```
LLL                    IIIIIIIII       BBBBBBBBBBB     RRRRRRRRRRR      TTTTTTTTTTTTTTT   LLL
LLL                    IIIIIIIII       BBBBBBBBBBB     RRRRRRRRRRR      TTTTTTTTTTTTTTT   LLL
LLL                    IIIIIIIII       BBBBBBBBBBB     RRRRRRRRRRR      TTTTTTTTTTTTTTT   LLL
LLL                       III          BBB     BBB     RRR       RRR         TTT          LLL
LLL                       III          BBB     BBB     RRR       RRR         TTT          LLL
LLL                       III          BBB     BBB     RRR       RRR         TTT          LLL
LLL                       III          BBB     BBB     RRR       RRR         TTT          LLL
LLL                       III          BBB     BBB     RRR       RRR         TTT          LLL
LLL                       III          BBBBBBBBBBB     RRRRRRRRRRR          TTT          LLL
LLL                       III          BBBBBBBBBBB     RRRRRRRRRRR          TTT          LLL
LLL                       III          BBB     BBB     RRR   RRR            TTT          LLL
LLL                       III          BBB     BBB     RRR   RRR            TTT          LLL
LLL                       III          BBB     BBB     RRR    RRR           TTT          LLL
LLL                       III          BBB     BBB     RRR     RRR          TTT          LLL
LLL                       III          BBB     BBB     RRR     RRR          TTT          LLL
LLLLLLLLLLLLLLL           III          BBBBBBBBBBB     RRR       RRR        TTT      LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL           III          BBBBBBBBBBB     RRR       RRR        TTT      LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL           III          BBBBBBBBBBB     RRR       RRR        TTT      LLLLLLLLLLLLLLL
```

```
 000000    TTTTTTTTTT   SSSSSSSS    CCCCCCCC  VV      VV  TTTTTTTTTT  FFFFFFFFFF  PPPPPPPP
 000000    TTTTTTTTTT   SSSSSSSS    CCCCCCC   VV      VV  TTTTTTTTTT  FFFFFFFFFF  PPPPPPPP
00    00       TT       SS          CC         VV    VV       TT      FF          PP      PP
00    00       TT       SS          CC         VV    VV       TT      FF          PP      PP
00    00       TT       SS          CC         VV    VV       TT      FF          PP      PP
00    00       TT         SSSSSS    CC         VV    VV       TT      FFFFFFF     PPPPPPPP
00    00       TT         SSSSSS    CC         VV    VV       TT      FFFFFFF     PPPPPPPP
00    00       TT             SS    CC         VV    VV       TT      FF          PP
00    00       TT             SS    CC          VV  VV        TT      FF          PP
00    00       TT             SS    CC           VV VV        TT      FF          PP       ....
00    00       TT             SS    CC           VV VV        TT      FF          PP       ....
 000000        TT       SSSSSSSS     CCCCCCCC     VV          TT      FF          PP       ....
 000000        TT       SSSSSSSS     CCCCCCC      VV          TT      FF          PP       ....

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

```
0000      1          .TITLE  OTS$CVTFP_R9     Convert Floating to Packed
0000      2          .IDENT  /1-005/          ; File: OTSCVTFP.MAR Edit: PLL1005
0000      3  ;
0000      4  ;
0000      5  ;********************************************************************
0000      6  ;*                                                                  *
0000      7  ;*   COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                        *
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0000     23  ;*   SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.         *
0000     24  ;*                                                                  *
0000     25  ;*                                                                  *
0000     26  ;********************************************************************
0000     27
0000     28
0000     29  ; FACILITY: LANGUAGE INDEPENDENT SUPPORT
0000     30  ;++
0000     31  ; ABSTRACT:
0000     32  ;       This module contains the routine that converts floating
0000     33  ;       numbers to packed.
0000     34  ;
0000     35  ;
0000     36  ;--
0000     37
0000     38  ; VERSION: 1
0000     39  ;
0000     40  ; HISTORY:
0000     41  ;
0000     42  ; AUTHOR:
0000     43  ;       Marty Jack, 14-Mar-1979
0000     44  ;
0000     45  ; MODIFIED BY:
0000     46  ;
0000     47  ;
0000     48  ;
```

OTS$CVTFP_R9
1-005

G 13
Convert Floating to Packed   16-SEP-1984 00:23:47   VAX/VMS Macro V04-00   Page 2
HISTORY   ; Detailed Current Edit History   6-SEP-1984 11:12:56   [LIBRTL.SRC]OTSCVTFP.MAR;1   (2)

```
0000   50           .SBTTL  HISTORY            ; Detailed Current Edit History
0000   51
0000   52
0000   53 ; Edit History for Version 1 of OTSCVTFP
0000   54 ;
0000   55 ; 1-001 - Original.  MLJ 14-Mar-1979
0000   56 ; 1-002 - Make external references explicit. RKR 17-JULY-1979
0000   57 ; 1-003 - Change all references to FOR$CNV_OUT_E to COB$CNVOUT
0000   58 ;           RKR  27-SEPT-79
0000   59 ; 1-004 - Cosmetic changes.  RKR 18-OCT-79
0000   60 ; 1-005 - Change source name to OTS$ but retain old entry point name.
0000   61 ;           PLL 21-Jan-82
```

```
         0000        63                 .SBTTL  DECLARATIONS
         0000        64
         0000        65  ;
         0000        66  ; INCLUDE FILES:
         0000        67  ;
         0000        68         $DSCDEF
         0000        69
         0000        70  ;
         0000        71  ; EXTERNAL SYMBOLS:
         0000        72         .DSABL  GBL              ; Prevent undeclared symbols from being
         0000        73                                 ; automatically global
         0000        74         .EXTRN  OTS$CNVOUT       ; E-format conversion
         0000        75         .EXTRN  LIB$STOP         ; Error halt
         0000        76         .EXTRN  OTS$_FATINTERR   ; Fatal internal error code
         0000        77
         0000        78  ;
         0000        79
         0000        80  ;
         0000        81  ; MACROS:
         0000        82  ;       NONE
         0000        83  ;
         0000        84
         0000        85  ;
         0000        86  ; PSECT DECLARATIONS:
     00000000        87         .PSECT  _OTS$CODE        PIC, SHR, LONG, EXE, NOWRT,-
         0000        88                                  USR, CON, REL, LCL, RD
         0000        89
         0000        90  ;
         0000        91  ; EQUATED SYMBOLS:
         0000        92  ;       NONE
         0000        93  ;
         0000        94
         0000        95  ;
         0000        96  ; OWN STORAGE:
         0000        97  ;       NONE
         0000        98  ;
```

I 13

OTS$CVTFP_R9   Convert Floating to Packed   16-SEP-1984 00:23:47   VAX/VMS Macro V04-00   Page 4   OT
1-005   OTS$CVTFP_R9   6-SEP-1984 11:12:56   [LIBRTL.SRC]OTSCVTFP.MAR;1   (4)   Ta

```
                               0000   100              .SBTTL  OTS$CVTFP_R9
                               0000   101
                               0000   102  ;++
                               0000   103  ; FUNCTIONAL DESCRIPTION:
                               0000   104  ;
                               0000   105  ;        Converts a floating number to packed.
                               0000   106  ;
                               0000   107  ; CALLING SEQUENCE:
                               0000   108  ;
                               0000   109  ;        JSB OTS$CVTFP_R9 (scale.rl.v, src.rf.r, dstlen.rl.v, dst.wp.r)
                               0000   110  ;
                               0000   111  ;        Arguments are passed in R6, R7, R8 and R9.
                               0000   112  ;
                               0000   113  ; INPUT PARAMETERS:
                               0000   114  ;
                               0000   115  ;        SCALE.rl.v                The power of ten by which the internal
                               0000   116  ;                                  representation of the source must be
                               0000   117  ;                                  multiplied to scale the same as the
                               0000   118  ;                                  internal representation of the dest.
                               0000   119  ;        SRC.rf.r                  The number to be converted
                               0000   120  ;        DSTLEN.rl.v               The number of digits in the destination
                               0000   121  ;
                               0000   122  ; IMPLICIT INPUTS:
                               0000   123  ;
                               0000   124  ;        All of the trap bits in the PSL are assumed off.
                               0000   125  ;
                               0000   126  ; OUTPUT PARAMETERS:
                               0000   127  ;
                               0000   128  ;        DST.wp.r                  The place to store the converted number
                               0000   129  ;
                               0000   130  ; IMPLICIT OUTPUTS:
                               0000   131  ;
                               0000   132  ;        NONE
                               0000   133  ;
                               0000   134  ; FUNCTION VALUE:
                               0000   135  ;
                               0000   136  ;        1 = SUCCESS, 0 = FAILURE
                               0000   137  ;
                               0000   138  ; SIDE EFFECTS:
                               0000   139  ;
                               0000   140  ;        Destroys registers R0 through R9.
                               0000   141  ;
                               0000   142  ;--
                               0000   143
                               0000   144
                               0000   145  OTS$CVTFP_R9::
                               0000   146  COB$CVTFP_R9::
            5E   30   C2      0000   147              SUBL2   #48,SP                ; Allocate temp space
            6E   67   56      0003   148              CVTFD   (R7),(SP)             ; Get input number
                               0006   149  ;
                               0006   150  ; Make a descriptor for the temporary string.
                               0006   151  ;
                08 AE  9F      0006   152              PUSHAB  8(SP)                 ; Address = space reserved
            7E   01   90      0009   153              MOVB    #DSC$K_CLASS_S,-(SP)  ; Class = static
            7E   0E   90      000C   154              MOVB    #DSC$K_DTYPE_T,-(SP)  ; Data type = ASCII string
            7E   26   B0      000F   155              MOVW    #38,-(SP)             ; Length in bytes
                               0012   156  ;
```

OTS$CVTFP_R9   Convert Floating to Packed   16-SEP-1984 00:23:47 VAX/VMS Macro V04-00   Page 5
1-005   OTS$CVTFP_R9   6-SEP-1984 11:12:56 [LIBRTL.SRC]OTSCVTFP MAR;1   (4)

J 13

```
                                    0012    157 ; Call OTS$CNVOUT.
                                    0012    158 ;
                        1F    DD    0012    159           PUSHL    #31                      ; Digits in fraction
                  04 AE   9F    0014    160           PUSHAB   4(SP)                    ; Output string descriptor
                  10 AE   9F    0017    161           PUSHAB   16(SP)                   ; Number to convert
         00000000'GF   03    FB    001A    162           CALLS    #3,G^OTS$CNVOUT          ; Call conversion routine
                     29 50   E9    0021    163           BLBC     R0,20$                   ; Should never fail
                                    0024    164 ;
                                    0024    165 ; Convert the exponent and correct for scale factor.
                                    0024    166 ;
        6E    02    33 AE   02   09    0024    167           CVTSP    #2,51(SP),#2,(SP)        ; Make packed exponent
                  50 6E   02   36    002A    168           CVTPL    #2,(SP),R0               ; Make longword exponent
                  56   E1 A640   9E    002E    169           MOVAB    -31(R6)[R0],R6           ; Correct for fraction size and scale
                                    0033    170 ;
                                    0033    171 ; Convert the fraction to packed.
                                    0033    172 ;
             12 AE   10 AE   90    0033    173           MOVB     16(SP),18(SP)            ; Move sign over "."
        6E   1F   12 AE   1F   09    0038    174           CVTSP    #31,18(SP),#31,(SP)      ; Make packed fraction
   69   58 00   6E   1F   56   F8    003E    175           ASHP     R6,#31,(SP),#0,R8,(R9)   ; Scale to destination
                                    0045    176           ;                                     (also clears R0)
                     02   1D    0045    177           BVS      10$                      ; Branch if overflowed
                     50   D6    0047    178           INCL     R0                       ; Indicate success, R0 = 1
                  5E   38   C0    0049    179 10$:      ADDL2    #56,SP                   ; Delete stack temps
                        05    004C    180           RSB
                                    004D    181 ;
                                    004D    182 ; Come here on failure of OTS$CNVOUT.  This should never happen.
                                    004D    183 ;
         00000000'8F   DD    004D    184 20$:      PUSHL    #OTS$_FATINTERR          ; OTS fatal error message
      00000000'GF   01   FB    0053    185           CALLS    #1,G^LIB$STOP            ; Signal and don't return
                                    005A    186 ;
                                    005A    187           .END
```

OTS$CVTFP_R9   Convert Floating to Packed   16-SEP-1984 00:23:47   VAX/VMS Macro V04-00   Page   6
Symbol table   6-SEP-1984 11:12:56   [LIBRTL.SRC]OTSCVTFP.MAR;1   (4)

```
COB$CVTFP_R9                        00000000 RG    02
DSC$K_CLASS_S                     = 00000001
DSC$K_DTYPE_T                     = 0000000E
LIB$STOP                            ********  X    00
OTS$CNVOUT                          ********  X    00
OTS$CVTFP_R9                        00000000 RG    02
OTS$_FATINTERR                      ********  X    00
```

```
                                    +------------------+
                                    ! Psect synopsis !
                                    +------------------+


PSECT name                     Allocation          PSECT No.   Attributes
----------                     ----------          ---------   ----------
  .  ABS  .                    00000000  (    0.)  00 (  0.)   NOPIC   USR   CON   ABS   LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
 $ABS$                         00000000  (    0.)  01 (  1.)   NOPIC   USR   CON   ABS   LCL NOSHR   EXE   RD     WRT NOVEC BYTE
 _OTS$CODE                     0000005A  (   90.)  02 (  2.)     PIC   USR   CON   REL   LCL   SHR   EXE   RD   NOWRT NOVEC LONG
```

```
                                +-----------------------+
                                ! Performance indicators !
                                +-----------------------+


Phase                  Page faults    CPU Time       Elapsed Time
-----                  -----------    --------       ------------
Initialization                  29    00:00:00.03    00:00:00.58
Command processing             112    00:00:00.30    00:00:03.59
Pass 1                         134    00:00:01.10    00:00:05.75
Symbol table sort                0    00:00:00.11    00:00:00.85
Pass 2                          47    00:00:00.35    00:00:00.91
Symbol table output              3    00:00:00.01    00:00:00.01
Psect synopsis output            2    00:00:00.01    00:00:00.01
Cross-reference output           0    00:00:00.00    00:00:00.00
Assembler run totals           329    00:00:01.91    00:00:11.70
```

The working set limit was 900 pages.
8391 bytes (17 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 136 non-local and 2 local symbols.
187 source lines were read in Pass 1, producing 10 object records in Pass 2.
8 pages of virtual memory were used to define 7 macros.

```
                                +---------------------------+
                                ! Macro library statistics !
                                +---------------------------+


Macro library name                      Macros defined
------------------                      --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2              4
```

190 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:OTSCVTFP/OBJ=OBJ$:OTSCVTFP MSRC$:OTSCVTFP/UPDATE=(ENH$:OTSCVTFP)

OTSCCB
LIS

OTSCCBDAT
LIS

OTSCVTDP
LIS

OTSCNVOUT
LIS

OTSCVTFP
LIS

OTSCVTLT
LIS

LIBVECTR2
LIS

LIBWAIT
LIS

OTSCLOSEF
LIS

OTSCVTHP
LIS

LIBVECTOR
LIS

OTSCVTDT
LIS

LIBVM
LIS

OTSCVTGP
LIS