   3$                                  ;
                   66        01   D0 00020         MOVL    #1, WDW_PRE_BUFF                    ; 1543
                             02   11 00023         BRB     4$                                  ;
                             66   D6 00025 3$:     INCL    WDW_PRE_BUFF                        ; 1545
      50           66        06   C5 00027 4$:     MULL3   #6, WDW_PRE_BUFF, R0                ; 1549
                   50   30   A6   C0 0002B         ADDL2   RFA_VEC, R0                         ;
  FA   A0   0000'  CF        06   28 0002F         MOVC3   #6, RAB+16, -6(R0)                  ;
                                  04 00036         RET                                         ; 1552

; Routine Size:  55 bytes,    Routine Base:  $CODE$ + 0A6B
```

```
;1569     1553  1 ROUTINE std_search_file : NOVALUE =                    ! Searches the file
;1570     1554  1
;1571     1555  1 !++
;1572     1556  1 ! Functional description
;1573     1557  1 !
;1574     1558  1 !       This routine searches one file (fab) for one of the search strings
;1575     1559  1 !       and outputs any occurrences.
;1576     1560  1 !
;1577     1561  1 ! Calling sequence
;1578     1562  1 !
;1579     1563  1 !       search_file
;1580     1564  1 !
;1581     1565  1 ! Input parameters
;1582     1566  1 !
;1583     1567  1 !       none
;1584     1568  1 !
;1585     1569  1 ! Implicit inputs
;1586     1570  1 !
;1587     1571  1 !       fab             - The FAB  for the file specification
;1588     1572  1 !       nam             - The related NAMe block
;1589     1573  1 !
;1590     1574  1 ! Output parameters
;1591     1575  1 !
;1592     1576  1 !       none
;1593     1577  1 !
;1594     1578  1 ! Implicit outputs
;1595     1579  1 !
;1596     1580  1 !       The filename and any occurrences of the string are put to
;1597     1581  1 !       SYS$OUTPUT.
;1598     1582  1 !
;1599     1583  1 ! Routine value
;1600     1584  1 !
;1601     1585  1 !       novalue
;1602     1586  1 !
;1603     1587  1 ! Side effects
;1604     1588  1 !
;1605     1589  1 !       Errors are signaled. Messages are put to SYS$OUTPUT.
;1606     1590  1 !
;1607     1591  1 !--
;1608     1592  1
;1609     1593  2 BEGIN
;1610     1594  2
;1611     1595  2 WHILE 1 DO                                          ! Main search loop
;1612     1596  3         BEGIN
;1613     1597  3         LOCAL
;1614     1598  3             rec_siz,            ! Length of input record
;1615     1599  3             rec_ptr,            ! Pointer to record
;1616     1600  3             status;
;1617     1601  3
;1618     1602  3         IF NOT get_next_record (rec_siz, rec_ptr)
;1619     1603  3         THEN
;1620     1604  3             EXITLOOP;
;1621     1605  3
;1622     1606  3         !
;1623     1607  3         ! See if record contains search string
;1624     1608  3         !
;1625     1609  3         IF std_match(.rec_siz, .rec_ptr)        ! See if string is present
```

```
;  1626     1610  3          THEN
;  1627     1611  4              BEGIN
;  1628     1612  4              IF .out_printing                        ! we know wdw_zero is off
;  1629     1613  4              THEN
;  1630     1614  5                  BEGIN
;  1631     1615  5                  IF NOT .fil_found                               ! If not already found
;  1632     1616  6                      AND (.nam_block [nam$v_wildcard] OR         ! and wildcard filespec
;  1633     1617  6                           .cnt_infile GTRU 1)                    ! or list of files
;  1634     1618  5                      AND .qua_heading                           ! And heading requested
;  1635     1619  5                  THEN
;  1636     1620  6                      BEGIN       ! Print blank, filename, blank
;  1637     1621  6                      srh$put_output(0, 0);
;  1638     1622  6                      srh$put_output(30, stars_30);
;  1639     1623  6                      srh$put_output(.nam_block [nam$b_rsl], .nam_block [nam$l_rsa]);
;  1640     1624  6                      srh$put_output(0, 0);
;  1641     1625  6                      END
;  1642     1626  5                  ELSE
;  1643     1627  6                      BEGIN
;  1644     1628  6                      IF .fil_found                  ! If already found,
;  1645     1629  6                      THEN
;  1646     1630  7                          BEGIN
;  1647     1631  7                          IF      .wdw_frame         ! Separate the displays if the
;  1648     1632  7                              AND .wdw_ovfl          ! windows are discontiguous
;  1649     1633  7                              AND .qua_heading       ! And heading requested
;  1650     1634  7                          THEN
;  1651     1635  7                              srh$put_output(15, stars_30);
;  1652     1636  6                          END;
;  1653     1637  5                      END;
;  1654     1638  5                  !
;  1655     1639  5                  ! Put the previous records (if any) and the current record
;  1656     1640  5                  !
;  1657     1641  5                  IF .wdw_pre_cntr LEQ 1
;  1658     1642  5                  THEN
;  1659     1643  5                      ! pre_cntr LEQ 1 is our flag then the window EQL 1,
;  1660     1644  5                      ! just print the current record, allowing for reformat
;  1661     1645  5                      !
;  1662     1646  5                      format_n_put(.rec_siz, .rec_ptr, .fil_linenum)
;  1663     1647  5                  ELSE
;  1664     1648  6                      BEGIN
;  1665     1649  6                      LOCAL
;  1666     1650  6                          status,
;  1667     1651  6                          idx;
;  1668     1652  6                      !
;  1669     1653  6                      ! Do a find by RFA to set to start of window
;  1670     1654  6                      !
;  1671     1655  6                      rab [rab$b_rac] = rab$c_rfa;           ! Set to random by RFA
;  1672     1656  7                      idx = (.wdw_pre_recs - .wdw_pre_cntr + .wdw_pre_buff + 1)
;  1673     1657  6                            MOD (.wdw_pre_recs + 1);
;  1674     1658  6                      CH$MOVE(rab$s_rfa, rfa_vec [.idx,0,0,0,0], rab [rab$w_rfa]);
;  1675     1659  7                      IF NOT (status = $FIND(RAB = rab)) ! Find the record
;  1676     1660  6                      THEN
;  1677     1661  7                          BEGIN
;  1678     1662  7                          SIGNAL_STOP (srh$_rfaerr, 2, .rfa_vec [.idx,0,0,32,0],
;  1679     1663  7                                       .rfa_vec [.idx,4,0,16,0], .status, .rab [rab$[_stv]);
;  1680     1664  7                          RETURN;
;  1681     1665  6                          END;
;  1682     1666  6                      rab [rab$b_rac] = rab$c_seq;           ! Back to sequential mode
```

```
;  1683     1667  6                    !
;  1684     1668  6                    ! Now do GETs to reread the records for the window
;  1685     1669  6                    !
;  1686     1670  6                    INCRU i FROM 1 TO .wdw_pre_cntr     ! Now put the records
;  1687     1671  6                    DO
;  1688     1672  7                        BEGIN
;  1689     1673  7                        LOCAL
;  1690     1674  7                            actual_line,        ! Line number adjusted for wdw
;  1691     1675  7                            len,
;  1692     1676  7                            status;
;  1693     1677  7                        status = $GET(RAB = rab);
;  1694     1678  7                        len = .rab [rab$w_rsz]; ! Get actual length read
;  1695     1679  7                        IF (.status EQLU rms$_rtb) OR
;  1696     1680  8                           (.status AND (.len GTRU io_buff_sz))
;  1697     1681  7                        THEN
;  1698     1682  7                            len = io_buff_sz    ! Would have warned at 1st get
;  1699     1683  7                        ELSE
;  1700     1684  7                            IF NOT .status      ! If any other error
;  1701     1685  7                            THEN                ! signal and stop
;  1702     1686  8                                BEGIN
;  1703     1687  8                                SIGNAL_STOP (srh$_rfaerr, 2, .rfa_vec [.idx,0,0,32,0],
;  1704     1688  8                                    .rfa_vec [.idx,4,0,16,0], .status, .rab [rab$l_stv]);
;  1705     1689  8                                RETURN;
;  1706     1690  7                                END;
;  1707     1691  7                        actual_line = .fil_linenum-(.wdw_pre_cntr-.i);
;  1708     1692  7                        format_n_put(.len, .rab [rab$l_rbf], .actual_line);
;  1709     1693  6                        END;
;  1710     1694  5                    END;
;  1711     1695  5                wdw_pre_cntr = 0;               ! First half of window is done
;  1712     1696  5                wdw_sub_cntr = .wdw_sub_recs;
;  1713     1697  5                END
;  1714     1698  4            ELSE
;  1715     1699  5                BEGIN
;  1716     1700  5                IF .wdw_zero                    ! Print filename if /WIN=0
;  1717     1701  5                THEN
;  1718     1702  5                    IF NOT .fil_found           ! Only need to do it once though
;  1719     1703  5                    THEN
;  1720     1704  5                        srh$put_output(.nam_block [nam$b_rsl], .nam_block [nam$l_rsa]);
;  1721     1705  4                END;
;  1722     1706  4                fil_found = true;               ! Set match flag for this file
;  1723     1707  4                found_any = true;               ! Set global match flag
;  1724     1708  4                fil_totmat = .fil_totmat+1;     ! Count match for this file
;  1725     1709  4                END
;  1726     1710  3            ELSE                    ! We don't have a match
;  1727     1711  4                BEGIN               ! If we have subsequent lines to display
;  1728     1712  5                IF .out_printing AND (.wdw_sub_cntr GTRU 0)
;  1729     1713  4                THEN
;  1730     1714  5                    BEGIN
;  1731     1715  5                    format_n_put(.rec_siz, .rec_ptr, .fil_linenum);
;  1732     1716  5                    wdw_pre_cntr = 0;       ! remember what we've shown.
;  1733     1717  5                    wdw_sub_cntr = .wdw_sub_cntr - 1;
;  1734     1718  4                    END;
;  1735     1719  4                END
;  1736     1720  2            END;
;  1737     1721  2 RETURN;
;  1738     1722  1 END;
```

```
                                        .EXTRN  SYS$FIND

                    0FFC 00000 STD_SEARCH_FILE:
                                        .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11            ; 1553
5B      0000V   CF  9E 00002            MOVAB   FORMAT_N_PUT, R11                               ;
5A      0000V   CF  9E 00007            MOVAB   SRH$PUT_OUTPUT, R10                             ;
59      0000'   CF  9E 0000C            MOVAB   NAM_BLOCK+4, R9                                 ;
58      0000'   CF  9E 00011            MOVAB   WDW_PRE_CNTR, R8                                ;
5E          08  C2  00016                SUBL2   #8, SP                                      ;
54          6E  9E 00019 1$:            MOVAB   REC_PTR, R4                                     ; 1602
53      04  AE  9E 0001C                MOVAB   REC_SIZ, R3                                     ;
        FECD    30 00020                BSBW    GET_NEXT_RECORD                             ;
01          50  E8 00023                BLBS    R0, 2$                                      ;
                04 00026                RET                                                 ;
55          6E  D0 00027 2$:            MOVL    REC_PTR, R5                                     ; 1609
54      04  AE  D0 0002A                MOVL    REC_SIZ, R4                                 ;
        0000V   30 0002E                BSBW    STD_MATCH                                   ;
03          50  E8 00031                BLBS    R0, 3$                                      ;
            0132    31 00034            BRW     20$                                         ;
03      29  A8  E8 00037 3$:            BLBS    OUT_PRINTING, 4$                            ; 1612
            010F    31 0003B            BRW     18$                                         ;
2D      35  A8  E8 0003E 4$:            BLBS    FIL_FOUND, 7$                               ; 1615
06      31  A9  E8 00042                BLBS    NAM_BLOCK+53, 5$                            ; 1616
01      0C  A8  D1 00046                CMPL    CNT_INFILE, #1                              ; 1617
            1F  1B 0004A                BLEQU   6$                                          ;
1B      31  A8  E9 0004C 5$:            BLBC    QUA_HEADING, 6$                             ; 1618
            52  7C 00050                CLRQ    R2                                          ; 1621
            6A  16 00052                JSB     SRH$PUT_OUTPUT                              ;
        53  0000'   CF  9E 00054        MOVAB   STARS_30, R3                                ; 1622
        52      1E  D0 00059            MOVL    #30, R2                                     ;
            6A  16 0005C                JSB     SRH$PUT_OUTPUT                              ;
        53      69  D0 0005E            MOVL    NAM_BLOCK+4, R3                             ; 1623
        52  FF  A9  9A 00061            MOVZBL  NAM_BLOCK+3, R2                             ;
            6A  16 00065                JSB     SRH$PUT_OUTPUT                              ;
            52  7C 00067                CLRQ    R2                                          ; 1624
            18  11 00069                BRB     8$                                          ;
16          35  A8  E9 0006B 6$:        BLBC    FIL_FOUND, 9$                               ; 1628
12          2C  A8  E9 0006F 7$:        BLBC    WDW_FRAME, 9$                               ; 1631
0E          2D  A8  E9 00073            BLBC    WDW_OVFL, 9$                                ; 1632
0A          31  A8  E9 00077            BLBC    QUA_HEADING, 9$                             ; 1633
        53  0000'   CF  9E 0007B        MOVAB   STARS_30, R3                                ; 1635
        52      0F  D0 00080            MOVL    #15, R2                                     ;
            6A  16 00083 8$:            JSB     SRH$PUT_OUTPUT                              ;
01          68  D1 00085 9$:            CMPL    WDW_PRE_CNTR, #1                            ; 1641
            10  14 00088                BGTR    10$                                         ;
        54  24  A8  D0 0008A            MOVL    FIL_LINENUM, R4                             ; 1646
        53      6E  D0 0008E            MOVL    REC_PTR, R3                                 ;
        52  04  AE  D0 00091            MOVL    REC_SIZ, R2                                 ;
            6B  16 00095                JSB     FORMAT_N_PUT                                ;
            00AA    31 00097            BRW     17$                                         ;
    00CA    C9      02  90 0009A 10$:   MOVB    #2, RAB+30                                  ; 1655
51      F8  A8      68  C3 0009F        SUBL3   WDW_PRE_CNTR, WDW_PRE_RECS, R1              ; 1656
        51  08  A8  C0 000A4            ADDL2   WDW_PRE_BUFF, R1                            ;
50      F8  A8      01  C1 000A8        ADDL3   #1, WDW_PRE_RECS, R0                        ; 1657
7E      01          51  01  7A 000AD    EMUL    #1, R1, #1, -(SP)                           ;
```

```
                50              8E                  50  7B 000B2          EDIV    R0, (SP)+, IDX, IDX
                56              50                  06  C5 000B7          MULL3   #6, IDX, R6                                 ;1658
             00BC   C9      38 B846                  06  28 000BB          MOVC3   #6, @RFA_VEC[R6], RAB+16
                                          00AC       C9  9F 000C3          PUSHAB  RAB                                         ;1659
                    00000000G   00                    01  FB 000C7          CALLS   #1, SYS$FIND
                                3B                    50  E9 000CE          BLBC    STATUS, 14$
                                          00CA       C9  94 000D1          CLRB    RAB+30                                      ;1666
                                57                    68  D0 000D5          MOVL    WDW_PRE_CNTR, R7                            ;1670
                                55                    01  D0 000D8          MOVL    #1, I
                                                      62  11 000DB          BRB     16$
                                          00AC       C9  9F 000DD 11$:      PUSHAB  RAB                                         ;1677
                    00000000G   00                    01  FB 000E1          CALLS   #1, SYS$GET
                                52        00CE       C9  3C 000E8          MOVZWL  RAB+34, LEN                                 ;1678
                    000181A8    8F                    50  D1 000ED          CMPL    STATUS, #98728                              ;1679
                                13                    0C  13 000F4          BEQL    12$
                                                      50  E9 000F6          BLBC    STATUS, 14$                                 ;1680
                    00000800    8F                    52  D1 000F9          CMPL    LEN, #2048
                                                      07  1B 00100          BLEQU   13$
                                52        0800       8F  3C 00102 12$:      MOVZWL  #2048, LEN                                  ;1682
                                                      24  11 00107          BRB     15$
                                21                    50  E8 00109 13$:      BLBS    STATUS, 15$                                 ;1684
                                          00B8       C9  DD 0010C 14$:      PUSHL   RAB+12                                      ;1688
                                                      50  DD 00110          PUSHL   STATUS
                50              56          38        A8  C1 00112          ADDL3   RFA_VEC, R6, R0
                                7E          04        A0  3C 00117          MOVZWL  4(R0), -(SP)
                                                      60  DD 0011B          PUSHL   (R0)                                        ;1687
                                                      02  DD 0011D          PUSHL   #2
                                          00000000G   8F  DD 0011F          PUSHL   #SRH$_RFAERR
                    00000000G   00                    06  FB 00125          CALLS   #6, LIB$STOP
                                                      04  0012C          RET                                                 ;1686
             50                 55                    68  C3 0012D 15$:      SUBL3   WDW_PRE_CNTR, I, R0                         ;1691
             54                 50          24        A8  C1 00131          ADDL3   FIL_LINENUM, R0, ACTUAL_LINE
                                53        00D4       C9  D0 00136          MOVL    RAB+40, R3                                  ;1692
                                                      6B  16 0013B          JSB     FORMAT_N_PUT
                                                      55  D6 0013D          INCL    I                                           ;1670
                                57                    55  D1 0013F 16$:      CMPL    I, R7
                                                      99  1B 00142          BLEQU   11$
                                                      68  D4 00144 17$:      CLRL    WDW_PRE_CNTR                                ;1695
                        04      A8          FC        A8  D0 00146          MOVL    WDW_SUB_RECS, WDW_SUB_CNTR                  ;1696
                                                      11  11 0014B          BRB     19$                                         ;1612
                                0D          2B        A8  E9 0014D 18$:      BLBC    WDW_ZERO, 19$                               ;1700
                                09          35        A8  E8 00151          BLBS    FIL_FOUND, 19$                              ;1702
                                53                    69  D0 00155          MOVL    NAM_BLOCK+4, R3                             ;1704
                                52          FF        A9  9A 00158          MOVZBL  NAM_BLOCK+3, R2
                                                      6A  16 0015C          JSB     SRH$PUT_OUTPUT
                        34      A8        0101        8F  B0 0015E 19$:      MOVW    #257, FOUND_ANY                             ;1707
                                            20        A8  D6 00164          INCL    FIL_TOTMAT                                  ;1708
                                                      1B  11 00167          BRB     21$                                         ;1609
                                17          29        A8  E9 00169 20$:      BLBC    OUT_PRINTING, 21$                           ;1712
                                            04        A8  D5 0016D          TSTL    WDW_SUB_CNTR
                                                      12  13 00170          BEQL    21$
                                54          24        A8  D0 00172          MOVL    FIL_LINENUM, R4                             ;1715
                                53                    6E  D0 00176          MOVL    REC_PTR, R3
                                52          04        AE  D0 00179          MOVL    REC_SIZ, R2
                                                      6B  16 0017D          JSB     FORMAT_N_PUT
                                                      68  D4 0017F          CLRL    WDW_PRE_CNTR                                ;1716
                                            04        A8  D7 00181          DECL    WDW_SUB_CNTR                                ;1717
```

```
                FE92  31 00184 21$:   BRW     1$                      ; 1609
                      04 00187        RET                             ; 1722

; Routine Size:  392 bytes,    Routine Base:  $CODE$ + 0AA2
```

```
;  1740     1723  1 ROUTINE std_match (size, buf) : JSB_STDMAT =
;  1741     1724  1
;  1742     1725  1 !++
;  1743     1726  1 ! Functional description
;  1744     1727  1 !
;  1745     1728  1 !       This routine checks to see if any of the search strings
;  1746     1729  1 !       is present in the current record
;  1747     1730  1 !
;  1748     1731  1 ! Calling sequence
;  1749     1732  1 !
;  1750     1733  1 !       std_match(.size, buf);
;  1751     1734  1 !
;  1752     1735  1 ! Input parameters
;  1753     1736  1 !
;  1754     1737  1 !       size = the length of the record
;  1755     1738  1 !       buf  = the address of the record
;  1756     1739  1 !
;  1757     1740  1 ! Implicit inputs
;  1758     1741  1 !
;  1759     1742  1 !       srhstr_desc     - The array of search string descriptors
;  1760     1743  1 !       cnt_srhstr      - The count of search string descriptors
;  1761     1744  1 !
;  1762     1745  1 ! Output parameters
;  1763     1746  1 !
;  1764     1747  1 !       none
;  1765     1748  1 !
;  1766     1749  1 ! Implicit outputs
;  1767     1750  1 !
;  1768     1751  1 !       none
;  1769     1752  1 !
;  1770     1753  1 ! Routine value
;  1771     1754  1 !
;  1772     1755  1 !       0 - None of the search strings was present
;  1773     1756  1 !       1 - At least one search string was present
;  1774     1757  1 !
;  1775     1758  1 ! Side effects
;  1776     1759  1 !
;  1777     1760  1 !       none
;  1778     1761  1 !
;  1779     1762  1 !--
;  1780     1763  1 ;
;  1781     1764  2 BEGIN
;  1782     1765  2
;  1783     1766  2 LOCAL
;  1784     1767  2     rec_ptr     : REF BLOCK [,BYTE],            ! Pointer to string
;  1785     1768  2     upc_buf     : BLOCK [io_buff_sz, BYTE],     ! In case we must upcase
;  1786     1769  2     match_found;                                ! String found flag
;  1787     1770  2
;  1788     1771  2
;  1789     1772  2     IF .qua_exact
;  1790     1773  2     THEN
;  1791     1774  2         rec_ptr = .buf                          ! Get the input record address
;  1792     1775  2     ELSE
;  1793     1776  3         BEGIN
;  1794     1777  3         upcase(.size, .buf, upc_buf);           ! Upcase the record
;  1795     1778  3         rec_ptr = upc_buf;                      ! Point it to new version
;  1796     1779  2         END;
```

```
;  1797     1780  2
;  1798     1781  2      match_found = .mat_and;                 ! 0 if OR or NOR, 1 if AND or NAND
;  1799     1782  2
;  1800     1783  2      INCR sdx FROM 0 TO .cnt_srhstr-1
;  1801     1784  2      DO
;  1802     1785  3          BEGIN
;  1803     1786  3          LOCAL
;  1804     1787  3              ptr;                                ! Pointer to found string
;  1805     1788  3
;  1806     1789  3          ptr = CH$FIND_SUB(.size, .rec_ptr,
;  1807     1790  3                            .srhstr_desc [.sdx, dsc$w_length],
;  1808     1791  3                            .srhstr_desc [.sdx, dsc$a_pointer]);
;  1809     1792  3
;  1810     1793  3          IF .mat_and                 ! If AND or NAND
;  1811     1794  3          THEN
;  1812     1795  4                  BEGIN
;  1813     1796  4                  IF CH$FAIL(.ptr)
;  1814     1797  4                  THEN
;  1815     1798  5                      BEGIN
;  1816     1799  5                      match_found = false;
;  1817     1800  5                      EXITLOOP;
;  1818     1801  4                      END;
;  1819     1802  4                  END
;  1820     1803  3          ELSE                        ! Else OR or NOR
;  1821     1804  4                  BEGIN
;  1822     1805  4                  IF NOT CH$FAIL(.ptr)
;  1823     1806  4                  THEN
;  1824     1807  5                      BEGIN
;  1825     1808  5                      match_found = true;
;  1826     1809  5                      EXITLOOP;
;  1827     1810  4                      END;
;  1828     1811  3                  END;
;  1829     1812  2          END;
;  1830     1813  2
;  1831     1814  2      IF .mat_negate THEN match_found = NOT .match_found; ! Is it NOR or NAND?
;  1832     1815  2
;  1833   L 1816  2      %IF switch_statistics
;  1834     1817  2      %THEN
;  1835     1818  2          IF .match_found THEN stat_totmat = .stat_totmat+1; ! Bump match count
;  1836     1819  2      %FI
;  1837     1820  2
;  1838     1821  2      RETURN .match_found;
;  1839     1822  1      END;


                        7E              57  7D 00000 STD_MATCH:
                                                          MOVQ    R7, -(SP)                       ; 1723
                        7E              55  7D 00003              MOVQ    R5, -(SP)                       ;
                        5E      F800    CE  9E 00006              MOVAB   -2048(SP), SP           ;
                        05      0000'   CF  E9 0000B              BLBC    QUA_EXACT, 1$           ; 1772
                        58              55  D0 00010              MOVL    BUF, REC_PTR            ; 1774
                                        0C  11 00013              BRB     2$                      ;
                        53              6E  9E 00015 1$:          MOVAB   UPC_BUF, R3             ; 1777
                        51              54  7D 00018              MOVQ    SIZE, R1                ;
```

```
                                 0000V 30 0001B          BSBW    UPCASE                                          ;
                              58    6E  9E 0001E          MOVAB   UPC_BUF, REC_PTR                                ; 1778
                              57    CF  9A 00021 2$:      MOVZBL  MAT_AND, MATCH_FOUND                            ; 1781
                              55    01  CE 00026          MNEGL   #1, SDX                                         ; 1789
                                    2F  11 00029          BRB     6$                                              ;
                                 0000'CF45  7F 0002B 3$:  PUSHAQ  SRHSTR_DESC[SDX]                                ; 1790
                              56    9E  3C 00030          MOVZWL  @(SP)+, R6
                                 0000'CF45  7F 00033      PUSHAQ  SRHSTR_DESC+4[SDX]                              ; 1791
                              50    9E  D0 00038          MOVL    @(SP)+, R0                                      ;
        68          54        60        56  39 0003B     MATCHC  R6, (R0), SIZE, (REC_PTR)                       ;
                                        03  13 00040      BEQL    4$                                              ;
                              53        56  D0 00042      MOVL    R6, R3                                          ;
                              53        56  C2 00045 4$:  SUBL2   R6, R3                                          ;
                              06  0000'   CF  E9 00048     BLBC    MAT_AND, 5$                                     ; 1796
                                        0B  12 0004D      BNEQ    6$                                              ;
                                        57  D4 0004F      CLRL    MATCH_FOUND                                     ; 1799
                                        0D  11 00051      BRB     7$                                              ; 1798
                                        05  13 00053 5$:  BEQL    6$                                              ; 1805
                              57        01  D0 00055      MOVL    #1, MATCH_FOUND                                 ; 1808
                                        06  11 00058      BRB     7$                                              ; 1807
                 CB           55  0000'   CF  F2 0005A 6$:  AOBLSS  CNT_SRHSTR, SDX, 3$                         ; 1783
                              03  0000'   CF  E9 00060 7$:  BLBC    MAT_NEGATE, 8$                                  ; 1814
                              57        57  D2 00065      MCOML   MATCH_FOUND, MATCH_FOUND
                              04        57  E9 00068 8$:  BLBC    MATCH_FOUND, 9$                                 ; 1818
                                 0000'   CF  D6 0006B      INCL    STAT_TOTMAT
                              50        57  D0 0006F 9$:  MOVL    MATCH_FOUND, R0                                 ; 1821
                              5E  0800    CE  9E 00072     MOVAB   2048(SP), SP                                    ; 1822
                                  01E0    8F  BA 00077     POPR    #^M<R5,R6,R7,R8>                                ;
                                              05 0007B     RSB                                                     ;

; Routine Size:  124 bytes,    Routine Base:  $CODE$ + 0C2A
```

```
;  1841          1823  1 ROUTINE file_error (    msg,                        ! The SEARCH message code
;  1842          1824  1                         rms_status,                 ! The main RMS error code
;  1843          1825  1                         fabb : REF BLOCK [,BYTE],   ! Address of FAB for file
;  1844          1826  1                         stv) =                      ! The RMS STV value
;  1845          1827  2 BEGIN
;  1846          1828  2
;  1847          1829  2 LOCAL
;  1848          1830  2     nam_blk : REF BLOCK [,BYTE];        ! Pointer to the name block
;  1849          1831  2
;  1850          1832  2 nam_blk = .fabb [fab$l_nam];           ! Get pointer to the name block
;  1851          1833  2
;  1852          1834  2 IF .nam_blk [nam$b_rsl] GTRU 0
;  1853          1835  2 THEN
;  1854          1836  3     BEGIN
;  1855          1837  3     tmp_desc [dsc$w_length]  = .nam_blk [nam$b_rsl];    ! Create file name desc
;  1856          1838  3     tmp_desc [dsc$a_pointer] = .nam_blk [nam$l_rsa];    ! ...
;  1857          1839  3     END
;  1858          1840  2 ELSE IF .nam_blk [nam$b_esl] GTRU 0
;  1859          1841  2 THEN
;  1860          1842  3     BEGIN
;  1861          1843  3     tmp_desc [dsc$w_length]  = .nam_blk [nam$b_esl];    ! Create file name desc
;  1862          1844  3     tmp_desc [dsc$a_pointer] = .nam_blk [nam$l_esa];    ! ...
;  1863          1845  3     END
;  1864          1846  2 ELSE
;  1865          1847  3     BEGIN
;  1866          1848  3     tmp_desc [dsc$w_length]  = .fabb [fab$b_fns];       ! Create file name desc
;  1867          1849  3     tmp_desc [dsc$a_pointer] = .fabb [fab$l_fna];       ! ...
;  1868          1850  2     END;
;  1869          1851  2
;  1870          1852  2 IF .rms_status EQL rms$_dme                ! Does RMS have enough memory?
;  1871          1853  2 THEN                                       ! No, print actual error
;  1872          1854  3     BEGIN
;  1873          1855  3     IF .wdw_pre_recs GTR 0                 ! Do we have a window?
;  1874          1856  3     THEN
;  1875          1857  3         SIGNAL_STOP (.msg, 1, tmp_desc, .rms_status, .stv, srh$_wdw_maxprev)
;  1876          1858  3     ELSE
;  1877          1859  3         SIGNAL_STOP (.msg, 1, tmp_desc, .rms_status, .stv, srh$_insvirmem);
;  1878          1860  3     END
;  1879          1861  2 ELSE
;  1880          1862  2     SIGNAL (.msg, 1, tmp_desc, .rms_status, .stv);
;  1881          1863  2
;  1882          1864  2 RETURN (.msg OR %X'10000000');              ! Don't let $EXIT signal also.
;  1883          1865  2
;  1884          1866  1 END;


                                0004 00000 FILE_ERROR:
                                           .WORD   Save R2                                  ; 1823
                     52    0000'  CF  9E 00002     MOVAB   TMP_DESC, R2                    ;
                     51      0C   AC  D0 00007     MOVL    FABB, R1                        ; 1832
                     50      28   A1  D0 0000B     MOVL    40(R1), NAM_BLK                 ;
                             03   A0  95 0000F     TSTB    3(NAM_BLK)                      ; 1834
                                  0B  13 00012     BEQL    1$                              ;
                     62      03   A0  9B 00014     MOVZBW  3(NAM_BLK), TMP_DESC            ; 1837
```

```
                  04   A2       04   A0  D0 00018       MOVL    4(NAM_BLK), TMP_DESC+4             ; 1838
                                     19  11 0001D       BRB     3$                                 ; 1834
                                0B   A0  95 0001F 1$:   TSTB    11(NAM_BLK)                        ; 1840
                                     0B  13 00022       BEQL    2$                                 ;
                       62       0B   A0  9B 00024       MOVZBW  11(NAM_BLK), TMP_DESC              ; 1843
                  04   A2       0C   A0  D0 00028       MOVL    12(NAM_BLK), TMP_DESC+4            ; 1844
                                     09  11 0002D       BRB     3$                                 ; 1840
                       62       34   A1  9B 0002F 2$:   MOVZBW  52(R1), TMP_DESC                   ; 1848
                  04   A2       2C   A1  D0 00033       MOVL    44(R1), TMP_DESC+4                 ; 1849
            000184D4   8F       08   AC  D1 00038 3$:   CMPL    RMS_STATUS, #99540                 ; 1852
                                     2A  12 00040       BNEQ    6$                                 ;
                             0000'   CF  D5 00042       TSTL    WDW_PRE_RECS                       ; 1855
                                     08  15 00046       BLEQ    4$                                 ;
                         00000000G   8F  DD 00048       PUSHL   #SRH$_WDW_MAXPREV                  ; 1857
                                     06  11 0004E       BRB     5$                                 ;
                          00D712F2   8F  DD 00050 4$:   PUSHL   #14095090                          ; 1859
                                10   AC  DD 00056 5$:   PUSHL   STV                                ;
                                08   AC  DD 00059       PUSHL   RMS_STATUS                         ;
                                     52  DD 0005C       PUSHL   R2                                 ;
                                     01  DD 0005E       PUSHL   #1                                 ;
                                04   AC  DD 00060       PUSHL   MSG                                ;
            00000000G  00            06  FB 00063       CALLS   #6, LIB$STOP                       ;
                                     14  11 0006A       BRB     7$                                 ; 1852
                                10   AC  DD 0006C 6$:   PUSHL   STV                                ; 1862
                                08   AC  DD 0006F       PUSHL   RMS_STATUS                         ;
                                     52  DD 00072       PUSHL   R2                                 ;
                                     01  DD 00074       PUSHL   #1                                 ;
                                04   AC  DD 00076       PUSHL   MSG                                ;
            00000000G  00            05  FB 00079       CALLS   #5, LIB$SIGNAL                     ;
      50          04   AC 10000000   8F  C9 00080 7$:   BISL3   #268435456, MSG, R0                ; 1864
                                     04     00089       RET                                        ; 1866

; Routine Size:  138 bytes,    Routine Base:  $CODE$ + 0CA6
```

```
;  1886          1867  1 ROUTINE upcase(in_siz,in_ptr,out_ptr) : NOVALUE JSB_UPCASE =
;  1887          1868  1 !++
;  1888          1869  1 ! Functional description
;  1889          1870  1 !
;  1890          1871  1 !       This routine converts a string to uppercase.  In testing it
;  1891          1872  1 !       appears to be faster to do this sort of loop than execute the
;  1892          1873  1 !       MOVTC instruction on the 11/780.
;  1893          1874  1 !
;  1894          1875  1 ! Input parameters
;  1895          1876  1 !
;  1896          1877  1 !       in_siz = size of input record to convert
;  1897          1878  1 !       in_ptr = address input of record to convert
;  1898          1879  1 !       out_ptr = address of output record buffer
;  1899          1880  1 !
;  1900          1881  1 ! Output parameters
;  1901          1882  1 !
;  1902          1883  1 !       Input record copied to output record buffer and all
;  1903          1884  1 !       lowercase alphabetic characters converted to uppercase.
;  1904          1885  1 !
;  1905          1886  1 !--
;  1906          1887  2 BEGIN
;  1907          1888  2 REGISTER
;  1908          1889  2     char: BYTE;                                ! Character to test
;  1909          1890  2
;  1910          1891  2 DECR count FROM .in_siz-1 TO 0 DO             ! Upcase the characters
;  1911          1892  3         BEGIN
;  1912          1893  3         char = CH$RCHAR_A(in_ptr);             !  Get next character
;  1913          1894  3         IF .char GEQU 'a'                      !  Lower case letter?
;  1914          1895  3          AND .char LEQU 'z'
;  1915          1896  3         THEN
;  1916          1897  3                 char = .char - %O'40';         ! Convert to upper
;  1917          1898  3         CH$WCHAR_A(.char,out_ptr);             ! Move character to buffer
;  1918          1899  2         END;
;  1919          1900  1 END;


                                        15  11 00000 UPCASE:  BRB     3$                              ; 1891
                    50                  82  90 00002 1$:     MOVB    (IN_PTR)+, CHAR                 ; 1893
                61  8F                  50  91 00005         CMPB    CHAR, #97                       ; 1894
                                        09  1F 00009         BLSSU   2$                              ;
                7A  8F                  50  91 0000B         CMPB    CHAR, #122                      ; 1895
                                        03  1A 0000F         BGTRU   2$                              ;
                    50                  20  82 00011         SUBB2   #32, CHAR                       ; 1897
                    83                  50  90 00014 2$:     MOVB    CHAR, (OUT_PTR)+                ; 1898
                    E8                  51  F4 00017 3$:     SOBGEQ  COUNT, 1$                       ; 1891
                                            05 0001A         RSB                                     ; 1900

; Routine Size:  27 bytes,    Routine Base:  $CODE$ + 0D30
```

```
;  1921     1901  1 ROUTINE format_n_put(in_siz, in_ptr, line) : NOVALUE JSB_FORPUT =
;  1922     1902  1 !++
;  1923     1903  1 ! Functional description
;  1924     1904  1 !
;  1925     1905  1 !       The main reason to reformat is to prevent matches in .EXE and
;  1926     1906  1 !       .OBJ files from setting terminals in strange states.  The
;  1927     1907  1 !       /FORMAT=PASSALL qualifier is included to allow for exotic
;  1928     1908  1 !       character sets.
;  1929     1909  1 !
;  1930     1910  1 !       This routine copies the input buffer to the output file.  If
;  1931     1911  1 !       PASSALL is in effect, the input buffer is simply copied to output.
;  1932     1912  1 !       If another format is active, a routine will be called to do the
;  1933     1913  1 !       reformatting.
;  1934     1914  1 !
;  1935     1915  1 ! Input parameters
;  1936     1916  1 !
;  1937     1917  1 !       in_siz = size of input record to convert
;  1938     1918  1 !       in_ptr = address of input record to convert
;  1939     1919  1 !       line = line number to print if .NUMBERS is true
;  1940     1920  1 !
;  1941     1921  1 ! Outputs
;  1942     1922  1 !
;  1943     1923  1 !       The line will go to the output file if one exists.
;  1944     1924  1 !
;  1945     1925  1 !--
;  1946     1926  2 BEGIN
;  1947     1927  2
;  1948     1928  2 LOCAL
;  1949     1929  2     len,                                    ! Output length
;  1950     1930  2     op  : REF BLOCK [,BYTE];                ! Local output pointer
;  1951     1931  2
;  1952     1932  2 IF NOT .out_printing
;  1953     1933  2 THEN
;  1954     1934  2     RETURN;                                 ! Nothing at all to do
;  1955     1935  2
;  1956     1936  3 IF (.format EQL form_passall) AND (NOT .qua_numbers)
;  1957     1937  2 THEN
;  1958     1938  3     BEGIN
;  1959     1939  3     srh$put_output(.in_siz, .in_ptr);       ! Move the buffer.
;  1960     1940  3     RETURN;                                 ! And go back to caller
;  1961     1941  2     END;
;  1962     1942  2
;  1963     1943  2 !
;  1964     1944  2 ! We will have to copy the buffer for line numbers or reformatting, or both
;  1965     1945  2 !
;  1966     1946  2 len = .in_siz;                              ! Nothing output yet
;  1967     1947  2 op = .output_buff;                          ! Set to start of output
;  1968     1948  2
;  1969     1949  2 IF .qua_numbers
;  1970     1950  2 THEN
;  1971     1951  3     BEGIN
;  1972     1952  3     LOCAL
;  1973     1953  3         stat,
;  1974     1954  3         tmplen;
;  1975     1955  3     tmp_desc [dsc$w_length] = 7;
;  1976     1956  3     tmp_desc [dsc$a_pointer] = .op;
;  1977     1957  4     IF NOT (stat = $FAO(%ASCID '!6SL    ', 0, tmp_desc, .line))
```

```
;  1978          1958  3     THEN
;  1979          1959  3         SIGNAL_STOP (.stat);     ! Signal the error
;  1980          1960  3     len  = 7+.len;               ! Bump our local length.
;  1981          1961  3     op   = 7+.op;                ! Bump the pointer to the output
;  1982          1962  2     END;
;  1983          1963  2
;  1984          1964  2 CASE .format FROM form_text TO form_nonulls OF
;  1985          1965  2     SET
;  1986          1966  2     [form_text]:
;  1987          1967  2                 len = format_action_text (.in_siz, .in_ptr, .op);
;  1988          1968  2     [form_passall]:
;  1989          1969  2                 CH$MOVE(.in_siz, .in_ptr, .op); ! Move the input buffer
;  1990          1970  2     [form_dump, form_nonulls]:
;  1991          1971  2                 len = format_action_dump (.in_siz, .in_ptr, .op);
;  1992          1972  2     TES;
;  1993          1973  2
;  1994          1974  2 srh$put_output(.len, .output_buff);              ! and then print
;  1995          1975  2
;  1996          1976  2 RETURN;
;  1997          1977  2
;  1998          1978  1 END;


                                                        .PSECT  $PLIT$,NOWRT,NOEXE,2

                    00  00  00  09  4C  53  36  21  002A4 P.ACB:   .ASCII  \!6SL\<9><0><0><0>                    ;
                                        010E0005    002AC P.ACA:   .LONG   17694725                              ;
                                        00000000'   002B0          .ADDRESS P.ACB                            ;


                                                        .PSECT  $CODE$,NOWRT,2

                            03E0    8F  BB 00000 FORMAT_N_PUT:
                                                        PUSHR   #^M<R5,R6,R7,R8,R9>                          ; 1901
                        57                  52  7D 00004           MOVQ    R2, R7                              ;
                        03          0000'   CF  E8 00007           BLBS    OUT_PRINTING, 1$                    ; 1932
                                      0083  31  00000C              BRW     12$                                 ;
                        01          0000'   CF  D1 0000F 1$:       CMPL    FORMAT, #1                          ; 1936
                                            0A  12 00014           BNEQ    2$                                  ;
                        05          0000'   CF  E8 00016           BLBS    QUA_NUMBERS, 2$                     ;
                        52                  57  7D 0001B           MOVQ    IN_SIZ, R2                          ; 1939
                                            6F  11 0001E           BRB     11$                                 ;
                        59                  57  D0 00020 2$:       MOVL    IN_SIZ, LEN                         ; 1946
                        56          0000'   CF  D0 00023           MOVL    OUTPUT_BUFF, OP                     ; 1947
                        2F          0000'   CF  E9 00028           BLBC    QUA_NUMBERS, 4$                     ; 1949
                0000'   CF                  07  B0 0002D           MOVW    #7, TMP_DESC                        ; 1955
                0000'   CF                  56  D0 00032           MOVL    OP, TMP_DESC+4                      ; 1956
                                            54  DD 00037           PUSHL   LINE                                ; 1957
                                    0000'   CF  9F 00039           PUSHAB  TMP_DESC                            ;
                                            7E  D4 0003D           CLRL    -(SP)                               ;
                                    0000'   CF  9F 0003F           PUSHAB  P.ACA                               ;
        00000000G   00                      04  FB 00043           CALLS   #4, SYS$FAO                         ;
                        09                  50  E8 0004A           BLBS    STAT, 3$                            ;
                                            50  DD 0004D           PUSHL   STAT                                ; 1959
        00000000G   00                      01  FB 0004F           CALLS   #1, LIB$STOP                        ;
```

```
                                 59      07  C0 00056 3$:     ADDL2   #7, LEN                             ; 1960
                                 56      07  C0 00059         ADDL2   #7, OP                              ; 1961
                       03        00  0000'  CF  CF 0005C 4$:  CASEL   FORMAT, #0, #3                      ; 1964
        0019         0019      0013      0008    00062 5$:    .WORD   6$-5$,-                             ;
                                                                      7$-5$,-                             ;
                                                                      8$-5$,-                             ;
                                                                      8$-5$                               ;
                                 52      56  D0 0006A 6$:     MOVL    OP, R2                              ; 1967
                                 54      57  7D 0006D         MOVQ    IN_SIZ, R4                          ;
                                      0000V  30 00070         BSBW    FORMAT_ACTION_TEXT                  ;
                                         0F  11 00073         BRB     9$                                  ;
                       66        68      57  28 00075 7$:     MOVC3   IN_SIZ, (IN_PTR), (OP)              ; 1969
                                         0C  11 00079         BRB     10$                                 ;
                                 50      56  D0 0007B 8$:     MOVL    OP, R0                              ; 1971
                                 52      57  7D 0007E         MOVQ    IN_SIZ, R2                          ;
                                      0000V  30 00081         BSBW    FORMAT_ACTION_DUMP                  ;
                                 59      50  D0 00084 9$:     MOVL    R0, LEN                             ;
                                 53  0000'  CF  D0 00087 10$: MOVL    OUTPUT_BUFF, R3                     ; 1974
                                 52      59  D0 0008C         MOVL    LEN, R2                             ;
                                      0000V  30 0008F 11$:    BSBW    SRH$PUT_OUTPUT                      ;
                            03E0      8F  BA 00092 12$:       POPR    #^M<R5,R6,R7,R8,R9>                 ; 1978
                                         05 00096             RSB                                         ;

; Routine Size:  151 bytes,    Routine Base:  $CODE$ + 0D4B
```

```
;  2000     1979  1 ROUTINE format_action_text (len, inp, outp) : JSB_FORACTTEX =
;  2001     1980  2 BEGIN
;  2002     1981  2
;  2003     1982  2 ! Define a table of substitute strings for control characters.  We define a byte vector of offsets to
;  2004     1983  2 ! ASCIC substitute strings.  A zero in the table means no substitution, an non-zero is the offset from
;  2005     1984  2 ! the base of the substitute strings.
;  2006     1985  2 !
;  2007     1986  2 PSECT
;  2008     1987  2     PLIT = $OWN$_CRF (WRITE);           ! Place string in crf along with table
;  2009     1988  2 BIND
;  2010     1989  2     table_base = UPLIT BYTE (0);
;  2011     1990  2 OWN_CRF
;  2012     1991  2     table : VECTOR [256, BYTE] PRESET (
;  2013     1992  2             [%x'00'] =  (UPLIT BYTE (%ascic 'NUL') - table_base),
;  2014     1993  2             [%x'01'] =  (UPLIT BYTE (%ascic 'SOH') - table_base),
;  2015     1994  2             [%x'02'] =  (UPLIT BYTE (%ascic 'STX') - table_base),
;  2016     1995  2             [%x'03'] =  (UPLIT BYTE (%ascic 'ETX') - table_base),
;  2017     1996  2             [%x'04'] =  (UPLIT BYTE (%ascic 'EOT') - table_base),
;  2018     1997  2             [%x'05'] =  (UPLIT BYTE (%ascic 'ENQ') - table_base),
;  2019     1998  2             [%x'06'] =  (UPLIT BYTE (%ascic 'ACK') - table_base),
;  2020     1999  2             [%x'07'] =  (UPLIT BYTE (%ascic 'BEL') - table_base),
;  2021     2000  2             [%x'08'] =  (UPLIT BYTE (%ascic 'BS') - table_base),
;  2022     2001  2             [%x'0E'] =  (UPLIT BYTE (%ascic 'SO') - table_base),
;  2023     2002  2             [%x'0F'] =  (UPLIT BYTE (%ascic 'SI') - table_base),
;  2024     2003  2             [%x'10'] =  (UPLIT BYTE (%ascic 'DLE') - table_base),
;  2025     2004  2             [%x'11'] =  (UPLIT BYTE (%ascic 'DC1') - table_base),
;  2026     2005  2             [%x'12'] =  (UPLIT BYTE (%ascic 'DC2') - table_base),
;  2027     2006  2             [%x'13'] =  (UPLIT BYTE (%ascic 'DC3') - table_base),
;  2028     2007  2             [%x'14'] =  (UPLIT BYTE (%ascic 'DC4') - table_base),
;  2029     2008  2             [%x'15'] =  (UPLIT BYTE (%ascic 'NAK') - table_base),
;  2030     2009  2             [%x'16'] =  (UPLIT BYTE (%ascic 'SYN') - table_base),
;  2031     2010  2             [%x'17'] =  (UPLIT BYTE (%ascic 'ETB') - table_base),
;  2032     2011  2             [%x'18'] =  (UPLIT BYTE (%ascic 'CAN') - table_base),
;  2033     2012  2             [%x'19'] =  (UPLIT BYTE (%ascic 'EM') - table_base),
;  2034     2013  2             [%x'1A'] =  (UPLIT BYTE (%ascic 'SUB') - table_base),
;  2035     2014  2             [%x'1B'] =  (UPLIT BYTE (%ascic 'ESC') - table_base),
;  2036     2015  2             [%x'1C'] =  (UPLIT BYTE (%ascic 'FS') - table_base),
;  2037     2016  2             [%x'1D'] =  (UPLIT BYTE (%ascic 'GS') - table_base),
;  2038     2017  2             [%x'1E'] =  (UPLIT BYTE (%ascic 'RS') - table_base),
;  2039     2018  2             [%x'1F'] =  (UPLIT BYTE (%ascic 'US') - table_base),
;  2040     2019  2             [%x'7F'] =  (UPLIT BYTE (%ascic 'DEL') - table_base),
;  2041     2020  2             [%x'80'] =  (UPLIT BYTE (%ascic 'x80') - table_base),
;  2042     2021  2             [%x'81'] =  (UPLIT BYTE (%ascic 'x81') - table_base),
;  2043     2022  2             [%x'82'] =  (UPLIT BYTE (%ascic 'x82') - table_base),
;  2044     2023  2             [%x'83'] =  (UPLIT BYTE (%ascic 'x83') - table_base),
;  2045     2024  2             [%x'84'] =  (UPLIT BYTE (%ascic 'IND') - table_base),
;  2046     2025  2             [%x'85'] =  (UPLIT BYTE (%ascic 'NEL') - table_base),
;  2047     2026  2             [%x'86'] =  (UPLIT BYTE (%ascic 'SSA') - table_base),
;  2048     2027  2             [%x'87'] =  (UPLIT BYTE (%ascic 'ESA') - table_base),
;  2049     2028  2             [%x'88'] =  (UPLIT BYTE (%ascic 'HTS') - table_base),
;  2050     2029  2             [%x'89'] =  (UPLIT BYTE (%ascic 'HTJ') - table_base),
;  2051     2030  2             [%x'8A'] =  (UPLIT BYTE (%ascic 'VTS') - table_base),
;  2052     2031  2             [%x'8B'] =  (UPLIT BYTE (%ascic 'PLD') - table_base),
;  2053     2032  2             [%x'8C'] =  (UPLIT BYTE (%ascic 'PLU') - table_base),
;  2054     2033  2             [%x'8D'] =  (UPLIT BYTE (%ascic 'RI') - table_base),
;  2055     2034  2             [%x'8E'] =  (UPLIT BYTE (%ascic 'SS2') - table_base),
;  2056     2035  2             [%x'8F'] =  (UPLIT BYTE (%ascic 'SS3') - table_base),
```

```
;  2057          2036  2              [%x'90'] =  (UPLIT BYTE (%asci 'DCS') - table_base),
;  2058          2037  2              [%x'91'] =  (UPLIT BYTE (%asci 'PU1') - table_base),
;  2059          2038  2              [%x'92'] =  (UPLIT BYTE (%asci 'PU2') - table_base),
;  2060          2039  2              [%x'93'] =  (UPLIT BYTE (%asci 'STS') - table_base),
;  2061          2040  2              [%x'94'] =  (UPLIT BYTE (%asci 'CCH') - table_base),
;  2062          2041  2              [%x'95'] =  (UPLIT BYTE (%asci 'MW') - table_base),
;  2063          2042  2              [%x'96'] =  (UPLIT BYTE (%asci 'SPA') - table_base),
;  2064          2043  2              [%x'97'] =  (UPLIT BYTE (%asci 'EPA') - table_base),
;  2065          2044  2              [%x'98'] =  (UPLIT BYTE (%asci 'x98') - table_base),
;  2066          2045  2              [%x'99'] =  (UPLIT BYTE (%asci 'x99') - table_base),
;  2067          2046  2              [%x'9A'] =  (UPLIT BYTE (%asci 'x9A') - table_base),
;  2068          2047  2              [%x'9B'] =  (UPLIT BYTE (%asci 'CSI') - table_base),
;  2069          2048  2              [%x'9C'] =  (UPLIT BYTE (%asci 'ST') - table_base),
;  2070          2049  2              [%x'9D'] =  (UPLIT BYTE (%asci 'OSC') - table_base),
;  2071          2050  2              [%x'9E'] =  (UPLIT BYTE (%asci 'PM') - table_base),
;  2072          2051  2              [%x'9F'] =  (UPLIT BYTE (%asci 'APC') - table_base),
;  2073          2052  2              [%x'A0'] =  (UPLIT BYTE (%asci 'xA0') - table_base),
;  2074          2053  2              [%x'FF'] =  (UPLIT BYTE (%asci 'xFF') - table_base));
;  2075          2054  2      BIND
;  2076          2055  2          table_top = UPLIT BYTE (0);                 ! Hang a label on the end
;  2077          2056  2
;  2078          2057  2      ! Make sure that all of the strings total fewer than 256 bytes, so that byte offsets will work.  Note
;  2079          2058  2      ! that BLISS stores the above table like <table-base><ascic-strings><table><table-top> so that we must
;  2080          2059  2      ! include the length of the table itself.  Also test the assumption about storage format.  (We have
;  2081          2060  2      ! defined both OWN and PLIT to the same psect.)
;  2082          2061  2      !
;  2083          2062  2      $assume ((table_top-table_base) LEQ 511);
;  2084          2063  2      $assume ((table_base LSSA table) AND (table LSSA table_top));
;  2085          2064  2
;  2086          2065  2      REGISTER
;  2087          2066  2          ip,                                         ! Input pointer
;  2088          2067  2          op;                                         ! Output pointer
;  2089          2068  2
;  2090          2069  2      ip = .inp;
;  2091          2070  2      op = .outp;
;  2092          2071  2
;  2093          2072  2      DECR count FROM .len-1 TO 0                     ! Convert the controls
;  2094          2073  2      DO
;  2095          2074  3          BEGIN
;  2096          2075  3          REGISTER
;  2097          2076  3              char,                                   ! Local character variable
;  2098          2077  3              string : REF VECTOR [, BYTE];           ! Pointer to string for expansion
;  2099          2078  3
;  2100          2079  3          char = CH$RCHAR_A (ip);                     ! Get next character
;  2101          2080  3          IF (string = .table [.char]) NEQ 0          ! See if the substitution offset is zero
;  2102          2081  3          THEN
;  2103          2082  4              BEGIN
;  2104          2083  4              REGISTER
;  2105          2084  4                  len;
;  2106          2085  4              string = .string + table_base;          ! Turn the offset into an address
;  2107          2086  4              CH$WCHAR_A ('<', op);                   ! Start with the open bracket
;  2108          2087  4              len = .string [0];                      ! Move the length to a register
;  2109          2088  4              CH$MOVE (.len, string [1], .op);        ! Copy the ASCIC string
;  2110          2089  4              op = .op+.len;                          ! Move the output pointer
;  2111          2090  4              CH$WCHAR_A ('>', op);                   ! And finish with the close bracket
;  2112          2091  4              END
;  2113          2092  3          ELSE                                        ! Offset is zero, just move the char
```

```
;  2114          2093  3          CH$WCHAR_A (.char, op);
;  2115          2094  2      END;
;  2116          2095  2
;  2117          2096  2 RETURN .op-.output_buff;                    ! Pass the new length back
;  2118          2097  1 END;


                                                .PSECT  $OWN$_CRF,NOEXE,2

                                          00  0032C P.ACC:  .BYTE   0
                                    4C 55 4E  03  0032D P.ACD:  .ASCII  <3>\NUL\                                    ;
                                    48 4F 53  03  00331 P.ACE:  .ASCII  <3>\SOH\                                    ;
                                    58 54 53  03  00335 P.ACF:  .ASCII  <3>\STX\                                    ;
                                    58 54 45  03  00339 P.ACG:  .ASCII  <3>\ETX\                                    ;
                                    54 4F 45  03  0033D P.ACH:  .ASCII  <3>\EOT\                                    ;
                                    51 4E 45  03  00341 P.ACI:  .ASCII  <3>\ENQ\                                    ;
                                    4B 43 41  03  00345 P.ACJ:  .ASCII  <3>\ACK\                                    ;
                                    4C 45 42  03  00349 P.ACK:  .ASCII  <3>\BEL\                                    ;
                                       53 42  02  0034D P.ACL:  .ASCII  <2>\BS\                                     ;
                                       4F 53  02  00350 P.ACM:  .ASCII  <2>\SO\                                     ;
                                       49 53  02  00353 P.ACN:  .ASCII  <2>\SI\                                     ;
                                    45 4C 44  03  00356 P.ACO:  .ASCII  <3>\DLE\                                    ;
                                    31 43 44  03  0035A P.ACP:  .ASCII  <3>\DC1\                                    ;
                                    32 43 44  03  0035E P.ACQ:  .ASCII  <3>\DC2\                                    ;
                                    33 43 44  03  00362 P.ACR:  .ASCII  <3>\DC3\                                    ;
                                    34 43 44  03  00366 P.ACS:  .ASCII  <3>\DC4\                                    ;
                                    4B 41 4E  03  0036A P.ACT:  .ASCII  <3>\NAK\                                    ;
                                    4E 59 53  03  0036E P.ACU:  .ASCII  <3>\SYN\                                    ;
                                    42 54 45  03  00372 P.ACV:  .ASCII  <3>\ETB\                                    ;
                                    4E 41 43  03  00376 P.ACW:  .ASCII  <3>\CAN\                                    ;
                                       4D 45  02  0037A P.ACX:  .ASCII  <2>\EM\                                     ;
                                    42 55 53  03  0037D P.ACY:  .ASCII  <3>\SUB\                                    ;
                                    43 53 45  03  00381 P.ACZ:  .ASCII  <3>\ESC\                                    ;
                                       53 46  02  00385 P.ADA:  .ASCII  <2>\FS\                                     ;
                                       53 47  02  00388 P.ADB:  .ASCII  <2>\GS\                                     ;
                                       53 52  02  0038B P.ADC:  .ASCII  <2>\RS\                                     ;
                                       53 55  02  0038E P.ADD:  .ASCII  <2>\US\                                     ;
                                    4C 45 44  03  00391 P.ADE:  .ASCII  <3>\DEL\                                    ;
                                    30 38 78  03  00395 P.ADF:  .ASCII  <3>\x80\                                    ;
                                    31 38 78  03  00399 P.ADG:  .ASCII  <3>\x81\                                    ;
                                    32 38 78  03  0039D P.ADH:  .ASCII  <3>\x82\                                    ;
                                    33 38 78  03  003A1 P.ADI:  .ASCII  <3>\x83\                                    ;
                                    44 4E 49  03  003A5 P.ADJ:  .ASCII  <3>\IND\                                    ;
                                    4C 45 4E  03  003A9 P.ADK:  .ASCII  <3>\NEL\                                    ;
                                    41 53 53  03  003AD P.ADL:  .ASCII  <3>\SSA\                                    ;
                                    41 53 45  03  003B1 P.ADM:  .ASCII  <3>\ESA\                                    ;
                                    53 54 48  03  003B5 P.ADN:  .ASCII  <3>\HTS\                                    ;
                                    4A 54 48  03  003B9 P.ADO:  .ASCII  <3>\HTJ\                                    ;
                                    53 54 56  03  003BD P.ADP:  .ASCII  <3>\VTS\                                    ;
                                    44 4C 50  03  003C1 P.ADQ:  .ASCII  <3>\PLD\                                    ;
                                    55 4C 50  03  003C5 P.ADR:  .ASCII  <3>\PLU\                                    ;
                                       49 52  02  003C9 P.ADS:  .ASCII  <2>\RI\                                     ;
                                    32 53 53  03  003CC P.ADT:  .ASCII  <3>\SS2\                                    ;
                                    33 53 53  03  003D0 P.ADU:  .ASCII  <3>\SS3\                                    ;
                                    53 43 44  03  003D4 P.ADV:  .ASCII  <3>\DCS\                                    ;
                                    31 55 50  03  003D8 P.ADW:  .ASCII  <3>\PU1\                                    ;
```

```
                                                32  55  50  03  003DC P.ADX:   .ASCII  <3>\PU2\                                ;
                                                53  54  53  03  003E0 P.ADY:   .ASCII  <3>\STS\                                ;
                                                48  43  43  03  003E4 P.ADZ:   .ASCII  <3>\CCH\                                ;
                                                    57  4D  02  003E8 P.AEA:   .ASCII  <2>\MW\                                 ;
                                                41  50  53  03  003EB P.AEB:   .ASCII  <3>\SPA\                                ;
                                                41  50  45  03  003EF P.AEC:   .ASCII  <3>\EPA\                                ;
                                                38  39  78  03  003F3 P.AED:   .ASCII  <3>\x98\                                ;
                                                39  39  78  03  003F7 P.AEE:   .ASCII  <3>\x99\                                ;
                                                41  39  78  03  003FB P.AEF:   .ASCII  <3>\x9A\                                ;
                                                49  53  43  03  003FF P.AEG:   .ASCII  <3>\CSI\                                ;
                                                    54  53  02  00403 P.AEH:   .ASCII  <2>\ST\                                 ;
                                                43  53  4F  03  00406 P.AEI:   .ASCII  <3>\OSC\                                ;
                                                    4D  50  02  0040A P.AEJ:   .ASCII  <2>\PM\                                 ;
                                                43  50  41  03  0040D P.AEK:   .ASCII  <3>\APC\                                ;
                                                30  41  78  03  00411 P.AEL:   .ASCII  <3>\xA0\                                ;
                                                46  46  78  03  00415 P.AEM:   .ASCII  <3>\xFF\                                ;
                                                            00419               .BLKB   3                                       ;
                                    21  1D  19  15  11  0D  09  05  01  0041C TABLE:    .BYTE   1, 5, 9, 13, 17, 21, 25, 29, 33         ;
                                                            00# 00425           .BYTE   0[5]                                    ;
59  55  51  4E  4A  46  42  3E  3A  36  32  2E  2A  27  24  0042A               .BYTE   36, 39, 42, 46, 50, 54, 58, 62, 66, 70, -   ;
                                                62  5F  5C  00439                       74, 78, 81, 85, 89, 92, 95, 98              ;
                                                            00# 0043C           .BYTE   0[95]                                   ;
9D  99  95  91  8D  89  85  81  7D  79  75  71  6D  69  65  0049B               .BYTE   101, 105, 109, 113, 117, 121, 125, -127, -  ;
D7  D3  CF  CB  C7  C3  BF  BC  B8  B4  B0  AC  A8  A4  A0  004AA                       -123, -119, -115, -111, -107, -103, -99, -  ;
                                            E5  E1  DE  DA  004B9                       -96, -92, -88, -84, -80, -76, -72, -68, -   ;
                                                                                        -65, -61, -57, -53, -49, -45, -41, -38, -   ;
                                                                                        -34, -31, -27                               ;
                                                            00# 004BD           .BYTE   0[94]                                   ;
                                                            E9  0051B           .BYTE   -23                                     ;
                                                            00  0051C P.AEN:    .BYTE   0                                       ;

                                                        TABLE_BASE=         P.ACC
                                                        TABLE_TOP=          P.AEN


                                                                .PSECT  $CODE$,NOWRT,2

                        7E              58  7D 00000 FORMAT_ACTION_TEXT:
                                                     MOVQ    R8, -(SP)                                  ; 1979
                        7E              56  7D 00003         MOVQ    R6, -(SP)                          ;
                        56              55  D0 00006         MOVL    INP, IP                            ; 2069
                        57              52  D0 00009         MOVL    OUTP, OP                           ; 2070
                        59              54  D0 0000C         MOVL    LEN, COUNT                         ; 2072
                                        29  11 0000F         BRB     4$                                 ;
                        50              86  9A 00011 1$:     MOVZBL  (IP)+, CHAR                        ; 2079
                        51      0000'CF40  9A 00014         MOVZBL  TABLE[CHAR], STRING                ; 2080
                                        19  13 0001A         BEQL    2$                                 ;
                        51      0000'CF41  9E 0001C         MOVAB   TABLE_BASE[STRING], STRING         ; 2085
                        87              3C  90 00022         MOVB    #60, (OP)+                         ; 2086
                        58              61  9A 00025         MOVZBL  (STRING), LEN                      ; 2087
67          01          A1              58  28 00028         MOVC3   LEN, 1(STRING), (OP)               ; 2088
                        57              58  C0 0002D         ADDL2   LEN, OP                            ; 2089
                        67              3E  90 00030         MOVB    #62, (OP)                          ; 2090
                                        03  11 00033         BRB     3$                                 ; 2093
                        67              50  90 00035 2$:     MOVB    CHAR, (OP)                         ;
                                        57  D6 00038 3$:     INCL    OP                                 ; 2090
                        D4              59  F4 0003A 4$:     SOBGEQ  COUNT, 1$                          ; 2072
```

```
                57      0000'  CF  C2 0003D        SUBL2   OUTPUT_BUFF, R7                 ; 2096
                50             57  D0 00042        MOVL    R7, R0                          ;
                               03C0  8F  BA 00045   POPR    #^M<R6,R7,R8,R9>                ; 2097
                                         05 00049   RSB                                     ;

; Routine Size:  74 bytes,    Routine Base:  $CODE$ + 0DE2
```

```
;  2120     2098  1 ROUTINE format_action_dump (len, inp, outp) : JSB_FORACTDUM =
;  2121     2099  2 BEGIN
;  2122     2100  2
;  2123     2101  2 ! Define a table of substitute strings for control characters.  We define a byte vector of offsets to
;  2124     2102  2 ! ASCIC substitute strings.  A zero in the table means no substitution, an non-zero is the offset from
;  2125     2103  2 ! the base of the substitute strings.
;  2126     2104  2 !
;  2127     2105  2 PSECT
;  2128     2106  2     PLIT = $OWN$_CRF (WRITE);          ! Place string in crf along with table
;  2129     2107  2 BIND
;  2130     2108  2     table_base = UPLIT BYTE (0);
;  2131     2109  2 OWN_CRF
;  2132     2110  2     table : VECTOR [256, BYTE] PRESET (
;  2133     2111  2             [%x'00'] = (UPLIT BYTE (%ascic 'NUL') - table_base),
;  2134     2112  2             [%x'01'] = (UPLIT BYTE (%ascic 'SOH') - table_base),
;  2135     2113  2             [%x'02'] = (UPLIT BYTE (%ascic 'STX') - table_base),
;  2136     2114  2             [%x'03'] = (UPLIT BYTE (%ascic 'ETX') - table_base),
;  2137     2115  2             [%x'04'] = (UPLIT BYTE (%ascic 'EOT') - table_base),
;  2138     2116  2             [%x'05'] = (UPLIT BYTE (%ascic 'ENQ') - table_base),
;  2139     2117  2             [%x'06'] = (UPLIT BYTE (%ascic 'ACK') - table_base),
;  2140     2118  2             [%x'07'] = (UPLIT BYTE (%ascic 'BEL') - table_base),
;  2141     2119  2             [%x'08'] = (UPLIT BYTE (%ascic 'BS') - table_base),
;  2142     2120  2             [%x'09'] = (UPLIT BYTE (%ascic 'HT') - table_base),
;  2143     2121  2             [%x'0A'] = (UPLIT BYTE (%ascic 'CR') - table_base),
;  2144     2122  2             [%x'0B'] = (UPLIT BYTE (%ascic 'LF') - table_base),
;  2145     2123  2             [%x'0C'] = (UPLIT BYTE (%ascic 'VT') - table_base),
;  2146     2124  2             [%x'0D'] = (UPLIT BYTE (%ascic 'FF') - table_base),
;  2147     2125  2             [%x'0E'] = (UPLIT BYTE (%ascic 'SO') - table_base),
;  2148     2126  2             [%x'0F'] = (UPLIT BYTE (%ascic 'SI') - table_base),
;  2149     2127  2             [%x'10'] = (UPLIT BYTE (%ascic 'DLE') - table_base),
;  2150     2128  2             [%x'11'] = (UPLIT BYTE (%ascic 'DC1') - table_base),
;  2151     2129  2             [%x'12'] = (UPLIT BYTE (%ascic 'DC2') - table_base),
;  2152     2130  2             [%x'13'] = (UPLIT BYTE (%ascic 'DC3') - table_base),
;  2153     2131  2             [%x'14'] = (UPLIT BYTE (%ascic 'DC4') - table_base),
;  2154     2132  2             [%x'15'] = (UPLIT BYTE (%ascic 'NAK') - table_base),
;  2155     2133  2             [%x'16'] = (UPLIT BYTE (%ascic 'SYN') - table_base),
;  2156     2134  2             [%x'17'] = (UPLIT BYTE (%ascic 'ETB') - table_base),
;  2157     2135  2             [%x'18'] = (UPLIT BYTE (%ascic 'CAN') - table_base),
;  2158     2136  2             [%x'19'] = (UPLIT BYTE (%ascic 'EM') - table_base),
;  2159     2137  2             [%x'1A'] = (UPLIT BYTE (%ascic 'SUB') - table_base),
;  2160     2138  2             [%x'1B'] = (UPLIT BYTE (%ascic 'ESC') - table_base),
;  2161     2139  2             [%x'1C'] = (UPLIT BYTE (%ascic 'FS') - table_base),
;  2162     2140  2             [%x'1D'] = (UPLIT BYTE (%ascic 'GS') - table_base),
;  2163     2141  2             [%x'1E'] = (UPLIT BYTE (%ascic 'RS') - table_base),
;  2164     2142  2             [%x'1F'] = (UPLIT BYTE (%ascic 'US') - table_base),
;  2165     2143  2             [%x'7F'] = (UPLIT BYTE (%ascic 'DEL') - table_base),
;  2166     2144  2             [%x'80'] = (UPLIT BYTE (%ascic 'x80') - table_base),
;  2167     2145  2             [%x'81'] = (UPLIT BYTE (%ascic 'x81') - table_base),
;  2168     2146  2             [%x'82'] = (UPLIT BYTE (%ascic 'x82') - table_base),
;  2169     2147  2             [%x'83'] = (UPLIT BYTE (%ascic 'x83') - table_base),
;  2170     2148  2             [%x'84'] = (UPLIT BYTE (%ascic 'IND') - table_base),
;  2171     2149  2             [%x'85'] = (UPLIT BYTE (%ascic 'NEL') - table_base),
;  2172     2150  2             [%x'86'] = (UPLIT BYTE (%ascic 'SSA') - table_base),
;  2173     2151  2             [%x'87'] = (UPLIT BYTE (%ascic 'ESA') - table_base),
;  2174     2152  2             [%x'88'] = (UPLIT BYTE (%ascic 'HTS') - table_base),
;  2175     2153  2             [%x'89'] = (UPLIT BYTE (%ascic 'HTJ') - table_base),
;  2176     2154  2             [%x'8A'] = (UPLIT BYTE (%ascic 'VTS') - table_base),
```

```
;  2177     2155  2                [%x'8B'] =  (UPLIT BYTE (%ascic 'PLD') - table_base),
;  2178     2156  2                [%x'8C'] =  (UPLIT BYTE (%ascic 'PLU') - table_base),
;  2179     2157  2                [%x'8D'] =  (UPLIT BYTE (%ascic 'RI') - table_base),
;  2180     2158  2                [%x'8E'] =  (UPLIT BYTE (%ascic 'SS2') - table_base),
;  2181     2159  2                [%x'8F'] =  (UPLIT BYTE (%ascic 'SS3') - table_base),
;  2182     2160  2                [%x'90'] =  (UPLIT BYTE (%ascic 'DCS') - table_base),
;  2183     2161  2                [%x'91'] =  (UPLIT BYTE (%ascic 'PU1') - table_base),
;  2184     2162  2                [%x'92'] =  (UPLIT BYTE (%ascic 'PU2') - table_base),
;  2185     2163  2                [%x'93'] =  (UPLIT BYTE (%ascic 'STS') - table_base),
;  2186     2164  2                [%x'94'] =  (UPLIT BYTE (%ascic 'CCH') - table_base),
;  2187     2165  2                [%x'95'] =  (UPLIT BYTE (%ascic 'MW') - table_base),
;  2188     2166  2                [%x'96'] =  (UPLIT BYTE (%ascic 'SPA') - table_base),
;  2189     2167  2                [%x'97'] =  (UPLIT BYTE (%ascic 'EPA') - table_base),
;  2190     2168  2                [%x'98'] =  (UPLIT BYTE (%ascic 'x98') - table_base),
;  2191     2169  2                [%x'99'] =  (UPLIT BYTE (%ascic 'x99') - table_base),
;  2192     2170  2                [%x'9A'] =  (UPLIT BYTE (%ascic 'x9A') - table_base),
;  2193     2171  2                [%x'9B'] =  (UPLIT BYTE (%ascic 'CSI') - table_base),
;  2194     2172  2                [%x'9C'] =  (UPLIT BYTE (%ascic 'ST') - table_base),
;  2195     2173  2                [%x'9D'] =  (UPLIT BYTE (%ascic 'OSC') - table_base),
;  2196     2174  2                [%x'9E'] =  (UPLIT BYTE (%ascic 'PM') - table_base),
;  2197     2175  2                [%x'9F'] =  (UPLIT BYTE (%ascic 'APC') - table_base),
;  2198     2176  2                [%x'A0'] =  (UPLIT BYTE (%ascic 'xA0') - table_base),
;  2199     2177  2                [%x'FF'] =  (UPLIT BYTE (%ascic 'xFF') - table_base);
;  2200     2178  2 BIND
;  2201     2179  2     table_top = UPLIT BYTE (0);                    ! Hang a label on the end
;  2202     2180  2
;  2203     2181  2 ! Make sure that all of the strings total fewer than 256 bytes, so that byte offsets will work.  Note
;  2204     2182  2 ! that BLISS stores the above table like <table-base><ascic-strings><table><table-top> so that we must
;  2205     2183  2 ! include the length of the table itself.  Also test the assumption about storage format.  (We have
;  2206     2184  2 ! defined both OWN and PLIT to the same psect.)
;  2207     2185  2 !
;  2208     2186  2 $assume ((table_top-table_base) LEQ 511);
;  2209     2187  2 $assume ((table_base LSSA table) AND (table LSSA table_top));
;  2210     2188  2
;  2211     2189  2 REGISTER
;  2212     2190  2     ip,                                            ! Input pointer
;  2213     2191  2     op;                                            ! Output pointer
;  2214     2192  2
;  2215     2193  2 ip = .inp;
;  2216     2194  2 op = .outp;
;  2217     2195  2
;  2218     2196  2 DECR count FROM .len-1 TO 0                       ! Convert the controls
;  2219     2197  2 DO
;  2220     2198  3     BEGIN
;  2221     2199  3     REGISTER
;  2222     2200  3         char,                                      ! Local character variable
;  2223     2201  3         string : REF VECTOR [, BYTE];              ! Pointer to string for expansion
;  2224     2202  3
;  2225     2203  3     char = CH$RCHAR_A (ip);                        ! Get next character
;  2226     2204  5     IF NOT ((.char EQL 0)                          ! Skip if character is zero
;  2227     2205  4             AND (.format EQL form_nonulls))        !  and we are skipping nulls
;  2228     2206  3     THEN
;  2229     2207  4         BEGIN
;  2230     2208  4         IF (string = .table [.char]) NEQ 0         ! See if the substitution offset is zero
;  2231     2209  4         THEN
;  2232     2210  5             BEGIN
;  2233     2211  5             REGISTER
```

```
;  2234          2212  5                 len;
;  2235          2213  5             string = .string + table_base;      ! Turn the offset into an address
;  2236          2214  5             CH$WCHAR_A ('<', op);               ! Start with the open bracket
;  2237          2215  5             len = .string [0];                  ! Move the length to a register
;  2238          2216  5             CH$MOVE (.len, string [1], .op);    ! Copy the ASCIC string
;  2239          2217  5             op = .op+.len;                      ! Move the output pointer
;  2240          2218  5             CH$WCHAR_A ('>', op);               ! And finish with the close bracket
;  2241          2219  5             END
;  2242          2220  4         ELSE                                    ! Offset is zero, just move the char
;  2243          2221  4             CH$WCHAR_A (.char, op);
;  2244          2222  3         END;
;  2245          2223  2     END;
;  2246          2224  2
;  2247          2225  2 RETURN .op-.output_buff;                        ! Pass the new length back
;  2248          2226  1 END;


                                                .PSECT  $OWN$_CRF,NOEXE,2

                                        00  0051D P.AEO:  .BYTE   0
                                4C  55  4E  03  0051E P.AEP:  .ASCII  <3>\NUL\                                  ;
                                48  4F  53  03  00522 P.AEQ:  .ASCII  <3>\SOH\                                  ;
                                58  54  53  03  00526 P.AER:  .ASCII  <3>\STX\                                  ;
                                58  54  45  03  0052A P.AES:  .ASCII  <3>\ETX\                                  ;
                                54  4F  45  03  0052E P.AET:  .ASCII  <3>\EOT\                                  ;
                                51  4E  45  03  00532 P.AEU:  .ASCII  <3>\ENQ\                                  ;
                                4B  43  41  03  00536 P.AEV:  .ASCII  <3>\ACK\                                  ;
                                4C  45  42  03  0053A P.AEW:  .ASCII  <3>\BEL\                                  ;
                                    53  42  02  0053E P.AEX:  .ASCII  <2>\BS\                                   ;
                                    54  48  02  00541 P.AEY:  .ASCII  <2>\HT\                                   ;
                                    52  43  02  00544 P.AEZ:  .ASCII  <2>\CR\                                   ;
                                    46  4C  02  00547 P.AFA:  .ASCII  <2>\LF\                                   ;
                                    54  56  02  0054A P.AFB:  .ASCII  <2>\VT\                                   ;
                                    46  46  02  0054D P.AFC:  .ASCII  <2>\FF\                                   ;
                                    4F  53  02  00550 P.AFD:  .ASCII  <2>\SO\                                   ;
                                    49  53  02  00553 P.AFE:  .ASCII  <2>\SI\
                                45  4C  44  03  00556 P.AFF:  .ASCII  <3>\DLE\
                                31  43  44  03  0055A P.AFG:  .ASCII  <3>\DC1\
                                32  43  44  03  0055E P.AFH:  .ASCII  <3>\DC2\
                                33  43  44  03  00562 P.AFI:  .ASCII  <3>\DC3\
                                34  43  44  03  00566 P.AFJ:  .ASCII  <3>\DC4\
                                4B  41  4E  03  0056A P.AFK:  .ASCII  <3>\NAK\
                                4E  59  53  03  0056E P.AFL:  .ASCII  <3>\SYN\
                                42  54  45  03  00572 P.AFM:  .ASCII  <3>\ETB\
                                4E  41  43  03  00576 P.AFN:  .ASCII  <3>\CAN\
                                    4D  45  02  0057A P.AFO:  .ASCII  <2>\EM\
                                42  55  53  03  0057D P.AFP:  .ASCII  <3>\SUB\
                                43  53  45  03  00581 P.AFQ:  .ASCII  <3>\ESC\
                                    53  46  02  00585 P.AFR:  .ASCII  <2>\FS\
                                    53  47  02  00588 P.AFS:  .ASCII  <2>\GS\
                                    53  52  02  0058B P.AFT:  .ASCII  <2>\RS\
                                    53  55  02  0058E P.AFU:  .ASCII  <2>\US\
                                4C  45  44  03  00591 P.AFV:  .ASCII  <3>\DEL\
                                30  38  78  03  00595 P.AFW:  .ASCII  <3>\x80\
                                31  38  78  03  00599 P.AFX:  .ASCII  <3>\x81\
                                32  38  78  03  0059D P.AFY:  .ASCII  <3>\x82\
```

```
                                                33  38  78  03  005A1 P.AFZ:   .ASCII   <3>\x83\                                  ;
                                                44  4E  49  03  005A5 P.AGA:   .ASCII   <3>\IND\                                   ;
                                                4C  45  4E  03  005A9 P.AGB:   .ASCII   <3>\NEL\                                   ;
                                                41  53  53  03  005AD P.AGC:   .ASCII   <3>\SSA\                                   ;
                                                41  53  45  03  005B1 P.AGD:   .ASCII   <3>\ESA\                                   ;
                                                53  54  48  03  005B5 P.AGE:   .ASCII   <3>\HTS\                                   ;
                                                4A  54  48  03  005B9 P.AGF:   .ASCII   <3>\HTJ\                                   ;
                                                53  54  56  03  005BD P.AGG:   .ASCII   <3>\VTS\                                   ;
                                                44  4C  50  03  005C1 P.AGH:   .ASCII   <3>\PLD\                                   ;
                                                55  4C  50  03  005C5 P.AGI:   .ASCII   <3>\PLU\                                   ;
                                                    49  52  02  005C9 P.AGJ:   .ASCII   <2>\RI\                                    ;
                                                32  53  53  03  005CC P.AGK:   .ASCII   <3>\SS2\                                   ;
                                                33  53  53  03  005D0 P.AGL:   .ASCII   <3>\SS3\                                   ;
                                                53  43  44  03  005D4 P.AGM:   .ASCII   <3>\DCS\                                   ;
                                                31  55  50  03  005D8 P.AGN:   .ASCII   <3>\PU1\                                   ;
                                                32  55  50  03  005DC P.AGO:   .ASCII   <3>\PU2\                                   ;
                                                53  54  53  03  005E0 P.AGP:   .ASCII   <3>\STS\                                   ;
                                                48  43  43  03  005E4 P.AGQ:   .ASCII   <3>\CCH\                                   ;
                                                    57  4D  02  005E8 P.AGR:   .ASCII   <2>\MW\                                    ;
                                                41  50  53  03  005EB P.AGS:   .ASCII   <3>\SPA\                                   ;
                                                41  50  45  03  005EF P.AGT:   .ASCII   <3>\EPA\                                   ;
                                                38  39  78  03  005F3 P.AGU:   .ASCII   <3>\x98\                                   ;
                                                39  39  78  03  005F7 P.AGV:   .ASCII   <3>\x99\                                   ;
                                                41  39  78  03  005FB P.AGW:   .ASCII   <3>\x9A\                                   ;
                                                49  53  43  03  005FF P.AGX:   .ASCII   <3>\CSI\                                   ;
                                                    54  53  02  00603 P.AGY:   .ASCII   <2>\ST\                                    ;
                                                43  53  4F  03  00606 P.AGZ:   .ASCII   <3>\OSC\                                   ;
                                                    4D  50  02  0060A P.AHA:   .ASCII   <2>\PM\                                    ;
                                                43  50  41  03  0060D P.AHB:   .ASCII   <3>\APC\                                   ;
                                                30  41  78  03  00611 P.AHC:   .ASCII   <3>\xA0\                                   ;
                                                46  46  78  03  00615 P.AHD:   .ASCII   <3>\xFF\                                   ;
                                                                00619           .BLKB    3                                         ;
33  30  2D  2A  27  24  21  1D  19  15  11  0D  09  05  01  0061C TABLE:   .BYTE    1, 5, 9, 13, 17, 21, 25, 29, 33, 36, 39, -  ;
6B  68  64  60  5D  59  55  51  4D  49  45  41  3D  39  36  0062B                   42, 45, 48, 51, 54, 57, 61, 65, 69, 73, -  ;
                                            71  6E  0063A                   77, 81, 85, 89, 93, 96, 100, 104, 107, -   ;
                                                                                    110, 113                                  ;
                                                00#  0063C          .BYTE    0[95]                                             ;
AC  A8  A4  A0  9C  98  94  90  8C  88  84  80  7C  78  74  0069B          .BYTE    116, 120, 124, -128, -124, -120, -116, -  ;
E6  E2  DE  DA  D6  D2  CE  CB  C7  C3  BF  BB  B7  B3  AF  006AA                   -112, -108, -104, -100, -96, -92, -88, -  ;
                                        F4  F0  ED  E9  006B9                   -84, -81, -77, -73, -69, -65, -61, -57, -  ;
                                                                                    -53, -50, -46, -42, -38, -34, -30, -26, -  ;
                                                                                    -23, -19, -16, -12                        ;
                                                00#  006BD          .BYTE    0[94]                                             ;
                                                F8   0071B          .BYTE    -8                                                ;
                                                00   0071C P.AHE:   .BYTE    0                                                 ;

                                                        TABLE_BASE=         P.AE0
                                                        TABLE_TOP=          P.AHE

                                                                    .PSECT  $CODE$,NOWRT,2

                                        7E              58  7D 00000 FORMAT_ACTION_DUMP:
                                                                    MOVQ    R8, -(SP)                                         ; 2098
                                        7E              56  7D 00003        MOVQ    R6, -(SP)                                     ;
                                        56              53  D0 00006        MOVL    INP, IP                                       ; 2193
                                        57              50  D0 00009        MOVL    OUTP, OP                                      ; 2194
```

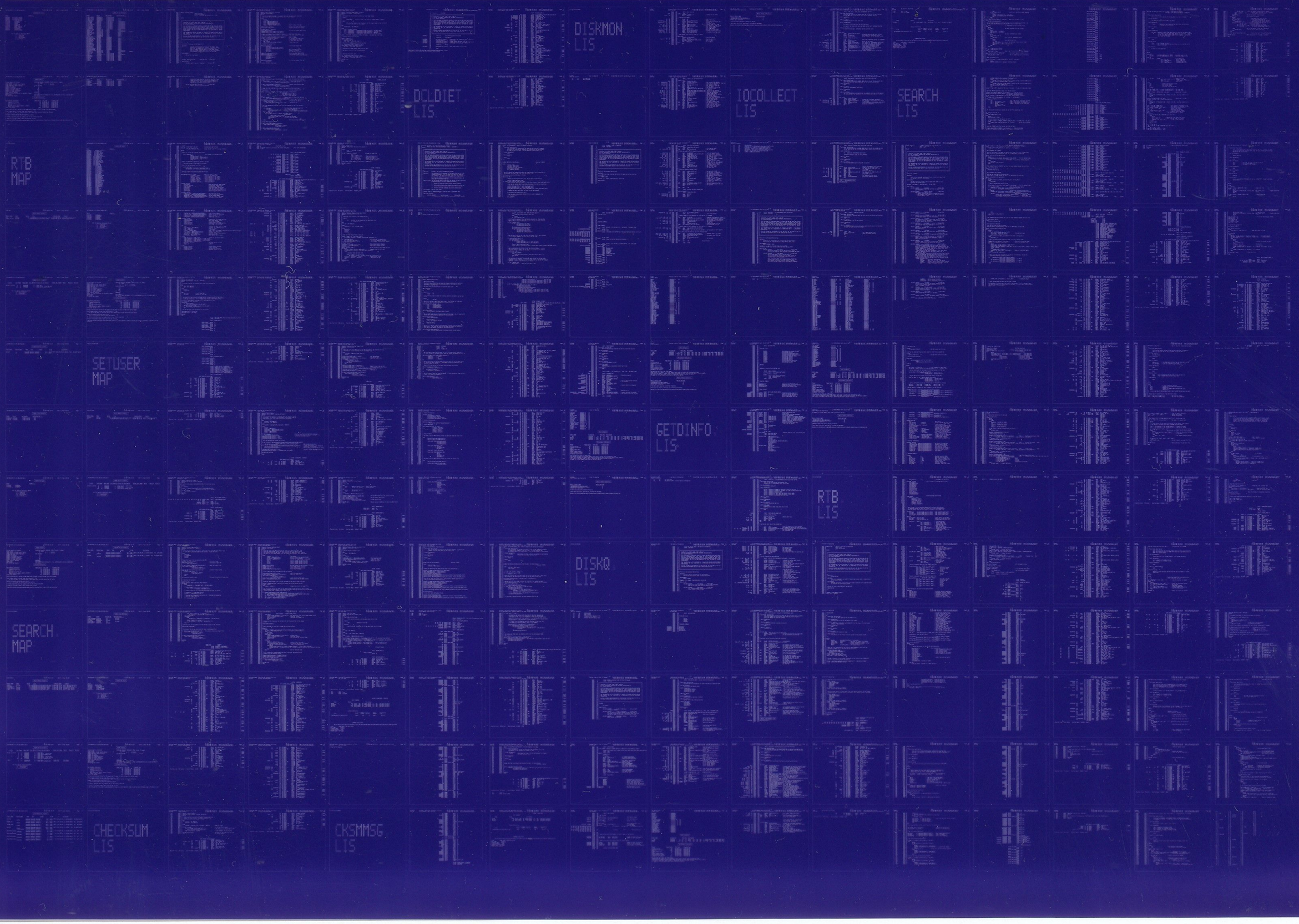
```
                        59              52  D0 0000C        MOVL    LEN, COUNT                      ; 2196
                                        32  11 0000F        BRB     5$                              ;
                        50              86  9A 00011 1$:    MOVZBL  (IP)+, CHAR                     ; 2203
                                        07  12 00014        BNEQ    2$                              ; 2204
                        03      0000'   CF  D1 00016        CMPL    FORMAT, #3                      ; 2205
                                        26  13 0001B        BEQL    5$                              ;
                        51      0000'CF40  9A 0001D 2$:     MOVZBL  TABLE[CHAR], STRING             ; 2208
                                        19  13 00023        BEQL    3$                              ;
                        51      0000'CF41  9E 00025        MOVAB   TABLE_BASE[STRING], STRING       ; 2213
                        87              3C  90 0002B        MOVB    #60, (OP)+                      ; 2214
                        58              61  9A 0002E        MOVZBL  (STRING), LEN                   ; 2215
                67      01      A1      58  28 00031        MOVC3   LEN, 1(STRING), (OP)            ; 2216
                        57              58  C0 00036        ADDL2   LEN, OP                         ; 2217
                        67              3E  90 00039        MOVB    #62, (OP)                       ; 2218
                                        03  11 0003C        BRB     4$                              ; 2221
                        67              50  90 0003E 3$:     MOVB    CHAR, (OP)                      ;
                                        57  D6 00041 4$:     INCL    OP                              ; 2218
                        CB              59  F4 00043 5$:     SOBGEQ  COUNT, 1$                       ; 2196
                        57      0000'   CF  C2 00046        SUBL2   OUTPUT_BUFF, R7                 ; 2225
                        50              57  D0 0004B        MOVL    R7, R0                          ;
                                03C0    8F  BA 0004E        POPR    #^M<R6,R7,R8,R9>                ; 2226
                                        05  00052        RSB                                     ;

; Routine Size:  83 bytes,    Routine Base:  $CODE$ + 0E2C
```

```
;  2250          2227  1 ROUTINE srh$put_output(length, buffer) : NOVALUE JSB_PUTOUT =
;  2251          2228  1 !++
;  2252          2229  1 ! Functional description
;  2253          2230  1 !
;  2254          2231  1 !       Routine to write records to the output file
;  2255          2232  1 !
;  2256          2233  1 ! Input parameters
;  2257          2234  1 !
;  2258          2235  1 !       length = length of string to output
;  2259          2236  1 !       buffer = address of string to output
;  2260          2237  1 !
;  2261          2238  1 !--
;  2262          2239  2 BEGIN
;  2263          2240  2
;  2264          2241  2 ROUTINE put (len, buf) : NOVALUE =
;  2265          2242  3 BEGIN
;  2266          2243  3
;  2267          2244  3 LOCAL
;  2268          2245  3     status;
;  2269          2246  3
;  2270          2247  3 outrab [rab$w_rsz] = .len;
;  2271          2248  3 outrab [rab$l_rbf] = .buf;
;  2272          2249  3
;  2273          2250  4 IF NOT (status = $PUT(RAB = outrab))
;  2274          2251  3 THEN
;  2275          2252  4     BEGIN
;  2276          2253  4
;  2277          2254  4     !+
;  2278          2255  4     ! if the error is due to a record which was too long, shorten the
;  2279          2256  4     ! request and try again
;  2280          2257  4     !-
;  2281          2258  5     IF (
;  2282          2259  6           (.max_rec GTR 80)           ! we aren't pretty short already
;  2283          2260  5         AND
;  2284          2261  6           (
;  2285          2262  7               (.status EQL RMS$_RSZ)  ! error is rec too big (get from tape)
;  2286          2263  6                OR
;  2287          2264  7               (
;  2288          2265  8                   (.status EQL RMS$_SYS)      ! terminal maxbuf error
;  2289          2266  7                    AND
;  2290          2267  8                   (.outrab[rab$l_stv] EQL SS$_EXQUOTA)
;  2291          2268  7               )
;  2292          2269  6           )
;  2293          2270  5         )
;  2294          2271  4     THEN
;  2295          2272  5         BEGIN
;  2296          2273  5         max_rec = (.len * 90) / 100;    ! try with rec 90% as long
;  2297          2274  5         put (.max_rec, .buf);
;  2298          2275  5         RETURN;
;  2299          2276  5         END
;  2300          2277  4     ELSE
;  2301          2278  4         file_error (srh$_writeerr, .status, outfab, .outrab[rab$l_stv]);
;  2302          2279  3     END;
;  2303          2280  3
;  2304        L 2281  3 %IF switch_statistics
;  2305          2282  3 %THEN
;  2306          2283  3     stat_totput = .stat_totput+1; ! Count this line
```

```
 3 %FI
 3
 3 RETURN;
 2 END;


                                                            .EXTRN  SYS$PUT

                                       000C 00000 PUT:      .WORD   Save R2,R3                          ; 2241
                    53       0000'  CF  9E 00002            MOVAB   MAX_REC, R3                         ;
                    52       0000'  CF  9E 00007            MOVAB   OUTRAB+12, R2                       ;
              16    A2         04   AC  B0 0000C            MOVW    LEN, OUTRAB+34                      ; 2247
              1C    A2         08   AC  D0 00011            MOVL    BUF, OUTRAB+40                      ; 2248
                               F4   A2  9F 00016            PUSHAB  OUTRAB                              ; 2250
         00000000G  00              01  FB 00019            CALLS   #1, SYS$PUT                         ;
                    4D              50  E8 00020            BLBS    STATUS, 3$                          ;
         00000050   8F              63  D1 00023            CMPL    MAX_REC, #80                        ; 2259
                    32              15 0002A                BLEQ    2$                                  ;
         000186A4   8F              50  D1 0002C            CMPL    STATUS, #100004                     ; 2262
                    0E              13 00033                BEQL    1$                                  ;
         0001C10C   8F              50  D1 00035            CMPL    STATUS, #114956                     ; 2265
                    20              12 0003C                BNEQ    2$                                  ;
                    1C              62  D1 0003E            CMPL    OUTRAB+12, #28                      ; 2267
                    1B              12 00041                BNEQ    2$                                  ;
      51            04       AC 0000005A  8F  C5 00043 1$:  MULL3   #90, LEN, R1                        ; 2273
      63                     51 00000064  8F  C7 0004C      DIVL3   #100, R1, MAX_REC                   ;
                               08   AC  DD 00054            PUSHL   BUF                                 ; 2274
                                    63  DD 00057            PUSHL   MAX_REC                             ;
                A3  AF              02  FB 00059            CALLS   #2, PUT                             ;
                                    04 0005D                RET                                         ; 2272
                                    62  DD 0005E 2$:        PUSHL   OUTRAB+12                           ; 2278
                               A4   A2  9F 00060            PUSHAB  OUTFAB                              ;
                                    50  DD 00063            PUSHL   STATUS                              ;
                        00D710D4    8F  DD 00065            PUSHL   #14094548                           ;
              FDB7  CF              04  FB 0006B            CALLS   #4, FILE_ERROR                      ;
                             0CFC   C3  D6 00070 3$:        INCL    STAT_TOTPUT                         ; 2283
                                    04 00074                RET                                         ; 2287

; Routine Size:  117 bytes,    Routine Base:  $CODE$ + 0E7F

 2
 2 IF .out_file_open
 2 THEN
 3         BEGIN
 3         LOCAL
 3             len,                            ! Local length
 3             ptr,                            ! Pointer to current part of buffer.
 3             printed;                        ! Flag that first part printed
 3
 3         len = .length;                      ! Copy inputs to local
 3         ptr = .buffer;
 3         printed = false;
 3         !
 3         ! Print the record.  We must allow for a segmented put if the
 3         ! size of the record is larger than the MRS of the output file.
```

```
;  2326          2303  3          !
;  2327          2304  3          DO
;  2328          2305  4              BEGIN
;  2329          2306  4              IF .printed
;  2330          2307  4              THEN
;  2331          2308  4                  put (11, UPLIT BYTE('(continued)'));
;  2332          2309  4              put (MIN(.len, .max_rec), .ptr);
;  2333          2310  4              len = .len - .max_rec;
;  2334          2311  4              ptr = .ptr + .max_rec;
;  2335          2312  4              printed = true;
;  2336          2313  4              END
;  2337          2314  3          UNTIL .len LEQ 0;
;  2338          2315  2          END;
;  2339          2316  1 END;


                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                29 64 65 75 6E 69 74 6E 6F 63 28  002B4 P.AHF:  .ASCII  \(continued)\                          ;


                                                                .PSECT  $CODE$,NOWRT,2

                                                  54  DD 00000 SRH$PUT_OUTPUT:
                                                                PUSHL   R4                                      ; 2227
                                      3A     0000'  CF  E9 00002          BLBC    OUT_FILE_OPEN, 4$           ; 2289
                                      54            53  D0 00007          MOVL    BUFFER, PTR                 ; 2298
                                                    53  D4 0000A          CLRL    PRINTED                     ; 2299
                                      0B            53  E9 0000C 1$:      BLBC    PRINTED, 2$                 ; 2306
                                            0000'   CF  9F 0000F          PUSHAB  P.AHF                       ; 2308
                                                    0B  DD 00013          PUSHL   #11                         ;
                                FF71  CF            02  FB 00015          CALLS   #2, PUT                     ;
                                                    54  DD 0001A 2$:      PUSHL   PTR                         ; 2309
                                      50     0000'  CF  D0 0001C          MOVL    MAX_REC, R0                 ;
                                                    52  DD 00021          PUSHL   LEN                         ;
                                      50            6E  D1 00023          CMPL    (SP), R0                    ;
                                                    03  15 00026          BLEQ    3$                          ;
                                      6E            50  D0 00028          MOVL    R0, (SP)                    ;
                                FF5B  CF            02  FB 0002B 3$:      CALLS   #2, PUT                     ;
                                      52     0000'  CF  C2 00030          SUBL2   MAX_REC, LEN                ; 2310
                                      54     0000'  CF  C0 00035          ADDL2   MAX_REC, PTR                ; 2311
                                      53            01  D0 0003A          MOVL    #1, PRINTED                 ; 2312
                                                    52  D5 0003D          TSTL    LEN                         ; 2314
                                                    CB  14 0003F          BGTR    1$                          ;
                                                    10  BA 00041 4$:      POPR    #^M<R4>                     ; 2316
                                                        05 00043          RSB                                 ;

; Routine Size:  68 bytes,    Routine Base:  $CODE$ + 0EF4
```

```
; 2341          2317  1 END
; 2342          2318  0 ELUDOM



                                                        .EXTRN  LIB$SIGNAL, LIB$STOP

;                               PSECT SUMMARY
;
;       Name                    Bytes                           Attributes
;
;  $OWN$_DZRO                     4940  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $OWN$_CRF                      1821  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $PLIT$                          703  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                         3896  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)


;                           Library Statistics
;                                        -------- Symbols --------      Pages       Processing
;       File                             Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]STARLET.L32;1      9776       108         1       581         00:01.0



;                                       COMMAND QUALIFIERS

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

; Size:         3896 code + 7464 data bytes
; Run Time:       01:19.6
; Elapsed Time:   01:29.4
; Lines/CPU Min:   1748
; Lexemes/CPU-Min: 23398
; Memory Used:  451 pages
; Compilation Complete
```



LUV1ROM

PQBTDRIVR
LIS

QVSS
LIS

SEARCHMSG
LIS

VMBUVAX1
MAP

SETUSER
LIS

VMBUVAX1
LIS

BOOTDRUV1
LIS

FILERDUV1
LIS

BOOTIOUV1
LIS

CONIO
LIS

NETBOOT
LIS