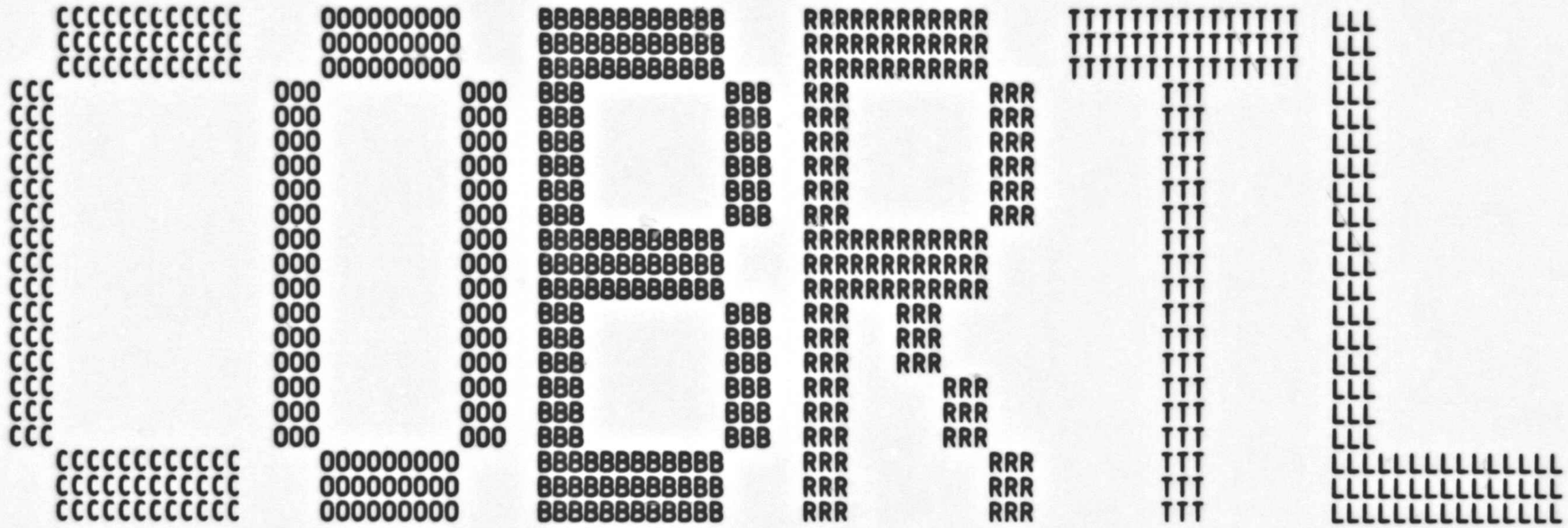
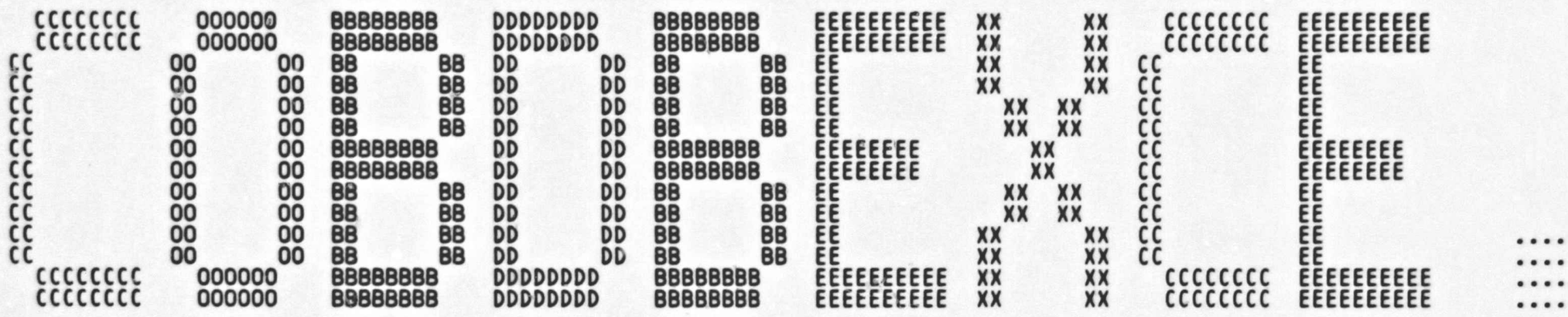

COBRA

FILEID**COBDBEXCE



```
;     1          0001  0 MODULE COB$DBEXCEPTION(
;     2          0002  0                   IDENT = '1-011'        ! file:COBDBEXCE.B32 Edit:STAN1011
;     3          0003  0                   ) =
;     4          0004  1 BEGIN
;     5          0005  1 !
;     6          0006  1 !**************************************************************************
;     7          0007  1 !*                                                                        *
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;    25          0025  1 !*                                                                        *
;    26          0026  1 !*                                                                        *
;    27          0027  1 !**************************************************************************
;    28          0028  1 !
;    29          0029  1 !++
;    30          0030  1 ! FACILITY:     COBOL SUPPORT
;    31          0031  1 !
;    32          0032  1 ! ABSTRACT
;    33          0033  1 !
;    34          0034  1 !       This procedure is called from compiled code when a data base
;    35          0035  1 !       exception condition occurs.  This procedure looks for an applicable
;    36          0036  1 !       USE procedure to handle the data base exception condition.
;    37          0037  1 !       If one is not found, it invokes LIB$STOP to handle the data base
;    38          0038  1 !       exception condition.
;    39          0039  1 !
;    40          0040  1 !
;    41          0041  1 ! ENVIRONMENT:  Vax-11 User Mode
;    42          0042  1 !
;    43          0043  1 ! AUTHOR: RKR , CREATION DATE: 11-FEB-1981
;    44          0044  1 !
;    45          0045  1 ! MODIFIED BY:
;    46          0046  1 !
;    47          0047  1 ! 1-001 - Original Skeleton.   RKR  11-FEB-1981
;    48          0048  1 ! 1-002 - Actual code added.   LB   11-MAR-1981
;    49          0049  1 ! 1-003 - Took out code that checked the DB code field (COB$B_USE CODE
;    50          0050  1 !         equal to COB$K_DBUSE_CODE)  This code was moved to
;    51          0051  1 !         COB$$HANDLER.  LB  18-MAR-81
;    52          0052  1 ! 1-004 - Added diagrams of the data structures involved in COB$DBEXCEPTION.
;    53          0053  1 !         Also compacted code and changed macro definition name to have a
;    54          0054  1 !         DBMS prefix.  LB  19-MAR-81
;    55          0055  1 ! 1-005 - Replaced arbitrary signalling value for no DB USE procedure found
;    56          0056  1 !         with appropriate symbol name now defined in COBMSGDEF.  Added
;    57          0057  1 !         corresponding entry in the EXTERNAL LITERAL declarations for
```

```
;    58          0058  1 !            this module.  LB  24-MAR-81
;    59          0059  1 !  1-006 - Changed name of data base external literal to correspond to change
;    60          0060  1 !            made in COBMSG.MDL.  Changed return status of SS$_CONTINUE to
;    61          0061  1 !            SS$_NORMAL.  Changed calls to SIGNAL_STOP to be to LIB$STOP for
;    62          0062  1 !            consistency reasons.  Changed calls to LIB$SIGNAL to now take an
;    63          0063  1 !            FAO parameter (as is syntactically correct) even though the
;    64          0064  1 !            parameter that is getting passed is not an FAO parameter (note that
;    65          0065  1 !            the !+ directive in the message text will ignore it).  Added code
;    66          0066  1 !            back into this routine that had previously been taken out (refer
;    67          0067  1 !            to revision history 1-003); that code now resides in both places
;    68          0068  1 !            (here and in COB$HANDLER).  Added heaps of comments and optimized
;    69          0069  1 !            code by encasing calls to LIB$STOP in BEGIN-END blocks.  LB  16-APR-81
;    70          0070  1 !  1-007 - Changed search code for a DB USE procedure due to hidden design flaws
;    71          0071  1 !            in the original search algorithm.  Code now saves the first match of
;    72          0072  1 !            a USE procedure and continues searching through the USE list for a
;    73          0073  1 !            locally defined one.  If one is found, then the local one is
;    74          0074  1 !            invoked; otherwise, the saved procedure is invoked.  Note that this
;    75          0075  1 !            code is executed only for the case where there is an ON OTHER clause
;    76          0076  1 !            (meaning that COB$L_USE_LIT = 0) and when the looping count has not
;    77          0077  1 !            reached its limit.  LB  21-APR-81
;    78          0078  1 !  1-008 - Changed check of looping count to check .I instead of
;    79          0079  1 !            .DBUSE[COB$B_DBUSE_CNT].  Moved code that returned SS$_NORMAL to
;    80          0080  1 !            follow directly after the call to LIB$SIGNAL instead of after the
;    81          0081  1 !            END directive.  Added code to return SS$_NORMAL within the
;    82          0082  1 !            BEGIN-END blocks at every occurrence of an invocation of a USE
;    83          0083  1 !            procedure to correct flow problems.  LB  11-MAY-81.
;    84          0084  1 !  1-009 - Minor improvements to generated code.  PDG  9-AUG-81
;    85          0085  1 !  1-010 - Declare LIB$SIGNAL external.  SBL 2-Dec-1981
;    86          0086  1 !  1-011 - Remove informational errors. STAN 24-Jul-1984.
;    87          0087  1 !
;    88          0088  1 !--
;    89          0089  1
;    90          0090  1 !<BLF/PAGE>
```

```
;    92          0091  1 !+
;    93          0092  1 ! SWITCHES:
;    94          0093  1 !-
;    95          0094  1
;    96          0095  1 SWITCHES ADDRESSING_MODE
;    97          0096  1                 (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
;    98          0097  1
;    99          0098  1 !+
;   100          0099  1 ! LINKAGES:
;   101          0100  1 !
;   102          0101  1 !       NONE
;   103          0102  1 !-
;   104          0103  1
;   105          0104  1 !+
;   106          0105  1 ! TABLE OF CONTENTS:
;   107          0106  1 !-
;   108          0107  1
;   109          0108  1 FORWARD ROUTINE
;   110          0109  1         COB$DBEXCEPTION ;
;   111          0110  1
;   112          0111  1 !+
;   113          0112  1 ! INCLUDE FILES:
;   114          0113  1 !
;   115          0114  1 ! Note that there is no require file for the data base
;   116          0115  1 ! exception codes.  These will be provided during link
;   117          0116  1 ! time as link-time constants.
;   118          0117  1 !-
;   119          0118  1
;   120          0119  1
;   121          0120  1 REQUIRE 'RTLIN:COBDEF';                 ! To find USE procedures
;   122          0562  1 REQUIRE 'RTLIN:RTLPSECT' ;              ! Macros for defining psects
;   123          0657  1 LIBRARY 'RTLSTARLE';
;   124          0658  1
;   125          0659  1 !+
;   126          0660  1 ! MACROS
;   127          0661  1 !-
;   128          0662  1
;   129          0663  1 MACRO
;   130          0664  1
;   131          0665  1         DBMS_COND_VAL   =       4,0,32,0%;      ! Data Base Condition Value (status code)
```

```
;  133          0666  1 !+
;  134          0667  1 ! EQUATED SYMBOLS
;  135          0668  1 !
;  136          0669  1 !       NONE
;  137          0670  1 !-
;  138          0671  1
;  139          0672  1 !+
;  140          0673  1 !
;  141          0674  1 ! PSECT DECLARATIONS:
;  142          0675  1 !-
;  143          0676  1
;  144          0677  1 DECLARE_PSECTS (COB) ;                          ! Declare psects for COB$ facility
;  145          0678  1
;  146          0679  1 !+
;  147          0680  1 ! EXTERNAL REFERENCES:
;  148          0681  1 !-
;  149          0682  1
;  150          0683  1 EXTERNAL ROUTINE
;  151          0684  1         LIB$SIGNAL,                            ! Signal
;  152          0685  1         LIB$STOP,                              ! Signal_stop
;  153          0686  1         COB$$INVOKE_USE : NOVALUE;             ! Invoke USE procedure
;  154          0687  1
;  155          0688  1
;  156          0689  1 EXTERNAL LITERAL
;  157          0690  1
;  158          0691  1 !+
;  159          0692  1 !  Condition codes we need
;  160          0693  1 !
;  161          0694  1 !  Note that the !+ directive for the data base literal indicates to ignore
;  162          0695  1 !  the next parameter in the LIB$SIGNAL parameter list.  This is needed in
;  163          0696  1 !  the case where the call to LIB$SIGNAL passes a condition value and an
;  164          0697  1 !  address of a USE procedure which gets checked in COB$HANDLER.  The address
;  165          0698  1 !  of the USE procedure is not a FAO parameter, but an FAO count must still
;  166          0699  1 !  be included (as is syntactically correct) in the call to LIB$SIGNAL in
;  167          0700  1 !  the case that COB$HANDLER resorts to re-signalling the error, causing an
;  168          0701  1 !  error message to be printed at user level.  At that point, the address of
;  169          0702  1 !  the USE procedure parameter must not be treated as an FAO parameter -
;  170          0703  1 !  therefore the !+ takes care of it (by ignoring the parameter).
;  171          0704  1 !
;  172          0705  1 !-
;  173          0706  1
;  174          0707  1     COB$_LSTHNDLDB,     ! Lost handler for data base exception - environment corrupted !+
;  175          0708  1     OTS$_FATINTERR;     ! Fatal Internal Error
```

```
;  177          0709  1 GLOBAL ROUTINE COB$DBEXCEPTION (
;  178          0710  1
;  179          0711  1         DBMS_STAT                               !\Ptr to a block which contains
;  180          0712  1                                                 !/the condition value & error msg.
;  181          0713  1                                 ) =
;  182          0714  1
;  183          0715  1 !++
;  184          0716  1 ! FUNCTIONAL DESCRIPTION:
;  185          0717  1 !
;  186          0718  1 !       This procedure is called from compiled code when a data base
;  187          0719  1 !       exception occurs when accessing the data base.  This procedure
;  188          0720  1 !       looks for an applicable USE procedure to handle the error; if
;  189          0721  1 !       it can't find one, it LIB$STOP's.  If it finds one defined in
;  190          0722  1 !       the local program, it invokes the USE procedure; if it is not
;  191          0723  1 !       defined in the local program, it signals the data base exception
;  192          0724  1 !       condition which should then get processed in COB$HANDLER.
;  193          0725  1 !
;  194          0726  1 !
;  195          0727  1 ! CALLING SEQUENCE:
;  196          0728  1 !
;  197          0729  1 !       COB$DBEXCEPTION (dbms_stat.rr.r)
;  198          0730  1 !
;  199          0731  1 ! FORMAL PARAMETERS:
;  200          0732  1 !
;  201          0733  1 !       DBMS_STAT.rr.r          Ptr to a block which contains the error
;  202          0734  1 !                               and the condition value to be LIB$SIGNAL'ed
;  203          0735  1 !                               (i.e. a message vector)
;  204          0736  1 !
;  205          0737  1 ! IMPLICIT INPUTS:
;  206          0738  1 !
;  207          0739  1 !       NONE
;  208          0740  1 !
;  209          0741  1 ! IMPLICIT OUTPUTS:
;  210          0742  1 !
;  211          0743  1 !       An error message may be signalled.
;  212          0744  1 !
;  213          0745  1 ! COMPLETION CODE:
;  214          0746  1 !
;  215          0747  1 !       Returns SS$_NORMAL if success (LSB = 1)
;  216          0748  1 !       Otherwise, returns a zero.
;  217          0749  1 !
;  218          0750  1 ! SIDE EFFECTS:
;  219          0751  1 !
;  220          0752  1 !       Calls LIB$STOP if input parameters are insufficient or invalid.
;  221          0753  1 !       Also invokes LIB$STOP if the frame pointer equals 0 (indicating
;  222          0754  1 !       serious problems).
;  223          0755  1 !
;  224          0756  1 ! NOTES:
;  225          0757  1 !
;  226          0758  1 !       For more information on the message vector, refer to
;  227          0759  1 !       the $PUTMSG system service documentation.
;  228          0760  1 !
;  229          0761  1 !--
```

```
;  231     0762  1 !+
;  232     0763  1 !
;  233     0764  1 ! Note that the DB USE list is structured as follows:
;  234     0765  1 !
;  235     0766  1 !       ************************************************************
;  236     0767  1 !       *                                        !COB$B_USE_CODE *
;  237     0768  1 !       *-----------------------------------------------------------*
;  238     0769  1 !       *                COB$A_DBUSE_PNC                          *
;  239     0770  1 !       *-----------------------------------------------------------*
;  240     0771  1 !       *                   !COB$B_GDBUSE_CNT!COB$B_DBUSE_CNT*
;  241     0772  1 !       *-----------------------------------------------------------*
;  242     0773  1 !       *                COB$A_USE_PROC                           * BASE OF 1ST DATA BASE ENTRY
;  243     0774  1 !       *-----------------------------------------------------------*
;  244     0775  1 !       *                COB$A_USE_EOPR                           *
;  245     0776  1 !       *-----------------------------------------------------------*
;  246     0777  1 !       *                COB$L_USE_LIT                            *
;  247     0778  1 !       ************************************************************
;  248     0779  1 !
;  249     0780  1 !-
;  250     0781  1
;  251     0782  1 !+
;  252     0783  1 !
;  253     0784  1 ! Note that the above fields are defined as follows:
;  254     0785  1 !
;  255     0786  1 !       COB$B_USE_CODE - generic code indicating that the USE list
;  256     0787  1 !                        pertains to data base exceptions.
;  257     0788  1 !       COB$A_DBUSE_PNC -address of Perform Nest Counter for declaring
;  258     0789  1 !                        program.
;  259     0790  1 !       COB$B_DBUSE_CNT -number of data base USE procedures defined in
;  260     0791  1 !                        this program.  This includes both local and
;  261     0792  1 !                        global procedures defined in both this program
;  262     0793  1 !                        and containing programs.
;  263     0794  1 !       COB$B_GDBUSE_CNT-number of global data base USE procedures
;  264     0795  1 !                        defined in the local program.
;  265     0796  1 !       COB$A_USE_PROC - address of data base USE procedure.
;  266     0797  1 !       COB$A_USE_EOPR - pointer to the end of the Perform Range Block
;  267     0798  1 !                        for the USE procedure if the entry was defined
;  268     0799  1 !                        in this program or 0 if it was defined in a
;  269     0800  1 !                        containing program.
;  270     0801  1 !       COB$L_USE_LIT  - a data base exception literal or 0 for "ON OTHER"
;  271     0802  1 !                        or no "ON".
;  272     0803  1 !-
```

```
;  274          0804  1
;  275          0805  1 !+
;  276          0806  1 ! Note that this is the DBMS_STAT block (referred to as
;  277          0807  1 ! a message vector) that is the input parameter to
;  278          0808  1 ! COB$DBEXCEPTION.  Note that this particular example
;  279          0809  1 ! is for one that contains FAO parameters.  There can
;  280          0810  1 ! be other formats, where the condition code is either
;  281          0811  1 ! an RMS status or a system service status, which in
;  282          0812  1 ! both cases, do not take any FAO parameters.  Also note
;  283          0813  1 ! that the numbers in parentheses are only meaningful for
;  284          0814  1 ! this sample block.  The # of longwords in a DBMS_STAT
;  285          0815  1 ! block can be up to 255.  Also, the # of FAO arguments
;  286          0816  1 ! that can be passed in this block can be up to 16 for
;  287          0817  1 ! DBMS.
;  288          0818  1 !
;  289          0819  1 !
;  290          0820  1 !       ********************************************
;  291          0821  1 !       *       # OF LONGWORDS IN BLOCK (6)        *
;  292          0822  1 !       *------------------------------------------*
;  293          0823  1 !       *       DBMS CONDITION CODE (STATUS)       *
;  294          0824  1 !       *------------------------------------------*
;  295          0825  1 !       *         0       !  # OF FAO ARGS (4)     *
;  296          0826  1 !       *------------------------------------------*
;  297          0827  1 !       *                FAO ARG #1                *
;  298          0828  1 !       *------------------------------------------*
;  299          0829  1 !       *                FAO ARG #2                *
;  300          0830  1 !       *------------------------------------------*
;  301          0831  1 !       *                FAO ARG #3                *
;  302          0832  1 !       *------------------------------------------*
;  303          0833  1 !       *                FAO ARG #4                *
;  304          0834  1 !       ********************************************
;  305          0835  1 !-
```

```
;  307     0836  2 BEGIN
;  308     0837  2
;  309     0838  2     BUILTIN
;  310     0839  2         CALLG,
;  311     0840  2         ACTUALPARAMETER,
;  312     0841  2         ACTUALCOUNT,
;  313     0842  2         FP;
;  314     0843  2
;  315     0844  2     MAP
;  316     0845  2         DBMS_STAT:      REF BLOCK[,BYTE],
;  317     0846  2         FP:             REF BLOCK[,BYTE];
;  318     0847  2
;  319     0848  2     LOCAL
;  320     0849  2         SFP:            REF BLOCK[,BYTE],       ! Saved FP
;  321     0850  2         DBUSE:          REF BLOCK[,BYTE],       ! Pointer to DB USE list
;  322     0851  2         DBUSE_ENT:      REF BLOCK[,BYTE],       ! Pointer to DB USE list entry
;  323     0852  2         SAVE_PNC:       VOLATILE,               ! Saved addr of PNC
;  324     0853  2         SAVE_EOPR:      VOLATILE,               ! Saved addr of EOPR
;  325     0854  2         SAVE_SAVED_AP:  VOLATILE,               ! Saved saved AP
;  326     0855  2         SAVE_ADDR_USELST: VOLATILE,             ! Saved addr of USE list
;  327     0856  2         SAVE_ADDR_USEPROC;                      ! Saved addr of USE procedure
;  328     0857  2
;  329     0858  2     !+
;  330     0859  2     ! Ensure that the DBMS_STAT argument is present
;  331     0860  2     !-
;  332     0861  2
;  333     0862  3     IF (IF ACTUALCOUNT() EQL 0 THEN 1 ELSE .DBMS_STAT EQL 0)
;  334     0863  2       THEN
;  335     0864  3         BEGIN
;  336     0865  3         LIB$STOP (OTS$_FATINTERR);
;  337     0866  3         RETURN 0;
;  338     0867  2         END;
;  339     0868  2
;  340     0869  2     !+
;  341     0870  2     ! Initialize the local storage for the
;  342     0871  2     ! saved address of the USE procedure
;  343     0872  2     ! for later use.
;  344     0873  2     !-
;  345     0874  2
;  346     0875  2     SAVE_ADDR_USEPROC = 0;
;  347     0876  2
;  348     0877  2     !+
;  349     0878  2     ! Search for an appropriate USE procedure.
;  350     0879  2     !-
;  351     0880  2
;  352     0881  2     SFP = .FP[SF$L_SAVE_FP];                    ! Get saved FP
;  353     0882  2     IF .SFP EQL 0                               !\If FP equals zero,
;  354     0883  2       THEN                                      ! then we have
;  355     0884  3         BEGIN                                   !/serious problems
;  356     0885  3         LIB$STOP (OTS$_FATINTERR);
;  357     0886  3         RETURN 0;
;  358     0887  3         END
;  359     0888  2       ELSE
;  360     0889  3         BEGIN
;  361     0890  3         DBUSE = .SFP[COB$A_DB_USE];             !\Fetch address at offset
;  362     0891  3                                                 ! 8 from stack to obtain
;  363     0892  3                                                 !/a ptr to a DB USE list
```

```
;  364     0893  3
;  365     0894  3          IF .DBUSE NEQ 0
;  366     0895  3            THEN
;  367     0896  4              BEGIN
;  368     0897  4
;  369     0898  4          !+
;  370     0899  4          ! The following check determines if this is a
;  371     0900  4          ! data base USE list.  The COB$B_USE_CODE field
;  372     0901  4          ! should contain the generic code for the class of
;  373     0902  4          ! data base exceptions (equal to COB$K_DBUSE_CODE).
;  374     0903  4          !-
;  375     0904  4
;  376     0905  4              IF .DBUSE[COB$B_USE_CODE] EQL COB$K_DBUSE_CODE
;  377     0906  4
;  378     0907  4                THEN
;  379     0908  5                  BEGIN
;  380     0909  5                  DBUSE_ENT = DBUSE[COB$A_DBUSE_ENT];     ! Point to 1st DB USE entry
;  381     0910  5
;  382     0911  5
;  383     0912  5                  !+
;  384     0913  5                  ! Find an applicable USE procedure.  A USE procedure
;  385     0914  5                  ! is applicable if COB$L_USE_LIT equals the data base
;  386     0915  5                  ! exception or if COB$L_USE_LIT equals zero.
;  387     0916  5                  !-
;  388     0917  5
;  389     0918  5                  DECR I FROM .DBUSE[COB$B_DBUSE_CNT] - 1 TO 0 DO
;  390     0919  6                    BEGIN
;  391     0920  6                    IF .DBUSE_ENT[COB$L_USE_LIT] EQL 0 OR
;  392     0921  6                    .DBUSE_ENT[COB$L_USE_LIT] EQL .DBMS_STAT[DBMS_COND_VAL]
;  393     0922  6                      THEN
;  394     0923  7                        BEGIN
;  395     0924  7
;  396     0925  7                        !+
;  397     0926  7                        ! If EOPR (ptr to end of perform range block)
;  398     0927  7                        ! not equal to zero, then we know that
;  399     0928  7                        ! the USE procedure is local, and we can invoke
;  400     0929  7                        ! it immediately.  Otherwise, the data base
;  401     0930  7                        ! error should be LIB$SIGNAL'ed.
;  402     0931  7                        !-
;  403     0932  7
;  404     0933  7                        IF .DBUSE_ENT[COB$A_USE_EOPR] NEQ 0
;  405     0934  7                          THEN
;  406     0935  8                            BEGIN
;  407     0936  8                            IF .DBUSE_ENT[COB$L_USE_LIT] EQL 0
;  408     0937  8                              THEN
;  409     0938  9                                BEGIN
;  410     0939  9
;  411     0940  9                                !+
;  412     0941  9                                ! If the looping count equals zero, (meaning
;  413     0942  9                                ! there aren't any more USE procedures in the
;  414     0943  9                                ! list), then we can invoke this USE procedure.
;  415     0944  9                                !-
;  416     0945  9
;  417     0946  9                                IF .I EQL 0
;  418     0947  9                                  THEN
;  419     0948 10                                    BEGIN
;  420     0949 10                                    COB$$INVOKE_USE (
```

```
;  421          0950 10                        .DBUSE_ENT[COB$A_USE_PROC], ! Addr of USE procedure
;  422          0951 10                        .DBUSE,                     ! Addr of USE list
;  423          0952 10                        .FP[SF$L_SAVE_AP],
;  424          0953 10                        .DBUSE_ENT[COB$A_USE_EOPR], ! EOPR
;  425          0954 10                        .DBUSE[COB$A_DBUSE_PNC]);   ! Perform Nest Ctr
;  426          0955 10                    RETURN SS$_NORMAL;
;  427          0956 10                    END
;  428          0957  9                ELSE
;  429          0958  9
;  430          0959  9                !+
;  431          0960  9                ! At this point, we have found a USE procedure,
;  432          0961  9                ! but rather than invoking it immediately, we
;  433          0962  9                ! save its address and all other context required
;  434          0963  9                ! to invoke the USE procedure, and keep on
;  435          0964  9                ! searching for an additional match.  This is
;  436          0965  9                ! due to the fact that the USE list is arranged
;  437          0966  9                ! in the order of global USE procedures defined
;  438          0967  9                ! in the local program, followed by local USE
;  439          0968  9                ! procedures defined in the local program.  This
;  440          0969  9                ! method of saving the context of the 1st matched
;  441          0970  9                ! USE procedure now ensures that if a local USE
;  442          0971  9                ! procedure defined in the local program exists
;  443          0972  9                ! that it will be invoked rather than a globally
;  444          0973  9                ! defined one.
;  445          0974  9                !-
;  446          0975  9
;  447          0976 10                    BEGIN
;  448          0977 10                    SAVE_ADDR_USEPROC = .DBUSE_ENT[COB$A_USE_PROC];
;  449          0978 10                    SAVE_ADDR_USELST = .DBUSE;
;  450          0979 10                    SAVE_SAVED_AP = .FP[SF$L_SAVE_AP];
;  451          0980 10                    SAVE_EOPR = .DBUSE_ENT[COB$A_USE_EOPR];
;  452          0981 10                    SAVE_PNC = .DBUSE[COB$A_DBUSE_PNC];
;  453          0982  9                    END;
;  454          0983  9                END
;  455          0984  8                ELSE
;  456          0985  8
;  457          0986  8                !+
;  458          0987  8                ! Here we know that there is no "ON OTHER"
;  459          0988  8                ! clause (meaning that COB$A_USE_LIT is not
;  460          0989  8                ! equal to zero), so we can just invoke the
;  461          0990  8                ! found USE procedure.
;  462          0991  8                !-
;  463          0992  8
;  464          0993  9                    BEGIN
;  465          0994  9                    COB$$INVOKE_USE (
;  466          0995  9                      .DBUSE_ENT[COB$A_USE_PROC],     ! Addr of USE procedure
;  467          0996  9                      .DBUSE,                         ! Addr of USE list
;  468          0997  9                      .FP[SF$L_SAVE_AP],
;  469          0998  9                      .DBUSE_ENT[COB$A_USE_EOPR],     ! EOPR
;  470          0999  9                      .DBUSE[COB$A_DBUSE_PNC]);       ! Perform Nest Ctr
;  471          1000  9                    RETURN SS$_NORMAL;
;  472          1001  8                    END;
;  473          1002  8                END
;  474          1003  7            ELSE
;  475          1004  8              BEGIN
;  476          1005  8
;  477          1006  8            !+
```

```
;  478          1007  8                    ! At this point, if "SAVE_ADDR_USEPROC" not
;  479          1008  8                    ! equal to zero, then we had previously found
;  480          1009  8                    ! a USE procedure which is a globally defined
;  481          1010  8                    ! one in the local program, and saved its context.
;  482          1011  8                    ! We can now invoke it.
;  483          1012  8                    !-
;  484          1013  8
;  485          1014  8                      IF .SAVE_ADDR_USEPROC NEQ 0
;  486          1015  8                        THEN
;  487          1016  8                          COB$$INVOKE_USE (
;  488          1017  8                            .SAVE_ADDR_USEPROC,          ! Addr of USE procedure
;  489          1018  8                            .SAVE_ADDR_USELST,           ! Addr of USE list
;  490          1019  8                            .SAVE_SAVED_AP,              ! Saved AP
;  491          1020  8                            .SAVE_EOPR,                  ! Addr of EOPR
;  492          1021  8                            .SAVE_PNC)                   ! Addr of PNC
;  493          1022  8                        ELSE
;  494          1023  8
;  495          1024  8                    !+
;  496          1025  8                    ! Signal the error here indicating that the USE
;  497          1026  8                    ! procedure is a global one that is in a containing
;  498          1027  8                    ! program.  Need to get the FP of the containing
;  499          1028  8                    ! program and check the defined global USE
;  500          1029  8                    ! procedures of the local program there.  If found,
;  501          1030  8                    ! then invoke the USE procedure at that level;
;  502          1031  8                    ! otherwise, the error is re-signalled.
;  503          1032  8                    !-
;  504          1033  8
;  505          1034  8                        LIB$SIGNAL (COB$_LSTHNDLDB,1,.DBUSE_ENT[COB$A_USE_PROC]);
;  506          1035  8                      RETURN SS$_NORMAL;
;  507          1036  7                      END;
;  508          1037  6                  END;
;  509          1038  6                  DBUSE_ENT = .DBUSE_ENT + COB$S_DBUSE;        ! Step to next entry
;  510          1039  5                  END;                                         ! End of DECR loop
;  511          1040  5
;  512          1041  5              !+
;  513          1042  5              ! At this point, we know that there isn't an
;  514          1043  5              ! applicable USE procedure, so the only recourse
;  515          1044  5              ! we have is to LIB$STOP.  The reason for this is that
;  516          1045  5              ! the COB$B_USE_CODE did not match with the code
;  517          1046  5              ! provided in COB$K_DBUSE_CODE.  We also could have
;  518          1047  5              ! arrived here if DBUSE was equal to zero, indicating
;  519          1048  5              ! there was no DB USE list to begin with.
;  520          1049  5              !--
;  521          1050  5
;  522          1051  4                  END;                                         !\End of code block that
;  523          1052  4                                                               ! checks for a COB$K_DBUSE_CODE
;  524          1053  4                                                               !/match
;  525          1054  3                END;                                           !\End of code dealing with
;  526          1055  3                                                               !/a valid ptr to a DB USE list
;  527          1056  3              CALLG (.DBMS_STAT,LIB$STOP);
;  528          1057  2            END;
;  529          1058  2        RETURN 0                                               ! Never gets here
;  530          1059  2                                                               !\End of global routine
;  531          1060  1        END;                                                   !/COB$DBEXCEPTION


                                                        .TITLE  COB$DBEXCEPTION
```

```
                                        .IDENT  \1-011\

                                        .EXTRN  LIB$SIGNAL, LIB$STOP
                                        .EXTRN  COB$$INVOKE_USE
                                        .EXTRN  COB$_LSTHNDLDB, OTS$_FATINTERR

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

                        00FC 00000      .ENTRY  COB$DBEXCEPTION, Save R2,R3,R4,R5,R6,R7     ; 0709
57 00000000G    00      9E 00002        MOVAB   LIB$STOP, R7                                ;
5E                      10 C2 00009     SUBL2   #16, SP                                     ;
                        6C 95 0000C     TSTB    (AP)                                        ; 0862
                        0D 13 0000E     BEQL    1$                                          ;
            04          AC D5 00010     TSTL    DBMS_STAT                                   ;
                        08 13 00013     BEQL    1$                                          ;
                        56 D4 00015     CLRL    SAVE_ADDR_USEPROC                           ; 0875
52          1C          AE D0 00017     MOVL    28(FP), SFP                                 ; 0881
                        0C 12 0001B     BNEQ    2$                                          ; 0882
    00000000G           8F DD 0001D 1$: PUSHL   #OTS$_FATINTERR                             ; 0885
67                      01 FB 00023     CALLS   #1, LIB$STOP                                ;
                    0099 31 00026       BRW     16$                                         ; 0886
52          F8          A2 D0 00029 2$: MOVL    -8(SFP), DBUSE                              ; 0890
                        03 12 0002D     BNEQ    4$                                          ; 0894
                    008C 31 0002F 3$:   BRW     15$                                         ;
01                      62 91 00032 4$: CMPB    (DBUSE), #1                                 ; 0905
                        F8 12 00035     BNEQ    3$                                          ;
53          0C          A2 9E 00037     MOVAB   12(R2), DBUSE_ENT                           ; 0909
55          08          A2 9A 0003B     MOVZBL  8(DBUSE), I                                 ; 0918
                        7A 11 0003F     BRB     14$                                         ;
                        51 D4 00041 5$: CLRL    R1                                          ; 0920
                08          A3 D5 00043 TSTL    8(DBUSE_ENT)                                ;
                        04 12 00046     BNEQ    6$                                          ;
                        51 D6 00048     INCL    R1                                          ;
                        0B 11 0004A     BRB     7$                                          ;
            50          04 AC D0 0004C 6$:  MOVL    DBMS_STAT, R0                           ; 0921
    04      A0          08 A3 D1 00050  CMPL    8(DBUSE_ENT), 4(R0)                         ;
                        61 12 00055     BNEQ    13$                                         ;
            54          04 A3 D0 00057 7$:  MOVL    4(DBUSE_ENT), R4                        ; 0933
                        2B 13 0005B     BEQL    9$                                          ;
            1A              51 E9 0005D BLBC    R1, 8$                                      ; 0952
                            55 D5 00060 TSTL    I                                           ; 0946
                            16 13 00062 BEQL    8$                                          ;
            56              63 D0 00064 MOVL    (DBUSE_ENT), SAVE_ADDR_USEPROC              ; 0977
            6E              52 D0 00067 MOVL    DBUSE, SAVE_ADDR_USELST                     ; 0978
    04      AE      18      AE D0 0006A MOVL    24(FP), SAVE_SAVED_AP                       ; 0979
    08      AE              54 D0 0006F MOVL    R4, SAVE_EOPR                               ; 0980
    0C      AE      04      A2 D0 00073 MOVL    4(DBUSE), SAVE_PNC                          ; 0981
                            3E 11 00078 BRB     13$                                         ; 0936
                    04      A2 DD 0007A 8$: PUSHL   4(DBUSE)                                ; 0999
                            54 DD 0007D PUSHL   R4                                          ; 0998
                    20      AE DD 0007F PUSHL   32(FP)                                      ; 0997
                            52 DD 00082 PUSHL   DBUSE                                       ; 0996
                            63 DD 00084 PUSHL   (DBUSE_ENT)                                 ; 0995
                            12 11 00086 BRB     10$                                         ;
                            56 D5 00088 9$: TSTL    SAVE_ADDR_USEPROC                       ; 1014
                            17 13 0008A BEQL    11$                                         ;
                    0C      AE DD 0008C PUSHL   SAVE_PNC                                    ; 1021
```

```
                                        0C   AE   DD 0008F          PUSHL   SAVE_EOPR                                  ; 1020
                                        0C   AE   DD 00092          PUSHL   SAVE_SAVED_AP                              ; 1019
                                        0C   AE   DD 00095          PUSHL   SAVE_ADDR_DSELST                           ; 1018
                                             56   DD 00098          PUSHL   SAVE_ADDR_USEPROC                          ; 1017
                00000000G  00                05   FB 0009A 10$:     CALLS   #5, COB$$INVOKE_USE                        ;
                                             11   11 000A1          BRB     12$                                        ; 1016
                                             63   DD 000A3 11$:     PUSHL   (DBUSE_ENT)                                ; 1034
                                             01   DD 000A5          PUSHL   #1                                         ;
                           00000000G         8F   DD 000A7          PUSHL   #COB$_LSTHNDLDB                            ;
                00000000G  00                03   FB 000AD          CALLS   #3, LIB$SIGNAL                             ;
                           50                01   D0 000B4 12$:     MOVL    #1, R0                                     ; 1035
                                                04 000B7          RET                                                ;
                           53                0C   C0 000B8 13$:     ADDL2   #12, DBUSE_ENT                             ; 1038
                           83                55   F4 000BB 14$:     SOBGEQ  I, 5$                                      ; 0918
                           67           04   BC   FA 000BE 15$:     CALLG   @DBMS_STAT, LIB$STOP                       ; 1056
                                             50   D4 000C2 16$:     CLRL    R0                                         ; 1060
                                                04 000C4          RET                                                ;

; Routine Size:  197 bytes,    Routine Base:  _COB$CODE + 0000

;  532          1061  1 END
;  533          1062  0 ELUDOM



;                                    PSECT SUMMARY
;
;       Name                    Bytes                           Attributes
;
;  _COB$CODE                        197  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         3         0         581       00:00.8



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

; Size:          197 code + 0 data bytes
```

```
; Run Time:          00:06.7
; Elapsed Time:      00:30.6
; Lines/CPU Min:      9581
; Lexemes/CPU-Min: 25181
; Memory Used:  115 pages
; Compilation Complete
```

COBDIVQ
LIS

COBFINDNA
LIS

COBDBEXCE
LIS

COBEXPI
LIS

COBDEEDIT
LIS

COBDISPLA
LIS

COBESCGEN
LIS

COBERROR
LIS

COBDHANDL
LIS