```
                                                       M  1

BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSSS  RRRRRRRRRRRR     TTTTTTTTTTTTTTT LLL
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSSS  RRRRRRRRRRRR     TTTTTTTTTTTTTTT LLL
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSSS  RRRRRRRRRRRR     TTTTTTTTTTTTTTT LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT       LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT       LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT       LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT       LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT       LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT       LLL
BBBBBBBBBBBB     AAA         AAA     SSSSSSSSS     RRRRRRRRRRRR           TTT       LLL
BBBBBBBBBBBB     AAA         AAA     SSSSSSSSS     RRRRRRRRRRRR           TTT       LLL
BBBBBBBBBBBB     AAA         AAA     SSSSSSSSS     RRRRRRRRRRRR           TTT       LLL
BBB         BBB  AAAAAAAAAAAAAAA              SSS  RRR   RRR              TTT       LLL
BBB         BBB  AAAAAAAAAAAAAAA              SSS  RRR   RRR              TTT       LLL
BBB         BBB  AAAAAAAAAAAAAAA              SSS  RRR   RRR              TTT       LLL
BBB         BBB  AAA         AAA              SSS  RRR      RRR           TTT       LLL
BBB         BBB  AAA         AAA              SSS  RRR      RRR           TTT       LLL
BBB         BBB  AAA         AAA              SSS  RRR      RRR           TTT       LLL
BBBBBBBBBBBB     AAA         AAA  SSSSSSSSSSSS     RRR         RRR        TTT       LLLLLLLLLLLLLLL
BBBBBBBBBBBB     AAA         AAA  SSSSSSSSSSSS     RRR         RRR        TTT       LLLLLLLLLLLLLLL
BBBBBBBBBBBB     AAA         AAA  SSSSSSSSSSSS     RRR         RRR        TTT       LLLLLLLLLLLLLLL
```

```
                                                   F 13
**FILE**ID**BASRESTAR










          BBBBBBBB      AAAAAA      SSSSSSSS  RRRRRRRR    EEEEEEEEEE    SSSSSSSS  TTTTTTTTTT    AAAAAA    RRRRRRRR
          BBBBBBBB      AAAAAA      SSSSSSSS  RRRRRRRR    EEEEEEEEEE    SSSSSSSS  TTTTTTTTTT    AAAAAA    RRRRRRRR
          BB      BB  AA      AA  SS          RR      RR  EE          SS              TT      AA      AA  RR      RR
          BB      BB  AA      AA  SS          RR      RR  EE          SS              TT      AA      AA  RR      RR
          BB      BB  AA      AA  SS          RR      RR  EE          SS              TT      AA      AA  RR      RR
          BB      BB  AA      AA  SS          RR      RR  EE          SS              TT      AA      AA  RR      RR
          BBBBBBBB    AA      AA    SSSSSS    RRRRRRRR    EEEEEEEE      SSSSSS        TT      AA      AA  RRRRRRRR
          BBBBBBBB    AA      AA    SSSSSS    RRRRRRRR    EEEEEEEE      SSSSSS        TT      AA      AA  RRRRRRRR
          BB      BB  AAAAAAAAAA          SS  RR  RR      EE                  SS      TT      AAAAAAAAAA  RR  RR
          BB      BB  AAAAAAAAAA          SS  RR  RR      EE                  SS      TT      AAAAAAAAAA  RR  RR
          BB      BB  AA      AA          SS  RR    RR    EE                  SS      TT      AA      AA  RR    RR         ....
          BB      BB  AA      AA          SS  RR    RR    EE                  SS      TT      AA      AA  RR    RR         ....
          BBBBBBBB    AA      AA  SSSSSSSS    RR      RR  EEEEEEEEEE  SSSSSSSS        TT      AA      AA  RR      RR       ....
          BBBBBBBB    AA      AA  SSSSSSSS    RR      RR  EEEEEEEEEE  SSSSSSSS        TT      AA      AA  RR      RR       ....


          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
```

```
0 MODULE BAS$$RESTART_IO (                              ! Restart BASIC I/O statement
0                  IDENT = '1-002'                      ! File: BASRESTAR.B32
0                  ) =
1 BEGIN
1 !
1 !****************************************************************************
1 !*                                                                          *
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1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 ! FACILITY: BASIC + 2 Support Library - User callable
1 !
1 ! ABSTRACT:
1 !
1 !       This module effects the restart of a BASIC I/O statement.
1 !       This only happens on certain typing errors from a terminal.
1 !
1 ! ENVIRONMENT:  VAX-11 User mode
1 !
1 ! AUTHOR: John Sauter, CREATION DATE: 07-MAY-1979
1 !
1 ! MODIFIED BY:
1 !
1 ! 1-001 - Original.  JBS 07-MAY-1979
1 ! 1-002 - Conform to new BAS$$IO_BEG.  JBS 24-JUL-1979
1 !--
1
1 !<BLF/PAGE>
```

```
;   49          0048  1 !
;   50          0049  1 ! SWITCHES:
;   51          0050  1 !
;   52          0051  1
;   53          0052  1 SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
;   54          0053  1
;   55          0054  1 !
;   56          0055  1 ! LINKAGES
;   57          0056  1 !
;   58          0057  1
;   59          0058  1 REQUIRE 'RTLIN:OTSLNK';                              ! Define all linkages
;   60          0487  1
;   61          0488  1 !
;   62          0489  1 ! TABLE OF CONTENTS:
;   63          0490  1 !
;   64          0491  1
;   65          0492  1 FORWARD ROUTINE
;   66          0493  1     BAS$$RESTART_IO;                                 ! Restart an I/O statement
;   67          0494  1
;   68          0495  1 !
;   69          0496  1 ! INCLUDE FILES:
;   70          0497  1 !
;   71          0498  1
;   72          0499  1 REQUIRE 'RTLML:OTSLUB';                              ! logical unit block (LUB) offsets
;   73          0639  1
;   74          0640  1 REQUIRE 'RTLML:OTSISB';                              ! I/O statement block (ISB) offsets
;   75          0808  1
;   76          0809  1 REQUIRE 'RTLIN:RTLPSECT';                            ! Define DECLARE_PSECTS macro
;   77          0904  1
;   78          0905  1 LIBRARY 'RTLSTARLE';                                 ! STARLET macros and symbols
;   79          0906  1
;   80          0907  1 !
;   81          0908  1 ! MACROS:
;   82          0909  1 !
;   83          0910  1 !       NONE
;   84          0911  1 !
;   85          0912  1 ! EQUATED SYMBOLS:
;   86          0913  1 !
;   87          0914  1 !       NONE
;   88          0915  1 !
;   89          0916  1 ! PSECT DECLARATIONS:
;   90          0917  1 !
;   91          0918  1 DECLARE_PSECTS (BAS);
;   92          0919  1 !
;   93          0920  1 ! OWN STORAGE:
;   94          0921  1 !
;   95          0922  1 !       NONE
;   96          0923  1 !
;   97          0924  1 !
;   98          0925  1 ! EXTERNAL REFERENCES:
;   99          0926  1 !
;  100          0927  1
;  101          0928  1 EXTERNAL ROUTINE
;  102          0929  1     BAS$IO_END : NOVALUE,                            ! End of I/O statement
;  103          0930  1     BAS$$IO_BEG : NOVALUE;                           ! Start of I/O statement
;  104          0931  1
;  105          0932  1 EXTERNAL
;  106          0933  1     OTS$$A_CUR_LUB;                                  ! Address of current logical unit block
;  107          0934  1
```

```
1 GLOBAL ROUTINE BAS$$RESTART_IO =                        ! Restart an I/O statement
1
1 !++
1 ! ABSTRACT:
1 !
1 !       Restart a BASIC I/O statement after a typing error.
1 !       Information about the current statement is gathered, and then
1 !       the statement is put through a normal end by calling BAS$IO_END.
1 !       Using the gathered information the statement is initialized
1 !       again by calling BAS$$IO_BEG with its original parameters.
1 !       Return is made to the RESTART_IO subroutine in the error module,
1 !       which will branch to the start of the I/O list.
1 !
1 ! FORMAL PAREMETERS:
1 !
1 !       NONE
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !       OTS$$A_CUR_LUB.ra        Pointer to the current LUB/ISB/RAB.
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !       The LUB/ISB/RAB is reinitialized for the I/O statement.
1 !
1 ! ROUTINE VALUE:
1 !
1 !       The address of the beginning of the I/O list.
1 !
1 ! SIDE EFFECTS:
1 !
1 !       NONE
1 !--
1
2    BEGIN
2
2    GLOBAL REGISTER
2        CCB = K_CCB_REG : REF BLOCK [, BYTE];
2
2    LOCAL
2        RESTART_PC,                                      ! Address of the start of the I/O list
2        LUN,                                             ! Logical unit number
2        STMT_TYPE,                                       ! Statement type
2        FMP;                                             ! User's frame pointer
2
2 !+
2 ! Save the information needed to call BAS$$IO_BEG.
2 !-
2    CCB = .OTS$$A_CUR_LUB;
2    RESTART_PC = .CCB [ISB$A_RESTARTPC];
2    LUN = .CCB [LUB$W_LUN];
2    STMT_TYPE = .CCB [ISB$B_STTM_TYPE];
2    FMP = .CCB [ISB$A_USER_FP];
2 !+
2 ! Suppress any "dangling prompt".  The prompt will be produced again
2 ! when we restart the I/O statement.
2 !-
```

```
;  166          0992  2       CCB [RAB$B_PSZ] = 0;
;  167          0993  2  !+
;  168          0994  2  ! Now end the I/O statement.
;  169          0995  2  !-
;  170          0996  2       BAS$IO_END ();
;  171          0997  2       CCB = 0;
;  172          0998  2  !+
;  173          0999  2  ! Now start a new I/O statement, just like the one we ended.
;  174          1000  2  !-
;  175          1001  2       BAS$$IO_BEG (.STMT_TYPE, .LUN, .FMP, .RESTART_PC);
;  176          1002  2  !+
;  177          1003  2  ! Return the address of the I/O list to our caller, who will branch to
;  178          1004  2  ! it, thereby completing the restart of the I/O statement.
;  179          1005  2  !-
;  180          1006  2       RETURN (.RESTART_PC);
;  181          1007  1       END;                                              ! End of BAS$$RESTART_IO routine



                                                                        .TITLE  BAS$$RESTART_IO
                                                                        .IDENT  \1-002\

                                                                        .EXTRN  BAS$IO_END, BAS$$IO_BEG
                                                                        .EXTRN  OTS$$A_CUR_LUB

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

                                                     083C 00000         .ENTRY  BAS$$RESTART_IO, Save R2,R3,R4,R5,R11          ; 0935
                            5B 00000000G  00   D0 00002         MOVL    OTS$$A_CUR_LUB, CCB                            ; 0983
                            54        FF44  CB   D0 00009         MOVL    -188(CCB), RESTART_PC                          ; 0984
                            55          C6  AB   32 0000E         CVTWL   -58(CCB), LUN                                  ; 0985
                            53        FF71  CB   9A 00012         MOVZBL  -143(CCB), STMT_TYPE                           ; 0986
                            52        FF4C  CB   D0 00017         MOVL    -180(CCB), FMP                                 ; 0987
                                        34  AB   94 0001C         CLRB    52(CCB)                                        ; 0992
                   00000000G  00            00   FB 0001F         CALLS   #0, BAS$IO_END                                 ; 0996
                                            5B   D4 00026         CLRL    CCB                                            ; 0997
                                            14   BB 00028         PUSHR   #^M<R2,R4>                                     ; 1001
                                            28   BB 0002A         PUSHR   #^M<R3,R5>                                     ;
                   00000000G  00            04   FB 0002C         CALLS   #4, BAS$$IO_BEG                                ;
                            50              54   D0 00033         MOVL    RESTART_PC, R0                                 ; 1006
                                                 04 00036         RET                                                    ; 1007

; Routine Size:  55 bytes,    Routine Base:  _BAS$CODE + 0000


;  182          1008  1
;  183          1009  1  END                                                     ! End of BAS$$RESTART_IO module
;  184          1010  1
;  185          1011  0  ELUDOM




;
;                                      PSECT SUMMARY
;
;       Name                       Bytes                            Attributes
```

```
;
;  _BAS$CODE                                55  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         1         0          581           00:01.2






;                                          COMMAND QUALIFIERS

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

; Size:           55 code + 0 data bytes
; Run Time:          00:08.2
; Elapsed Time:      00:24.1
; Lines/CPU Min:       7388
; Lexemes/CPU-Min: 44492
; Memory Used:  110 pages
; Compilation Complete
```

0030 AH-BT13A-SE
VAX/VMS V4.0

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