```
MMM          MMM  TTTTTTTTTTTTTTT  HHH          HHH  RRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
MMM          MMM  TTTTTTTTTTTTTTT  HHH          HHH  RRRRRRRRRRRR    TTTTTTTTTTTTTTT  LLL
MMM          MMM  TTTTTTTTTTTTTTT  HHH          HHH  RRRRRRRRRRRR    TTTTTTTTTTTTTTT  LLL
MMMMMM    MMMMMM        TTT       HHH          HHH  RRR         RRR       TTT         LLL
MMMMMM    MMMMMM        TTT       HHH          HHH  RRR         RRR       TTT         LLL
MMMMMM    MMMMMM        TTT       HHH          HHH  RRR         RRR       TTT         LLL
MMM  MMM  MMM           TTT       HHH          HHH  RRR         RRR       TTT         LLL
MMM  MMM  MMM           TTT       HHH          HHH  RRR         RRR       TTT         LLL
MMM  MMM  MMM           TTT       HHH          HHH  RRR         RRR       TTT         LLL
MMM       MMM           TTT       HHHHHHHHHHHHHHH  RRRRRRRRRRR         TTT         LLL
MMM       MMM           TTT       HHHHHHHHHHHHHHH  RRRRRRRRRRRR        TTT         LLL
MMM       MMM           TTT       HHHHHHHHHHHHHHH  RRRRRRRRRRRR        TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR   RRR           TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR   RRR           TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR   RRR           TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR      RRR        TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR      RRR        TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR      RRR        TTT         LLL
MMM       MMM           TTT       HHH          HHH  RRR         RRR     TTT         LLLLLLLLLLLLLLL
MMM       MMM           TTT       HHH          HHH  RRR         RRR     TTT         LLLLLLLLLLLLLLL
MMM       MMM           TTT       HHH          HHH  RRR         RRR     TTT         LLLLLLLLLLLLLLL
```

FILEID**MTHHMIN1

```
MM      MM  TTTTTTTTTT  HH      HH  HH      HH  MM      MM    IIIIII    NN      NN     11
MM      MM  TTTTTTTTTT  HH      HH  HH      HH  MM      MM    IIIIII    NN      NN     11
MMMM  MMMM      TT      HH      HH  HH      HH  MMMM  MMMM      II      NN      NN   1111
MMMM  MMMM      TT      HH      HH  HH      HH  MMMM  MMMM      II      NN      NN   1111
MM  MM  MM      TT      HH      HH  HH      HH  MM  MM  MM      II      NNNN    NN     11
MM  MM  MM      TT      HH      HH  HH      HH  MM  MM  MM      II      NNNN    NN     11
MM      MM      TT      HHHHHHHHHH  HHHHHHHHHH  MM      MM      II      NN  NN  NN     11
MM      MM      TT      HHHHHHHHHH  HHHHHHHHHH  MM      MM      II      NN  NN  NN     11
MM      MM      TT      HH      HH  HH      HH  MM      MM      II      NN    NNNN     11
MM      MM      TT      HH      HH  HH      HH  MM      MM      II      NN    NNNN     11
MM      MM      TT      HH      HH  HH      HH  MM      MM      II      NN      NN     11      ....
MM      MM      TT      HH      HH  HH      HH  MM      MM      II      NN      NN     11      ....
MM      MM      TT      HH      HH  HH      HH  MM      MM    IIIIII    NN      NN   111111    ....
MM      MM      TT      HH      HH  HH      HH  MM      MM    IIIIII    NN      NN   111111    ....

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
```

Table of contents

```
0000     1          .TITLE  MTH$HMIN1       HMIN1 function
0000     2          .IDENT  /1-002/         ; File: MTHHMIN1.MAR   EDIT: JCW1002
0000     3
0000     4 ;
0000     5 ;*****************************************************************************
0000     6 ;*                                                                           *
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0000    24 ;*                                                                           *
0000    25 ;*                                                                           *
0000    26 ;*****************************************************************************
0000    27 ;
0000    28 ;
0000    29 ; FACILITY: MATH LIBRARY
0000    30 ;++
0000    31 ; ABSTRACT:
0000    32 ;       This module contains routine MTH$HMIN1:
0000    33 ;       Return the smaller of n H floating-point
0000    34 ;       numbers.
0000    35 ;
0000    36 ;
0000    37 ;
0000    38 ;--
0000    39 ;
0000    40 ; VERSION: 1
0000    41 ;
0000    42 ; HISTORY:
0000    43 ;
0000    44 ; AUTHOR:
0000    45 ;       Steven B. Lionel, 18-Jan-79: Version 1
0000    46 ;
0000    47 ; MODIFIED BY:
0000    48 ;
0000    49 ;       Jeffrey C. Wiener, 14-May-84: Version 1
0000    50 ;
```

```
                        .SBTTL  HISTORY          ; Detailed Current Edit History

; Edit History for Version 1 of MTH$HMIN1
;
; 1-001 - Original.  SBL 18-Jan-79
; 1-002 - The code as written did not work. Corrections were made to one AP
;         reference, all G_floating references were replaced by H_floating
;         references, BLSS was changed to BLEQ and some comments were fixed.
;         JCW 14-May-1984
```



```
DIV
DIV
DON
ERR
EXP
HIG
I_G
MTH
MTH
MTH
MTH
NO
OVE
RET
SF$
SF$
STE
STE
STE
STE
STE
SUB
TES
TWO
UND

PSE
---

$AB
_MT


Pha
---
Ini
Com
Pas
Sym
Pas
Sym
Pse
Cro
Ass

The
710
The
351
8 p
```

```
    0000        .SBTTL  DECLARATIONS
    0000
    0000  ;
    0000  ; INCLUDE FILES:
    0000  ;         NONE
    0000  ;
    0000
    0000  ;
    0000  ; EXTERNAL SYMBOLS:
    0000  ;         NONE
    0000  ;
    0000
    0000  ;
    0000  ; MACROS:
    0000  ;         NONE
    0000  ;
    0000
    0000  ;
    0000  ; PSECT DECLARATIONS:
00000000          .PSECT  _MTH$CODE       PIC, SHR, LONG, EXE, NOWRT
    0000
    0000  ;
    0000  ; EQUATED SYMBOLS:
    0000  ;         NONE
    0000  ;
    0000
    0000  ;
    0000  ; OWN STORAGE:
    0000  ;         NONE
    0000  ;
```

MTH
VAX

Mac

_$2

88

The

MAC

```
                        0000     94          .SBTTL  MTH$HMIN1
                        0000     95
                        0000     96 ;++
                        0000     97 ; FUNCTIONAL DESCRIPTION:
                        0000     98 ;       Return the minimum of n arguments, n is greater than or equal
                        0000     99 ;       to 1.
                        0000    100 ;
                        0000    101 ;       Because the result can not be represented in 64 bits, the
                        0000    102 ;       minimum of arguments 2 through n are returned as argument 1.
                        0000    103 ;
                        0000    104 ; CALLING SEQUENCE:
                        0000    105 ;       CALL MTH$HMIN1 (minimum.wh.r, {arg.rh.r})
                        0000    106 ;
                        0000    107 ;
                        0000    108 ;
                        0000    109 ; INPUT PARAMETERS:
                        0000    110 ;       The n parameters are H floating point values
                        0000    111 ;       and are call-by-reference.
                        0000    112 ;
                        0000    113 ;
                        0000    114 ; IMPLICIT INPUTS:
                        0000    115 ;       NONE
                        0000    116 ;
                        0000    117 ; OUTPUT PARAMETERS:
                        0000    118 ;       The H floating output parameter is returned by reference.
                        0000    119 ;
                        0000    120 ; IMPLICIT OUTPUTS:
                        0000    121 ;       NONE
                        0000    122 ;
                        0000    123 ; COMPLETION CODES:
                        0000    124 ;       NONE
                        0000    125 ;
                        0000    126 ; SIDE EFFECTS:
                        0000    127 ;       Reserved Operand exception can occur.
                        0000    128 ;
                        0000    129 ;
                        0000    130 ;--
                        0000    131
                  0000  0000    132          .ENTRY  MTH$HMIN1,      ^M<>
    51    6C     9A    0002    133          MOVZBL  (AP), R1        ; R1 = arg count
          51     D7    0005    134          DECL    R1              ; R1 = the actual number of parameters
          8C     D5    0007    135          TSTL    (AP)+           ; bump AP by 4
    50    6C     D0    0009    136          MOVL    (AP), R0        ; save result address
          8C     D5    000C    137          TSTL    (AP)+           ; AP -> first arg
    60    9C   70FD    000E    138 1$:      MOVH    @(AP)+, (R0)    ; (R0) = trial min
          09     11    0012    139          BRB     3$              ; check arg count
60    00  BC   71FD    0014    140 2$:      CMPH    @(AP), (R0)     ; if this arg is less than trial min
          F3     15    0019    141          BLEQ    1$              ; then it becomes new trial min
          8C     D5    001B    142          TSTL    (AP)+           ; else ignore it
      F4  51     F5    001D    143 3$:      SOBGTR  R1, 2$          ; return if arg count exausted
                 04    0020    144          RET                     ; with min in first arg
                       0021    145
                       0021    146
                       0021    147          .END
```

MTH$HMIN1 00000000 RG 01

Psect synopsis

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
_MTH$CODE	00000021 (33.)	01 (1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	32	00:00:00.11	00:00:00.77
Command processing	103	00:00:00.50	00:00:03.18
Pass 1	66	00:00:00.45	00:00:02.25
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	40	00:00:00.34	00:00:01.61
Symbol table output	1	00:00:00.01	00:00:00.01
Psect synopsis output	2	00:00:00.02	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	246	00:00:01.43	00:00:07.84

The working set limit was 750 pages.
1513 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 1 non-local and 3 local symbols.
147 source lines were read in Pass 1, producing 10 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

Macro library statistics

Macro library name	Macros defined
_255DUA28:[SYSLIB]STARLET.MLB;2	0

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:MTHHMIN1/OBJ=OBJ$:MTHHMIN1 MSRC$:MTHHMIN1/UPDATE=(ENH$:MTHHMIN1)

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LIS

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MTHIIONNT
LIS

MTHIIHNNT
LIS

MTHHSQRT
LIS

MTHIMAX0
LIS

MTHHNINT
LIS

MTHHSINH
LIS

MTHHTANH
LIS

MTHHINT
LIS

MTHHMAX1
LIS

MTHHSINCO
LIS

MTHHMOD
LIS

MTHIIGNNT
LIS