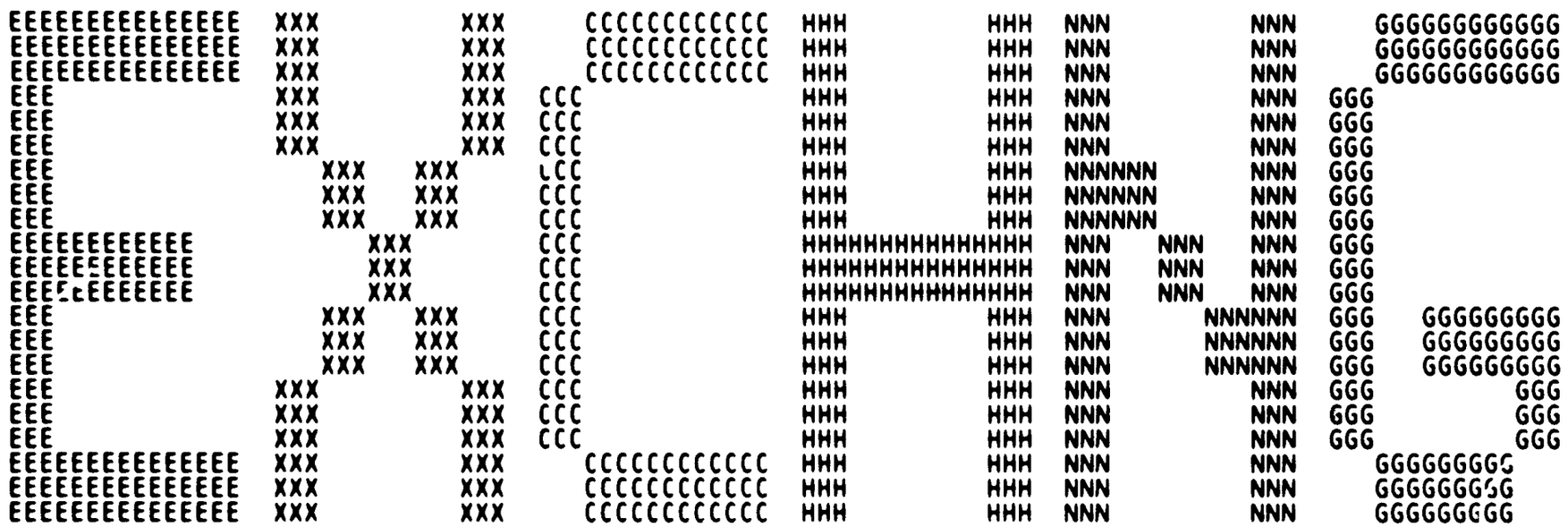
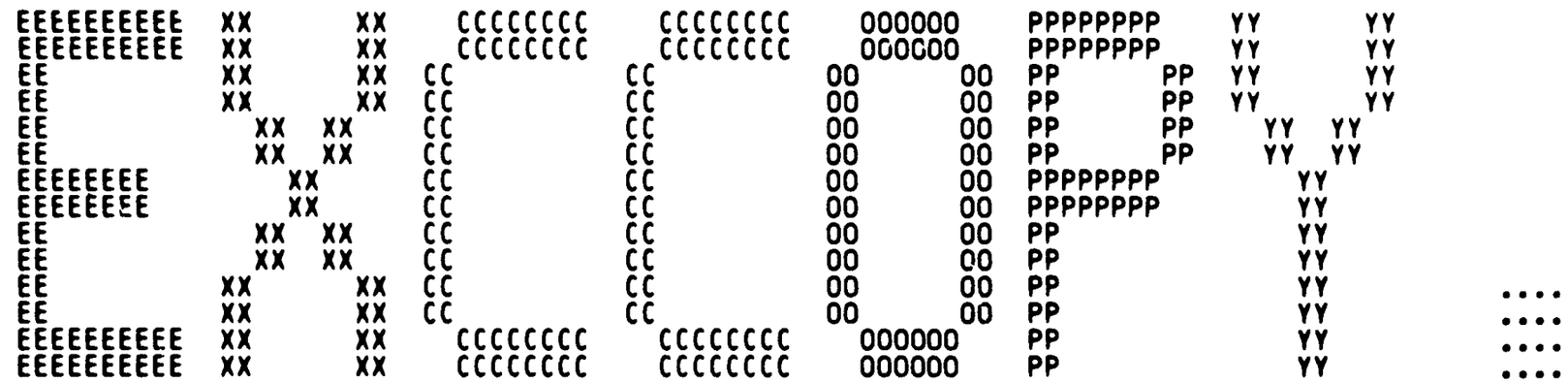

EEEEEEEEEEEEEEE XXX XXX CCCCCCCCCCCC HHH HHH NNN NNN GGGGGGGGGGG
EEE XXX XXX CCC HHH HHH NNN NNN GGG
EEE XXX XXX CCC HHH HHH NNN NNN GGG
EEE XXX XXX CCC HHH HHH NNNNNN NNN GGG
EEE XXX XXX CCC HHH HHH NNNNNN NNN GGG
EEE XXX XXX CCC HHH HHH NNNNNN NNN GGG
EEEEEEEEEEEE XXX CCC HHHHHHHHHHHHHHH NNN NNN NNN GGG
EEEEEEEEEEEE XXX CCC HHHHHHHHHHHHHHH NNN NNN NNN GGG
EEEEEEEEEEEE XXX CCC HHHHHHHHHHHHHHH NNN NNN NNN GGG
EEE XXX XXX CCC HHH HHH NNN NNNNNN GGG GGGGGGGG
EEE XXX XXX CCC HHH HHH NNN NNNNNN GGG GGGGGGGG
EEE XXX XXX CCC HHH HHH NNN NNNNNN GGG GGGGGGGG
EEE XXX XXX CCC HHH HHH NNN NNN GGG GGG
EEE XXX XXX CCC HHH HHH NNN NNN GGG GGG
EEEEEEEEEEEEEEE XXX XXX CCCCCCCCCCCC HHH HHH NNN NNN GGGGGGGGG
EEEEEEEEEEEEEEE XXX XXX CCCCCCCCCCCC HHH HHH NNN NNN GGGGGGGGG
EEEEEEEEEEEEEEE XXX XXX CCCCCCCCCCCC HHH HHH NNN NNN GGGGGGGGG

FILEID**EXCCOPY



```
;     1          0001  0 MODULE  exch$copy                                %TITLE 'copy verb dispatch and misc routines'
;     2          0002  0                 (
;     3          0003  0                 IDENT = 'V04-000',
;     4          0004  0                 ADDRESSING_MODE (EXTERNAL=LONG_RELATIVE, NONEXTERNAL=WORD_RELATIVE)
;     5          0005  0                 ) =
;     6          0006  1 BEGIN
;     7          0007  1 !
;     8          0008  1 !*****************************************************************************
;     9          0009  1 !*                                                                           *
;    10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
;    11          0011  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                    *
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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:     EXCHANGE - Foreign volume interchange facility
;    33          0033  1 !
;    34          0034  1 ! ABSTRACT:     Primary action routines for copy verb
;    35          0035  1 !
;    36          0036  1 ! ENVIRONMENT:  VAX/VMS User mode
;    37          0037  1 !
;    38          0038  1 ! AUTHOR:       CW Hobbs          CREATION DATE: 2-Oct-1982
;    39          0039  1 !
;    40          0040  1 ! MODIFIED BY:
;    41          0041  1 !
;    42          0042  1 !       V03-002 CWH3002                  CW Hobbs                 12-Apr-84
;    43          0043  1 !               Return file-not-found correctly in copy loop.  Modify TYPE
;    44          0044  1 !               output routine for eight-bit character set.
;    45          0045  1 !
;    46          0046  1 !
;    47          0047  1 !--
;    48          0048  1
;    49          0049  1 ! Include files:
;    50          0050  1 !
;    51          0051  1 MACRO $module_name_string = 'exch$copy' %;      ! The require file needs to know our module name
;    52          0052  1 REQUIRE 'SRC$:EXCREQ'                           ! Facility-wide require file
;    53          0053  1     ;
```

```
;    55          0150  1 %SBTTL 'Module table of contents'
;    56          0151  1
;    57          0152  1 ! Module table of contents:
;    58          0153  1 !
;    59          0154  1 FORWARD ROUTINE
;    60          0155  1     exch$copy_copy,                         ! Main action routine for COPY verb
;    61          0156  1         copy_init               : NOVALUE,  ! Inits common to COPY and TYPE
;    62          0157  1         copy_input_close        : NOVALUE,  ! Close the input file
;    63          0158  1         copy_input_open,                    ! Open the input file
;    64          0159  1     exch$copy_namb_to_filb      : NOVALUE,  ! Copy fields from namb to the filb
;    65          0160  1         copy_output_cleanup     : NOVALUE,  ! Release structures and clean up output
;    66          0161  1         copy_output_close,                  ! Close the output file
;    67          0162  1         copy_output_create,                 ! Create the output file
;    68          0163  1         copy_output_delete      : NOVALUE,  ! Delete the output file after error
;    69          0164  1         copy_parse_cleanup      : NOVALUE,  ! Release structures and clean up after parse
;    70          0165  1         copy_parse_next_input,              ! Fetch and expand next input parameter
;    71          0166  1     exch$copy_type,                         ! Main action routine for TYPE verb
;    72          0167  1         copy_type_print         : NOVALUE   ! Reformat and print lines on SYS$OUTPUT
;    73          0168  1     ;
;    74          0169  1
;    75          0170  1 ! EXCHANGE facility routines
;    76          0171  1 !
;    77          0172  1 EXTERNAL ROUTINE
;    78          0173  1     exch$cmd_cli_get_integer,               ! Get an integer value
;    79          0174  1     exch$cmd_parse_filespec,                ! Parse a file specification
;    80          0175  1     exch$dos11_create_file,                 ! Create and connect to a DOS-11 file
;    81          0176  1     exch$dos11_open_file,                   ! Connect to a DOS-11 file
;    82          0177  1     exch$fil11_create_file,                 ! Create and connect to an RMS file
;    83          0178  1     exch$fil11_open_file,                   ! Connect to an RMS file
;    84          0179  1     exch$moun_implied_mount,                ! Do a default mount
;    85          0180  1     exch$rt11_create_file,                  ! Create and connect to an RT11 file
;    86          0181  1     exch$rt11_open_file,                    ! Connect an RT11 file
;    87          0182  1     exch$rt11_write_cleanup     : NOVALUE,  ! Complete writing to an RT-11 volume
;    88          0183  1     exch$rt11_write_prepare     : NOVALUE,  ! Prepare to write to an RT-11 volume
;    89          0184  1     exch$util_dos11ctx_release  : NOVALUE,  ! Release dos-11 block
;    90          0185  1     exch$util_fao_buffer,                   ! Format an fao string
;    91          0186  1     exch$util_filb_allocate,                ! Allocate file context block
;    92          0187  1     exch$util_filb_release      : NOVALUE,  ! Release file context block
;    93          0188  1     exch$util_file_error,                   ! Tell about an rms error
;    94          0189  1     exch$util_namb_release      : NOVALUE,  ! Release name block
;    95          0190  1     exch$util_rmsb_allocate,                ! Allocate Files-11 control block
;    96          0191  1     exch$util_rmsb_release      : NOVALUE,  ! Release Files-11 block
;    97          0192  1     exch$util_rt11ctx_allocate,             ! Allocate RT-11 context block
;    98          0193  1     exch$util_rt11ctx_release   : NOVALUE,  ! Release RT-11 block
;    99          0194  1     exch$util_vm_allocate                   ! Allocate virtual memory
;   100          0195  1     ;
;   101          0196  1
;   102          0197  1 ! Equated symbols:
;   103          0198  1 !
;   104          0199  1 !LITERAL
;   105          0200  1 !   ;
;   106          0201  1
;   107          0202  1 ! Bound declarations:
;   108          0203  1 !
;   109          0204  1 BIND
;   110          0205  1     ascid_allocation    = %ASCID 'ALLOCATION',          ! Save some space, these strings used more than once
;   111          0206  1     ascid_best_try      = %ASCID 'BEST_TRY_CONTIGUOUS',
```

```
;  112          0207  1     ascid_contiguous    = %ASCID 'CONTIGUOUS',
;  113          0208  1     ascid_extension     = %ASCID 'EXTENSION',
;  114          0209  1     ascid_truncate      = %ASCID 'TRUNCATE'
;  115          0210  1     ;
```

```
;  117          0211  1 GLOBAL ROUTINE exch$copy_copy = %SBTTL 'exch$copy_copy'
;  118          0212  2 BEGIN
;  119          0213  2 !++
;  120          0214  2 !
;  121          0215  2 ! FUNCTIONAL DESCRIPTION:
;  122          0216  2 !
;  123          0217  2 !       Action routine for the copy verb, parses and performs main control functions for copy
;  124          0218  2 !
;  125          0219  2 ! INPUTS:
;  126          0220  2 !
;  127          0221  2 !       none
;  128          0222  2 !
;  129          0223  2 ! IMPLICIT INPUTS:
;  130          0224  2 !
;  131          0225  2 !       Command parameters and qualifiers as returned from CLI$ routines.  Global environment ref'd by exch$
;  132          0226  2 !
;  133          0227  2 ! OUTPUTS:
;  134          0228  2 !
;  135          0229  2 !       none
;  136          0230  2 !
;  137          0231  2 ! IMPLICIT OUTPUTS:
;  138          0232  2 !
;  139          0233  2 !       none
;  140          0234  2 !
;  141          0235  2 ! ROUTINE VALUE:
;  142          0236  2 !
;  143          0237  2 !       Success or worst error encountered.
;  144          0238  2 !
;  145          0239  2 ! SIDE EFFECTS:
;  146          0240  2 !
;  147          0241  2 !       Files may be created.
;  148          0242  2 !--
;  149          0243  2
;  150          0244  2 $dbgtrc_prefix ('copy_copy> ');
;  151          0245  2
;  152          0246  2 LOCAL
;  153          0247  2     copy : $ref_bblock,                         ! Pointer to work area
;  154          0248  2     inp_filb : $ref_bblock,
;  155          0249  2     out_filb : $ref_bblock,
;  156          0250  2     out_namb : $ref_bblock,
;  157          0251  2     abort,
;  158          0252  2     protect,
;  159          0253  2     prs_stat,
;  160          0254  2     status
;  161          0255  2     ;
;  162          0256  2
;  163          0257  2
;  164          0258  2 ! Allocate and/or initialize the work area
;  165          0259  2 !
;  166          0260  2 copy_init ();
;  167          0261  2
;  168          0262  2 ! Get pointers that we need.  Have to wait until work area is allocated by init call
;  169          0263  2 !
;  170          0264  2 copy = .exch$a_gbl [excg$a_copy_work];          ! Pointer to work area
;  171          0265  2
;  172          0266  2 ! Init the name used for the input file default.  As long as it is null we can also use it for output defaul
;  173          0267  2 !
```

```
;  174          0268  2 str$copy_dx (copy [copy$q_input_sticky_name], %ASCID '');
;  175          0269  2
;  176          0270  2 ! Get the string and the namb for the output filename.  By fetching this parameter, we will pick up position
;  177          0271  2 ! qualifiers attached to the second parameter.
;  178          0272  2 !
;  179          0273  3 IF NOT (status = exch$cmd_parse_filespec (%ASCID 'OUTPUT', copy [copy$q_input_sticky_name], 0,
;  180          0274  3                                          copy [copy$q_output_filename], out_namb))
;  181          0275  2 THEN
;  182          0276  2     $exch_signal_return (exch$_parseerr, 1, copy [copy$q_output_filename], .status);
;  183          0277  2 $debug_print_fao ('output parameter is "!AS"', copy [copy$q_output_filename]);
;  184          0278  2 copy [copy$a_out_namb] = .out_namb;              ! Save the address of the namb in the work area
;  185          0279  2
;  186          0280  2 ! Get the default set of boolean qualifiers, note that we treat positionals on the second parameter as globa
;  187          0281  2 !
;  188          0282  2 copy [copy$v_q_best_try_contiguous] = cli$present (ascid_best_try);              ! positional
;  189          0283  2 copy [copy$v_q_contiguous]          = cli$present (ascid_contiguous);           ! positional
;  190          0284  2 copy [copy$v_q_delete]              = cli$present (%ASCID 'DELETE');            ! positional
;  191          0285  2 copy [copy$v_q_replace]             = cli$present (%ASCID 'REPLACE');           ! positional
;  192          0286  2 copy [copy$v_q_system]              = cli$present (%ASCID 'SYSTEM');            ! global
;  193          0287  2 copy [copy$v_q_truncate]            = cli$present (ascid_truncate);             ! positional
;  194          0288  2
;  195          0289  2 ! For /PROTECT, we need to know whether it was specified or defaulted
;  196          0290  2 !
;  197          0291  2 protect = cli$present (%ASCID 'PROTECT');
;  198          0292  2 copy [copy$v_q_protect]          = .protect;                                   ! Simply value of low bit
;  199          0293  4 copy [copy$v_q_protect_explicit] = ((.protect EQL cli$_present)                ! Either /PROTECT or /NOPROT
;  200          0294  2                                  OR (.protect EQL cli$_negated));            !  must be there
;  201          0295  2
;  202          0296  2 ! Get individual integer-valued qualifiers, routine signals on errors.  If the qualifier is not present, 0 i
;  203          0297  2 ! in the second parameter and -1 (success) is returned as the routine value.  Here we also treat positionals
;  204          0298  2 ! second parameter as globals.
;  205          0299  2 !
;  206          0300  3 IF NOT (status = exch$cmd_cli_get_integer (ascid_allocation, copy [copy$l_q_allocation]))
;  207          0301  2 THEN
;  208          0302  3     BEGIN
;  209          0303  3     exch$util_namb_release (.out_namb);
;  210          0304  3     RETURN .status;
;  211          0305  2     END;
;  212          0306  2
;  213          0307  3 IF NOT (status = exch$cmd_cli_get_integer (ascid_extension, copy [copy$l_q_extension]))
;  214          0308  2 THEN
;  215          0309  3     BEGIN
;  216          0310  3     exch$util_namb_release (.out_namb);
;  217          0311  3     RETURN .status;
;  218          0312  2     END;
;  219          0313  2
;  220          0314  3 IF NOT (status = exch$cmd_cli_get_integer (%ASCID 'START_BLOCK', copy [copy$l_q_start_block]))
;  221          0315  2 THEN
;  222          0316  3     BEGIN
;  223          0317  3     exch$util_namb_release (.out_namb);
;  224          0318  3     RETURN .status;
;  225          0319  2     END;
;  226          0320  2
;  227          0321  2 ! If a foreign device is not mounted, then perform an implied mount
;  228          0322  2 !
;  229          0323  3 IF    (.out_namb [namb$a_assoc_volb] EQL 0)
;  230          0324  2   AND
```

```
;  231          0325  4      (BEGIN
;  232          0326  4       BIND
;  233          0327  4         dev = out_namb [namb$l_fabdev] : $bblock;
;  234          0328  5       .dev [dev$v_for] OR (NOT (.dev [dev$v_mnt]))
;  235          0329  3       END)
;  236          0330  2   AND
;  237          0331  4      ((.out_namb [namb$b_devclass] EQL dc$_disk)
;  238          0332  3       OR
;  239          0333  3       (.out_namb [namb$b_devclass] EQL dc$_tape))
;  240          0334  2 THEN
;  241          0335  3     BEGIN
;  242          0336  3
;  243          0337  4     IF NOT (status = exch$moun_implied_mount (.out_namb))
;  244          0338  3     THEN
;  245          0339  4         BEGIN
;  246          0340  4         exch$util_namb_release (.out_namb);
;  247          0341  4         RETURN .status;
;  248          0342  3         END;
;  249          0343  2     END;
;  250          0344  2
;  251          0345  2 ! If the device has a volb, make sure that the volb is valid and that write access is permitted.
;  252          0346  2 !
;  253          0347  3 IF (.out_namb [namb$a_assoc_volb] NEQ 0)
;  254          0348  2 THEN
;  255          0349  3     BEGIN
;  256          0350  3     BIND
;  257          0351  3         volb = out_namb [namb$a_assoc_volb] : $ref_bblock;
;  258          0352  3
;  259          0353  3     ! We should now have a valid volb, but we still should check
;  260          0354  3     !
;  261          0355  3     $block_check (2, .volb, volb, 496);
;  262          0356  3
;  263          0357  3     ! Make certain that write access is permitted
;  264          0358  3     !
;  265          0359  3     IF NOT .volb [volb$v_write]
;  266          0360  3     THEN
;  267          0361  4         BEGIN
;  268          0362  4         $exch_signal (exch$_nocoplock, 2, .volb [volb$l_vol_ident_len], volb [volb$t_vol_ident]);
;  269          0363  4         exch$util_namb_release (.out_namb);
;  270          0364  4         RETURN exch$_nocoplock;
;  271          0365  3         END;
;  272          0366  3
;  273          0367  3     CASE .volb [volb$b_vol_format] FROM volb$k_vfmt_lobound TO volb$k_vfmt_hibound OF
;  274          0368  3         SET
;  275          0369  3
;  276          0370  3         [volb$k_vfmt_rt11] :
;  277          0371  4                         BEGIN
;  278          0372  4                         IF .out_namb [namb$v_bad_pdp_char]
;  279          0373  4                           OR
;  280          0374  4                            .out_namb [namb$v_rt_truncate]
;  281          0375  4                         THEN
;  282          0376  5                             BEGIN
;  283        P 0377  5                             $exch_signal (exch$_badfilename, 3, out_namb [namb$q_input],
;  284          0378  5                                           .volb [volb$l_vol_type_len], volb [volb$t_vol_type]);
;  285          0379  5                             exch$util_namb_release (.out_namb);
;  286          0380  5                             RETURN exch$_badfilename;
;  287          0381  4                             END;
```

```
;  288          0382  4                          exch$rt11_write_prepare (.volb);        ! Do sundries necessary before we start copy
;  289          0383  3                          END;
;  290          0384  3
;  291          0385  3          [volb$k_vfmt_dos11] :
;  292          0386  4                          BEGIN
;  293          0387  4                          IF .out_namb [namb$v_bad_pdp_char]
;  294          0388  4                            OR
;  295          0389  4                             .out_namb [namb$v_dos_truncate]
;  296          0390  4                          THEN
;  297          0391  5                              BEGIN
;  298        P 0392  5                              $exch_signal (exch$_badfilename, 3, out_namb [namb$q_input],
;  299          0393  5                                                  .volb [volb$l_vol_type_len], volb [volb$t_vol_type]);
;  300          0394  5                              exch$util_namb_release (.out_namb);
;  301          0395  5                              RETURN exch$_badfilename;
;  302          0396  4                              END;
;  303          0397  3                          END;
;  304          0398  3
;  305          0399  3          [INRANGE, OUTRANGE] :
;  306          0400  3                          ;                                       ! Nothing to do for these guys
;  307          0401  3          TES;
;  308          0402  2      END;
;  309          0403  2
;  310          0404  2  ! Allocate a file block to contain the output file information
;  311          0405  2  !
;  312          0406  2  out_filb = exch$util_filb_allocate ();
;  313          0407  2  copy [copy$a_out_filb] = .out_filb;          ! Save the address c' the filb in the work area
;  314          0408  2  exch$copy_namb_to_filb (.out_namb, .out_filb);  ! Move some data from .ne namb to the filb
;  315          0409  2
;  316          0410  2
;  317          0411  2  ! Loop through the list of input file specifications.  Errors will be signalled.  If an error occurs the cur
;  318          0412  2  ! input element is skipped and processing continues with the next input item.
;  319          0413  2  !
;  320          0414  2  abort = false;
;  321          0415  2  status = ss$_normal;
;  322          0416  3  WHILE (prs_stat = copy_parse_next_input ())     ! Get next input file parameter
;  323          0417  2  DO
;  324          0418  3      BEGIN
;  325          0419  3      LOCAL
;  326          0420  3          ino_stat;
;  327          0421  3
;  328          0422  3      inp_filb = .copy [copy$a_inp_filb];         ! Grab the pointer to the input filb
;  329          0423  3
;  330          0424  3      ! Check for some invalid naming conditions
;  331          0425  3      !
;  332          0426  3      IF .copy [copy$v_multiple_files]            ! If the input could map multiple files
;  333          0427  3      THEN
;  334          0428  4          BEGIN
;  335          0429  4
;  336          0430  4          ! Complain if the output file name is explicitly a single file name
;  337          0431  4          !
;  338          0432  6          IF NOT (    (.out_namb [namb$v_wildcard])                   ! A wildcard will help us out
;  339          0433  5                   OR
;  340          0434  6                      (NOT .out_namb [namb$v_explicit_name])          ! A missing name will work
;  341          0435  5                   OR
;  342          0436  6                      (NOT .out_namb [namb$v_explicit_type])          ! A missing type can also map multip
;  343          0437  5                  )
;  344          0438  4          THEN
```

```
;  345     0439  5              BEGIN
;  346     0440  5              status = exch$_many_to_one;
;  347     0441  5              $exch_signal (.status);
;  348     0442  5              copy_parse_cleanup ();
;  349     0443  5              EXITLOOP;
;  350     0444  4              END;
;  351     0445  4
;  352     0446  4          ! Also complain if /START_BLOCK has been requested, since it is hard to put several files on the sam
;  353     0447  4          !
;  354     0448  4          IF .copy [copy$l_q_start_block] NEQ 0
;  355     0449  4          THEN
;  356     0450  5              BEGIN
;  357     0451  5              status = exch$_strtnomulti;
;  358     0452  5              $exch_signal (.status);
;  359     0453  5              copy_parse_cleanup ();
;  360     0454  5              EXITLOOP;
;  361     0455  4              END;
;  362     0456  3          END;
```

```
;  364     0457  3     WHILE 1
;  365     0458  3     DO
;  366     0459  4         BEGIN
;  367     0460  4
;  368     0461  4         ! If a control/c is pending, don't bother with opening another file
;  369     0462  4         !
;  370     0463  4         IF .exch$a_gbl [excg$v_control_c]
;  371     0464  4         THEN
;  372     0465  5             BEGIN
;  373     0466  5             ino_stat = exch$_canceled;
;  374     0467  5             $exch_signal ($info_stat_copy (.ino_stat));
;  375     0468  5             END
;  376     0469  4         ELSE
;  377     0470  4             ino_stat = copy_input_open ();      ! Open the input file, loop for wildcards
;  378     0471  4
;  379     0472  4         ! Remember if this is a reopen, and clear the reopen flag
;  380     0473  4         !
;  381     0474  4         copy [copy$v_reopen_in_progress] = .copy [copy$v_reopen_input];
;  382     0475  4         copy [copy$v_reopen_input] = false;     ! Clear any possible retry
;  383     0476  4
;  384     0477  4         IF .ino_stat
;  385     0478  4         THEN
;  386     0479  5             BEGIN
;  387     0480  5             LOCAL
;  388     0481  5                 cre_stat,
;  389     0482  5                 rec_count;
;  390     0483  5
;  391     0484  5             ! Now create the file and copy the records
;  392     0485  5             !
;  393     0486  6             IF (cre_stat = copy_output_create ())       ! Open the output file
;  394     0487  5             THEN
;  395     0488  6                 BEGIN
;  396     0489  6                 LOCAL
;  397     0490  6                     getput_err,
;  398     0491  6                     cop_stat,
;  399     0492  6                     get_stat,
;  400     0493  6                     put_stat;
;  401     0494  6
;  402     0495  6                 ! While we can get records move them to the output
;  403     0496  6                 !
;  404     0497  6                 rec_count = put_stat = getput_err = 0;
;  405     0498  7                 WHILE (get_stat = (.inp_filb [filb$a_get_routine]) (.inp_filb))
;  406     0499  6                 DO
;  407     0500  7                     BEGIN
;  408     0501  7                     IF NOT (put_stat = (.out_filb [filb$a_put_routine]) ()) THEN EXITLOOP;
;  409     0502  7                     rec_count = .rec_count + 1;
;  410     0503  7
;  411     0504  7                     ! If we have seen control/c, exit the loop with a canceled error
;  412     0505  7                     !
;  413     0506  7                     IF .exch$a_gbl [excg$v_control_c]
;  414     0507  7                     THEN
;  415     0508  8                         BEGIN
;  416     0509  8                         put_stat = exch$_canceled;
;  417     0510  8                         abort = true;
;  418     0511  8                         $exch_signal ($info_stat_copy (.put_stat));
;  419     0512  8                         EXITLOOP;
;  420     0513  7                         END;
```

```
;  421          0514  6                    END;
;  422          0515  6
;  423          0516  6                $trace_print_fao ('status !XL, get_stat !XL, put_stat !XL', .status, .get_stat, .put_stat);
;  424          0517  6
;  425          0518  7                IF (NOT .get_stat) AND (.get_stat NEQ 0)
;  426          0519  6                THEN
;  427          0520  7                    BEGIN
;  428          0521  7                    status = .get_stat;
;  429          0522  7                    getput_err = true;
;  430          0523  6                    END;
;  431          0524  6
;  432          0525  7                IF (NOT .put_stat) AND (.put_stat NEQ 0)
;  433          0526  6                THEN
;  434          0527  7                    BEGIN
;  435          0528  7                    status = .put_stat;
;  436          0529  7                    getput_err = true;
;  437          0530  6                    END;
;  438          0531  6
;  439          0532  6                ! If we have an error before any records are transferred, try to delete the file
;  440          0533  6                !
;  441          0534  6                IF NOT .out_filb [filb$v_file_erased]   ! Output file is still valid
;  442          0535  6                THEN
;  443          0536  7                    BEGIN
;  444          0537  7                    IF   .getput_err                                ! If we had an error during our get or put a
;  445          0538  7                      AND                                           !  either have transferred no records or we
;  446          0539  9                        ((.rec_count EQL 0)                         !  delete a previous version during close.
;  447          0540  8                        OR                                          !  not want to delete the previous copy of t
;  448          0541  9                         (.out_filb [filb$v_delete_previous])       !  if there was an error in the transfer.
;  449          0542  8                        OR                                          !  We also want to delete the output file if
;  450          0543  8                         (.exch$a_gbl [excg$v_control_c]))          !  command was canceled.
;  451          0544  7                    THEN
;  452          0545  8                        BEGIN
;  453          0546  8                        copy_output_delete ();                      ! Delete the output file if supported for th
;  454          0547  8                        rec_count = 0;                              ! Make sure we get "NOTCOPIED" message
;  455          0548  8                        END
;  456          0549  8
;  457          0550  8                    ! Close the ouput file
;  458          0551  8                    !
;  459          0552  7                    ELSE
;  460          0553  8                        BEGIN
;  461          0554  8                        LOCAL
;  462          0555  8                            cls_stat;
;  463          0556  8                        cls_stat = copy_output_close ();            ! Close the output file, clean up
;  464          0557  8                        $trace_print_fao ('status !XL, cls_stat !XL', .status, .cls_stat);
;  465          0558  8                        IF NOT .cls_stat
;  466          0559  8                        THEN
;  467          0560  9                            BEGIN
;  468          0561  9                            status = .cls_stat;
;  469          0562  9                            getput_err = true;
;  470          0563  8                            END;
;  471          0564  7                        END;
;  472          0565  6                    END;
;  473          0566  6
;  474          0567  6                ! If the file has been erased, set record count to zero.  The file might have been erased be
;  475          0568  6                ! of an I/O error during close, therefore we must do this here.
;  476          0569  6                !
;  477          0570  6                IF .out_filb [filb$v_file_erased]
```

```
;  478     0571  6              THEN
;  479     0572  7                  BEGIN
;  480     0573  7                  rec_count = 0;
;  481     0574  7                  out_filb [filb$v_file_erased] = false;
;  482     0575  6                  END;
;  483     0576  6
;  484     0577  6              ! Set the cop_stat if we need to signal
;  485     0578  6              !
;  486     0579  6              cop_stat = 0;                   ! Start by assuming no signal
;  487     0580  6              IF .getput_err                  ! We had an error which might have caused a partial copy
;  488     0581  6              THEN
;  489     0582  7                  BEGIN
;  490     0583  7                  IF .rec_count EQL 0         ! No recs will get the NOTCOPIED message
;  491     0584  7                  THEN
;  492     0585  7                      cop_stat = exch$_notcopied
;  493     0586  7                  ELSE
;  494     0587  7                      cop_stat = exch$_partcopied;
;  495     0588  7                  END
;  496     0589  6              ELSE
;  497     0590  7                  BEGIN
;  498     0591  7                  IF  .out_filb [filb$v_name_change]          ! If the name has changed
;  499     0592  7                     AND
;  500     0593  7                      NOT .copy [copy$v_q_nolog_explicit]     ! But not if /NOLOG was seen
;  501     0594  7                  THEN
;  502     0595  7                      cop_stat = exch$_copnewname
;  503     0596  7                  ELSE IF .copy [copy$v_q_log]                ! /LOG is in effect
;  504     0597  7                         OR
;  505     0598  7                          .copy [copy$v_reopen_in_progress]   ! Or we have successfully retried the operat
;  506     0599  7                  THEN
;  507     0600  7                      cop_stat = exch$_copied;
;  508     0601  6                  END;
;  509     0602  6
;  510     0603  6              ! If we are going to retry, give that signal
;  511     0604  6              !
;  512     0605  6              IF .copy [copy$v_reopen_input]
;  513     0606  6              THEN
;  514     0607  6                  cop_stat = exch$_notcop_retry;
;  515     0608  6
;  516     0609  6              ! If the command was canceled at the keyboard, then do not signal
;  517     0610  6              !
;  518     0611  6              IF .exch$a_gbl [excg$v_control_c]
;  519     0612  6              THEN
;  520     0613  6                  cop_stat = 0;
;  521     0614  6
;  522     0615  6              ! Now, if we have a status do the signal
;  523     0616  6              !
;  524     0617  6              IF .cop_stat NEQ 0
;  525     0618  6              THEN
;  526     0619  7                  BEGIN
;  527     0620  7                  LOCAL
;  528     0621  7                      b_or_r;
;  529     0622 10                  b_or_r = (IF  ((.out_filb [filb$b_rec_format] EQL filb$k_rfmt_fixed)
;  530     0623  9                                 AND (.out_filb [filb$l_fixed_len] EQL 512))
;  531     0624  8                               OR
;  532     0625  9                                 (.out_filb [filb$b_transfer_mode] EQL filb$k_xfrm_block
;  533     0626  9                                  OR .inp_filb [filb$b_transfer_mode] EQL filb$k_xfrm_block)
;  534     0627  7                           THEN %ASCID 'block' ELSE %ASCID 'record');
```

```
;  535        P 0628  7                    $exch_signal (.cop_stat, 6,
;  536        P 0629  7                                  .inp_filb [filb$l_result_name_len], inp_filb [filb$t_result_name
;  537        P 0630  7                                  .out_filb [filb$l_result_name_len], out_filb [filb$t_result_name
;  538           0631  7                                  .rec_count, .b_or_r);
;  539           0632  6                    END;
;  540           0633  6                END
;  541           0634  6
;  542           0635  6            ! Able to open input, but not output.  Give the "File not copied" message
;  543           0636  6            !
;  544           0637  5            ELSE
;  545           0638  6                BEGIN
;  546        P 0639  6                $exch_signal (exch$_notcopied, 4, .inp_filb [filb$l_result_name_len], inp_filb [filb$t_resul
;  547           0640  6                             .out_filb [filb$l_result_name_len], out_filb [filb$t_result_name], .cre_
;  548           0641  6                $trace_print_fao ('status !XL, cre_stat !XL', .status, .cre_stat);
;  549           0642  6                status = .cre_stat;
;  550           0643  6
;  551           0644  6                ! Some errors should terminate the command, for example if the directory has overflowed ther
;  552           0645  6                ! no hope of accomplishing anything useful in this command.
;  553           0646  6                !
;  554           0647  6                SELECTONE .cre_stat OF
;  555           0648  6                SET
;  556           0649  6                    [0, exch$_rt11_overflow, exch$_volume_full, exch$_volume_full, exch$_nocopsamdev,
;  557           0650  6                     exch$_illmtcopy, rms$_dev] :
;  558           0651  6                                                abort = true;
;  559           0652  6                    [OTHERWISE] :
;  560           0653  6                                                ;
;  561           0654  6                TES;
;  562           0655  6
;  563           0656  5                END;
;  564           0657  5
;  565           0658  5            copy_input_close ();
;  566           0659  5            IF .abort THEN EXITLOOP;
;  567           0660  5            END
;  568           0661  5
;  569           0662  5        ! We got an error from the input_open, but we aren't done yet
;  570           0663  5        !
;  571           0664  4        ELSE
;  572           0665  5            BEGIN
;  573           0666  5            $trace_print_fao ('status !XL, ino_stat !XL', .status, .ino_stat);
;  574           0667  5
;  575           0668  5            IF  .ino_stat EQL 0
;  576           0669  5               OR
;  577           0670  5                .exch$a_gbl [excg$v_control_c]
;  578           0671  5            THEN
;  579           0672  5                EXITLOOP
;  580           0673  5            ELSE
;  581           0674  6                BEGIN
;  582           0675  6                status = .ino_stat;
;  583           0676  6                SELECTONE .ino_stat OF          ! Some errors call for leaving the loop
;  584           0677  6                SET
;  585           0678  6                    [rms$_fnf, rms$_dev] :
;  586           0679  6                                    EXITLOOP;
;  587           0680  6                    [OTHERWISE] :               ! Continue to try for all other errors
;  588           0681  6                                    ;
;  589           0682  6                TES;
;  590           0683  5                END;
;  591           0684  5
```

```
;  592          0685  4              END;
;  593          0686  3          END;
;  594          0687  3
;  595          0688  3      copy_parse_cleanup ();                      . Release namb, clean up after parse
;  596          0689  3      IF .abort THEN EXITLOOP;
;  597          0690  2      END;
;  598          0691  2
;  599          0692  2 ! If we had an unusual return from copy_parse_input then use that as the final status
;  600          0693  2 !
;  601          0694  2 $trace_print_fao ('status !XL, prs_stat !XL', .status, .prs_stat);
;  602          0695  2 IF (NOT .prs_stat) AND (.prs_stat NEQ 0) THEN status = .prs_stat;
;  603          0696  2
;  604          0697  2 ! Clean up the structures associated with the output file
;  605          0698  2 !
;  606          0699  2 copy_output_cleanup ();
;  607          0700  2
;  608          0701  2 $trace_print_fao ('status !XL  (exit)', .status);
;  609          0702  2 RETURN .status;
;  610          0703  1 END;


                                                                .TITLE  EXCH$COPY copy verb dispatch and misc routines
                                                                .IDENT  \V04-000\

                                                                .PSECT  EXCH$COPY_PLIT,NOWRT,2

          00  00  4E  4F  49  54  41  43  4F  4C  4C  41  00000 P.AAB:  .ASCII  \ALLOCATION\<0><0>
                                                  010E000A  0000C P.AAA:  .LONG   17694730
                                                  00000000'  00010        .ADDRESS P.AAB
47  49  54  4E  4F  43  5F  59  52  54  5F  54  53  45  42  00014 P.AAD:  .ASCII  \BEST_TRY_CONTIGUOUS\<0>
                                                00  53  55  4F  55  00023
                                                  010E0013  00028 P.AAC:  .LONG   17694739
                                                  00000000'  0002C        .ADDRESS P.AAD
      00  00  53  55  4F  55  47  49  54  4E  4F  43  00030 P.AAF:  .ASCII  \CONTIGUOUS\<0><0>
                                                  010E000A  0003C P.AAE:  .LONG   17694730
                                                  00000000'  00040        .ADDRESS P.AAF
      00  00  00  4E  4F  49  53  4E  45  54  58  45  00044 P.AAH:  .ASCII  \EXTENSION\<0><0><0>
                                                  010E0009  00050 P.AAG:  .LONG   17694729
                                                  00000000'  00054        .ADDRESS P.AAH
                      45  54  41  43  4E  55  52  54  00058 P.AAJ:  .ASCII  \TRUNCATE\
                                                  010E0008  00060 P.AAI:  .LONG   17694728
                                                  00000000'  00064        .ADDRESS P.AAJ
                                                            00068 P.AAL:  .BLKB   0
                                                  010E0000  00068 P.AAK:  .LONG   17694720
                                                  00000000'  0006C        .ADDRESS P.AAL
                      00  00  54  55  50  54  55  4F  00070 P.AAN:  .ASCII  \OUTPUT\<0><0>
                                                  010E0006  00078 P.AAM:  .LONG   17694726
                                                  00000000'  0007C        .ADDRESS P.AAN
                      00  00  45  54  45  4C  45  44  00080 P.AAP:  .ASCII  \DELETE\<0><0>
                                                  010E0006  00088 P.AAO:  .LONG   17694726
                                                  00000000'  0008C        .ADDRESS P.AAP
                      00  45  43  41  4C  50  45  52  00090 P.AAR:  .ASCII  \REPLACE\<0>
                                                  010E0007  00098 P.AAQ:  .LONG   17694727
                                                  00000000'  0009C        .ADDRESS P.AAR
                      00  00  4D  45  54  53  59  53  000A0 P.AAT:  .ASCII  \SYSTEM\<0><0>
                                                  010E0006  000A8 P.AAS:  .LONG   17694726
                                                  00000000'  000AC        .ADDRESS P.AAT
```

```
                        00  54  43  45  54  4F  52  50  000B0 P.AAV:   .ASCII  \PROTECT\<0>
                                                010E0007  000B8 P.AAU:   .LONG   17694727
                                                00000000' 000BC         .ADDRESS P.AAV
        00  4D  43  4F  4C  42  5F  54  52  41  54  53  000C0 P.AAX:   .ASCII  \START_BLOCK\<0>
                                                010E000B  000CC P.AAW:   .LONG   17694731
                                                00000000' 000D0         .ADDRESS P.AAX
                        00  00  00  6B  63  6F  6C  62  000D4 P.AAZ:   .ASCII  \block\<0><0><0>
                                                010E0005  000DC P.AAY:   .LONG   17694725
                                                00000000' 000E0         .ADDRESS P.AAZ
                        00  00  64  72  6F  63  65  72  000E4 P.ABB:   .ASCII  \record\<0><0>
                                                010E0006  000EC P.ABA:   .LONG   17694726
                                                00000000' 000F0         .ADDRESS P.ABB

                                                ASCID_ALLOCATION=   P.AAA
                                                ASCID_BEST_TRY=     P.AAC
                                                ASCID_CONTIGUOUS=   P.AAE
                                                ASCID_EXTENSION=    P.AAG
                                                ASCID_TRUNCATE=     P.AAI
                                                        .EXTRN  EXCH$CMD_CLI_GET_INTEGER
                                                        .EXTRN  EXCH$CMD_PARSE_FILESPEC
                                                        .EXTRN  EXCH$DOST1_CREATE_FILE
                                                        .EXTRN  EXCH$DOS11_OPEN_FILE
                                                        .EXTRN  EXCH$FIL11_CREATE_FILE
                                                        .EXTRN  EXCH$FIL11_OPEN_FILE
                                                        .EXTRN  EXCH$MOUN_IMPLIED_MOUNT
                                                        .EXTRN  EXCH$RT11_CREATE_FILE
                                                        .EXTRN  EXCH$RT11_OPEN_FILE
                                                        .EXTRN  EXCH$RT11_WRITE_CLEANUP
                                                        .EXTRN  EXCH$RT11_WRITE_PREPARE
                                                        .EXTRN  EXCH$UTIL_DOS11CTX_RELEASE
                                                        .EXTRN  EXCH$UTIL_FAO_BUFFER
                                                        .EXTRN  EXCH$UTIL_FILB_ALLOCATE
                                                        .EXTRN  EXCH$UTIL_FILB_RELEASE
                                                        .EXTRN  EXCH$UTIL_FILE_ERROR
                                                        .EXTRN  EXCH$UTIL_NAMB_RELEASE
                                                        .EXTRN  EXCH$UTIL_RMSB_ALLOCATE
                                                        .EXTRN  EXCH$UTIL_RMSB_RELEASE
                                                        .EXTRN  EXCH$UTIL_RT11CTX_ALLOCATE
                                                        .EXTRN  EXCH$UTIL_RT11CTX_RELEASE
                                                        .EXTRN  EXCH$UTIL_VM_ALLOCATE
                                                        .EXTRN  EXCH$A_GBL, STR$COPY_DX
                                                        .EXTRN  EXCH$_PARSEERR, CLI$PRESENT
                                                        .EXTRN  CLI$_PRESENT, CLI$_NEGATED
                                                        .EXTRN  EXCH$UTIL_BLOCK_CHECK
                                                        .EXTRN  EXCH$_NOCOPLOCK
                                                        .EXTRN  EXCH$_BADFILENAME
                                                        .EXTRN  EXCH$_MANY_TO_ONE
                                                        .EXTRN  EXCH$_STRTNOMULTI
                                                        .EXTRN  EXCH$_CANCELED, EXCH$_NOTCOPIED
                                                        .EXTRN  EXCH$_PARTCOPIED
                                                        .EXTRN  EXCH$_COPNEWNAME
                                                        .EXTRN  EXCH$_COPIED, EXCH$_NOTCOP_RETRY
                                                        .EXTRN  EXCH$_RT11_OVERFLOW
                                                        .EXTRN  EXCH$_VOLUME_FULL
                                                        .EXTRN  EXCH$_NOCOPSAMDEV
                                                        .EXTRN  EXCH$_ILLMTCOPY
```

```
                                                        .PSECT  EXCH$COPY_CODE,NOWRT,2

                                        0FFC 00000      .ENTRY  EXCH$COPY_COPY, Save R2,R3,R4,R5,R6,R7,R8,-      ; 0211
                                                                R9,R10,R11
                    5E                  18   C2 00002          SUBL2   #24, SP
              0000V CF                  00   FB 00005          CALLS   #0, COPY_INIT                            ; 0260
                    50 00000000G        EF   D0 0000A          MOVL    EXCH$A_GBL, R0                           ; 0264
                    55            04    A0   D0 00011          MOVL    4(R0), COPY
                                  0000' CF   9F 00015          PUSHAB  P.AAK                                    ; 0268
                                    1C  A5   9F 00019          PUSHAB  28(COPY)
        00000000G   00                  02   FB 0001C          CALLS   #2, STR$COPY_DX
                                    14  AE   9F 00023          PUSHAB  OUT_NAMB                                 ; 0274
                                    14  A5   9F 00026          PUSHAB  20(COPY)
                                        7E   D4 00029          CLRL    -(SP)
                                    1C  A5   9F 0002B          PUSHAB  28(COPY)                                 ; 0273
                                  0000' CF   9F 0002E          PUSHAB  P.AAM
        00000000G   EF                  05   FB 00032          CALLS   #5, EXCH$CMD_PARSE_FILESPEC              ; 0274
                    58                  50   D0 00039          MOVL    R0, STATUS
                    1B                  58   E8 0003C          BLBS    STATUS, 1$
                    52 00000000G        8F   D0 0003F          MOVL    #EXCH$_PARSEERR, TEMP                    ; 0276
                                        58   DD 00046          PUSHL   STATUS
                                    14  A5   9F 00048          PUSHAB  20(COPY)
                                        01   DD 0004B          PUSHL   #1
                                        52   DD 0004D          PUSHL   TEMP
        00000000G   00                  04   FB 0004F          CALLS   #4, LIB$SIGNAL
                    50                  52   D0 00056          MOVL    TEMP, R0
                                        04   00059          RET
                    54            14    AE   D0 0005A 1$:      MOVL    OUT_NAMB, R4                             ; 0278
                          48        A5        54   D0 0005E    MOVL    R4, 72(COPY)
                    59            30    A5   9E 00062          MOVAB   48(COPY), R9                             ; 0282
                                  0000' CF   9F 00066          PUSHAB  ASCID_BEST_TRY
                    00000000G     00         01   FB 0006A    CALLS   #1, CLI$PRESENT
69                        01              00   F0 00071    INSV    R0, #0, #1, (R9)
                                  0000' CF   9F 00076          PUSHAB  ASCID_CONTIGUOUS                         ; 0283
                    00000000G     00         01   FB 0007A    CALLS   #1, CLI$PRESENT
69                        01              01   F0 00081    INSV    R0, #1, #1, (R9)
                                  0000' CF   9F 00086          PUSHAB  P.AAO                                    ; 0284
                    00000000G     00         01   FB 0008A    CALLS   #1, CLI$PRESENT
69                        01              02   F0 00091    INSV    R0, #2, #1, (R9)
                                  0000' CF   9F 00096          PUSHAB  P.AAQ                                    ; 0285
                    00000000G     00         01   FB 0009A    CALLS   #1, CLI$PRESENT
69                        01              07   F0 000A1    INSV    R0, #7, #1, (R9)
                                  0000' CF   9F 000A6          PUSHAB  P.AAS                                    ; 0286
                    00000000G     00         01   FB 000AA    CALLS   #1, CLI$PRESENT
69                        01              09   F0 000B1    INSV    R0, #9, #1, (R9)
                                  0000' CF   9F 000B6          PUSHAB  ASCID_TRUNCATE                           ; 0287
                    00000000G     00         01   FB 000BA    CALLS   #1, CLI$PRESENT
69                        01              0A   F0 000C1    INSV    R0, #10, #1, (R9)
                                  0000' CF   9F 000C6          PUSHAB  P.AAU                                    ; 0291
                    00000000G     00         01   FB 000CA    CALLS   #1, CLI$PRESENT
69                        01              05   F0 000D1    INSV    PROTECT, #5, #1, (R9)                    ; 0292
                                              52   D4 000D6    CLRL    R2                                       ; 0293
                        00000000G     8F         50   D1 000D8    CMPL    PROTECT, #CLI$_PRESENT
                                              02   12 000DF    BNEQ    2$
                                              52   D6 000E1    INCL    R2
                                              51   D4 000E3 2$:    CLRL    R1                                   ; 0294
                        00000000G     8F         50   D1 000E5    CMPL    PROTECT, #CLI$_NEGATED
```

```
                                    02  12 000EC       BNEQ    3$                                 ;
                                    51  D6 000EE       INCL    R1                                 ;
           53          51           52  89 000F0 3$:   BISB3   R2, R1, R3                         ;
     69    01          06           53  F0 000F4       INSV    R3, #6, #1, (R9)                   ;
                             24     A5  9F 000F9       PUSHAB  36(COPY)                           ; 0300
                           0000'    CF  9F 000FC       PUSHAB  ASCID_ALLOCATION                   ;
              00000000G  EF         02  FB 00100       CALLS   #2, EXCH$CMD_CLI_GET_INTEGER       ;
                         58         50  D0 00107       MOVL    R0, STATUS                         ;
                         51         58  E9 0010A       BLBC    STATUS, 6$                         ;
                             28     A5  9F 0010D       PUSHAB  40(COPY)                           ; 0307
                           0000'    CF  9F 00110       PUSHAB  ASCID_EXTENSION                    ;
              00000000G  EF         02  FB 00114       CALLS   #2, EXCH$CMD_CLI_GET_INTEGER       ;
                         58         50  D0 0011B       MOVL    R0, STATUS                         ;
                         3D         58  E9 0011E       BLBC    STATUS, 6$                         ;
                             2C     A5  9F 00121       PUSHAB  44(COPY)                           ; 0314
                           0000'    CF  9F 00124       PUSHAB  P.AAW                              ;
              00000000G  EF         02  FB 00128       CALLS   #2, EXCH$CMD_CLI_GET_INTEGER       ;
                         58         50  D0 0012F       MOVL    R0, STATUS                         ;
                         29         58  E9 00132       BLBC    STATUS, 6$                         ;
                             74     A4  D5 00135       TSTL    116(R4)                            ; 0323
                                    30  12 00138       BNEQ    7$                                 ;
                         05  6B     A4  E8 0013A       BLBS    107(R4), 4$                        ; 0328
           27      6A    A4         03  E0 0013E       BBS     #3, 106(R4), 7$                    ;
                         01  78     A4  91 00143 4$:   CMPB    120(R4), #1                        ; 0331
                                    06  13 00147       BEQL    5$                                 ;
                         02  78     A4  91 00149       CMPB    120(R4), #2                        ; 0333
                                    1B  12 0014D       BNEQ    7$                                 ;
                                    54  DD 0014F 5$:   PUSHL   R4                                 ; 0337
              00000000G  EF         01  FB 00151       CALLS   #1, EXCH$MOUN_IMPLIED_MOUNT        ;
                         58         50  D0 00158       MOVL    R0, STATUS                         ;
                         0C         58  E8 0015B       BLBS    STATUS, 7$                         ;
                                    54  DD 0015E 6$:   PUSHL   R4                                 ; 0340
              00000000G  EF         01  FB 00160       CALLS   #1, EXCH$UTIL_NAMB_RELEASE         ;
                                  0334  31 00167       BRW     55$                                ; 0341
                             74     A4  D5 0016A 7$:   TSTL    116(R4)                            ; 0347
                                    65  13 0016D       BEQL    11$                                ;
                         53  74     A4  D0 0016F       MOVL    116(R4), R3                        ; 0355
                         52 041B00F3 8F D0 00173       MOVL    #68878579, R2                      ;
                         51    01F0 8F  3C 0017A       MOVZWL  #496, R1                           ;
                         50         53  D0 0017F       MOVL    R3, R0                             ;
                           00000000G EF 16 00182       JSB     EXCH$UTIL_BLOCK_CHECK              ;
           26      48    A3         05  E0 00188       BBS     #5, 72(R3), 8$                     ; 0359
                             69     A3  9F 0018D       PUSHAB  105(R3)                            ; 0362
                             65     A3  DD 00190       PUSHL   101(R3)                            ;
                                    02  DD 00193       PUSHL   #2                                 ;
                           00000000G 8F DD 00195       PUSHL   #EXCH$_NOCOPLOCK                   ;
              00000000G  00         04  FB 0019B       CALLS   #4, LIB$SIGNAL                     ;
                                    54  DD 001A2       PUSHL   R4                                 ; 0363
              00000000G  EF         01  FB 001A4       CALLS   #1, EXCH$UTIL_NAMB_RELEASE         ;
                         50 00000000G 8F D0 001AB      MOVL    #EXCH$_NOCOPLOCK, R0               ; 0364
                                    04 001B2           RET                                        ;
           03          00    58     A3  8F 001B3 8$:   CASEB   88(R3), #0, #3                     ; 0367
  000A   0050        001E          0050    001B8 9$:   .WORD   14$-9$,-                           ;
                                                               12$-9$,-                           ;
                                                               14$-9$,-                           ;
                                                               10$-9$                             ;
                                    46  11 001C0       BRB     14$                                ;
```

```
                        19        6E  A4  E8 001C2 10$:     BLBS    110(R4), 13$                              ; 0372
              14      6E  A4          02  E0 001C6          BBS     #2, 110(R4), 13$                          ; 0374
                                      53  DD 001CB          PUSHL   R3                                        ; 0382
               00000000G  EF          01  FB 001CD          CALLS   #1, EXCH$RT11_WRITE_PREPARE               ;
                                      32  11 001D4 11$:     BRB     14$                                       ; 0367
                        05        6E  A4  E8 001D6 12$:     BLBS    110(R4), 13$                              ; 0387
              29      6E  A4          01  E1 001DA          BBC     #1, 110(R4), 14$                          ; 0389
                                  5D  A3  9F 001DF 13$:     PUSHAB  93(R3)                                    ; 0393
                                  59  A3  DD 001E2          PUSHL   89(R3)                                    ;
                                  10  A4  9F 001E5          PUSHAB  16(R4)                                    ;
                                      03  DD 001E8          PUSHL   #3                                        ;
                          00000000G   8F  DD 001EA          PUSHL   #EXCH$_BADFILENAME                        ;
               00000000G  00          05  FB 001F0          CALLS   #5, LIB$SIGNAL                            ;
                                      54  DD 001F7          PUSHL   R4                                        ; 0394
               00000000G  EF          01  FB 001F9          CALLS   #1, EXCH$UTIL_NAMB_RELEASE                ;
                        50  00000000G 8F  D0 00200          MOVL    #EXCH$_BADFILENAME, R0                    ; 0395
                                          04 00207          RET                                               ;
               00000000G  EF          00  FB 00208 14$:     CALLS   #0, EXCH$UTIL_FILB_ALLOCATE               ; 0406
                          53          50  D0 0020F          MOVL    R0, OUT_FILB                              ;
                      44  A5          53  D0 00212          MOVL    OUT_FILB, 68(COPY)                        ; 0407
                                      53  DD 00216          PUSHL   OUT_FILB                                  ; 0408
                                      54  DD 00218          PUSHL   R4                                        ;
                   0000V  CF          02  FB 0021A          CALLS   #2, EXCH$COPY_NAMB_TO_FILB                ;
                                  0C  AE  D4 0021F          CLRL    ABORT                                     ; 0414
                          58          01  D0 00222          MOVL    #1, STATUS                                ; 0415
                          6E      34  A5  9E 00225          MOVAB   52(COPY), (SP)                            ; 0426
                   0000V  CF          00  FB 00229 15$:     CALLS   #0, COPY_PARSE_NEXT_INPUT                 ; 0416
                      10  AE          50  D0 0022E          MOVL    R0, PRS_STAT                              ;
                          03      10  AE  E8 00232          BLBS    PRS_STAT, 16$                             ;
                                    0257  31 00236          BRW     53$                                       ;
                          52      3C  A5  D0 00239 16$:     MOVL    60(COPY), INP_FILB                        ; 0422
                          34      00  BE  E9 0023D          BLBC    @0(SP), 19$                               ; 0426
                          13      6C  A4  E8 00241          BLBS    108(R4), 17$                              ; 0432
              0E      6D  A4          01  E1 00245          BBC     #1, 109(R4), 17$                          ; 0434
              09      6D  A4          02  E1 0024A          BBC     #2, 109(R4), 17$                          ; 0436
                        58  00000000G 8F  D0 0024F          MOVL    #EXCH$_MANY_TO_ONE, STATUS                ; 0440
                                      0C  11 00256          BRB     19$                                       ; 0441
                                  2C  A5  D5 00258 17$:     TSTL    44(COPY)                                  ; 0448
                                      18  13 0025B          BEQL    19$                                       ;
                        58  00000000G 8F  D0 0025D          MOVL    #EXCH$_STRTNOMULTI, STATUS                ; 0451
                                      58  DD 00264 18$:     PUSHL   STATUS                                    ; 0452
               00000000G  00          01  FB 00266          CALLS   #1, LIB$SIGNAL                            ;
                   0000V  CF          00  FB 0026D          CALLS   #0, COPY_PARSE_CLEANUP                    ; 0453
                                    0217  31 00272          BRW     52$                                       ; 0450
                        1C  00000000G FF  E9 00275 19$:     BLBC    @EXCH$A_GBL, 20$                          ; 0463
                      08  AE  00000000G 8F  D0 0027C        MOVL    #EXCH$_CANCELED, INO_STAT                 ; 0466
                          50      08  AE  D0 00284          MOVL    INO_STAT, STATUS2                         ; 0467
      50          03              00  03  F0 00288          INSV    #3, #0, #3, STATUS2                       ;
                                      50  DD 0028D          PUSHL   STATUS2                                   ;
               00000000G  00          01  FB 0028F          CALLS   #1, LIB$SIGNAL                            ;
                                      09  11 00296          BRB     21$                                       ; 0463
                   0000V  CF          00  FB 00298 20$:     CALLS   #0, COPY_INPUT_OPEN                       ; 0470
                      08  AE          50  D0 0029D          MOVL    R0, INO_STAT                              ;
      50        00  BE          01    02  EF 002A1 21$:     EXTZV   #2, #1, @0(SP), R0                        ; 0474
  00  BE        01              03    50  F0 002A7          INSV    R0, #3, #1, @0(SP)                        ;
                      00  BE          04  8A 002AD          BICB2   #4, @0(SP)                                ; 0475
                          03      08  AE  E8 002B1          BLBS    INO_STAT, 22$                             ; 0477
```

```
                                      01A4  31 002B5         BRW     50$
                     0000V   CF         00  FB 002B8 22$:    CALLS   #0, COPY_OUTPUT_CREATE                      ; 0486
                             56         50  D0 002BD         MOVL    R0, CRE_STAT                                ;
                             03         56  E8 002C0         BLBS    CRE_STAT, 23$                               ;
                                      0137  31 002C3         BRW     46$                                         ;
                                        5A  D4 002C6 23$:    CLRL    GETPUT_ERR                                  ; 0497
                                        57  D4 002C8         CLRL    PUT_STAT                                    ;
                                  04    AE  D4 002CA         CLRL    REC_COUNT                                   ;
                                        52  DD 002CD 24$:    PUSHL   INP_FILB                                    ; 0498
                        52   B2         01  FB 002CF         CALLS   #1, @82(INP_FILB)                           ;
                             5B         50  D0 002D3         MOVL    R0, GET_STAT                                ;
                             33         5B  E9 002D6         BLBC    GET_STAT, 26$                               ;
                        56   B3         00  FB 002D9         CALLS   #0, @86(OUT_FILB)                           ; 0501
                             57         50  D0 002DD         MOVL    R0, PUT_STAT                                ;
                             26         57  E9 002E0         BLBC    PUT_STAT, 25$                               ;
                                  04    AE  D6 002E3         INCL    REC_COUNT                                   ; 0502
                             E0 00000000G  FF  E9 002E6      BLBC    @EXCH$A_GBL, 24$                            ; 0506
                             57 00000000G  8F  D0 002ED      MOVL    #EXCH$_CANCELED, PUT_STAT                   ; 0509
                        0C   AE         01  D0 002F4         MOVL    #1, ABORT                                   ; 0510
                             50         57  D0 002F8         MOVL    PUT_STAT, STATUS2                           ; 0511
  50             03          00         03  F0 002FB         INSV    #3, #0, #3, STATUS2                         ;
                                        50  DD 00300         PUSHL   STATUS2                                     ;
                 00000000G   00         01  FB 00302         CALLS   #1, LIB$SIGNAL                              ;
                             0A         5B  E8 00309 25$:    BLBS    GET_STAT, 27$                               ; 0518
                                        5B  D5 0030C 26$:    TSTL    GET_STAT                                    ;
                                        06  13 0030E         BEQL    27$                                         ;
                             58         5B  D0 00310         MOVL    GET_STAT, STATUS                            ; 0521
                             5A         01  D0 00313         MOVL    #1, GETPUT_ERR                              ; 0522
                             0A         57  E8 00316 27$:    BLBS    PUT_STAT, 28$                               ; 0525
                                        57  D5 00319         TSTL    PUT_STAT                                    ;
                                        06  13 0031B         BEQL    28$                                         ;
                             58         57  D0 0031D         MOVL    PUT_STAT, STATUS                            ; 0528
                             5A         01  D0 00320         MOVL    #1, GETPUT_ERR                              ; 0529
                 31     2B   A3         02  E0 00323 28$:    BBS     #2, 43(OUT_FILB), 32$                       ; 0534
                             1B         5A  E9 00328         BLBC    GETPUT_ERR, 30$                             ; 0537
                                  04    AE  D5 0032B         TSTL    REC_COUNT                                   ; 0539
                                        0C  13 0032E         BEQL    29$                                         ;
                 07     2B   A3         06  E0 00330         BBS     #6, 43(OUT_FILB), 29$                       ; 0541
                             0A 00000000G  FF  E9 00335      BLBC    @EXCH$A_GBL, 30$                            ; 0543
                     0000V   CF         00  FB 0033C 29$:    CALLS   #0, COPY_OUTPUT_DELETE                      ; 0546
                                  04    AE  D4 00341         CLRL    REC_COUNT                                   ; 0547
                                        0E  11 00344         BRB     31$                                         ; 0537
                     0000V   CF         00  FB 00346 30$:    CALLS   #0, COPY_OUTPUT_CLOSE                       ; 0556
                             06         50  E8 0034B         BLBS    CLS_STAT, 31$                               ; 0558
                             58         50  D0 0034E         MOVL    CLS_STAT, STATUS                            ; 0561
                             5A         01  D0 00351         MOVL    #1, GETPUT_ERR                              ; 0562
                 07     2B   A3         02  E1 00354 31$:    BBC     #2, 43(OUT_FILB), 33$                       ; 0570
                                  04    AE  D4 00359 32$:    CLRL    REC_COUNT                                   ; 0573
                        2B   A3         04  8A 0035C         BICB2   #4, 43(OUT_FILB)                            ; 0574
                                        50  D4 00360 33$:    CLRL    COP_STAT                                    ; 0579
                             17         5A  E9 00362         BLBC    GETPUT_ERR, 35$                             ; 0580
                                  04    AE  D5 00365         TSTL    REC_COUNT                                   ; 0583
                                        09  12 00368         BNEQ    34$                                         ;
                             50 00000000G  8F  D0 0036A      MOVL    #EXCH$_NOTCOPIED, COP_STAT                  ; 0585
                                        2B  11 00371         BRB     38$                                         ;
                             50 00000000G  8F  D0 00373 34$: MOVL    #EXCH$_PARTCOPIED, COP_STAT                 ; 0587
                                        22  11 0037A         BRB     38$                                         ; 0580
```

```
                            2B  A3  95 0037C 35$:   TSTB    43(OUT_FILB)                       ; 0591
                                0D  18 0037F        BGEQ    36$                                ;
        09              69      04  E0 00381        BBS     #4, (R9), 36$                      ; 0593
                        50 00000000G 8F  D0 00385   MOVL    #EXCH$_COPNEWNAME, COP_STAT        ; 0595
                                10  11 0038C        BRB     38$                                ;
        05              69      03  E0 0038E 36$:   BBS     #3, (R9), 37$                      ; 0596
        07      00      BE      03  E1 00392        BBC     #3, @0(SP), 38$                    ; 0598
                        50 00000000G 8F  D0 00397 37$: MOVL #EXCH$_COPIED, COP_STAT            ; 0600
        07      00      BE      02  E1 0039E 38$:   BBC     #2, @0(SP), 39$                    ; 0605
                        50 00000000G 8F  D0 003A3   MOVL    #EXCH$_NOTCOP_RETRY, COP_STAT      ; 0607
                        02 00000000G FF  E9 003AA 39$: BLBC @EXCH$A_GBL, 40$                   ; 0611
                                50  D4 003B1        CLRL    COP_STAT                           ; 0613
                                50  D5 003B3 40$:   TSTL    COP_STAT                           ; 0617
                                44  13 003B5        BEQL    45$                                ;
                        02      28  A3  91 003B7    CMPB    40(OUT_FILB), #2                   ; 0622
                                0A  12 003BB        BNEQ    41$                                ;
        00000200        8F      35  A3  D1 003BD    CMPL    53(OUT_FILB), #512                 ; 0623
                                0C  13 003C5        BEQL    42$                                ;
                        01      29  A3  91 003C7 41$: CMPB  41(OUT_FILB), #1                   ; 0625
                                06  13 003CB        BEQL    42$                                ;
                        01      29  A2  91 003CD    CMPB    41(INP_FILB), #1                   ; 0626
                                07  12 003D1        BNEQ    43$                                ;
                        51    0000' CF  9E 003D3 42$: MOVAB P.AAY, B_OR_R                      ; 0627
                                05  11 003D8        BRB     44$                                ;
                        51    0000' CF  9E 003DA 43$: MOVAB P.ABA, B_OR_R                      ;
                                51  DD 003DF 44$:   PUSHL   B_OR_R                             ; 0631
                            08  AE  DD 003E1        PUSHL   REC_COUNT                          ;
                            5A  A3  9F 003E4        PUSHAB  90(OUT_FILB)                       ;
                            3A  A3  DD 003E7        PUSHL   58(OUT_FILB)                       ;
                            5A  A2  9F 003EA        PUSHAB  90(INP_FILB)                       ;
                            3A  A2  DD 003ED        PUSHL   58(INP_FILB)                       ;
                                06  DD 003F0        PUSHL   #6                                 ;
                                50  DD 003F2        PUSHL   COP_STAT                           ;
        00000000G       00      08  FB 003F4        CALLS   #8, LIB$SIGNAL                     ;
                                53  11 003FB 45$:   BRB     48$                                ; 0486
                                56  DD 003FD 46$:   PUSHL   CRE_STAT                           ; 0640
                            5A  A3  9F 003FF        PUSHAB  90(OUT_FILB)                       ;
                            3A  A3  DD 00402        PUSHL   58(OUT_FILB)                       ;
                            5A  A2  9F 00405        PUSHAB  90(INP_FILB)                       ;
                            3A  A2  DD 00408        PUSHL   58(INP_FILB)                       ;
                                04  DD 0040B        PUSHL   #4                                 ;
                        00000000G 8F  DD 0040D      PUSHL   #EXCH$_NOTCOPIED                   ;
        00000000G       00      07  FB 00413        CALLS   #7, LIB$SIGNAL                     ;
                        58      56  D0 0041A        MOVL    CRE_STAT, STATUS                   ; 0642
                                2D  13 0041D        BEQL    47$                                ; 0649
        000184C4        8F      56  D1 0041F        CMPL    CRE_STAT, #99524                   ;
                                24  13 00426        BEQL    47$                                ;
        00000000G       8F      56  D1 00428        CMPL    CRE_STAT, #EXCH$_RT11_OVERFLOW     ;
                                1B  13 0042F        BEQL    47$                                ;
        00000000G       8F      56  D1 00431        CMPL    CRE_STAT, #EXCH$_VOLUME_FULL       ;
                                12  13 00438        BEQL    47$                                ;
        00000000G       8F      56  D1 0043A        CMPL    CRE_STAT, #EXCH$_NOCOPSAMDEV       ;
                                09  13 00441        BEQL    47$                                ;
        00000000G       8F      56  D1 00443        CMPL    CRE_STAT, #EXCH$_ILLMTCOPY         ;
                                04  12 0044A        BNEQ    48$                                ;
              0C        AE      01  D0 0044C 47$:   MOVL    #1, ABORT                          ; 0651
           0000V        CF      00  FB 00450 48$:   CALLS   #0, COPY_INPUT_CLOSE               ; 0658
```

; R

```
                   27        0C    AE  E8 00455         BLBS    ABORT, 51$                           ; 0659
                             FE19  31  00459 49$:       BRW     19$
                             08    AE  D5 0045C 50$:    TSTL    INO_STAT                             ; 0668
                                   1F  13 0045F         BEQL    51$
                   18 00000000G    FF  E8 00461         BLBS    @EXCH$A_GBL, 51$                     ; 0670
                   58        08    AE  D0 00468         MOVL    INO_STAT, STATUS                     ; 0675
        00018292   8F        08    AE  D1 0046C         CMPL    INO_STAT, #98962                     ; 0678
                                   0A  13 00474         BEQL    51$
        000184C4   8F        08    AE  D1 00476         CMPL    INO_STAT, #99524
                                   D9  12 0047E         BNEQ    49$
           0000V   CF              00  FB 00480 51$:    CALLS   #0, COPY_PARSE_CLEANUP               ; 0688
                   03        0C    AE  E8 00485         BLBS    ABORT, 52$                           ; 0689
                             FD9D  31  00489            BRW     15$
                   09        10    AE  E8 0048C 52$:    BLBS    PRS_STAT, 54$                        ; 0695
                             10    AE  D5 00490 53$:    TSTL    PRS_STAT
                                   04  13 00493         BEQL    54$
                   58        10    AE  D0 00495         MOVL    PRS_STAT, STATUS
           0000V   CF              00  FB 00499 54$:    CALLS   #0, COPY_OUTPUT_CLEANUP              ; 0699
                   50              58  D0 0049E 55$:    MOVL    STATUS, R0                           ; 0702
                                   04  004A1            RET                                          ; 0703

; Routine Size:  1186 bytes,    Routine Base:  EXCH$COPY_CODE + 0000
```

```
;  612     0704  1 GLOBAL ROUTINE copy_init : NOVALUE =    %SBTTL 'exch$copy_init'
;  613     0705  2 BEGIN
;  614     0706  2 !++
;  615     0707  2 !
;  616     0708  2 ! FUNCTIONAL DESCRIPTION:
;  617     0709  2 !
;  618     0710  2 !       Common init routine for the copy and type verbs
;  619     0711  2 !
;  620     0712  2 ! INPUTS:
;  621     0713  2 !
;  622     0714  2 !       none
;  623     0715  2 !
;  624     0716  2 ! IMPLICIT INPUTS:
;  625     0717  2 !
;  626     0718  2 !       Command parameters and qualifiers as returned from CLI$ routines.  Global environment ref'd by exch$
;  627     0719  2 !
;  628     0720  2 ! OUTPUTS:
;  629     0721  2 !
;  630     0722  2 !       none                                                                                    ; R
;  631     0723  2 !
;  632     0724  2 ! IMPLICIT OUTPUTS:
;  633     0725  2 !
;  634     0726  2 !       none
;  635     0727  2 !
;  636     0728  2 ! ROUTINE VALUE:
;  637     0729  2 !
;  638     0730  2 !       none
;  639     0731  2 !
;  640     0732  2 ! SIDE EFFECTS:
;  641     0733  2 !
;  642     0734  2 !       Files may be created.
;  643     0735  2 !--
;  644     0736  2
;  645     0737  2 $dbgtrc_prefix ('copy_init> ');
;  646     0738  2
;  647     0739  2 LOCAL
;  648     0740  2     status
;  649     0741  2     ;
;  650     0742  2
;  651     0743  2 BIND
;  652     0744  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock  ! Pointer to work area
;  653     0745  2     ;
;  654     0746  2
;  655     0747  2
;  656     0748  2 ! If our pointer is null, we need to allocate and initialize the work area
;  657     0749  2 !
;  658     0750  2 IF .copy EQL 0
;  659     0751  2 THEN
;  660     0752  3     BEGIN
;  661     0753  3
;  662     0754  3     ! Get the right sized chunk of memory
;  663     0755  3     !
;  664     0756  3     copy = exch$util_vm_allocate (exchblk$s_copy);
;  665     0757  3
;  666     0758  3     ! Set the ident fields
;  667     0759  3     !
;  668     0760  3     $block_init (.copy, copy);
```

```
;  669     0761  3
;  670     0762  3     ! Set the dynamic strings
;  671     0763  3     !
;  672     0764  3     $dyn_str_desc_init (copy [copy$q_default_filename]);
;  673     0765  3     $dyn_str_desc_init (copy [copy$q_input_filename]);
;  674     0766  3     $dyn_str_desc_init (copy [copy$q_output_filename]);
;  675     0767  3     $dyn_str_desc_init (copy [copy$q_input_sticky_name]);
;  676     0768  3 !\  $dyn_str_desc_init (copy [copy$q_q_boot]);
;  677     0769  3 !\  $dyn_str_desc_init (copy [copy$q_q_fdl]);
;  678     0770  3 !\  $dyn_str_desc_init (copy [copy$q_q_protection]);
;  679     0771  3
;  680     0772  3     END
;  681     0773  2 ELSE
;  682     0774  3     BEGIN
;  683     0775  3
;  684     0776  3     ! Free the dynamic strings and the Chicago 7
;  685     0777  3     !
;  686     0778  3     str$free1_dx (copy [copy$q_default_filename]);
;  687     0779  3     str$free1_dx (copy [copy$q_input_filename]);
;  688     0780  3     str$free1_dx (copy [copy$q_output_filename]);
;  689     0781  3 !\  str$free1_dx (copy [copy$q_q_boot]);
;  690     0782  3 !\  str$free1_dx (copy [copy$q_q_fdl]);
;  691     0783  3 !\  str$free1_dx (copy [copy$q_q_protection]);
;  692     0784  3
;  693     0785  2     END;
;  694     0786  2
;  695     0787  2 ! Get some confidence that our work area is valid
;  696     0788  2 !
;  697     0789  2 $block_check (2, .copy, copy, 408);
;  698     0790  2
;  699     0791  2 ! Set the last part of the block to nulls
;  700     0792  2 !
;  701     0793  2 CH$FILL (0, copy$k_end_zero - copy$k_start_zero, .copy + copy$k_start_zero);
;  702     0794  2
;  703     0795  2 ! Start with a very large max rec, it will be adjusted if too large
;  704     0796  2 !
;  705     0797  2 copy [copy$l_max_rec] = 65535;
;  706     0798  2
;  707     0799  2 ! Get the global boolean qualifiers common to both commands
;  708     0800  2 !
;  709     0801  2 status = cli$present (%ASCID 'LOG');                          ! Global qualifier
;  710     0802  2 copy [copy$v_q_log]             = .status;                    ! Log state
;  711     0803  2 copy [copy$v_q_nolog_explicit] = (.status EQL cli$_negated);  ! Set if /NOLOG is present
;  712     0804  2
;  713     0805  2 !\ copy [copy$v_q_confirm]      = cli$present (%ASCID 'CONFIRM');                    ! global
;  714     0806  2
;  715     0807  2 RETURN;
;  716     0808  1 END;


                                        .PSECT  EXCH$COPY_PLIT,NOWRT,2

                        00  47  4F  4C  000F4 P.ABD:  .ASCII  \LOG\<0>                                ;
                              010E0003  000F8 P.ABC:  .LONG   17694723                                ;
                              00000000' 000FC         .ADDRESS P.ABD                                  ;
```

```
                                                        .EXTRN   EXCH$GQ_DYN_STR_TEMPLATE
                                                        .EXTRN   STR$FREE1_DX

                                                        .PSECT   EXCH$COPY_CODE,NOWRT,2

                                     00FC 00000         .ENTRY   COPY_INIT, Save R2,R3,R4,R5,R6,R7         ; 0704
                   57 00000000G  00   9E 00002          MOVAB    STR$FREE1_DX, R7                          ;
         52 00000000G  EF            04   C1 00009      ADDL3    #4, EXCH$A_GBL, R2                        ; 0744
                       62            D5 00011           TSTL     (R2)                                      ; 0750
                       52            12 00013           BNEQ     1$                                        ;
                       7E       4C   8F   9A 00015      MOVZBL   #76, -(SP)                                ; 0756
            00000000G  EF            01   FB 00019      CALLS    #1, EXCH$UTIL_VM_ALLOCATE                 ;
                       62            50   D0 00020      MOVL     R0, (R2)                                  ;
                08     A0       4C   8F   9B 00023      MOVZBW   #76, 8(R0)                                ; 0760
                0A     A0            01   8E 00028      MNEGB    #1, 10(R0)                                ;
                       50            62   D0 0002C      MOVL     (R2), R0                                  ; 0764
                       53 00000000G  EF   D0 0002F      MOVL     TMPL, R3                                  ;
                       60            53   D0 00036      MOVL     R3, (R0)                                  ;
                       51 00000000G  EF   D0 00039      MOVL     TMPL+4, R1                                ;
                04     A0            51   D0 00040      MOVL     R1, 4(R0)                                 ;
         50            62            0C   C1 00044      ADDL3    #12, (R2), R0                             ; 0765
                       60            53   D0 00048      MOVL     R3, (R0)                                  ;
                04     A0            51   D0 0004B      MOVL     R1, 4(R0)                                 ;
         50            62            14   C1 0004F      ADDL3    #20, (R2), R0                             ; 0766
                       60            53   D0 00053      MOVL     R3, (R0)                                  ;
                04     A0            51   D0 00056      MOVL     R1, 4(R0)                                 ;
         50            62            1C   C1 0005A      ADDL3    #28, (R2), R0                             ; 0767
                       60            53   D0 0005E      MOVL     R3, (R0)                                  ;
                04     A0            51   D0 00061      MOVL     R1, 4(R0)                                 ;
                                     13   11 00065      BRB      2$                                        ; 0750
                                     62   DD 00067 1$:  PUSHL    (R2)                                      ; 0778
                       67            01   FB 00069      CALLS    #1, STR$FREE1_DX                          ;
         7E            62            0C   C1 0006C      ADDL3    #12, (R2), -(SP)                          ; 0779
                       67            01   FB 00070      CALLS    #1, STR$FREE1_DX                          ;
         7E            62            14   C1 00073      ADDL3    #20, (R2), -(SP)                          ; 0780
                       67            01   FB 00077      CALLS    #1, STR$FREE1_DX                          ;
                       56            62   D0 0007A 2$:  MOVL     (R2), R6                                  ; 0789
                       52 004C00FF   8F   D0 0007D      MOVL     #4980991, R2                              ;
                       51     0198   8F   3C 00084      MOVZWL   #408, R1                                  ;
                       50            56   D0 00089      MOVL     R6, R0                                    ;
                          00000000G  EF   16 0008C      JSB      EXCH$UTIL_BLOCK_CHECK                     ;
      28       00      6E            00   2C 00092      MOVC5    #0, (SP), #0, #40, 36(R6)                 ; 0793
                                24   A6      00097
                38     A6     FFFF   8F   3C 00099      MOVZWL   #65535, 56(R6)                            ; 0797
                             0000'   CF   9F 0009F      PUSHAB   P.ABC                                     ; 0801
            00000000G  00            01   FB 000A3      CALLS    #1, CLI$PRESENT                           ;
 30   A6       01      03            50   F0 000AA      INSV     STATUS, #3, #1, 48(R6)                    ; 0802
                                     51   D4 000B0      CLRL     R1                                        ; 0803
            00000000G  8F            50   D1 000B2      CMPL     STATUS, #CLI$_NEGATED                     ;
                                     02   12 000B9      BNEQ     3$                                        ;
                                     51   D6 000BB      INCL     R1                                        ;
 30   A6       01      04            51   F0 000BD 3$:  INSV     R1, #4, #1, 48(R6)                        ;
                                          04 000C3      RET                                                ; 0808

; Routine Size:  196 bytes,    Routine Base:  EXCH$COPY_CODE + 04A2
```

```
;  718     0809  1 GLOBAL ROUTINE copy_input_close : NOVALUE =      %SBTTL 'copy_input_close'
;  719     0810  2 BEGIN
;  720     0811  2 !++
;  721     0812  2 !
;  722     0813  2 ! FUNCTIONAL DESCRIPTION:
;  723     0814  2 !
;  724     0815  2 !       Close the input file
;  725     0816  2 !
;  726     0817  2 ! INPUTS:
;  727     0818  2 !
;  728     0819  2 !       none
;  729     0820  2 !
;  730     0821  2 ! IMPLICIT INPUTS:
;  731     0822  2 !
;  732     0823  2 !       copy [copy$a_inp_filb] describes the file to be closed
;  733     0824  2 !
;  734     0825  2 ! OUTPUTS:
;  735     0826  2 !
;  736     0827  2 !       none
;  737     0828  2 !
;  738     0829  2 ! IMPLICIT OUTPUTS:
;  739     0830  2 !
;  740     0831  2 !       none
;  741     0832  2 !
;  742     0833  2 ! ROUTINE VALUE:
;  743     0834  2 !
;  744     0835  2 !       Success or worst error encountered.
;  745     0836  2 !
;  746     0837  2 ! SIDE EFFECTS:
;  747     0838  2 !
;  748     0839  2 !       none
;  749     0840  2 !--
;  750     0841  2
;  751     0842  2 $dbgtrc_prefix ('copy_input_close> ');
;  752     0843  2
;  753     0844  2 LOCAL
;  754     0845  2     status
;  755     0846  2     ;
;  756     0847  2
;  757     0848  2 BIND
;  758     0849  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;  759     0850  2     inp_filb = copy [copy$a_inp_fi[b]    : $ref_bblock  ! Filb for the input
;  760     0851  2     ;
;  761     0852  2
;  762     0853  2
;  763     0854  2 $block_check (2, .copy, copy, 509);
;  764     0855  2 $block_check (2, .inp_filb, filb, 510);
;  765     0856  2
;  766     0857  2 ! Call the file-specific close routine
;  767     0858  2 !
;  768     0859  2 (.inp_filb [filb$a_close_routine]) (.inp_filb);
;  769     0860  2
;  770     0861  2 RETURN;
;  771     0862  1 END;
```

```
                                 003C 0000C          .ENTRY  COPY_INPUT_CLOSE, Save R2,R3,R4,R5        ; 0809
                 55 00000000G EF   9E 00002          MOVAB   EXCH$UTIL_BLOCK_CHECK, R5                 ;
   53 00000000G EF            04   C1 00009          ADDL3   #4, EXCH$A_GBL, R3                        ; 0849
   54             63           3C   C1 00011          ADDL3   #60, (R3), R4                             ; 0850
                 52 004C00FF  8F   D0 00015          MOVL    #4980991, R2                              ; 0854
                 51     01FD  8F   3C 0001C          MOVZWL  #509, R1                                  ;
                 50           63   D0 00021          MOVL    (R3), R0                                  ;
                              65   16 00024          JSB     EXCH$UTIL_BLOCK_CHECK                     ;
                 53           64   D0 00026          MOVL    (R4), R3                                  ; 0855
                 52 035B00FA  8F   D0 00029          MOVL    #56295674, R2                             ;
                 51     01FE  8F   3C 00030          MOVZWL  #510, R1                                  ;
                 50           53   D0 00035          MOVL    R3, R0                                    ;
                              65   16 00038          JSB     EXCH$UTIL_BLOCK_CHECK                     ;
                              53   DD 0003A          PUSHL   R3                                        ; 0859
            4A   B3           01   FB 0003C          CALLS   #1, @74(R3)                               ;
                                   04 00040          RET                                               ; 0862

; Routine Size:  65 bytes,    Routine Base:  EXCH$COPY_CODE + 0566
```

```
;  773          0863  1 GLOBAL ROUTINE copy_input_open =        %SBTTL 'copy_input_open'
;  774          0864  2 BEGIN
;  775          0865  2 !++
;  776          0866  2 !
;  777          0867  2 ! FUNCTIONAL DESCRIPTION:
;  778          0868  2 !
;  779          0869  2 !       Open the input file
;  780          0870  2 !
;  781          0871  2 ! INPUTS:
;  782          0872  2 !
;  783          0873  2 !       none
;  784          0874  2 !
;  785          0875  2 ! IMPLICIT INPUTS:
;  786          0876  2 !
;  787          0877  2 !       copy [copy$a_inp_filb] describes the file to be opened
;  788          0878  2 !
;  789          0879  2 ! OUTPUTS:
;  790          0880  2 !
;  791          0881  2 !       none
;  792          0882  2 !
;  793          0883  2 ! IMPLICIT OUTPUTS:
;  794          0884  2 !
;  795          0885  2 !       none
;  796          0886  2 !
;  797          0887  2 ! ROUTINE VALUE:
;  798          0888  2 !
;  799          0889  2 !       Success or worst error encountered.
;  800          0890  2 !
;  801          0891  2 ! SIDE EFFECTS:
;  802          0892  2 !
;  803          0893  2 !       none
;  804          0894  2 !--
;  805          0895  2
;  806          0896  2 $dbgtrc_prefix ('copy_input_open> ');
;  807          0897  2
;  808          0898  2 LOCAL
;  809          0899  2     status
;  810          0900  2     ;
;  811          0901  2
;  812          0902  2 BIND
;  813          0903  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;  814          0904  2     inp_filb = copy [copy$a_inp_filb]    : $ref_bblock, ! Filb for the input
;  815          0905  2     inp_namb = copy [copy$a_inp_namb]    : $ref_bblock  ! Namb for the input
;  816          0906  2     ;
;  817          0907  2
;  818          0908  2
;  819          0909  2 $block_check (2, .copy, copy, 409);
;  820          0910  2 $block_check (2, .inp_filb, filb, 410);
;  821          0911  2 $block_check (2, .inp_namb, namb, 411);
```

```
;  823     0912  2 ! Perform the volume-specific open operation
;  824     0913  2 !
;  825     0914  2 CASE .inp_namb [namb$b_vol_format] FROM volb$k_vfmt_lobound TO volb$k_vfmt_hibound OF
;  826     0915  2 SET
;  827     0916  2     [volb$k_vfmt_dos11]         : status = exch$dos11_open_file ();
;  828     0917  2     [volb$k_vfmt_files11]       : status = exch$fil11_open_file ();
;  829     0918  2     [volb$k_vfmt_rt11]          : status = exch$rt11_open_file ();
;  830     0919  2 !\  [volb$k_vfmt_rtmt]          : $exch_signal_stop (exch$_notimplement);
;  831     0920  2     [OUTRANGE,INRANGE]          : $logic_check (0, (false), 233);
;  832     0921  2 TES;
;  833     0922  2
;  834     0923  2 RETURN .status;
;  835     0924  1 END;

                                                        .EXTRN  EXCH$_BADLOGIC

                                        007C 00000      .ENTRY  COPY_INPUT_OPEN, Save R2,R3,R4,R5,R6        ; 0863
                    56 00000000G    EF   9E 00002       MOVAB   EXCH$UTIL_BLOCK_CHECK, R6
          53 00000000G              EF   04 C1 00009      ADDL3   #4, EXCH$A_GBL, R3                        ; 0903
          55                        63   3C C1 00011      ADDL3   #60, (R3), R5                             ; 0904
          54                        63   8F C1 00015      ADDL3   #64, (R3), R4                             ; 0905
                    52 004C00FF     8F   D0 0001D       MOVL    #4980991, R2                              ; 0909
                    51      0199    8F   3C 00024       MOVZWL  #409, R1
                    50              63   D0 00029       MOVL    (R3), R0
                                    66   16 0002C       JSB     EXCH$UTIL_BLOCK_CHECK
                    52 035B00FA     8F   D0 0002E       MOVL    #56295674, R2                             ; 0910
                    51      019A    8F   3C 00035       MOVZWL  #410, R1
                    50              65   D0 0003A       MOVL    (R5), R0
                                    66   16 0003D       JSB     EXCH$UTIL_BLOCK_CHECK
                    53              64   D0 0003F       MOVL    (R4), R3                                  ; 0911
                    52 010A00F7     8F   D0 00042       MOVL    #17432823, R2
                    51      019B    8F   3C 00049       MOVZWL  #411, R1
                    50              53   D0 0004E       MOVL    R3, R0
                                    66   16 00051       JSB     EXCH$UTIL_BLOCK_CHECK
                03              00      7A   A3  8F 00053       CASEB   122(R3), #0, #3                   ; 0914
        002C        0024            001C        0008    00058 1$:   .WORD   2$-1$,-
                                                                        3$-1$,-
                                                                        4$-1$,-
                                                                        5$-1$
                                7E      E9   8F  9A 00060 2$:   MOVZBL  #233, -(SP)                       ; 0920
                                             01  DD 00064       PUSHL   #1
                                    00000000G    8F  DD 00066       PUSHL   #EXCH$_BADLOGIC
                        00000000G   00           03  FB 0006C       CALLS   #3, LIB$STOP
                                                 04  00073       RET
                        00000000G   EF           00  FB 00074 3$:   CALLS   #0, EXCH$DOS11_OPEN_FILE      ; 0916
                                                 04  0007B       RET
                        00000000G   EF           00  FB 0007C 4$:   CALLS   #0, EXCH$FIL11_OPEN_FILE      ; 0917
                                                 04  00083       RET
                        00000000G   EF           00  FB 00084 5$:   CALLS   #0, EXCH$RT11_OPEN_FILE      ; 0918
                                                 04  0008B       RET                                       ; 0924

; Routine Size:  140 bytes,    Routine Base:  EXCH$COPY_CODE + 05A7
```

```
;  837     0925  1 GLOBAL ROUTINE exch$copy_namb_to_filb (namb : $ref_bblock,      %SBTTL 'exch$copy_namb_to_filb (namb, filb)'
;  838     0926  1                                         filb : $ref_bblock) : NOVALUE =
;  839     0927  2 BEGIN
;  840     0928  2 !++
;  841     0929  2 !
;  842     0930  2 ! FUNCTIONAL DESCRIPTION:
;  843     0931  2 !
;  844     0932  2 !       Set some fields in the filb using data from the namb
;  845     0933  2 !
;  846     0934  2 ! INPUTS:
;  847     0935  2 !
;  848     0936  2 !       namb - address of namb
;  849     0937  2 !       filb - address of filb
;  850     0938  2 !
;  851     0939  2 ! IMPLICIT INPUTS:
;  852     0940  2 !
;  853     0941  2 !       none
;  854     0942  2 !
;  855     0943  2 ! OUTPUTS:
;  856     0944  2 !
;  857     0945  2 !       none
;  858     0946  2 !
;  859     0947  2 ! IMPLICIT OUTPUTS:
;  860     0948  2 !
;  861     0949  2 !       none
;  862     0950  2 !
;  863     0951  2 ! ROUTINE VALUE:
;  864     0952  2 !
;  865     0953  2 !       none
;  866     0954  2 !
;  867     0955  2 ! SIDE EFFECTS:
;  868     0956  2 !
;  869     0957  2 !       none
;  870     0958  2 !--
;  871     0959  2
;  872     0960  2 $dbgtrc_prefix ('copy_namb_to_filb> ');
;  873     0961  2
;  874     0962  2 $block_check (2, .namb, namb, 523);
;  875     0963  2 $block_check (2, .filb, filb, 524);
;  876     0964  2
;  877     0965  2 ! Set fields in the file context block
;  878     0966  2 !
;  879     0967  2 filb [filb$a_assoc_namb]        = .namb;                          ! Pointer to the namb
;  880     0968  2 filb [filb$a_assoc_volb]        = .namb [namb$a_assoc_volb];      ! Pointer to the volb (0 if Files-11
;  881     0969  2 filb [filb$b_car_control]       = .namb [namb$b_car_control];     ! Carriage control byte
;  882     0970  2 filb [filb$b_rec_format]        = .namb [namb$b_rec_format];      ! Record format byte
;  883     0971  2 filb [filb$b_transfer_mode]     = .namb [namb$b_transfer_mode];   ! Transfer mode byte
;  884     0972  2 filb [filb$l_fixed_len]         = .namb [namb$l_fixed_len];       ! Record length (format=fixed only)
;  885     0973  2 filb [filb$b_pad_char]          = .namb [namb$b_pad_char];        ! Pad character (format=fixed only)
;  886     0974  2 filb [filb$v_rfmt_explicit]     = .namb [namb$v_rfmt_explicit];   ! A /RECORD was seen
;  887     0975  2 filb [filb$v_cctl_explicit]     = .namb [namb$v_cctl_explicit];   ! A /CARRIAGE was seen
;  888     0976  2 filb [filb$v_explicit_version]  = .namb [namb$v_explicit_version]; ! Explicit version number specified
;  889     0977  2
;  890     0978  2 ! Virtual devices will have meaningless vol_formats in the namb.  Copy the volb format to the namb always.
;  891     0979  2 !
;  892     0980  3 IF (.filb [filb$a_assoc_volb] NEQ 0)
;  893     0981  2 THEN
```

```
;  894          0982  3         BEGIN
;  895          0983  3         BIND
;  896          0984  3             volb = filb [filb$a_assoc_volb] : $ref_bblock;
;  897          0985  3         namb [namb$b_vol_format] = .volb [volb$b_vol_format];
;  898          0986  2         END;
;  899          0987  2
;  900          0988  2 RETURN;
;  901          0989  1 END;



                                                  003C 00000          .ENTRY  EXCH$COPY_NAMB_TO_FILB, Save R2,R3,R4,R5         ; 0925
                          55 00000000G  EF          9E 00002          MOVAB   EXCH$UTIL_BLOCK_CHECK, R5
                          54        04  AC          D0 00009          MOVL    NAMB, R4                                         ; 0962
                          52 010A00F7  8F          D0 0000D          MOVL    #17432823, R2                                    ;
                          51      020B  8F          3C 00014          MOVZWL  #523, R1                                         ;
                          50             54          D0 00019          MOVL    R4, R0                                           ;
                                         65          16 0001C          JSB     EXCH$UTIL_BLOCK_CHECK                            ;
                          53        08  AC          D0 0001E          MOVL    FILB, R3                                         ; 0963
                          52 035B00FA  8F          D0 00022          MOVL    #56295674, R2                                    ;
                          51      020C  8F          3C 00029          MOVZWL  #524, R1                                         ;
                          50             53          D0 0002E          MOVL    R3, R0                                           ;
                                         65          16 00031          JSB     EXCH$UTIL_BLOCK_CHECK                            ;
                   18  A3                54          D0 00033          MOVL    R4, 24(R3)                                       ; 0967
                   1C  A3        74      A4          D0 00037          MOVL    116(R4), 28(R3)                                  ; 0968
                   28  A3        7B      A4          90 0003C          MOVB    123(R4), 40(R3)                                  ; 0970
                   29  A3        7C      A4          B0 00041          MOVW    124(R4), 41(R3)                                  ; 0971
                   35  A3        7E      A4          D0 00046          MOVL    126(R4), 53(R3)                                  ; 0972
                   39  A3      0082      C4          90 0004B          MOVB    130(R4), 57(R3)                                  ; 0973
  2B  A3          01   00      0085      C4          F0 00051          INSV    133(R4), #0, #1, 43(R3)                          ; 0974
      50   0085   C4   01                01          EF 00059          EXTZV   #1, #1, 133(R4), R0                              ; 0975
  2B  A3          01   01                50          F0 00060          INSV    R0, #1, #1, 43(R3)                               ;
      50     6D   A4   01                03          EF 00066          EXTZV   #3, #1, 109(R4), R0                              ; 0976
  2B  A3          01   05                50          F0 0006C          INSV    R0, #5, #1, 43(R3)                               ;
                                 1C      A3          D5 00072          TSTL    28(R3)                                           ; 0980
                                         09          13 00075          BEQL    1$                                               ;
                          50     1C      A3          D0 00077          MOVL    28(R3), R0                                       ; 0985
                   7A  A4        58      A0          90 0007B          MOVB    88(R0), 122(R4)                                  ;
                                                     04 00080 1$:      RET                                                      ; 0989

; Routine Size:  129 bytes,     Routine Base:  EXCH$COPY_CODE + 0633
```

```
;  903     0990  1 GLOBAL ROUTINE copy_output_cleanup : NOVALUE =  %SBTTL 'copy_output_cleanup'
;  904     0991  2 BEGIN
;  905     0992  2 !++
;  906     0993  2 !
;  907     0994  2 ! FUNCTIONAL DESCRIPTION:
;  908     0995  2 !
;  909     0996  2 !       Clean up the output file info.  Release the namb and other structures.
;  910     0997  2 !
;  911     0998  2 ! INPUTS:
;  912     0999  2 !
;  913     1000  2 !       none
;  914     1001  2 !
;  915     1002  2 ! IMPLICIT INPUTS:
;  916     1003  2 !
;  917     1004  2 !       copy$a_out_filb field in copy work area
;  918     1005  2 !       copy$a_out_namb field in copy work area
;  919     1006  2 !
;  920     1007  2 ! OUTPUTS:
;  921     1008  2 !
;  922     1009  2 !       none
;  923     1010  2 !
;  924     1011  2 ! IMPLICIT OUTPUTS:
;  925     1012  2 !
;  926     1013  2 !       none
;  927     1014  2 !
;  928     1015  2 ! ROUTINE VALUE:
;  929     1016  2 !
;  930     1017  2 !       none
;  931     1018  2 !
;  932     1019  2 ! SIDE EFFECTS:
;  933     1020  2 !
;  934     1021  2 !       none
;  935     1022  2 !--
;  936     1023  2
;  937     1024  2 $dbgtrc_prefix ('copy_output_cleanup> ');
;  938     1025  2
;  939     1026  2
;  940     1027  2 BIND
;  941     1028  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;  942     1029  2     out_filb = copy [copy$a_out_filb]    : $ref_bblock, ! Filb for the output
;  943     1030  2     out_namb = copy [copy$a_out_namb]    : $ref_bblock, ! Namb for the output
;  944     1031  2     ctx = out_filb [filb$a_context]      : $ref_bblock  ! Volume specific context
;  945     1032  2     ;
```

```
;  947    1033  2 ! If a context block is present release it
;  948    1034  2 !
;  949    1035  2 IF .ctx NEQ 0
;  950    1036  2 THEN
;  951    1037  2     CASE .out_namb [namb$b_vol_format] FROM volb$k_vfmt_lobound TO volb$k_vfmt_hibound OF
;  952    1038  2     SET
;  953    1039  2         [volb$k_vfmt_dos11] :           exch$uti:_dos11ctx_release (.ctx);
;  954    1040  2         [volb$k_vfmt_files11] :         exch$util_rmsb_release (.ctx);
;  955    1041  2         [volb$k_vfmt_rt11] :            exch$util_rt11ctx_release (.ctx);
;  956    1042  2         [OUTRANGE,INRANGE] :            $logic_check (0, (false), 234);
;  957    1043  2     TES;
;  958    1044  2
;  959    1045  2 ! If the output volume was RT-11, flush the directory of any modified segments
;  960    1046  2 !
;  961    1047  2 CASE .out_namb [namb$b_vol_format] FROM volb$k_vfmt_lobound TO volb$k_vfmt_hibound OF
;  962    1048  2     SET
;  963    1049  2
;  964    1050  2     [volb$k_vfmt_rt11] :
;  965    1051  3                 BEGIN
;  966    1052  3                 BIND
;  967    1053  3                     volb = out_filb [filb$a_assoc_volb] : $ref_bblock;
;  968    1054  3                 exch$rt11_write_cleanup (.volb);    ! Do sundries necessary before we stop copying
;  969    1055  2                 END;
;  970    1056  2
;  971    1057  2     [INRANGE, OUTRANGE] :
;  972    1058  2                 ;                                   ! Nothing to do for these guys
;  973    1059  2     TES;
;  974    1060  2
;  975    1061  2 ! Release the output namb
;  976    1062  2 !
;  977    1063  2 exch$util_namb_release (.out_namb);
;  978    1064  2
;  979    1065  2 ! Release the output filb
;  980    1066  2 !
;  981    1067  2 exch$util_filb_release (.out_filb);
;  982    1068  2
;  983    1069  2 RETURN;
;  984    1070  1 END;


                                      000C 00000          .ENTRY  COPY_OUTPUT_CLEANUP, Save R2,R3      ; 0990
          50 00000000G   EF        04   C1 00002          ADDL3   #4, EXCH$A_GBL, R0                   ; 1028
          53           60 00000044  8F   C1 0000A          ADDL3   #68, (R0), R3                        ; 1029
          52           60 00000048  8F   C1 00012          ADDL3   #72, (R0), R2                        ; 1030
          51           63           20   C1 0001A          ADDL3   #32, (R3), R1                        ; 1031
                                    61   D5 0001E          TSTL    (R1)                                 ; 1035
                                    44   13 00020          BEQL    6$                                   ;
                       50           62   D0 00022          MOVL    (R2), R0                             ; 1037
          03           00      7A   A0   8F 00025          CASEB   122(R0), #0, #3                      ;
 0033     0028         001D          0008    0002A 1$:     .WORD   2$-1$,-                              ;
                                                                   3$-1$,-                              ;
                                                                   4$-1$,-                              ;
                                                                   5$-1$                                ;
                       7E      EA   8F   9A 00032 2$:      MOVZBL  #234, -(SP)                          ; 1042
```

```
                                          01  DD 00036         PUSHL   #1                                  ;
                               00000000G  8F  DD 00038         PUSHL   #EXCH$_BADLOGIC                     ;
                 00000000G  00            03  FB 0003E         CALLS   #3, LIB$STOP                        ;
                                          1F  11 00045         BRB     6$                                  ;
                                          61  DD 00047 3$:     PUSHL   (R1)                                ; 1039
                 00000000G  EF            01  FB 00049         CALLS   #1, EXCH$UTIL_DOS11CTX_RELEASE      ;
                                          14  11 00050         BRB     6$                                  ;
                                          61  DD 00052 4$:     PUSHL   (R1)                                ; 1040
                 00000000G  EF            01  FB 00054         CALLS   #1, EXCH$UTIL_RMSB_RELEASE          ;
                                          09  11 0005B         BRB     6$                                  ;
                                          61  DD 0005D 5$:     PUSHL   (R1)                                ; 1041
                 00000000G  EF            01  FB 0005F         CALLS   #1, EXCH$UTIL_RT11CTX_RELEASE       ;
                            52            62  D0 00066 6$:     MOVL    (R2), R2                            ; 1047
                 03         00        7A  A2  8F 00069         CASEB   122(R2), #0, #3                     ;
      000A       0017       0017         0017    0006E 7$:     .WORD   9$-7$,-                             ;
                                                                       9$-7$,-                             ;
                                                                       9$-7$,-                             ;
                                                                       8$-7$                               ;
                                          0D  11 00076         BRB     9$                                  ;
                 50         63            1C  C1 00078 8$:     ADDL3   #28, (R3), R0                       ; 1053
                                          60  DD 0007C         PUSHL   (R0)                                ; 1054
                 00000000G  EF            01  FB 0007E         CALLS   #1, EXCH$RT11_WRITE_CLEANUP         ;
                                          52  DD 00085 9$:     PUSHL   R2                                  ; 1063
                 00000000G  EF            01  FB 00087         CALLS   #1, EXCH$UTIL_NAMB_RELEASE          ;
                                          63  DD 0008E         PUSHL   (R3)                                ; 1067
                 00000000G  EF            01  FB 00090         CALLS   #1, EXCH$UTIL_FILB_RELEASE          ;
                                              04 00097         RET                                         ; 1070

; Routine Size:  152 bytes,    Routine Base:  EXCH$COPY_CODE + 06B4
```

```
;  986          1071  1 GLOBAL ROUTINE copy_output_close =      %SBTTL 'copy_output_close'
;  987          1072  2 BEGIN
;  988          1073  2 !++
;  989          1074  2 !
;  990          1075  2 ! FUNCTIONAL DESCRIPTION:
;  991          1076  2 !
;  992          1077  2 !       Close the output file
;  993          1078  2 !
;  994          1079  2 ! INPUTS:
;  995          1080  2 !
;  996          1081  2 !       none
;  997          1082  2 !
;  998          1083  2 ! IMPLICIT INPUTS:
;  999          1084  2 !
; 1000          1085  2 !       copy [copy$a_out_filb] describes the file to be closed                                  ; R
; 1001          1086  2 !
; 1002          1087  2 ! OUTPUTS:
; 1003          1088  2 !
; 1004          1089  2 !       none
; 1005          1090  2 !
; 1006          1091  2 ! IMPLICIT OUTPUTS:
; 1007          1092  2 !
; 1008          1093  2 !       none
; 1009          1094  2 !
; 1010          1095  2 ! ROUTINE VALUE:
; 1011          1096  2 !
; 1012          1097  2 !       Success or worst error encountered.
; 1013          1098  2 !
; 1014          1099  2 ! SIDE EFFECTS:
; 1015          1100  2 !
; 1016          1101  2 !       none
; 1017          1102  2 !--
; 1018          1103  2
; 1019          1104  2 $dbgtrc_prefix ('copy_output_close> ');
; 1020          1105  2
; 1021          1106  2 LOCAL
; 1022          1107  2     status
; 1023          1108  2     ;
; 1024          1109  2
; 1025          1110  2 BIND
; 1026          1111  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
; 1027          1112  2     out_filb = copy [copy$a_out_filb]    : $ref_bblock  ! Filb for the output
; 1028          1113  2     ;
; 1029          1114  2
; 1030          1115  2 $trace_print_lit ('entry');
; 1031          1116  2 $block_check (2, .copy, copy, 514);
; 1032          1117  2 $block_check (2, .out_filb, filb, 515);
; 1033          1118  2
; 1034          1119  2 ! Call the file-specific close routine
; 1035          1120  2 !
; 1036          1121  2 RETURN (.out_filb [filb$a_close_routine]) (.out_filb);
; 1037          1122  2
; 1038          1123  1 END;
```

```
                                    003C 00000      .ENTRY  COPY_OUTPUT_CLOSE, Save R2,R3,R4,R5      ; 1071
                          55 00000000G  EF   9E 00002  MOVAB   EXCH$UTIL_BLOCK_CHECK, R5
                53 00000000G  EF        04   C1 00009  ADDL3   #4, EXCH$A_GBL, R3                  ; 1111
                54            63 00000044   8F   C1 00011  ADDL3   #68, (R3), R4                    ; 1112
                              52 004C00FF   8F   D0 00019  MOVL    #4980991, R2                      ; 1116
                              51     0202   8F   3C 00020  MOVZWL  #514, R1                         ;
                              50            63   D0 00025  MOVL    (R3), R0                        ;
                                            65   16 00028  JSB     EXCH$UTIL_BLOCK_CHECK           ;
                              53            64   D0 0002A  MOVL    (R4), R3                        ; 1117
                              52 035B00FA   8F   D0 0002D  MOVL    #56295674, R2                   ;
                              51     0203   8F   3C 00034  MOVZWL  #515, R1                         ;
                              50            53   D0 00039  MOVL    R3, R0                          ;
                                            65   16 0003C  JSB     EXCH$UTIL_BLOCK_CHECK           ;
                                            53   DD 0003E  PUSHL   R3                              ; 1121
                        4A    B3            01   FB 00040  CALLS   #1, @74(R3)                     ;
                                            04   00044  RET                                       ; 1123

; Routine Size:  69 bytes,    Routine Base:  EXCH$COPY_CODE + 074C
```

```
;1040     1124  1 GLOBAL ROUTINE copy_output_create =     %SBTTL 'copy_output_create'
;1041     1125  2 BEGIN
;1042     1126  2 !++
;1043     1127  2 !
;1044     1128  2 ! FUNCTIONAL DESCRIPTION:
;1045     1129  2 !
;1046     1130  2 !       Open the output file
;1047     1131  2 !
;1048     1132  2 ! INPUTS:
;1049     1133  2 !
;1050     1134  2 !       none
;1051     1135  2 !
;1052     1136  2 ! IMPLICIT INPUTS:
;1053     1137  2 !
;1054     1138  2 !       copy [copy$a_out_filb] describes the file to be opened
;1055     1139  2 !
;1056     1140  2 ! OUTPUTS:
;1057     1141  2 !
;1058     1142  2 !       none
;1059     1143  2 !
;1060     1144  2 ! IMPLICIT OUTPUTS:
;1061     1145  2 !
;1062     1146  2 !       none
;1063     1147  2 !
;1064     1148  2 ! ROUTINE VALUE:
;1065     1149  2 !
;1066     1150  2 !       Success or worst error encountered.
;1067     1151  2 !
;1068     1152  2 ! SIDE EFFECTS:
;1069     1153  2 !
;1070     1154  2 !       none
;1071     1155  2 !--
;1072     1156  2
;1073     1157  2 $dbgtrc_prefix ('copy_output_create> ');
;1074     1158  2
;1075     1159  2 LOCAL
;1076     1160  2     status
;1077     1161  2     ;
;1078     1162  2
;1079     1163  2 BIND
;1080     1164  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;1081     1165  2     out_filb = copy [copy$a_out_filb]    : $ref_bblock, ! Filb for the output
;1082     1166  2     out_namb = copy [copy$a_out_namb]    : $ref_bblock  ! Namb for the output
;1083     1167  2     ;
;1084     1168  2
;1085     1169  2
;1086     1170  2 $block_check (2, .copy, copy, 516);
;1087     1171  2 $block_check (2, .out_filb, filb, 517);
;1088     1172  2 $block_check (2, .out_namb, namb, 518);
```

```
; 1090      1173  2 ! Perform the volume-specific create operation
; 1091      1174  2 !
; 1092      1175  2 CASE .out_namb [namb$b_vol_format] FROM volb$k_vfmt_lobound TO volb$k_vfmt_hibound OF
; 1093      1176  2 SET
; 1094      1177  2     [volb$k_vfmt_dos11]        : status = exch$dos11_create_file ();
; 1095      1178  2     [volb$k_vfmt_files11]      : status = exch$fil11_create_file ();
; 1096      1179  2     [volb$k_vfmt_rt11]         : status = exch$rt11_create_file ();
; 1097      1180  2 !\  [volb$k_vfmt_rtmt]         : $exch_signal_stop (exch$_notimplement);
; 1098      1181  2     [OUTRANGE,INRANGE]         : $logic_check (0, (false), 235);
; 1099      1182  2 TES;
; 1100      1183  2
; 1101      1184  2 RETURN .status;
; 1102      1185  1 END;
```

```
                                        007C 00000         .ENTRY  COPY_OUTPUT_CREATE, Save R2,R3,R4,R5,R6   ; 1124
                    56 00000000G  EF     9E 00002         MOVAB   EXCH$UTIL_BLOCK_CHECK, R6                 ;
          53 00000000G  EF        04     C1 00009         ADDL3   #4, EXCH$A_GBL, R3                        ; 1164
          55            63 00000044  8F  C1 00011         ADDL3   #68, (R3), R5                             ; 1165
          54            63 00000048  8F  C1 00019         ADDL3   #72, (R3), R4                             ; 1166
                        52 004C00FF  8F  D0 00021         MOVL    #4980991, R2                              ; 1170
                        51     0204  8F  3C 00028         MOVZWL  #516, R1                                  ;
                        50           63  D0 0002D         MOVL    (R3), R0                                  ;
                                     66  16 00030         JSB     EXCH$UTIL_BLOCK_CHECK                     ;
                        52 035B00FA  8F  D0 00032         MOVL    #56295674, R2                             ; 1171
                        51     0205  8F  3C 00039         MOVZWL  #517, R1                                  ;
                        50           65  D0 0003E         MOVL    (R5), R0                                  ;
                                     66  16 00041         JSB     EXCH$UTIL_BLOCK_CHECK                     ;
                        53           64  D0 00043         MOVL    (R4), R3                                  ; 1172
                        52 010A00F7  8F  D0 00046         MOVL    #17432823, R2                             ;
                        51     0206  8F  3C 0004D         MOVZWL  #518, R1                                  ;
                        50           53  D0 00052         MOVL    R3, R0                                    ;
                                     66  16 00055         JSB     EXCH$UTIL_BLOCK_CHECK                     ;
          03            00       7A  A3  8F 00057         CASEB   122(R3), #0, #3                           ; 1175
   002C         0024         001C    0008    0005C 1$:    .WORD   2$-1$,-                                   ;
                                                                  3$-1$,-                                   ;
                                                                  4$-1$,-                                   ;
                                                                  5$-1$                                     ;
                        7E       EB  8F  9A 00064 2$:     MOVZBL  #235, -(SP)                               ; 1181
                                     01  DD 00068         PUSHL   #1                                        ;
                          00000000G  8F  DD 0006A         PUSHL   #EXCH$_BADLOGIC                           ;
             00000000G  00           03  FB 00070         CALLS   #3, LIB$STOP                              ;
                                         04 00077         RET                                               ;
             00000000G  EF           00  FB 00078 3$:     CALLS   #0, EXCH$DOS11_CREATE_FILE                ; 1177
                                         04 0007F         RET                                               ;
             00000000G  EF           00  FB 00080 4$:     CALLS   #0, EXCH$FIL11_CREATE_FILE                ; 1178
                                         04 00087         RET                                               ;
             00000000G  EF           00  FB 00088 5$:     CALLS   #0, EXCH$RT11_CREATE_FILE                 ; 1179
                                         04 0008F         RET                                               ; 1185
```

; Routine Size: 144 bytes, Routine Base: EXCH$COPY_CODE + 0791

```
;  1104          1186  1 GLOBAL ROUTINE copy_output_delete : NOVALUE =   %SBTTL 'copy_output_delete'
;  1105          1187  2 BEGIN
;  1106          1188  2 !++
;  1107          1189  2 !
;  1108          1190  2 ! FUNCTIONAL DESCRIPTION:
;  1109          1191  2 !
;  1110          1192  2 !       Delete the output file
;  1111          1193  2 !
;  1112          1194  2 ! INPUTS:
;  1113          1195  2 !
;  1114          1196  2 !       none
;  1115          1197  2 !
;  1116          1198  2 ! IMPLICIT INPUTS:
;  1117          1199  2 !
;  1118          1200  2 !       copy [copy$a_out_filb] describes the file to be deleted
;  1119          1201  2 !
;  1120          1202  2 ! OUTPUTS:
;  1121          1203  2 !
;  1122          1204  2 !       none
;  1123          1205  2 !
;  1124          1206  2 ! IMPLICIT OUTPUTS:
;  1125          1207  2 !                                                                                    ;
;  1126          1208  2 !       none
;  1127          1209  2 !
;  1128          1210  2 ! ROUTINE VALUE:
;  1129          1211  2 !
;  1130          1212  2 !       Success or worst error encountered.
;  1131          1213  2 !
;  1132          1214  2 ! SIDE EFFECTS:
;  1133          1215  2 !
;  1134          1216  2 !       none
;  1135          1217  2 !--
;  1136          1218  2
;  1137          1219  2 $dbgtrc_prefix ('copy_output_delete> ');
;  1138          1220  2
;  1139          1221  2 LOCAL
;  1140          1222  2     status
;  1141          1223  2     ;
;  1142          1224  2
;  1143          1225  2 BIND
;  1144          1226  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;  1145          1227  2     out_filb = copy [copy$a_out_filb]    : $ref_bblock  ! Filb for the output
;  1146          1228  2     ;
;  1147          1229  2
;  1148          1230  2
;  1149          1231  2 $block_check (2, .copy, copy, 558);
;  1150          1232  2 $block_check (2, .out_filb, filb, 559);
;  1151          1233  2
;  1152          1234  2 ! Call the file-specific delete routine
;  1153          1235  2 !
;  1154          1236  2 IF .out_filb [filb$a_delete_routine] NEQ 0
;  1155          1237  2 THEN
;  1156          1238  2     (.out_filb [filb$a_delete_routine]) (.out_filb);
;  1157          1239  2
;  1158          1240  2 RETURN;
;  1159          1241  1 END;
```

```
                                    003C 00000          .ENTRY  COPY_OUTPUT_DELETE, Save R2,R3,R4,R5    ; 1186
                55 00000000G    EF  9E 00002            MOVAB   EXCH$UTIL_BLOCK_CHECK, R5
     53 00000000G   EF          04  C1 00009            ADDL3   #4, EXCH$A_GBL, R3                      ; 1226
     54             63 00000044 8F  C1 00011            ADDL3   #68, (R3), R4                           ; 1227
                    52 004C00FF 8F  D0 00019            MOVL    #4980991, R2                            ; 1231
                    51     022E 8F  3C 00020            MOVZWL  #558, R1
                    50          63  D0 00025            MOVL    (R3), R0
                                65  16 00028            JSB     EXCH$UTIL_BLOCK_CHECK
                    53          64  D0 0002A            MOVL    (R4), R3                                ; 1232
                    52 035B00FA 8F  D0 0002D            MOVL    #56295674, R2
                    51     022F 8F  3C 00034            MOVZWL  #559, R1
                    50          53  D0 00039            MOVL    R3, R0
                                65  16 0003C            JSB     EXCH$UTIL_BLOCK_CHECK
                           4E   A3  D5 0003E            TSTL    78(R3)                                  ; 1236
                                06  13 00041            BEQL    1$
                                53  DD 00043            PUSHL   R3                                      ; 1238
                4E  B3              01  FB 00045        CALLS   #1, @78(R3)
                                    04 00049 1$:        RET                                             ; 1241

; Routine Size:  74 bytes,    Routine Base:  EXCH$COPY_CODE + 0821
```

```
;1161     1242  1 GLOBAL ROUTINE copy_parse_cleanup : NOVALUE =   %SBTTL 'copy_parse_cleanup'
;1162     1243  2 BEGIN
;1163     1244  2 !++
;1164     1245  2 !
;1165     1246  2 ! FUNCTIONAL DESCRIPTION:
;1166     1247  2 !
;1167     1248  2 !       Clean up after a successful parse.  Release the namb and other structures.
;1168     1249  2 !
;1169     1250  2 ! INPUTS:
;1170     1251  2 !
;1171     1252  2 !       none
;1172     1253  2 !
;1173     1254  2 ! IMPLICIT INPUTS:
;1174     1255  2 !
;1175     1256  2 !       copy$a_inp_namb field in copy work area
;1176     1257  2 !
;1177     1258  2 ! OUTPUTS:
;1178     1259  2 !
;1179     1260  2 !       none
;1180     1261  2 !
;1181     1262  2 ! IMPLICIT OUTPUTS:
;1182     1263  2 !
;1183     1264  2 !       none
;1184     1265  2 !
;1185     1266  2 ! ROUTINE VALUE:
;1186     1267  2 !
;1187     1268  2 !       none
;1188     1269  2 !
;1189     1270  2 ! SIDE EFFECTS:
;1190     1271  2 !
;1191     1272  2 !       none
;1192     1273  2 !--
;1193     1274  2
;1194     1275  2 $dbgtrc_prefix ('copy_parse_cleanup> ');
;1195     1276  2
;1196     1277  2
;1197     1278  2 BIND
;1198     1279  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;1199     1280  2     inp_filb = copy [copy$a_inp_fi[b]    : $ref_bblock, ! Filb for the input
;1200     1281  2     inp_namb = copy [copy$a_inp_namb]    : $ref_bblock, ! Namb for the input
;1201     1282  2     ctx = inp_filb [filb$a_context]      : $ref_bblock  ! Volume specific context
;1202     1283  2     ;
```

```
;  1204          1284  2 ! If a context block is present release it
;  1205          1285  2 !
;  1206          1286  2 IF .ctx NEQ 0
;  1207          1287  2 THEN
;  1208          1288  2     CASE .inp_namb [namb$b_vol_format] FROM volb$k_vfmt_lobound TO volb$k_vfmt_hibound OF
;  1209          1289  2     SET
;  1210          1290  2         [volb$k_vfmt_dos11] :           exch$util_dos11ctx_release (.ctx);
;  1211          1291  2         [volb$k_vfmt_files11] :         exch$util_rmsb_release (.ctx);
;  1212          1292  2         [volb$k_vfmt_rt11] :            exch$util_rt11ctx_release (.ctx);
;  1213          1293  2         [OUTRANGE,INRANGE] :            $logic_check (0, 7false), 236);
;  1214          1294  2     TES;
;  1215          1295  2
;  1216          1296  2 ! Release the input namb
;  1217          1297  2 !
;  1218          1298  2 exch$util_namb_release (.inp_namb);
;  1219          1299  2
;  1220          1300  2 ! Release the input filb
;  1221          1301  2 !
;  1222          1302  2 exch$util_filb_release (.inp_filb);
;  1223          1303  2
;  1224          1304  2 RETURN;
;  1225          1305  1 END;


                                    000C 00000          .ENTRY  COPY_PARSE_CLEANUP, Save R2,R3                  ; 1242
    50 00000000G   EF               04   C1 00002       ADDL3   #4, EXCH$A_GBL, R0                              ; 1279
    53             60               3C   C1 0000A       ADDL3   #60, (R0), R3                                   ; 1280
    52             60 00000040      8F   C1 0000E       ADDL3   #64, (R0), R2                                   ; 1281
    51             63               20   C1 00016       ADDL3   #32, (R3), R1                                   ; 1282
                                    61   D5 0001A       TSTL    (R1)                                            ; 1286
                                    44   13 0001C       BEQL    6$                                              ;
                   50               62   D0 0001E       MOVL    (R2), R0                                        ; 1288
          03       00        7A     A0   8F 00021       CASEB   122(R0), #0, #3
0033      0028     001D        0008     00026 1$:       .WORD   2$-1$,-
                                                                3$-1$,-
                                                                4$-1$,-
                                                                5$-1$
                   7E        EC     8F   9A 0002E 2$:     MOVZBL  #236, -(SP)                                     ; 1293
                                    01   DD 00032       PUSHL   #1
                        00000000G   8F   DD 00034       PUSHL   #EXCH$_BADLOGIC
              00000000G  00         03   FB 0003A       CALLS   #3, LIB$STOP
                                    1F   11 00041       BRB     6$
                                    61   DD 00043 3$:    PUSHL   (R1)                                            ; 1290
              00000000G  EF         01   FB 00045       CALLS   #1, EXCH$UTIL_DOS11CTX_RELEASE
                                    14   11 0004C       BRB     6$
                                    61   DD 0004E 4$:    PUSHL   (R1)                                            ; 1291
              00000000G  EF         01   FB 00050       CALLS   #1, EXCH$UTIL_RMSB_RELEASE
                                    09   11 00057       BRB     6$
                                    61   DD 00059 5$:    PUSHL   (R1)                                            ; 1292
              00000000G  EF         01   FB 0005B       CALLS   #1, EXCH$UTIL_RT11CTX_RELEASE
                                    62   DD 00062 6$:    PUSHL   (R2)                                            ; 1298
              00000000G  EF         01   FB 00064       CALLS   #1, EXCH$UTIL_NAMB_RELEASE
                                    63   DD 0006B       PUSHL   (R3)                                            ; 1302
              00000000G  EF         01   FB 0006D       CALLS   #1, EXCH$UTIL_FILB_RELEASE
                                                                                                                  ;
```

```
                                        04 00074        RET                                     ; 1305

; Routine Size:  117 bytes,    Routine Base:  EXCH$COPY_CODE + 086B
```

```
;  1227          1306  1 GLOBAL ROUTINE copy_parse_next_input =  %SBTTL 'copy_parse_next_input'
;  1228          1307  2 BEGIN
;  1229          1308  2 !++
;  1230          1309  2 !
;  1231          1310  2 ! FUNCTIONAL DESCRIPTION:
;  1232          1311  2 !
;  1233          1312  2 !       Fetch the next input parameter.  Parse the filename and initialize the input file work region.
;  1234          1313  2 !
;  1235          1314  2 ! INPUTS:
;  1236          1315  2 !
;  1237          1316  2 !       none
;  1238          1317  2 !
;  1239          1318  2 ! IMPLICIT INPUTS:
;  1240          1319  2 !
;  1241          1320  2 !       Command qualifier value as returned from CLI$xxx routines.  COPY command work area.
;  1242          1321  2 !
;  1243          1322  2 ! OUTPUTS:
;  1244          1323  2 !
;  1245          1324  2 !       none
;  1246          1325  2 !
;  1247          1326  2 ! IMPLICIT OUTPUTS:
;  1248          1327  2 !
;  1249          1328  2 !       Command work area receives parse info
;  1250          1329  2 !
;  1251          1330  2 ! ROUTINE VALUE:
;  1252          1331  2 !
;  1253          1332  2 !       Success or worst error encountered.
;  1254          1333  2 !
;  1255          1334  2 ! SIDE EFFECTS:
;  1256          1335  2 !
;  1257          1336  2 !       none
;  1258          1337  2 !--
;  1259          1338  2
;  1260          1339  2 $dbgtrc_prefix ('copy_parse_next_input> ');
;  1261          1340  2
;  1262          1341  2 LOCAL
;  1263          1342  2     status
;  1264          1343  2     ;
;  1265          1344  2
;  1266          1345  2 BIND
;  1267          1346  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;  1268          1347  2     inp_filb = copy [copy$a_inp_filb]    : $ref_bblock  ! Filb for the input
;  1269          1348  2     inp_namb = copy [copy$a_inp_namb]    : $ref_bblock  ! Namb for the input
;  1270          1349  2     ;
;  1271          1350  2
;  1272          1351  2
;  1273          1352  2 $block_check (2, .copy, copy, 412);
;  1274          1353  2
;  1275          1354  2 ! Fetch the filename and a pointer to a namb
;  1276          1355  2 !
;  1277          1356  3 IF NOT (status = exch$cmd_parse_filespec (%ASCID 'INPUT', copy [copy$q_input_sticky_name], 0,
;  1278          1357  3                                          copy [copy$q_input_filename], inp_namb))
;  1279          1358  2 THEN
;  1280          1359  3     BEGIN
;  1281          1360  3     IF .status NEQ 0
;  1282          1361  3     THEN
;  1283          1362  3         $exch_signal (exch$_parseerr, 1, copy [copy$q_input_filename], .status);
```

```
;  1284     1363  3     RETURN .status;                                 ! No more files to copy, or error in parse
;  1285     1364  2     END;
;  1286     1365  2 $debug_print_fao ('input parameter is "!AS"', copy [copy$q_input_filename]);
;  1287     1366  2
;  1288     1367  2 ! If if the input potentially describes multiple files, then set the bit
;  1289     1368  2 !
;  1290     1369  2 IF .inp_namb [namb$v_more_files] OR .inp_namb [namb$v_wildcard]
;  1291     1370  2 THEN
;  1292     1371  2     copy [copy$v_multiple_files] = true;
;  1293     1372  2
;  1294     1373  2 ! If a foreign device is not mounted, then perform an implied mount
;  1295     1374  2 !
;  1296     1375  3 IF   (.inp_namb [namb$a_assoc_volb] EQL 0)                                                    99
;  1297     1376  2   AND                                                                                       D3
;  1298     1377  4      (BEGIN
;  1299     1378  4       BIND
;  1300     1379  4         dev = inp_namb [namb$l_fabdev] : $bblock;
;  1301     1380  5       .dev [dev$v_for] OR (NOT (.dev [dev$v_mnt]))
;  1302     1381  3       END)
;  1303     1382  2   AND
;  1304     1383  4      ((.inp_namb [namb$b_devclass] EQL dc$_disk)
;  1305     1384  3       OR
;  1306     1385  3       (.inp_namb [namb$b_devclass] EQL dc$_tape))
;  1307     1386  2 THEN
;  1308     1387  3     BEGIN
;  1309     1388  3
;  1310     1389  4     IF NOT (status = exch$moun_implied_mount (.inp_namb))
;  1311     1390  3     THEN
;  1312     1391  4         BEGIN
;  1313     1392  4         exch$util_namb_release (.inp_namb);
;  1314     1393  4         RETURN .status;
;  1315     1394  3         END;
;  1316     1395  3
;  1317     1396  3     ! We should now have a valid volb, but we still should check
;  1318     1397  3     !
;  1319     1398  3     $block_check (2, .inp_namb [namb$a_assoc_volb], volb, 413);
;  1320     1399  3
;  1321     1400  2     END;
;  1322     1401  2
;  1323     1402  2 ! Now copy the full name to the default name for proper stickiness
;  1324     1403  2 !
;  1325     1404  2 str$copy_dx (copy [copy$q_input_sticky_name], inp_namb [namb$q_fullname]);
;  1326     1405  2
;  1327     1406  2 ! Allocate a file block to contain the input information
;  1328     1407  2 !
;  1329     1408  2 inp_filb = exch$util_filb_allocate ();
;  1330     1409  2 exch$copy_namb_to_filb (.inp_namb, .inp_filb);  ! Copy from the namb to the filb
;  1331     1410  2
;  1332     1411  2 ! Refetch the positional REWIND qualifier.  DOS-11 clears this bit after rewinding the tape, therefore we mu
;  1333     1412  2 ! set it once for each parameter
;  1334     1413  2 !
;  1335     1414  2 copy [copy$v_q_rewind] = cli$present (%ASCID 'REWIND');
;  1336     1415  2
;  1337     1416  2 ! We allow several "output" qualifiers to be on the input filespec.  We interpret "output" quals on the outp
;  1338     1417  2 ! spec as applying to all output files, whereas "output" quals on the input spec apply only to files created
;  1339     1418  2 ! this input spec.
;  1340     1419  2 !
```

```
;  1341          1420  2 IF NOT .copy [copy$v_type_command]
;  1342          1421  2 THEN
;  1343          1422  3     BEGIN
;  1344          1423  3     inp_filb [filb$v_q_best_try_contiguous]     = cli$present (ascid_best_try);
;  1345          1424  3     inp_filb [filb$v_q_contiguous]              = cli$present (ascid_contiguous);
;  1346          1425  3     inp_filb [filb$v_q_truncate]                = cli$present (ascid_truncate);
;  1347          1426  3
;  1348          1427  3     ! Get integer-valued "output" qualifiers, routine signals on errors.  If the qualifier is not present, 0
;  1349          1428  3     ! in the second parameter and -1 (success) is returned as the routine value.
;  1350          1429  3     !
;  1351          1430  4     IF NOT (status = exch$cmd_cli_get_integer (ascid_allocation, inp_filb [filb$l_q_allocation]))
;  1352          1431  3     THEN
;  1353          1432  4         BEGIN
;  1354          1433  4         copy_parse_cleanup ();
;  1355          1434  4         RETURN .status;
;  1356          1435  3         END;
;  1357          1436  4     IF NOT (status = exch$cmd_cli_get_integer (ascid_extension, inp_filb [filb$l_q_extension]))
;  1358          1437  3     THEN
;  1359          1438  4         BEGIN
;  1360          1439  4         copy_parse_cleanup ();
;  1361          1440  4         RETURN .status;
;  1362          1441  3         END;
;  1363          1442  2     END;
;  1364          1443  2
;  1365          1444  2 RETURN .status;
;  1366          1445  1 END;


                                                        .PSECT  EXCH$COPY_PLIT,NOWRT,2

                00  00  00  54  55  50  4E  49  00100 P.ABF:  .ASCII  \INPUT\<0><0><0>                                    ;
                                      010E0005  00108 P.ABE:  .LONG   17694725                                          ;
                                      00000000' 0010C         .ADDRESS P.ABF                                            ;
                00  00  44  4E  49  57  45  52  00110 P.ABH:  .ASCII  \REWIND\<0><0>                                    ;
                                      010E0006  00118 P.ABG:  .LONG   17694726                                          ;
                                      00000000' 0011C         .ADDRESS P.ABH                                            ;


                                                        .PSECT  EXCH$COPY_CODE,NOWRT,2

                                          01FC 00000            .ENTRY  COPY_PARSE_NEXT_INPUT, Save R2,R3,R4,R5,R6,-    ; 1306
                                                                        R7,R8                                           ;
                    58 00000000G    EF  9E 00002            MOVAB   EXCH$CMD_CLI_GET_INTEGER, R8                    ;
                    57 00000000G    EF  9E 00009            MOVAB   EXCH$UTIL_BLOCK_CHECK, R7                       ;
                    56 00000000G    00  9E 00010            MOVAB   CLI$PRESENT, R6                                 ;
    50 00000000G    EF              04  C1 00017            ADDL3   #4, EXCH$A_GBL, R0                              ; 1346
                    54              60  D0 0001F            MOVL    (R0), R4                                        ; 1347
                    52  004C00FF     8F  D0 00022            MOVL    #4980991, R2                                    ; 1352
                    51       019C   8F  3C 00029            MOVZWL  #412, R1                                        ;
                    50              54  D0 0002E            MOVL    R4, R0                                          ;
                                    67  16 00031            JSB     EXCH$UTIL_BLOCK_CHECK                           ;
                             40     A4  9F 00033            PUSHAB  64(R4)                                          ; 1357
                             0C     A4  9F 00036            PUSHAB  12(R4)                                          ;
                                    7E  D4 00039            CLRL    -(SP)                                           ;
                             1C     A4  9F 0003B            PUSHAB  28(R4)                                          ; 1356
```

```
                                   0000'  CF  9F 0003E       PUSHAB  P.ABE                                  :
                  00000000G  EF            05  FB 00042       CALLS   #5, EXCH$CMD_PARSE_FILESPEC            : 1357
                             55            50  D0 00049       MOVL    R0, STATUS                             :
                             18            55  E8 0004C       BLBS    STATUS, 1$                             :
                                           59  13 0004F       BEQL    6$                                     : 1360
                                           55  DD 00051       PUSHL   STATUS                                 : 1362
                                     0C    A4  9F 00053       PUSHAB  12(R4)                                 :
                                           01  DD 00056       PUSHL   #1                                     :
                             00000000G     8F  DD 00058       PUSHL   #EXCH$_PARSEERR                        :
                  00000000G  00            04  FB 0005E       CALLS   #4, LIB$SIGNAL                         :
                                           43  11 00065       BRB     6$                                     : 1363
                             53      40    A4  D0 00067 1$:   MOVL    64(R4), R3                             : 1369
                                     6D    A3  95 0006B       TSTB    109(R3)                                :
                                           04  19 0006E       BLSS    2$                                     :
                             04      6C    A3  E9 00070       BLBC    108(R3), 3$                            :
                        34   A4            01  88 00074 2$:   BISB2   #1, 52(R4)                             : 1371
                                     74    A3  D5 00078 3$:   TSTL    116(R3)                                : 1375
                                           42  12 0007B       BNEQ    8$                                     :
                             05      6B    A3  E8 0007D       BLBS    107(R3), 4$                            : 1380
                39      6A   A3            03  E0 00081       BBS     #3, 106(R3), 8$                        :
                             01      78    A3  91 00086 4$:   CMPB    120(R3), #1                            : 1383
                                           06  13 0008A       BEQL    5$                                     :
                             02      78    A3  91 0008C       CMPB    120(R3), #2                            : 1385
                                           2D  12 00090       BNEQ    8$                                     :
                                           53  DD 00092 5$:   PUSHL   R3                                     : 1389
                  00000000G  EF            01  FB 00094       CALLS   #1, EXCH$MOUN_IMPLIED_MOUNT            :
                             55            50  D0 0009B       MOVL    R0, STATUS                             :
                             0C            55  E8 0009E       BLBS    STATUS, 7$                             :
                                           53  DD 000A1       PUSHL   R3                                     : 1392
                  00000000G  EF            01  FB 000A3       CALLS   #1, EXCH$UTIL_NAMB_RELEASE             :
                                         0095  31 000AA 6$:   BRW     10$                                    : 1393
                             52 041B00F3   8F  D0 000AD 7$:   MOVL    #68878579, R2                          : 1398
                             51      019D  8F  3C 000B4       MOVZWL  #413, R1                               :
                             50      74    A3  D0 000B9       MOVL    116(R3), R0                            :
                                           67  16 000BD       JSB     EXCH$UTIL_BLOCK_CHECK                  :
                                     18    A3  9F 000BF 8$:   PUSHAB  24(R3)                                 : 1404
                                     1C    A4  9F 000C2       PUSHAB  28(R4)                                 :
                  00000000G  00            02  FB 000C5       CALLS   #2, STR$COPY_DX                        :
                  00000000G  EF            00  FB 000CC       CALLS   #0, EXCH$UTIL_FILB_ALLOCATE            : 1408
                        3C   A4            50  D0 000D3       MOVL    R0, 60(R4)                             :
                             52      3C    A4  D0 000D7       MOVL    60(R4), R2                             : 1409
                                           52  DD 000DB       PUSHL   R2                                     :
                                           53  DD 000DD       PUSHL   R3                                     :
                       FC6F  CF            02  FB 000DF       CALLS   #2, EXCH$COPY_NAMB_TO_FILB             :
                                   0000'  CF  9F 000E4       PUSHAB  P.ABG                                  : 1414
                             66            01  FB 000E8       CALLS   #1, CLI$PRESENT                        :
 31   A4          01         00            50  F0 000EB       INSV    R0, #0, #1, 49(R4)                     :
                  4C         34    A4      01  E0 000F1       BBS     #1, 52(R4), 10$                        : 1420
                                   0000'  CF  9F 000F6       PUSHAB  ASCID_BEST_TRY                         : 1423
                             66            01  FB 000FA       CALLS   #1, CLI$PRESENT                        :
 2C   A2          01         00            50  F0 000FD       INSV    R0, #0, #1, 44(R2)                     :
                                   0000'  CF  9F 00103       PUSHAB  ASCID_CONTIGUOUS                       : 1424
                             66            01  FB 00107       CALLS   #1, CLI$PRESENT                        :
 2C   A2          01         01            50  F0 0010A       INSV    R0, #1, #1, 44(R2)                     :
                                   0000'  CF  9F 00110       PUSHAB  ASCID_TRUNCATE                         : 1425
                             66            01  FB 00114       CALLS   #1, CLI$PRESENT                        :
 2C   A2          01         02            50  F0 00117       INSV    R0, #2, #1, 44(R2)                     :
```

```
                        2D   A2   9F 0011D         PUSHAB  45(R2)                                  ; 1430
                     0000'   CF   9F 00120         PUSHAB  ASCID_ALLOCATION                        ;
             68              02   FB 00124         CALLS   #2, EXCH$CMD_CLI_GET_INTEGER            ;
             55              50   D0 00127         MOVL    R0, STATUS                              ;
             10              55   E9 0012A         BLBC    STATUS, 9$                              ;
                        31   A2   9F 0012D         PUSHAB  49(R2)                                  ; 1436
                     0000'   CF   9F 00130         PUSHAB  ASCID_EXTENSION                         ;
             68              02   FB 00134         CALLS   #2, EXCH$CMD_CLI_GET_INTEGER            ;
             55              50   D0 00137         MOVL    R0, STATUS                              ;
             05              55   E8 0013A         BLBS    STATUS, 10$                             ;
      FE49   CF              00   FB 0013D 9$:     CALLS   #0, COPY_PARSE_CLEANUP                  ; 1439
             50              55   D0 00142 10$:    MOVL    STATUS, R0                              ; 1444
                                  04 00145         RET                                             ; 1445

; Routine Size:  326 bytes,    Routine Base:  EXCH$COPY_CODE + 08E0
```

```
;1368     1446  1 GLOBAL ROUTINE exch$copy_type = %SBTTL 'exch$copy_type'
;1369     1447  2 BEGIN
;1370     1448  2 !++
;1371     1449  2 !
;1372     1450  2 ! FUNCTIONAL DESCRIPTION:
;1373     1451  2 !
;1374     1452  2 !       Action routine for the type verb, parses and performs main control functions for type
;1375     1453  2 !
;1376     1454  2 ! INPUTS:
;1377     1455  2 !
;1378     1456  2 !       none
;1379     1457  2 !
;1380     1458  2 ! IMPLICIT INPUTS:
;1381     1459  2 !
;1382     1460  2 !       Command parameters and qualifiers as returned from CLI$ routines.  Global environment ref'd by exch$
;1383     1461  2 !
;1384     1462  2 ! OUTPUTS:
;1385     1463  2 !
;1386     1464  2 !       none
;1387     1465  2 !
;1388     1466  2 ! IMPLICIT OUTPUTS:
;1389     1467  2 !
;1390     1468  2 !       none
;1391     1469  2 !
;1392     1470  2 ! ROUTINE VALUE:
;1393     1471  2 !
;1394     1472  2 !       Success or worst error encountered.
;1395     1473  2 !
;1396     1474  2 ! SIDE EFFECTS:
;1397     1475  2 !
;1398     1476  2 !       Files may be created.
;1399     1477  2 !--
;1400     1478  2
;1401     1479  2 $dbgtrc_prefix ('copy_type> ');
;1402     1480  2
;1403     1481  2 LOCAL
;1404     1482  2     copy : $ref_bblock,                         ! Pointer to work area
;1405     1483  2     inp_filb : $ref_bblock,
;1406     1484  2     status
;1407     1485  2     ;
;1408     1486  2
;1409     1487  2
;1410     1488  2 ! Allocate and/or initialize the work area
;1411     1489  2 !
;1412     1490  2 copy_init ();
;1413     1491  2
;1414     1492  2 ! Get pointers that we need.  Have to wait until work area allocated by init call
;1415     1493  2 !
;1416     1494  2 copy = .exch$a_gbl [excg$a_copy_work];          ! Pointer to work area
;1417     1495  2 copy [copy$v_type_command] = true;
;1418     1496  2
;1419     1497  2 ! Init the name used for the input file default
;1420     1498  2 !
;1421     1499  2 str$copy_dx (copy [copy$q_input_sticky_name], %ASCID '.LIS');
```

```
! Loop through the list of input file specifications.  Errors will be signalled.
!
status = rms$_fnf;
WHILE copy_parse_next_input ()                          ! Get next input file parameter
DO
    BEGIN

    inp_filb = .copy [copy$a_inp_filb];                 ! The input filb

    WHILE copy_input_open ()                            ! Open the input file, loop for wildcards
    DO
        BEGIN
        REGISTER
            rec_count;

        ! Print the file name if file list or wildcards
        !
        IF .copy [copy$v_multiple_files]
        THEN
            BEGIN
            REGISTER
                fao_desc = 0 : $ref_bblock;
            copy_type_print (0, 0);
            fao_desc = exch$util_fao_buffer (%ASCID 'File "!AF"',
                                .inp_filb [filb$l_result_name_len], inp_filb [filb$t_result_name]);
            copy_type_print (.fao_desc [dsc$w_length], .fao_desc [dsc$a_pointer]);
            copy_type_print (0, 0);
            END;

        ! While we can get records print them on sys$output
        !
        rec_count = 0;
        WHILE (.inp_filb [filb$a_get_routine]) (.inp_filb)
        DO
            BEGIN
            rec_count = .rec_count + 1;
            copy_type_print (.inp_filb [filb$l_record_len], .inp_filb [filb$a_record]);
            IF .exch$a_gbl [excg$v_control_c] THEN EXITLOOP;     ! If we have seen control/c, exit the loop
            END;

        IF .exch$a_gbl [excg$v_control_c]           ! If control/c, tell them about it
        THEN
            $exch_signal ($info_stat_copy (exch$_canceled))
        ELSE IF .copy [copy$v_q_log]                ! If /LOG, then display file name and count
        THEN
            $exch_signal (exch$_typed, 3, .inp_filb [filb$l_result_name_len], inp_filb [filb$t_result_name],

        copy_input_close ();
        status = ss$_normal;
        IF .exch$a_gbl [excg$v_control_c] THEN EXITLOOP;
        END;

    copy_parse_cleanup ();                              ! Release namb, clean up after parse
    IF .exch$a_gbl [excg$v_control_c] THEN EXITLOOP;
    END;

RETURN .status;
```

```
; 1480          1557  1 END;

                                                                  .PSECT  EXCH$COPY_PLIT,NOWRT,2

                                    53  49  4C  2E  00120 P.ABJ:  .ASCII  \.LIS\                                     :
                                         010E0004  00124 P.ABI:  .LONG   17694724                                  :
                                         00000000' 00128         .ADDRESS P.ABJ                                    :
        00  00  22  46  41  21  22  20  65  6C  69  46  0012C P.ABL:  .ASCII  \File "!AF"\<0><0>                   :
                                         010E000A  00138 P.ABK:  .LONG   17694730                                  :
                                         00000000' 0013C         .ADDRESS P.ABL                                    :

                                                                  .EXTRN  EXCH$_TYPED

                                                                  .PSECT  EXCH$COPY_CODE,NOWRT,2

                                              01FC 00000         .ENTRY  EXCH$COPY_TYPE, Save R2,R3,R4,R5,R6,R7,R8   : 1446
                       58 00000000G  00  9E 00002         MOVAB   LIB$SIGNAL, R8                            :
                       57     0000V  CF  9E 00009         MOVAB   COPY_TYPE_PRINT, R7                       :
                       56 00000000G  EF  9E 0000E         MOVAB   EXCH$A_GBL, R6                            :
               FA62    CF            00  FB 00015         CALLS   #0, COPY_INIT                             : 1490
                       50            66  D0 0001A         MOVL    EXCH$A_GBL, R0                            : 1494
                       54        04  A0  D0 0001D         MOVL    4(R0), COPY                               :
                 34    A4            02  88 00021         BISB2   #2, 52(COPY)                              : 1495
                              0000'  CF  9F 00025         PUSHAB  P.ABI                                     : 1499
                                 1C  A4  9F 00029         PUSHAB  28(COPY)                                  :
          00000000G    00            02  FB 0002C         CALLS   #2, STR$COPY_DX                           :
                       55 00018292   8F  D0 00033         MOVL    #98962, STATUS                            : 1502
               FE7B    CF            00  FB 0003A 1$:     CALLS   #0, COPY_PARSE_NEXT_INPUT                 : 1503
                       03            50  E8 0003F         BLBS    R0, 2$                                    :
                                   0096  31 00042         BRW     10$                                       :
                       53        3C  A4  D0 00045 2$:     MOVL    60(COPY), INP_FILB                        : 1507
               FB33    CF            00  FB 00049 3$:     CALLS   #0, COPY_INPUT_OPEN                       : 1509
                       7E            50  E9 0004E         BLBC    R0, 9$                                    :
                       24        34  A4  E9 00051         BLBC    52(COPY), 4$                              : 1517
                                     7E  7C 00055         CLRQ    -(SP)                                     : 1522
                       67            02  FB 00057         CALLS   #2, COPY_TYPE_PRINT                       :
                                 5A  A3  9F 0005A         PUSHAB  90(INP_FILB)                              : 1524
                                 3A  A3  DD 0005D         PUSHL   58(INP_FILB)                              :
                              0000'  CF  9F 00060         PUSHAB  P.ABK                                     : 1523
          00000000G    EF            03  FB 00064         CALLS   #3, EXCH$UTIL_FAO_BUFFER                  : 1524
                                 04  AC  DD 0006B         PUSHL   4(FAO_DESC)                               : 1525
                       7E            60  3C 0006E         MOVZWL  (FAO_DESC), -(SP)                         :
                       67            02  FB 00071         CALLS   #2, COPY_TYPE_PRINT                       :
                                     7E  7C 00074         CLRQ    -(SP)                                     : 1526
                       67            02  FB 00076         CALLS   #2, COPY_TYPE_PRINT                       :
                                     52  D4 00079 4$:     CLRL    REC_COUNT                                 : 1531
                                     53  DD 0007B 5$:     PUSHL   INP_FILB                                  : 1532
                 52    B3            01  FB 0007D         CALLS   #1, @82(INP_FILB)                         :
                       0D            50  E9 00081         BLBC    R0, 6$                                    :
                                     52  D6 00084         INCL    REC_COUNT                                 : 1535
                       7E        42  A3  7D 00086         MOVQ    66(INP_FILB), -(SP)                       : 1536
                       67            02  FB 0008A         CALLS   #2, COPY_TYPE_PRINT                       :
                       EA        00  B6  E9 0008D         BLBC    @EXCH$A_GBL, 5$                           : 1537
                       13        00  B6  E9 00091 6$:     BLBC    @EXCH$A_GBL, 7$                           : 1540
                       50 00000000G  8F  D0 00095         MOVL    #EXCH$_CANCELED, STATUS2                  : 1542
```

```
                50              03              00              03  F0 0009C          INSV    #3, #0, #3, STATUS2                     ;
                                                50              03  DD 000A1          PUSHL   STATUS2                         ;
                                                68              01  FB 000A3          CALLS   #1, LIB$SIGNAL                  ;
                                                                18  11 000A6          BRB     8$                              ;
                                                13      30      A4              03  E1 000A8 7$:      BBC     #3, 48(COPY), 8$        ; 1543
                                                                52  DD 000AD          PUSHL   REC_COUNT                       ; 1545
                                                                        5A      A3  9F 000AF          PUSHAB  90(INP_FILB)            ;
                                                                        3A      A3  DD 000B2          PUSHL   58(INP_FILB)            ;
                                                                03  DD 000B5          PUSHL   #3                              ;
                                                        00000000G   8F  DD 000B7          PUSHL   #EXCH$_TYPED                    ;
                                                68              05  FB 000BD          CALLS   #5, LIB$SIGNAL                  ;
                                                FA7B    CF          00  FB 000C0 8$:      CALLS   #0, COPY_INPUT_CLOSE            ; 1547
                                                55              01  D0 000C5          MOVL    #1, STATUS                      ; 1548
                                                03      00      B6  E8 000C8          BLBS    @EXCH$A_GBL, 9$                 ; 1549
                                                                FF7A  31 000CC          BRW     3$                              ;
                                                FD71    CF          00  FB 000CF 9$:      CALLS   #0, COPY_PARSE_CLEANUP          ; 1552
                                                03      00      B6  E8 000D4          BLBS    @EXCH$A_GBL, 10$                ; 1553
                                                                FF5F  31 000D8          BRW     1$                              ;
                                                50              55  D0 000DB 10$:      MOVL    STATUS, R0                      ; 1556
                                                                    04 000DE          RET                                     ; 1557

; Routine Size:  223 bytes,    Routine Base:  EXCH$COPY_CODE + 0A26
```

```
;  1482          1558  1 GLOBAL ROUTINE copy_type_print (len, rec : $ref_bvector) : NOVALUE =    %SBTTL 'copy_type_print (len, rec)'
;  1483          1559  2 BEGIN
;  1484          1560  2 !++
;  1485          1561  2 !
;  1486          1562  2 ! FUNCTIONAL DESCRIPTION:
;  1487          1563  2 !
;  1488          1564  2 !       Reformats (non-format control chars replaced by ^char) and prints the record
;  1489          1565  2 !
;  1490          1566  2 ! INPUTS:
;  1491          1567  2 !
;  1492          1568  2 !       len - lergth of the record to be reformatted
;  1493          1569  2 !       rec - address of the record
;  1494          1570  2 !
;  1495          1571  2 ! IMPLICIT INPUTS:
;  1496          1572  2 !
;  1497          1573  2 !       output rab in global storage
;  1498          1574  2 !
;  1499          1575  2 ! OUTPUTS:
;  1500          1576  2 !
;  1501          1577  2 !       none
;  1502          1578  2 !
;  1503          1579  2 ! IMPLICIT OUTPUTS:
;  1504          1580  2 !
;  1505          1581  2 !       none
;  1506          1582  2 !
;  1507          1583  2 ! ROUTINE VALUE:
;  1508          1584  2 !
;  1509          1585  2 !       none
;  1510          1586  2 !
;  1511          1587  2 ! SIDE EFFECTS:
;  1512          1588  2 !
;  1513          1589  2 !       output on SYS$OUTPUT
;  1514          1590  2 !--
;  1515          1591  2
;  1516          1592  2 $dbgtrc_prefix ('copy_type_print> ');
;  1517          1593  2
;  1518          1594  2 BIND
;  1519          1595  2     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
;  1520          1596  2     fab = exch$a_gbl [excg$a_sysout_fab] : $ref_bblock, ! Pointer to output fab
;  1521          1597  2     rab = exch$a_gbl [excg$a_sysout_rab] : $ref_bblock  ! Pointer to output rab
;  1522          1598  2     ;
;  1523          1599  2
;  1524          1600  2 ! Define a table of substitute strings for control characters.  We define a byte vector of offsets to
;  1525          1601  2 ! ASCIC substitute strings.  A zero in the table means no substitution, an non-zero is the offset from
;  1526          1602  2 ! the base of the substitute strings.
;  1527          1603  2 !
;  1528          1604  2 BIND
;  1529          1605  2     table_base = UPLIT BYTE (0);
;  1530          1606  2 OWN
;  1531          1607  2     table : VECTOR [256, BYTE] PRESET (
;  1532          1608  2             [%x'00'] =  (UPLIT BYTE (%ascic 'NUL') - table_base),
;  1533          1609  2             [%x'01'] =  (UPLIT BYTE (%ascic 'SOH') - table_base),
;  1534          1610  2             [%x'02'] =  (UPLIT BYTE (%ascic 'STX') - table_base),
;  1535          1611  2             [%x'03'] =  (UPLIT BYTE (%ascic 'ETX') - table_base),
;  1536          1612  2             [%x'04'] =  (UPLIT BYTE (%ascic 'EOT') - table_base),
;  1537          1613  2             [%x'05'] =  (UPLIT BYTE (%ascic 'ENQ') - table_base),
;  1538          1614  2             [%x'06'] =  (UPLIT BYTE (%ascic 'ACK') - table_base),
```

```
;  1539     1615  2                [%x'07'] =  (UPLIT BYTE (%asCic 'BEL') - table_base),
;  1540     1616  2                [%x'08'] =  (UPLIT BYTE (%asCic 'BS') - table_base),
;  1541     1617  2                [%x'0E'] =  (UPLIT BYTE (%asCic 'SO') - table_base),
;  1542     1618  2                [%x'0F'] =  (UPLIT BYTE (%asCic 'SI') - table_base),
;  1543     1619  2                [%x'10'] =  (UPLIT BYTE (%asCic 'DLE') - table_base),
;  1544     1620  2                [%x'11'] =  (UPLIT BYTE (%asCic 'DC1') - table_base),
;  1545     1621  2                [%x'12'] =  (UPLIT BYTE (%asCic 'DC2') - table_base),
;  1546     1622  2                [%x'13'] =  (UPLIT BYTE (%asCic 'DC3') - table_base),
;  1547     1623  2                [%x'14'] =  (UPLIT BYTE (%asCic 'DC4') - table_base),
;  1548     1624  2                [%x'15'] =  (UPLIT BYTE (%asCic 'NAK') - table_base),
;  1549     1625  2                [%x'16'] =  (UPLIT BYTE (%asCic 'SYN') - table_base),
;  1550     1626  2                [%x'17'] =  (UPLIT BYTE (%asCic 'ETB') - table_base),
;  1551     1627  2                [%x'18'] =  (UPLIT BYTE (%asCic 'CAN') - table_base),
;  1552     1628  2                [%x'19'] =  (UPLIT BYTE (%asCic 'EM') - table_base),
;  1553     1629  2                [%x'1A'] =  (UPLIT BYTE (%asCic 'SUB') - table_base),
;  1554     1630  2          !     [%x'1B'] =  (UPLIT BYTE (%asCic 'ESC') - table_base),
;  1555     1631  2                [%x'1C'] =  (UPLIT BYTE (%asCic 'FS') - table_base),
;  1556     1632  2                [%x'1D'] =  (UPLIT BYTE (%asCic 'GS') - table_base),
;  1557     1633  2                [%x'1E'] =  (UPLIT BYTE (%asCic 'RS') - table_base),
;  1558     1634  2                [%x'1F'] =  (UPLIT BYTE (%asCic 'US') - table_base),
;  1559     1635  2                [%x'7F'] =  (UPLIT BYTE (%asCic 'DEL') - table_base),
;  1560     1636  2                [%x'80'] =  (UPLIT BYTE (%asCic 'X80') - table_base),
;  1561     1637  2                [%x'81'] =  (UPLIT BYTE (%asCic 'X81') - table_base),
;  1562     1638  2                [%x'82'] =  (UPLIT BYTE (%asCic 'X82') - table_base),
;  1563     1639  2                [%x'83'] =  (UPLIT BYTE (%asCic 'X83') - table_base),
;  1564     1640  2                [%x'84'] =  (UPLIT BYTE (%asCic 'IND') - table_base),
;  1565     1641  2                [%x'85'] =  (UPLIT BYTE (%asCic 'NEL') - table_base),
;  1566     1642  2                [%x'86'] =  (UPLIT BYTE (%asCic 'SSA') - table_base),
;  1567     1643  2                [%x'87'] =  (UPLIT BYTE (%asCic 'ESA') - table_base),
;  1568     1644  2                [%x'88'] =  (UPLIT BYTE (%asCic 'HTS') - table_base),
;  1569     1645  2                [%x'89'] =  (UPLIT BYTE (%asCic 'HTJ') - table_base),
;  1570     1646  2                [%x'8A'] =  (UPLIT BYTE (%asCic 'VTS') - table_base),
;  1571     1647  2                [%x'8B'] =  (UPLIT BYTE (%asCic 'PLD') - table_base),
;  1572     1648  2                [%x'8C'] =  (UPLIT BYTE (%asCic 'PLU') - table_base),
;  1573     1649  2                [%x'8D'] =  (UPLIT BYTE (%asCic 'RI') - table_base),
;  1574     1650  2                [%x'8E'] =  (UPLIT BYTE (%asCic 'SS2') - table_base),
;  1575     1651  2                [%x'8F'] =  (UPLIT BYTE (%asCic 'SS3') - table_base),
;  1576     1652  2                [%x'90'] =  (UPLIT BYTE (%asCic 'DCS') - table_base),
;  1577     1653  2                [%x'91'] =  (UPLIT BYTE (%asCic 'PU1') - table_base),
;  1578     1654  2                [%x'92'] =  (UPLIT BYTE (%asCic 'PU2') - table_base),
;  1579     1655  2                [%x'93'] =  (UPLIT BYTE (%asCic 'STS') - table_base),
;  1580     1656  2                [%x'94'] =  (UPLIT BYTE (%asCic 'CCH') - table_base),
;  1581     1657  2                [%x'95'] =  (UPLIT BYTE (%asCic 'MW') - table_base),
;  1582     1658  2                [%x'96'] =  (UPLIT BYTE (%asCic 'SPA') - table_base),
;  1583     1659  2                [%x'97'] =  (UPLIT BYTE (%asCic 'EPA') - table_base),
;  1584     1660  2                [%x'98'] =  (UPLIT BYTE (%asCic 'X98') - table_base),
;  1585     1661  2                [%x'99'] =  (UPLIT BYTE (%asCic 'X99') - table_base),
;  1586     1662  2                [%x'9A'] =  (UPLIT BYTE (%asCic 'X9A') - table_base),
;  1587     1663  2                [%x'9B'] =  (UPLIT BYTE (%asCic 'CSI') - table_base),
;  1588     1664  2                [%x'9C'] =  (UPLIT BYTE (%asCic 'ST') - table_base),
;  1589     1665  2                [%x'9D'] =  (UPLIT BYTE (%asCic 'OSC') - table_base),
;  1590     1666  2                [%x'9E'] =  (UPLIT BYTE (%asCic 'PM') - table_base),
;  1591     1667  2                [%x'9F'] =  (UPLIT BYTE (%asCic 'APC') - table_base),
;  1592     1668  2                [%x'A0'] =  (UPLIT BYTE (%asCic 'XA0') - table_base),
;  1593     1669  2                [%x'FF'] =  (UPLIT BYTE (%asCic 'XFF') - table_base));
;  1594     1670  2 BIND
;  1595     1671  2     table_top = UPLIT BYTE (0);                    ! Hang a label on the end
```

```
;  1596          1672  2
;  1597          1673  2 ! Make sure that all of the strings total fewer than 256 bytes, so that byte offsets will work.  Note
;  1598          1674  2 ! that BLISS stores the above table like <table-base><ascic-strings><table><table-top> so that we must
;  1599          1675  2 ! include the length of the table itself.  Also test the assumption about storage format.  (We have
;  1600          1676  2 ! defined both OWN and PLIT to the same psect.)
;  1601          1677  2 !
;  1602        L 1678  2 $logic_check (0, ((table_top-table_base) LEQ 511), 309);
;  %PRINT:       assumption 309 verified during compilation
;  1603        L 1679  2 $logic_check (0, ((table_base LSSA table) AND (table LSSA table_top)), 318);
;  %PRINT:       assumption 318 verified during compilation
;  1604          1680  2
;  1605          1681  2 LOCAL
;  1606          1682  2     buf : $bvector [filb$s_record_buffer*5],    ! Worst case is buffer of deletes, "<DEL><DEL>..."
;  1607          1683  2     buflen,
;  1608          1684  2     bufptr,
;  1609          1685  2     status
;  1610          1686  2     ;
;  1611          1687  2
;  1612          1688  2 REGISTER
;  1613          1689  2     ip,                                         ! Input pointer
;  1614          1690  2     op;                                         ! Output pointer
```

```
; 1616          1691  2 ROUTINE put (len, buf) : NOVALUE =
; 1617          1692  3 BEGIN
; 1618          1693  3
; 1619          1694  3 !+
; 1620          1695  3 ! Local routine to put a record.  If the put fails because the record is too long, we will shorten the
; 1621          1696  3 ! request and try again.
; 1622          1697  3 !-
; 1623          1698  3
; 1624          1699  3 LOCAL
; 1625          1700  3     status;
; 1626          1701  3
; 1627          1702  3 BIND
; 1628          1703  3     copy = exch$a_gbl [excg$a_copy_work] : $ref_bblock, ! Pointer to work area
; 1629          1704  3     fab = exch$a_gbl [excg$a_sysout_fab] : $ref_bblock, ! Pointer to output fab
; 1630          1705  3     rab = exch$a_gbl [excg$a_sysout_rab] : $ref_bblock  ! Pointer to output rab
; 1631          1706  3     ;
; 1632          1707  3
; 1633          1708  3 rab [rab$w_rsz] = .len;
; 1634          1709  3 rab [rab$l_rbf] = .buf;
; 1635          1710  3
; 1636          1711  4 IF NOT (status = $put (rab = .rab))
; 1637          1712  3 THEN
; 1638          1713  4     BEGIN
; 1639          1714  4
; 1640          1715  4     ! If the error is due to a record which was too long, shorten the request and try again
; 1641          1716  4     !
; 1642          1717  5     IF (
; 1643          1718  6           (.copy [copy$l_max_rec] GTRU 80)    ! we aren't pretty short already
; 1644          1719  5         AND
; 1645          1720  6           (
; 1646          1721  7               (.status EQL RMS$_RSZ)          ! error is rec too big (get from tape)
; 1647          1722  6            OR
; 1648          1723  7               (
; 1649          1724  8                   (.status EQL RMS$_SYS)      ! terminal maxbuf error
; 1650          1725  7                AND
; 1651          1726  8                   (.rab [rab$l_stv] EQL SS$_EXQUOTA)
; 1652          1727  7               )
; 1653          1728  6           )
; 1654          1729  5        )
; 1655          1730  4     THEN
; 1656          1731  5         BEGIN
; 1657          1732  5         copy [copy$l_max_rec] = (.len * 90) / 100;      ! try with rec 90% as long
; 1658          1733  5         put (.copy [copy$l_max_rec], .buf);
; 1659          1734  5         RETURN;
; 1660          1735  5         END
; 1661          1736  4     ELSE
; 1662          1737  4         exch$util_file_error (exch$_writeerr, .status, .fab, .rab [rab$l_stv]);
; 1663          1738  3     END;
; 1664          1739  3
; 1665          1740  3 RETURN;
; 1666          1741  2 END;


                                                        .PSECT  EXCH$COPY_PLIT,NOWRT,2
                                                00  00140 P.ABM:  .BYTE   0                                                ;
```

```
                                00141 P.ABN:    .ASCII   <3>\NUL\
                                00145 P.ABO:    .ASCII   <3>\SOH\
                                00149 P.ABP:    .ASCII   <3>\STX\
                                0014D P.ABQ:    .ASCII   <3>\ETX\
                                00151 P.ABR:    .ASCII   <3>\EOT\
                                00155 P.ABS:    .ASCII   <3>\ENQ\
                                00159 P.ABT:    .ASCII   <3>\ACK\
                                0015D P.ABU:    .ASCII   <3>\BEL\
                                00161 P.ABV:    .ASCII   <2>\BS\
                                00164 P.ABW:    .ASCII   <2>\SO\
                                00167 P.ABX:    .ASCII   <2>\SI\
                                0016A P.ABY:    .ASCII   <3>\DLE\
                                0016E P.ABZ:    .ASCII   <3>\DC1\
                                00172 P.ACA:    .ASCII   <3>\DC2\
                                00176 P.ACB:    .ASCII   <3>\DC3\
                                0017A P.ACC:    .ASCII   <3>\DC4\
                                0017E P.ACD:    .ASCII   <3>\NAK\
                                00182 P.ACE:    .ASCII   <3>\SYN\
                                00186 P.ACF:    .ASCII   <3>\ETB\
                                0018A P.ACG:    .ASCII   <3>\CAN\
                                0018E P.ACH:    .ASCII   <2>\EM\
                                00191 P.ACI:    .ASCII   <3>\SUB\
                                00195 P.ACJ:    .ASCII   <2>\FS\
                                00198 P.ACK:    .ASCII   <2>\GS\
                                0019B P.ACL:    .ASCII   <2>\RS\
                                0019E P.ACM:    .ASCII   <2>\US\
                                001A1 P.ACN:    .ASCII   <3>\DEL\
                                001A5 P.ACO:    .ASCII   <3>\X80\
                                001A9 P.ACP:    .ASCII   <3>\X81\
                                001AD P.ACQ:    .ASCII   <3>\X82\
                                001B1 P.ACR:    .ASCII   <3>\X83\
                                001B5 P.ACS:    .ASCII   <3>\IND\
                                001B9 P.ACT:    .ASCII   <3>\NEL\
                                001BD P.ACU:    .ASCII   <3>\SSA\
                                001C1 P.ACV:    .ASCII   <3>\ESA\
                                001C5 P.ACW:    .ASCII   <3>\HTS\
                                001C9 P.ACX:    .ASCII   <3>\HTJ\
                                001CD P.ACY:    .ASCII   <3>\VTS\
                                001D1 P.ACZ:    .ASCII   <3>\PLD\
                                001D5 P.ADA:    .ASCII   <3>\PLU\
                                001D9 P.ADB:    .ASCII   <2>\RI\
                                001DC P.ADC:    .ASCII   <3>\SS2\
                                001E0 P.ADD:    .ASCII   <3>\SS3\
                                001E4 P.ADE:    .ASCII   <3>\DCS\
                                001E8 P.ADF:    .ASCII   <3>\PU1\
                                001EC P.ADG:    .ASCII   <3>\PU2\
                                001F0 P.ADH:    .ASCII   <3>\STS\
                                001F4 P.ADI:    .ASCII   <3>\CCH\
                                001F8 P.ADJ:    .ASCII   <2>\MW\
                                001FB P.ADK:    .ASCII   <3>\SPA\
                                001FF P.ADL:    .ASCII   <3>\EPA\
                                00203 P.ADM:    .ASCII   <3>\X98\
                                00207 P.ADN:    .ASCII   <3>\X99\
                                0020B P.ADO:    .ASCII   <3>\X9A\
                                0020F P.ADP:    .ASCII   <3>\CSI\
                                00213 P.ADQ:    .ASCII   <2>\ST\
                                00216 P.ADR:    .ASCII   <3>\OSC\
```

```
                                 4D 50 02  0021A P.ADS:  .ASCII  <2>\PM\                                              ;
                              43 50 41 03  0021D P.ADT:  .ASCII  <3>\APC\                                             ;
                              30 41 58 03  00221 P.ADU:  .ASCII  <3>\XA0\                                             ;
                              46 46 58 03  00225 P.ADV:  .ASCII  <3>\XFF\                                             ;
                                           00229         .BLKB   3
               21 1D 19 15 11 0D 09 05 01  0022C TABLE:  .BYTE   1, 5, 9, 13, 17, 21, 25, 29, 33                      ;
                                       00# 00235         .BYTE   0[5]                                                 ;
      51 4E 4A 46 42 3E 3A 36 32 2E 2A 27 24  0023A      .BYTE   36, 39, 42, 46, 50, 54, 58, 62, 66, 70, -            ;
                                                                 74, 78, 81                                           ;
                                        00 00247         .BYTE   0                                                    ;
                              5E 5B 58 55  00248         .BYTE   85, 88, 91, 94                                       ;
                                       00# 0024C         .BYTE   0[95]                                                ;
99 95 91 8D 89 85 81 7D 79 75 71 6D 69 65 61  002AB      .BYTE   97, 101, 105, 109, 113, 117, 121, 125, -             ;
D3 CF CB C7 C3 BF BB B8 B4 B0 AC A8 A4 A0 9C  002BA              -127, -123, -119, -115, -111, -107, -103, -          ;
                              E1 DD DA D6  002C9                 -100, -96, -92, -88, -84, -80, -76, -72, -           ;
                                                                 -69, -65, -61, -57, -53, -49, -45, -42, -            ;
                                                                 -38, -35, -31                                        ;
                                       00# 002CD         .BYTE   0[94]                                                ;
                                        E5 0032B         .BYTE   -27                                                  ;
                                        00 0032C P.ADW:  .BYTE   0                                                    ;

                                                 TABLE_BASE=         P.ABM
                                                 TABLE_TOP=          P.ADW
                                                         .EXTRN  SYS$PUT

                                                         .PSECT  EXCH$COPY_CODE,NOWRT,2

                                     001C 00000 PUT:     .WORD   Save R2,R3,R4                                        ; 1691
                  50 00000000G  EF  D0 00002             MOVL    EXCH$A_GBL, R0                                       ; 1703
                  53        04  A0  9E 00009             MOVAB   4(R0), R3                                            ;
                  54      00D0  C0  9E 0000D             MOVAB   208(R0), R4                                          ; 1704
                  50      00D4  C0  9E 00012             MOVAB   212(R0), R0                                          ; 1705
                  52            60  D0 00017             MOVL    (R0), R2                                             ; 1708
            22    A2        04  AC  B0 0001A             MOVW    LEN, 34(R2)                                          ;
            28    A2        08  AC  D0 0001F             MOVL    BUF, 40(R2)                                          ; 1709
                                52  DD 00024             PUSHL   R2                                                   ; 1711
      00000000G   00            01  FB 00026             CALLS   #1, SYS$PUT                                          ;
                  56            50  E8 0002D             BLBS    STATUS, 3$                                           ;
                  51            63  D0 00030             MOVL    (R3), R1                                             ; 1718
      00000050    8F        38  A1  D1 00033             CMPL    56(R1), #80                                          ;
                                35  1B 0003B             BLEQU   2$                                                   ;
      000186A4    8F            50  D1 0003D             CMPL    STATUS, #100004                                      ; 1721
                                0F  13 00044             BEQL    1$                                                   ;
      0001C10C    8F            50  D1 00046             CMPL    STATUS, #114956                                      ; 1724
                                23  12 0004D             BNEQ    2$                                                   ;
                  1C        0C  A2  D1 0004F             CMPL    12(R2), #28                                          ; 1726
                                1D  12 00053             BNEQ    2$                                                   ;
         53       04  AC 0000005A  8F  C5 00055 1$:      MULL3   #90, LEN, R3                                         ; 1732
      38 A1       53 00000064      8F  C7 0005E          DIVL3   #100, R3, 56(R1)                                     ;
                            08  AC  DD 00067             PUSHL   BUF                                                  ; 1733
                            38  A1  DD 0006A             PUSHL   56(R1)                                               ;
            8F    AF            02  FB 0006D             CALLS   #2, PUT                                              ;
                                    04 00071             RET                                                          ; 1731
                            0C  A2  DD 00072 2$:         PUSHL   12(R2)                                               ; 1737
                                64  DD 00075             PUSHL   (R4)                                                 ;
                                50  DD 00077             PUSHL   STATUS                                               ;
                  00F810D0      8F  DD 00079             PUSHL   #16257232                                            ;
```

```
                     00000000G  EF             04  FB 0007F           CALLS   #4, EXCH$UTIL_FILE_ERROR                ;
                                                    04 00086 3$:       RET                                         ; 1741

; Routine Size:  135 bytes,    Routine Base:  EXCH$COPY_CODE + 0B05
```

```
;  1668     1742  2 ip = .rec;                                    ! Input buffer pointer
;  1669     1743  2 op = buf;
;  1670     1744  2
;  1671     1745  2 DECR count FROM .len-1 TO 0                   ! Convert the controls
;  1672     1746  2 DO
;  1673     1747  3     BEGIN
;  1674     1748  3     REGISTER
;  1675     1749  3         char,                                  ! Local character variable
;  1676     1750  3         string : $ref_bvector;                 ! Pointer to string for expansion
;  1677     1751  3
;  1678     1752  3     char = CH$RCHAR_A (ip);                    ! Get next character
;  1679     1753  3     IF (string = .table [.char]) NEQ 0         ! See if the substitution offset is zero
;  1680     1754  3     THEN
;  1681     1755  4         BEGIN
;  1682     1756  4         REGISTER
;  1683     1757  4             len;
;  1684     1758  4         string = .string + table_base;         ! Turn the offset into an address
;  1685     1759  4         CH$WCHAR_A ('<', op);                  ! Start with the open bracket
;  1686     1760  4         len = .string [0];                     ! Move the length to a register
;  1687     1761  4         CH$MOVE (.len, string [1], .op);       ! Copy the ASCIC string
;  1688     1762  4         op = .op+.len;                         ! Move the output pointer
;  1689     1763  4         CH$WCHAR_A ('>', op);                  ! And finish with the close bracket
;  1690     1764  4         END
;  1691     1765  3     ELSE                                       ! Offset is zero, just move the char
;  1692     1766  3         CH$WCHAR_A (.char, op);
;  1693     1767  2     END;
;  1694     1768  2
;  1695     1769  2 ! Start with the address and length of the record
;  1696     1770  2 !
;  1697     1771  2 buflen = .op - buf;
;  1698     1772  2 bufptr = buf;
;  1699     1773  2
;  1700     1774  2 ! Print the record.  We must allow for a segmented put if the size of the record is too big for the output f
;  1701     1775  2 !
;  1702     1776  2 DO
;  1703     1777  3     BEGIN
;  1704     1778  3     put (MINU (.buflen, .copy [copy$l_max_rec]), .bufptr);
;  1705     1779  3     buflen = .buflen - .copy [copy$l_max_rec];
;  1706     1780  3     bufptr = .bufptr + .copy [copy$l_max_rec];
;  1707     1781  3     END
;  1708     1782  2 UNTIL .buflen LEQ 0;
;  1709     1783  2
;  1710     1784  2 RETURN;
;  1711     1785  1 END;


                                07FC 00000          .ENTRY  COPY_TYPE_PRINT, Save R2,R3,R4,R5,R6,R7,R8,-; 1558
                                                            R9,R10                                        ;
                5E      F600    CE   9E 00002       MOVAB   -2560(SP), SP                                 ;
                50 00000000G    EF   D0 00007       MOVL    EXCH$A_GBL, R0                                ; 1595
                5A        04    A0   9E 0000E       MOVAB   4(R0), R10                                    ;
                56        08    AC   D0 00012       MOVL    REC, IP                                       ; 1742
                57              6E   9E 00016       MOVAB   BUF, OP                                       ; 1743
                59        04    AC   D0 00019       MOVL    LEN, COUNT                                    ; 1745
```

```
                                   29  11 0001D         BRB     4$                                  ;
                       50          86  9A 0001F 1$:     MOVZBL  (IP)+, CHAR                         ; 1752
                       51   0000'CF40  9A 00022         MOVZBL  TABLE[CHAR], STRING                 ; 1753
                                   19  13 00028         BEQL    2$                                  ;
                       51   0000'CF41  9E 0002A         MOVAB   TABLE_BASE[STRING], STRING          ; 1758
                       87          3C  90 00030         MOVB    #60, (OP)+                          ; 1759
                       58          61  9A 00033         MOVZBL  (STRING), LEN                       ; 1760
         67      01    A1          58  28 00036         MOVC3   LEN, 1(STRING), (OP)                ; 1761
                       57          58  C0 0003B         ADDL2   LEN, OP                             ; 1762
                       67          3E  90 0003E         MOVB    #62, (OP)                           ; 1763
                                   03  11 00041         BRB     3$                                  ; 1766
                       67          50  90 00043 2$:     MOVB    CHAR, (OP)                          ;
                                   57  D6 00046 3$:     INCL    OP                                  ; 1763
                       D4          59  F4 00048 4$:     SOBGEQ  COUNT, 1$                           ; 1745
                       50          6E  9E 0004B         MOVAB   BUF, R0                             ; 1771
         53            57          50  C3 0004E         SUBL3   R0, OP, BUFLEN                      ;
                       54          6E  9E 00052         MOVAB   BUF, BUFPTR                         ; 1772
                                   54  DD 00055 5$:     PUSHL   BUFPTR                              ; 1778
                       52          6A  D0 00057         MOVL    (R10), R2                           ;
                                   53  DD 0005A         PUSHL   BUFLEN                              ;
                 38    A2          6E  D1 0005C         CMPL    (SP), 56(R2)                        ;
                                   04  1B 00060         BLEQU   6$                                  ;
                       6E      38  A2  D0 00062         MOVL    56(R2), (SP)                        ;
               FF0E    CF          02  FB 00066 6$:     CALLS   #2, PUT                             ;
                       53      38  A2  C2 0006B         SUBL2   56(R2), BUFLEN                      ; 1779
                       54      38  A2  C0 0006F         ADDL2   56(R2), BUFPTR                      ; 1780
                                   53  D5 00073         TSTL    BUFLEN                              ; 1782
                                   DE  14 00075         BGTR    5$                                  ;
                                       04 00077         RET                                         ; 1785

; Routine Size:  120 bytes,    Routine Base:  EXCH$COPY_CODE + 0B8C
```

```
; 1713          1786  1 END
; 1714          1787  0 ELUDOM


                                                        .EXTRN  LIB$SIGNAL, LIB$STOP

;                                    PSECT SUMMARY

;       Name                    Bytes                           Attributes

;  EXCH$COPY_P_IT                813  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  EXCH$COPY_CODE               3076  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]LIB.L32;1          18619        22         0        1000        00:01.9
;  _$255$DUA28:[EXCHNG.OBJ]EXCLIB.L32;1    1151       147        12          79        00:01.4


;                                    COMMAND QUALIFIERS

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

; Size:         3076 code + 813 data bytes
; Run Time:       00:58.6
; Elapsed Time:   03:23.2
; Lines/CPU Min:   1830
; Lexemes/CPU-Min: 20110
; Memory Used:  367 pages
; Compilation Complete
```

0159 AH-BT13A-SE
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