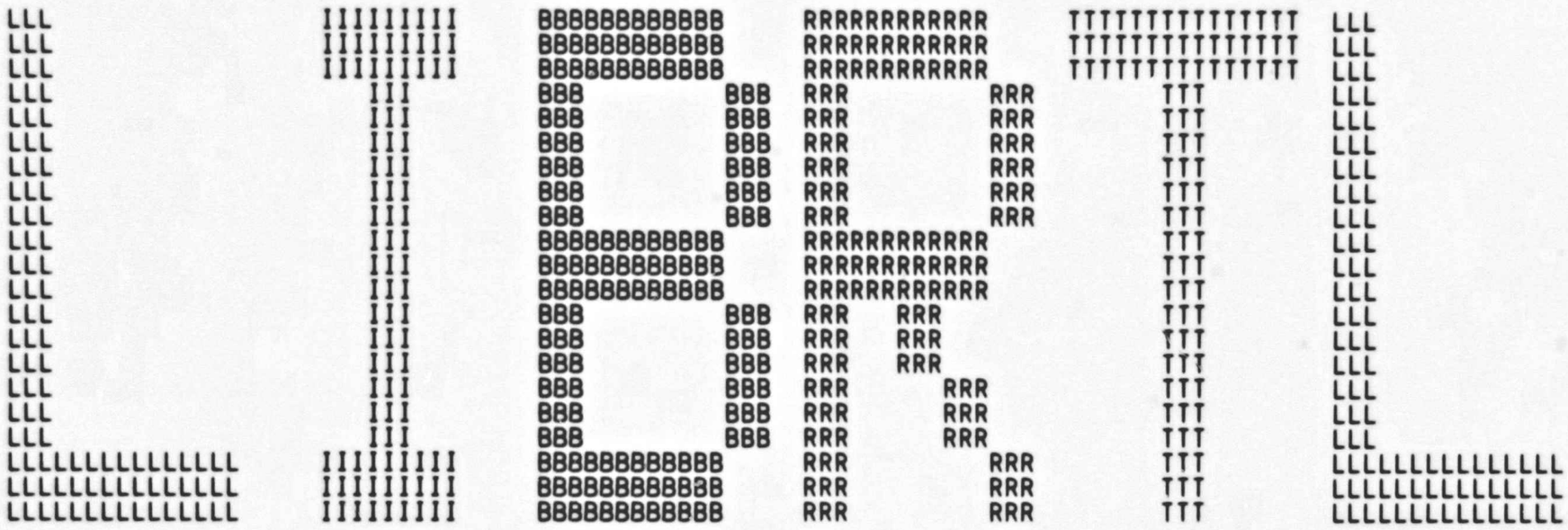
LLL IIIIIIIII BBBBBBBBBBB RRRRRRRRRRR TTTTTTTTTTTTTTT LLL
LLL IIIIIIIII BBBBBBBBBBBB RRRRRRRRRRRR TTTTTTTTTTTTTTT LLL
LLL IIIIIIIII BBBBBBBBBBBB RRRRRRRRRRR TTTTTTTTTTTTTTT LLL
LLL III BBB BBB RRR RRR TTT LLL
LLL III BBB BBB RRR RRR TTT LLL
LLL III BBB BBB RRR RRR TTT LLL
LLL III BBB BBB RRR RRR TTT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

```
LL            IIIIII    BBBBBBBB    WW      WW    AAAAAA     IIIIII    TTTTTTTTTT
LL            IIIIII    BBBBBBBB    WW      WW    AAAAAA     IIIIII    TTTTTTTTTT
LL              II      BB      BB  WW      WW   AA      AA     II        TT
LL              II      BB      BB  WW      WW   AA      AA     II        TT
LL              II      BB      BB  WW      WW   AA      AA     II        TT
LL              II      BB      BB  WW      WW   AA      AA     II        TT
LL              II      BBBBBBBB    WW      WW   AA      AA     II        TT
LL              II      BBBBBBBB    WW      WW   AA      AA     II        TT
LL              II      BB      BB  WW  WW  WW   AAAAAAAAAA     II        TT
LL              II      BB      BB  WW  WW  WW   AAAAAAAAAA     II        TT
LL              II      BB      BB  WWWW  WWWW   AA      AA     II        TT        ....
LL              II      BB      BB  WWWW  WWWW   AA      AA     II        TT        ....
LLLLLLLLLL    IIIIII    BBBBBBBB    WW      WW   AA      AA   IIIIII      TT        ....
LLLLLLLLLL    IIIIII    BBBBBBBB    WW      WW   AA      AA   IIIIII      TT        ....

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$WAIT ( %TITLE 'Wait for a given period of time'
;     2        0002  0                   IDENT = '1-001'          ! File: LIBWAIT.B32 Edit: SBL1001
;     3        0003  0                   ) =
;     4        0004  1 BEGIN
;     5        0005  1 !
;     6        0006  1 !**********************************************************************************
;     7        0007  1 !*                                                                                *
;     8        0008  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                       *
;     9        0009  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                         *
;    10        0010  1 !*  ALL RIGHTS RESERVED.                                                           *
;    11        0011  1 !*                                                                                *
;    12        0012  1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED         *
;    13        0013  1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE        *
;    14        0014  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER        *
;    15        0015  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY        *
;    16        0016  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY        *
;    17        0017  1 !*  TRANSFERRED.                                                                   *
;    18        0018  1 !*                                                                                *
;    19        0019  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE        *
;    20        0020  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT        *
;    21        0021  1 !*  CORPORATION.                                                                   *
;    22        0022  1 !*                                                                                *
;    23        0023  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS        *
;    24        0024  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                        *
;    25        0025  1 !*                                                                                *
;    26        0026  1 !*                                                                                *
;    27        0027  1 !**********************************************************************************
;    28        0028  1 !
;    29        0029  1
;    30        0030  1 !++
;    31        0031  1 ! FACILITY:     General Utility Library
;    32        0032  1 !
;    33        0033  1 ! ABSTRACT:
;    34        0034  1 !
;    35        0035  1 !       LIB$WAIT hibernates the current process for a specified period
;    36        0036  1 !       of time.
;    37        0037  1 !
;    38        0038  1 ! ENVIRONMENT:  User mode - AST reentrant
;    39        0039  1 !
;    40        0040  1 ! AUTHOR: Steven B. Lionel, CREATION DATE: 07-Jul-1982
;    41        0041  1 !
;    42        0042  1 ! MODIFIED BY:
;    43        0043  1 !
;    44        0044  1 ! 1-001 - Original.  SBL 07-Jul-1982
;    45        0045  1 !--
;    46        0046  1
```

```
;  48          0047  1 %SBTTL 'Declarations'
;  49          0048  1 !
;  50          0049  1 ! PROLOGUE FILE:
;  51          0050  1 !
;  52          0051  1
;  53          0052  1 REQUIRE 'RTLIN:LIBPROLOG';                  ! Switches, PSECTS, macros
;  54          0123  1
;  55          0124  1 !
;  56          0125  1 ! LINKAGES:
;  57          0126  1 !
;  58          0127  1 !       NONE
;  59          0128  1 !
;  60          0129  1 ! TABLE OF CONTENTS:
;  61          0130  1 !
;  62          0131  1
;  63          0132  1 FORWARD ROUTINE
;  64          0133  1     LIB$WAIT;                              ! Wait a given period of time
;  65          0134  1
;  66          0135  1 !
;  67          0136  1 ! MACROS:
;  68          0137  1 !
;  69          0138  1 !       NONE
;  70          0139  1 !
;  71          0140  1 ! EQUATED SYMBOLS:
;  72          0141  1 !
;  73          0142  1 !       NONE
;  74          0143  1 !
;  75          0144  1 ! FIELDS:
;  76          0145  1 !
;  77          0146  1 !       NONE
;  78          0147  1 !
;  79          0148  1 ! OWN STORAGE:
;  80          0149  1 !
;  81          0150  1 !       NONE
;  82          0151  1 !
;  83          0152  1 ! EXTERNALS:
;  84          0153  1 !
;  85          0154  1
;  86          0155  1 EXTERNAL LITERAL
;  87          0156  1     LIB$_INVARG;
```

```
;    89          0157  1 %SBTTL 'LIB$WAIT - Wait a given period of time'
;    90          0158  1 GLOBAL ROUTINE LIB$WAIT (
;    91          0159  1     SECONDS: REF VECTOR [, LONG]        ! Number of seconds to wait
;    92          0160  1     ) =
;    93          0161  1
;    94          0162  1 !++
;    95          0163  1 ! FUNCTIONAL DESCRIPTION:
;    96          0164  1 !
;    97          0165  1 !       This procedure places the current process into hibernation for
;    98          0166  1 !       the number of seconds specified.
;    99          0167  1 !
;   100          0168  1 ! CALLING SEQUENCE:
;   101          0169  1 !
;   102          0170  1 !       ret_status.wlc.v = LIB$WAIT (tenths.rf.r)
;   103          0171  1 !
;   104          0172  1 ! FORMAL PARAMETERS:
;   105          0173  1 !
;   106          0174  1 !       SECONDS         Number of seconds to wait expressed as an
;   107          0175  1 !                       F_floating value.  The value must be between 0
;   108          0176  1 !                       and 100000.00.  The resolution of the delay
;   109          0177  1 !                       is to the nearest hundredth-second.
;   110          0178  1 !
;   111          0179  1 ! IMPLICIT INPUTS:
;   112          0180  1 !
;   113          0181  1 !       NONE
;   114          0182  1 !
;   115          0183  1 ! IMPLICIT OUTPUTS:
;   116          0184  1 !
;   117          0185  1 !       NONE
;   118          0186  1 !
;   119          0187  1 ! COMPLETION STATUS:
;   120          0188  1 !
;   121          0189  1 !       SS$_NORMAL      Normal successful completion
;   122          0190  1 !       LIB$_INVARG     Invalid argument.  SECONDS was less than zero or was
;   123          0191  1 !                       greater than 100000
;   124          0192  1 !       LIB$_WRONUMARG  Wrong number of arguments.
;   125          0193  1 !       SS$_xxx         Error status returned by the $SCHDWK system service.
;   126          0194  1 !
;   127          0195  1 ! SIDE EFFECTS:
;   128          0196  1 !
;   129          0197  1 !       Schedules a wakeup for the current process and places the process into
;   130          0198  1 !       hibernation.
;   131          0199  1 !
;   132          0200  1 !--
;   133          0201  1
;   134          0202  2     BEGIN
;   135          0203  2
;   136          0204  2     LOCAL
;   137          0205  2         RET_STATUS,                             ! Return status
;   138          0206  2         DELTA_TIME: VECTOR [2, LONG];           ! Quadword time to wait
;   139          0207  2
;   140          0208  2     LITERAL
;   141          0209  2         N_OF_TICKS_IN_CENTISECOND = -100000;     ! Number of 100-nanosecond
;   142          0210  2                                                 ! clock ticks in .01 seconds;
;   143          0211  2                                                 ! negative because we need
;   144          0212  2                                                 ! a negative delta time.
;   145          0213  2     BUILTIN
```

```
;  146     0214  2          CMPF,
;  147     0215  2          CVTRFL,
;  148     0216  2          EMUL,
;  149     0217  2          MULF;
;  150     0218  2
;  151     0219  2      !+
;  152     0220  2      ! Validate argument count.
;  153     0221  2      !-
;  154     0222  2
;  155     0223  2      $LIB$VALIDATE_ARGCOUNT (1,1);
;  156     0224  2
;  157     0225  2      !+
;  158     0226  2      ! Return the error LIB$_INVARG if SECONDS is out if range.
;  159     0227  2      !
;  160     0228  2      ! \\ Note:  The code generated by the CMPFs is awful, though
;  161     0229  2      !    correct.  The BLISS folks say that this will be fixed
;  162     0230  2      !    in a future release.  One could get the right code by
;  163     0231  2      !    saying: CASE CMPF(..) FROM -1 TO 1 , but in the interest
;  164     0232  2      !    of clarity, I'll wait. \\
;  165     0233  2      !-
;  166     0234  2
;  167     0235  2      IF CMPF (SECONDS [0], %REF (%E'100000')) GTR 0 OR
;  168     0236  2         CMPF (SECONDS [0], %REF (%E'0')) LSS 0
;  169     0237  2      THEN
;  170     0238  2          RETURN LIB$_INVARG;
;  171     0239  2
;  172     0240  2      !+
;  173     0241  2      ! Get number of centiseconds and then round to an integer.
;  174     0242  2      !-
;  175     0243  2
;  176     0244  2      MULF (SECONDS [0], %REF (%E'100'), DELTA_TIME [0]);
;  177     0245  2      CVTRFL (DELTA_TIME [0], DELTA_TIME [0]);
;  178     0246  2
;  179     0247  2      !+
;  180     0248  2      ! Convert the number of centiseconds to wait into a VMS delta time.
;  181     0249  2      !-
;  182     0250  2
;  183     0251  2      EMUL (%REF (N_OF_TICKS_IN_CENTISECOND),      ! Number of ticks in .01 seconds
;  184     0252  2            DELTA_TIME [0],                        ! Number of centiseconds
;  185     0253  2            %REF (0),                              ! Addend - zero
;  186     0254  2            DELTA_TIME);                           ! Delta time result
;  187     0255  2
;  188     0256  2      !+
;  189     0257  2      ! Schedule a wakeup for the current process.  Note that if SECONDS is
;  190     0258  2      ! zero, the wakeup happens immediately.
;  191     0259  2      !-
;  192     0260  2
;  193     0261  2      RET_STATUS = $SCHDWK (DAYTIM = DELTA_TIME);
;  194     0262  2      IF NOT .RET_STATUS
;  195     0263  2      THEN
;  196     0264  2          RETURN .RET_STATUS;
;  197     0265  2
;  198     0266  2      !+
;  199     0267  2      ! Hibernate, and return the status of the $HIBER when it wakes up.
;  200     0268  2      !-
;  201     0269  2
;  202     0270  2      RETURN ($HIBER);
```

```
;  203          0271  2
;  204          0272  1      END;                                                     ! End of routine LIB$WAIT

                                                                      .TITLE  LIB$WAIT Wait for a given period of time
                                                                      .IDENT  \1-001\

                                                                      .EXTRN  LIB$_INVARG, LIB$_WRONUMARG
                                                                      .EXTRN  SYS$SCHDWK, SYS$HIBER

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

                                                   0000 00000         .ENTRY  LIB$WAIT, Save nothing                            ; 0158
                              5E                08  C2 00002          SUBL2   #8, SP                                            ;
                              01                6C  91 00005          CMPB    (AP), #1                                          ; 0223
                                                08  13 00008          BEQL    1$                                                ;
                              50 00000000G      8F  D0 0000A          MOVL    #LIB$_WRONUMARG, R0                               ;
                                                    04 00011          RET                                                       ;
                    500048C3  8F          04    BC  51 00012 1$:      CMPF    @SECONDS, #100000                                 ; 0235
                                                50  DC 0001A          MOVPSL  R0                                                ;
      50          50          02                02  EF 0001C          EXTZV   #2, #2, R0, R0                                    ;
                                                50  D7 00021          DECL    R0                                                ;
                                                13  19 00023          BLSS    2$                                                ;
                    00000000  8F          04    BC  51 00025          CMPF    @SECONDS, #0                                      ; 0236
                                                50  DC 0002D          MOVPSL  R0                                                ;
      50          50          02                02  EF 0002F          EXTZV   #2, #2, R0, R0                                    ;
                                                50  D7 00034          DECL    R0                                                ;
                                                08  15 00036          BLEQ    3$                                                ;
                              50 00000000G      8F  D0 00038 2$:      MOVL    #LIB$_INVARG, R0                                  ; 0238
                                                    04 0003F          RET                                                       ;
                 6E 000043C8  8F          04    BC  45 00040 3$:      MULF3   @SECONDS, #100, DELTA_TIME                        ; 0244
                              6E                6E  4B 00049          CVTRFL  DELTA_TIME, DELTA_TIME                            ; 0245
      6E          00          6E FFFE7960       8F  7A 0004C          EMUL    #-100000, DELTA_TIME, #0, DELTA_TIME              ; 0251
                                                7E  D4 00055          CLRL    -(SP)                                             ; 0261
                                          04    AE  9F 00057          PUSHAB  DELTA_TIME                                        ;
                                                7E  7C 0005A          CLRQ    -(SP)                                             ;
                    00000000G 00                04  FB 0005C          CALLS   #4, SYS$SCHDWK                                    ;
                              07                50  E9 00063          BLBC    RET_STATUS, 4$                                    ; 0262
                    00000000G 00                00  FB 00066          CALLS   #0, SYS$HIBER                                     ; 0270
                                                    04 0006D 4$:      RET                                                       ; 0272

; Routine Size:  110 bytes,    Routine Base:  _LIB$CODE + 0000


;  205          0273  1 !<BLF/PAGE>
```

```
;  207          0274  1 END                                               ! End of module LIB$WAIT
;  208          0275  1
;  209          0276  0 ELUDOM


;                                 PSECT SUMMARY
;
;      Name                    Bytes                       Attributes
;
;   _LIB$CODE                          110  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         4          0         581       00:00.7
;   _$255$DUA28:[LIBRTL.OBJ]RTLLIB.L32;1  36         1          2           8       00:00.1


;                                 COMMAND QUALIFIERS

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

; Size:            110 code + 0 data bytes
; Run Time:           00:03.0
; Elapsed Time:       00:18.0
; Lines/CPU Min:      5538
; Lexemes/CPU-Min: 16916
; Memory Used:  49 pages
; Compilation Complete
```

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