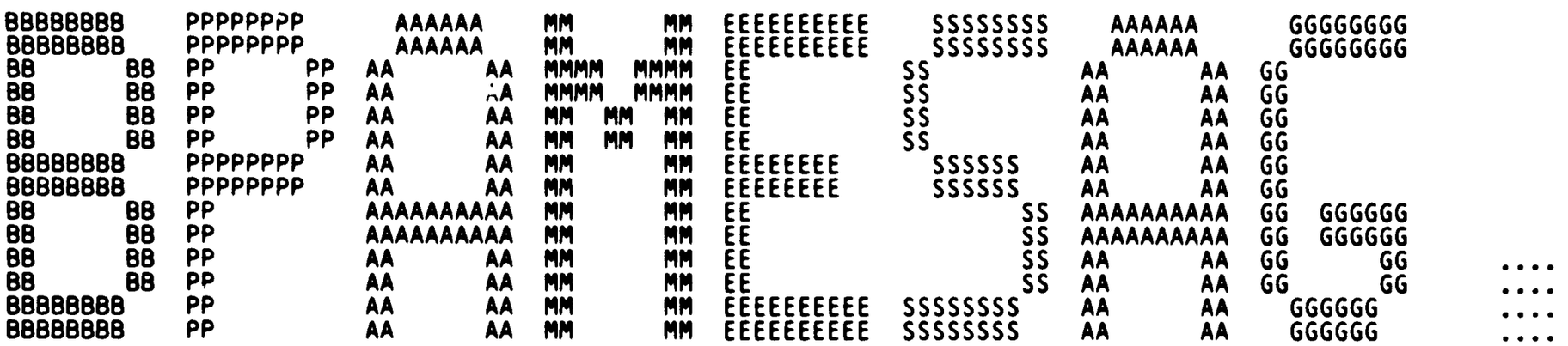
M 1

```
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
```

FILEID**BPAMESAG



```
;     1          0001  0 .
;     2          0002  0 .<blf/width:80>
;     3          0003  0 !
;     4          0004  0 MODULE bpa$mesag (                      ! Message send/receive
;     5          0005  0                   IDENT = '1-272'       ! File: BPAMESAG.B32 EDIT:MDL1272
;     6          0006  0                   ) =
;     7          0007  1 BEGIN
;     8          0008  1 !
;     9          0009  1 !*****************************************************************************
;    10          0010  1 !*                                                                           *
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;    28          0028  1 !*                                                                           *
;    29          0029  1 !*                                                                           *
;    30          0030  1 !*****************************************************************************
;    31          0031  1 !
;    32          0032  1 !<blf/uppercase_key>
;    33          0033  1 !<blf/lowercase_user>
;    34          0034  1 !
;    35          0035  1
;    36          0036  1 !++
;    37          0037  1 ! FACILITY: BASIC-PLUS AME
;    38          0038  1 !
;    39          0039  1 ! ABSTRACT:
;    40          0040  1 !
;    41          0041  1 !       This module simulates some subfunctions of the RSTS monitor directive
;    42          0042  1 !       .MESAG.
;    43          0043  1 !       bpa$mess_dcl corresponds to SR$DCL
;    44          0044  1 !       bpa$mess_lcl    - " -    to SR$LCL
;    45          0045  1 !       bpa$mess_rcv    - " -    to SR$RCV
;    46          0046  1 !       bpa$mess_rem    - " -    to SR$REM
;    47          0047  1 !
;    48          0048  1 ! ENVIRONMENT: Native mode VAX processor, User mode.
;    49          0049  1 !
;    50          0050  1 ! AUTHOR: V.Eriksson (CAP), CREATION DATE: 10 - May - 1979
;    51          0051  1 !
;    52          0052  1 ! MODIFIED BY:
;    53          0053  1 !
;    54          0054  1 !       VERSION X01
;    55          0055  1 !
;    56          0056  1 !       V.ERIKSSON (CAP), 27-JUNE-79
;    57          0057  1 ! 260   - The definition of IOSB (status block returned by QIOW) was wrong
```

```
;    58          0058  1 !          and has been changed.
;    59          0059  1 !
;    60          0060  1 !       V.ERIKSSON (CAP), 27-JUNE-79
;    61          0061  1 ! 261   - A firqb-subfunction value has been inserted in bpa$mess_rcv.
;    62          0062  1 ! 1-262 - Remove REQUIRE 'REQ:AME' and added necessary
;    63          0063  1 !          BPA prefixes on the names.  JBS 02-OCT-1979
;    64          0064  1 ! 1-263 - Remove the XRB.  Instead, the caller will pass the necessary
;    65          0065  1 !          fields.  This is needed because in the VAX-11 BASIC environment
;    66          0066  1 !          addresses are 32-bits long, and the XRB only has 16 bits for
;    67          0067  1 !          the buffer address.  JBS 04-OCT-1979
;    68          0068  1 ! 1-264 - Add an exit handler, so that the logical name will be deleted
;    69          0069  1 !          when the image exits, in case it is unable to delete it.
;    70          0070  1 !          JBS 05-OCT-1979
;    71          0071  1 ! 1-265 - Correct some comments describing receiver selection
;    72          0072  1 !          and return 0 for job number.  JBS 07-OCT-1979
;    73          0073  1 ! 1-266 - Remember the parameter string, so it can be returned with each
;    74          0074  1 !          message segment read.  JBS 07-OCT-1979
;    75          0075  1 ! 1-267 - Correct an error in a comment.  JBS 16-OCT-1979
;    76          0076  1 ! 1-268 - If the permanent mailbox is already created and we do not have
;    77          0077  1 !          SYSNAM priv. to put the name of the mailbox in the table then
;    78          0078  1 !          instead of just signalling, first delete the permanent mailbox.
;    79          0079  1 !          FM 1-OCT-80
;    80          0080  1 ! 1-269 - Do not interpret FIRQB[FQB$W_BMAX] to be anything other than
;    81          0081  1 !          negative or positive.  Negative or zero means use temporary mailbox,
;    82          0082  1 !          and positive means use permanent mailbox. Use a constant for the
;    83          0083  1 !          size of message, when creating the mailbox. The buffer quota for
;    84          0084  1 !          the mailbox should be the system default. When these changes were
;    85          0085  1 !          made, BAS$SYS was also modified to support small send/receive.
;    86          0086  1 !          This call is simulated to look like a large send/receive to this
;    87          0087  1 !          module. As a result of adding small send/receive, we will now
;    88          0088  1 !          signal illegal sys usage instead of account or device in use
;    89          0089  1 !          if this is a small send/receive to be compatible with RSTS. FM 21-FEB_81.
;    90          0090  1 ! 1-270 - Use LIB$GET_EF to allocate event flags for $QIOWs.  PLL 30-Nov-81
;    91          0091  1 ! 1-271 - Deallocate an active ISB/LUB/RAB after trying to read a mailbox
;    92          0092  1 !          message and not receiving one.  MDL 11-Oct-1982
;    93          0093  1 ! 1-272 - fix bug introduced in previous edit; can't assume we have a valid
;    94          0094  1 !          ISB/LUB/RAB all the time.  MDL 26-Apr-1983
;    95          0095  1 !--
;    96          0096  1
;    97          0097  1 !
;    98          0098  1 !<blf/page>
```

```
;  100          0099  1 !
;  101          0100  1 ! SWITCHES:
;  102          0101  1 !
;  103          0102  1
;  104          0103  1 SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
;  105          0104  1
;  106          0105  1 !
;  107          0106  1 ! TABLE OF CONTENTS:
;  108          0107  1 !
;  109          0108  1
;  110          0109  1 FORWARD ROUTINE
;  111          0110  1     bpa$mesag,                          ! Main routine, calls the others
;  112          0111  1     bpa$mess_dcl,                       ! Simulates declare receiver
;  113          0112  1     mess_rcvname : NOVALUE,     ! Called by bpa$mess_decl and bpa$mess_lcl to
;  114          0113  1     ! create a logical mailbox name
;  115          0114  1     bpa$mess_lcl,                       ! Simulates send local data message
;  116          0115  1     bpa$mess_send : NOVALUE,    ! Called by bpa$mess_lcl to send a message
;  117          0116  1     bpa$mess_rcv,                       ! Simulates receive local data message
;  118          0117  1     read_mailbox,               ! Called by bpa$mess_rcv to read a mailbox
;  119          0118  1     ! into a buffer
;  120          0119  1     bpa$mess_rem,                       ! Simulates remove receiver
;  121          0120  1     bpa$mess_clear,             ! Called by bpa$mess_rem to perform remove
;  122          0121  1     exit_handler : NOVALUE;             ! Called at image exit
;  123          0122  1
;  124          0123  1 ! receiver
;  125          0124  1 !
;  126          0125  1 ! INCLUDE FILES:
;  127          0126  1 !
;  128          0127  1
;  129          0128  1 REQUIRE 'RTLIN:BPASTRUCT';
;  130          0219  1
;  131          0220  1 REQUIRE 'RTLIN:BPAFQBDEF';
;  132          0344  1
;  133          0345  1 REQUIRE 'RTLIN:BPAMSGDEF';
;  134          0407  1
;  135          0408  1 REQUIRE 'RTLIN:BPAFUNDEF';
;  136          0658  1
;  137          0659  1 REQUIRE 'RTLIN:BPAERRDEF';
;  138          0855  1
;  139          0856  1 LIBRARY 'RTLSTARLE';
;  140          0857  1
;  141          0858  1 REQUIRE 'RTLIN:RTLPSECT';
;  142          0953  1
;  143          0954  1 REQUIRE 'RTLIN:OTSLNK';
;  144          1383  1
;  145          1384  1 REQUIRE 'RTLML:OTSLUB';
;  146          1524  1
;  147          1525  1 !
;  148          1526  1 ! MACROS:
;  149          1527  1 !
;  150          1528  1 !       NONE
;  151          1529  1 !
;  152          1530  1 ! EQUATED SYMBOLS:
;  153          1531  1 !
;  154          1532  1 !       NONE
;  155          1533  1 !
;  156          1534  1 ! PSECTS:
```

```
;  157          1535  1 !
;  158          1536  1 declare_psects (bpa);
;  159          1537  1
;  160          1538  1 ! OWN STORAGE:
;  161          1539  1 !
;  162          1540  1
;  163          1541  1 GLOBAL
;  164          1542  1     bpa$a_msg : $msg_def;                      ! Block with data needed to be
;  165          1543  1
;  166          1544  1                                                ! saved between calls
;  167          1545  1
;  168          1546  1 OWN
;  169          1547  1     exit_lock : INITIAL (0),              ! One-time flag for exit handler
;  170          1548  1     exit_reason,
;  171          1549  1     exit_block : VECTOR [4] INITIAL (0, 0, 0, 0),
;  172          1550  1     param_string : VECTOR [20, BYTE];          ! Last parameter string read
;  173          1551  1
;  174          1552  1 !
;  175          1553  1 ! EXTERNAL REFERENCES:
;  176          1554  1 !
;  177          1555  1
;  178          1556  1 EXTERNAL ROUTINE
;  179          1557  1     LIB$GET_EF,                                ! allocate an event flag
;  180          1558  1     LIB$FREE_EF,                               ! deallocate an event flag
;  181          1559  1     BAS$$CB_POP: JSB_CB_POP NOVALUE,           ! free an ISB/LUB/RAB
;  182          1560  1     bpa$wakeup;                                ! Routine to wake the process
;  183          1561  1                                                ! when a message comes.
```

```
;  185          1562  1 GLOBAL ROUTINE bpa$mesag (                    ! Main Routine
;  186          1563  1         firqb,                                 ! Address of the FIRQB
;  187          1564  1         buflen,                                ! Length of the user's buffer
;  188          1565  1         bufadr,                                ! Address of the user's buffer
;  189          1566  1         bytxfr                                 ! Number of bytes actually transfered
;  190          1567  1     ) =
;  191          1568  1
;  192          1569  1 !++
;  193          1570  1 ! FUNCTIONAL DESCRIPTION:
;  194          1571  1 !
;  195          1572  1 !       This routine calls one of bpa$mess_dcl, bpa$mess_lcl, bpa$mess_rcv
;  196          1573  1 !       and bpa$mess_rem depending on the subfunction code in firqb. If the
;  197          1574  1 !       subfunction code is faulty an error is signalled.
;  198          1575  1 !
;  199          1576  1 ! FORMAL PARAMETERS:
;  200          1577  1 !
;  201          1578  1 !       firqb                   =  firqb address
;  202          1579  1 !       buflen.rl.v     Length of output data buffer in bytes, 0 to 512.
;  203          1580  1 !       bufadr.ra.v     Starting address of data buffer
;  204          1581  1 !       bytxfr.ww.r     Number of data bytes received
;  205          1582  1 !
;  206          1583  1 ! IMPLICIT INPUTS:
;  207          1584  1 !
;  208          1585  1 !       Depending on the subfunction code, various fields in firqb and
;  209          1586  1 !       bpa$a_msg are used as input.
;  210          1587  1 !
;  211          1588  1 ! IMPLICIT OUTPUTS:
;  212          1589  1 !
;  213          1590  1 !       Depending on the subfunction code, various fields in firqb and
;  214          1591  1 !       bpa$a_msg are used as output.
;  215          1592  1 !
;  216          1593  1 ! ROUTINE VALUE:
;  217          1594  1 !
;  218          1595  1 !       1  -  success
;  219          1596  1 !       ?  -  failure
;  220          1597  1 !
;  221          1598  1 ! SIDE EFFECTS:
;  222          1599  1 !
;  223          1600  1 !       NONE
;  224          1601  1 !
;  225          1602  1 !--
;  226          1603  1
;  227          1604  2     BEGIN
;  228          1605  2
;  229          1606  2     MAP
;  230          1607  2         firqb : REF $fqb_def;                   ! Defines firqb
;  231          1608  2
;  232          1609  2 ! Select the right subfunction and perform it.
;  233          1610  2
;  234          1611  2     CASE .firqb [fqb$b_subfun] FROM fun$k_minsr TO fun$k_maxsr OF
;  235          1612  2         SET
;  236          1613  2
;  237          1614  2         [fun$k_srlcl] :
;  238          1615  2             bpa$mess_lcl (.firqb, .buflen, .bufadr);
;  239          1616  2
;  240          1617  2         [fun$k_srrem] :
;  241          1618  2             bpa$mess_rem (.firqb);
```

```
;  242          1619  2
;  243          1620  2          [fun$k_srdcl] :
;  244          1621  2              bpa$mess_dcl (.firqb);
;  245          1622  2
;  246          1623  2          [fun$k_srrcv] :
;  247          1624  2              bpa$mess_rcv (.firqb, .buflen, .bufadr, .bytxfr);
;  248          1625  2
;  249          1626  2          [INRANGE, OUTRANGE] :
;  250          1627  2              RETURN SIGNAL (errerr);
;  251          1628  2          TES;
;  252          1629  2
;  253          1630  2      RETURN 1;
;  254          1631  1      END;                                    ! End of bpa$mesag


                                                                    .TITLE  BPA$MESAG
                                                                    .IDENT  \1-272\

                                                                    .PSECT  _BPA$DATA,NOEXE,  PIC,2

                                                00# 00000 BPA$A_MSG::
                                                                    .BYTE   0[562]                          ;
                                                    00232           .BLKB   2
                                           00000000 00234 EXIT_LOCK:
                                                                    .LONG   0                               ;
                                                    00238 EXIT_REASON:
                                                                    .BLKB   4
                  00000000  00000000  00000000  00000000            00023C EXIT_BLOCK:
                                                                    .LONG   0, 0, 0, 0                      ;
                                                    0024C PARAM_STRING:
                                                                    .BLKB   20

                                                                    .EXTRN  LIB$GET_EF, LIB$FREE_EF
                                                                    .EXTRN  BAS$$CB_POP, BPA$WAKEUP

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

                                                        0004 00000          .ENTRY  BPA$MESAG, Save R2      ; 1562
                                                  52        04   AC  D0 00002 MOVL    FIRQB, R2           ; 1611
                                               0B     F7  8F    04   A2  8F 00006 CASEB   4(R2), #-9, #11  ;
                0018            0018            0018        0018       0000C 1$:  .WORD   2$-1$,-         ;
                0018            0018            0018        0018       00014              2$-1$,-         ;
                0045            003C            0033        0026       0001C              2$-1$,-         ;
                                                                                      2$-1$,-         ;
                                                                                      2$-1$,-         ;
                                                                                      2$-1$,-         ;
                                                                                      2$-1$,-         ;
                                                                                      2$-1$,-         ;
                                                                                      2$-1$,-         ;
                                                                                      3$-1$,-         ;
                                                                                      4$-1$,-         ;
                                                                                      5$-1$,-         ;
                                                                                      6$-1$           ;
                                                001A8210    8F  DD 00024 2$:  PUSHL   #1737232        ; 1627
                                    00000000G   00          01  FB 0002A       CALLS   #1, LIB$SIGNAL  ;
                                                            04  00031       RET                     ;
                                                7E      08  AC  7D 00032 3$:  MOVQ    BUFLEN, -(SP)   ; 1615
                                                            52  DD 00036       PUSHL   R2              ;
```

```
                    0000V  CF              03  FB 00038          CALLS   #3, BPA$MESS_LCL                    ;
                                            20  11 0003D          BRB     7$                                 ;
                                            52  DD 0003F  4$:     PUSHL   R2                                 ; 1618
                    0000V  CF               01  FB 00041          CALLS   #1, BPA$MESS_REM                   ;
                                            17  11 00046          BRB     7$                                 ;
                                            52  DD 00048  5$:     PUSHL   R2                                 ; 1621
                    0000V  CF               01  FB 0004A          CALLS   #1, BPA$MESS_DCL                   ;
                                            0E  11 0004F          BRB     7$                                 ;
                           7E       0C      AC  7D 00051  6$:     MOVQ    BUFADR, -(SP)                      ; 1624
                                    08      AC  DD 00055          PUSHL   BUFLEN                             ;
                                            52  DD 00058          PUSHL   R2                                 ;
                    0000V  CF               04  FB 0005A          CALLS   #4, BPA$MESS_RCV                   ;
                           50               01  D0 0005F  7$:     MOVL    #1, R0                             ; 1630
                                                04 00062          RET                                        ; 1631

; Routine Size:  99 bytes,    Routine Base:  _BPA$CODE + 0000

;  255          1632  1
```

```
;  257          1633  1 ROUTINE bpa$mess_dcl (firqb) =                    ! Simulates declare receiver
;  258          1634  1
;  259          1635  1 !++
;  260          1636  1 ! FUNCTIONAL DESCRIPTION:
;  261          1637  1 !
;  262          1638  1 !       A check is made that the caller isn't already a receiver and then
;  263          1639  1 !       the input in firqb is checked. If the receivername given in firqb
;  264          1640  1 !       isn't already in use, a mailbox is created with logical name equal
;  265          1641  1 !       to the receivername prefixed by 'BPA$'and a buffer pointer is
;  266          1642  1 !       zeroed to indicate that no partial message is outstanding.
;  267          1643  1 !
;  268          1644  1 ! FORMAL PARAMETERS:
;  269          1645  1 !
;  270          1646  1 !       firqb                                   =  firqb address
;  271          1647  1 !
;  272          1648  1 ! IMPLICIT INPUTS:
;  273          1649  1 !
;  274          1650  1 !       firqb [fqb$t_rcvnam]                    =  receiver logical name in ASCII,
;  275          1651  1 !                                                  padded with zero (6 bytes)
;  276          1652  1 !       firqb [fqb$b_access]                    =  1 (access type)
;  277          1653  1 !       firqb [fqb$w_bmax]                      =  max buffer area to be used for
;  278          1654  1 !                                                  the receive queue.
;  279          1655  1 !                                                  >0 => system memory is to be used
;  280          1656  1 !                                                  <0 => user I/O buffer space is to
;  281          1657  1 !                                                        be used
;  282          1658  1 !       firqb [20, B_] - firqb [31, B_]         =  0
;  283          1659  1 !       bpa$a_msg [msg$l_messchan]              =  0  (indicates that the caller
;  284          1660  1 !                                                      isn't a receiver already)
;  285          1661  1 !
;  286          1662  1 ! IMPLICIT OUTPUTS:
;  287          1663  1 !
;  288          1664  1 !       bpa$a_msg [msg$l_messchan]              =  channel opened to the mailbox
;  289          1665  1 !       bpa$a_msg [msg$t_rcvname]               =  logical name of the mailbox
;  290          1666  1 !       bpa$a_msg [msg$t_namedesc]              =  char. string desc. pointing to
;  291          1667  1 !                                                  logical name of mailbox
;  292          1668  1 !       bpa$a_msg [msg$l_buffptr]               =  0 (pointer to the receive buffer)
;  293          1669  1 !
;  294          1670  1 ! ROUTINE VALUE:
;  295          1671  1 !
;  296          1672  1 !       1  -  success
;  297          1673  1 !       ?  -  failure
;  298          1674  1 !
;  299          1675  1 ! SIDE EFFECTS:
;  300          1676  1 !
;  301          1677  1 !       NONE
;  302          1678  1 !
;  303          1679  1 !--
;  304          1680  1
;  305          1681  2     BEGIN
;  306          1682  2
;  307          1683  2     MAP
;  308          1684  2         firqb : REF $fqb_def;                   ! Defines firqb
;  309          1685  2
;  310          1686  2     LOCAL
;  311          1687  2         sts,                                    ! Status received from calls
;  312          1688  2                                                 ! to system services
;  313          1689  2         rslbuf : VECTOR [2, LONG],              ! Char. string descriptor
```

```
;  314          1690  2                                       ! pointing to $trnlog - buffer
;  315          1691  2          rslnam : BLOCK [63, BYTE],   ! Buffer for $trnlog
;  316          1692  2          pribuf : VECTOR [2, LONG],   ! Char. string descriptor
;  317          1693  2                                       ! pointing to $getchn - buffer
;  318          1694  2          devbuf : BLOCK [200, BYTE],  ! Buffer for $getchn
;  319          1695  2          devnam_desc : VECTOR [2, LONG],  ! Char. string descr. pointing
;  320          1696  2                                       ! to the mailbox device name
;  321          1697  2          devnam : BLOCK [9, BYTE],    ! Mailbox device name
;  322          1698  2          fao_desc : VECTOR [2, LONG]; ! Char. string desc. for
;  323          1699  2
;  324          1700  2                                       ! commands to $fao
;  325          1701  2
;  326          1702  2      LITERAL
;  327          1703  2          k_maxmsg_size = 512 + 20,    ! max. message size.
;  328          1704  2          k_lrg_sndrcv = 22;           ! Large send/receive.
;  329          1705  2
;  330          1706  2      BIND
;  331          1707  2          chan = bpa$a_msg [msg$l_messchan],  ! Channel
;  332          1708  2          lognam_desc = bpa$a_msg [msg$t_namedesc],  ! Char.descr. of
;  333          1709  2                                       ! receiver name.
;  334          1710  2          lognam = bpa$a_msg [msg$t_rcvname],  ! Receiver name
;  335          1711  2                                       ! $qiow
;  336          1712  2          buff_ptr = bpa$a_msg [msg$l_bufptr];  ! Buffer pointer
;  337          1713  2
;  338          1714  2  ! Is the caller already a receiver? If so, signal an error.
;  339          1715  2  ! If this is small send and receive then just return.
;  340          1716  2
;  341          1717  2      IF .chan NEQU 0
;  342          1718  2      THEN
;  343          1719  2
;  344          1720  2          IF .firqb [fqb$b_function] EQL k_lrg_sndrcv
;  345          1721  2          THEN
;  346          1722  2              RETURN SIGNAL (inuse)
;  347          1723  2          ELSE
;  348          1724  2              RETURN 1;
;  349          1725  2
;  350          1726  2  ! Check input data.
;  351          1727  2
;  352          1728  2      IF .firqb [fqb$b_access] NEQU 1 OR NOT CH$FAIL (CH$FIND_NOT_CH (12,
;  353          1729  2                  firqb [20, b_], 0))
;  354          1730  2      THEN
;  355          1731  2          RETURN SIGNAL (badfuo);
;  356          1732  2
;  357          1733  2  ! Create a logical name for the mailbox (receiver name from firqb, prefixed
;  358          1734  2  ! by 'BPA$').
;  359          1735  2      mess_rcvname (lognam_desc, lognam, .firqb);
;  360          1736  2  ! Check that the logical name isn't already in use.
;  361          1737  2      rslbuf [0] = 63;
;  362          1738  2      rslbuf [1] = rslnam;
;  363          1739  2
;  364          1740  2      IF (sts = $trnlog (lognam = lognam_desc, rslbuf = rslbuf)) EQLU ss$_normal
;  365          1741  2      THEN
;  366          1742  2          RETURN SIGNAL (fiexst);
;  367          1743  2
;  368          1744  2  ! Create a mailbox. If buffer maximum is negative, the mailbox should be
;  369          1745  2  ! temporary, otherwise permanent.
;  370          1746  2
```

```
;  371          1747  2      IF .firqb [fqb$w_bmax] LEQ 0
;  372          1748  2      THEN
;  373        P 1749  2          sts = $crembx (prmflg = 0, chan = chan,
;  374          1750  3              maxmsg = k_maxmsg_size, bufquo = 0)
;  375          1751  2      ELSE
;  376        P 1752  2          sts = $crembx (prmflg = 1, chan = chan, maxmsg = k_maxmsg_size,
;  377          1753  2              bufquo = 0);
;  378          1754  2
;  379          1755  2      IF NOT .sts THEN RETURN SIGNAL (.sts);
;  380          1756  2
;  381          1757  2  ! Get the device name of the mailbox.
;  382          1758  2      pribuf [0] = 200;
;  383          1759  2      pribuf [1] = devbuf;
;  384          1760  2
;  385          1761  3      IF NOT (sts = $getchn (chan = .chan, pribuf = pribuf))
;  386          1762  2      THEN
;  387          1763  2          RETURN SIGNAL (.sts);
;  388          1764  2
;  389          1765  2      fao_desc [1] = UPLIT BYTE(%ASCIC'!AC!ZW:') + 1;
;  390          1766  2      fao_desc [0] = CH$RCHAR (.fao_desc [1] - 1);
;  391          1767  2      devnam_desc [1] = devnam;
;  392          1768  2      devnam_desc [0] = 9;
;  393          1769  2
;  394        P 1770  3      IF NOT (sts = $fao (fao_desc, devnam_desc [0], devnam_desc,
;  395          1771  3              devbuf [.devbuf [dib$w_devnamoff], a_], .devbuf [dib$w_unit]))
;  396          1772  2      THEN
;  397          1773  2          RETURN SIGNAL (.sts);
;  398          1774  2
;  399          1775  2  ! Assign the logical name to the devicename of the mailbox
;  400          1776  2
;  401          1777  3      IF NOT (sts = $crelog (eqlnam = devnam_desc, lognam = lognam_desc))
;  402          1778  2      THEN
;  403          1779  3          BEGIN
;  404          1780  3  !+
;  405          1781  3  ! If we cannot create a logical then we must delete the permanent mailbox
;  406          1782  3  ! that we created above.
;  407          1783  3  !-
;  408          1784  4          BEGIN
;  409          1785  4
;  410          1786  5          IF .firqb [fqb$w_bmax] LSS 0 THEN $delmbx (chan = chan)
;  411          1787  5
;  412          1788  3          END;
;  413          1789  3          RETURN SIGNAL (prviol, 0, .sts);
;  414          1790  2          END;
;  415          1791  2
;  416          1792  2  ! Prepare for the receive calls by clearing the buffer pointer used by
;  417          1793  2  ! bpa$mess_rcv.
;  418          1794  2      buff_ptr = 0;
;  419          1795  2  !+
;  420          1796  2  ! Declare an exit handler, to delete the name when the image exits.
;  421          1797  2  ! This may be needed if the user's program fails and it does not
;  422          1798  2  ! delete the name itself.
;  423          1799  2  !-
;  424          1800  3      BEGIN
;  425          1801  3
;  426          1802  3      LOCAL
;  427          1803  3          ast_status,
```

```
;  428          1804  3          dclexh_status;
;  429          1805  3
;  430          1806  3      ast_status = $setast (enbflg = 0);
;  431          1807  3
;  432          1808  4      IF ( NOT .exit_lock)
;  433          1809  3      THEN
;  434          1810  4          BEGIN
;  435          1811  4          exit_block [1] = exit_handler;
;  436          1812  4          exit_block [2] = 1;
;  437          1813  4          exit_block [3] = exit_reason;
;  438          1814  4          dclexh_status = $dclexh (desblk = exit_block);
;  439          1815  4          exit_lock = 1;
;  440          1816  4          END
;  441          1817  3      ELSE
;  442          1818  3          dclexh_status = 1;
;  443          1819  3
;  444          1820  3      IF (.ast_status EQL ss$_wasset) THEN $setast (enbflg = 1);
;  445          1821  3
;  446          1822  3      IF ( NOT .dclexh_status) THEN SIGNAL (badfuo, 0, .dclexh_status);
;  447          1823  3
;  448          1824  2      END;
;  449          1825  2      RETURN 1;
;  450          1826  1      END;                                    !End of bpa$mess_dcl


                            3A  57  5A  21  43  41  21  07  00063 P.AAA:  .ASCII  <7>\!AC!ZW:\                    ;
                                                                  CHAN=          BPA$A_MSG
                                                                  LOGNAM_DESC=   BPA$A_MSG+4
                                                                  LOGNAM=        BPA$A_MSG+12
                                                                  BUFF_PTR=      BPA$A_MSG+554
                                                                         .EXTRN  SYS$TRNLOG, SYS$CREMBX
                                                                         .EXTRN  SYS$GETCHN, SYS$FAO
                                                                         .EXTRN  SYS$CRELOG, SYS$DELMBX
                                                                         .EXTRN  SYS$SETAST, SYS$DCLEXH

                                                          007C 00000 BPA$MESS_DCL:
                                                                         .WORD   Save R2,R3,R4,R5,R6             ; 1633
                                                 56 00000000G   00  9E 00002     MOVAB   SYS$SETAST, R6          ;
                                                 55 00000000G   00  9E 00009     MOVAB   LIB$SIGNAL, R5          ;
                                                 54 00000000'   EF  9E 00010     MOVAB   CHAN, R4                ;
                                                 5E      FECC   CE  9E 00017     MOVAB   -308(SP), SP            ;
                                                                64  D5 0001C     TSTL    CHAN                    ; 1717
                                                                15  13 0001E     BEQL    2$                      ;
                                                 50        04   AC  D0 00020     MOVL    FIRQB, R0               ; 1720
                                                 16        03   A0  91 00024     CMPB    3(R0), #22              ;
                                                                03  13 00028     BEQL    1$                      ;
                                                                0177 31 0002A     BRW     18$                     ;
                                                    001A8018    8F  DD 0002D 1$:  PUSHL   #1736728                ; 1722
                                                                56  11 00033     BRB     6$                      ;
                                                 52        04   AC  D0 00035 2$:  MOVL    FIRQB, R2               ; 1728
                                                 01        0D   A2  91 00039     CMPB    13(R2), #1              ;
                                                                0D  12 0003D     BNEQ    4$                      ;
                                              14    A2        0C  00  3B 0003F     SKPC    #0, #12, 20(R2)         ; 1729
                                                                02  12 00044     BNEQ    3$                      ;
                                                                51  D4 00046     CLRL    R1                      ;
```

```
                                    51  D5 00048 3$:    TSTL    R1                                      ;
                                    08  13 0004A        BEQL    5$                                      ;
                          001A8090  8F  DD 0004C 4$:    PUSHL   #1736848                                ; 1731
                                    37  11 00052        BRB     6$                                      ;
                                    52  DD 00054 5$:    PUSHL   R2                                      ; 1735
                                0C  A4  9F 00056        PUSHAB  LOGNAM                                  ;
                                04  A4  9F 00059        PUSHAB  LOGNAM_DESC                             ;
                  0000V CF          03  FB 0005C        CALLS   #3, MESS_RCVNAME                        ;
                    F8  AD          3F  D0 00061        MOVL    #63, RSLBUF                             ; 1737
                    FC  AD      B8  AD  9E 00065        MOVAB   RSLNAM, RSLBUF+4                        ; 1738
                                    7E  7C 0006A        CLRQ    -(SP)                                   ; 1740
                                    7E  D4 0006C        CLRL    -(SP)                                   ;
                                F8  AD  9F 0006E        PUSHAB  RSLBUF                                  ;
                                    7E  D4 00071        CLRL    -(SP)                                   ;
                                04  A4  9F 00073        PUSHAB  LOGNAM_DESC                             ;
                  00000000G     00    06  FB 00076        CALLS   #6, SYS$TRNLOG                          ;
                                53    50  D0 0007D        MOVL    R0, STS                                 ;
                                01    53  D1 00080        CMPL    STS, #1                                 ;
                                    09  12 00083        BNEQ    7$                                      ;
                          001A8080  8F  DD 00085        PUSHL   #1736832                                ; 1742
                              0089  31  DD 0008B 6$:    BRW     11$                                     ;
                                0E  A2  B5 0008E 7$:    TSTW    14(R2)                                  ; 1747
                                    0F  14 00091        BGTR    8$                                      ;
                                    7E  7C 00093        CLRQ    -(SP)                                   ; 1750
                                    7E  7C 00095        CLRQ    -(SP)                                   ;
                            7E      0214  8F  3C 00097        MOVZWL  #532, -(SP)                             ;
                                    54  DD 0009C        PUSHL   R4                                      ;
                                    7E  D4 0009E        CLRL    -(SP)                                   ;
                                    0D  11 000A0        BRB     9$                                      ;
                                    7E  7C 000A2 8$:    CLRQ    -(SP)                                   ; 1753
                                    7E  7C 000A4        CLRQ    -(SP)                                   ;
                            7E      0214  8F  3C 000A6        MOVZWL  #532, -(SP)                             ;
                                    54  DD 000AB        PUSHL   R4                                      ;
                                    01  DD 000AD        PUSHL   #1                                      ;
                  00000000G     00    07  FB 000AF 9$:    CALLS   #7, SYS$CREMBX                          ;
                                53    50  D0 000B6        MOVL    R0, STS                                 ;
                                59    53  E9 000B9        BLBC    STS, 10$                                ; 1755
                          B0    AD      C8  8F  9A 000BC        MOVZBL  #200, PRIBUF                            ; 1758
                          B4    AD      1C  AE  9E 000C1        MOVAB   DEVBUF, PRIBUF+4                        ; 1759
                                    7E  7C 000C6        CLRQ    -(SP)                                   ; 1761
                                B0  AD  9F 000C8        PUSHAB  PRIBUF                                  ;
                                    7E  D4 000CB        CLRL    -(SP)                                   ;
                                    64  DD 000CD        PUSHL   CHAN                                    ;
                  00000000G     00    05  FB 000CF        CALLS   #5, SYS$GETCHN                          ;
                                53    50  D0 000D6        MOVL    R0, STS                                 ;
                                39    53  E9 000D9        BLBC    STS, 10$                                ;
                          04    AE      FF19  CF  9E 000DC        MOVAB   P.AAA+1, FAO_DESC+4                     ; 1765
                                50      04  AE  D0 000E2        MOVL    FAO_DESC+4, R0                          ; 1766
                                6E      FF  A0  9A 000E6        MOVZBL  -1(R0), FAO_DESC                        ;
                          18    AE      08  AE  9E 000EA        MOVAB   DEVNAM, DEVNAM_DESC+4                   ; 1767
                          14    AE          09  D0 000EF        MOVL    #9, DEVNAM_DESC                         ; 1768
                                7E      28  AE  3C 000F3        MOVZWL  DEVBUF+12, -(SP)                        ; 1771
                                50      2E  AE  3C 000F7        MOVZWL  DEVBUF+14, R0                           ;
                                    20 AE40  9F 000FB        PUSHAB  DEVBUF[R0]                              ;
                                    1C  AE  9F 000FF        PUSHAB  DEVNAM_DESC                             ;
                                    20  AE  9F 00102        PUSHAB  DEVNAM_DESC                             ;
                                    10  AE  9F 00105        PUSHAB  FAO_DESC                                ;
```

```
                00000000G  00              05  FB 00108          CALLS   #5, SYS$FAO                                     ;
                           53              50  D0 0010F          MOVL    R0, STS                                         ;
                           06              53  E8 00112          BLBS    STS, 12$                                        ;
                                           53  DD 00115 10$:     PUSHL   STS                                             ; 1773
                           65              01  FB 00117 11$:     CALLS   #1, LIB$SIGNAL                                  ;
                                           04  00011A           RET                                                     ;
                                           7E  D4 00011B 12$:     CLRL    -(SP)                                           ; 1777
                                     18    AE  9F 0011D          PUSHAB  DEVNAM_DESC                                     ;
                                     04    A4  9F 00120          PUSHAB  LOGNAM_DESC                                     ;
                                           7E  D4 00123          CLRL    -(SP)                                           ;
                00000000G  00              04  FB 00125          CALLS   #4, SYS$CRELOG                                  ;
                           53              50  D0 0012C          MOVL    R0, STS                                         ;
                           1C              53  E8 0012F          BLBS    STS, 14$                                        ;
                                     0E    A2  B5 00132          TSTW    14(R2)                                          ; 1786
                                           09  18 00135          BGEQ    13$                                             ;
                                           54  DD 00137          PUSHL   R4                                              ;
                00000000G  00              01  FB 00139          CALLS   #1, SYS$DELMBX                                  ;
                                           53  DD 00140 13$:     PUSHL   STS                                             ; 1789
                                           7E  D4 00142          CLRL    -(SP)                                           ;
                                001A8050   8F  DD 00144          PUSHL   #1736784                                        ;
                           65              03  FB 0014A          CALLS   #3, LIB$SIGNAL                                  ;
                                           04  0014D            RET                                                     ;
                                   022A    C4  D4 0014E 14$:     CLRL    BUFF_PTR                                        ; 1794
                                           7E  D4 00152          CLRL    -(SP)                                           ; 1806
                           66              01  FB 00154          CALLS   #1, SYS$SETAST                                  ;
                           53              50  D0 00157          MOVL    R0, AST_STATUS                                  ;
                           28      0234    C4  E8 0015A          BLBS    EXIT_LOCK, 15$                                  ; 1808
                0240       C4      0000V   CF  9E 0015F          MOVAB   EXIT_HANDLER, EXIT_BLOCK+4                      ; 1811
                0244       C4              01  D0 00166          MOVL    #1, EXIT_BLOCK+8                                ; 1812
                0248       C4      0238    C4  9E 0016B          MOVAB   EXIT_REASON, EXIT_BLOCK+12                      ; 1813
                                   023C    C4  9F 00172          PUSHAB  EXIT_BLOCK                                      ; 1814
                00000000G  00              01  FB 00176          CALLS   #1, SYS$DCLEXH                                  ;
                           52              50  D0 0017D          MOVL    R0, DCLEXH_STATUS                               ;
                              0234         C4  01  D0 00180      MOVL    #1, EXIT_LOCK                                   ; 1815
                                           03  11 00185          BRB     16$                                             ; 1808
                           52              01  D0 00187 15$:     MOVL    #1, DCLEXH_STATUS                               ; 1818
                           09              53  D1 0018A 16$:     CMPL    AST_STATUS, #9                                  ; 1820
                                           05  12 0018D          BNEQ    17$                                             ;
                                           01  DD 0018F          PUSHL   #1                                              ;
                           66              01  FB 00191          CALLS   #1, SYS$SETAST                                  ;
                           0D              52  E8 00194 17$:     BLBS    DCLEXH_STATUS, 18$                              ; 1822
                                           52  DD 00197          PUSHL   DCLEXH_STATUS                                   ;
                                           7E  D4 00199          CLRL    -(SP)                                           ;
                                001A8090   8F  DD 0019B          PUSHL   #1736848                                        ;
                           65              03  FB 001A1          CALLS   #3, LIB$SIGNAL                                  ;
                           50              01  D0 001A4 18$:     MOVL    #1, R0                                          ; 1825
                                           04  001A7            RET                                                     ; 1826

; Routine Size:  424 bytes,    Routine Base:  _BPA$CODE + 006B
```

```
;  452     1827  1 ROUTINE mess_rcvname (name_desc, name, firqb) : NOVALUE =       ! Creates a
;  453     1828  1                                                 ! logical
;  454     1829  1                                                 ! mailbox name
;  455     1830  1
;  456     1831  1 !++
;  457     1832  1 ! FUNCTIONAL DESCRIPTION:
;  458     1833  1 !
;  459     1834  1 !       A string of receiver name from firqb, prefixed by 'BPA$' and  padded
;  460     1835  1 !       with zeroes to 10 bytes, is given to the second parameter.
;  461     1836  1 !       The character string descriptor of the string is given to the first
;  462     1837  1 !       parameter.
;  463     1838  1 !
;  464     1839  1 ! FORMAL PARAMETERS:
;  465     1840  1 !
;  466     1841  1 !       name_desc             = address to receive the char. string desc. of
;  467     1842  1 !                               mailbox name
;  468     1843  1 !       name                  = address to receive the mailbox name string
;  469     1844  1 !                               (max. 10 bytes)
;  470     1845  1 !       firqb                 = address to firqb
;  471     1846  1 !
;  472     1847  1 ! IMPLICIT INPUTS:
;  473     1848  1 !
;  474     1849  1 !       firqb [fqb$t_rcvnam]  =  receiver logical name in ASCII,
;  475     1850  1 !                                padded with zero (6 bytes)
;  476     1851  1 !
;  477     1852  1 ! IMPLICIT OUTPUTS:
;  478     1853  1 !
;  479     1854  1 !       name_desc             = char. string desc. of mailbox name
;  480     1855  1 !       name                  = string of 'BPA$' + receiver name in firqb,
;  481     1856  1 !                               padded with zero
;  482     1857  1 !
;  483     1858  1 ! ROUTINE VALUE:
;  484     1859  1 !
;  485     1860  1 !       NONE
;  486     1861  1 !
;  487     1862  1 ! SIDE EFFECTS:
;  488     1863  1 !
;  489     1864  1 !       NONE
;  490     1865  1 !
;  491     1866  1 !--
;  492     1867  1
;  493     1868  2     BEGIN
;  494     1869  2
;  495     1870  2     MAP
;  496     1871  2         name_desc : REF VECTOR [2, LONG],       ! Char. string descr.
;  497     1872  2                                                 ! of mailbox name
;  498     1873  2         name : REF BLOCK [, BYTE],              ! Mailbox name
;  499     1874  2         firqb : REF $fqb_def;                   ! Defines firqb
;  500     1875  2
;  501     1876  2     BIND
;  502     1877  2         prefix = UPLIT BYTE(%ASCIC'BPA$');      ! First part of mailbox name
;  503     1878  2
;  504     1879  2 ! Copy 'BPA$' + receiver name from firqb to recname
;  505     1880  2     CH$COPY (CH$RCHAR (prefix), prefix + 1, 6, firqb [fqb$t_rcvnam], 0, 10,
;  506     1881  2         .name);
;  507     1882  2 ! Initialise the character string descriptor
;  508     1883  2     name_desc [0] = CH$FIND_CH (10, .name, 0) - .name;
```

```
;  509          1884  2
;  510          1885  2     IF .name_desc [0] LSS 0 THEN name_desc [0] = 10;
;  511          1886  2
;  512          1887  2     name_desc [1] = .name;
;  513          1888  2     RETURN;
;  514          1889  1     END;                                    ! End of mess_rcvname


                                    24  41  50  42  04  00213 P.AAB:  .ASCII  <4>\BPA$\                          ;
                                                                 PREFIX=          P.AAB


                                                  03FC 00000 MESS_RCVNAME:
                                                             .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9                 ; 1827
                                        59        F6   AF   9A 00002          MOVZBL  PREFIX, R9                 ; 1880
                                        56        0C   AC   D0 00006          MOVL    FIRQB, R6                  ;
                                        58             0A   D0 0000A          MOVL    #10, R8                    ;
                                        57        08   AC   D0 0000D          MOVL    NAME, R7                   ; 1881
                58              00        E7   AF        59  2C 00011          MOVC5   R9, PREFIX+1, #0, R8, (R7) ;
                                                         67     00017
                                                         0D  18 00018          BGEQ    1$                         ;
                                        57             59  C0 0001A          ADDL2   R9, R7                     ;
                                        58             59  C2 0001D          SUBL2   R9, R8                     ;
                58              00        06   A6        06  2C 00020          MOVC5   #6, 6(R6), #0, R8, (R7)    ;
                                                         67     00026
                                        52        04   AC   D0 00027 1$:      MOVL    NAME_DESC, R2              ; 1883
                        08      BC              0A        00  3A 0002B          LOCC    #0, #10, @NAME             ;
                                                          02  12 00030          BNEQ    2$                         ;
                                                          51  D4 00032          CLRL    R1                         ;
                        62              51        08   AC   C3 00034 2$:      SUBL3   NAME, R1, (R2)             ;
                                                          03  18 00039          BGEQ    3$                         ; 1885
                                        62             0A  D0 0003B          MOVL    #10, (R2)                  ;
                                04      A2        08   AC   D0 0003E 3$:      MOVL    NAME, 4(R2)                ; 1887
                                                          04 00043            RET                                ; 1889

; Routine Size:  68 bytes,    Routine Base:  _BPA$CODE + 0218
```

```
;  516     1890  1 ROUTINE bpa$mess_lcl (                        ! Simulate send local data message
;  517     1891  1         firqb,                                 ! Address of FIRQB
;  518     1892  1         buflen,                                ! Length of buffer
;  519     1893  1         bufadr                                 ! Address of buffer
;  520     1894  1     ) =
;  521     1895  1
;  522     1896  1 !++
;  523     1897  1 ! FUNCTIONAL DESCRIPTION:
;  524     1898  1 !
;  525     1899  1 !       The receiver mailbox name is created as receiver name from firqb,
;  526     1900  1 !       prefixed by 'BPA$', and a channel is assigned to the mailbox.
;  527     1901  1 !       The input in firqb is checked and if faulty an error is signalled. The
;  528     1902  1 !       parameterstring and the databuffer are copied into a buffer and sent
;  529     1903  1 !       to the mailbox. Finally the channel is deassigned.
;  530     1904  1 !
;  531     1905  1 ! FORMAL PARAMETERS:
;  532     1906  1 !
;  533     1907  1 !       firqb                           =  address to firqb
;  534     1908  1 !       buflen.rl.v             Length of output data buffer in bytes
;  535     1909  1 !       bufadr.ra.v             Starting address of data buffer
;  536     1910  1 !
;  537     1911  1 ! IMPLICIT INPUTS:
;  538     1912  1 !
;  539     1913  1 !       firqb [fqb$b_jobnr]             =  0
;  540     1914  1 !       firqb [fqb$t_rcvnam]            =  receiver logical name in ASCII,
;  541     1915  1 !                                          padded with zero (6 bytes)
;  542     1916  1 !       firqb [fqb$t_par_str]           =  optional user parameter string,
;  543     1917  1 !                                          padded with zero (20 bytes)
;  544     1918  1 !
;  545     1919  1 ! IMPLICIT OUTPUTS:
;  546     1920  1 !
;  547     1921  1 !       NONE
;  548     1922  1 !
;  549     1923  1 ! ROUTINE VALUE:
;  550     1924  1 !
;  551     1925  1 !       1  -  success
;  552     1926  1 !       ?  -  failure
;  553     1927  1 !
;  554     1928  1 ! SIDE EFFECTS:
;  555     1929  1 !
;  556     1930  1 !       NONE
;  557     1931  1 !
;  558     1932  1 !--
;  559     1933  1
;  560     1934  2     BEGIN
;  561     1935  2
;  562     1936  2     MAP
;  563     1937  2         firqb : REF $fqb_def;                  ! Defines firqb
;  564     1938  2
;  565     1939  2     LOCAL
;  566     1940  2         msg_buffer : BLOCK [532, BYTE],        ! Buffer for output message
;  567     1941  2         sts,                                   ! Status received from calls
;  568     1942  2                                                ! to system services
;  569     1943  2         lognam_desc : VECTOR [2, LONG],        ! Char. string descr. pointing
;  570     1944  2                                                ! to the logical mailbox name
;  571     1945  2         lognam : BLOCK [10, BYTE],             ! Logical name of mailbox
;  572     1946  2         chan;                                  ! Channel to mailbox
```

```
;  573          1947  2
;  574          1948  2 ! Create the logical name of the mailbox
;  575          1949  2     mess_rcvname (lognam_desc, lognam, .firqb);
;  576          1950  2 ! Assign a channnel to the mailbox
;  577          1951  2
;  578          1952  3     IF NOT (sts = $assign (devnam = lognam_desc, chan = chan))
;  579          1953  2     THEN
;  580          1954  3         BEGIN
;  581          1955  3
;  582          1956  3         IF .sts EQLU %X'144'
;  583          1957  3         THEN
;  584          1958  3             RETURN SIGNAL (nosuch)
;  585          1959  3         ELSE
;  586          1960  3             RETURN SIGNAL (.sts);
;  587          1961  3
;  588          1962  2         END;
;  589          1963  2
;  590          1964  2 ! Check input data.
;  591          1965  2
;  592          1966  2     IF (.buflen GTRU 512) THEN RETURN SIGNAL (badfuo);
;  593          1967  2
;  594          1968  2     IF .firqb [fqb$b_jobnr] NEQU 0 THEN RETURN SIGNAL (errerr);
;  595          1969  2
;  596          1970  2 ! Fill msg_buffer from parameter string and data buffer
;  597          1971  2     CH$COPY (20, firqb [fqb$t_par_str], .buflen, .bufadr, 0, 532, msg_buffer);
;  598          1972  2 ! Send message to mailbox
;  599          1973  2     bpa$mess_send (.chan, msg_buffer, 20 + .buflen);
;  600          1974  2 ! Deassign the channel
;  601          1975  2
;  602          1976  2     IF NOT (sts = $dassgn (chan = .chan)) THEN RETURN SIGNAL (.sts);
;  603          1977  2
;  604          1978  2     RETURN 1;
;  605          1979  1     END;                                    !End of bpa$mess_lcl


                                                    .EXTRN  SYS$ASSIGN, SYS$DASSGN

                                        01FC 00000 BPA$MESS_LCL:
                                                    .WORD   Save R2,R3,R4,R5,R6,R7,R8           ; 1890
                        5E      FDD4    CE  9E 00002        MOVAB   -556(SP), SP
                        52        04    AC  D0 00007        MOVL    FIRQB, R2                   ; 1949
                                        52  DD 00008        PUSHL   R2
                                  08    AE  9F 0000D        PUSHAB  LOGNAM
                                  18    AE  9F 00010        PUSHAB  LOGNAM_DESC
                              A5  AF          03  FB 00013  CALLS   #3, MESS_RCVNAME
                                        7E  7C 00017        CLRQ    -(SP)                       ; 1952
                                  08    AE  9F 00019        PUSHAB  CHAN
                                  1C    AE  9F 0001C        PUSHAB  LOGNAM_DESC
                    00000000G     00        04  FB 0001F  CALLS   #4, SYS$ASSIGN
                                  58        50  D0 00026  MOVL    R0, STS
                                  11        58  E8 00029  BLBS    STS, 1$
                    00000144      8F        58  D1 0002C  CMPL    STS, #324                   ; 1956
                                            66  12 00033  BNEQ    5$
                                 001A8028   8F  DD 00035  PUSHL   #1736744                    ; 1958
                                            60  11 0003B  BRB     6$
                    00000200      8F    08  AC  D1 0003D 1$:     CMPL    BUFLEN, #512        ; 1966
```

```
                                                08  1B 00045          BLEQU   2$                                      ;
                                        001A8090    8F  DD 00047          PUSHL   #1736848                            ;
                                                    4E  11 0004D          BRB     6$                                  ;
                                             05     A2  95 0004F 2$:      TSTB    5(R2)                               ; 1968
                                                    08  13 00052          BEQL    3$                                  ;
                                        001A8210    8F  DD 00054          PUSHL   #1737232                            ;
                                                    41  11 0005A          BRB     6$                                  ;
                                    57      0214    8F  3C 0005C 3$:      MOVZWL  #532, R7                            ; 1971
                                    56        18    AE  9E 00061          MOVAB   MSG_BUFFER, R6                      ;
        57          00      0C      A2            14  2C 00065          MOVC5   #20, 12(R2), #0, R7, (R6)           ;
                                                    66  0006B                                                         ;
                                                    0E  18 0006C          BGEQ    4$                                  ;
                                    56              14  C0 0006E          ADDL2   #20, R6                             ;
                                    57              14  C2 00071          SUBL2   #20, R7                             ;
        57          00      0C      BC        08    AC  2C 00074          MOVC5   BUFLEN, @BUFADR, #0, R7, (R6)       ;
                                                    66  0007B                                                         ;
                    7E      08      AC            14  C1 0007C 4$:      ADDL3   #20, BUFLEN, -(SP)                  ; 1973
                                            1C      AE  9F 00081          PUSHAB  MSG_BUFFER                          ;
                                            08      AE  DD 00084          PUSHL   CHAN                                ;
                            0000V   CF              03  FB 00087          CALLS   #3, BPA$MESS_SEND                   ;
                                                    6E  DD 0008C          PUSHL   CHAN                                ; 1976
                    00000000G       00              01  FB 0008E          CALLS   #1, SYS$DASSGN                      ;
                                    58              50  D0 00095          MOVL    R0, STS                             ;
                                    0A              58  E8 00098          BLBS    STS, 7$                             ;
                                                    58  DD 0009B 5$:      PUSHL   STS                                 ;
                    00000000G       00              01  FB 0009D 6$:      CALLS   #1, LIB$SIGNAL                      ;
                                                        04 000A4          RET                                         ;
                                    50              01  D0 000A5 7$:      MOVL    #1, R0                              ; 1978
                                                        04 000A8          RET                                         ; 1979

; Routine Size:  169 bytes,    Routine Base:  _BPA$CODE + 025C
```

```
;  607          1980  1 ROUTINE bpa$mess_send (chan, p1, p2) : NOVALUE =        ! Sends message
;  608          1981  1                                                        ! to a mailbox
;  609          1982  1
;  610          1983  1 !++
;  611          1984  1 ! FUNCTIONAL DESCRIPTION:
;  612          1985  1 !
;  613          1986  1 !       Sends a message to a mailbox using $qiow and checks the return
;  614          1987  1 !       status.
;  615          1988  1 !
;  616          1989  1 ! FORMAL PARAMETERS:
;  617          1990  1 !
;  618          1991  1 !       chan  =  channel number opened to mailbox
;  619          1992  1 !       p1    =  pointer to databuffer
;  620          1993  1 !       p2    =  number of bytes to send
;  621          1994  1 !
;  622          1995  1 ! IMPLICIT INPUTS:
;  623          1996  1 !
;  624          1997  1 !       NONE
;  625          1998  1 !
;  626          1999  1 ! IMPLICIT OUTPUTS:
;  627          2000  1 !
;  628          2001  1 !       NONE
;  629          2002  1 !
;  630          2003  1 ! ROUTINE VALUE:
;  631          2004  1 !
;  632          2005  1 !       ? - failure
;  633          2006  1 !
;  634          2007  1 ! SIDE EFFECTS:
;  635          2008  1 !
;  636          2009  1 !       NONE
;  637          2010  1 !
;  638          2011  1 !--
;  639          2012  1
;  640          2013  2     BEGIN
;  641          2014  2
;  642          2015  2     LOCAL
;  643          2016  2         sts,                            ! Status received from calls to system
;  644          2017  2         status,                         ! need 2 locals for status
;  645          2018  2         event_flag,
;  646          2019  2         ! services
;  647          2020  2         iosb : BLOCK [8, BYTE];         ! Status block from $qiow              ! M 260
;  648          2021  2 !+
;  649          2022  2 ! Allocate an event flag.
;  650          2023  2 !-
;  651          2024  2
;  652          2025  2     sts = LIB$GET_EF (event_flag);
;  653          2026  2     IF (NOT .sts) THEN RETURN SIGNAL (.sts);
;  654          2027  2
;  655          2028  2 ! Send the message
;  656          2029  2
;  657        P 2030  2     sts = $qiow (efn = .event_flag, chan = .chan, iosb = iosb,
;  658          2031  2             func = io$_writevblk OR io$m_now, p1 = .p1, p2 = .p2);
;  659          2032  2 !+
;  660          2033  2 ! Make sure event flag is deallocated.
;  661          2034  2 !-
;  662          2035  2
;  663          2036  2         status = LIB$FREE_EF (event_flag);
```

```
;  664          2037  2          IF (NOT .status) THEN RETURN SIGNAL (.status);
;  665          2038  2
;  666          2039  2 !+
;  667          2040  2 ! Now check return status from $QIOW.
;  668          2041  2 !-
;  669          2042  3          IF NOT (.sts)
;  670          2043  2          THEN
;  671          2044  3              BEGIN
;  672          2045  3                  IF .sts EQLU %X'19C'
;  673          2046  3                  THEN
;  674          2047  3                      RETURN SIGNAL (noroom)
;  675          2048  3                  ELSE
;  676          2049  3                      RETURN SIGNAL (.sts);
;  677          2050  3
;  678          2051  2              END;
;  679          2052  2
;  680          2053  2
;  681          2054  2 ! Check status returned in iosb
;  682          2055  2
;  683          2056  2     IF NOT .iosb [0, w_] THEN RETURN SIGNAL (.iosb [0, w_]);
;  684          2057  2
;  685          2058  2     RETURN;
;  686          2059  1     END;                                    ! End of bpa$mess_send


                                                                    .EXTRN  SYS$QIOW

                                    0004 00000 BPA$MESS_SEND:
                                                       .WORD   Save R2                 ; 1980
                          5E                0C  C2 00002       SUBL2   #12, SP
                                            5E  DD 00005       PUSHL   SP              ; 2025
                00000000G 00                01  FB 00007       CALLS   #1, LIB$GET_EF
                          52                50  D0 0000E       MOVL    R0, STS
                          04                52  E8 00011       BLBS    STS, 2$         ; 2026
                                            52  DD 00014 1$:    PUSHL   STS
                                            4D  11 00016       BRB     5$
                                            7E  7C 00018 2$:    CLRQ    -(SP)           ; 2031
                                            7E  7C 0001A       CLRQ    -(SP)
                          7E          08    AC  7D 0001C       MOVQ    P1, -(SP)
                                            7E  7C 00020       CLRQ    -(SP)
                                      24    AE  9F 00022       PUSHAB  IOSB
                          7E          70    8F  9A 00025       MOVZBL  #112, -(SP)
                                      04    AC  DD 00029       PUSHL   CHAN
                                      2C    AE  DD 0002C       PUSHL   EVENT_FLAG
                00000000G 00                0C  FB 0002F       CALLS   #12, SYS$QIOW
                          52                50  D0 00036       MOVL    R0, STS
                                            5E  DD 00039       PUSHL   SP              ; 2036
                00000000G 00                01  FB 0003B       CALLS   #1, LIB$FREE_EF
                          04                50  E8 00042       BLBS    STATUS, 3$      ; 2037
                                            50  DD 00045       PUSHL   STATUS
                                            1C  11 00047       BRB     5$
                          11                52  E8 00049 3$:    BLBS    STS, 4$         ; 2042
                0000019C  8F                52  D1 0004C       CMPL    STS, #412       ; 2045
                                            BF  12 00053       BNEQ    1$
                              001A8020      8F  DD 00055       PUSHL   #1736736        ; 2047
                                            08  11 0005B       BRB     5$
;
```

```
                    0B     04   AE  E8 0005D 4$:    BLBS    IOSB, 6$                        ; 2056
                    7E     04   AE  3C 00061        MOVZWL  IOSB, -(SP)                     ;
          00000000G 00          01  FB 00065 5$:    CALLS   #1, LIB$SIGNAL                  ;
                                    04 0006C 6$:    RET                                     ; 2059

; Routine Size:  109 bytes,    Routine Base:  _BPA$CODE + 0305
```

```
;  688          2060  1 ROUTINE bpa$mess_rcv (                          ! Simulates receive message
;  689          2061  1         firqb,                                  ! Address of FIRQB
;  690          2062  1         buflen,                                 ! Length of input data buffer
;  691          2063  1         bufadr,                                 ! Starting address of data buffer
;  692          2064  1         bytxfr                                  ! The number of bytes transferred
;  693          2065  1     ) =
;  694          2066  1
;  695          2067  1 !++
;  696          2068  1 ! FUNCTIONAL DESCRIPTION:
;  697          2069  1 !
;  698          2070  1 !       A check is made that the caller is a declared receiver and then
;  699          2071  1 !       the input in firqb is checked. If no partial message is outstanding
;  700          2072  1 !       the mailbox is read into a buffer and if a message is received the
;  701          2073  1 !       parameter string is filled and the buffer pointer is moved 20 bytes
;  702          2074  1 !       forward. The caller's data buffer is filled with data from buffer
;  703          2075  1 !       pointer and onwards until the end of the message, and the buffer
;  704          2076  1 !       pointer is updated. If the whole message is transferred to the caller
;  705          2077  1 !       or the caller wants the message truncated, then the buffer pointer
;  706          2078  1 !       is cleared to indicate that no partial message is outstanding.
;  707          2079  1 !
;  708          2080  1 ! FORMAL PARAMETERS:
;  709          2081  1 !
;  710          2082  1 !       firqb                           =  firqb address
;  711          2083  1 !       buflen.rl.v             Size of the receive data buffer, in bytes
;  712          2084  1 !       bufadr.ra.v             Starting address of the data buffer
;  713          2085  1 !       bytxfr.ww.r             Number of bytes transferred
;  714          2086  1 !
;  715          2087  1 ! IMPLICIT INPUTS:
;  716          2088  1 !
;  717          2089  1 !       firqb [fqb$b_rmod]              =  receive modifiers :
;  718          2090  1 !                                          bit 0 set -caller wants to wait
;  719          2091  1 !                                                     for messages
;  720          2092  1 !                                          bit 1 set -caller wants message
;  721          2093  1 !                                                     truncated
;  722          2094  1 !       firqb [8, W_] - firqb [10, W_]  =  0
;  723          2095  1 !       firqb [fqb$w_sleep]             =  sleep time (in seconds)
;  724          2096  1 !       firqb [20, W_] - firqb [31, W_] =  0
;  725          2097  1 !       bpa$a_msg [msg$l_remain]        =  the number of bytes that remain if
;  726          2098  1 !                                          a partial message is outstanding
;  727          2099  1 !       bpa$a_msg [msg$t_buffer]        =  points to buffer containing the
;  728          2100  1 !                                          remaining bytes to transfer if a
;  729          2101  1 !                                          partial message is outstanding
;  730          2102  1 !       bpa$a_msg [msg$l_messchan]      =  channel opened to mailbox by
;  731          2103  1 !                                          bpa$mess_dcl
;  732          2104  1 !       bpa$a_msg [ms$l_buffptr]        =  points to next byte to be
;  733          2105  1 !                                          transferred in msg_buffer (0 if
;  734          2106  1 !                                          buffer is empty)
;  735          2107  1 !
;  736          2108  1 ! IMPLICIT OUTPUTS:
;  737          2109  1 !
;  738          2110  1 !       firqb [fqb$w_not_tran]          =  number of data bytes not
;  739          2111  1 !                                          transferred
;  740          2112  1 !       firqb [fqb$b_subfun]            =  -1                          ! A 261
;  741          2113  1 !       firqb [fqb$t_par_str]           =  data passed as parameters by the
;  742          2114  1 !                                          sender, padded with zero
;  743          2115  1 !       bpa$a_msg [msg$l_remain]        =  the number of bytes that remain if
;  744          2116  1 !                                          a partial message is outstanding
```

```
;  745          2117  1 !       bpa$a_msg [msg$t_buffer]        =  contains the remaining bytes to
;  746          2118  1 !                                          transfer if a partial message is
;  747          2119  1 !                                          outstanding
;  748          2120  1 !       bpa$a_msg [msg$l_buffptr]       =  points to next byte to be
;  749          2121  1 !                                          transferred in msg_buffer (0 if
;  750          2122  1 !                                          buffer is empty)
;  751          2123  1 !       firqb [fqb$b_jobnr]             =  0
;  752          2124  1 !
;  753          2125  1 ! ROUTINE VALUE:
;  754          2126  1 !
;  755          2127  1 !       1  -  success
;  756          2128  1 !       ?  -  failure
;  757          2129  1 !
;  758          2130  1 ! SIDE EFFECTS:
;  759          2131  1 !
;  760          2132  1 !       NONE
;  761          2133  1 !
;  762          2134  1 !--
;  763          2135  1
;  764          2136  2     BEGIN
;  765          2137  2
;  766          2138  2     MAP
;  767          2139  2         firqb : REF $fqb_def,                   ! Defines firqb
;  768          2140  2         bytxfr : REF VECTOR [1, WORD];          ! Where to store byte count
;  769          2141  2
;  770          2142  2     BIND
;  771          2143  2         bytes_remain = bpa$a_msg [msg$l_remain],        ! Remaining bytes
;  772          2144  2         buff_ptr = bpa$a_msg [msg$l_buffptr],   ! Buffer pointer
;  773          2145  2         rcv_mod = firqb [fqb$b_rmod] : BITVECTOR [8],   ! Receive modifier
;  774          2146  2         msg_buffer = bpa$a_msg [msg$t_buffer];  ! Buffer
;  775          2147  2
;  776          2148  2 ! Is the caller a declared receiver? If not, then signal an error.
;  777          2149  2
;  778          2150  2     IF .bpa$a_msg [msg$l_messchan] EQLU 0 THEN RETURN SIGNAL (badfuo);
;  779          2151  2
;  780          2152  2 ! Check input data
;  781          2153  2
;  782          2154  3     IF ( NOT CH$FAIL (CH$FIND_NOT_CH (4, firqb [8, b_], 0)) OR  !
;  783          2155  3         NOT CH$FAIL (CH$FIND_NOT_CH (12, firqb [20, b_], 0)))
;  784          2156  2     THEN
;  785          2157  2         RETURN SIGNAL (badfuo);
;  786          2158  2
;  787          2159  2 ! If no partial message is outstanding (i.e. buffer pointer = 0), then try to
;  788          2160  2 ! read the mailbox into msg_buffer. The length of the received message is
;  789          2161  2 ! stored in bytes_remain.
;  790          2162  2
;  791          2163  2     IF .buff_ptr EQLU 0
;  792          2164  2     THEN
;  793          2165  3         BEGIN
;  794          2166  3         bytes_remain = read_mailbox (.firqb);
;  795          2167  3 ! If a message is received, then fill the parameter buffer
;  796          2168  3
;  797          2169  3         IF .bytes_remain LEQU 20
;  798          2170  3         THEN
;  799          2171  4             BEGIN
;  800          2172  4             CH$COPY (.bytes_remain, msg_buffer, 0, 20, param_string [0]);
;  801          2173  4             bytes_remain = 0;
```

```
;  802          2174  4            END
;  803          2175  3        ELSE
;  804          2176  4            BEGIN
;  805          2177  4            CH$COPY (20, msg_buffer, 0, 20, param_string [0]);
;  806          2178  4            buff_ptr = msg_buffer + 20;
;  807          2179  4            bytes_remain = .bytes_remain - 20;
;  808          2180  3            END;
;  809          2181  3
;  810          2182  2        END;
;  811          2183  2
;  812          2184  2 !+
;  813          2185  2 ! Place the parameter buffer in the FIRQB.  This will be either from the
;  814          2186  2 ! beginning of a message (above) or from the previous message.
;  815          2187  2 !-
;  816          2188  2     CH$COPY (20, param_string [0], 0, 20, firqb [fqb$t_par_str]);
;  817          2189  2 ! If msg-buffer is empty, then clear 'number of bytes transferred' and
;  818          2190  2 ! 'number of bytes not transferred'.
;  819          2191  2
;  820          2192  2     IF .bytes_remain EQLU 0
;  821          2193  2     THEN
;  822          2194  3         BEGIN
;  823          2195  3         bytxfr [0] = 0;
;  824          2196  3         firqb [fqb$w_not_tran] = 0;
;  825          2197  3         END
;  826          2198  2     ELSE
;  827          2199  2 ! If the number of bytes remaining in msg-buffer is less than bufferlength,
;  828          2200  2 ! then set 'number of bytes transferred' equal to number of bytes remaining
;  829          2201  2 ! and clear 'number of bytes not transferred'.
;  830          2202  3         BEGIN
;  831          2203  3
;  832          2204  3         IF .bytes_remain LEQU .buflen
;  833          2205  3         THEN
;  834          2206  4             BEGIN
;  835          2207  4             bytxfr [0] = .bytes_remain;
;  836          2208  4             firqb [fqb$w_not_tran] = 0;
;  837          2209  4             END
;  838          2210  3         ELSE
;  839          2211  3 ! If the number of bytes remaining in msg-buffer is larger than bufferlength,
;  840          2212  3 ! then set 'number of bytes transferred' equal to bufferlength and 'number of
;  841          2213  3 ! bytes not transferred' equal to number of bytes remaining minus the buffer-
;  842          2214  3 ! length.
;  843          2215  4             BEGIN
;  844          2216  4             bytxfr [0] = .buflen;
;  845          2217  4             firqb [fqb$w_not_tran] = .bytes_remain - .buflen;
;  846          2218  3             END;
;  847          2219  3
;  848          2220  3 ! Copy 'number of bytes transferred' from msg-buffer to receive buffer and
;  849          2221  3 ! update the buffer pointer.
;  850          2222  3         CH$COPY (.bytxfr [0], .buff_ptr, 0, .buflen, .bufadr);
;  851          2223  3         buff_ptr = .buff_ptr + .bytxfr [0];
;  852          2224  2         END;
;  853          2225  2
;  854          2226  2 ! Set number of bytes remaining in msg-buffer equal to number of bytes not
;  855          2227  2 ! transferred.
;  856          2228  2     bytes_remain = .firqb [fqb$w_not_tran];
;  857          2229  2 ! Set the subfunction code for data message in firqb.                    ! A 261
;  858          2230  2     firqb [fqb$b_subfun] = fun$k_srlcl;          ! A 261
```

```
;  859          2231  2 ! If all the message is transferred or if the caller wants the message
;  860          2232  2 ! truncated, clear the bufferpointer.
;  861          2233  2
;  862          2234  2     IF .bytes_remain EQLU 0 OR .rcv_mode [1] THEN buff_ptr = 0;
;  863          2235  2
;  864          2236  2 !+
;  865          2237  2 ! In case the caller is using the job number field, set it to zero.
;  866          2238  2 !-
;  867          2239  2     firqb [fqb$b_jobnr] = 0;
;  868          2240  2     RETURN 1;
;  869          2241  1     END;                                    !End of bpa$mess_rcv


                                                BYTES_REMAIN=       BPA$A_MSG+558
                                                BUFF_PTR=           BPA$A_MSG+554
                                                MSG_BUFFER=         BPA$A_MSG+22

                                    00FC 00000 BPA$MESS_RCV:
                                                        .WORD   Save R2,R3,R4,R5,R6,R7                  ; 2060
                          57 00000000'   EF   9E 00002          MOVAB   BYTES_REMAIN, R7                ;
                          56       04    AC   D0 00009          MOVL    FIRQB, R6                       ; 2145
                                 FDD2    C7   D5 0000D          TSTL    BPA$A_MSG                       ; 2150
                                         1A   13 00011          BEQL    3$                              ;
                08    A6           04     00   3B 00013          SKPC    #0, #4, 8(R6)                   ; 2154
                                         02   12 00018          BNEQ    1$                              ;
                                         51   D4 0001A          CLRL    R1                              ;
                                         51   D5 0001C 1$:       TSTL    R1                              ;
                                         0D   12 0001E          BNEQ    3$                              ;
                14    A6           0C     00   3B 00020          SKPC    #0, #12, 20(R6)                 ; 2155
                                         02   12 00025          BNEQ    2$                              ;
                                         51   D4 00027          CLRL    R1                              ;
                                         51   D5 00029 2$:       TSTL    R1                              ;
                                         0E   13 0002B          BEQL    4$                              ;
                                001A8090 8F   DD 0002D 3$:       PUSHL   #1736848                        ; 2157
                      00000000G  00      01   FB 00033          CALLS   #1, LIB$SIGNAL                  ;
                                         04   0003A          RET                                     ;
                                   FC    A7   D5 0003B 4$:       TSTL    BUFF_PTR                        ; 2163
                                         2C   12 0003E          BNEQ    6$                              ;
                                         56   DD 00040          PUSHL   R6                              ; 2166
                           0000V         CF   01   FB 00042          CALLS   #1, READ_MAILBOX                ;
                                         67   50   D0 00047          MOVL    R0, BYTES_REMAIN                ;
                                         14   67   D1 0004A          CMPL    BYTES_REMAIN, #20               ; 2169
                                         0D   1A   0004D          BGTRU   5$                              ;
                14          00     FDE8  C7   67   2C 0004F          MOVC5   BYTES_REMAIN, MSG_BUFFER, #0, #20, - ; 2172
                                   1E    A7         00056                  PARAM_STRING                    ;
                                         67   D4 00058          CLRL    BYTES_REMAIN                    ; 2173
                                         10   11 0005A          BRB     6$                              ; 2169
                1E    A7       FDE8    C7   14   28 0005C 5$:       MOVC3   #20, MSG_BUFFER, PARAM_STRING   ; 2177
                         FC    A7     FDFC  C7   9E 00063          MOVAB   MSG_BUFFER+20, BUFF_PTR         ; 2178
                                         67   14   C2 00069          SUBL2   #20, BYTES_REMAIN               ; 2179
                0C    A6         1E    A7   14   28 0006C 6$:       MOVC3   #20, PARAM_STRING, 12(R6)       ; 2188
                                         50   67   D0 00072          MOVL    BYTES_REMAIN, R0                ; 2192
                                         08   12 00075          BNEQ    7$                              ;
                                   10    BC   B4 00077          CLRW    @BYTXFR                         ; 2195
                                   0A    A6   B4 0007A          CLRW    10(R6)                          ; 2196
```

```
                                        2C  11 0007D       BRB     10$                                        ; 2192
                    08  AC              50  D1 0007F 7$:   CMPL    R0, BUFLEN                                 ; 2204
                                        09  1A 00083       BGTRU   8$                                         ;
                    10  BC              50  B0 00085       MOVW    R0, @BYTXFR                                ; 2207
                                  0A    A6  B4 00089       CLRW    10(R6)                                     ; 2208
                                        0B  11 0008C       BRB     9$                                         ; 2204
                    10  BC        08    AC  B0 0008E 8$:   MOVW    BUFLEN, @BYTXFR                            ; 2216
           0A   A6      50        08    AC  A3 00093       SUBW3   BUFLEN, R0, 10(R6)                         ; 2217
  08  AC        00  FC  B7        10    BC  2C 00099 9$:   MOVC5   @BYTXFR, @BUFF_PTR, #0, BUFLEN, @BUFADR    ; 2222
                                  0C    BC     000A1                                                          ;
                        50        10    BC  3C 000A3       MOVZWL  @BYTXFR, R0                                ; 2223
                    FC  A7              50  C0 000A7       ADDL2   R0, BUFF_PTR                               ;
                        67        0A    A6  3C 000AB 10$:  MOVZWL  10(R6), BYTES_REMAIN                       ; 2228
                    04  A6              01  8E 000AF       MNEGB   #1, 4(R6)                                  ; 2230
                                        67  D5 000B3       TSTL    BYTES_REMAIN                               ; 2234
                                        05  13 000B5       BEQL    11$                                        ;
                03  05  A6              01  E1 000B7       BBC     #1, 5(R6), 12$                             ;
                                  FC    A7  D4 000BC 11$:  CLRL    BUFF_PTR                                   ;
                                  05    A6  94 000BF 12$:  CLRB    5(R6)                                      ; 2239
                        50              01  D0 000C2       MOVL    #1, R0                                     ; 2240
                                            04 000C5       RET                                                ; 2241
```

; Routine Size: 198 bytes,   Routine Base: _BPA$CODE + 0372

```
;  871          2242  1 ROUTINE read_mailbox (firqb) =                    ! Reads the mailbox
;  872          2243  1
;  873          2244  1 !++
;  874          2245  1 ! FUNCTIONAL DESCRIPTION:
;  875          2246  1 !
;  876          2247  1 !       The receiver mailbox is read into a buffer. If a message is received,
;  877          2248  1 !       the length of the message is returned to the caller. If no message is
;  878          2249  1 !       received and the caller doesn't want to wait, an error is signalled.
;  879          2250  1 !       If the caller wants to wait, an AST is set to awaken the process when
;  880          2251  1 !       the message comes and the process is put to sleep. If a sleep time is
;  881          2252  1 !       specified in firqb, the process is awakened when the time has expired.
;  882          2253  1 !       When the process finally wakes up either by the arrival of a message
;  883          2254  1 !       or by an expired sleep time, an error is signalled.
;  884          2255  1 !
;  885          2256  1 ! FORMAL PARAMETERS:
;  886          2257  1 !
;  887          2258  1 !       firqb                           =  address to firqb
;  888          2259  1 !
;  889          2260  1 ! IMPLICIT INPUTS:
;  890          2261  1 !
;  891          2262  1 !       bpa$a_msg [msg$l_messchan]  =  channel opened to mailbox by
;  892          2263  1 !                                      bpa$mess_dcl
;  893          2264  1 !       bpa$a_msg [msg$t_buffer]    =  points to buffer for message from
;  894          2265  1 !                                      mailbox
;  895          2266  1 !       firqb [fqb$b_rmod]          =  receive modifier :
;  896          2267  1 !                                      bit 0 set - caller wants to wait for
;  897          2268  1 !                                                  messages
;  898          2269  1 !       firqb [fqb$w_sleep]         =  sleep time (in seconds)
;  899          2270  1 !
;  900          2271  1 ! IMPLICIT OUTPUTS:
;  901          2272  1 !
;  902          2273  1 !       bpa$a_msg [msg$t_buffer]    =  points to buffer for received message
;  903          2274  1 !
;  904          2275  1 ! ROUTINE VALUE:
;  905          2276  1 !
;  906          2277  1 !       length of received message (in bytes)
;  907          2278  1 !
;  908          2279  1 ! SIDE EFFECTS:
;  909          2280  1 !
;  910          2281  1 !       NONE
;  911          2282  1 !
;  912          2283  1 !--
;  913          2284  1
;  914          2285  2     BEGIN
;  915          2286  2
;  916          2287  2     BUILTIN
;  917          2288  2         emul;
;  918          2289  2
;  919          2290  2     global register
;  920          2291  2         ccb = 11: ref block [,byte];
;  921          2292  2
;  922          2293  2     MAP
;  923          2294  2         firqb : REF $fqb_def;                   ! Defines firqb
;  924          2295  2
;  925          2296  2     LOCAL
;  926          2297  2         sts,                                    ! Status received from calls
;  927          2298  2                                                 ! to system services
```

```
;  928          2299  2          status,                                 ! need 2 locals for status
;  929          2300  2          event_flag,
;  930          2301  2          iosb : BLOCK [8, BYTE],             ! Status block from $qiow       ! M 260
;  931          2302  2          daytim : VECTOR [2, LONG];              ! Stores sleeptime in system
;  932          2303  2                                                  ! time format
;  933          2304  2
;  934          2305  2      EXTERNAL
;  935          2306  2          OTS$$A_CUR_LUB;
;  936          2307  2
;  937          2308  2      BIND
;  938          2309  2          chan = bpa$a_msg [msg$l_messchan],      ! Channel
;  939          2310  2          msg_buffer = bpa$a_msg [msg$t_buffer],  ! Buffer
;  940          2311  2          qiow_sts = iosb [0, w_] : WORD,         ! Ret.stat.     ! M 260
;  941          2312  2                                                  ! by $qiow
;  942          2313  2          transf_bytes = iosb [2, w_] : WORD,     ! # of trans-! M 260
;  943          2314  2                                                  ! ferred bytes
;  944          2315  2          rcv_mod = firqb [fqb$b_rmod] : BITVECTOR [8];   ! Receiver modifier
;  945          2316  2
;  946          2317  2      CCB = .OTS$$A_CUR_LUB;
;  947          2318  2
;  948          2319  2  !+
;  949          2320  2  ! Allocate event flag.
;  950          2321  2  !-
;  951          2322  2
;  952          2323  2      sts = LIB$GET_EF (event_flag);
;  953          2324  2      IF (NOT .sts) THEN RETURN SIGNAL (.sts);
;  954          2325  2
;  955          2326  2  ! Try to get a new message from the mailbox
;  956          2327  2
;  957        P 2328  2      sts = $qiow (efn = .event_flag, chan = .chan, iosb = iosb,
;  958          2329  2              func = io$_readvblk OR io$m_now, p1 = msg_buffer, p2 = 532);
;  959          2330  2
;  960          2331  2  !+
;  961          2332  2  ! Deallocate the event flag, and then check the status of the $QIOW.
;  962          2333  2  !-
;  963          2334  2
;  964          2335  2      status = LIB$FREE_EF (event_flag);
;  965          2336  2      IF NOT (.status) THEN RETURN SIGNAL (.status);
;  966          2337  2
;  967          2338  2      IF NOT (.sts) THEN RETURN SIGNAL (.sts);
;  968          2339  2
;  969          2340  2      IF NOT .qiow_sts AND .qiow_sts NEQU ss$_endoffile
;  970          2341  2      THEN
;  971          2342  2          RETURN SIGNAL (.qiow_sts);
;  972          2343  2
;  973          2344  2  ! If a message is received, then return number of transferred bytes.
;  974          2345  2
;  975          2346  2      IF .qiow_sts NEQU ss$_endoffile THEN RETURN .transf_bytes;
;  976          2347  2
;  977          2348  2  ! If there is no message and the caller doesn't want to wait, then signal
;  978          2349  2  ! an error.
;  979          2350  2
;  980          2351  2      IF NOT .rcv_mod [0]
;  981          2352  2      THEN
;  982          2353  3          BEGIN
;  983          2354  3          !+
;  984          2355  3          ! free up this ISB/LUB/RAB
```

```
;  985          2356  3          !-
;  986          2357  3          IF .CCB NEQ 0
;  987          2358  3          THEN IF .CCB [LUB$V_IO_ACTIVE] THEN BAS$$CB_POP ();
;  988          2359  3          RETURN SIGNAL (nosuch);
;  989          2360  2          END;
;  990          2361  2
;  991          2362  2 ! If the caller wants to wait for the message and a sleeptime is specified,
;  992          2363  2 ! then schedule a wakeup.
;  993          2364  2
;  994          2365  2      IF .firqb [fqb$w_sleep] NEQU 0
;  995          2366  2      THEN
;  996          2367  3          BEGIN
;  997          2368  3          emul (%REF (-10000000), firqb [fqb$w_sleep], %REF (0), daytim [0]);
;  998          2369  3
;  999          2370  3          IF NOT (sts = $schdwk (daytim = daytim)) THEN RETURN SIGNAL (.sts);
; 1000          2371  3
; 1001          2372  3          END
; 1002          2373  2      ELSE
; 1003          2374  2 ! If the caller wants to wait for the message but no sleeptime is specified,
; 1004          2375  2 ! then set an attention AST (so that the process is awakened when the next
; 1005          2376  2 ! message comes).
; 1006          2377  3          BEGIN
; 1007          2378  3
; 1008          2379  3          sts = LIB$GET_EF (event_flag);
; 1009          2380  3          IF (NOT .sts) THEN RETURN SIGNAL (.sts);
; 1010          2381  3
; 1011        P 2382  4          IF NOT (sts = $qiow (efn = .event_flag, chan = .chan, iosb = iosb,
; 1012          2383  4                  func = io$_setmode OR io$m_wrtattn, p1 = bpa$wakeup))
; 1013          2384  3          THEN
; 1014          2385  3              RETURN SIGNAL (.sts);
; 1015          2386  3
; 1016          2387  3          IF NOT .qiow_sts THEN RETURN SIGNAL (.qiow_sts);
; 1017          2388  3
; 1018          2389  3          sts = LIB$FREE_EF (event_flag);
; 1019          2390  3          IF (NOT .sts) THEN RETURN SIGNAL (.sts);
; 1020          2391  3
; 1021          2392  2          END;
; 1022          2393  2
; 1023          2394  2 ! Hibernate the process
; 1024          2395  2      $hiber;
; 1025          2396  2 ! When the process wakes up, return an error.
; 1026          2397  2      RETURN SIGNAL (nosuch);
; 1027          2398  1      END;                                    !End of read_mailbox


                                                  CHAN=               BPA$A_MSG
                                                  MSG_BUFFER=         BPA$A_MSG+22
                                                          .EXTRN  OTS$$A_CUR_LUB, SYS$SCHDWK
                                                          .EXTRN  SYS$HIBER

                                    08FC 00000 READ_MAILBOX:
                                                          .WORD   Save R2,R3,R4,R5,R6,R7,R11                  ; 2242
                                57 00000000G   00   9E 00002      MOVAB   LIB$FREE_EF, R7                     ;
                                56 00000000G   00   9E 00009      MOVAB   SYS$QIOW, R6                        ;
                                55 00000000G   00   9E 00010      MOVAB   LIB$GET_EF, R5                      ;
                                54 00000000'   EF   9E 00017      MOVAB   CHAN, R4                            ;
```

```
                5E            14   C2 0001E                SUBL2   #20, SP                                        ;
                52         04 AC   D0 00021                MOVL    FIRQB, R2                                       ; 2315
                5B 00000000G  00   D0 00025                MOVL    OTS$$A_CUR_LUB, CCB                             ; 2317
                              5E   DD 0002C                PUSHL   SP                                              ; 2323
                65            01   FB 0002E                CALLS   #1, LIB$GET_EF                                  ;
                53            50   D0 00031                MOVL    R0, STS                                         ;
                2C            53   E9 00034                BLBC    STS, 1$                                         ; 2324
                              7E   7C 00037                CLRQ    -(SP)                                           ; 2329
                              7E   7C 00039                CLRQ    -(SP)                                           ;
                7E      0214  8F   3C 0003B                MOVZWL  #532, -(SP)                                     ;
                          16  A4   9F 00040                PUSHAB  MSG_BUFFER                                      ;
                              7E   7C 00043                CLRQ    -(SP)                                           ;
                          2C  AE   9F 00045                PUSHAB  IOSB                                            ;
                7E        71  8F   9A 00048                MOVZBL  #113, -(SP)                                     ;
                              64   DD 0004C                PUSHL   CHAN                                            ;
                          2C  AE   DD 0004E                PUSHL   EVENT_FLAG                                      ;
                66            0C   FB 00051                CALLS   #12, SYS$QIOW                                   ;
                53            50   D0 00054                MOVL    R0, STS                                         ;
                              5E   DD 00057                PUSHL   SP                                              ; 2335
                67            01   FB 00059                CALLS   #1, LIB$FREE_EF                                 ;
                04            50   E8 0005C                BLBS    STATUS, 1$                                      ; 2336
                              50   DD 0005F                PUSHL   STATUS                                          ;
                              13   11 00061                BRB     3$                                              ;
                5D            53   E9 00063 1$:           BLBC    STS, 8$                                         ; 2338
                0F        0C  AE   E8 00066                BLBS    QIOW_STS, 4$                                    ; 2340
          0870  8F        0C  AE   B1 0006A                CMPW    QIOW_STS, #2160                                 ;
                              07   13 00070                BEQL    4$                                              ;
                7E        0C  AE   3C 00072 2$:           MOVZWL  QIOW_STS, -(SP)                                 ; 2342
                            0091   31 00076 3$:           BRW     13$                                             ;
                      0870  8F   0C AE B1 00079 4$:       CMPW    QIOW_STS, #2160                                 ; 2346
                              05   13 0007F                BEQL    5$                                              ;
                50            0E   AE 3C 00081           MOVZWL  TRANSF_BYTES, R0                                ;
                                   04 00085                RET                                                     ;
                11        05  A2   E8 00086 5$:           BLBS    5(R2), 6$                                       ; 2351
                              5B   D5 0008A                TSTL    CCB                                             ; 2357
                              76   13 0008C                BEQL    12$                                             ;
             71       FC  AB        01   E1 0008E        BBC     #1, -4(CCB), 12$                                ; 2358
                   00000000G  00    16 00093             JSB     BA$$$CB_POP                                     ;
                              69    11 00099             BRB     12$                                             ; 2359
                          12  A2    B5 0009B 6$:         TSTW    18(R2)                                          ; 2365
                              1B    13 0009E             BEQL    7$                                              ;
04  AE        00        12  A2 FF676980  8F 7A 000A0     EMUL    #-10000000, 18(R2), #0, DAYTIM                  ; 2368
                              7E    D4 000AB             CLRL    -(SP)                                           ; 2370
                          08  AE    9F 000AD             PUSHAB  DAYTIM                                          ;
                              7E    7C 000B0             CLRQ    -(SP)                                           ;
                00000000G     00    04 FB 000B2          CALLS   #4, SYS$SCHDWK                                  ;
                              38    11 000B9             BRB     9$                                              ;
                              5E    DD 000BB 7$:         PUSHL   SP                                              ; 2379
                65            01    FB 000BD             CALLS   #1, LIB$GET_EF                                  ;
                53            50    D0 000C0             MOVL    R0, STS                                         ;
                33            53    E9 000C3 8$:         BLBC    STS, 10$                                        ; 2380
                              7E    7C 000C6             CLRQ    -(SP)                                           ; 2383
                              7E    7C 000C8             CLRQ    -(SP)                                           ;
                              7E    D4 000CA             CLRL    -(SP)                                           ;
                   00000000G  00    9F 000CC             PUSHAB  BPA$WAKEUP                                      ;
                              7E    7C 000D2             CLRQ    -(SP)                                           ;
                          2C  AE    9F 000D4             PUSHAB  IOSB                                            ;
```

```
                         7E      0123    8F  3C 000D7          MOVZWL  #291, -(SP)                                    ;
                                         64  DD 000DC          PUSHL   CHAN                                          ;
                                 2C      AE  DD 000DE          PUSHL   EVENT_FLAG                                    ;
                         66              0C  FB 000E1          CALLS   #12, SYS$QIOW                                 ;
                         53              50  D0 000E4          MOVL    R0, STS                                       ;
                         0F              53  E9 000E7          BLBC    STS, 10$                                      ;
                         84      0C      AE  E9 000EA          BLBC    QIOW_STS, 2$                                  ; 2387
                                         5E  DD 000EE          PUSHL   SP                                            ; 2389
                         67              01  FB 000F0          CALLS   #1, LIB$FREE_EF                               ;
                         53              50  D0 000F3 9$:      MOVL    R0, STS                                       ;
                         04              53  E8 000F6          BLBS    STS, 11$                                      ; 2390
                                         53  DD 000F9 10$:     PUSHL   STS                                           ;
                                         0D  11 000FB          BRB     13$                                           ;
                 00000000G   00          00  FB 000FD 11$:     CALLS   #0, SYS$HIBER                                 ; 2392
                                 001A8028    8F  DD 00104 12$:     PUSHL   #1736744                                  ; 2397
                 00000000G   00              01  FB 0010A 13$:     CALLS   #1, LIB$SIGNAL                            ;
                                             04  00111           RET                                                   ; 2398

; Routine Size:  274 bytes,    Routine Base:  _BPA$CODE + 0438
```

```
;1029     2399  1 ROUTINE bpa$mess_rem (firqb) =                ! Simulates remove receiver
;1030     2400  1
;1031     2401  1 !++
;1032     2402  1 ! FUNCTIONAL DESCRIPTION:
;1033     2403  1 !
;1034     2404  1 !       The input in firqb is checked and if faulty an error is signalled.
;1035     2405  1 !       The receiver is removed by calling, bpa$mess_clear.
;1036     2406  1 !
;1037     2407  1 ! FORMAL PARAMETERS:
;1038     2408  1 !
;1039     2409  1 !       firqb                           =  address to firqb
;1040     2410  1 !
;1041     2411  1 ! IMPLICIT INPUTS:
;1042     2412  1 !
;1043     2413  1 !       firqb [fqb$b_jobnr]             =   0
;1044     2414  1 !       firqb [6, B_] - firqb [31, B_]  =   0
;1045     2415  1 !       bpa$a_msg [msg$l_messchan]      =   channel opened to mailbox by
;1046     2416  1 !                                           receiver
;1047     2417  1 !       bpa$a_msg [msg$t_namedesc]      =   char. string desc. pointing
;1048     2418  1 !                                           to logical name of mailbox
;1049     2419  1 !
;1050     2420  1 ! IMPLICIT OUTPUTS:
;1051     2421  1 !
;1052     2422  1 !       bpa$a_msg [msg$l_messchan]      =   0 (indicates that the receiver
;1053     2423  1 !                                              is removed)
;1054     2424  1 !
;1055     2425  1 ! ROUTINE VALUE:
;1056     2426  1 !
;1057     2427  1 !       1  -  success
;1058     2428  1 !       ?  -  failure
;1059     2429  1 !
;1060     2430  1 ! SIDE EFFECTS:
;1061     2431  1 !
;1062     2432  1 !       NONE
;1063     2433  1 !
;1064     2434  1 !--
;1065     2435  1
;1066     2436  2     BEGIN
;1067     2437  2
;1068     2438  2     MAP
;1069     2439  2         firqb : REF $fqb_def;                   ! Defines firqb
;1070     2440  2
;1071     2441  2 ! Check input.
;1072     2442  2
;1073     2443  2     IF NOT CH$FAIL (CH$FIND_NOT_CH (26, CH$PTR (firqb [6, b_]), 0))
;1074     2444  2     THEN
;1075     2445  2         RETURN SIGNAL (badfuo);
;1076     2446  2
;1077     2447  2     IF .firqb [fqb$b_jobnr] NEQU 0 THEN RETURN SIGNAL (errerr);
;1078     2448  2
;1079     2449  2 ! Perform 'remove receiver'
;1080     2450  2     bpa$mess_clear ();
;1081     2451  2     RETURN 1;
;1082     2452  1     END;                                        !End of bpa$mess_rem
```

```
                                        0004 00000 BPA$MESS_REM:
                                                   .WORD   Save R2                                  ; 2399
                        52      04      AC  D0 00002       MOVL    FIRQB, R2                        ; 2443
            06  A2          1A          00  3B 00006       SKPC    #0, #26, 6(R2)                   ;
                                        02  12 0000B       BNEQ    1$                               ;
                                        51  D4 0000D       CLRL    R1                               ;
                                        51  D5 0000F 1$:    TSTL    R1                               ;
                                        08  13 00011       BEQL    2$                               ;
                            001A8090    8F  DD 00013       PUSHL   #1736848                         ; 2445
                                        0B  11 00019       BRB     3$                               ;
                                05      A2  95 0001B 2$:    TSTB    5(R2)                            ; 2447
                                        0E  13 0001E       BEQL    4$                               ;
                            001A8210    8F  DD 00020       PUSHL   #1737232                         ;
                    00000000G   00      01  FB 00026 3$:    CALLS   #1, LIB$SIGNAL                   ;
                                        04  0002D       RET                                      ;
                        0000V   CF      00  FB 0002E 4$:    CALLS   #0, BPA$MESS_CLEAR               ; 2450
                                50      01  D0 00033       MOVL    #1, R0                           ; 2451
                                        04  00036       RET                                      ; 2452

; Routine Size:  55 bytes,    Routine Base:  _BPA$CODE + 054A
```

```
;  1084          2453  1 ROUTINE exit_handler (                          ! Exit handler
;  1085          2454  1                 exit_reason                    ! reason
;  1086          2455  1     ) : NOVALUE =
;  1087          2456  1
;  1088          2457  1 !++
;  1089          2458  1 ! FUNCTIONAL DESCRIPTION:
;  1090          2459  1 !
;  1091          2460  1 !       This is the exit handler for the BASIC-PLUS message handler.
;  1092          2461  1 !       It deletes the system logical name defined by this user, in
;  1093          2462  1 !       case it hasn't been deleted already.
;  1094          2463  1 !
;  1095          2464  1 ! FORMAL PARAMETERS:
;  1096          2465  1 !
;  1097          2466  1 !       EXIT_REASON.rl.r        Not used
;  1098          2467  1 !
;  1099          2468  1 ! IMPLICIT INPUTS:
;  1100          2469  1 !
;  1101          2470  1 !       NONE
;  1102          2471  1 !
;  1103          2472  1 ! IMPLICIT OUTPUTS:
;  1104          2473  1 !
;  1105          2474  1 !
;  1106          2475  1 ! ROUTINE VALUE:
;  1107          2476  1 !
;  1108          2477  1 !       NONE
;  1109          2478  1 !
;  1110          2479  1 ! SIDE EFFECTS:
;  1111          2480  1 !
;  1112          2481  1 !       Deletes the system logical name, if there is one.
;  1113          2482  1 !
;  1114          2483  1 !--
;  1115          2484  1
;  1116          2485  2     BEGIN
;  1117          2486  2     bpa$mess_clear ();
;  1118          2487  2     RETURN;
;  1119          2488  1     END;                                    !End of exit_handler


                                        0000 00000 EXIT_HANDLER:
                                                   .WORD   Save nothing                    ;  2453
                            0000V  CF      00  FB 00002    CALLS   #0, BPA$MESS_CLEAR      ;  2486
                                           04 00007        RET                             ;  2488

; Routine Size:  8 bytes,    Routine Base:  _BPA$CODE + 0581

;  1120          2489  1
```

```
;  1122          2490  1 GLOBAL ROUTINE bpa$mess_clear =                ! Removes a permanent receiver
;  1123          2491  1
;  1124          2492  1 !++
;  1125          2493  1 ! FUNCTIONAL DESCRIPTION:
;  1126          2494  1 !
;  1127          2495  1 !       If the caller isn't a declared receiver, success is returned.
;  1128          2496  1 !       The reciver mailbox is deleted, the channel to the mailbox is
;  1129          2497  1 !       deassigned, the mailbox logical name is deleted and the channel is
;  1130          2498  1 !       zeroed to indicate that the caller no longer is a receiver.
;  1131          2499  1 !
;  1132          2500  1 ! FORMAL PARAMETERS:
;  1133          2501  1 !
;  1134          2502  1 !       NONE
;  1135          2503  1 !
;  1136          2504  1 ! IMPLICIT INPUTS:
;  1137          2505  1 !
;  1138          2506  1 !       bpa$a_msg [msg$l_messchan]   =   channel opened to mailbox by receiver
;  1139          2507  1 !       bpa$a_msg [msg$t_namedesc]   =   char. string desc. pointing to the
;  1140          2508  1 !                                        logical name of mailbox
;  1141          2509  1 !
;  1142          2510  1 ! IMPLICIT OUTPUTS:
;  1143          2511  1 !
;  1144          2512  1 !       bpa$a_msg [msg$l_messchan]   =   0
;  1145          2513  1 !
;  1146          2514  1 ! ROUTINE VALUE:
;  1147          2515  1 !
;  1148          2516  1 !       success  -  1
;  1149          2517  1 !       failure  -  ?
;  1150          2518  1 !
;  1151          2519  1 ! SIDE EFFECTS:
;  1152          2520  1 !
;  1153          2521  1 !       NONE
;  1154          2522  1 !
;  1155          2523  1 !--
;  1156          2524  1
;  1157          2525  2     BEGIN
;  1158          2526  2
;  1159          2527  2     LOCAL
;  1160          2528  2         sts;                                 ! Status received from
;  1161          2529  2                                              ! calls to sys. serv.
;  1162          2530  2
;  1163          2531  2     BIND
;  1164          2532  2         chan = bpa$a_msg [msg$l_messchan],   ! Channel
;  1165          2533  2         lognam_desc = bpa$a_msg [msg$t_namedesc];    ! Char. string desc.
;  1166          2534  2                                              ! of mailbox name
;  1167          2535  2
;  1168          2536  2 ! Is the caller a declared receiver? If not, then return success.
;  1169          2537  2
;  1170          2538  2     IF .bpa$a_msg [msg$l_messchan] EQLU 0 THEN RETURN 1;
;  1171          2539  2
;  1172          2540  2 ! Delete the mailbox
;  1173          2541  2
;  1174          2542  2     IF NOT (sts = $delmbx (chan = .chan)) THEN RETURN SIGNAL (.sts);
;  1175          2543  2
;  1176          2544  2 ! Deassign the channel
;  1177          2545  2
;  1178          2546  2
```

```
;  1179          2547  2     IF NOT (sts = $dassgn (chan = .chan)) THEN RETURN SIGNAL (.sts);
;  1180          2548  2
;  1181          2549  2 ! Delete the logical name
;  1182          2550  2
;  1183          2551  2     IF NOT (sts = $dellog (lognam = lognam_desc)) THEN RETURN SIGNAL (.sts);
;  1184          2552  2
;  1185          2553  2 ! Clear chan to indicate that the receiver is removed.
;  1186          2554  2     chan = 0;
;  1187          2555  2     RETURN 1;
;  1188          2556  1     END;                                    !End of bpa$mess_clear


                                                  CHAN=               BPA$A_MSG
                                                  LOGNAM_DESC=        BPA$A_MSG+4
                                                        .EXTRN  SYS$DELLOG

                                        000C 00000          .ENTRY  BPA$MESS_CLEAR, Save R2,R3                  ; 2490
                          53 00000000'  EF   9E 00002       MOVAB   BPA$A_MSG, R3
                          50            63   D0 00009       MOVL    BPA$A_MSG, R0                               ; 2539
                                        3E   13 0000C       BEQL    3$
                                        50   DD 0000E       PUSHL   R0                                          ; 2543
                00000000G 00            01   FB 00010       CALLS   #1, SYS$DELMBX
                          52            50   D0 00017       MOVL    R0, STS
                          23            52   E9 0001A       BLBC    STS, 1$
                                        63   DD 0001D       PUSHL   CHAN                                        ; 2547
                00000000G 00            01   FB 0001F       CALLS   #1, SYS$DASSGN
                          52            50   D0 00026       MOVL    R0, STS
                          14            52   E9 00029       BLBC    STS, 1$
                                        7E   D4 0002C       CLRL    -(SP)                                       ; 2551
                                   04   A3   9F 0002E       PUSHAB  LOGNAM_DESC
                                        7E   D4 00031       CLRL    -(SP)
                     00000000G  00           03   FB 00033       CALLS   #3, SYS$DELLOG
                                52           50   D0 0003A       MOVL    R0, STS
                                0A           52   E8 0003D       BLBS    STS, 2$
                                             52   DD 00040 1$:   PUSHL   STS
                     00000000G  00           01   FB 00042       CALLS   #1, LIB$SIGNAL
                                             04   00049       RET
                                             63   D4 0004A 2$:   CLRL    CHAN                                 ; 2554
                                50           01   D0 0004C 3$:   MOVL    #1, R0                               ; 2555
                                             04   0004F       RET                                             ; 2556

; Routine Size:  80 bytes,    Routine Base:  _BPA$CODE + 0589

;  1189          2557  1
;  1190          2558  1 END                                         !End of module
;  1191          2559  1
;  1192          2560  0 ELUDOM


                                                        .EXTRN  LIB$SIGNAL

;                                  PSECT SUMMARY
;
```

```
;       Name                    Bytes                           Attributes
;
;  _BPA$DATA                     608  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,  PIC,ALIGN(2)
;  _BPA$CODE                    1497  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        26         0       581         00:01.2



;                                   COMMAND QUALIFIERS

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

; Size:         1484 code + 621 data bytes
; Run Time:       00:36.9
; Elapsed Time:   01:26.2
; Lines/CPU Min:   4163
; Lexemes/CPU-Min: 29056
; Memory Used:  239 pages
; Compilation Complete
```

BASXLATE
LIS

BPAMESAG
LIS

BPAPSS
LIS

BPAGETBLK
LIS

BASZIRET
LIS

BOOTBLOCK
MAP

STACONFIG
MAP

SYSBOOT
MAP

BPAMOVTUC
LIS

BOOTS

BPASSDEAS
LIS

BOOT58
MAP

STANDCONF
MAP

CONFIGURE
MAP

BPAWAKEUP
LIS

STASYSGEN
MAP

BPASETPRI
LIS