```
TTTTTTTTTTTTTTT  EEEEEEEEEEEEEEEE    CCCCCCCCCCC     000000000
TTTTTTTTTTTTTTT  EEEEEEEEEEEEEEEE    CCCCCCCCCCC     000000000
TTTTTTTTTTTTTTT  EEEEEEEEEEEEEEEE    CCCCCCCCCCC     000000000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEEEEEEEEEEE        CCC          000       000
      TTT        EEEEEEEEEEEE        CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEE                 CCC          000       000
      TTT        EEEEEEEEEEEEEEEE    CCCCCCCCCCC     000000000
      TTT        EEEEEEEEEEEEEEEE    CCCCCCCCCCC     000000000
      TTT        EEEEEEEEEEEEEEEE    CCCCCCCCCCC     000000000
```

```
TTTTTTTTT1  EEEEEEEEEE    CCCCCCC     000000   LL          BBBBBBBB   RRRRRRRR
TTTTTTTTTT  EEEEEEEEEE    CCCCCCC     000000   LL          BBBBBBBB   RRRRRRRR
     TT     EE          CC           00    00  LL          BB    BB   RR    RR
     TT     EE          CC           00    00  LL          BB    BB   RR    RR
     TT     EE          CC           00    00  LL          BB    BB   RR    RR
     TT     EE          CC           00    00  LL          BB    BB   RR    RR
     TT     EEEEEEEE    CC           00    00  LL          BBBBBBBB   RRRRRRRR
     TT     EEEEEEEE    CC           00    00  LL          BBBBBBBB   RRRRRRRR
     TT     EE          CC           00    00  LL          BB    BB   RR RR
     TT     EE          CC           00    00  LL          BB    BB   RR RR
     TT     EE          CC           00    00  LL          BB    BB   RR   RR      ....
     TT     EE          CC           00    00  LL          BB    BB   RR   RR      ....
     TT     EEEEEEEEEE    CCCCCCC     000000   LLLLLLLLLL   BBBBBBBB   RR    RR     ....
     TT     EEEEEEEEEE    CCCCCCC     000000   LLLLLLLLLL   BBBBBBBB   RR    RR     ....


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

TECOLBR
V39.00

TECO's HELP command, etc.

D 10

16-SEP-1984 02:13:33   VAX/VMS Macro V04-00      Page  1
10-SEP-1984 13:13:14   [TECO.SRC]TECOLBR.MAR;2         (1)

TEC
V39

```
                        0000        1  .TITLE   TECOLBR TECO's HELP command, etc.
                        0000        2  .IDENT   /V39.00/
                        0000        3
                        0000        4 ;********************************************************************
                        0000        5 ;*                                                                  *
                        0000        6 ;*   COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                        *
                        0000        7 ;*   DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.         *
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                        0000       18 ;*   AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT  *
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                        0000       22 ;*   SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.        *
                        0000       23 ;*                                                                  *
                        0000       24 ;*                                                                  *
                        0000       25 ;********************************************************************
                        0000       26
                        0000       27  .SBTTL   TECO's HELP command, etc.
                        0000       28
                        0000       29  ; Last edit on 27-Jul-1983 by Mark Bramhall
                        0000       30
                        0000       31           $HLPDEF                          ; Librarian's HELP definitions
                        0000       32           $LBRDEF                          ; Librarian definitions
                        0000       33
         0000000A       0000       34  MAX_KEYS         =         10             ; Maximum number of keys allowed
                        0000       35
         000000FF       0000       36  LIB_NAME_MAX     =         255            ; Maximum size of a library name
                        0000       37
         000000FF       0000       38  RNS_NAME_MAX     =         255            ; Maximum size of a resultant name
                        0000       39
                        0000       40  .DEFAULT DISPLACEMENT WORD               ; 16 bits should always reach
                        0000       41
                        0000       42  .SHOW    MEB
                        0000       43
         00000000       0000       44  .PSECT   TECOEXELBR,       PAGE,NOPIC,USR,OVR,REL,GBL,  SHR,  EXE,RD,NOWRT
                        0000       45
            50    D5    0000       46           TSTL     R0                      ; Error message printing call (-1)?
            4A    19    0002       47           BLSS     40$                     ; Yes
         00'AB    B5    0004       48           TSTW     B^INDIR(R11)            ; Active indirect command file?
            38    12    0007       49           BNEQ     20$                     ; Yep, do nothing
    56   0000'CB 3C    0009       50           MOVZWL   W^QPNTR(R11), R6        ; Get the size of the command line
            34    13    000E       51           BEQL     30$                     ; Can't be a HELP command
      1B    50    91    0010       52           CMPB     R0, #27                 ; An ESCape?
            08    13    0013       53           BEQL     10$                     ; Yep, go check for 2 ESCapes
      0A    50    91    0015       54           CMPB     R0, #10                 ; A LF?
            27    12    0018       55           BNEQ     20$                     ; Nope
      50    0D    9A    001A       56           MOVZBL   #13, R0                 ; Yep, check for CR/LF combination
   50   00'AB    B1    001D       57  10$:      CMPW     B^TEMP(R11), R0         ; The second ESCape or CR/LF?
```

E 10

TECOLBR              TECO's HELP command, etc.      16-SEP-1984 02:13:33 VAX/VMS Macro V04-00    Page 2
V39.00              TECO's HELP command, etc.      10-SEP-1984 13:13:14 [TECO.SRC]TECOLBR.MAR;2    (1)

```
                        1E   12  0021   58            BNEQ    20$                        ; No
              57   00'AB   3C  0023   59            MOVZWL  B^QRSTOR(R11), R7          ; Get base of Q-register storage
              57   00'AB   A0  0027   60            ADDW    B^QZ(R11), R7             ;  and add in the inuse amount
                   57   56   C2  002B   61            SUBL    R6, R7                   ;   then back up by command's length
                   51   87   D0  002E   62            MOVL    (R7)+, R1                ; Get first four command characters
         51   20202020 8F   CA  0031   63            BICL    #32@8!32@8!32@8!32, R1   ;  and (dirty) convert to upper case
         504C4548 8F   51   D1  0038   64            CMPL    R1, #^A/HELP/            ; Is this a HELP command?
                        6F   13  003F   65            BEQL    50$                      ; Yes
                        50   7C  0041   66 20$:       CLRQ    R0                       ; Say nothing happened
                        05  0043   67            RSB                              ;  and exit
                            0044   68
                   2F   50   91  0044   69 30$:       CMPB    R0, #^A'/'               ; A slash?
                        F8   12  0047   70            BNEQ    20$                      ; Nope
                   00'AB   B5  0049   71            TSTW    B^ERRPOS(R11)            ; Recovering from an error?
                        F3   15  004C   72            BLEQ    20$                      ; Nope again
         005C'CF   0242'CF   9E  004E   73 40$:       MOVAB   230$, PRINT_ROUT         ; Set a special print routine
              0253'CF   7F  0055   74            PUSHAQ  250$                     ; Set a null line
              0000'CF   01   FB  0059   75            CALLS   #1, TEC$OUT_ASCID        ;  and go output it
      0050 8F   00   6E   00   2C  005E   76            MOVC5   #0, (SP), #0, #MAX_KEYS*8, KEY_DESC ; Clear out key descs
              0000'CF        0065
         0050'CF   025B'CF   7D  0068   77            MOVQ    260$, LIB_DESC           ; Set library name to TECO
         0000'CF   0267'CF   7D  006F   78            MOVQ    270$, KEY_DESC           ; Set key #1 to ERRORS
         0008'CF   03   D0  0076   79            MOVL    #3, KEY_DESC+8           ; Key #2 will be length 3
              52   026F'CF   9E  007B   80            MOVAB   ERROR_CODE, R2           ; Get pointer to error code spot
         000C'CF   62   9E  0080   81            MOVAB   (R2), KEY_DESC+8+4       ;  and set it into key #2
              50   00000000'EF   3C  0085   82            MOVZWL  L^ERRCOD, R0             ; Get the RAD50 code into low order
                        51   D4  008C   83            CLRL    R1                       ;  and clear a high order
   50   51   50   00000640 8F   7B  008E   84            EDIV    #40*40, R0, R1, R0       ; Divide for the first character
              82   51   40  8F   81  0097   85            ADDB3   #^A/A/-1, R1, (R2)+      ;  and set it
                        51   D4  009C   86            CLRL    R1                       ; Clear a high order
         50   51   50   28   7B  009E   87            EDIV    #40, R0, R1, R0          ;  and divide for 2nd and 3rd
              82   51   40  8F   81  00A3   88            ADDB3   #^A/A/-1, R1, (R2)+      ; Set the second character
              82   50   40  8F   81  00A8   89            ADDB3   #^A/A/-1, R0, (R2)+      ;  and the third
                        00C5  31  00AD   90            BRW     170$                     ; Go print the error message help
                            00B0   91
                   56   05   C2  00B0   92 50$:       SUBL    #4+1, R6                 ; Remove HELP (4) and ESCape or CR (1)
         005C'CF   0000'CF   9E  00B3   93            MOVAB   TEC$OUT_ASCID, PRINT_ROUT ; Set the standard print routine
                   0D   50   91  00BA   94            CMPB    R0, #13                  ; Was this the CR/LF entry?
                        09   13  00BD   95            BEQL    60$                      ; Yes
              0253'CF   7F  00BF   96            PUSHAQ  250$                     ; No, ESCape, set a null line
              0000'CF   01   FB  00C3   97            CALLS   #1, TEC$OUT_ASCID        ;  and go output it
      0050 8F   00   6E   00   2C  00C8   98 60$:       MOVC5   #0, (SP), #0, #MAX_KEYS*8, KEY_DESC ; Clear out key descs
              0000'CF        00CF
              54   FFF8'CF   7E  00D2   99            MOVAQ   KEY_DESC-8, R4           ; Start a (biased) key desc pointer
                        54   08   C0  00D7  100 70$:       ADDL    #8, R4                   ; Bump to the next key descriptor
                   04 A4   67   9E  00DA  101 80$:       MOVAB   (R7), 4(R4)              ; Set pointer to key in descriptor
                        56   D7  00DE  102 90$:       DECL    R6                       ; More command line to look at?
                        33   19  00E0  103            BLSS    130$                     ; Nope, done
                        20   87   91  00E2  104            CMPB    (R7)+, #32               ; Is this a <SP> or lower?
                        21   1B  00E5  105            BLEQU   110$                     ; Yes, end of key (or ignoring junk)
                        64   D6  00E7  106            INCL    (R4)                     ; Count a key character in desc
              61 8F   77   91  00E9  107            CMPB    -(R7), #^A/A/+32         ; A possible lower case character?
                        09   1F  00ED  108            BLSSU   100$                     ; No
              7A 8F   67   91  00EF  109            CMPB    (R7), #^A/Z/+32          ; Might be?
                        03   1A  00F3  110            BGTRU   100$                     ; But it isn't...
                        67   20   8A  00F5  111            BICB    #32, (R7)                ; Convert lower case into upper case
                        2F   87   91  00F8  112 100$:      CMPB    (R7)+, #^A'/'            ; A slash ("/") for another key?
```

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TECOLBR                      TECO's HELP command, etc.           F 10        16-SEP-1984 02:13:33  VAX/VMS Macro V04-00   Page  3
V39.00                       TECO's HELP command, etc.                       10-SEP-1984 13:13:14  [TECO.SRC]TECOLBR.MAR;2        (1)
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```
                       E1  12  00FB  113            BNEQ    90$                              ; Nope, loop for more...
                01  64  D1  00FD  114            CMPL    (R4), #1                         ; Yep, only thing in the key?
                    DC  13  0100  115            BEQL    90$                              ; Just continue if only slash so far
                    64  D7  0102  116            DECL    (R4)                             ; Else remove the slash from old key
                    56  D6  0104  117            INCL    R6                               ; Put the slash back into the count
                    57  D7  0106  118            DECL    R7                               ; and back up pointer over it
                    64  D5  0108  119 110$:      TSTL    (R4)                             ; Are we within a key?
                    CE  13  010A  120            BEQL    80$                              ; No, so don't start a new key
     00000048'8F  54  D1  010C  121 120$:      CMPL    R4, #KEY_DESC+<<MAX_KEYS-1>*8> ; Too many keys?
                    C2  1F  0113  122            BLSSU   70$                              ; No, loop for the next key...
  0004'DF  0000'CF  3D  3A  0115  123 130$:      LOCC    #^A/=/, KEY_DESC, @KEY_DESC+4 ; Find any equals separator
                    4F  13  011D  124            BEQL    160$                             ; None
              56  50  7D  011F  125            MOVQ    R0, R6                           ; Save length and pointer to remainder
        50  0000'CF  50  C3  0122  126            SUBL3   R0, KEY_DESC, R0                 ; Find size before the equals
  0275'CF  0004'DF  50  29  0128  127            CMPC    R0, @KEY_DESC+4, 280$            ; Is it really /LIBRARY?
                    3C  12  0130  128            BNEQ    160$                             ; Nope
0000'CF  0008'CF  0048 8F  28  0132  129            MOVC    #<MAX_KEYS-1>*8, KEY_DESC+8, KEY_DESC ; Shuffle up key descs
                    63  7C  013C  130            CLRQ    (R3)                             ; and clear the last one
                    57  D6  013E  131            INCL    R7                               ; Bump pointer over the equals
                    56  D7  0140  132            DECL    R6                               ; and remove the equals from length
                    05  12  0142  133            BNEQ    140$                             ; A real library name remains
          56  027D'CF  7D  0144  134            MOVQ    290$, R6                         ; Else use the default default name
      0050'CF  56  7D  0149  135 140$:      MOVQ    R6, LIB_DESC                     ; Set the new library name into desc
              3D  67  91  014E  136            CMPB    (R7), #^A/=/                     ; Making this library name permanent?
                    22  12  0151  137            BNEQ    170$                             ; No
                    57  D6  0153  138            INCL    R7                               ; Yes, bump pointer over 2nd equals
                    56  D7  0155  139            DECL    R6                               ; and remove it from length
                    05  12  0157  140            BNEQ    150$                             ; A real library name is still there
          56  027D'CF  7D  0159  141            MOVQ    290$, R6                         ; Else set the default default name
  00FF 8F  00  67  56  2C  015E  142 150$:      MOVC5   R6, (R7), #0, #LIB_NAME_MAX, @DEF_LIB_DESC+4 ; Load new name
              0064'DF      0165
      0060'CF  51  57  C3  0168  143            SUBL3   R7, R1, DEF_LIB_DESC             ; Set default name descriptor length
  0050'CF  0060'CF  7D  016E  144 160$:      MOVQ    DEF_LIB_DESC, LIB_DESC           ; Default the library name
      04  0050'CF  D1  0175  145 170$:      CMPL    LIB_DESC, #4                     ; Is the library name exactly 4 chars?
                    12  12  017A  146            BNEQ    180$                             ; Nope
504C4548 8F  0054'DF  D1  017C  147            CMPL    @LIB_DESC+4, #^A/HELP/           ; Really want system HELP library?
                    07  12  0185  148            BNEQ    180$                             ; No
      0050'CF  0289'CF  7D  0187  149            MOVQ    300$, LIB_DESC                   ; Yes, be good and update the name
          0168'CF  D4  018E  150 180$:      CLRL    RNS_DESC                         ; Say no resultant name yet...
          029C'CF  DF  0192  151            PUSHAL  320$                             ; Arg #3 is the library type (HELP)
          0298'CF  DF  0196  152            PUSHAL  310$                             ; Arg #2 is the access mode (read)
          0058'CF  DF  019A  153            PUSHAL  LIB_INDEX                        ; Arg #1 is the librarian's index
  00000000'GF  03  FB  019E  154            CALLS   #3, G^LBR$INI_CONTROL            ; Init the library access
              55  50  E9  01A5  155            BLBC    R0, 190$                         ; Abort if any error
      0168'CF  00FF 8F  3C  01A8  156            MOVZWL  #RNS_NAME_MAX, RNS_DESC          ; Reset the resultant name descriptor
          0168'CF  3F  01AF  157            PUSHAW  RNS_DESC                         ; Arg #7 is the resultant name length
          0168'CF  7F  01B3  158            PUSHAQ  RNS_DESC                         ; Arg #6 is the resultant file name
              00  DD  01B7  159            PUSHL   #0                               ; Arg #5 is the related name
          02A0'CF  7F  01B9  160            PUSHAQ  330$                             ; Arg #4 is the default file name
              00  DD  01BD  161            PUSHL   #0                               ; Arg #3 is the create option
          0050'CF  7F  01BF  162            PUSHAQ  LIB_DESC                         ; Arg #2 is the library file name
          0058'CF  DF  01C3  163            PUSHAL  LIB_INDEX                        ; Arg #1 is the librarian's index
  00000000'GF  07  FB  01C7  164            CALLS   #7, G^LBR$OPEN                   ; Open the library
              2C  50  E9  01CE  165            BLBC    R0, 190$                         ; Abort if any error
          50  0050'CF  7E  01D1  166            MOVAQ   KEY_DESC+<MAX_KEYS*8>, R0 ; Point to the key descriptor array
                        01D6  167 .REPT      MAX_KEYS
                        01D6  168            PUSHAQ  -(R0)                            ; Arg #n is one of the key's
```

TECOLBR
V39.00

TECO's HELP command, etc.
TECO's HELP command, etc.

G 10

16-SEP-1984 02:13:33   VAX/VMS Macro V04-00   Page   4
10-SEP-1984 13:13:14   [TECO.SRC]TECOLBR.MAR;2        (1)

```
                            01D6    169 .ENDR    ; MAX_KEYS
                70   7F     01D6        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01D8        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01DA        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01DC        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01DE        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01E0        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01E2        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01E4        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01E6        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                70   7F     01E8        PUSHAQ   -(R0)            ; Arg #n is one of the key's
                00   DD     01EA    170 PUSHL    #0               ; Arg #4 is the user data
        005C'CF DD     01EC    171 PUSHL    PRINT_ROUT       ; Arg #3 is the print routine
                00   DD     01F0    172 PUSHL    #0               ; Arg #2 is the line width
        0058'CF DF     01F2    173 PUSHAL   LIB_INDEX        ; Arg #1 is the librarian's index
    00000000'GF  0E FB 01F6    174 CALLS    #4+MAX_KEYS, G^LBR$GET_HELP ; Go print the HELP information
        51  00000000'GF D0 7D 01FD 175 190$: MOVL   G^LBR$GL_RMSSTV, R1  ; Save any RMS STV value
                56   50 7D 0204    176 MOVQ     R0, R6           ; Save the final exit status
        0058'CF DF     0207    177 PUSHAL   LIB_INDEX        ; Arg #1 is the librarian's index
    00000000'GF  01 FB 020B    178 CALLS    #1, G^LBR$CLOSE      ; Close the library
                0A 56 E9     0212    179 BLBC     R6, 200$         ; Use previous error if any
                56   50 D0 0215 180 MOVL     R0, R6           ; Else use the status we just got
        57  00000000'GF D0 0218 181 MOVL   G^LBR$GL_RMSSTV, R7  ;  with any RMS STV value
                1C 56 E8     021F    182 200$: BLBS   R6, 220$     ; Was everything successful?
        50  0168'CF 7D 0222    183 MOVQ     RNS_DESC, R0     ; Get the resultant name desciptor
                50   B5 0227    184 TSTW     R0               ; Anything there?
                05   12 0229    185 BNEQ     210$             ; Yes, so use it
        50  0050'CF 7D 022B    186 MOVQ     LIB_DESC, R0     ; No, use the library name descriptor
    FFFE'8F 00   61 50 2C 0230 187 210$: MOVC5  R0,-(R1), #0, #FILSIZ-1-1, L^FILSRT ; Load the filename buffer
    00000000'EF        0237
                63   94 023C    188 CLRB     (R3)             ;  making sure that it's ASCIZ
                50   56 7D 023E 189 220$: MOVQ   R6, R0       ; Set the final exit status
                05   0241    190 RSB                          ;  and exit
                     0242    191
                0000 0242    192 230$: .WORD  ^M<>             ; Error message print routine
                50   01 D0 0244 193 MOVL   #1, R0             ; Preset success
        06  08 BC D3 0247    194 BITL     @HLP$L_FLAGS+4(AP), - ; Check for
                     024B    195          #HLP$M_KEYNAMLIN!-     ;  a keyword name line
                     024B    196          HLP$M_OTHERINFO       ;  or additional information
                05   12 024B 197 BNEQ     240$                 ; Suppress either of those
        0000'CF 6C FA 024D 198 CALLG   (AP), TEC$OUT_ASCID   ; Else go print the information
                04   0252    199 240$: RET                    ; Return
                     0253    200
    0000025B'010E0000' 0253 201 250$: .ASCID //               ; A null descriptor
                     025B    202
 4F 43 45 54 00000263'010E0000' 025B 203 260$: .ASCID /TECO/  ; Library name for error message help
                     0267    204
53 52 4F 52 52 45 0000026F'010E0000' 0267 205 270$: .ASCID /ERRORS/ ; Key #1 for error message help
                     0275    206
        59 52 41 52 42 49 4C 2F 0275 207 280$: .ASCII '/LIBRARY' ; /LIBRARY qualifier
                     027D    208
 4F 43 45 54 00000285'010E0000' 027D 209 290$: .ASCID /TECO/   ; Default default library name
                     0289    210
49 4C 50 4C 45 48 00000291'010E0000' 0289 211 300$: .ASCID /HELPLIB/ ; System HELP library's real name
                42   0297
                     0298    212
    00000001 0298    213 310$: .LONG   LBR$C_READ            ; Access is for read
```

```
                                 029C      214
                     00000003    029C      215 320$:    .LONG   LBR$C_TYP_HLP              ; Library type is a HELP library
                                 02A0      216
45 48 24 53 59 53 000002A8'010E0000' 02A0 217 330$:    .ASCID  /SYS$HELP:.HLB/            ; Library's default file name string
       42 4C 48 2E 3A 50 4C  02AE
                                 02B5      218
                     00000000    02A0      219 .PSECT  TECOCTL,         QUAD,NOPIC,USR,CON,REL,LCL,NOSHR,NOEXE,RD,  WRT
                                 0000      220
                                 0000      221 KEY_DESC:                                   ; Key descriptors
                     00000050    0000      222         .BLKQ   MAX_KEYS
                                 0050      223
                                 0050      224 LIB_DESC:                                   ; Library name descriptor
                     00000058    0050      225         .BLKQ
                                 0058      226
                                 0058      227 LIB_INDEX:                                  ; Librarian's index
                     0000005C    0058      228         .BLKL
                                 005C      229
                                 005C      230 PRINT_ROUT:                                 ; Librarian output print routine addr
                     00000060    005C      231         .BLKL
                                 0060      232
                                 0060      233 .ALIGN QUAD
                                 0060      234
                                 0060      235 DEF_LIB_DESC:                               ; Default library name descriptor
          00000068'00000004'    0060      236         .LONG   20$-10$, 10$
                                 0068      237
             4F 43 45 54        0068      238 10$:     .ASCII  /TECO/
                     00000167    006C      239 20$:     .BLKB   LIB_NAME_MAX-<20$-10$>
                                 0167      240
                                 0167      241 .ALIGN QUAD
                                 0168      242
                                 0168      243 RNS_DESC:                                   ; Resultant name descriptor
          00000170'000000FF'    0168      244         .LONG   20$-10$, 10$
                                 0170      245
                     0000026F    0170      246 10$:     .BLKB   RNS_NAME_MAX
                                 026F      247 20$:
                                 026F      248
                                 026F      249 ERROR_CODE:                                 ; Holder for TECO's error code
                     00000272    026F      250         .BLKB   3
                                 0272      251
                                 0272      252 .END
```

I 10

TECOLBR                    TECO's HELP command, etc.                16-SEP-1984 02:13:33  VAX/VMS Macro V04-00       Page  6
Symbol table                                                        10-SEP-1984 13:13:14  [TECO.SRC]TECOLBR.MAR;2          (1)

```
DEF_LIB_DESC               00000060 R      03
ERRCOD                     ********    X    02
ERROR_CODE                 0000026F R      03
ERRPOS                     ********    X    02
FILSIZ                     ********    X    02
FILSRT                     ********    X    02
HLP$L_FLAGS              = 00000004
HLP$M_KEYNAMLIN          = 00000002
HLP$M_OTHERINFO         = 00000004
INDIR                      ********    X    02
KEY_DESC                   00000000 R      03
LBR$CLOSE                  ********    X    02
LBR$C_READ              = 00000001
LBR$C_TYP_HLP           = 00000003
LBR$GET_HELP               ********    X    02
LBR$GL_RMSSTV              ********    X    02
LBR$INI_CONTROL            ********    X    02
LBR$OPEN                   ********    X    02
LIB_DESC                   00000050 R      03
LIB_INDEX                  00000058 R      03
LIB_NAME_MAX            = 000000FF
MAX_KEYS                = 0000000A
PRINT_ROUT                 0000005C R      03
QPNTR                      ********    X    02
QRSTOR                     ********    X    02
QZ                         ********    X    02
RNS_DESC                   00000168 R      03
RNS_NAME_MAX            = 000000FF
TEC$OUT_ASCID              ********    X    02
TEMP                       ********    X    02
```

```
                    +----------------+
                    ! 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 |
| TECOEXELBR | 000002B5 ( 693.) | 02 ( 2.) | NOPIC | USR | OVR | REL | GBL | SHR | EXE | RD | NOWRT | NOVEC | PAGE |
| TECOCTL | 00000272 ( 626.) | 03 ( 3.) | NOPIC | USR | CON | REL | LCL | NOSHR | NOEXE | RD | WRT | NOVEC | QUAD |

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

| Phase | Page faults | CPU Time | Elapsed Time |
|-------|-------------|----------|--------------|
| Initialization | 37 | 00:00:00.08 | 00:00:00.39 |
| Command processing | 121 | 00:00:00.46 | 00:00:02.08 |
| Pass 1 | 154 | 00:00:02.52 | 00:00:06.07 |
| Symbol table sort | 0 | 00:00:00.24 | 00:00:00.62 |
| Pass 2 | 67 | 00:00:00.78 | 00:00:01.59 |
| Symbol table output | 5 | 00:00:00.04 | 00:00:00.04 |
| Psect synopsis output | 2 | 00:00:00.02 | 00:00:00.02 |
| Cross-reference output | 0 | 00:00:00.00 | 00:00:00.00 |
| Assembler run totals | 388 | 00:00:04.15 | 00:00:10.82 |

J 10

TECOLBR                     TECO's HELP command, etc.          16-SEP-1984 02:13:33  VAX/VMS Macro V04-00          Page  7
VAX-11 Macro Run Statistics                                    10-SEP-1984 13:13:14  [TECO.SRC]TECOLBR.MAR;2                (1)

The working set limit was 1200 pages.
14966 bytes (30 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 180 non-local and 37 local symbols.
252 source lines were read in Pass 1, producing 17 object records in Pass 2.
9 pages of virtual memory were used to define 8 macros.

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

Macro library name                        Macros defined
------------------                        --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2                5

218 GETS were required to define 5 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:TECOLBR/OBJ=OBJ$:TECOLBR MSRC$:TECOLBR/UPDATE=(ENH$:TECOLBR)

UTILKEY
LIS

TECOLBR
LIS

TECOCMD
LIS

SCSLOA
LIS

TECO

TECO
MAP

UTILKEY
LIS

TECONAT
LIS