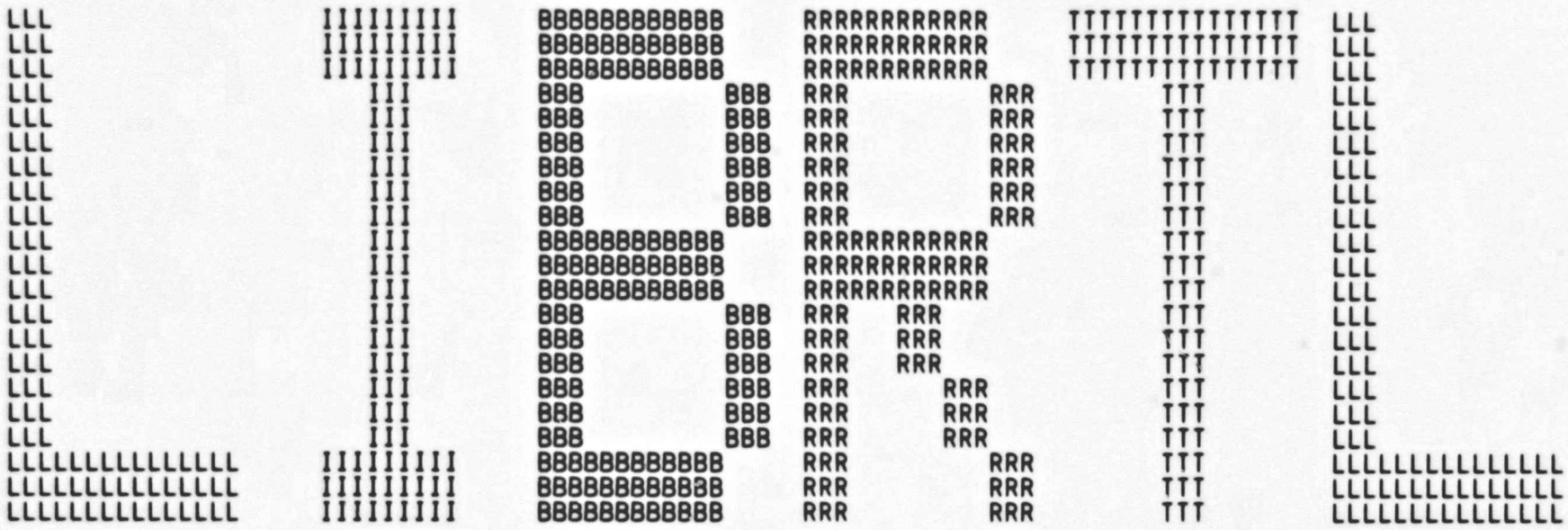
LLL IIIIIIIII BBBBBBBBBBB RRRRRRRRRRR TTTTTTTTTTTTTTT LLL
LLL IIIIIIIII BBBBBBBBBBBB RRRRRRRRRRRR TTTTTTTTTTTTTTT LLL
LLL IIIIIIIII BBBBBBBBBBBB RRRRRRRRRRR TTTTTTTTTTTTTTT LLL
LLL III BBB BBB RRR RRR TTT LLL
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LLL III BBB BBB RRR RRR TTT LLL
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LLL III BBB BBB RRR RRR TTT LLL
LLL III BBBBBBBBBBB RRRRRRRRRRR TTT LLL
LLL III BBBBBBBBBBBB RRRRRRRRRRRR TTT LLL
LLL III BBBBBBBBBBBB RRRRRRRRRRRR TTT LLL
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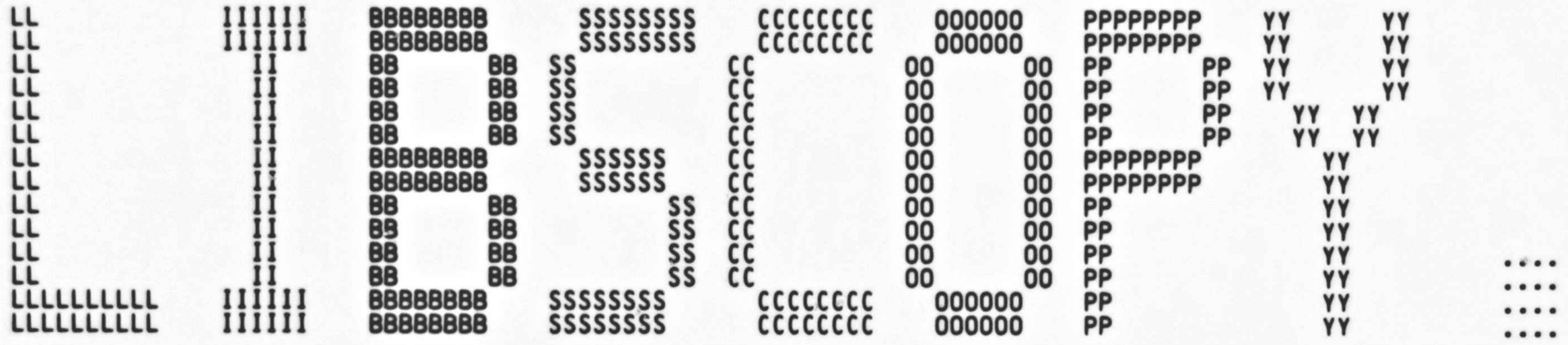
LLL III BBB BBB RRR RRR TTT LLL
LLLLLLLLLLLLLLL IIIIIIIII BBBBBBBBBBBB RRR RRR TTT LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL IIIIIIIII BBBBBBBBBBBB RRR RRR TTT LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL IIIIIIIII BBBBBBBBBBBB RRR RRR TTT LLLLLLLLLLLLLLL


LL IIIIII BBBBBBBB SSSSSSSS CCCCCCCC OOOOOO PPPPPPPP YY YY
LL IIIIII BBBBBBBB SSSSSSSS CCCCCCCC OOOOOO PPPPPPPP YY YY
LL II BB BB SS CC OO OO PP PP YY YY
LL II BB BB SS CC OO OO PP PP YY YY
LL II BB BB SS CC OO OO PP PP YY YY
LL II BB BB SS CC OO OO PP PP YY YY
LL II BBBBBBBB SSSSSS CC OO OO PPPPPPPP YY
LL II BBBBBBBB SSSSSS CC OO OO PPPPPPPP YY
LL II BB BB SS CC OO OO PP YY
LL II BB BB SS CC OO OO PP YY
LL II BB BB SS CC OO OO PP YY
LL II BB BB SS CC OO OO PP YY
LLLLLLLLLL IIIIII BBBBBBBB SSSSSSSS CCCCCCCC OOOOOO PP YY
LLLLLLLLLL IIIIII BBBBBBBB SSSSSSSS CCCCCCCC OOOOOO PP YY
LL IIIIII SSSSSSSS
LL IIIIII SSSSSSSS
LL II SS
LL II SS
LL II SS
LL II SS
LL II SSSSSS
LL II SSSSSS
LL II SS
LL II SS
LL II SS
LL II SS
LLLLLLLLLL IIIIII SSSSSSSS
LLLLLLLLLL IIIIII SSSSSSSS

```
;     1          0001  0 MODULE LIB$SCOPY (
;     2          0002  0
;     3          0003  0                 IDENT = '1-018' ! File: LIBSCOPY.B32    Edit: DG1018
;     4          0004  0
;     5          0005  0                  ) =
;     6          0006  1 BEGIN
;     7          0007  1 !
;     8          0008  1 !**************************************************************************
;     9          0009  1 !*                                                                        *
;    10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                               *
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;    18          0018  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
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;    20          0020  1 !*                                                                        *
;    21          0021  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
;    22          0022  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
;    23          0023  1 !*  CORPORATION.                                                           *
;    24          0024  1 !*                                                                        *
;    25          0025  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
;    26          0026  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                *
;    27          0027  1 !*                                                                        *
;    28          0028  1 !*                                                                        *
;    29          0029  1 !**************************************************************************
;    30          0030  1 !
;    31          0031  1
;    32          0032  1 !++
;    33          0033  1 ! FACILITY: General library: string handling
;    34          0034  1 !
;    35          0035  1 ! ABSTRACT:
;    36          0036  1 !
;    37          0037  1 !       This module contains routines to allocate and deallocate
;    38          0038  1 !       strings.  Also included are the basic string copying routines.
;    39          0039  1 !
;    40          0040  1 ! ENVIRONMENT:  VAX-11 User Mode
;    41          0041  1 !
;    42          0042  1 ! ORIGINAL AUTHOR: Tomas N. Hastings, 08-OCT-1977
;    43          0043  1 ! REWRITTEN BY: John Sauter, 14-MAR-1979
;    44          0044  1 !
;    45          0045  1 ! MODIFIED BY:
;    46          0046  1 !
;    47          0047  1 ! 0-09  - Pass by-reference.  TNH 19-DEC-77
;    48          0048  1 ! 0-10  - Change order of arguments to conform to manual.  JMT 5-Mar-78
;    49          0049  1 ! 0-11  - Fix typo in PIC case table.  DGP 29-Jun-78
;    50          0050  1 ! 0-12  - Change JSB entry point names to DX6.  TNH 5-July-78
;    51          0051  1 ! 0-14  - Add dynamic descriptors.  TNH 5-July-78
;    52          0052  1 ! 0-28  - Remove entry points not in manual.  TNH 1-Aug-78
;    53          0053  1 ! 0-29  - Make REMQUE be PIC.  TNH 2-Aug-78
;    54          0054  1 ! 0-31  - And INSQUE be PIC.  TNH 2-Aug-78
;    55          0055  1 ! 0-32  - Compute effective adr before REMQUE to be PIC.  TNH 2-Aug-78
;    56          0056  1 ! 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
;    57          0057  1 ! 1-002 - Add "_" to the PSECT directives.  JBS 21-DEC-78
```

```
;    58          0058  1 ! 1-003 - Make external references use 32-bit addresses. JBS 11-FEB-1979
;    59          0059  1 ! 1-004 - Fix allocation of 1- and 2-character strings so that they
;    60          0060  1 !         don't expand the region unconditionally, but instead use
;    61          0061  1 !         an 8-character string.  JBS 11-FEB-1979
;    62          0062  1 ! 1-005 - Edit 004 introduced a bug: strings just too large for the
;    63          0063  1 !         queues try to allocate from them.  Fix it.  JBS 18-FEB-1979
;    64          0064  1 ! 1-006 - Do a total rewrite: these routines are now maintained
;    65          0065  1 !         just for compatability: they call the STR facility.
;    66          0066  1 !         JBS 20-MAR-1979
;    67          0067  1 ! 1-007 - Call the string facility using input scalars by reference.
;    68          0068  1 !         JBS 18-MAY-1979
;    69          0069  1 ! 1-008 - Change calls to STR$COPY.  JBS 16-JUL-1979
;    70          0070  1 ! 1-009 - LIB$SCOPY_DXDX was incorrectly checking for truncation.
;    71          0071  1 !         DGP 09-Oct-79
;    72          0072  1 ! 1-010 - Make compatible with release 1 return codes.  RW  21-Jan-1980
;    73          0073  1 ! 1-011 - Reorganized string routines to all find their way to
;    74          0074  1 !         LIB$SCOPY_R_DX6.  Introduce new classes of descriptors
;    75          0075  1 !         to be recognized by string copying routines.
;    76          0076  1 !         Change LIB$SFREEN_DD6 to accept count by immediate value,
;    77          0077  1 !         they way its external documentation says it should operate.
;    78          0078  1 !         RKR 27-MAR-1981
;    79          0079  1 ! 1-012 - Correct some comments to more accurately reflect actual code.
;    80          0080  1 !         RKR 24-AUG-1981
;    81          0081  1 ! 1-013 - Correct which error codes are returned in LIB$SCOPY_R_DX6.
;    82          0082  1 !         RKR 4-SEP-1981.
;    83          0083  1 ! 1-014 - Return an error if the caller attempts to deallocate a non-dynamic
;    84          0084  1 !         string.  SBL 9-Sep-1981
;    85          0085  1 ! 1-015 - Add special-case code to process string descriptors that
;    86          0086  1 !         "read" like fixed string descriptors.  RKR 7-OCT-1981.
;    87          0087  1 ! 1-016 - Change code in LIB$SGET1_DD and LIB$SGET1_DD_R6 so that
;    88          0088  1 !         if either is called with a descriptor that is not CLASS_D,
;    89          0089  1 !         no problems will result -- i.e., replace validity check for
;    90          0090  1 !         CLASS_D with code to force CLASS_D.  This is what occurred
;    91          0091  1 !         in VMS RTL V2.x of these routines.  Functionality was
;    92          0092  1 !         inadvertently changed in producing Version 3 routines.
;    93          0093  1 !         In LIB$SCOPY_DXDX6, don't use $STR$GET_LEN_ADDR macro, since
;    94          0094  1 !         this macro uses STR$ANALYZE_SDESC_R1 -- don't want the
;    95          0095  1 !         signaling routine used by a LIB$ routine.
;    96          0096  1 !         Redirect jsb's from LIB$ANALYZE_SDESC_R3 to
;    97          0097  1 !         LIB$ANALZYE_SDESC_R2.
;    98          0098  1 !         Remove checks on contents of desciptors other than insuring
;    99          0099  1 !         that DSC$A_ARSIZE is < 65K for class_A and class_NCA.
;   100          0100  1 !         RKR 18-NOV-1981.
;   101          0101  1 ! 1-017 - Add support for class S0 string descriptors.  DG 3-OCT-1983.
;   102          0102  1 ! 1-018 - Change class S0 string descriptors to SB.  DG 27-Feb-1984.
;   103          0103  1 !--
;   104          0104  1
;   105          0105  1 !<BLF/PAGE>
```

```
;  107     0106  1 !
;  108     0107  1 ! SWITCHES:
;  109     0108  1 !
;  110     0109  1
;  111     0110  1 SWITCHES ADDRESSING_MODE
;  112     0111  1                 (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
;  113     0112  1
;  114     0113  1 !
;  115     0114  1 ! LINKAGES:
;  116     0115  1 !
;  117     0116  1 REQUIRE 'RTLIN:STRLNK';         ! Linkages
;  118     0301  1
;  119     0302  1 !
;  120     0303  1 ! TABLE OF CONTENTS:
;  121     0304  1 !
;  122     0305  1
;  123     0306  1 FORWARD ROUTINE
;  124     0307  1     LIB$SGET1_DD,                           ! Allocate a string
;  125     0308  1     LIB$SGET1_DD_R6 : STRING_JSB,           ! (JSB entry point)
;  126     0309  1     LIB$SFREE1_DD,                          ! Deallocate a string
;  127     0310  1     LIB$SFREE1_DD6 : STRING_JSB,            ! (JSB entry point)
;  128     0311  1     LIB$SFREEN_DD,                          ! Deallocate N strings
;  129     0312  1     LIB$SFREEN_DD6 : STRING_JSB,            ! (JSB entry point)
;  130     0313  1     LIB$SCOPY_DXDX,                         ! Copy a string by
;  131     0314  1                                             ! descriptor
;  132     0315  1     LIB$SCOPY_DXDX6 : STRING_JSB,           ! (JSB entry point)
;  133     0316  1     LIB$SCOPY_R_DX,                         ! Copy a string by
;  134     0317  1                                             ! reference
;  135     0318  1     LIB$SCOPY_R_DX6 : STRING_JSB;           ! (JSB entry point)
;  136     0319  1
;  137     0320  1 !
;  138     0321  1 ! INCLUDE FILES:
;  139     0322  1 !
;  140     0323  1
;  141     0324  1 REQUIRE 'RTLIN:STRMACROS';      ! String macros
;  142     1240  1 REQUIRE 'RTLIN:RTLPSECT';       ! Macros for defining psects
;  143     1335  1
;  144     1336  1 LIBRARY 'RTLSTARLE';            ! System symbols
;  145     1337  1
;  146     1338  1 !
;  147     1339  1 ! MACROS: NONE
;  148     1340  1 !
;  149     1341  1 !
;  150     1342  1 ! EQUATED SYMBOLS:
;  151     1343  1 !
;  152     1344  1 LITERAL
;  153     1345  1         MAX_SIZE = 65535;       ! Maximum size string
;  154     1346  1
;  155     1347  1 !
;  156     1348  1 ! PSECTS:
;  157     1349  1 !
;  158     1350  1 DECLARE_PSECTS (LIB);           ! Declare psects for LIB$ facility
;  159     1351  1 !
;  160     1352  1 ! OWN STORAGE:
;  161     1353  1 !
;  162     1354  1 !       NONE
;  163     1355  1 !
```

```
;  164          1356  1 ! EXTERNAL REFERENCES:
;  165          1357  1 !
;  166          1358  1
;  167          1359  1 EXTERNAL LITERAL
;  168          1360  1     STR$_NORMAL,                ! (Used in macro $STR$DEALLOCATE)
;  169          1361  1     LIB$_FATERRLIB,             ! Fatal error in the library
;  170          1362  1     LIB$_INSVIRMEM,             ! Insufficient virtual memory
;  171          1363  1     LIB$_INVSTRDES,             ! Invalid string descriptor
;  172          1364  1     LIB$_STRTRU;                ! String truncated
;  173          1365  1
;  174          1366  1 EXTERNAL ROUTINE
;  175          1367  1     LIB$ANALYZE_SDESC_R2 : LIB$ANALYZE_SDESC_JSB_LINK ;
```

```
;  177     1368  1 GLOBAL ROUTINE LIB$SGET1_DD (                  ! Allocate a dynamic string
;  178     1369  1
;  179     1370  1         LEN,                                    ! Number of bytes to allocate
;  180     1371  1         DESCRIP                                 ! Descriptor to allocate into
;  181     1372  1                                 ) =
;  182     1373  1
;  183     1374  1 !++
;  184     1375  1 ! FUNCTIONAL DESCRIPTION:
;  185     1376  1 !
;  186     1377  1 !       Allocate a string.  LEN bytes are allocated to DESCRIP, which
;  187     1378  1 !       is assumed to be a dynamic descriptor.  If the descriptor
;  188     1379  1 !       already has storage allocated to it, but not enough, the old
;  189     1380  1 !       storage is deallocated.
;  190     1381  1 !
;  191     1382  1 ! FORMAL PARAMETERS:
;  192     1383  1 !
;  193     1384  1 !       LEN.rwu.r       The number of bytes to allocate.
;  194     1385  1 !       DESCRIP.wqu.r   The descriptor.  The DSC$B_DTYPE field is not
;  195     1386  1 !                       touched.
;  196     1387  1 !
;  197     1388  1 ! IMPLICIT INPUTS:
;  198     1389  1 !
;  199     1390  1 !       NONE
;  200     1391  1 !
;  201     1392  1 ! IMPLICIT OUTPUTS:
;  202     1393  1 !
;  203     1394  1 !       NONE
;  204     1395  1 !
;  205     1396  1 ! COMPLETION CODES:
;  206     1397  1 !
;  207     1398  1 !       SS$_NORMAL      All is OK.
;  208     1399  1 !       LIB$_INSVIRMEM  There was not enough virtual memory to allocate
;  209     1400  1 !                       the string.
;  210     1401  1 !       LIB$_FATERRLIB  Fatal error in the library
;  211     1402  1 !
;  212     1403  1 ! SIDE EFFECTS:
;  213     1404  1 !
;  214     1405  1 !       May deallocate the descriptor's storage and allocate new
;  215     1406  1 !       storage for it.
;  216     1407  1 !
;  217     1408  1 !--
;  218     1409  1
;  219     1410  2     BEGIN
;  220     1411  2
;  221     1412  2     MAP
;  222     1413  2         DESCRIP : REF BLOCK [ , BYTE];
;  223     1414  2
;  224     1415  2 !+
;  225     1416  2 ! Deallocate old space (if necesaary) and allocate new space.
;  226     1417  2 !-
;  227     1418  2     RETURN LIB$SGET1_DD_R6 ((..LEN AND %X'FFFF'), .DESCRIP) ;
;  228     1419  1     END;                                        ! end of LIB$SGET1_DD

                                                                    .TITLE  LIB$SCOPY
                                                                    .IDENT  \1-018\
```

```
                                                .EXTRN  STR$_NORMAL, LIB$_FATERRLIB
                                                .EXTRN  LIB$_INSVIRMEM, LIB$_INVSTRDES
                                                .EXTRN  LIB$_STRTRU, LIB$ANALYZE_SDESC_R2

                                                .PSECT  _LIB$CODE,NOWRT,  SHR,  PIC,2

                                007C 00000      .ENTRY  LIB$SGET1_DD, Save R2,R3,R4,R5,R6       ; 1368
                     51     08   AC   D0 00002  MOVL    DESCRIP, R1                             ; 1418
                     50     04   BC   3C 00006  MOVZWL  @LEN, R0                               ;
                          0000V  30   0000A     BSBW    LIB$SGET1_DD_R6                         ;
                                 04   0000D     RET                                             ; 1419

; Routine Size:  14 bytes,    Routine Base:  _LIB$CODE + 0000
```

```
;  230     1420  1 GLOBAL ROUTINE LIB$SGET1_DD_R6 (          ! Allocate a dynamic string
;  231     1421  1
;  232     1422  1         LEN,                               ! Number of bytes to allocate
;  233     1423  1         DESCRIP                            ! Descriptor to allocate into
;  234     1424  1                                 ) : STRING_JSB =
;  235     1425  1
;  236     1426  1 !++
;  237     1427  1 ! FUNCTIONAL DESCRIPTION:
;  238     1428  1 !
;  239     1429  1 !       Allocate a string.  LEN bytes are allocated to DESCRIP, which
;  240     1430  1 !       is assumed to be a dynamic descriptor.  If the descriptor
;  241     1431  1 !       already has storage allocated to it, but not enough, the old
;  242     1432  1 !       storage is deallocated.
;  243     1433  1 !
;  244     1434  1 ! FORMAL PARAMETERS:
;  245     1435  1 !
;  246     1436  1 !       LEN.rwu.v       The number of bytes to allocate.
;  247     1437  1 !       DESCRIP.wqu.r   The descriptor.  The DSC$B_DTYPE field is not
;  248     1438  1 !                       touched.
;  249     1439  1 !
;  250     1440  1 ! IMPLICIT INPUTS:
;  251     1441  1 !
;  252     1442  1 !       NONE
;  253     1443  1 !
;  254     1444  1 ! IMPLICIT OUTPUTS:
;  255     1445  1 !
;  256     1446  1 !       NONE
;  257     1447  1 !
;  258     1448  1 ! COMPLETION CODES:
;  259     1449  1 !
;  260     1450  1 !       SS$_NORMAL      All is OK.
;  261     1451  1 !       LIB$_INSVIRMEM  There was not enough virtual memory to allocate
;  262     1452  1 !                       the string.
;  263     1453  1 !       LIB$_FATERRLIB  Fatal error in the library
;  264     1454  1 !
;  265     1455  1 ! SIDE EFFECTS:
;  266     1456  1 !
;  267     1457  1 !       May deallocate the descriptor's storage and allocate new
;  268     1458  1 !       storage for it.
;  269     1459  1 !
;  270     1460  1 !--
;  271     1461  1
;  272     1462  2     BEGIN
;  273     1463  2     LOCAL
;  274     1464  2         RETURN_STATUS ;
;  275     1465  2
;  276     1466  2     MAP
;  277     1467  2         DESCRIP : REF BLOCK [, BYTE] ;
;  278     1468  2
;  279     1469  2 !+
;  280     1470  2 ! Make the descriptor be a dynamic string.
;  281     1471  2 !-
;  282     1472  2     DESCRIP [DSC$B_CLASS] = DSC$K_CLASS_D;
;  283     1473  2
;  284     1474  2     RETURN_STATUS = SS$_NORMAL ;        ! assume success
;  285     1475  2
;  286     1476  2 !+
```

```
;  287          1477  2 ! see if current space needs to be deallocated and reallocated
;  288          1478  2 !-
;  289        P 1479  2     IF ( $STR$NEED_ALLOC (( .LEN AND %X'FFFF'),
;  290          1480  2                           $STR$DYN_AL_LEN (DESCRIP)))
;  291          1481  2     THEN
;  292          1482  2         BEGIN
;  293          1483  2         !
;  294          1484  2         ! give back old space
;  295          1485  2         !
;  296          1486  4         IF ( RETURN_STATUS = $STR$DEALLOCATE (DESCRIP))
;  297          1487  4         THEN
;  298          1488  4             !
;  299          1489  4             ! and get new space
;  300          1490  4             !
;  301        P 1491  4             RETURN_STATUS = $STR$ALLOCATE (( .LEN AND %X'FFFF'),
;  302          1492  4                                            DESCRIP ) ;
;  303          1493  4         END
;  304          1494  4
;  305          1495  2     ELSE
;  306          1496  2
;  307          1497  2         !
;  308          1498  2         ! old space can be reused
;  309          1499  2         !
;  310          1500  2         $STR$LENGTH (DESCRIP) = (.LEN AND %X'FFFF') ;
;  311          1501  2 !+
;  312          1502  2 ! at this point, RETURN_STATUS contains one of:
;  313          1503  2 !       A.  originally assigned status i.e., SS$_NORMAL
;  314          1504  2 !       B.  failure status from $STR$DEALLOCATE
;  315          1505  2 !       C.  status from $STR$ALLOCATE
;  316          1506  2 !-
;  317          1507  2
;  318          1508  2     RETURN .RETURN_STATUS ;
;  319          1509  1     END ;                           ! of routine LIB$SGET1_DD_R6


                                                .EXTRN  STR$$Q_SHORT_Q, LIB$FREE_VM
                                                .EXTRN  STR$_FATINTERR, STR$$INIT
                                                .EXTRN  STR$$V_INIT, STR$$ALOC_SHORT
                                                .EXTRN  LIB$GET_VM, STR$_INSVIRMEM

                    5E              04  C2 00000 LIB$SGET1_DD_R6::
                                                SUBL2   #4, SP                          ; 1420
                    52              51  D0 00003            MOVL    R1, R2             ;
                    54              50  D0 00006            MOVL    R0, R4             ;
                03  A2              02  90 00009            MOVB    #2, 3(DESCRIP)     ; 1472
                                    01  DD 0000D            PUSHL   #1                 ; 1474
                    53          04  A2  D0 0000F            MOVL    4(DESCRIP), R3     ; 1480
                                    50  D4 00013            CLRL    R0                 ;
                                    53  D5 00015            TSTL    R3                 ;
                                    06  12 00017            BNEQ    1$                 ;
                                    50  D6 00019            INCL    R0                 ;
                                    51  D4 0001B            CLRL    R1                 ;
                                    13  11 0001D            BRB     3$                 ;
              00F0  8F              62  B1 0001F 1$:        CMPW    (DESCRIP), #240    ;
                                    05  1B 00024            BLEQU   2$                 ;
                    51              62  3C 00026            MOVZWL  (DESCRIP), R1      ;
```

```
                                        07  11  00029                BRB     3$                                                      ;
                                    51  53  D0  0002B  2$:            MOVL    R3, STRING_BLOCK                                        ;
                                    51  FE  A1  3C  0002E            MOVZWL  -2(STRING_BLOCK), R1                                    ;
                            000000F0    8F      51  D1  00032  3$:    CMPL    R1, #240                                                ;
                                        23  1F  00039                BLSSU   7$                                                      ;
                                    04      50  E9  0003B            BLBC    R0, 4$                                                  ;
                                        51  D4  0003E                CLRL    R1                                                      ;
                                        13  11  00040                BRB     6$                                                      ;
                                00F0    8F      62  B1  00042  4$:    CMPW    (DESCRIP), #240                                         ;
                                        05  1B  00047                BLEQU   5$                                                      ;
                                    51      62  3C  00049            MOVZWL  (DESCRIP), R1                                           ;
                                        07  11  0004C                BRB     6$                                                      ;
                                    51  53  D0  0004E  5$:            MOVL    R3, STRING_BLOCK                                        ;
                                    51  FE  A1  3C  00051            MOVZWL  -2(STRING_BLOCK), R1                                    ;
                51          54          10      00  ED  00055  6$:    CMPZV   #0, #16, LEN, R1                                        ;
                                        23  13  0005A                BEQL    11$                                                     ;
                                        24  11  0005C                BRB     12$                                                     ;
                                    04      50  E9  0005E  7$:        BLBC    R0, 8$                                                  ;
                                        51  D4  00061                CLRL    R1                                                      ;
                                        13  11  00063                BRB     10$                                                     ;
                                00F0    8F      62  B1  00065  8$:    CMPW    (DESCRIP), #240                                         ;
                                        05  1B  0006A                BLEQU   9$                                                      ;
                                    51      62  3C  0006C            MOVZWL  (DESCRIP), R1                                           ;
                                        07  11  0006F                BRB     10$                                                     ;
                                    51  53  D0  00071  9$:            MOVL    R3, STRING_BLOCK                                        ;
                                    51  FE  A1  3C  00074            MOVZWL  -2(STRING_BLOCK), R1                                    ;
                51          54          10      00  ED  00078  10$:   CMPZV   #0, #16, LEN, R1                                        ;
                                        03  1A  0007D                BGTRU   12$                                                     ;
                                    00CE        31  0007F  11$:       BRW     25$                                                     ;
                                50  00000000G    8F  D0  00082  12$:   MOVL    #STR$_NORMAL, RETURN_STATUS                             ; 1486
                                        53  D5  00089                TSTL    R3                                                      ;
                                        3C  13  0008B                BEQL    14$                                                     ;
                                00F0    8F      62  B1  0008D        CMPW    (DESCRIP), #240                                         ;
                                        1A  1A  00092                BGTRU   13$                                                     ;
                                    51      53  D0  00094            MOVL    R3, STRING_BLOCK                                        ;
                                    51      FE  A1  3C  00097        MOVZWL  -2(STRING_BLOCK), ALLOC_LENGTH                          ;
                                        51  D7  0009B                DECL    R1                                                      ;
                                    51      07  8A  0009D            BICB2   #7, R1                                                  ;
                                    51  00000000G00041  9E  000A0    MOVAB   STR$$Q_SHORT_Q[R1], INSQUE_ADDR                         ;
                                00  B1          63  0E  000A8        INSQUE  (R3), @0(INSQUE_ADDR)                                   ;
                                        1B  11  000AC                BRB     14$                                                     ;
                                    04      A2  9F  000AE  13$:       PUSHAB  4(DESCRIP)                                              ;
                                08  AE          62  3C  000B1        MOVZWL  (DESCRIP), 8(SP)                                        ;
                                    08      AE  9F  000B5            PUSHAB  8(SP)                                                   ;
                00000000G       00          02  FB  000B8            CALLS   #2, LIB$FREE_VM                                         ;
                                07          50  E8  000BF            BLBS    RETURN_STATUS, 14$                                      ;
                                50  00000000G  8F  D0  000C2        MOVL    #STR$_FATINTERR, RETURN_STATUS                          ;
                                6E          50  D0  000C9  14$:     MOVL    RETURN_STATUS, RETURN_STATUS                            ;
                                7F          50  E9  000CC            BLBC    RETURN_STATUS, 24$                                      ;
                                07  00000000G   00  E8  000CF        BLBS    STR$$V_INIT, 15$                                        ; 1492
                00000000G       00          00  FB  000D6            CALLS   #0, STR$$INIT                                           ;
                                50  00000000G  8F  D0  000DD  15$:     MOVL    #STR$_NORMAL, RETURN_STATUS                             ;
                                00F0    8F      54  B1  000E4        CMPW    LEN, #240                                               ;
                                        40  1A  000E9                BGTRU   21$                                                     ;
                                        54  B5  000EB                TSTW    LEN                                                     ;
                                        04  12  000ED                BNEQ    16$                                                     ;
                                        55  D4  000EF                CLRL    TEMP                                                    ;
```

```
                            2F  11 000F1         BRB      20$                                        ;
               51           54  3C 000F3 16$:    MOVZWL   LEN, R1                                    ;
                            51  D7 000F6         DECL     R1                                         ;
               51           07  8A 000F8         BICB2    #7, R1                                     ;
               56 00000000G0041  9E 000FB         MOVAB    STR$$Q_SHORT_Q[R1], REMQUE_ADDR            ;
               55       00  B6  0F 00103 17$:    REMQUE   @0(REMQUE_ADDR), TEMP                      ;
                            05  1D 00107         BVS      18$                                        ;
               53           01  D0 00109         MOVL     #1, ALLOC_DONE                             ;
                            0C  11 0010C         BRB      19$                                        ;
                            53  D4 0010E 18$:    CLRL     ALLOC_DONE                                 ;
               7E           54  3C 00110         MOVZWL   LEN, -(SP)                                 ;
      00000000G  00         01  FB 00113         CALLS    #1, STR$$ALOC_SHORT                        ;
               05           53  E8 0011A 19$:    BLBS     ALLOC_DONE, 20$                            ;
               2B           50  E9 0011D         BLBC     RETURN_STATUS, 23$                         ;
                            E1  11 00120         BRB      17$                                        ;
               26           50  E9 00122 20$:    BLBC     RETURN_STATUS, 23$                         ;
          04   A2           55  D0 00125         MOVL     TEMP, 4(DESCRIP)                           ;
                            1D  11 00129         BRB      22$                                        ;
                        04  A2  9F 0012B 21$:    PUSHAB   4(DESCRIP)                                 ;
          08   AE           54  3C 0012E         MOVZWL   LEN, 8(SP)                                 ;
                        08  AE  9F 00132         PUSHAB   8(SP)                                      ;
      00000000G  00         02  FB 00135         CALLS    #2, LIB$GET_VM                             ;
               09           50  E8 0013C         BLBS     RETURN_STATUS, 22$                         ;
               50 00000000G 8F  D0 0013F         MOVL     #STR$_INSVIRMEM, RETURN_STATUS             ;
                            03  11 00146         BRB      23$                                        ;
               62           54  B0 00148 22$:    MOVW     LEN, (DESCRIP)                             ;
               6E           50  D0 0014B 23$:    MOVL     RETURN_STATUS, RETURN_STATUS               ;
                            03  11 0014E 24$:    BRB      26$                                        ; 1479
               62           54  B0 00150 25$:    MOVW     LEN, (DESCRIP)                             ; 1500
               50           8E  D0 00153 26$:    MOVL     RETURN_STATUS, R0                          ; 1508
               5E           04  C0 00156         ADDL2    #4, SP                                     ; 1509
                                05 00159         RSB                                                 ;

; Routine Size:  346 bytes,    Routine Base:  _LIB$CODE + 000E
```

```
;  321     1510  1 GLOBAL ROUTINE LIB$SFREE1_DD (          ! Deallocate a dynamic string
;  322     1511  1
;  323     1512  1         DESCRIP                          ! The descriptor to deallocate
;  324     1513  1                                 ) =
;  325     1514  1
;  326     1515  1 !++
;  327     1516  1 ! FUNCTIONAL DESCRIPTION:
;  328     1517  1 !
;  329     1518  1 !       Deallocate a string.  The string is assumed to by dynamic.
;  330     1519  1 !
;  331     1520  1 ! FORMAL PARAMETERS:
;  332     1521  1 !
;  333     1522  1 !       DESCRIP.wqu.r   The descriptor of the string to deallocate.
;  334     1523  1 !
;  335     1524  1 ! IMPLICIT INPUTS:
;  336     1525  1 !
;  337     1526  1 !       NONE
;  338     1527  1 !
;  339     1528  1 ! IMPLICIT OUTPUTS:
;  340     1529  1 !
;  341     1530  1 !       NONE
;  342     1531  1 !
;  343     1532  1 ! COMPLETION CODES:
;  344     1533  1 !
;  345     1534  1 !       SS$_NORMAL      All is OK.
;  346     1535  1 !       LIB$_INVSTRDES  Invalid string descriptor
;  347     1536  1 !       LIB$_FATERRLIB  Fatal error in the library
;  348     1537  1 !
;  349     1538  1 ! SIDE EFFECTS:
;  350     1539  1 !
;  351     1540  1 !       May deallocate virtual storage.
;  352     1541  1 !
;  353     1542  1 !--
;  354     1543  1
;  355     1544  2     BEGIN
;  356     1545  2
;  357     1546  2
;  358     1547  2 !+
;  359     1548  2 ! Free the string
;  360     1549  2 !-
;  361     1550  2     RETURN LIB$SFREE1_DD6 (.DESCRIP) ;
;  362     1551  1     END;                                 ! end of LIB$SFREE1_DD


                                        007C 00000      .ENTRY  LIB$SFREE1_DD, Save R2,R3,R4,R5,R6      ; 1510
                              50    04    AC  D0 00002  MOVL    DESCRIP, R0                             ; 1550
                                    0000V 30 00006      BSBW    LIB$SFREE1_DD6                          ;
                                          04 00009      RET                                             ; 1551

; Routine Size:  10 bytes,    Routine Base:  _LIB$CODE + 0168
```

```
;  364     1552  1 GLOBAL ROUTINE LIB$SFREE1_DD6 (          ! Deallocate a dynamic string
;  365     1553  1
;  366     1554  1         DESCRIP                           ! The descriptor to deallocate
;  367     1555  1
;  368     1556  1                                 ) : STRING_JSB =
;  369     1557  1
;  370     1558  1 !++
;  371     1559  1 ! FUNCTIONAL DESCRIPTION:
;  372     1560  1 !
;  373     1561  1 !       Deallocate a string.  The string is assumed to by dynamic.
;  374     1562  1 !
;  375     1563  1 ! FORMAL PARAMETERS:
;  376     1564  1 !
;  377     1565  1 !       DESCRIP.wqu.r   The descriptor of the string to deallocate.
;  378     1566  1 !
;  379     1567  1 ! IMPLICIT INPUTS:
;  380     1568  1 !
;  381     1569  1 !       NONE
;  382     1570  1 !
;  383     1571  1 ! IMPLICIT OUTPUTS:
;  384     1572  1 !
;  385     1573  1 !       NONE
;  386     1574  1 !
;  387     1575  1 ! COMPLETION CODES:
;  388     1576  1 !
;  389     1577  1 !       SS$_NORMAL      All is OK.
;  390     1578  1 !       LIB$_INVSTRDES  Invalid string descriptor
;  391     1579  1 !       LIB$_FATERRLIB  Fatal error in the library
;  392     1580  1 !
;  393     1581  1 ! SIDE EFFECTS:
;  394     1582  1 !
;  395     1583  1 !       May deallocate virtual storage.
;  396     1584  1 !
;  397     1585  1 !--
;  398     1586  1
;  399     1587  2     BEGIN
;  400     1588  2
;  401     1589  2     LOCAL
;  402     1590  2         RETURN_STATUS ;
;  403     1591  2
;  404     1592  2     MAP
;  405     1593  2         DESCRIP : REF BLOCK [ , BYTE] ;
;  406     1594  2
;  407     1595  2     !
;  408     1596  2     ! see if this is a dynamic descriptor
;  409     1597  2     !
;  410     1598  2     IF .DESCRIP [DSC$B_CLASS] EQL DSC$K_CLASS_D
;  411     1599  2     THEN
;  412     1600  3         BEGIN
;  413     1601  3         !
;  414     1602  3         ! deallocate the string
;  415     1603  3         !
;  416     1604  4         IF (RETURN_STATUS = $STR$DEALLOCATE (DESCRIP))
;  417     1605  3         THEN
;  418     1606  4             BEGIN
;  419     1607  4             !
;  420     1608  4             ! Make sure the pointer and length field are zero, so the
```

```
;  421          1609  4              ! user is less likely to mistakenly use an old address.
;  422          1610  4              ! Also, if he calls to reallocate without reinitalizing,
;  423          1611  4              ! he will not get confused.
;  424          1612  4              !
;  425          1613  4              DESCRIP [DSC$W_LENGTH]  = 0 ;
;  426          1614  4              DESCRIP [DSC$A_POINTER] = 0 ;
;  427          1615  3              END;
;  428          1616  3          END
;  429          1617  3          !
;  430          1618  3          ! at this point, RETURN_STATUS contains the status returned
;  431          1619  3          ! by $STR$DEALLOCATE
;  432          1620  3          !
;  433          1621  2      ELSE
;  434          1622  2          !
;  435          1623  2          ! not a dynamic descriptor
;  436          1624  2          !
;  437          1625  2
;  438          1626  2          RETURN_STATUS = LIB$_INVSTRDES ;
;  439          1627  2
;  440          1628  2      RETURN .RETURN_STATUS
;  441          1629  2
;  442          1630  1      END ;                       ! of routine LIB$SFREE1_DD6


                        5E              04  C2 00000 LIB$SFREE1_DD6::
                                                      SUBL2   #4, SP                                  ; 1552
                        52              50  D0 00003          MOVL    R0, R2
                        02          03  A2  91 00006          CMPB    3(DESCRIP), #2                  ; 1598
                                        56  12 0000A          BNEQ    3$
                        50  00000000G   8F  D0 0000C          MOVL    #STR$_NORMAL, RETURN_STATUS     ; 1604
                        53          04  A2  D0 00013          MOVL    4(DESCRIP), R3
                                        3C  13 00017          BEQL    2$
                  00F0  8F                  62  B1 00019          CMPW    (DESCRIP), #240
                                            1A  1A 0001E          BGTRU   1$
                        51                  53  D0 00020          MOVL    R3, STRING_BLOCK
                        51              FE  A1  3C 00023          MOVZWL  -2(STRING_BLOCK), ALLOC_LENGTH
                                            51  D7 00027          DECL    R1
                        51                  07  8A 00029          BICB2   #7, R1
                        51  00000000G00041     9E 0002C          MOVAB   STR$$Q_SHORT_Q[R1], INSQUE_ADDR
                     00     B1                  63  0E 00034          INSQUE  (R3), @0(INSQUE_ADDR)
                                                1B  11 00038          BRB     2$
                                        04  A2  9F 0003A 1$:       PUSHAB  4(DESCRIP)
                     04     AE                  62  3C 0003D          MOVZWL  (DESCRIP), 4(SP)
                                        04  AE  9F 00041          PUSHAB  4(SP)
                00000000G   00                  02  FB 00044          CALLS   #2, LIB$FREE_VM
                        07                      50  E8 0004B          BLBS    RETURN_STATUS, 2$
                        50  00000000G           8F  D0 0004E          MOVL    #STR$_FATINTERR, RETURN_STATUS
                        51                      50  D0 00055 2$:      MOVL    RETURN_STATUS, RETURN_STATUS
                        0E                      50  E9 00058          BLBC    RETURN_STATUS, 4$
                                                62  B4 0005B          CLRW    (DESCRIP)               ; 1613
                                            04  A2  D4 0005D          CLRL    4(DESCRIP)              ; 1614
                                                07  11 00060          BRB     4$                      ; 1598
                        51  00000000G           8F  D0 00062 3$:      MOVL    #LIB$_INVSTRDES, RETURN_STATUS  ; 1626
                        50                      51  D0 00069 4$:      MOVL    RETURN_STATUS, R0       ; 1628
```

```
                          5E      04  C0 0006C        ADDL2   #4, SP                          ; 1630
                                  05  0006F        RSB                                     ;

; Routine Size:  112 bytes,    Routine Base:  _LIB$CODE + 0172
```

```
;  444          1631  1 GLOBAL ROUTINE LIB$SFREEN_DD (          ! Deallocate dynamic strings
;  445          1632  1
;  446          1633  1         NUM_DESC,                       ! Number of descriptors
;  447          1634  1         DESC_PTR                        ! First descriptor to deallocate
;  448          1635  1                                 ) =
;  449          1636  1
;  450          1637  1 !++
;  451          1638  1 ! FUNCTIONAL DESCRIPTION:
;  452          1639  1 !
;  453          1640  1 !       Deallocate a number of strings.  The strings are all assumed
;  454          1641  1 !       to be dynamic.
;  455          1642  1 !
;  456          1643  1 ! FORMAL PARAMETERS:
;  457          1644  1 !
;  458          1645  1 !       NUM_DESC.rl.r   The number of descriptors to deallocate.
;  459          1646  1 !       DESC_PTR.wqu.r  The first of these descriptors.
;  460          1647  1 !
;  461          1648  1 ! IMPLICIT INPUTS:
;  462          1649  1 !
;  463          1650  1 !       NONE
;  464          1651  1 !
;  465          1652  1 ! IMPLICIT OUTPUTS:
;  466          1653  1 !
;  467          1654  1 !       NONE
;  468          1655  1 !
;  469          1656  1 ! COMPLETION CODES:
;  470          1657  1 !
;  471          1658  1 !       SS$_NORMAL
;  472          1659  1 !       LIB$_FATERRLIB                  Fatal error in the library
;  473          1660  1 !
;  474          1661  1 ! SIDE EFFECTS:
;  475          1662  1 !
;  476          1663  1 !       May deallocate virtual storage.
;  477          1664  1 !
;  478          1665  1 !--
;  479          1666  1
;  480          1667  2     BEGIN
;  481          1668  2
;  482          1669  2     LIB$SFREEN_DD6 (..NUM_DESC, .DESC_PTR)
;  483          1670  2
;  484          1671  1     END;                                   ! end of LIB$SFREE1_DD


                                        007C 00000      .ENTRY  LIB$SFREEN_DD, Save R2,R3,R4,R5,R6      ; 1631
                                  51    08   AC  D0 00002  MOVL   DESC_PTR, R1                          ; 1669
                                  50    04   BC  D0 00006  MOVL   @NUM_DESC, R0                        ;
                                      0000V 30 0000A      BSBW   LIB$SFREEN_DD6                       ;
                                            04 0000D      RET                                         ; 1671

; Routine Size:  14 bytes,    Routine Base:  _LIB$CODE + 01E2

;  485          1672  1
```

```
;  487     1673  1 GLOBAL ROUTINE LIB$SFREEN_DD6 (          ! Deallocate dynamic strings
;  488     1674  1
;  489     1675  1         NUM_DESC,                         ! Number of descriptors
;  490     1676  1         DESC_PTR                          ! First descriptor to deallocate
;  491     1677  1
;  492     1678  1                                 ) : STRING_JSB =
;  493     1679  1
;  494     1680  1 !++
;  495     1681  1 ! FUNCTIONAL DESCRIPTION:
;  496     1682  1 !
;  497     1683  1 !       Deallocate a number of strings.  The strings are all assumed
;  498     1684  1 !       to be dynamic.
;  499     1685  1 !
;  500     1686  1 ! FORMAL PARAMETERS:
;  501     1687  1 !
;  502     1688  1 !       NUM_DESC.rl.v   The number of descriptors to deallocate.
;  503     1689  1 !       DESC_PTR.wqu.r  The first of these descriptors.
;  504     1690  1 !
;  505     1691  1 ! IMPLICIT INPUTS:
;  506     1692  1 !
;  507     1693  1 !       NONE
;  508     1694  1 !
;  509     1695  1 ! IMPLICIT OUTPUTS:
;  510     1696  1 !
;  511     1697  1 !       NONE
;  512     1698  1 !
;  513     1699  1 ! COMPLETION CODES:
;  514     1700  1 !
;  515     1701  1 !       SS$_NORMAL
;  516     1702  1 !       LIB$_FATERRLIB  Fatal error in the library
;  517     1703  1 !
;  518     1704  1 ! SIDE EFFECTS:
;  519     1705  1 !
;  520     1706  1 !       May deallocate virtual storage.
;  521     1707  1 !
;  522     1708  1 !--
;  523     1709  1
;  524     1710  2     BEGIN
;  525     1711  2
;  526     1712  2     LOCAL
;  527     1713  2         RETURN_STATUS,
;  528     1714  2         DESCRIP : REF BLOCK [ , BYTE];
;  529     1715  2
;  530     1716  2 !+
;  531     1717  2 ! Loop through all the descriptors, freeing them.
;  532     1718  2 ! Quit when one fails to deallocate
;  533     1719  2 !-
;  534     1720  2
;  535     1721  2     INCR COUNTER FROM 1 TO .NUM_DESC DO
;  536     1722  3         BEGIN
;  537     1723  3         DESCRIP = .DESC_PTR + ((.COUNTER - 1)*DSC$K_D_BLN);
;  538     1724  3
;  539     1725  3 !+
;  540     1726  3 ! Now try freeing it.
;  541     1727  3 !-
;  542     1728  3         RETURN_STATUS = LIB$SFREE1_DD6 (.DESCRIP) ;
;  543     1729  3         IF .RETURN_STATUS NEQ SS$_NORMAL
```

```
;  544          1730  3          THEN
;  545          1731  3              RETURN .RETURN_STATUS ;
;  546          1732  3
;  547          1733  2          END;    ! of INCR loop
;  548          1734  2
;  549          1735  2      !+
;  550          1736  2      ! Since we fell out of the loop above, all strings have been
;  551          1737  2      ! successfully deallocated, so...
;  552          1738  2      !-
;  553          1739  2
;  554          1740  2      RETURN (SS$_NORMAL);
;  555          1741  1      END;                                    ! end of LIB$SFREE1_DD6



                                                 7E            50  7D 00000 LIB$SFREEN_DD6::
                                                                               MOVQ    R0, NUM_DESC                    ; 1673
                                                               7E  D4 00003   CLRL    COUNTER                         ; 1723
                                                               1F  10 00005   BSBB    2$                              ;
                                          50       04   AE      03  78 00007 1$:    ASHL    #3, COUNTER, R0         ;
                                                50       0C   AE  C0 0000C   ADDL2   DESC_PTR, R0                   ;
                                                6E            70  7E 00010   MOVAQ   -(R0), DESCRIP                  ;
                                                50            6E  D0 00013   MOVL    DESCRIP, R0                     ; 1728
                                                            FF69  30 00016   BSBW    LIB$SFREE1_DD6                  ;
                                                51            50  D0 00019   MOVL    R0, RETURN_STATUS               ;
                                                01            51  D1 0001C   CMPL    RETURN_STATUS, #1               ; 1729
                                                              05  13 0001F   BEQL    2$                              ;
                                                50            51  D0 00021   MOVL    RETURN_STATUS, R0               ; 1731
                                                              09  11 00024   BRB     3$                              ;
                                          DB       04   AE      08  AE  F3 00026 2$:    AOBLEQ  NUM_DESC, COUNTER, 1$   ; 1721
                                                50            01  D0 0002C   MOVL    #1, R0                          ; 1740
                                                5E            10  C0 0002F 3$:    ADDL2   #16, SP                 ; 1741
                                                              05  00032       RSB                                     ;

; Routine Size:  51 bytes,    Routine Base:  _LIB$CODE + 01F0

;  556          1742  1
```

```
;  558          1743  1 GLOBAL ROUTINE LIB$SCOPY_DXDX (          ! Copy string by descriptor
;  559          1744  1
;  560          1745  1         SRC_DESC,                              ! Source string
;  561          1746  1         DEST_DESC                              ! Destination string
;  562          1747  1                                 ) =
;  563          1748  1
;  564          1749  1 !++
;  565          1750  1 ! FUNCTIONAL DESCRIPTION:
;  566          1751  1 !
;  567          1752  1 !       Copy any supported class string passed by descriptor to any
;  568          1753  1 ! supported class string passed by descriptor.
;  569          1754  1 !
;  570          1755  1 ! FORMAL PARAMETERS:
;  571          1756  1 !
;  572          1757  1 !       SRC_DESC.rt.dx  Address of source string descriptor.
;  573          1758  1 !       DEST_DESC.wt.dx Address of destination descriptor.
;  574          1759  1 !                       The class and dtype fields are not disturbed.
;  575          1760  1 !
;  576          1761  1 ! IMPLICIT INPUTS:
;  577          1762  1 !
;  578          1763  1 !       NONE
;  579          1764  1 !
;  580          1765  1 ! IMPLICIT OUTPUTS:
;  581          1766  1 !
;  582          1767  1 !       NONE
;  583          1768  1 !
;  584          1769  1 ! COMPLETION CODES:
;  585          1770  1 !
;  586          1771  1 !       SS$_NORMAL      Success
;  587          1772  1 !
;  588          1773  1 !       LIB$_STRTRU     The source string was truncated to fit the
;  589          1774  1 !                       fixed-length destination string.
;  590          1775  1 !
;  591          1776  1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
;  592          1777  1 !
;  593          1778  1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
;  594          1779  1 !                               If class = A or NCA, ARSIZE => 65K
;  595          1780  1 !
;  596          1781  1 ! SIDE EFFECTS:
;  597          1782  1 !
;  598          1783  1 !       May allocate and deallocate virtual storage.
;  599          1784  1 !
;  600          1785  1 !--
;  601          1786  1
;  602          1787  2     BEGIN
;  603          1788  2         RETURN LIB$SCOPY_DXDX6 (.SRC_DESC, .DEST_DESC) ;
;  604          1789  1     END;                                       ! end of LIB$SCOPY_DXDX


                                    007C 00000          .ENTRY  LIB$SCOPY_DXDX, Save R2,R3,R4,R5,R6          ; 1743
                           50   04   AC  7D 00002          MOVQ    SRC_DESC, R0                                 ; 1788
                                0000V 30 00006          BSBW    LIB$SCOPY_DXDX6                              ;
                                      04 00009          RET                                                  ; 1789
```

```
; Routine Size:  10 bytes,    Routine Base:  _LIB$CODE + 0223

;  605          1790  1
```

```
;  607     1791  1 GLOBAL ROUTINE LIB$SCOPY_DXDX6 (                      ! Copy string by descriptor
;  608     1792  1         SRC_DESC,                                      ! Source string
;  609     1793  1         DEST_DESC                                      ! Destination string
;  610     1794  1
;  611     1795  1                                 ) : STRING_JSB =
;  612     1796  1
;  613     1797  1 !++
;  614     1798  1 ! FUNCTIONAL DESCRIPTION:
;  615     1799  1 !
;  616     1800  1 !       Copy any supported class string passed by descriptor to any
;  617     1801  1 ! supported class string passed by descriptor.
;  618     1802  1 !
;  619     1803  1 ! FORMAL PARAMETERS:
;  620     1804  1 !
;  621     1805  1 !       SRC_DESC.rt.dx  Address of source string descriptor.
;  622     1806  1 !       DEST_DESC.wt.dx Address of destination string descriptor.
;  623     1807  1 !                       The class and dtype fields are not disturbed.
;  624     1808  1 !
;  625     1809  1 ! IMPLICIT INPUTS:
;  626     1810  1 !
;  627     1811  1 !       NONE
;  628     1812  1 !
;  629     1813  1 ! IMPLICIT OUTPUTS:
;  630     1814  1 !
;  631     1815  1 !       NONE
;  632     1816  1 !
;  633     1817  1 ! COMPLETION CODES:
;  634     1818  1 !
;  635     1819  1 !       SS$_NORMAL      Success
;  636     1820  1 !
;  637     1821  1 !       LIB$_STRTRU     The source string was truncated to fit the
;  638     1822  1 !                       fixed-length destination string.
;  639     1823  1 !
;  640     1824  1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
;  641     1825  1 !
;  642     1826  1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
;  643     1827  1 !                               If class = A or NCA, ARSIZE => 65K
;  644     1828  1 !
;  645     1829  1 ! SIDE EFFECTS:
;  646     1830  1 !
;  647     1831  1 !       May allocate and deallocate virtual storage.
;  648     1832  1 !
;  649     1833  1 !--
;  650     1834  1
;  651     1835  2     BEGIN
;  652     1836  2
;  653     1837  2     MAP
;  654     1838  2         SRC_DESC  : REF BLOCK [, BYTE],
;  655     1839  2         DEST_DESC : REF BLOCK [, BYTE];
;  656     1840  2
;  657     1841  2 !+
;  658     1842  2 ! Extract the length and address of 1st byte of data from the source
;  659     1843  2 ! descriptor.  JSB to LIB$SCOPY_R_DX6 to do work.
;  660     1844  2 !-
;  661     1845  2     IF .SRC_DESC [DSC$B_CLASS] GTRU DSC$K_CLASS_D
;  662     1846  2     THEN                    ! Use generalized extraction
;  663     1847  3         BEGIN
```

```
;  664          1848  3          LOCAL
;  665          1849  3              LENGTH : VECTOR [1, LONG],  ! length of string
;  666          1850  3              DATA_ADDR : VECTOR [1, LONG] ,      ! start of data address
;  667          1851  3              RETURN_STATUS ;
;  668          1852  3
;  669          1853  3          RETURN_STATUS = LIB$ANALYZE_SDESC_R2 ( .SRC_DESC ;
;  670          1854  3                                                 LENGTH [0],
;  671          1855  3                                                 DATA_ADDR [0]) ;
;  672          1856  3
;  673          1857  3          IF NOT .RETURN_STATUS THEN RETURN (.RETURN_STATUS) ;
;  674          1858  3
;  675          1859  3          RETURN (LIB$SCOPY_R_DX6 ( .LENGTH, .DATA_ADDR, .DEST_DESC)) ;
;  676          1860  3
;  677          1861  3          END
;  678          1862  3
;  679          1863  3      ELSE                    ! can jsb with lenth and address directly
;  680          1864  3          BEGIN
;  681          1865  4          RETURN (LIB$SCOPY_R_DX6 ( .SRC_DESC [DSC$W_LENGTH],
;  682          1866  4                                    .SRC_DESC [DSC$A_POINTER],
;  683          1867  4                                    .DEST_DESC ) ) ;
;  684          1868  3          END ;
;  685          1869  2
;  686          1870  1      END;                                    ! end of LIB$SCOPY_DXDX6


                                53              50  7D 00000 LIB$SCOPY_DXDX6::
                                                              MOVQ    R0, R3                  ; 1791
                                02          03  A3  91 00003          CMPB    3(SRC_DESC), #2         ; 1845
                                                1D  1B 00007          BLEQU   1$
                                50              53  D0 00009          MOVL    SRC_DESC, R0            ; 1853
                                  00000000G     00  16 0000C          JSB     LIB$ANALYZE_SDESC_R2
                                56              51  D0 00012          MOVL    R1, R6
                                55              52  D0 00015          MOVL    R2, R5
                                18              50  E9 00018          BLBC    RETURN_STATUS, 3$       ; 1857
                                52              54  D0 0001B          MOVL    DEST_DESC, R2           ; 1859
                                51              55  D0 0001E          MOVL    DATA_ADDR, R1
                                50              56  D0 00021          MOVL    LENGTH, R0
                                                0A  11 00024          BRB     2$
                                52              54  D0 00026 1$:      MOVL    DEST_DESC, R2           ; 1865
                                51          04  A3  D0 00029          MOVL    4(SRC_DESC), R1
                                50              63  3C 0002D          MOVZWL  (SRC_DESC), R0
                                              0000V 30 00030 2$:      BSBW    LIB$SCOPY_R_DX6
                                                    05 00033 3$:      RSB                     ; 1870

; Routine Size:  52 bytes,    Routine Base:  _LIB$CODE + 022D

;  687          1871  1
```

```
;  689     1872  1 GLOBAL ROUTINE LIB$SCOPY_R_DX (          ! Copy string by reference
;  690     1873  1
;  691     1874  1         SRC_LEN,                                ! Length of source
;  692     1875  1         SRC_ADDR,                               ! Address of source data
;  693     1876  1         DEST_DESC                               ! Destination string
;  694     1877  1                                 ) =
;  695     1878  1
;  696     1879  1 !++
;  697     1880  1 ! FUNCTIONAL DESCRIPTION:
;  698     1881  1 !
;  699     1882  1 !       Copy any class string passed by reference to any supported
;  700     1883  1 ! class string passed by descriptor.
;  701     1884  1 !
;  702     1885  1 ! FORMAL PARAMETERS:
;  703     1886  1 !
;  704     1887  1 !       SRC_LEN.rwu.r   Address of length of source
;  705     1888  1 !       SRC_ADDR.rt.r   Address of source
;  706     1889  1 !       DEST_DESC.wt.dx Address of destination string descriptor.
;  707     1890  1 !                       The class and dtype fields are not disturbed.
;  708     1891  1 !
;  709     1892  1 ! IMPLICIT INPUTS:
;  710     1893  1 !
;  711     1894  1 !       NONE
;  712     1895  1 !
;  713     1896  1 ! IMPLICIT OUTPUTS:
;  714     1897  1 !
;  715     1898  1 !       NONE
;  716     1899  1 !
;  717     1900  1 ! COMPLETION CODES:
;  718     1901  1 !
;  719     1902  1 !       SS$_NORMAL      Success
;  720     1903  1 !
;  721     1904  1 !       LIB$_STRTRU     The source string was truncated to fit the
;  722     1905  1 !                       fixed-length destination string.
;  723     1906  1 !
;  724     1907  1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
;  725     1908  1 !
;  726     1909  1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
;  727     1910  1 !                               If class = A or NCA, ARSIZE => 65K
;  728     1911  1 !
;  729     1912  1 ! SIDE EFFECTS:
;  730     1913  1 !
;  731     1914  1 !       May allocate and deallocate virtual storage.
;  732     1915  1 !
;  733     1916  1 !--
;  734     1917  1
;  735     1918  2     BEGIN
;  736     1919  2     RETURN LIB$SCOPY_R_DX6 (..SRC_LEN, .SRC_ADDR, .DEST_DESC) ;
;  737     1920  1     END;                                    ! end of LIB$SCOPY_R_DX


                                 007C 00000          .ENTRY  LIB$SCOPY_R_DX, Save R2,R3,R4,R5,R6     ; 1872
                        51   08  AC  7D 00002          MOVQ    SRC_ADDR, R1                            ; 1919
                        50   04  BC  D0 00006          MOVL    @SRC_LEN, R0                            ;
```

```
                0000V 30 0000A          BSBW    LIB$SCOPY_R_DX6                 ;
                      04 0000D          RET                                     ; 1920

; Routine Size:  14 bytes,    Routine Base:  _LIB$CODE + 0261

;  738          1921  1
```

```
;  740          1922  1 GLOBAL ROUTINE LIB$SCOPY_R_DX6 (          ! Copy string by descriptor
;  741          1923  1
;  742          1924  1         SRC_LEN,                          ! Number of bytes in source
;  743          1925  1         SRC_ADDR,                         ! Address of source data
;  744          1926  1         DEST_DESC                         ! Destination string
;  745          1927  1
;  746          1928  1                                 ) : STRING_JSB =
;  747          1929  1
;  748          1930  1 !++
;  749          1931  1 ! FUNCTIONAL DESCRIPTION:
;  750          1932  1 !
;  751          1933  1 !       Copy any class string passed by reference to any supported
;  752          1934  1 ! class string passed by descriptor.
;  753          1935  1 !
;  754          1936  1 ! FORMAL PARAMETERS:
;  755          1937  1 !
;  756          1938  1 !       SRC_LEN.rwu.v           ! (in R0) length of source
;  757          1939  1 !       SRC_ADDR.rt.r           ! (in R1) pointer to source string
;  758          1940  1 !       DEST_DESC.wt.dx         ! (in R2) pointer to destination
;  759          1941  1 !                                         string descriptor
;  760          1942  1 !
;  761          1943  1 ! IMPLICIT INPUTS:
;  762          1944  1 !
;  763          1945  1 !       NONE
;  764          1946  1 !
;  765          1947  1 ! IMPLICIT OUTPUTS:
;  766          1948  1 !
;  767          1949  1 !       NONE
;  768          1950  1 !
;  769          1951  1 ! COMPLETION CODES:
;  770          1952  1 !
;  771          1953  1 !       SS$_NORMAL      Success
;  772          1954  1 !
;  773          1955  1 !       LIB$_STRTRU     The source string was truncated to fit the
;  774          1956  1 !                       fixed-length destination string.
;  775          1957  1 !
;  776          1958  1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
;  777          1959  1 !
;  778          1960  1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
;  779          1961  1 !                               If class = A or NCA, ARSIZE => 65K
;  780          1962  1 !
;  781          1963  1 ! SIDE EFFECTS:
;  782          1964  1 !
;  783          1965  1 !       May allocate and deallocate virtual storage.
;  784          1966  1 !--
;  785          1967  1
;  786          1968  2     BEGIN
;  787          1969  2
;  788          1970  2     LOCAL
;  789          1971  2         RETURN_STATUS;
;  790          1972  2
;  791          1973  2     MAP
;  792          1974  2         DEST_DESC : REF BLOCK [ , BYTE] , ! destination descriptor
;  793          1975  2         SRC_LEN : WORD UNSIGNED ;         ! length of input
;  794          1976  2
;  795          1977  2
```

```
;  797          1978  2 !+
;  798          1979  2 ! Select the class of descriptor.
;  799          1980  2 ! Return the status resulting from the copy operation.
;  800          1981  2 !-
;  801          1982  2
;  802          1983  2     RETURN_STATUS = SS$_NORMAL ;          ! Assume success
;  803          1984  3     RETURN ( CASE .DEST_DESC[DSC$B_CLASS]
;  804          1985  3                  FROM DSC$K_CLASS_Z TO DSC$K_CLASS_SB OF
;  805          1986  3     SET
;  806          1987  3
;  807          1988  3 !+
;  808          1989  3 ! fixed string descriptor (CLASS _Z, _S, _SD, _SB)
;  809          1990  3 ! ********************************************
;  810          1991  3 !
;  811          1992  3 ! Use fixed length semantics. Copy to destination with fill or
;  812          1993  3 ! truncation.
;  813          1994  3 !-
;  814          1995  3         [DSC$K_CLASS_Z,
;  815          1996  3          DSC$K_CLASS_S,
;  816          1997  3          DSC$K_CLASS_SD,
;  817          1998  3          DSC$K_CLASS_SB] :
;  818          1999  4             BEGIN
;  819          2000  4             BUILTIN R0; ! length of uncopied src from MOVC5
;  820          2001  4
;  821          2002  4             CH$COPY (.SRC_LEN, .SRC_ADDR, STR$K_FILL_CHAR,
;  822          2003  4                      .DEST_DESC [DSC$W_LENGTH],
;  823          2004  4                      .DEST_DESC [DSC$A_POINTER]); ! do copy
;  824          2005  4
;  825          2006  4             IF .R0 EQLU 0   ! if no uncopied src
;  826          2007  4                 THEN
;  827          2008  4                     SS$_NORMAL                  ! then success
;  828          2009  4                 ELSE
;  829          2010  4                     LIB$_STRTRU                 ! else truncation
;  830          2011  3             END;
;  831          2012  3
```

```
;  833     2013  3 !+
;  834     2014  3 ! dynamic destination string
;  835     2015  3 ! ***************************
;  836     2016  3 !-
;  837     2017  3         [DSC$K_CLASS_D] :
;  838     2018  4             BEGIN
;  839   P 2019  4             IF $STR$NEED_ALLOC (.SRC_LEN,
;  840     2020  5                                 ($STR$DYN_AL_LEN (DEST_DESC)) )
;  841     2021  5
;  842   L 2022  5 %IF %BLISS (BLISS16) OR %BLISS (BLISS36)          ! if not VAX must not
;  843   U 2023  5 %THEN                                            ! CH$MOVE with overlap
;  844   U 2024  5 OR $STR$OVERLAP (.SRC_ADDR, .SRC_LEN,
;  845   U 2025  5                  .DEST_DESC [DSC$A_POINTER], .SRC_LEN)
;  846     2026  5 %FI
;  847     2027  4                 THEN
;  848     2028  5                     BEGIN                       ! cannot directly fill dest
;  849     2029  5                     LOCAL
;  850     2030  5                         LOC_RET_STAT,           ! status of calls to Allocate
;  851     2031  5                                                 !  and Deallocate
;  852     2032  5                         TEMP_DESC : $STR$DESCRIPTOR;        ! create temp
;  853     2033  5
;  854     2034  5                         LOC_RET_STAT = $STR$ALLOCATE (.SRC_LEN, TEMP_DESC);
;  855     2035  5                                                             ! alloc temp
;  856     2036  5                         !+
;  857     2037  5                         ! Allocate will only return STR$_NORMAL or
;  858     2038  5                         ! STR$_INSVIRMEM, therefore if it wasn't success,
;  859     2039  5                         ! don't continue copying
;  860     2040  5                         !-
;  861     2041  5
;  862     2042  6                         IF (.LOC_RET_STAT)
;  863     2043  5                             THEN
;  864     2044  6                                 BEGIN       ! successful allocate
;  865     2045  6                                 CH$MOVE (.SRC_LEN, .SRC_ADDR, ! copy to temp
;  866     2046  6                                          .TEMP_DESC [DSC$A_POINTER]);
;  867     2047  6                                 $STR$EXCH_DESCS (TEMP_DESC, DEST_DESC);
;  868     2048  6                                                             ! switch temp
;  869     2049  6                                                             ! and dest
;  870     2050  6                                 LOC_RET_STAT = $STR$DEALLOCATE (TEMP_DESC);
;  871     2051  6                                                             ! return former
;  872     2052  6                                                             ! string
;  873     2053  6                                 !+
;  874     2054  6                                 ! $STR$DEALLOCATE returns either STR$_NORMAL
;  875     2055  6                                 ! or STR$_FATINTERR.
;  876     2056  6                                 !-
;  877     2057  6                                 IF NOT .LOC_RET_STAT
;  878     2058  6                                 THEN
;  879     2059  6                                     RETURN_STATUS = LIB$_FATERRLIB ;
;  880     2060  6                                 END         ! successful allocate
;  881     2061  5                             ELSE
;  882     2062  5                                 RETURN_STATUS = LIB$_INSVIRMEM ;
;  883     2063  5                     END                     ! cannot directly fill dest
;  884     2064  5
;  885     2065  4                 ELSE
;  886     2066  4
;  887     2067  5                     BEGIN                   ! directly fill dest
;  888     2068  5                     CH$MOVE (.SRC_LEN, .SRC_ADDR,   ! write dest
;  889     2069  5                              .DEST_DESC [DSC$A_POINTER]);
```

```
;  890          2070  5          DEST_DESC [DSC$W_LENGTH] = .SRC_LEN;
;  891          2071  4          END;                              ! directly fill dest
;  892          2072  4
;  893          2073  4      .RETURN_STATUS                        ! return the status
;  894          2074  3      END;
;  895          2075  3
```

```
;  897     2076  3 !+
;  898     2077  3 ! Class A and NCA array descriptor
;  899     2078  3 ! ********************************
;  900     2079  3 !-
;  901     2080  3         [DSC$K_CLASS_A,          ! Class A Array descriptor
;  902     2081  3          DSC$K_CLASS_NCA]:       ! Class NCA array descriptor
;  903     2082  4             BEGIN
;  904     2083  4             BUILTIN R0; ! len of uncopied src from MOVC5
;  905     2084  4
;  906     2085  4             IF .DEST_DESC [DSC$L_ARSIZE] GTR MAX_SIZE ! If size>max
;  907     2086  4             THEN LIB$_INVSTRDES ;                     ! then quit
;  908     2087  4
;  909     2088  4             CH$COPY (.SRC_LEN, .SRC_ADDR, STR$K_FILL_CHAR,
;  910     2089  4                      .DEST_DESC [DSC$L_ARSIZE],
;  911     2090  4                      .DEST_DESC [DSC$A_POINTER]); ! do copy
;  912     2091  4
;  913     2092  4             IF .R0 EQLU 0   ! if no uncopied src
;  914     2093  4             THEN
;  915     2094  4                 RETURN_STATUS = SS$_NORMAL      ! then success
;  916     2095  4             ELSE
;  917     2096  4                 RETURN_STATUS = LIB$_STRTRU   !else truncation
;  918     2097  4
;  919     2098  3             END ;                 ! of Class A and NCA Array Descriptor
```

```
;  921          2099  3 !+
;  922          2100  3 ! Varying string descriptor
;  923          2101  3 ! ***************************
;  924          2102  3 !-
;  925          2103  3
;  926          2104  3         [DSC$K_CLASS_VS]:       ! Varying string descriptor
;  927          2105  4            BEGIN
;  928          2106  5            IF (.SRC_LEN LEQU .DEST_DESC [DSC$W_MAXSTRLEN] )
;  929          2107  4            THEN        ! fits within MAXLEN, copy and update CURLEN
;  930          2108  5                BEGIN
;  931          2109  5                CH$MOVE (.SRC_LEN, .SRC_ADDR,
;  932          2110  5                         .DEST_DESC [DSC$A_POINTER] + 2);
;  933          2111  5                (.DEST_DESC [DSC$A_POINTER])<0,16> = .SRC_LEN ;
;  934          2112  5                SS$_NORMAL      ! return success status
;  935          2113  5                END
;  936          2114  5
;  937          2115  4            ELSE        ! Won't fit within MAXLEN. Only copy MAXLEN's
;  938          2116  4                        ! worth of data and update CURLEN to MAXLEN
;  939          2117  4
;  940          2118  5                BEGIN
;  941          2119  5                CH$MOVE (.DEST_DESC [DSC$W_MAXSTRLEN], .SRC_ADDR,
;  942          2120  5                         .DEST_DESC [DSC$A_POINTER] + 2);
;  943          2121  5                (.DEST_DESC [DSC$A_POINTER])<0,16> =
;  944          2122  5                                        .DEST_DESC [DSC$W_MAXSTRLEN] ;
;  945          2123  5                LIB$_STRTRU     ! return truncation status
;  946          2124  5                END
;  947          2125  5
;  948          2126  3            END ;               ! of Varying string descriptor
;  949          2127  3
;  950          2128  3
;  951          2129  3 !+
;  952          2130  3 ! Unsupported class descriptor
;  953          2131  3 ! ****************************
;  954          2132  3 !-
;  955          2133  3
;  956          2134  3         [INRANGE, OUTRANGE]:    ! Unsupported class of descriptor
;  957          2135  3             LIB$_INVSTRDES ;
;  958          2136  2     TES);                       ! end of set on class code
;  959          2137  2
;  960          2138  1     END;                                    ! end of LIB$SCOPY_R_DX6


                                                        .EXTRN  STR$$MOVQ_R1

                                5E            1C  C2 00000 LIB$SCOPY_R_DX6::
                                                           SUBL2   #28, SP                          ; 1922
                             04   AE             52  D0 00003          MOVL    R2, DEST_DESC       ;
                                                 51  DD 00007          PUSHL   R1                  ;
                             04   AE             50  D0 00009          MOVL    R0, SRC_LEN         ;
                                  56             01  D0 0000D          MOVL    #1, RETURN_STATUS   ; 1983
                          7E      08   AE         03  C1 00010          ADDL3   #3, DEST_DESC, -(SP) ; 1984
                          0F            00     9E  8F 00015          CASEB   @(SP)+, #0, #15     ;
                0020            004F          0029    0029     00019 1$:     .WORD   3$-1$,-         ;
                0020            0020          0020    020D     00021         3$-1$,-             ;
                022F            020D          0029    0020     00029         7$-1$,-             ;
                0029            0020          0020    0020     00031         2$-1$,-             ;
```

```
                                                                                34$-1$,-                                                        ;
                                                                                2$-1$,-                                                         ;
                                                                                2$-1$,-                                                         ;
                                                                                2$-1$,-                                                         ;
                                                                                2$-1$,-                                                         ;
                                                                                3$-1$,-                                                         ;
                                                                                34$-1$,-                                                        ;
                                                                                35$-1$,-                                                        ;
                                                                                2$-1$,-                                                         ;
                                                                                2$-1$,-                                                         ;
                                                                                2$-1$,-                                                         ;
                                                                                3$-1$                                                           ;
                                56 00000000G   8F   D0 00039 2$:        MOVL    #LIB$_INVSTRDES, R6                                             ;
                                               23   11 00040            BRB     6$                                                              ;
                     7E   08   AE              04   C1 00042 3$:        ADDL3   #4, DEST_DESC, -(SP)                                            ; 2004
                                               9E   DD 00047            PUSHL   @(SP)+                                                          ;
          0C   BE    20   04   BE        08    AE   2C 00049            MOVC5   SRC_LEN, @SRC_ADDR, #32, @DEST_DESC, @(SP)+                     ;
                                               9E      00051                                                                                    ;
                                                    50   D5 00052            TSTL    R0                                                      ; 2006
                                                    05   12 00054            BNEQ    4$                                                      ;
                                56                  01   D0 00056            MOVL    #1, R0                                                  ;
                                                    07   11 00059            BRB     5$                                                      ;
                                50 00000000G        8F   D0 0005B 4$:        MOVL    #LIB$_STRTRU, R0                                        ;
                                56                  50   D0 00062 5$:        MOVL    R0, R6                                                  ;
                                                  0217   31 00065 6$:        BRW     39$                                                     ;
                     51   08   AE                  04   C1 00068 7$:        ADDL3   #4, DEST_DESC, R1                                       ; 2020
                                50                  61   D0 0006D            MOVL    (R1), R0                                                ;
                                                    51   D4 00070            CLRL    R1                                                      ;
                                                    50   D5 00072            TSTL    R0                                                      ;
                                                    06   12 00074            BNEQ    8$                                                      ;
                                                    51   D6 00076            INCL    R1                                                      ;
                                                    52   D4 00078            CLRL    R2                                                      ;
                                                    15   11 0007A            BRB     10$                                                     ;
                     00F0   8F        08    BE   B1 0007C 8$:        CMPW    @DEST_DESC, #240                                                ;
                                               06   1B 00082            BLEQU   9$                                                      ;
                                52             08   BE   3C 00084            MOVZWL  @DEST_DESC, R2                                          ;
                                               07   11 00088            BRB     10$                                                     ;
                                52                  50   D0 0008A 9$:        MOVL    R0, STRING_BLOCK                                        ;
                                52             FE   A2   3C 0008D            MOVZWL  -2(STRING_BLOCK), R2                                    ;
               000000F0   8F                        52   D1 00091 10$:        CMPL    R2, #240                                                ;
                                               26   1F 00098            BLSSU   14$                                                     ;
                                04                  51   E9 0009A            BLBC    R1, 11$                                                 ;
                                                    52   D4 0009D            CLRL    R2                                                      ;
                                                    15   11 0009F            BRB     13$                                                     ;
                     00F0   8F        08    BE   B1 000A1 11$:        CMPW    @DEST_DESC, #240                                                ;
                                               06   1B 000A7            BLEQU   12$                                                     ;
                                52             08   BE   3C 000A9            MOVZWL  @DEST_DESC, R2                                          ;
                                               07   11 000AD            BRB     13$                                                     ;
                                52                  50   D0 000AF 12$:        MOVL    R0, STRING_BLOCK                                        ;
                                52             FE   A2   3C 000B2            MOVZWL  -2(STRING_BLOCK), R2                                    ;
     52        04   AE                  10          00   ED 000B6 13$:        CMPZV   #0, #16, SRC_LEN, R2                                    ;
                                               26   13 000BC            BEQL    18$                                                     ;
                                               27   11 000BE            BRB     19$                                                     ;
                                04                  51   E9 000C0 14$:        BLBC    R1, 15$                                                 ;
                                                    52   D4 000C3            CLRL    R2                                                      ;
                                                    15   11 000C5            BRB     17$                                                     ;
                     00F0   8F        08    BE   B1 000C7 15$:        CMPW    @DEST_DESC, #240                                                ;
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                                 06  1B 000CD          BLEQU   16$                                         :
              52          08     BE  3C 000CF          MOVZWL  @DEST_DESC, R2                              :
                                 07  11 000D3          BRB     17$                                         :
              52                 50  D0 000D5 16$:     MOVL    R0, STRING_BLOCK                            :
              52          FE     A2  3C 000D8          MOVZWL  -2(STRING_BLOCK), R2                        :
52    04  AE  10                 00  ED 000DC 17$:     CMPZV   #0, #16, SRC_LEN, R2                        :
                                 03  1A 000E2          BGTRU   19$                                         :
                               0132  31 000E4 18$:     BRW     33$                                         :
           07 00000000G          00  E8 000E7 19$:     BLBS    STR$$V_INIT, 20$                            : 2034
   00000000G  00                 00  FB 000EE          CALLS   #0, STR$$INIT                               :
           50 00000000G          8F  D0 000F5 20$:     MOVL    #STR$_NORMAL, RETURN_STATUS                 :
        00F0  8F          04     AE  B1 000FC          CMPW    SRC_LEN, #240                               :
                                 43  1A 00102          BGTRU   26$                                         :
                          04     AE  B5 00104          TSTW    SRC_LEN                                     :
                                 04  12 00107          BNEQ    21$                                         :
                                 53  D4 00109          CLRL    TEMP                                        :
                                 31  11 0010B          BRB     25$                                         :
              51          04     AE  3C 0010D 21$:     MOVZWL  SRC_LEN, R1                                 :
                                 51  D7 00111          DECL    R1                                          :
              51                 07  8A 00113          BICB2   #7, R1                                      :
           54 00000000G0041      9E 00116              MOVAB   STR$$Q_SHORT_Q[R1], REMQUE_ADDR             :
              53          00     B4  0F 0011E 22$:     REMQUE  @0(REMQUE_ADDR), TEMP                       :
                                 05  1D 00122          BVS     23$                                         :
              52                 01  D0 00124          MOVL    #1, ALLOC_DONE                              :
                                 0D  11 00127          BRB     24$                                         :
                                 52  D4 00129 23$:     CLRL    ALLOC_DONE                                  :
              7E          04     AE  3C 0012B          MOVZWL  SRC_LEN, -(SP)                              :
   00000000G  00                 01  FB 0012F          CALLS   #1, STR$$ALOC_SHORT                         :
              05                 52  E8 00136 24$:     BLBS    ALLOC_DONE, 25$                             :
              2E                 50  E9 00139          BLBC    RETURN_STATUS, 28$                          :
                                 E0  11 0013C          BRB     22$                                         :
              29                 50  E9 0013E 25$:     BLBC    RETURN_STATUS, 28$                          :
          1C  AE                 53  D0 00141          MOVL    TEMP, TEMP_DESC+4                           :
                                 1E  11 00145          BRB     27$                                         :
                          1C     AE  9F 00147 26$:     PUSHAB  TEMP_DESC+4                                 :
          10  AE          08     AE  3C 0014A          MOVZWL  SRC_LEN, 16(SP)                             :
                          10     AE  9F 0014F          PUSHAB  16(SP)                                      :
   00000000G  00                 02  FB 00152          CALLS   #2, LIB$GET_VM                              :
              09                 50  E8 00159          BLBS    RETURN_STATUS, 27$                          :
           50 00000000G          8F  D0 0015C          MOVL    #STR$_INSVIRMEM, RETURN_STATUS              :
                                 05  11 00163          BRB     28$                                         :
      18  AE              04     AE  B0 00165 27$:     MOVW    SRC_LEN, TEMP_DESC                          :
      0C  AE                     50  D0 0016A 28$:     MOVL    RETURN_STATUS, LOC_RET_STAT                 :
          03              0C     AE  E8 0016E          BLBS    LOC_RET_STAT, 29$                           : 2042
                               009B  31 00172          BRW     32$                                         :
1C  BE    00  BE          04     AE  28 00175 29$:     MOVC3   SRC_LEN, @SRC_ADDR, @TEMP_DESC+4            : 2046
          10  AE          08     BE  B0 0017C          MOVW    @DEST_DESC, $STR$TEMP_DESC                  : 2047
      50  08  AE                 04  C1 00181          ADDL3   #4, DEST_DESC, R0                           :
          14  AE                 60  D0 00186          MOVL    (R0), $STR$TEMP_DESC+4                      :
      50  08  AE                 02  C1 0018A          ADDL3   #2, DEST_DESC, R0                           :
          1A  AE                 60  90 0018F          MOVB    (R0), TEMP_DESC+2                           :
      50  08  AE                 03  C1 00193          ADDL3   #3, DEST_DESC, R0                           :
          1B  AE                 60  90 00198          MOVB    (R0), TEMP_DESC+3                           :
              50          18     AE  9E 0019C          MOVAB   TEMP_DESC, R0                               :
              51          08     AE  D0 001A0          MOVL    DEST_DESC, R1                               :
                   00000000G     00  16 001A4          JSB     STR$$MOVQ_R1                                :
      18  AE              10     AE  B0 001AA          MOVW    $STR$TEMP_DESC, TEMP_DESC                   :
```

```
                1C   AE        14   AE   D0 001AF          MOVL   $STR$TEMP_DESC+4, TEMP_DESC+4                          ;
                50 00000000G   8F   D0 001B4          MOVL   #STR$_NORMAL, RETURN_STATUS                          ; 2050
                52        1C   AE   D0 001BB          MOVL   TEMP_DESC+4, R2                                      ;
                              3E   13 001BF          BEQL   31$                                                  ;
             00F0   8F        18   AE   B1 001C1          CMPW   TEMP_DESC, #240                                      ;
                              1A   1A 001C7          BGTRU  30$                                                  ;
                51            52   D0 001C9          MOVL   R2, STRING_BLOCK                                     ;
                51        FE   A1   3C 001CC          MOVZWL -2(STRING_BLOCK), ALLOC_LENGTH                       ;
                              51   D7 001D0          DECL   R1                                                   ;
                51            07   8A 001D2          BICB2  #7, R1                                               ;
                51 00000000G0041   9E 001D5          MOVAB  STR$$Q_SHORT_Q[R1], INSQUE_ADDR                      ;
                00   B1            62   0E 001DD          INSQUE (R2), @0(INSQUE_ADDR)                                ;
                              1C   11 001E1          BRB    31$                                                  ;
                        1C   AE   9F 001E3 30$:     PUSHAB TEMP_DESC+4                                          ;
                0C   AE         1C   AE   3C 001E6          MOVZWL TEMP_DESC, 12(SP)                                    ;
                        0C   AE   9F 001EB          PUSHAB 12(SP)                                               ;
          00000000G   00            02   FB 001EE          CALLS  #2, LIB$FREE_VM                                      ;
                07            50   E8 001F5          BLBS   RETURN_STATUS, 31$                                   ;
                50 00000000G   8F   D0 001F8          MOVL   #STR$_FATINTERR, RETURN_STATUS                       ;
                0C   AE       50   D0 001FF 31$:     MOVL   RETURN_STATUS, LOC_RET_STAT                          ;
                78        0C   AE   E8 00203          BLBS   LOC_RET_STAT, 39$                                    ; 2057
                56 00000000G   8F   D0 00207          MOVL   #LIB$_FATERRLIB, RETURN_STATUS                       ; 2059
                              6F   11 0020E          BRB    39$                                                  ; 2042
                56 00000000G   8F   D0 00210 32$:     MOVL   #LIB$_INSVIRMEM, RETURN_STATUS                       ; 2062
                              66   11 00217          BRB    39$                                                  ; 2019
          60        00   BE        04   AE   28 00219 33$:     MOVC3  SRC_LEN, @SRC_ADDR, (R0)                            ; 2069
                08   BE        04   AE   B0 0021F          MOVW   SRC_LEN, @DEST_DESC                                 ; 2070
                              59   11 00224          BRB    39$                                                  ; 2073
          50    08   AE              0C   C1 00226 34$:     ADDL3  #12, DEST_DESC, R0                                  ; 2085
          7E    08   AE              04   C1 0022B          ADDL3  #4, DEST_DESC, -(SP)                                ; 2090
                              9E   DD 00230          PUSHL  @(SP)+                                               ;
          7E    0C   AE              0C   C1 00232          ADDL3  #12, DEST_DESC, -(SP)                               ;
       9E       20   08   BE        0C   AE   2C 00237          MOVC5  SRC_LEN, @SRC_ADDR, #32, @(SP)+, @(SP)+             ;
                                    9E        0023E                                                                  ;
                              50   D5 0023F          TSTL   R0                                                   ; 2092
                              35   12 00241          BNEQ   38$                                                  ;
                56                 01   D0 00243          MOVL   #1, RETURN_STATUS                                    ; 2094
                              1D   11 00246          BRB    36$                                                  ;
                51   08   AE              04   C1 00248 35$:     ADDL3  #4, DEST_DESC, R1                                   ; 2110
                50                 61   9E 0024D          MOVAB  (R1), R0                                             ;
                     08   BE        04   AE   B1 00250          CMPW   SRC_LEN, @DEST_DESC                                 ; 2106
                              13   1A 00255          BGTRU  37$                                                  ;
                56                 60   D0 00257          MOVL   (R0), R6                                             ; 2110
          02    A6   00   BE        04   AE   28 0025A          MOVC3  SRC_LEN, @SRC_ADDR, 2(R6)                           ;
                66        04   AE   B0 00261          MOVW   SRC_LEN, (R6)                                       ; 2111
                56                 01   D0 00265 36$:     MOVL   #1, R6                                               ; 2108
                              15   11 00268          BRB    39$                                                  ;
                56                 60   D0 0026A 37$:     MOVL   (R0), R6                                             ; 2120
          02    A6   00   BE        08   BE   28 0026D          MOVC3  @DEST_DESC, @SRC_ADDR, 2(R6)                        ;
                66        08   BE   B0 00274          MOVW   @DEST_DESC, (R6)                                    ; 2122
                56 00000000G   8F   D0 00278 38$:     MOVL   #LIB$_STRTRU, R6                                     ; 2118
                50                 56   D0 0027F 39$:     MOVL   R6, R0                                               ; 1984
                5E                 20   C0 00282          ADDL2  #32, SP                                              ; 2138
                                        05 00285          RSB                                                         ;

; Routine Size:  646 bytes,    Routine Base:  _LIB$CODE + 026F
```

```
;  962          2139  1 END
;  963          2140  0 ELUDOM


;                               PSECT SUMMARY
;
;      Name                     Bytes                          Attributes
;
;  _LIB$CODE                      1269  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(2)


;                             Library Statistics
;
;                                      --------  Symbols  --------      Pages       Processing
;      File                            Total     Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]STARLET.L32;1    9776        16         0       581          00:00.8



;                                        COMMAND QUALIFIERS

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

; Size:          1269 code + 0 data bytes
; Run Time:         00:18.3
; Elapsed Time:     01:17.2
; Lines/CPU Min:     7012
; Lexemes/CPU-Min: 32267
; Memory Used:  205 pages
; Compilation Complete
```

0209 AH-BT13A-SE
VAX/VMS V4.0

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