STORAGE ALLOCATION.

ADDRESS	LENGTH
0	1
1	

BINARY CONTROL CARDS.

```
IDENT   BUILDER
END
```

BLOCKS	TYPE	ADDRESS	LENGTH
ABSOLUTE*	ABSOLUTE	0	4752
LITERALS*	LOCAL	0	1

```
IDENT   BUILDER
```

```
                    *
                    *
                    *                   CONSTANTS
                    *
                    *
144     MAXLPNT     EQU     100         SIZE OF LOCAL NAME TABLE
764     MAXGPNT     EQU     500         SIZE OF GLOBAL NAME TABLE
  2     GLBLMP      EQU     2           INDEX OF GLOBAL NAME TABLE MAP ENTRY
  3     LCLMP       EQU     3           INDEX OF LOCAL NAME TABLE MAP ENTRY
                    *
 41     SVCLSZ      EQU     3*11        SIZE OF SAVE CLIST
                    *
 50     RTNCNT      EQU     40          MAX NO. OF RETURNED ITEMS FROM
                    *                   CALLED SUBPROCESS
                    *
 12     NEWPRCN     EQU     10          MAX ALLOWED CLIST BLOCK PARAMS
                    *                   ON NEW PROCESS CALL
                    *
  5     LGMPSZ      EQU     5           LOGICAL MAP SIZE FOR BUILDER
 62     CMPMPSZ     EQU     50          COMPILED MAP SIZE FOR BUILDER
                    *
                    *
  6     N.ECWDS     EQU     6           NO. OF EC CONTROL WDS FOR USER PROCESS
 36     N.STKSZ     EQU     30          STACK SIZE FOR USER PROCESS
  3     R.LGMPSZ    EQU     3           LOGICA MAP SIZE FOR ROOT OF USER PROCESS
 12     R.CMPSZ     EQU     10          COMPILED MAP SIZE FOR ROOT OF USER PROCESS
                    *
                    *
                    *
                    *                   ECS SYSTEM TYPES
                    *
1767    ALLOCTYP    EQU     1767B
1757    EVTYPE      EQU     1757B
1677    OPTYPE      EQU     1677B
```

```
                        *
                        *
                        *
XJ              MACRO   LOC
                VFD     12/0130B,18/LOC,30/1
                SB7     *+1
                JP      ERR
                ENDM
                *
                *
XJR             MACRO   LOC,RTNAUTH
                VFD     12/0130B,18/LOC,12/1,18/2
                VFD     60/RTNAUTH
                SB7     *+1
                JP      ERR
                ENDM
                *
                *
XJF             MACRO   LOC,FRTN
                VFD     12/0130B,18/LOC,30/1
                SB7     *+1
                JP      FRTN
                ENDM
                *
                *
CALL            MACRO   LOC
                SB7     *+1
                JP      LOC
                ENDM
                *
                *
FETCH           MACRO   NAME,CX
                SA1     NAME
                SX5     CX
                CALL    FETCH
                ENDM
                *
                *
ENTER           MACRO   NAME,CX
                SA1     NAME
                SX5     CX
                CALL    ENTER
                ENDM
                *
                *
                *
                MACRO   CBSS,CX,CNT
CX              EQU     CPNTR
CPNTR           SET     CPNTR+CNT
                ENDM
                *
                *
MCAP            MACRO   NAME
```

```
                BSS     0
M.NAME          EQU     *
                VFD     1/1,29/C.NAME,30/Y.MAST
                ENDM
*
*
MXCAP           MACRO   NAME
+               VFD     1/1,29/C.NAME,30/Y.MAST
                ENDM
*
*
ENTERG          MACRO   NAME,CX
                SA1     NAME
                SX5     CX
                CALL    ENTERG
                ENDM
*
*
GETMAST         MACRO   NAME
                SX5     NAME
                CALL    GETMAST
                ENDM
*
*
ITEMS           MACRO   A,B,C,D,E,F,G,H
                VFD     60/A
                IFC     NE,$$B$
                VFD     60/B
                IFC     NE,$$C$
                VFD     60/C
                IFC     NE,$$D$
                VFD     60/D
                IFC     NE,$$E$
                VFD     60/E
                IFC     NE,$$F$
                VFD     60/F
                IFC     NE,$$G$
                VFD     60/G
                IFC     NE,$$H$
                VFD     60/H
                ENDIF
                ENDM
```

```
*
*
*                       BASIC MACRO
*
XSETXJ    MACRO     A,B,C,D,E
LOCALPXJ  SET       0
          IFC       NE,$$A$
          SX1       A
LOCALPXJ  SET       1
          IFC       NE,$$B$
          SX2       B
LOCALPXJ  SET       2
          IFC       NE,$$C$
          SX3       C
LOCALPXJ  SET       3
          IFC       NE,$$D$
          SX4       D
LOCALPXJ  SET       4
          IFC       NE,$$E$
          SX5       E
LOCALPXJ  SET       5
          ENDM
*
*
*                       FULL IO PARAM VERSION
*
YSETXJ    MACRO     A,B,C,D,E,F,G,H,I,J
          XSETXJ    A,B,C,D,E
          SB2       5
          CALL      SET
          XSETXJ    F,G,H,I,J
          ENDIF
          SB2       LOCALPXJ
          CALL      SET
          ENDM
*
*
*                       STANDARD XJ CALL
*
DOXJ      MACRO     A,B,C,D,E,F,G,H,I,J
          SB1       XJLOC
          YSETXJ    A,B,C,D,E,F,G,H,I,J
          XJ        XJLOC
          ENDM
*
*
*                       MULTI LINE VERSIONS
*
*                       INITIAL SET UP LINE
*
SETXJ     MACRO     A,B,C,D,E,F,G,H,I,J
          SB1       XJLOC
          YSETXJ    A,B,C,D,E,F,G,H,I,J
```

```
                ENDM
*
*                       FINAL CALL  ( USE YSETXJ IN BETWEEN)
*
XDOXJ   MACRO   A,B,C,D,E,F,G,H,I,J
        YSETXJ  A,B,C,D,E,F,G,H,I,J
        XJ      XJLOC
        ENDM
```

```
                        *
                        *
                        *
                        *                OPNAMES * XTEXT USED HERE
                        *
                                LIST    X
0                       OPNAMES XTEXT
                  0     C.SELF  EQU     0               CAPABILITY FOR THIS C LIST                      OPNAMES
                  1     C.ALLOC EQU     1               ALLOCATION BLOKC C LIST INDEX                   OPNAMES
                  2     C.INTFIL EQU    2                                                               OPNAMES
                  3     C.RFILE EQU     2+1             READ ON FILE                                    OPNAMES
                  4     C.WFILE EQU     3+1             WRITE ON FILE                                   OPNAMES
                  5     C.SENDE EQU     4+1             SEND EVENT                                      OPNAMES
                  6     C.GETE  EQU     5+1             GET EVENT OR HANG                               OPNAMES
                  7     C.CCLIST EQU    6+1             CREATE C-LIST OPERATION                         OPNAMES
                 10     C.CFILE EQU     7+1             CREATE FILE                                     OPNAMES
                 11     C.CBLK  EQU     8+1             CREATE FILE BLOCK                               OPNAMES
                 12     C.CPROC EQU     9+1             CREATE PROCESS                                  OPNAMES
                 13     C.CEVCH EQU     10+1            CREATE EVENT CHANNEL                            OPNAMES
                 14     C.CSPROC EQU    11+1            CREATE SUB PROCESS                              OPNAMES
                 15     C.CCC   EQU     12+1            CREATE CLASS CODE                               OPNAMES
                 16     C.SAVE  EQU     13+1            SAVE REGISTERS                                  OPNAMES
                 17     C.RESTOR EQU    14+1            RESTORE REGISTERS                               OPNAMES
                 20     C.DSCAP EQU     16              .. DISPLAY A CAPABILITY                         OPNAMES
                 20     C.DSPCAP EQU    C.DSCAP         .. OLD NAME FOR C.DSCAP                         OPNAMES
                 21     C.FSON  EQU     16+1                                                            OPNAMES
                 22     C.MOVEC EQU     18              .. MOVE A CAPABILITY WITHIN FULL CLIST          OPNAMES
                 22     C.MVECAP EQU    C.MOVEC         .. OLD NAME FOR C.MOVEC                         OPNAMES
                 23     C.CAPIN EQU     18+1                                                            OPNAMES
                 24     C.CAPOU EQU     20              .. COPY A CAPABILITY OUT OF FULL CLIST          OPNAMES
                 24     C.CAPOUT EQU    C.CAPOU         .. OLD NAME FOR C.CAPOU                         OPNAMES
                 25     C.ESMGEN EQU    21                SET ANY ESM IN PROCESS                        OPNAMES
                 26     C.ESMLOC EQU    22                SET LOCAL ESM                                 OPNAMES
                 27     C.MKOPR EQU     23                CREATE OPERATION(SUBP CALL)                   OPNAMES
                 30     C.RETURN EQU    24                SUBPROCESS RETURN                             OPNAMES
                 31     C.FRETUR EQU    25                F-RETURN                                      OPNAMES
                 32     C.FIXC  EQU     26                FIX CAPABILITY PS                             OPNAMES
                 33     C.FIXD  EQU     27                FIX DATUM PS                                  OPNAMES
                 34     C.UDAT  EQU     28                CHANGE ANY PS TO USER DATUM                   OPNAMES
                 35     C.UCAP  EQU     29                CHANGE ANY PS TO USER CAPABILITY              OPNAMES
                 36     C.ACAP  EQU     30                CHANGE ANY PS TO ANY CAPABILITY               OPNAMES
                 37     C.ADDOPT EQU    31                ADD OPTION BITS TO PS                         OPNAMES
                 40     C.COPYOP EQU    32                * MAKE A COPY OF AN OPERATION                 OPNAMES
                 41     C.CHKBLK EQU    33                * CHECK FOR MISSING FILE BLOCKS               OPNAMES
                 42     C.DELBLK EQU    34                * DELETE A FILE BLOCK                         OPNAMES
                 43     C.DELFIL EQU    35                * DELETE A FILE                               OPNAMES
                 44     C.REDSHP EQU    36                * GET SHAPE NUMBERS OF A FILE                 OPNAMES
                 45     C.MAPZRO EQU    37                * ZERO A MAP ENTRY                            OPNAMES
                 46     C.MPCHRO EQU    38              * CHANGE A ZERO MAP ENTRY TO READ ONLY          OPNAMES
                 47     C.MPCHRW EQU    39              * CHANGE A ZERO MAP ENTRY TO RW                 OPNAMES
                 50     C.MOVBLK EQU    40                * MOVE A FILE BLOCK                           OPNAMES
                 51     C.DISMAP EQU    41                                                              OPNAMES
                 52     C.JUMP  EQU     42                                                              OPNAMES
```

```
                53     C.NEWUN   EQU     43          .CHANGE UNIQUE NAME                          OPNAMES  1
                54     C.DISPT   EQU     44          .DISPLAY ENTIRE STACK                        OPNAMES  1
                55     C.DISSEN  EQU     45          .DISPLAY STACK ENTRY                         OPNAMES  1
                56     C.DSFMAP  EQU     46        DISPLAY FULL MAP ENTRY                         OPNAMES  1
                57     C.DELCL   EQU     47        DELETE C-LIST                                  OPNAMES  1
                60     C.PINT    EQU     48        SEND PROCESS INTERRUPT                         OPNAMES  1
                61     C.ADDORD  EQU     49          . ADD AN ORDER TO AN OPERATION               OPNAMES  1
                62     C.CCCLOA  EQU     50          CREATE COMPLETE CAPABILITY                   OPNAMES  1
                63     C.DONATE  EQU     51          TRANSFER BETWEEN ALLOC BKS                   OPNAMES  1
                64     C.CRALBK  EQU      52         .CREATE ALLOC BLOCK                          OPNAMES  1
                65     C.MODPC   EQU     53          .MODIFY P-COUNTER                            OPNAMES  1
                66     C.DLPROC  EQU     54          .DESTROY A PROCESS                           OPNAMES  1
                67     C.DPROD   EQU      55       .. DISPLAY  A PROCESS                         OPNAMES  1
                67     C.CHNGWD  EQU      C.DPROD  ***NOW DEFUNCT OPERATION. SYMBOL DEFINITIO   OPNAMES  1
                       ,                                                                        OPNAMES  1
                       *                          KEPT AROUND TO AVOID ASSEMBLY PROBLEMS        OPNAMES  1
                       *                          SHOULD EVENTUALLY BE DELETED.                 OPNAMES  1
                70     C.CLRDAE  EQU     56          . CLEAR THE DIRECT ACCESS ECS ENTRY          OPNAMES  1
                71     C.SETDAE  EQU     57          . SET THE DIRECT ACCESS ECS ENTRY            OPNAMES  1
                72     C.DELSUB  EQU      58        DELETE SUP PROC                              OPNAMES  1
                73     C.SETITB  EQU     55+4        .SET INTERRUPT INHIBIT BIT                   OPNAMES  1
                74     C.CLRITB  EQU     56+4        .CLEAR INTERRUPT-INHIBIT BIT                 OPNAMES  1
                75     C.GETEVF  EQU     57+4      .GET EVENT OR FRETURN                          OPNAMES  1
                76     C.DELAB   EQU      62          .DESTROY ALLOCATION BLOCK                   OPNAMES  1
                77     C.MGETL   EQU      63        GET EVENT FROM MULTIPLE CHANNELS OR H        OPNAMES  1
                       ,                                                                        OPNAMES  1
               100     C.MGETF   EQU      64        GET EVENT FROM MULTIPLE CHANNELS OR F        OPNAMES  1
                       ,                                                                        OPNAMES  1
               101     C.DESECH  EQU     65        DESTROY EVENT CHANNEL                        OPNAMES  1
               102     C.DSPCLX  EQU     66        DISPLAY CLOCKS IN USER CORE                  OPNAMES  1
                 3     C.READ    EQU     C.RFILE                                                OPNAMES  1
                 4     C.WRITF   EQU     C.WFILE                                                OPNAMES  1
                 6     C.HANG    EQU     C.GETE                                                 OPNAMES  1
                41     C.PROBE   EQU     C.CHKBLK                                               OPNAMES  1
               103     C.NWTMP   EQU     67        SET TEMPORARY PART OF CLASS CODE             OPNAMES  1
               104     C.DSPAB   EQU     68        DISPLAY ALLOCATION BLOCK                     OPNAMES  1
               105     C.BDAT    EQU     69        . CHANGE ANY TO BLOCK DATA PARAMETER         OPNAMES  1
               106     C.BLKCAP    EQU     70        . CHANGE ANY TO BLOCK CAPABILITY PARAM     OPNAMES  1
               107     C.DISPOP  EQU     71        . DISPLAY OPERATION                          OPNAMES  1
               110     C.USRER   EQU     72        . USER INITIATED ERROR                       OPNAMES  1
               111     C.RETPAR  EQU     73        . RETURN WITH PARAMETERS                     OPNAMES  1
               112     C.TIMDT   EQU     74        .  RETURN DATE AND TIME                      OPNAMES  1
               113     C.CAGEN   EQU     75        . MAKE CAPABILITY CREATING AUTHORIZATION     OPNAMES  1
               114     C.CGEN    EQU     76        . MAKE CAPABILITY OF AUTHORIZED TYPE         OPNAMES  1
               115     C.DSPSB   EQU     77        . DISPLAY SUBPROCESS DESCRIPTOR              OPNAMES  1
               116     C.TRDB    EQU     78        .  TEST AND RESET DIRTY BIT                  OPNAMES  1
               117     C.INCHR   EQU     79        . INCREMENT AB CHARGE RATE                   OPNAMES  1
               120     C.DSPOB   EQU     80        . DISPLAY OBJECT                             OPNAMES  1
               121     C.DSPALC  EQU     81        . DISPLAY ALLOCATOR CONSTANTS                OPNAMES  1
               122     C.CHMPRW  EQU     82        . CHANGE A READ-WRITE MAP ENTRY              OPNAMES  1
               123     C.CHMPRO  EQU     83        . CHANGE A READ ONLY MAP ENTRY               OPNAMES  1
                47     C.MKMPRW  EQU     C.MPCHRW  . MORE REASONALBE NAME FOR C.MPCHRW           OPNAMES  1
                46     C.MKMPRO  EQU     C.MPCHRO  . MORE REASONALBE NAME FOR C.MPCHRO           OPNAMES  1
```

```
124   C.DSCLK   EQU   84   . DISPLAY SYSTEM CLOCKS IN USER CORE                  OPNAMES
125   C.SPRET   EQU   85   .. SPECIAL RETURN (DECREMENT P-COUNTER)              OPNAMES
126   C.CPZRO   EQU   86   .. ZERO A CAPABILITY                                 OPNAMES
127   C.MOVCP   EQU   87   . TRANSFER CP TIME BETWEEN ABS                       OPNAMES
130   C.MOVMT   EQU   88   . TRANSFER MOT SLOTS BETWEEN ABS                     OPNAMES
131   C.INMTR   EQU   89   . INCREMENT AB CHARGE METER                          OPNAMES
132   C.DLOPR   EQU   90   . DESTROY AN OPERATION                               OPNAMES
133   C.GRAB    EQU   91   . STEAL ECS SPACE                                   OPNAMES
134   C.CPUIN   EQU   92   .. MOVE TIME INTO PROCESS TIMER                      OPNAMES
135   C.CPOUT   EQU   93   .. MOVE TIME OUT OF PROCESS TIMER                    OPNAMES
136   C.STMSG   EQU   94   .. SET MSG MECHANISM IN A PROCESS                    OPNAMES
137   C.CLRMG   EQU   95   .. CLEAR MSG MECHANISM IN A PROCESS                  OPNAMES
140   C.ARMIT   EQU   96   .. ARM INTERRUPTS FOR A PROCESS                      OPNAMES
141   C.DISIT   EQU   97   .. DISARM INTERRUPTS FOR A PROCESS                   OPNAMES
```

```
                                *
                                *
                                *                DESCRIPTOR FOR IPROC ETC
                                *
     0                                  ORG      0
                                *
     0  0000000000000000000002          DATA     2          TYPE
     1  0000000000000000000000          DATA     0
                                *
     2  0000000000000000000005          VFD      60/LGMPSZ            LOGICAL MAP SIZE
     3  0000000000000000000062          VFD      60/CMPMPSZ           COMPILED MAP SIZE
     4  0000000000000000004751          VFD      60/FL      FIELD LENGTH
     5  0000000000000000000417          VFD      60/MAIN    ENTRY POINT
     6  0000000000000000000124          VFD      60/CLSTSZ  CLIST SIZE
     7  0000000000000000000252          VFD      60/SCRSZ   SCRATCH FILE SIZE
    10  0000000000000000003616          VFD      60/FLX     END OF READ ONLY MAP ENTRY
    11  0000000000000000000764          VFD      60/MAXGPNT           SIZE OF GLOBAL DIRECTORY
    12  0000000000000000000103          VFD      60/Y.MAST            START OF BLOCK OF FILLED IN
                                *                                      CLIST ITEMS FROM IPROC
    13  0000000000000000000144          VFD      60/MAXLPNT           LOCAL NAME TABLE SIZE
                                *
    14                          DESCEND BSS      0                    END OF DESCRIPTOR
                                *
                                *
                                *                PARAMETER AREA DEFINITIONS FOR CALLS
                                *
     6                                  ORG      6
                                *
     6                          NWPRCCTP BSS     1          CALL TYPE ( HIDDEN )
     7                          NWPRCTYP BSS     1          NAME OF FILE CONTAINING PROCESS DESCRIPTIONS
    10                                  BSS      1          COUNT OF FOLLOWING DATA BLOCK
    11                          NWPRCBLK BSS     NEWPRCN*1    NAMES TO INITIALIZE LOCAL DIRECTORY
    24                                  BSS      1          INDEX AND COUNT OF CAPABILITY BLOCK
    25                                  BSS      2          INDEXES OF 2 CAPABILITIES
    27                          NWPRCSHT BSS     1          SHUT DOWN DATUM
                                *
    30                          PRMEND  BSS      0          END OF PARAMETER AREA
                                *
                                *
                                *
                                *                NOW ORG TO MAX OF END OF ABOVE TWO AREAS
                                *
                                         IFLT    PRMEND,DESCEND
                                         ENDIF
```

```
                        *
                        *
                        *                   CLIST INDEXES
                        *
                        *
0       CPNTR     SET     0
                        *
                        Y.PARAMS  CBSS    NEWPRCN   PARAMETER BLOCK FOR CALLS
                        Y.NWALLOC CBSS    1         ALLOC BOCK FOR NEW USER PROCESS
                        Y.NWEV    CBSS    1         SHUT DOWN EVENT CHANNEL
                        *
                        Y.CLSTOB  CBSS    1
                        Y.DFILE   CBSS    1
                        Y.INICIL  CBSS    1
                        Y.MPFL    CBSS    1
                        Y.SBCL    CBSS    1
                        Y.SBCLSS  CBSS    1
                        Y.SBFTH   CBSS    1
                        Y.SBSCRF  CBSS    1
                        Y.SVCL    CBSS    1
                        Y.TEMP    CBSS    1
                        Y.NMFL    CBSS    1
                        Y.NWBLOC  CBSS    1
                        Y.NWRTCL  CBSS    1
                        Y.USROOT  CBSS    1
                        Y.SBSON   CBSS    1
                        Y.RTNX    CBSS    RTNCNT
                        *
                        Y.MAST    CBSS    1         BEGGINNING OF ITEMS FILLED IN BY IPROC
                        Y.ROOTCC  CBSS    1
                        Y.NEWF    CBSS    1
                        Y.CALLSB  CBSS    1
                        Y.NULL2   CBSS    2
                        Y.BLDCC   CBSS    1
                        Y.CODEF   CBSS    1
                        Y.GDIRF   CBSS    1
                        Y.GDIRC   CBSS    1
                        Y.ALLOC   CBSS    1
                        Y.BEAD    CBSS    1
                        *
                        Y.LDIRC   CBSS    1         FILLED IN BY ROOT BUT NOT IPROC
                        Y.LDIRF   CBSS    1
                        Y.SHTEV   CBSS    1         SHUT DOWN EVENT CHAN
                        Y.ROOTCL  CBSS    1         CLIST OF ROOT
                        *
                        Y.NULL    CBSS    1         NEVER SET, ALWAYS NULL
                        *
124     CLSTSZ    EQU     CPNTR
```

```
                    *
                    *
                    *                   HEADER OF SUBPROCESS TO BE BUILT
                    *                   WILL BE READ IN HERE
                    *
 30                 HEADER    BSS       0
                    *
 30                 H.TYPE    BSSZ      1           TYPE
 31                           BSSZ      1           ( ZERO )
 32                 H.CLASS   BSSZ      1           NAME OF CLASS CODE
 33                 H.FATHER  BSSZ      1           NAME OF CLASS CODE OF FATHER
 34                 H.INICL   BSSZ      1           NAME OF INITIAL CALL OPERATION
 35                 H.CLIST   BSSZ      1           NAME TO BE USED FOR LOCAL CLIST
 36                 H.SCRF    BSSZ      1           NAME TO BE USED FOR SCRATCH FILE
 37                 H.LMPSZ   BSSZ      1           LOGICAL MAP SIZE
 40                 H.CMPSZ   BSSZ      1           COMPILED MAP SIZE
 41                 H.FL      BSSZ      1           FIELD LENGTH
 42                 H.ENTRY   BSSZ      1           ENTRY POINT
 43                 H.CLSTSZ  BSSZ      1           SIZE OF LOCAL CLIST
 44                 H.SCRSZ   BSSZ      1           SIZE OF SCRATCH FILE
                    *
 45                           BSS       0
                15  H.MAPDX   EQU       *-HEADER    INDEX OF FIRST MAP DESCRIPTOR
                    *
                15  HEADCNT   EQU       *-HEADER
```

```
                                *
                                *
                                *                MAP DESCRIPTORS WILL BE READ IN HERE
                                *
45                              MAPDES    BSS    0
                                *
45                              MPDS.FN   BSSZ   1          NAME OF FILE
46                              MPDS.INX  BSSZ   1          MAP INDEX TOP 30 BITS, FILE ADDRS BOTTOM
47                              MPDS.CM   BSSZ   1          READ ONLY BIT IN SIGN, CM ADDR IN NEXT
                                *                           29 BITS, CM ADDRS + CNT IN BOTTOM 30 BITS
                                *
50                                        BSS    0
                          3     MAPDESSZ  EQU    *-MAPDES
                                *
                                *
                                *                CLIST NAMES TO BE READ IN HERE, ETC
                                *
50                              CLSTNM    BSSZ   1
51                              CLSTX     BSSZ   1          POSITION IN CLIST
                                *
                                *
                                *                XJS PERFORMED HERE
                                *
52                              XJLOC     BSSZ   25
                                *
                                *                USER MAP ACTIONS PERFORMED HERE
                                *
103                             MAPACT    BSSZ   1
104  000000000000000000021      MAPCC     VFD    60/Y.SRCLSS
105                             MAPLX     BSSZ   1
106  000000000000000000017      MAPFL     VFD    60/Y.MPFL
107                             MAPFA     BSSZ   1
110                             MAPCM     BSSZ   1
111                             MAPCNT    BSSZ   1
                                *
                                *                MISC DAATA FOR MKSUBP
                                *
112                             MKSUBP7   BSSZ   1
113                             HPOINT    BSSZ   1
                                *
                                *                DATA FOR NAME FILE READING LOOPS
                                *
114                             NAME      BSSZ   1
115                             NMFLX     BSSZ   1
                                *
                                *          RETURN DATA LOCATIONS
                                *
116                             RTNDTA    BSSZ   RTNCNT+1
167  000000000000000000000      RTNCNT    DATA   0          GUARD ZERO
                                *
                                *                MISC B7 SAVE CELLS
                                *
```

LOW CORE

```
170                     FETENT7   BSSZ   1
171                     SETGLBL7  BSSZ   1
172                     GETMAST7  BSSZ   1
173                     GLBLADD7  BSSZ   1
174                     KILLSUB7  BSSZ   1
175                     NEWPROC7  BSSZ   1
                        *
                        *
                        *                OTHER MISC DATA
                        *
176                     CSVX      BSSZ   1
                        *
177                     REGS      BSSZ   20
                        *
223                     GLBLADDX  BSSZ   1
                        *
224                     NEWLDP    BSSZ   1
                        *
225                     SHTDTM    BSSZ   1          SHUT DOWN DATUM
                        *
                        *                FLAG TO INDICATE NOT FIRST CALL
                        *
226  000000000000000001 AGAIN     DATA   1
                        *
                        *
                        *                DATA AREA FOR ERROR HANDLING
                        *
227                     EFLAG     BSSZ   1
230                     ECLASS    BSSZ   1
231                     ENUMB     BSSZ   1
                        *
232                     EREGS     BSSZ   20B
```

```
                                *
                                *
                                *                NON SCRATCH AREA BEGINS HERE
                                *
  262                           SCRSZ     BSS    0
                                *
                                *
                                *                FIXED IP LISTS
                                *
  252  4000000016000000000103   SAVEREG   MXCAP  SAVE
  253  0000000000000000000177            VFD    60/REGS
                                *
  254  4000000017000000000103   RESTREG   MXCAP  RESTOR
  255  0000000000000000000177            VFD    60/REGS
                                *
  256  0000000000000000000116   BEAD      VFD    60/Y.BEAD
                                *
                                *
  257  4000000007000000000103   MKLCLST   MXCAP  CCLIST
  260  0000000000000000000115            VFD    60/Y.ALLOC,60/Y.LDIRC,60/MAXLPNT
  261  0000000000000000000117
  262  0000000000000000000144
                                *
                                *
  263  4000000010000000000103   MKLCLF    MXCAP  CFILE
  264  0000000000000000000115            VFD    60/Y.ALLOC,60/Y.LDIRF
  265  0000000000000000000120
  266  0000000000000000000001            VFD    60/1,60/*+1
  267  0000000000000000000270
  270  0000000000000000000145            VFD    60/MAXLPNT+1
                                *
                                *
  271  4000000011000000000103   MKLCLBLK   MXCAP  CBLK
  272  0000000000000000000120            VFD    60/Y.LDIRF
  273  0000000000000000000000            VFD    60/0
                                *
  274  4000000047000000000103   MKLCLMP   MXCAP  MPCHRW
  275  0000000000000000000111            VFD    60/Y.RLDCC
  276  0000000000000000000003            VFD    60/LCLMP
  277  0000000000000000000120            VFD    60/Y.LDIRF
  300  0000000000000000000000            VFD    60/0,60/LCLPNT,60/MAXLPNT+1
  301  0000000000000000003617
  302  0000000000000000000145
                                *
                                *
  303  4000000007000000000103   MKSVCLST   MXCAP  CCLIST
  304  0000000000000000000115            VFD    60/Y.ALLOC,60/Y.SVCL
  305  0000000000000000000024
  306  0000000000000000000041            VFD    60/SVCLSZ
                                *
                                *
  307  4000000047000000000103   MKGLBLMP   MXCAP  MPCHRW
  310  0000000000000000000111            VFD    60/Y.RLDCC
```

```
311  0000000000000000002          VFD       60/GLBLMP
312  0000000000000000113          VFD       60/Y.GDIRF
313  0000000000000000000          VFD       60/0,60/GLBLPNT,60/MAXGPNT+1
314  0000000000000003764
315  0000000000000000765
                          *
                          *
316  4000000003000000103  READSELF  MXCAP     READ
317  0000000000000000112            VFD       60/Y.CODEF
320  0000000000000000000            VFD       60/0,60/0.60/SCRS7
321  0000000000000000000
322  0000000000000000252
                          *
                          *
323  4000000030000000103  RETURN    MXCAP     RETURN
                          *
                          *
324  0000000000000000105  NEWFILE   VFD       60/Y.NEWF
                          *
                          *
325  0000000000000000016  CALLSUBP  VFD       60/Y.TNICLL
                          *
                          *
326  4000000026000000103  SETEMSK   MXCAP     FSMLOC
327  0000000000000000330            ITEMS     #+1
330  0200000000000000000            VFD       5/1,55/0  ERROR CALSS 4 FOR DELETE SUBP ERROR
                          *
                          *
331  4000000016000000103  ESAVE     MXCAP     SAVE
332  0000000000000000232            ITEMS     EREGS
                          *
                          *
333  4000000017000000103  ERESTOR   MXCAP     RESTOR
334  0000000000000000232            ITEMS     EREGS
                          *
                          *
335  4000000031000000103  FRETURN   MXCAP     FRETUR
```

```
                                *
                                *
                                *                FIXED RETURN AUTHORIZATIONS
                                *
                                *
336  0000000000000000000000     NEWFX     VFD    30/0,30/0
337  0000000001000000000025               VFD    30/1,30/Y.TEMP
                                *
                                *
340  0000000051000000001160     RTNAUTH   VFD    30/RTNCNT+1,30/RTNDTA
341  0000000050000000000033               VFD    30/RTNCNT,30/Y.RTNX
```

```
                                *
                                *
                                *
                                *                       ERROR CONSTANTS
                                *
                                *
342                             E.BADTYP  BSSZ  1
343                             E.BADCI   BSSZ  1
344                             E.BADSCR  BSSZ  1
345                             E.BADSUB  BSSZ  1
346                             E.BADMAP  BSSZ  1
347                             E.NOFTCH  BSSZ  1
350                             E.LTBFIL  BSSZ  1
351                             E.GTBFIL  BSSZ  1
                                *
                                *                       MASTER CLIST REFERANCES
                                *
352                                       MCAP  CAPIN
353                                       MCAP  CAPOUT
354                                       MCAP  CBLK
355                                       MCAP  CCLIST
356                                       MCAP  CFILE
357                                       MCAP  CSPROC
360                                       MCAP  MPCHRO
361                                       MCAP  MPCHRW
362                                       MCAP  READ
363                                       MCAP  CCC
364                                       MCAP  MKOPR
365                                       MCAP  MVECAP
366                                       MCAP  DELBLK
367                                       MCAP  DELCL
370                                       MCAP  DELFIL
371                                       MCAP  DELSUB
372                                       MCAP  MAPZRO
373                                       MCAP  BLKCAP
374                                       MCAP  CPROC
375                                       MCAP  RETPAR
376                                       MCAP  UDAT
377                                       MCAP  WRITE
400                                       MCAP  RDAT
401                                       MCAP  FSON
402                                       MCAP  FIXD
403                                       MCAP  DSPCAP
404                                       MCAP  UCAP
405                                       MCAP  SENDE
406                                       MCAP  JUMP
407                                       MCAP  MODPC
410                                       MCAP  CPUIN
```

```
                                *
                                *
                                *
                                *                MAIN PROGRAM
                                *
                                *
411                                     BSSZ    6           ALTERNATE ENTRY POINTS
                                *
416  020000117                          JP      ERRC        ERROR CALL ENTRY POINT
417  0130000326000000000001     MAIN    XJ      SETESMSK    SET ESM
421  5110000226                         SA1     AGAIN
                      0311000436        NZ      X1,MAINP    YES
422  5110000006                         SA1     NWPRCCTP    PICK UP POSSIBLE FILE NAME
                      5120000225        SA2     SHTDTM      PICK UP POSSIBLE SHUTDOWN DTM
423  0130000316000000000001             XJ      READSELF    INITIALIZE READ WRITE CORE
425  10611                              BX6     X1
           5160000174                   SA6     NAME        SAVE POSSIBLE NAME
                     10622              BX6     X2
426  5160000225                         SA6     SHTDTM      SAVE POSSIBLE SHUTDOWN DATUM
                                *
427  0130000303000000000001             XJ      MKSVCLST    MAKE SAVE CLIST
431  76600                              SX6     B0
           5160000176                   SA6     CSVX        INITIALIZE POINTER
                                *
432  0130000307000000000001             XJ      MKGLBLMP    MAKE GLOBAL NAME TABLE MAP ENTRY
434  5110003764                         SA1     GLBLPNT
                      0311001073        NZ      X1,MAINR                USER PROCESS CASE
435  0200000443                         JP      MAING                   INITIALIZE CASE
```

```
                                *
                                *                CALL TO CONSTRUCT ANOTHER PROCESS
                                *                        OR TO KILL BUILDER
                                *
 436  5110000006                MAINP     SA1     NWPRCCTP  CHECK TYPE CALL
                 7211777775               SX1     X1-2
 437  0301002060                         ZR      X1,KILLSLF          KILL SELF
                                *
 440  6170000441                         CALL    NEWPROC   CREATE NEW PROCESS
 441  6170000442                         CALL    ERR
 442  6170000443                         CALL    ERR
```

```
                                *
                                *
                                *                       GLOBAL INITIALIZING CASE
                                *
443  7160777776                 MAING       SX6         -1
                  5166003764                SA6         GLBLPNTS
444  6170000445                             CALL        SETGLBLS  MAKE INITIAL GLOBAL ENTRIES
                                *
                                *
                                *                       CREATE CLASS CODE FOR USER ROOT
                                *
445  6110000052                             DOXJ        M.CCC,Y.TEMP
452  5110001065                             ENTERG      XUSEROOT,Y.TEMP
                                *
                                *
                                *                       CREATE OPERATIONS TO CREATE NEW PROCESSES
                                *
                                *
                                *                       FIRST , OLD STYLE OP
                                *
454  6110000052                             DOXJ        M.MKOPR,Y.ALLOC,Y.TEMP,B0,Y.BLDCC,4
465  6110000052                             DOXJ        M.UDAT,Y.TEMP,B0
473  6110000052                             DOXJ        M.UDAT,Y.TEMP,1
501  6110000052                             DOXJ        M.RDAT,Y.TEMP,2,NEWPRCN*1
507  6110000052                             DOXJ        M.BLKCAP,Y.TEMP,3,NEWPRCN
515  6110000052                             DOXJ        M.FIXD,Y.TEMP,B0,B0
523  5110001066                             ENTERG      XNEWPRC,Y.TEMP
                                *
                                *
                                *                       NEXT, NEW STYLE OP
                                *
525  6110000052                             DOXJ        M.MKOPR,Y.ALLOC,Y.TEMP,B0,Y.BLDCC,7
536  6110000052                             DOXJ        M.UDAT,Y.TEMP,B0
544  6110000052                             DOXJ        M.UDAT,Y.TEMP,1
552  6110000052                             DOXJ        M.RDAT,Y.TEMP,2,NEWPRCN*1
560  6110000052                             DOXJ        M.BLKCAP,Y.TEMP,3,NEWPRCN
566  6110000052                             DOXJ        M.UCAP,Y.TEMP,4,ALLOCTYP,-XMANYBTS
577  6110000052                             DOXJ        M.UCAP,Y.TEMP,5,EVTYPE,-XMANYBTS
610  6110000052                             DOXJ        M.UDAT,Y.TEMP,6
616  6110000052                             DOXJ        M.FIXD,Y.TEMP,B0,1
624  5110001067                             ENTERG      XNEWPRC1,Y.TEMP
                                *
                                *
                                *                       NOW CREATE OPERATION TO KILL SELF
                                *
626  6110000052                             DOXJ        M.MKOPR,Y.ALLOC,Y.TEMP,B0,Y.BLDCC,2
637  6110000052                             DOXJ        M.UDAT,Y.TEMP,B0
645  6110000052                             DOXJ        M.UCAP,Y.TEMP,1,OPTYPE,-XMANYBTS
656  6110000052                             DOXJ        M.FIXD,Y.TEMP,B0,2
664  5110001072                             ENTERG      XKILLBLD,Y.TEMP
                                *
                                *
                                *                       NOW GET FILES FROM TAPE
```

```
                                *               AND PLACE IN GLOBAL DIRECTORY
                                *
  666  0130000324000100000002           XJR     NEWFILE,NEWFX           GET NAME FILE
  671  6110000052                       DOXJ    M,MVECAP,Y,TEMP,Y,NMFL,-XMINUS0
  677  76600                            SX6     B0
            5160000115                  SA6     NMFLX       SET POINTER
                                *
  700  6110000052            GETFS1     DOXJ    M,READ,Y,NMFL,-NMFLX,NAME,1
  711  0130000324000100000002           XJR     NEWFILE,NEWFX           GET THE FILE, OR REWIND NLD
  714  5110000115                       SA1     NMFLX
                 7261000001             SX6     X1+1        STEP POINTER
  715  54610                            SA6     A1
            5110000114                  SA1     NAME
  716  0301000722                       ZR      X1,LOCALS               NO MORE FILES
                 5110000114             ENTERG  NAME,Y,TEMP             PLACE IN NAME TABLE
  721  0200000700                       JP      GETFS1
                                *
                                *
                                *               NOW INITIALIZE LOCALS
                                *
  722  0130000257000000000001 LOCALS    XJ      MKLCLST     MAKE LOCAL TABLE CLIST
  724  0130000263000000000001           XJ      MKLCLF      MAKE LOCAL TABEL FILE
  726  0130000271000000000001           XJ      MKLCLBLK    MAKE LOCAL TABLE FILE BLOCK
  730  0130000274000000000001           XJ      MKLCLMP     MAKE LOCAL TABLE MAP ENTRY
  732  7160777776                       SX6     -1
                 5160003617             SA6     LCLPNT      INITIALIZE LOCAL POINTER
                                *
  733  5110001061                       ENTER   XROOT,Y,ROOTCC
  735  5110001062                       ENTER   XBEAD,Y,BEAD
                                *
  737  6110000052                       DOXJ    M,CCC,Y,TEMP
  744  5110001063                       ENTER   XCLASS,Y,TEMP
                                *
  746  6110000052                       DOXJ    M,MKOPR,Y,ALLOC,Y,TEMP,B0,Y,TEMP,B0
  757  5110001064                       ENTER   XCALL,Y,TEMP
                                *
                                *
                                *               NOW CREATE AND CALL SUBPS
                                *
  761  76600                 ILOOP      SX6     B0
            5160000116                  SA6     RTNDTA      ASSURE A ZERO FLAG
  762  6110000052                       DOXJ    M,READ,Y,NMFL,-NMFLX,NAME,1
  773  5110000115                       SA1     NMFLX
                 7261000001             SX6     X1+1        STEP POINTER
  774  54610                            SA6     A1
            5110000114                  SA1     NAME
  775  0301001007                       ZR      X1,IDONE    NO MORE SUBPS
                 5110000114             FETCH   NAME,Y,DFILE
 1000  6170001001                       CALL    MKSUBP
 1001  0130000325000100000002           XJR     CALLSUBP,RTNAUTH
 1004  6170001005                       CALL    GLBLADD     ADD ANY RETURNED ITEMS TO TABLE
 1005  6170001006                       CALL    KILLSUBP    KILL ONE SUBPROCESS
 1006  0200000761                       JP      ILOOP
```

```
                                *
                                *                       ALL DONE
                                *
1007  61100000 52               IDONE     DOXJ        M.MAPZRO,Y.BLDCC,ICLMP,Y.LDIRF
1015  6110000052                          DOXJ        M.DELBLK,Y.LDIRF,RO   DELETE THE BLOCK IN LOCAL TABLE
1023  6110000052                          DOXJ        M.DELFIL,Y.LDIRF      KILL LOCAL TABLE FILE
1030  61100000 52                         DOXJ        M.DELCL,Y.LDIRC       KILL LOCAL TABLE CLIST
1035  6110000052                          DOXJ        M.DELCL,Y.SVCL        KILL SAVE CLIST
1042  6110000052                          DOXJ        M.DSPCAP,Y.SHTEV      SEE IF THERE IS A SHUT DOWN EV
1047  03060001 55                         ZR          X6,IDONE1             NO
                  6110000052              DOXJ        M.SENDE,Y.SHTEV,-SHTDTM       YES
                                *
                                *
1055  0130000323000000000001    IDONE1    XJ          RETURN
                                *
                                *
                                *
1057  7777777777777777777       XMINUS0   DATA        -0
1060  7777777777777777776       XMINUS1   DATA        -1
1061  2217172400000000000       XROOT     DATA        0LROOT
1062  0205010400000000000       XBEAD     DATA        0LBEAD
1063  0314012323000000000       XCLASS    DATA        0LCLASS
1064  0301141400000000000       XCALL     DATA        0LCALL
1065  2523052222171724000       XUSERROOT DATA        0LUSERROOT
1066  0257160527202217030O      XNEWPRC   DATA        0LB.NEWPROC
1067  0257162720220325232       XNEWPRC1  DATA        0LB.NWPRCUSR
1070  000000777777777777        XMANYBTS  DATA        777777777777777B
1071  2410112320221703000       XTHSPRC   DATA        0LTHISPROC
1072  0257131114140214040       XKILLBLD  DATA        0LB.KILLBLD
```

```
                                *
                                *
                                *                       RUN USER PROCESSS CASE
                                *
1073  013000027400000000001     MAINR     XJ          MKLCLMP   MAKE LOCAL NAME TABLE MAP ENTRY
1075  6110000052                          DOXJ        M.DSPCAP,Y.ROOTCL
1102  0306001117                          ZR          X6,MAINR2             (NO ROOTCL AVAILABLE)
                                *
1103  6110000062                MAINR1    DOXJ        M.DSPCAP,M.THSPRC
1110  0306001103                          ZR          X6,MAINR1             WAIT FOR PROCESS CAPABILITY
          6110000052                      DOXJ        M.MVECAP,M.THSPRC,Y.TEMP,-XMINUS0
                                *
                                *                       INITIALIZE LOCALS ( BEYOND WHAT ROOT DID )
                                *
1117  5110001061                MAINR2    ENTER       XROOT,Y.ROOTCC
1121  5110001062                          ENTER       XBEAD,Y.BEAD
1123  5110001071                          ENTER       XTHSPRC,Y.TEMP        (EMPTY IF ROOTCL NOT AVAIL)
                                *
                                *                       NOW GET NAME FILE AND INITIALIZE
                                *
1125  5110000114                          FETCH       NAME,Y.NMFL
1127  76600                               SX6         B0
          5160000115                      SA6         NMFLX
                                *
                                *                       CREATE AND CLL SUBPS
                                *
1130  6110000062                          DOXJ        M.READ,Y.NMFL,-NMFLX.NAME,1
                                *
1141  5110000114                RLOOP     FETCH       NAME,Y.DFILE
1143  6170001144                          CALL        MKSUBP    MAKE THE SUBPROCESS
1144  5110000115                          SA1         NMFLX
              7261000001                  SX6         X1+1
1145  54610                               SA6         A1        STEP POINTER
          6110000062                      DOXJ        M.READ,Y.NMFL,-NMFLX.NAME,1
1156  5110000114                          SA1         NAME
                  0301001162              ZR          X1,RLOOP1             CURRENT SUBPROCESS IS LAST
1157  013000032500000000001              XJ          CALLSUBP
1161  0200001141                          JP          RLOOP
                                *
1162  6110000052                RLOOP1    DOXJ        Y.INICLL,-SHTDTM,Y.SUTEV
                                *
1170  6170001171                RLOOP2    CALL        KILLSUBP  KILL A SUBPROCESS
1171  5110000176                          SA1         CSVX      SEE IF ANY MORE
                  0311001170              NZ          X1,RLOOP2 YES
                                *
1172  0200001007                          JP          IDONE     CLEAN UP
1173  6170001174                          CALL        ERR
                                *
                                *
1174                                      BSS         0
              7776603           M.THSPRC  EQU         -*        REF TO THIS PROC CAP IN ROOT CL
1174  4000000007000000000122    *         VFD         1/1H29/RX.PROC,30/Y.ROOTCL
```

```
                                *
                                *
                                *                THIS CODE ENTERED ON AN ERROR CALL
                                *                CONVERTS ERROR TO AN FRETURN
                                *
 1175  0130000331000000000001   ERRC     XJ       ESAVE      SAVE REGISTERS
 1177  0130000326000000000001              XJ       SETEMSK    RESET ERROR SELECTION MASK
 1201  5110000227                         SA1      EFLAG      TEST FLAG
                 0301001203               ZR       X1,ERRC1   NOT ON, OK, SO PROCEED
 1202  6170001203                         CALL     ERR        ON, SO LAST ERROR NOT FINISHED, UGH
 1203  7160000001              ERRC1      SX6      1          SET
                 5160000227               SA6      EFLAG        ERROR FLAG
 1204  5110000006                         SA1      6          SAVE
                 10611                    BX6      X1           CLASS
 1205  5160000230                         SA6      ECLASS         AND
                 5110000007               SA1      7                NUMBER
 1206  10611                              BX6      X1                 .
           5160000231                     SA6      ENUMB
 1207  0130000333000000000001             XJ       ERESTOR    RESTORE REGISTERS
 1211  0130000335000000000001             XJ       FRETURN    CONVERT TO AN FRETURN
```

```
                                *
                                *
                                *                       ACTUAL SUBPROCESS CONSTRUCTOR
                                *
                                *                       HAVE DESCRIPTOR FILE AT Y.DFILE
                                *
1213  76670                     MKSUBP    SX6     B7
            5160000172                    SA6     MKSUBP7
                                *
                                *
                                *                       PRE READ CELL 0 TO COMPUTE ADDRES OF HEADER
                                *
1214  6110000052                          DOXJ    M.READ,Y.DFILE,B0,HEADER,1
1225  5130000030                          SA3     HEADER
                  21336                   AX3     30
                      73330               SX3     X3
1226  73630                               SX6     X3
            5160000173                    SA6     HPOINT    NOW HAVE COMPUTED ACTUAL ADDRESS OF HEAD
                                *
                                *
                                *                       GET HEADER, CHECK TYPE
                                *
1227  6110000052                          DOXJ    M.READ,Y.DFILE,X3,HEADER,HEADCNT
1240  5110000030                          SA1     H.TYPE
                  71200000001             SX2     1
1241  13112                               BX1     X1-X2
            0301001244                    ZR      X1,MKSUBP1
1242  6160000342                          SB6     E.BADTYP
1243  6170001244                          CALL    ERR
                                *
1244  5110000032                MKSUBP1   FETCH   H.CLASS,Y.SBCLSS     GET CLASS CODE
1246  5110000033                          FETCH   H.FATHER,Y.SBFTH      GET FATHER CLASS CODE
1250  5110000034                          FETCH   H.INICLL,Y.INICLL     GET INITIAL CALL
                                *
                                *                       MAKE CLIST, SCRATCH FILE, AND PLACE IN LOCAL DIRECTORY
                                *
1252  6160000343                          SB6     E.BADCL
                  61110000052             DOXJ    M.CCLIST,Y.ALLOC,Y.SBCL,-H.CLSTSZ
1261  5110000035                          ENTER   H.CLIST,Y.SBCL
1263  6160000344                          SB6     E.BADSCR
                                *
                  51110000044             SA1     H.SCRSZ   . GET SIZE WORD IN DESCRIPTOR
1264  10611                               BX6     X1
            5160000045                    SA6     MAPDES    . AND STASH IN TEMPORARY
1265  0326001270                          PL      X6,MKSCR  . GO AHEAD IF LENGTH IS POSITIV
                                *
                                *                       ELSE SUBTRACT FIRST FROM LIMIT TO GET SIZE
                                *
                                *       VFD     1/FLAG,29/FIRST,30/LIMIT
                                *
                  43036                 MX0     30
                       15210            BX2     -X0*X1    . LIMIT
1266  20136                               LX1     30
```

```
                43037
                     15610
                          376026
1267  5160000045                    MX0     60-29
                                    BX6     -X0*X1      . FIRST
                                    IX6     X2-X6       . COUNT
                                    SA6     MAPDES      . AND STORE IN TEMPORARY
                      *
1270                  MKSCR         BSS     0
                      *
                      *             NOTE SIZE IS TAKEN FROM TEMPORARY
                      *
1270  6110000052                    DOXJ    M.CFILE,Y.ALLOC,Y.SBSCRF,1,XJLOC+5,-MAPDES
1301  6110000052                    DOXJ    M.CBLK,Y.SBSCRF,B0
1307  5110000036                    ENTER   H.SCRF,Y.SBSCRF
                      *
                      *             CREATE SUBPROCESS
                      *
1311  6160000345                    SB6     E.BADSUB
                     6110000052     SETXJ   M.CSPROC,V.SBCLSS,Y.SBFTH,-H.LMPSZ,-H.CMPSZ
1320  7110777736                    XDOXJ   -H.FL,-H.ENTRY,Y.SBCI
                      *
                      *             CONSTRUCT MAP ENTRIES
                      *
1325  5110000113                    SA1     HPOINT
                         7261000015 SX6     X1+H.MAPDX
1326  54610                         SA6     A1
                      *
1327  6110000052      MKSUBPM1      DOXJ    M.READ,Y.DFILE,-HPOINT,MAPDES,MAPDESSZ
1340  5110000045                    SA1     MAPDES
                           0331001342 NZ     X1,MKSUBPM2
1341  0331001362                    NG      X1,MKSUBPC1         BEGIN WORKING ON CLIST
                      *
1342  5110000045      MKSUBPM2      FETCH   MPDS.FN,Y.MPFL      ( GET FILE )
1344  5110000046                    SA1     MPDS.INX
                          43036     MX0     60-30
                               15610 BX6     -X0*X1
1345  5160000107                    SA6     MAPFA               ( FILE ADDRESS )
                          20136     LX1     30
                               15610 BX6     -X0*X1
1346  5160000105                    SA6     MAPLX               ( LOGICAL INDEX )
                          5110000047 SA1     MPDS.CM
1347  0331001351                    NG      X1,MKSUBPM3
                          5120000361 SA2     -M.MPCHRW            ( READ WRITE MAP ENTRY )
1350  0200001352                    JP      MKSUBPM4
1351  5120000360      MKSUBPM3      SA2     -M.MPCHRO            ( READ ONLY MAP ENTRY )
1352  10622           MKSUBPM4      BX6     X2
                     5160000163     SA6     MAPACT
                               15210 BX2     -X0*X1
1353  20136                         LX1     30
                          43037     MX0     60-29
                               15610 BX6     -X0*X1
1354  5160000110                    SA6     MAPCM               ( CM ADDRESS )
                          376036    IX6     X2-X6
1355  5160000111                    SA6     MAPCNT              ( COUNT )
                          6160000346 SB6     E.BADMAP
```

```
1356  0130000103000000001          XJ      MAPACT              MAKE THE MAP ENTRY
                                   *
1360  5110000113                   SA1     HPOINT
                 7261000003        SX6     X1+MAPDES2
1361  54610                        SA6     A1                  STEP POINTER
            020000001357           JP      MKSUBPM1
                                   *
                                   *       PLACE ITEMS IN CLIST
                                   *
1362  5110000113          MKSUBPC1 SA1     HPOINT
                 7261000001        SX6     X1+1
1363  54610                        SA6     A1                  STEP POINTER
            76600                  SX6     B0
                 5160000051        SA6     CLSTX               INITIALIZE CLIST INDEX
                                   *
1364  6110000052          MKSUBPC2 DOXJ    M.READ.Y.DFILE.-HPOINT.CLSTNM.1
1375  5110000050                   SA1     CLSTNM
                 0311001377        NZ      X1.MKSUBPC3
1376  0331001413                   NG      X1.MKSUBPF1         END OF LIST
                 0200001407        JP      MKSUBPC4            SKIP THIS ENTRY
                                   *
1377  5110000050          MKSUBPC3 FETCH   CLSTNM.Y.CLSTOB
1401  6110000052                   DOXJ    M.CAPOUT.Y.SBCL.-CLSTX.Y.CLSTOB
                                   *
1407  5110000051          MKSUBPC4 SA1     CLSTX
                 7261000001        SX6     X1+1
1410  54610                        SA6     A1                  STEP INDEX
            5110000113             SA1     HPOINT
1411  7261000001                   SX6     X1+1
                 54610             SA6     A1                  STEP INDEX
1412  0200001364                   JP      MKSUBPC2
                                   *
                                   *       SAVE TEMPORARY OBJECTS
                                   *
1413  5130000176          MKSUBPF1 SA3     CSVX
                 6110000052        DOXJ    M.CAPOUT.Y.SVCL.X3.Y.SBCL
1422  6110000052                   DOXJ    M.CAPOUT.Y.SVCL.X3+1.Y.SBSCRF
1430  6110000052                   DOXJ    M.CAPOUT.Y.SVCL.X3+1.Y.SBCLSS
1436  7263000001                   SX6     X3+1
                 5160000176        SA6     CSVX                SAVE SAVE LIST INDEX
                                   *
1437  5110000112                   SA1     MKSUBP7
                 63710             SB7     X1
1440  0270000000                   JP      B7
```

```
                                *
                                *
                                *
                                *                       THIS SUBRPUTINE CREATES AN OTHER PROCESS
                                *                               WITH A BUILDER
                                *
                                *                       USES MASTER ALLOCATION BLOCK FOR NOW
                                *
1441  76670                     NEWPROC   SX6     B7
            5160000175                    SA6     NEWPROC7
                                *
1442  5110000006                        SA1     NWPRCCTP                SEE IF NEW KIND OF CALL
                  0311001457            NZ      X1,NEWPROC0             ( YES )
                                *
1443  6110000052                        DOXJ    M.MVECAP,Y.ALLOC,Y.NWALLC,-XMINUS0    ( NO )
1451  6110000052                        DOXJ    M.MVECAP,Y.NULL,Y.NWFV,-XMINUS0
                                *
                                *                       CREATE CLIST FOR NEW PROCESS
                                *
1457  6110000052                NEWPROC0  DOXJ    M.CCLIST,Y.NWALLC,Y.NWRTCL,ROOTCLSZ
                                *
                                *                       CREATE ITEMS FOR NEW CLIST AND INSERT IN THE CLIST
                                *
1465  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.MAST,Y.MAST
1473  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.SBCC,Y.BLDCC
1501  5110001065                        FETCH   XUSEROOT,Y.USROOT
1503  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.SBFTH,Y.USROOT
1511  6110000052                        DOXJ    M.CFILE,Y.NWALLC,Y.TEMP,1,XJLOC+5,SCREZ
1522  6110000052                        DOXJ    M.CBLK,Y.TEMP,B0
1530  6110000052                        DOXJ    M.WRITE,Y.TEMP,NWPRCCTP,NWPRCTYP,1
1541  6110000052                        DOXJ    M.WRITE,Y.TEMP,SHTDTM,NWPRCSHT,1
1552  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.SBSCR,Y.TEMP
1560  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.SBCDF,Y.CODEF
1566  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.SBCAL,Y.CALLSB
1574  6110000052                        DOXJ    M.CCLIST,Y.NWALLC,Y.NWBLDC,CLSTSZ
1602  6110000052                        DOXJ    M.CAPOUT,Y.NWRTCL,RX.SBCL,Y.NWBLDC
                                *
                                *                       NOW CREATE AND PLACE ITEMS IN THE NEW PROCESS
                                *                       BUILDER CLIST
                                *
1610  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.MAST,Y.MAST
1616  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.BOOTCC,Y.USROOT
1624  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.CALLSB,Y.CALLSB
1632  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.BLDCC,Y.BLDCC
1640  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.CODEF,Y.CODEF
1646  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.GDIRF,Y.GDIRF
1654  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.GDIRC,Y.GDIRC
1662  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.SHTEV,Y.NWEV
1670  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.ALLOC,Y.NWALLC
1676  6110000052                        DOXJ    M.CAPOUT,Y.NWBLDC,Y.ROOTCL,Y.NWRTCL
                                *
                                *                       MABE SHOULD MAKE AN ALLOCATION BLOCK >
                                *
```

```
                                *
                                *                FINALLY MAKE UP A LOCAL DIRECTORY FOR NEW PROCESS
                                *                PRE INITIALIZE IT AND PLACE IN BUILDER CLIST
                                *
1704  611000005 2                        DOXJ     M.CCLIST,Y.NWALLC,Y.TEMP,MAXLPNT
1712  76600                              SX6      B0
          5160000224                     SA6      NEWLDP
                                *
1713  5110000224                NEWPROC1 SA1      NEWLDP
                52110000011              SA1      X1+NWPRCBLK
1714  0301001725                         ZR       X1,NEWPROC2          NO MORE ENTRIES FOR NEW LOCAL TABLE
                611000005 2              DOXJ     M.CAPOUT,Y.TEMP,-NEWLDP,X3+Y.PARAMS
1723  5110000224                         SA1      NEWLDP
                72611000001              SX6      X1+1
1724  54610                              SA6      A1          STEP POINTER
          0200001713                     JP       NEWPROC1
                                *
1725  611000005 2               NEWPROC2 DOXJ     M.CAPOUT,Y.NWBLDC,Y.=DIRC,Y.TEMP
1733  6110000052                         DOXJ     M.CFILE,Y.NWALLC,Y.TEMP,1,XJLOC+5,MAXLPNT+1
1744  6110000052                         DOXJ     M.CBLK,Y.TEMP,B0
1752  611000005 2                        DOXJ     M.WRITE,Y.TEMP,1,NWPRCBLK,-NEWLDP
1763  5110000224                         SA1      NEWLDP
                72677777776              SX6      X1-1
1764  54610                              SA6      A1          INITIAL VALUE OF LCLPNT
          611000005 2                    DOXJ     M.WRITE,Y.TEMP,B0,NEWLDP,1
1775  611000005 2                        DOXJ     M.CAPOUT,Y.NWBLDC,Y.=DIRF,Y.TEMP
                                *
                                *                NOW CREATE THE PROCESS
                                *
2003  611000005 2                        SETXJ    M.CPROC,Y.NWALLC,Y.TEMP,N.ECWDS,N.STKSZ
2012  7110000031                         YSETXJ   Y.USROOT,R.LGMPSZ,R.CMPSZ,ROOTSZ
2016  7110000013                         YSETXJ   R.FNTRY,Y.NWRTCL
2021  7110000112                         YSETXJ   Y.CODEF,ROOT0,B0,ROOTSZ1
2025  7110000112                         XDOXJ    Y.CODEF,ROOT1,B0,ROOTSZ1,ROOTSZ2
2033  6110000052                         DOXJ     M.CAPOUT,Y.NWRTCL,RX.PROC,Y.TEMP
2041  611000005 2                        DOXJ     M.CPUTN,Y.NWALLC,Y.TEMP,-TIME
                                *
                                *                NOW RETURN TO USER WITH PROCESS
                                *
2047  611000005 2                        DOXJ     M.RETPAR,-ZERO,-RTNTEMP
                                *
                                *
2055  000000000000000000000     ZERO     VFD      30/0,30/0
2056  000000000100000000025     RTNTEMP  VFD      30/1,30/Y.TEMP
2057  000000020000000000000     TIME     VFD      23/1,37/0  . 2**37 MICRO SECONDS IS OVER ONE DAY
```

```
                                *
                                *
                                *       THIS CODE DESTROYS LOCAL DIRECTORY AND SAVE CLIST,
                                *       RESETS PCOUNTER IN ROOT, PUTS USER RECALL IN ROOT CL,
                                *       AND JUMP RETURNS TO ROOT
                                *
                                *               ROOT THEN DESTROYS BUILDER AND RECALLS USER
                                *
2060  6110000052                KILLSLF   DOXJ    M.DSPCAP,Y.ROOTCL
2065  0306002144                          ZR      X6,KILLSLF1           (ROOT NOT AVAIL FOR THIS PURPOSE)
                                *
                    6110000052          DOXJ    M.MAPZRO,Y.BLDCC,ICLMP,Y.LDIRF
2074  6110000052                        DOXJ    M.DELBLK,Y.LDIRF,R0
2102  6110000052                        DOXJ    M.DELFIL,Y.LDIRF
2107  6110000052                        DOXJ    M.DELCL,Y.LDIRC
2114  6110000052                        DOXJ    M.DELCL,Y.SVCL
2121  6110000052                        DOXJ    M.MODPC,Y.ROOTCC,-XMINUS1,R.SCND
2127  6110000052                        DOXJ    M.CAPOUT,Y.ROOTCL,RX.SBCAL,Y.PARAMS+0
2135  6110000052                        DOXJ    M.JUMP,Y.ROOTCC,-XMINUS1
2143  6170002144                        CALL    ERR
                                *
                                *
                                *               ROOT NOT AVAIL FOR THIS PURPOSE
                                *               SIMULATE THIS REQUEST, DO NOT ACTUALLY
                                *               DESTROY BUILDER
                                *
2144  6110000052                KILLSLF1  DOXJ    M.MODPC,Y.BLDCC,-XMINUS1,KILLSLF2
2152  6110000052                          DOXJ    M.JUMP,Y.BLDCC,-XMINUS1
                                *
2160  6110000052                KILLSLF2  DOXJ    Y.PARAMS+0  RECALL USER
                                *
2165  6170002166                KILLSLF3  CALL    KILLSUBP  KILL A SUBPROCESS
2166  5110000176                          SA1     CSVX      SEE IF ANY MORE
                    0311002165            NZ      X1,KILLSLF3         YES
2167  0200001007                          JP      IDONE     CLEAN UP AND GO AWAY
```

```
                                *
                                *
                                *                FETCH A DIRECTORY ENTRY
                                *
                                *                HAVE NAME IN X1, CLIST INDEX IN X5
                                *
2170  76670                     FETCH     SX6    B7
            5160000170                    SA6    FETENT7
2171  5130003617                          SA3    LCLPNT
                  63330                   SB3    X3
                                *
2172  0730002206                FETCHL1   LT     B3,B0,FETCHG          LOCAL SCAN DONE, TRY GLOBAL
                  5133003620              SA3    B3+LCLNMS
2173  13313                               BX3    X1-X3
            0313002204                    NZ     X3,FETCHL2
2174  0333002204                          NG     X3,FETCHL2
                                *
                                *                FOUND AND IS LOCAL
                                *
                  6110000052              DOXJ   M,CAPTN,Y,LDIRC,B3,X5
                                *
2202  5110001170                FETCHF1   SA1    FETENT7
                  63710                   SB7    X1
2203  0270000000                          JP     B7
                                *
2204  6133777776                FETCHL2   SB3    B3-1          STEP TO NEXT ENTRY
                  0200002172              JP     FETCHL1
                                *
                                *
                                *
2205  5130003764                FETCHG    SA3    GLBLPNT
                  63330                   SB3    X3
                                *
2206  0730002220                FETCHG1   LT     B3,B0,FETCHX          GLOBAL SCAN DONE, NOT FOUND
                  5133003765              SA3    B3+GLBLNMS
2207  13313                               BX3    X1-X3
            0313002217                    NZ     X3,FETCHG2
2210  0333002217                          NG     X3,FETCHG2
                                *
                                *                FOUND AND IS GLOBAL
                                *
                  6110000052              DOXJ   M,CAPTN,Y,GDIRC,B3,X5
2216  0200002202                          JP     FETCHF1
                                *
                                *
2217  6133777776                FETCHG2   SB3    B3-1          STEP TO NEXT ENTRY
                  0200002206              JP     FETCHG1
                                *
                                *                NOT FOUND
                                *
2220  6160000347                FETCHX    SB6    E,NOFTCH
2221  6170002222                          CALL   ERR
```

```
                                *
                                *
                                *                PLACE CAPABILITY IN LOCAL TABLE
                                *
                                *                NAME IN X1, CLIST INDEX IN X5
                                *
2222  76670                     ENTER     SX6      B7
            5160000170                    SA6      FETENT7
2223  5130003617                          SA3      LCLPNT
                  7263000001              SX6      X3+1
2224  54630                               SA6      A3
            63360                         SB3      X6
                  6120000144              SB2      MAXLPNT
2225  0723002235                          LT       B2,B3,ENTERX
                  1061                    BX6      X1
2226  5163003620                          SA6      B3+LCLNMS
                  6110000052              DOXJ     M.CAPOUT,Y.LDIRC,B3,X5
2234  0400002202                          JP       FETCHF1
                                *
                                *                TABLE FULL
                                *
2235  6160003560                ENTERX    SB6      E.LTBFUL
2236  6170002237                          CALL     ERR
                                *
                                *
                                *
                                *
                                *                PLACE CAPABILITY IN GLOBAL TABLE
                                *
                                *                NAME IN X1, CLIST INDEX IN X5
                                *
2237  76670                     ENTERG    SX6      B7
            5160000170                    SA6      FETENT7
2240  5130003764                          SA3      GLBLPNT
                  7263000001              SX6      X3+1
2241  54630                               SA6      A3
            63360                         SB3      X6
                  6120000764              SB2      MAXGPNT
2242  0723002252                          LT       B2,B3,ENTERGX
                  1061                    BX6      X1
2243  5163003765                          SA6      B3+GLBLNMS
                  6110000052              DOXJ     M.CAPOUT,Y.GDIRC,B3,X5
2251  0200002202                          JP       FETCHF1
                                *
                                *                TABLE FULL
                                *
2252  6160003551                ENTERGX   SB6      E.GTBFUL
2253  6170002254                          CALL     ERR
```

```
                                *
                                *
                                *                THIS SUBROUTINE OBTAINS CAPABILITIES FROM
                                *                MASTER CLIST INDEX X5
                                *                AND PLACES THEM AT Y.TEMP
                                *
2254  76670                     GETMAST   SX6      B7
            5160000172                    SA6      GETMAST7
2255  6110000052                          DOXJ     M.CAPIN,Y.MAST,X5,Y.TEMP
2263  5110000172                          SA1      GETMAST7
                  63710                   SB7      X1
2264  0270000000                          JP       B7
                                *
                                *
                                *                THIS SUBROUTIENE PLACES RETURNED ITEMS FROM
                                *                LAST SUBPROCESS CALLED IN GLOBAL TABLE
                                *
2265  76670                     GLBLADD   SX6      B7
            5160000173                    SA6      GLBLADD7  SAVE B7
                      76600               SX6      B0
2266  5160000223                          SA6      GLBLADDX  INITIALIZE POINTER
                                *
2267  5120000223                GLBLADD1  SA2      GLBLADDX
                  7265000001              SX6      X2+1      STEP POINTER
2270  54620                               SA6      A2
            5212000176                    SA1      X2+RTNDTA PICK UP POSSIBLE NAME
2271  0301002274                          ZR       X1,GLBLADD2        ALL DONE AS NAME = 0
                  7255000033              SX5      X2+Y.RTNX          COMPUTE CLIST INDEX
2272  6170002273                          CALL     ENTERG    PLACE IN NAME TABLE
2273  0200002267                          JP       GLBLADD1
                                *
2274  76600                     GLBLADD2  SX6      B0        RESET GUARD 0 AT START
            5160000176                    SA6      RTNDTA
2275  5110000173                          SA1      GLBLADD7
                  63710                   SB7      X1
2276  0270000000                          JP       B7
                                *
                                *
                                *                THIS SUBROUTINE KILLS MOST RECENT
                                *                UNKILLED SUBPROCESS
                                *
2277  76670                     KILLSUBP  SX6      B7
            5160000174                    SA6      KILLSUB7
2300  5130000176                          SA3      CSVX
                  0303002357              ZR       X3,KILLSUBX        NO EXISITING SUBPROCESS
2301  6110000052                          DOXJ     M.CAPIN,Y.SVCL,X3-1,Y.SBCLSS
2307  6110000052                          DOXJ     M.CAPIN,Y.SVCL,X3-1,Y.SBSCRF
2315  6110000052                          DOXJ     M.CAPIN,Y.SVCL,X3-1,Y.SBCL
2323  73630                               SX6      X3
            5160000176                    SA6      CSVX      RESET POINTER
                                *
                                *
2324  6110000052                KILLSUB1  DOXJ     M.MVECAP,Y.SBCLSS,Y.SBSON,-XMINUS0
```

```
2332  6110000052                    SETXJ   M.DELSUB,Y.SBSON
2335  0130000052000000000001        XJF     XJLOC,KILLSUBF
                                    *
2337  6110000052                    KILLSUB2 DOXJ   M.DELBLK,Y.SBSCRF,0
2345  6110000052                    DOXJ    M.DELFIL,Y.SBSCRF
2352  6110000052                    DOXJ    M.DELCL,Y.SBCL
                                    *
2357  5110000174                    KILLSUBX SA1    KILLSUB7
                  6371 0                    SB7     X1
2360  0270000000                    JP      B7
                                    *
                                    *
                                    *                       FRETURN ON KILL SUBPROCESS, AT ONE OF 2 PLACES
                                    *
                          4         E.SUBP  EQU     4       MUST CORRESPOND TO MASK AT SETEMSK
                         13         E.NLEAF EQU     11
                                    *
2361  5110000227                    KILLSUBF SA1    EFLAG   SEE IF THIS WAS ERROR
                  0311002363                NZ      X1,*+2
2362  6170002363                    CALL    ERR     NO, WASNT ERROR
                                    *
2363  5110000230                    SA1     ECLASS
                  7120000004                SX2     E.SUBP  CHECK ERROR CLASS
2364  37212                         IX2     X1-X2
                  0302002366                ZR      X2,*+2
2365  6170002366                    CALL    ERR     WRONG CLASS
                                    *
2366  5110000231                    SA1     ENUMB   CHECK ERROR NUMBER
                  7120000013                SX2     E.NLEAF
2367  37212                         IX2     X1-X2
                  0302002371                ZR      X2,*+2
2370  6170002371                    CALL    ERR     WRONG ERROR NUMBER
                                    *
2371  76600                         SX6     B0
                  5160000227                SA6     EFLAG   RESET FLAG
2372  6110000052                    DOXJ    M.FSON,Y.SBSON,1,Y.SBSON        ( FIND SON )
2400  6110000052                    SETXJ   M.DELSUB,Y.SBSON
2403  0130000052000000000001        XJF     XJLOC,KILLSUBF          ( MAY ALSO CAUSE ERROR )
2405  0400002324                    JP      KILLSUB1                ( OK, GO BACK AN TRY AGAIN ON 1ST )
```

```
                                *
                                *
                                *
                                *                THIS SUBROUTINE XFERS B2 ITEMS
                                *                        ( OR 5, WHICH EVER IS LESS )
                                *                FROM X1, X2, . . . XE TO B1, B1+1, . . B1+4
                                *
                                *                IF XN IS POSITIVE, CONTENTS OF XN IS XFERED
                                *                IF XN IS NEGATIVE, CONTENTS OF CELL ADDRESS -XN
                                *
                                *                X1 WILL BE DESTROYED
                                *
                                *                B1 IS ADVANCED AND B2 DECREMENTED BY 1 FOR EACH XFER
                                *
2406  43074                     SET       MX0    60
            66570                         SB5    B7
                  10611                   BX6    X1
2407  6170002410                          CALL   SETA
2410  10622                               BX6    X2
2411  6170002412                          CALL   SETA
2412  10633                               BX6    X3
2413  6170002414                          CALL   SETA
2414  10644                               BX6    X4
2415  6170002416                          CALL   SETA
2416  10655                               BX6    X5
2417  6170002420                          CALL   SETA
                                *
2420  66750                     SETB      SB7    B5
            0270000000                    JP     B7
                                *
                                *
2421  0602002420                SETA      GE     B0,B2,SETA
                  0324002423              PL     X6,SETA1
2422  13660                               BX6    X6-X0
            53160                         SA1    X6
                  10611                   BX6    X1
2423  56610                     SETA1     SA6    B1
            6111000001                    SB1    B1+1
2424  0122777776                          SB2    B2-1
                  0270000000              JP     B7
```

```
                                *
                                *
                                *                       ERROR SUBROUTINE
                                *
                                *                       READ VERSION
                                *
2425  0130000252000000000001    ERR         XJ          SAVEREG
2427  0130000245000000000001                XJ          DSPBEAD
2431  0306002447                            ZR          X6,STOP   (LIVE CASE)
                    6160000004                SB6         4
2432  0130000256000000000001                XJ          BEAD
2434  0200002434                +           JP          *
                                *
                                *
                                *                       DEBUG
                                *
2435  0130000252000000000001    DEBUG       XJ          SAVEREG
2437  0130000245000000000001                XJ          DSPBEAD
2441  0306002444                            ZR          X6,DEBUGX (LIVE CASE)
                    6160000004                SB6         4
2442  0130000256000000000001                XJ          BEAD
2444  0130000254000000000001    DEBUGX      XJ          RESTREG
2446  0270000000                            JP          B7
                                *
                                *
                                *                       STOP
                                *
2447  0200002447                STOP        JP          STOP
                                *
                                *
                                *
2450  4000000020000000010003    DSPBEAD     MXCAP       DSCAP
2451  0000000000000000000116                vFD         60/Y,BEAD
```

```
                    *
                    *
                    *
                    *                   ASSIGNMENT OF CLIST INDEXES FOR USER PROCESS ROOT
                    *
2452                LCNTR     BSS       0
                    *
   0                          ORG       0
                    *
   0                RX.MAST   BSS       1         MASTER CLIST
   1                RX.SBCC   BSS       1         BUILDER CLASS CODE
   2                RX.SBFTH  BSS       1         CLASS CODE OF ROOT ( FATHER OF BUILDER )
   3                RX.SBSCR  BSS       1         SCRATCH FILE FOR BUILDER
   4                RX.SBCDF  BSS       1         CODE FILE FOR BUILDER
   5                RX.SBCAL  BSS       1         CALL ON BUILDER
   6                RX.SBCL   BSS       1         C LIST FOR BUILDER
   7                RX.PROC   BSS       1         USER PROCESS ( APPEARENCE IS DELAYED )
                    *
  10                ROOTCLSZ  BSS       0
                    *
                    *
2452                          ORG       LCNTR
```

```
*
*
*                       MACROS FOR ROOT OF A PROCESS
*
R.XJ        MACRO       LOC
+           VFD         12/0130B,18/LOC,30/0
            ENDM
*
*
R.MXCAP     MACRO       NAME
+           VFD         1/1,29/C.NAME,30/RX.MAST
            ENDM
*
*
R.CALL      MACRO       LOC
+           SB7         *+1
            JP          LOC
            ENDM
```

```
                                    *
                                    *
                                    *                   THIS IS THE CODE FOR A PROCESS ROOT
                                    *
    2452                            ROOT0   BSS     0
                                    *
                                    *
      0                                     LOC     0
                                    *
      0                                     BSSZ    2           2 ZERO CELLS
      2                                     BSSZ    6           SKIP SOME MORE CELLS
                                    *
                          2462      ROOT1   EQU     *0          END OF FIRST MAP ENTRY
                            10      ROOTSZ  EQU     *L
                                    *
                                    *
     10  0200000014                        JP      R.MAIN      INITIAL SUBPROCESS ENTRY
     11                                     BSSZ    2           ALTERNATE ENTRY POINTS
     13                             R.ENTRY BSSZ    1           NORMAL ENTRY POINT ( UNUSED )
                                    *
     14  0130000033000000000000     R.MAIN  R.XJ    R.CSUB      CREAT SUBPROCESS BUILDER
     15  0130000043000000000000             R.XJ    R.CMAP1     CREATE MAP ENTRY 1
     16  0130000052000000000000             R.XJ    R.CMAP2     CREATE MAP ENTRY 2
                                    *
     17  0130000061000000000000             R.XJ    R.CALLSB    CALL BUILDER
     20  0170000021                         R.CALL  R.DBLD      DELETE BUILDER
                                    *
     21  0130000075000000000000     R.MAIN1 R.XJ    R.DPR       DELETE OWN PROCESS
     22  0200000022                 *       JP      *           WAIT FOR DESTRUCTION
                                    *
                                    *
                                    *
                                    *                   NOTE.  CLIST. ACCOUNTING BLOCK STILL AROUND?
                                    *
                                    *
                                    *                   CODE TO DESTROY BUILDER AND RECALL USER
                                    *                           ENTERED BY BUILDER BY SETTING PONTR
                                    *                           AND JUMP RETURN
                                    *
                                    *                   EXPECTS TO FIND RECALL ON USER IN RX.SBCAL
                                    *
     23  0170000024                 R.SCND  R.CALL  R.DBLD      DELETE BUILDER
     24  0130000061000000000000             R.XJ    R.CALLSB    RECALL USER
     25  0200000021                         JP      R.MAIN1
                                    *
                                    *
                                    *                   CODE TO DELETE BUILDER
                                    *
     26  0130000062000000000000     R.DBLD  R.XJ    R.DSUB      DELTE BUILDER SUBPROCES
     27  0130000064000000000000             R.XJ    R.DCL       DELTE BUILDER CLIST
     30  0130000066000000000000             R.XJ    R.DBK       DELETE FILE BLOCK
     31  0130000071000000000000             R.XJ    R.DFL       DELETE FILE
     32  0270000000                         JP      B7
```

```
                                *
                                *
                                *                       IP LISTS FOR ROOT
                                *
     33  4000000014000000000    R.CSUB      R.MXCAP     CSPROC
     34  0000000000000000001                 ITEMS       RX.SBCC,RX.SBFTH
     36  0000000000000000005                 ITEMS       LGMPSZ,CMPMPSZ
     40  00000000000000004751                ITEMS       FL.MAIN,RX.SBCL
                                *
     43  4000000047000000000    R.CMAP1     R.MXCAP     MPCHRW
     44  0000000000000000001                 ITEMS       RX.SBCC,0
     46  0000000000000000003                 ITEMS       RX.SBSCR
     47  0000000000000000000                 ITEMS       0,0,SCRSZ
                                *
     52  4000000046000000000    R.CMAP2     R.MXCAP     MPCHRO
     53  0000000000000000001                 ITEMS       RX.SBCC,1
     55  0000000000000000004                 ITEMS       RX.SBCDF
     56  0000000000000000252                 ITEMS       SCRSZ,SCRSZ,FLX-SCRSZ
                                *
     61  0000000000000000005    R.CALLSB    ITEMS       RX.SBCAL
                                *
     62  4000000072000000000    R.DSUB      R.MXCAP     DELSUB
     63  0000000000000000001                 ITEMS       RX.SBCC
                                *
     64  4000000057000000000    R.DCL       R.MXCAP     DELCL
     65  0000000000000000006                 ITEMS       RX.SBCL
                                *
     66  4000000042000000000    R.DBK       R.MXCAP     DELBLK
     67  0000000000000000003                 ITEMS       RX.SBSCR,0
                                *
     71  4000000043000000000    R.DFL       R.MXCAP     DELFIL
     72  0000000000000000003                 ITEMS       RX.SBSCR
                                *
     73  4000000020000000000    R.DSPSIF    R.MXCAP     DSPCAP
     74  0000000000000000007                 ITEMS       RX.PROC
                                *
     75  4000000066000000000    R.DPR       R.MXCAP     DLPROC
     76  0000000000000000007                 ITEMS       RX.PROC
                                *
                                *
                                *
     77                         ROOTSZ      BSS         0
                           67   ROOTSZ2     EQU         ROOTSZ-ROOTSZ1
                                *
                                *
   2551                                     LOC         *O
                                *
```

```
                                    *
                                    *
                                    *          I        THIS CODE SETS UP INITIAL GLOBAL NAME
                                    *                   NAME TABLE ENTRIES FROM MASTER CLIST
                                    *
                                    *                   EQU IS REDEFINED HERE, SO NO MORE
                                    *                   EQUS CAN BE USED FROM THIS POINT ON
                                    *
                                    *                   THE CODE IS CONSTRUCTED FROM OPNAMES,XTEXT
                                    *
3                                                MACRO    EQU,NAME,LOC
                                                 LOCAL    A,B
                                    A            MICRO    3,,$NAME$
                                                 GETMAST  NAME
                                                 ENTERG   R,Y,TEMP
                                                 RMT
                                    B            DATA     0LOC.=A=
                                                 RMT
                                                 ENDM
                                    *
                                    *
                                    *
 2551  76670                        SETGLBLS    SX6      B7
                 5160000171                      SA6      SETGLBL7
                                    *
 2551                               OPNAMES     XTEXT
 2552  7150000000                   C.SELF      EQU      0            CAPABILITY FOR THIS C LIST                OPNAMES
 2556  7150000001                   C.ALLOC     EQU      1            ALLOCATION BLOKC C LIST INDEX             OPNAMES
 2562  7150000002                   C.INTFIL    EQU      2                                                      OPNAMES
 2566  7150000003                   C.RFILE     EQU      2+1          READ ON FILE                              OPNAMES
 2572  7150000004                   C.WFILE     EQU      3+1          WRITE ON FILE                             OPNAMES
 2576  7150000005                   C.SENDE     EQU      4+1          SEND EVENT                                OPNAMES
 2602  7150000006                   C.GETE      EQU      5+1          GET EVENT OR HANG                         OPNAMES
 2606  7150000007                   C.CCLIST    EQU      6+1          CREATE C LIST OPERATION                   OPNAMES
 2612  7150000010                   C.CFILE     EQU      7+1          CREATE FILE                               OPNAMES
 2616  7150000011                   C.CBLK      EQU      8+1          CREATE FILE BLOCK                         OPNAMES
 2622  7150000012                   C.CPROC     EQU      9+1          CREATE PROCESS                            OPNAMES
 2626  7150000013                   C.CEVCH     EQU      10+1         CREATE EVENT CHANNEL                      OPNAMES
 2632  7150000014                   C.CSPROC    EQU      11+1         CREATE SUB PROCESS                        OPNAMES
 2636  7150000015                   C.CCC       EQU      12+1         CREATE CLASS CODE                         OPNAMES
 2642  7150000016                   C.SAVE      EQU      13+1         SAVE REGISTERS                            OPNAMES
 2646  7150000017                   C.RESTOR    EQU      14+1         RESTORE REGISTERS                         OPNAMES
 2652  7150000020                   C.DSCAP     EQU      16           ** DISPLAY A CAPABILITY                   OPNAMES
 2656  7150000020                   C.DSPCAP    EQU      C.DSCAP      ** OLD NAME FOR C.DSCAP                   OPNAMES
 2662  7150000021                   C.FSON      EQU      16+1                                                   OPNAMES
 2666  7150000022                   C.MOVEC     EQU      18           ** MOVE A CAPABILITY WITHIN FULL CLIST    OPNAMES
 2672  7150000022                   C.MVECAP    EQU      C.MOVEC      ** OLD NAME FOR C.MOVEC                   OPNAMES
 2676  7150000023                   C.CAPIN     EQU      18+1                                                   OPNAMES
 2702  7150000024                   C.CAPOU     EQU      20           ** COPY A CAPABILITY OUT OF FULL CLIST    OPNAMES
 2706  7150000024                   C.CAPOUT    EQU      C.CAPOU      ** OLD NAME FOR C.CAPOU                   OPNAMES
 2712  7150000025                   C.ESMGEN    EQU      21             SET ANY ESM IN PROCESS                  OPNAMES
 2716  7150000026                   C.ESMLOC    EQU      22             SET LOCAL ESM                           OPNAMES
 2722  7150000027                   C.MKOPB     EQU      23             CREATE OPERATION(SUBP CALL)             OPNAMES
```

```
2726  7150000030  C.RETURN  EQU  24      SUBPROCESS RETURN                          OPNAMES  1
2732  7150000031  C.FRETUR  EQU  25      F-RETURN                                   OPNAMES  1
2736  7150000032  C.FIXC    EQU  26      FIX CAPABILITY PS                          OPNAMES  1
2742  7150000033  C.FIXD    EQU  27      FIX DATUM PS                               OPNAMES  1
2746  7150000034  C.UDAT    EQU  28      CHANGE ANY PS TO USER DATUM                OPNAMES  1
2752  7150000035  C.UCAP    EQU  29      CHANGE ANY PS TO USER CAPABILITY           OPNAMES  1
2756  7150000036  C.ACAP    EQU  30      CHANGE ANY PS TO ANY CAPABILITY            OPNAMES  1
2762  7150000037  C.ADDOPT  EQU  31      ADD OPTION BITS TO PS                      OPNAMES  1
2766  7150000040  C.COPYOP  EQU  32      * MAKE A COPY OF AN OPERATION              OPNAMES  1
2772  7150000041  C.CHKBLK  EQU  33      * CHECK FOR MISSING FILE BLOCKS            OPNAMES  1
2776  7150000042  C.DELBLK  EQU  34      * DELETE A FILE BLOCK                      OPNAMES  1
3002  7150000043  C.DELFIL  EQU  35      * DELETE A FILE                            OPNAMES  1
3006  7150000044  C.REDSHP  EQU  36      * GET SHAPE NUMBERS OF A FILE              OPNAMES  1
3012  7150000045  C.MAPZRO  EQU  37      * ZERO A MAP ENTRY                         OPNAMES  1
3016  7150000046  C.MPCHRO  EQU  38    * CHANGE A ZERO MAP ENTRY TO READ ONLY       OPNAMES  1
3022  7150000047  C.MPCHRW  EQU  39    * CHANGE A ZERO MAP ENTRY TO RW              OPNAMES  1
3026  7150000050  C.MOVBLK  EQU  40      * MOVE A FILE BLOCK                        OPNAMES  1
3032  7150000051  C.DISMAP  EQU  41                                                 OPNAMES  1
3036  7150000052  C.JUMP    EQU  42                                                 OPNAMES  1
3042  7150000053  C.NEWUN   EQU  43      *CHANGE UNIQUE NAME                        OPNAMES  1
3046  7150000054  C.DISPST  EQU  44      *DISPLAY ENTIRE STACK                      OPNAMES  1
3052  7150000055  C.DISSEN  EQU  45      *DISPLAY STACK ENTRY                       OPNAMES  1
3056  7150000056  C.DSFMAP  EQU  46    DISPLAY FULL MAP ENTRY                       OPNAMES  1
3062  7150000057  C.DELCI   EQU  47    DELETE C-LIST                                OPNAMES  1
3066  7150000060  C.PINT    EQU  48    SEND PROCESS INTERRUPT                       OPNAMES  1
3072  7150000061  C.ADDORD  EQU  49      * ADD AN ORDER TO AN OPERATION             OPNAMES  1
3076  7150000062  C.CCCLOA  EQU  50      CREATE COMPLETE CAPABILITY                 OPNAMES  1
3102  7150000063  C.DONATE  EQU  51      TRANSFER BETWEEN ALLOC BKS                 OPNAMES  1
3106  7150000064  C.CRALBK  EQU  52      *CREATE ALLOC BLOCK                        OPNAMES  1
3112  7150000065  C.MODPC   EQU  53      *MODIFY P-COUNTER                          OPNAMES  1
3116  7150000066  C.DLPROC  EQU  54      *DESTROY A PROCESS                         OPNAMES  1
3122  7150000067  C.DPROD   EQU  55    ** DISPLAY A PROCESS                         OPNAMES  1
3126  7150000067  C.CHNGUD  EQU  C.DPROD ***NOW DEFUNCT OPERATION. SYMBOL DEFINITIOOPNAMES  1
                  ;                                                               OPNAMES  1
                  *                    KEPT AROUND TO AVOID ASSEMBLY PROBLEMS     OPNAMES  1
                  *                    SHOULD EVENTUALLY BE DELETED.              OPNAMES  1
3132  7150000070  C.CLRDAE  EQU  56      * CLEAR THE DIRECT ACCESS ECS ENTRY       OPNAMES  1
3136  7150000071  C.SETDAE  EQU  57      * SET THE DIRECT ACCESS ECS ENTRY         OPNAMES  1
3142  7150000072  C.DELSUB  EQU  58      DELETE SUP PROC                            OPNAMES  1
3146  7150000073  C.SETITB  EQU  55+4    *SET INTERRUPT INHIBIT BIT                 OPNAMES  1
3152  7150000074  C.CLRITB  EQU  56+4    *CLEAR INTERRUPT-INHIBIT BIT               OPNAMES  1
3156  7150000075  C.GETEVF  EQU  57+4  *GET EVENT OR FRETURN                       OPNAMES  1
3162  7150000076  C.DELAR   EQU  62        *DESTROY ALLOCATION BLOCK              OPNAMES  1
3166  7150000077  C.MGETH   EQU  63      GET EVENT FROM MULTIPLE CHANNELS OR HOPNAMES  1
                  ;                                                               OPNAMES  1
3172  7150000100  C.MGETF   EQU  64      GET EVENT FROM MULTIPLE CHANNELS OR FOPNAMES  1
                  ;                                                               OPNAMES  1
3176  7150000101  C.DESECH  EQU  65    DESTROY EVENT CHANNEL                        OPNAMES  1
3202  7150000102  C.DSPCLX  EQU  66    DISPLAY CLOCKS IN USER CORE                  OPNAMES  1
3206  7150000003  C.READ    EQU  C.RFILE                                          OPNAMES  1
3212  7150000004  C.WRITE   EQU  C.WFILE                                          OPNAMES  1
3216  7150000006  C.HANG    EQU  C.GETE                                           OPNAMES  1
3222  7150000041  C.PROBE   EQU  C.CHKBLK                                         OPNAMES  1
```

```
3226  7150000103          C.NWTMP   EQU     67        SET TEMPORARY PART OF CLASS CODE                OPNAMES
3232  7150000104          C.DSPAR   EQU     68        DISPLAY ALLOCATION BLOCK                        OPNAMES
3236  7150000105          C.BDAT    EQU     69        . CHANGE ANY TO BLOCK DATA PARAMETER            OPNAMES
3242  7150000106          C.BLKCAP  EQU     70          . CHANGE ANY TO BLOCK CAPABILITY PARAM        OPNAMES
3246  7150000107          C.DISPOP  EQU     71        . DISPLAY OPERATION                             OPNAMES
3252  7150000110          C.USRER   EQU     72        . USER INITIATED ERROR                          OPNAMES
3256  7150000111          C.RETPAR  EQU     73        . RETURN WITH PARAMETERS                        OPNAMES
3262  7150000112          C.TIMDT   EQU     74        .  RETURN DATE AND TIME                         OPNAMES
3266  7150000113          C.CAGEN   EQU     75        . MAKE CAPABILITY CREATING AUTHORIZATION        OPNAMES
3272  7150000114          C.CGEN    EQU     76        . MAKE CAPABILITY OF AUTHORIZED TYPE            OPNAMES
3276  7150000115          C.DSPSP   EQU     77        . DISPLAY SUBPROCESS DESCRIPTOR                 OPNAMES
3302  7150000116          C.TRDB    EQU     78        .  TEST AND RESET DIRTY BIT                     OPNAMES
3306  7150000117          C.INCHR   EQU     79        . INCREMENT AB CHARGE RATE                      OPNAMES
3312  7150000120          C.DSPOB   EQU     80        . DISPLAY OBJECT                                OPNAMES
3316  7150000121          C.DSPALC  EQU     81        . DISPLAY ALLOCATOR CONSTANTS                   OPNAMES
3322  7150000122          C.CHMPRW  EQU     82        . CHANGE A READ-WRITE MAP ENTRY                 OPNAMES
3326  7150000123          C.CHMPRO  EQU     83        . CHANGE A READ ONLY MAP ENTRY                  OPNAMES
3332  7150000047          C.MKMPRW  EQU     C.MPCHRW  . MORE REASONALBE NAME FOR C.MPCHRW              OPNAMES
3336  7150000046          C.MKMPRO  EQU     C.MPCHRO  . MORE REASONALBE NAME FOR C.MPCHRO              OPNAMES
3342  7150000124          C.DSCLK   EQU     84        . DISPLAY SYSTEM CLOCKS IN USER CORE            OPNAMES
3346  7150000125          C.SPRET   EQU     85        .. SPECIAL RETURN (DECREMENT P-COUNTER)         OPNAMES
3352  7150000126          C.CPZRO   EQU     86        .. ZERO A CAPABILITY                            OPNAMES
3356  7150000127          C.MOVCP   EQU     87        . TRANSFER CP TIME BETWEEN ABS                  OPNAMES
3362  7150000130          C.MOVMT   EQU     88        . TRANSFER MOT SLOTS BETWEEN ABS                OPNAMES
3366  7150000131          C.INMTR   EQU     89        . INCREMENT AB CHARGE METER                     OPNAMES
3372  7150000132          C.DLOPR   EQU     90        . DESTROY AN OPERATION                          OPNAMES
3376  7150000133          C.GRAB    EQU     91        . STEAL ECS SPACE                               OPNAMES
3402  7150000134          C.CPUIN   EQU     92        .. MOVE TIME INTO PROCESS TIMER                 OPNAMES
3406  7150000135          C.CPOUT   EQU     93        .. MOVE TIME OUT OF PROCESS TIMER               OPNAMES
3412  7150000136          C.STMSG   EQU     94        .. SET MSG MECHANISM IN A PROCESS               OPNAMES
3416  7150000137          C.CLRMG   EQU     95        .. CLEAR MSG MECHANISM IN A PROCESS             OPNAMES
3422  7150000140          C.ARMIT   EQU     96        .. ARM INTERRUPTS FOR A PROCESS                 OPNAMES
3426  7150000141          C.DISIT   EQU     97        .. DISARM INTERRUPTS FOR A PROCESS              OPNAMES
                          *
                          *
                          *                           ADDITIONAL ENTRIES
                          *
3432  7150000000                    GETMAST   C.SELF
3434  5110003440                    ENTERG    XI.MAST*Y.TEMP
                          *
                          **          ENTERG    XI.ALLOC*Y.ALLOC    MASTER ALLOCATION BLK IN REAL
                          *                                        CASE, LOCAL IN TEST CASE.
                          *                               (3/24/71) NOW ALWAYS MASTER ALLOC BLOCK
                          *
                          *
3436  5110001771                    SAI       SETGLBL7
                                    SB7       X1
3437  0270000000                    JP        B7
                          *
                          *
                          *
3440  1157150123205220000 XI.MAST   DATA      0LI.MASTER
3441  1157011414170000000 XI.ALLOC  DATA      0LI.ALLOC
```

```
                                *
                                *
                                *                       END OF READ ONLY CORE
                                *
                                *
                    100000000                   LIT
                                                HERE
                                *
                                *
                                *
                                *
3616  0000000000000000001       FLX           DATA      1
                                *
                                *
                                *                       LOCAL AND GLOBAL NAME TABLES
                                *
                                *                       MAPPED FROM THEIR OWN FILES
                                *
3617                            LCLPNT        BSSZ      1
3620                            LCLNMS        BSSZ      MAXLPNT
                                *
3764                            GLBLPNT       BSSZ      1
3765                            GLBLNMS       BSSZ      MAXGPNT
```

```
                                *
                                *
                                *
  4751  0000000000000000000001  FL          DATA        1
                                *
                                *
                                *

     1                                      END

                      37072     STORAGE USED                 6823 STATEMENTS      509 SYMBOLS      00021 INVENTED SYMBOLS
                                6600 ASSEMBLY               29.648 SECONDS        3057 REFERENCES
```

ERROR DIRECTORY.

3 TYPE ERROR DUPLICATE MACRO DEFINITION. NEW ONE OVERRIDES.
OCCURRED ON PAGES 43

SYMBOLIC REFERENCE TABLE.

AGAIN	226	15/23	L	20/11																	
ALLOCTYP	1767	3/32	D	22/38																	
BEAD	256	16/16	L	38/11		38/21															
CALLSUBP	325	17/21	L	23/50		25/37															
CLSTNM	50	14/18	L	29/17		29/17		29/22													
CLSTSZ	124	11/14		12/48	D	30/36															
CLSTX	51	14/19	L	29/14	S	29/24		29/25													
CMPMPSZ	62	3/20	D	11/11		42/08															
CPNTR	124	12/06	D	12/13	D	12/18		12/22		12/27	D	12/33		12/37		12/43	D				
		12/08		12/13		12/18	D	12/23		12/27		12/33	D	12/38		12/43					
		12/08	D	12/14		12/18		12/23	D	12/29		12/33		12/38	D	12/44					
		12/08		12/14	D	12/19		12/23		12/29	D	12/34		12/38		12/44	D				
		12/09		12/14		12/19	D	12/24		12/29		12/34	D	12/39		12/44					
		12/09	D	12/15		12/19		12/24	D	12/30		12/34		12/39	D	12/46					
		12/09		12/15	D	12/20		12/24		12/30	D	12/35		12/39		12/46	D				
		12/10		12/15		12/20	D	12/25		12/30		12/35	D	12/41		12/46					
		12/10	D	12/16		12/20		12/25	D	12/31		12/35		12/41	D	12/48					
		12/10		12/16	D	12/21		12/25		12/31	D	12/36		12/41							
		12/12		12/16		12/21	D	12/26		12/31		12/36	D	12/42							
		12/12	D	12/17		12/21		12/26	D	12/32		12/36		12/42	D						
		12/12		12/17	D	12/22		12/26		12/32	D	12/37		12/42							
		12/13		12/17		12/22	D	12/27		12/32		12/37	D	12/43							
CSVX	176	15/11	L	20/23	S	25/43		29/35		29/40	S	32/33		35/44		35/50	S				
C.ACAP	36	8/41	D	44/07																	
C.ADDOPT	37	8/42	D	44/08																	
C.ADDORD	61	9/07	D	44/26																	
C.ALLOC	1	8/09	D	43/28																	
C.ARMIT	140	10/13	D	45/32																	
C.BDAT	105	9/37	D	19/41		45/03															
C.BLKCAP	106	9/38	D	19/36		45/04															
C.CAGEN	113	9/43	D	45/09																	
C.CAPIN	23	8/29	D	19/19		43/48															
C.CAPOU	24	8/30	D	8/31		43/49															
C.CAPOUT	24	8/31	D	19/20		43/50															
C.CBLK	11	8/17	D	16/33		19/21		43/36													
C.CCC	15	8/21	D	19/28		43/40															
C.CCCLOA	62	9/08	D	44/27																	
C.CCLIST	7	8/15	D	16/19		16/46		19/25		43/34											
C.CEVCH	13	8/19	D	43/38																	
C.CFILE	10	8/16	D	16/25		19/23		43/35													
C.CGEN	114	9/44	D	45/10																	
C.CHKBLK	41	8/44	D	9/34		44/10															
C.CHMPRO	123	9/51	D	45/17																	
C.CHMPRW	122	9/50	D	45/16																	
C.CHNGWD	47	9/14	D	44/33																	
C.CLRDAE	70	9/18	D	44/37																	
C.CLRIIB	74	9/22	D	44/41																	
C.CLRMG	137	10/12	D	45/31																	
C.COPYOP	40	8/43	D	44/09																	
C.CPOUT	135	10/10	D	45/29																	
C.CPROC	12	8/18	D	19/37		43/37															
C.CPUIN	134	10/09	D	19/49		45/28															
C.CPZRO	126	10/03	D	45/22																	

SYMBOLIC REFERENCE TABLE.

C.CRALBK	64	9/10	D	44/29				
C.CSPROC	14	8/20	D	19/24	42/05	43/39		
C.DFLAB	76	9/54	D	44/43				
C.DELBLK	42	8/45	D	19/31	42/28	44/11		
C.DELCL	57	9/55	D	19/32	42/25	44/24		
C.DELFIL	43	8/46	D	19/33	42/31	44/12		
C.DELSUB	72	9/20	D	19/34	42/22	44/39		
C.DESECH	101	9/29	D	44/48				
C.DISIT	141	10/14	D	45/33				
C.DISMAP	51	8/52	D	44/18				
C.DISPOP	107	9/39	D	45/05				
C.DISPST	54	9/02	D	44/21				
C.DISSEN	55	9/03	D	44/22				
C.DLOPR	132	10/07	D	45/26				
C.DLPROC	66	9/12	D	42/37	44/31			
C.DONATE	63	9/09	D	44/28				
C.DPROD	67	9/13	D	9/14	44/32			
C.DSCAP	20	8/24	D	8/25	38/32	43/43		
C.DSCLX	124	10/01	D	45/20				
C.DSFMAP	56	9/04	D	44/23				
C.DSPAB	104	9/36	D	45/02				
C.DSPALC	121	9/49	D	45/15				
C.DSPCAP	20	8/25	D	19/44	42/34	43/44		
C.DSPCLX	102	9/30	D	44/49				
C.DSPOB	120	9/48	D	45/14				
C.DSPSP	115	9/45	D	45/11				
C.ESMGEN	25	8/32	D	43/51				
C.ESMLOC	26	8/33	D	17/24	43/52			
C.FIXC	32	8/37	D	44/03				
C.FIXD	33	8/38	D	19/43	44/04			
C.FRETUR	31	8/36	D	17/37	44/02			
C.FSON	21	8/26	D	19/42	43/45			
C.GETE	6	8/14	D	9/33	43/33			
C.GETEVF	75	9/53	D	44/42				
C.GRAB	133	10/08	D	45/27				
C.HANG	6	9/33	D	44/52				
C.INCHR	117	9/47	D	45/13				
C.INMTR	131	10/06	D	45/25				
C.INTFIL	2	8/10	D	43/29				
C.JUMP	52	8/53	D	19/47	44/19			
C.MAPZRO	45	8/48	D	19/35	44/14			
C.MGETF	100	9/27	D	44/46				
C.MGETH	77	9/25	D	44/44				
C.MKMPRO	46	9/53	D	45/19				
C.MKMPRW	47	9/52	D	45/18				
C.MKOPR	27	8/34	D	19/29	43/53			
C.MODPC	65	9/11	D	19/48	44/30			
C.MOVBLK	50	8/51	D	44/17				
C.MOVCP	127	10/04	D	45/23				
C.MOVEC	22	8/27	D	8/28	43/46			
C.MOVMT	130	10/05	D	45/24				
C.MPCHRO	46	8/49	D	9/53	19/25	42/15	44/15	
C.MPCHRW	47	8/50	D	9/52	16/37	16/52	19/26	42/16	44/16

SYMBOLIC REFERENCE TABLE.

C.MVECAP 22 8/38 D 19/30 43/47
C.NEWUN 53 9/51 D 44/20
C.NWTMP 103 9/35 D 45/01
C.PINT 60 9/56 D 44/25
C.PRORE 41 9/34 D 44/53
C.READ 3 9/31 D 17/08 19/27 44/50
C.REDSHP 44 8/47 D 44/13
C.RESTOR 17 8/53 D 16/13 17/33 43/45
C.RETPAR 111 9/41 D 19/38 45/07
C.RETURN 30 8/35 D 17/15 44/01
C.RFILE 3 8/11 D 9/31 43/30
C.SAVE 16 8/22 D 16/10 17/29 43/41
C.SELF 0 8/08 D 43/27 45/38
C.SENDE 5 8/13 D 19/46 43/32
C.SETDAE 71 9/19 D 44/38
C.SETIIB 73 9/21 D 44/40
C.SPRET 125 10/02 D 45/21
C.STMSG 136 10/11 D 45/30
C.TIMDT 112 9/42 D 45/08
C.TRDB 116 9/46 D 45/12
C.UCAP 35 8/40 D 19/45 44/06
C.UDAT 34 8/39 D 19/39 44/05
C.USRER 110 9/40 D 45/06
C.WFILE 4 8/12 D 9/32 43/31
C.WRITE 4 9/32 D 19/40 44/51
DEBUG 2435 38/17 L
DEBUGX 2444 38/19 38/22 L
DESCEND 14 11/22 L
DSPBEAD 2450 38/08 38/18 38/32 L
ECLASS 230 15/29 L 26/15 S 36/22
EFLAG 227 15/38 L 26/08 26/12 S 36/18 36/35 S
ENTER 2222 23/29 23/33 25/16 25/18 28/13
23/30 23/36 25/17 27/40 34/07 L
ENTERG 2237 22/14 43/36 43/51 44/13 44/28 44/48 45/10 45/25
22/28 43/37 43/52 44/14 44/29 44/49 45/11 45/26
22/42 43/38 43/53 44/15 44/30 44/50 45/12 45/27
22/51 43/39 44/01 44/16 44/31 44/51 45/13 45/28
23/16 43/40 44/02 44/17 44/32 44/52 45/14 45/29
34/31 L 43/41 44/03 44/18 44/33 44/53 45/15 45/30
35/30 43/42 44/04 44/19 44/35 45/01 45/16 45/31
43/28 43/43 44/05 44/20 44/36 45/02 45/17 45/32
43/29 43/44 44/06 44/21 44/39 45/03 45/18 45/33
43/30 43/45 44/07 44/22 44/40 45/04 45/19 45/34
43/31 43/46 44/08 44/23 44/41 45/05 45/20 45/40
43/32 43/47 44/09 44/24 44/42 45/06 45/21
43/33 43/48 44/10 44/25 44/43 45/07 45/22
43/34 43/49 44/11 44/26 44/44 45/08 45/23
43/35 43/50 44/12 44/27 44/46 45/09 45/24
ENTERGX 2252 34/38 34/46 L
ENTERX 2235 34/14 34/22 L
ENUMB 231 15/30 L 26/18 S 36/28
EREGS 232 15/32 L 17/30 17/34
ERESTOR 333 17/33 L 26/19

GETMAST 2254 35/07 L 43/41 44/02 44/16 44/30 44/49 45/10 45/24
43/28 43/42 44/03 44/17 44/31 44/50 45/11 45/25
43/29 43/43 44/04 44/18 44/32 44/51 45/12 45/26
43/30 43/44 44/05 44/19 44/33 44/52 45/13 45/27
43/31 43/45 44/06 44/20 44/35 44/53 45/14 45/28
43/32 43/46 44/07 44/21 44/38 45/01 45/15 45/29
43/33 43/47 44/08 44/22 44/39 45/02 45/16 45/30
43/34 43/48 44/09 44/23 44/40 45/03 45/17 45/31
43/35 43/49 44/10 44/24 44/41 45/04 45/18 45/32
43/36 43/50 44/11 44/25 44/42 45/05 45/19 45/33
43/37 43/51 44/12 44/26 44/43 45/06 45/20 45/34
43/38 43/52 44/13 44/27 44/44 45/07 45/21 45/39
43/39 43/53 44/14 44/28 44/46 45/08 45/22
43/40 44/01 44/15 44/29 44/48 45/09 45/23

GETMAST7 172 15/03 L 35/08 S 35/10
GLBLADD 2265 23/52 35/18 L
GLBLADDX 223 15/15 L 35/21 S 35/23
GLBLADD1 2267 35/23 L 35/30
GLBLADD2 2274 35/27 35/32 L
GLBLADD7 173 15/04 L 35/19 S 35/34
GLBLMP 2 3/08 D 17/01
GLBLNMS 3765 33/35 34/40 S 46/23
GLBLPNT 3764 17/04 20/26 22/06 S 33/31 34/33 46/22 L
HEADCNT 15 13/05 D 27/24
HEADER 30 13/06 L 13/23 13/25 27/14 27/14 27/24
HPOINT 113 14/10 L 27/18 S 28/22 28/27 29/03 29/10 29/17 29/28
H.CLASS 32 13/10 L 27/31
H.CLIST 35 13/13 L 27/39
H.CLSTSZ 43 13/19 L 27/39
H.CMPSZ 40 13/16 L 28/18
H.ENTRY 42 13/18 L 28/19
H.FATHER 33 13/11 L 27/32
H.FL 41 13/17 L 28/18
H.INICLL 34 13/12 L 27/33
H.LMPSZ 37 13/15 L 28/18
H.MAPDX 15 13/23 D 28/23
H.SCRF 36 13/14 L 28/12
H.SCRSZ 44 13/20 L 27/42
H.TYPE 30 13/08 L 27/24
IDONE 1007 23/47 24/04 L 25/46 32/35
IDONE1 1055 24/10 24/14 L
ILOOP 761 23/40 L 23/53
KILLSLF 2060 21/07 32/09 L
KILLSLF1 2144 32/10 32/27 L
KILLSLF2 2160 32/28 32/30 L
KILLSLF3 2165 32/32 L 32/34
KILLSUBF 2361 36/03 36/18 L 36/39
KILLSUBP 2277 23/53 25/43 32/33 35/45 L
KILLSUBX 2357 35/45 36/08 L
KILLSUB1 2324 35/53 L 36/39
KILLSUB2 2337 36/04 L
KILLSUB7 174 15/05 L 35/43 S 36/08
LCLMP 3 3/09 D 16/39 24/05 32/13

SYMBOLIC REFERENCE TABLE.

LCLNMS	3626	33/13	34/16 S	46/20			
LCLPNT	3617	16/42	23/26 S	33/09	34/09	46/19 L	
LCNTR	2452	39/06 L	39/22				
LGMPSZ	5	3/19 D	11/10	42/07			

SYMBOLIC REFERENCE TABLE.

LOCALPXJ 2

22/13 D 22/40 24/09 28/18 30/30 D 30/48 31/33 D 32/29
22/13 D 22/41 D 24/10 D 28/18 D 30/30 D 30/49 D 31/33 D 32/31 D
22/13 22/41 D 24/10 D 28/19 D 30/30 30/49 D 31/33 32/31 D
22/22 D 22/41 D 24/10 28/19 D 30/31 D 30/49 D 31/33 D 32/31
22/22 D 22/41 24/12 D 28/19 30/31 D 30/49 31/34 D 33/21 D
22/22 D 22/47 D 24/12 D 28/27 D 30/31 D 30/50 D 31/34 D 33/21 D
22/22 D 22/47 D 24/12 28/27 D 30/31 D 30/50 D 31/34 33/21
22/22 22/47 D 25/07 D 28/27 D 30/31 D 30/50 D 31/34 D 33/43 D
22/23 D 22/47 D 25/07 D 28/27 D 30/31 30/50 31/35 D 33/43 D
22/23 D 22/47 25/07 28/27 D 30/32 D 30/51 D 31/35 D 33/43
22/23 22/48 D 25/10 D 28/27 30/32 D 30/51 D 31/35 D 34/18 D
22/24 D 22/48 D 25/10 D 29/17 D 30/32 D 30/51 D 31/35 34/18 D
22/24 D 22/48 25/10 29/17 D 30/32 D 30/51 31/36 D 34/18
22/24 D 22/49 D 25/12 D 29/17 D 30/32 D 31/06 D 31/36 D 34/42 D
22/24 22/49 D 25/12 D 29/17 D 30/32 31/06 D 31/36 D 34/42 D
22/25 D 22/49 D 25/12 D 29/17 D 30/33 D 31/06 D 31/36 34/42
22/25 D 22/49 D 25/12 29/17 30/33 D 31/06 31/37 D 35/10 D
22/25 D 22/49 D 25/28 D 29/24 D 30/33 D 31/13 D 31/37 D 35/10 D
22/25 22/49 25/28 D 29/24 D 30/33 31/13 D 31/37 D 35/10 D
22/26 D 22/50 D 25/28 D 29/24 D 30/34 D 31/13 D 31/37 35/10
22/26 D 22/50 D 25/28 D 29/24 30/34 D 31/13 31/41 D 35/47 D
22/26 D 22/50 D 25/28 D 29/37 D 30/34 D 31/19 D 31/41 D 35/47 D
22/26 22/50 25/28 29/37 D 30/34 31/19 D 31/41 D 35/47 D
22/27 D 23/05 D 25/35 D 29/37 30/35 D 31/19 D 31/41 35/47
22/27 D 23/05 D 25/35 29/38 D 30/35 D 31/19 32/10 D 35/48 D
22/27 D 23/05 D 25/35 D 29/38 D 30/35 D 31/20 D 32/10 D 35/48 D
22/27 23/05 25/35 D 29/38 D 30/35 31/20 D 32/10 35/48 D
22/33 D 23/09 D 25/35 D 29/38 30/36 D 31/20 D 32/13 D 35/48
22/33 D 23/09 D 25/35 29/39 D 30/36 D 31/20 D 32/13 D 35/49 D
22/33 D 23/09 D 25/41 D 29/39 D 30/36 D 31/20 D 32/13 D 35/49 D
22/33 D 23/09 D 25/41 29/39 D 30/36 31/20 32/13 35/49 D
22/33 23/09 D 25/41 29/39 30/37 D 31/21 D 32/14 D 35/49
22/34 D 23/09 25/41 30/16 D 30/37 D 31/21 D 32/14 D 36/01 D
22/34 D 23/32 D 27/14 D 30/16 D 30/37 D 31/21 32/14 36/01 D
22/34 23/32 D 27/14 30/16 D 30/37 31/22 D 32/15 D 36/01 D
22/35 D 23/32 27/14 30/16 30/42 D 31/22 D 32/15 36/01
22/35 D 23/35 D 27/14 30/17 D 30/42 D 31/22 D 32/15 36/02 D
22/35 D 23/35 D 27/14 30/17 D 30/42 D 31/22 D 32/16 D 36/02 D
22/35 23/35 D 27/14 30/17 D 30/42 31/22 D 32/16 36/02
22/36 D 23/35 D 27/24 30/17 30/43 D 31/22 32/16 36/05 D
22/36 D 23/35 27/24 30/21 D 30/43 D 31/26 D 32/17 D 36/05 D
22/36 D 23/43 D 27/24 30/21 D 30/43 D 31/26 D 32/17 D 36/05 D
22/36 23/43 D 27/24 30/21 D 30/43 31/26 D 32/17 36/05
22/37 D 23/43 D 27/24 30/21 30/44 D 31/26 D 32/18 D 36/06 D
22/37 D 23/43 D 27/24 30/25 D 30/44 D 31/26 D 32/18 D 36/06
22/37 D 23/43 D 27/39 30/25 D 30/44 D 31/26 32/18 D 36/07 D
22/37 23/43 27/39 D 30/25 D 30/44 31/27 D 32/19 D 36/07 D
22/38 D 24/05 D 27/39 D 30/25 30/45 D 31/27 D 32/19 D 36/07
22/38 D 24/05 D 28/11 D 30/26 D 30/45 D 31/27 32/19 D 36/37 D
22/38 D 24/05 28/11 D 30/26 D 30/45 31/31 D 32/19 36/37 D
22/38 D 24/06 D 28/11 D 30/26 30/46 D 31/31 D 32/20 D 36/37 D
22/38 24/06 D 28/11 D 30/28 D 30/46 D 31/31 D 32/20 D 36/37

M.CAPOUT 7777424 19/20 D 29/39 30/33 30/45 30/46 30/50 31/27 34/45
29/24 30/25 30/34 30/43 30/47 30/51 31/36
29/27 30/26 30/35 30/44 30/48 31/13 32/19
29/28 30/28 30/37 30/45 30/49 31/19 34/18
M.CBLK 7777423 19/21 D 28/12 30/30 31/21
M.CCC 7777414 19/28 D 22/13 23/32
M.CCLIST 7777422 19/22 D 27/39 30/21 30/36 31/06
M.CFILE 7777421 19/23 D 28/11 30/29 31/20
M.CPROC 7777403 19/37 D 31/31
M.CPUIN 7777367 19/49 D 31/37
M.CSPROC 7777420 19/24 D 28/18
M.DELBLK 7777411 19/31 D 24/06 32/14 36/05
M.DELCL 7777410 19/32 D 24/08 24/09 32/16 32/17 36/07
M.DELFIL 7777407 19/33 D 24/07 32/15 36/06
M.DELSUB 7777406 19/34 D 36/02 36/38
M.DSPCAP 7777374 19/44 D 24/10 25/07 25/10 32/10
M.FIXD 7777375 19/43 D 22/27 22/41 22/50
M.FSON 7777376 19/42 D 36/37
M.JUMP 7777371 19/47 D 32/20 32/29
M.MAPZRO 7777405 19/35 D 24/05 32/13
M.MKOPR 7777413 19/39 D 22/22 22/33 22/47 23/35
M.MODPC 7777370 19/48 D 32/18 32/28
M.MPCHR0 7777417 19/25 D 28/43
M.MPCHRW 7777416 19/26 D 28/41
M.MVECAP 7777412 19/30 D 23/05 25/12 30/16 30/17 36/01
M.READ 7777415 19/27 D 23/43 25/35 27/24 29/17
23/29 25/28 27/14 28/27
M.RETPAR 7777402 19/38 D 31/41
M.SENDE 7777372 19/46 D 24/12
M.THSPRC 7776603 25/10 25/12 25/51 D
M.UCAP 7777373 19/45 D 22/38 22/39 22/49
M.UDAT 7777401 19/39 D 22/23 22/24 22/34 22/35 22/40 22/48
19/40 D 30/31 30/32 31/22 31/26
NAME 114 14/44 L 23/09 23/15 23/46 25/21 25/29 25/35
20/17 S 23/13 23/43 23/48 25/28 25/35
NEWFILE 324 17/18 L 23/03 23/09
NEWFX 336 18/06 L 23/04 23/10
NEWLDP 224 15/17 L 31/07 S 31/09 31/13 31/13 31/22 31/22 31/24
NEWPRCN 12 3/16 D 11/32 12/08 22/25 22/26 22/36 22/37
NEWPROC 1441 21/10 30/09 L
NEWPROC0 1457 30/13 30/20 L
NEWPROC1 1713 31/09 L 31/16
NEWPROC2 1725 31/11 31/18 L
NEWPROC7 175 15/06 L 30/10 S
NMFLX 115 14/45 L 23/09 23/43 25/23 S 25/31
23/36 S 23/10 23/43 25/28 25/35
NWPRCBLK 11 11/22 L 31/10 31/22
NWPRCCTP 6 11/29 L 20/13 21/05 30/12 30/31
NWPRCSHT 27 11/35 L 30/32
NWPRCTYP 7 11/40 L 30/31
N.ECWDS 6 3/23 D 31/31
N.STKSZ 36 3/24 D 31/31
OPTYPE 1677 3/34 D 22/49

```
PRMEND          30      11/37 L
READSELF       316      17/08 L   20/15
REGS           177      15/13 L   16/11      16/14
RESTREG        254      16/13 L   38/22
RETURN         323      17/15 L   24/14
RLOOP         1141      25/29 L   25/38
RLOOP1        1162      25/36     25/40 L
RLOOP2        1170      25/42 L   25/44
ROOTCLSZ        10      30/21     39/19 L
ROOTSZ          77      31/32     42/42 L   42/43
ROOTSZ1         10      31/34     31/35     41/14 D   42/43
ROOTSZ2         67      31/35     42/43 D
ROOT0         2452      31/34     41/05 L
ROOT1         2462      31/35     41/13 D
RTNAUTH        340      18/10 L   23/51
RTNCNT          50       3/13 D   12/27     14/49     18/10     18/11
RTNDTA         116      14/49 L   18/10     23/41 S   35/26     35/33 S
RTNTEMP       2056      31/41     31/44 L
RX.MAST          0      30/25     42/05     42/15     42/25     42/31     42/37
                        39/10 L   42/10     42/22     42/28     42/34
RX.PROC          7      25/52     31/36     39/17     42/35     42/38
RX.SBCAL         5      30/35     32/19     39/15     42/20
RX.SBCC          1      30/26     39/11 L   42/06     42/11     42/16     42/23
RX.SBCDF         4      30/24     39/14 L   42/17
RX.SBCL          6      30/37     39/16 L   42/09     42/26
RX.SBFTH         2      30/28     39/12 L   42/07
RX.SBSCR         3      30/33     39/13 L   42/12     42/29     42/32
R.CALLSB        61      41/25     41/43     42/20
R.CMAP1         43      41/22     42/10 L
R.CMAP2         52      41/23     42/15 L
R.CMPSZ         12       3/26 D   31/32
R.CSUB          33      41/21     42/05 L
R.DBK           66      41/51     42/28 L
R.DBLD          26      41/27     41/43     41/49
R.DCL           64      41/50     42/25 L
R.DFL           71      41/52     42/31 L
R.DPR           75      41/28     42/37 L
R.DSPSLF        73      42/34 L
R.DSUB          62      41/49     42/22 L
R.ENTRY         13      31/32     41/19 L
R.LGMPSZ         3       3/25 D   31/32
R.MAIN          14      41/17     41/21 L
R.MAIN1         21      41/28 L   41/44
R.SCND          23      32/18     41/42 L
SAVEREG        252      16/10 L   38/07     38/17
SCRSZ          252      11/15     16/05 L   17/12     30/29     42/14     42/18     42/19     42/19
```

SET	2406	22/13	22/40	24/07	28/11	30/26	30/46	31/31	32/29
		22/22	22/41	24/08	28/11	30/28	30/47	31/32	32/31
		22/22	22/47	24/09	28/12	30/29	30/48	31/33	33/21
		22/23	22/47	24/10	28/18	30/29	30/49	31/34	33/43
		22/24	22/48	24/12	28/18	30/30	30/50	31/35	34/18
		22/25	22/49	25/07	28/19	30/31	30/51	31/36	34/42
		22/26	22/49	25/10	28/27	30/31	31/06	31/37	35/10
		22/27	22/50	25/12	28/27	30/32	31/13	31/41	35/47
		22/33	23/05	25/28	29/17	30/32	31/19	32/10	35/48
		22/33	23/09	25/28	29/17	30/33	31/20	32/13	35/49
		22/34	23/09	25/35	29/24	30/34	31/20	32/14	36/01
		22/35	23/32	25/35	29/37	30/35	31/21	32/15	36/02
		22/36	23/35	25/41	29/38	30/36	31/22	32/16	36/05
		22/37	23/35	27/14	29/39	30/37	31/22	32/17	36/06
		22/38	23/43	27/14	30/16	30/42	31/26	32/18	36/07
		22/38	23/43	27/24	30/17	30/43	31/26	32/19	36/37
		22/39	24/05	27/24	30/21	30/44	31/27	32/20	36/38
		22/39	24/06	27/39	30/25	30/45	31/31	32/28	37/15 L
SETA	2421	37/19	37/21	37/23	37/25	37/27	37/32 L		
SETA1	2423	37/33	37/37 L						
SETB	2420	37/28 L	37/32						
SETEMSK	320	17/24 L	20/10	26/07					
SETGLBLS	2551	22/08	43/23 L						
SETGLBL7	171	15/02 L	43/24 S	45/46					
SHTDTM	225	15/19 L	20/14	20/19 S	24/12	25/41	30/32		
STOP	2447	38/09	38/28 L	38/28					
SVCLSZ	41	3/11 D	16/49						
TIME	2057	31/37	31/45 L						
XBEAD	1062	23/29	24/21 L	25/16					
XCALL	1064	23/35	24/23 L						
XCLASS	1063	23/32	24/22 L						
XI.ALLOC	3441	45/53 L							
XI.MAST	3440	45/29	45/52 L						

XJLOC 52

XKILLRLD	1072
XMANYBTS	1070
XMINUS0	1057
XMINUS1	1060
XNEWPRC	1066
XNEWPRC1	1067
XROOT	1061
XTHSPRC	1071
XUSEROOT	1065
Y.ALLOC	115
Y.BEAD	116
Y.BLDCC	111
Y.CALLSB	106
Y.CLSTOB	14
Y.CODEF	112
Y.DFILE	15
Y.GDIRC	114
Y.GDIRF	113
Y.INICLL	16
Y.LDIRC	117
Y.LDIRF	120

14/24 L 22/39 24/08 28/12 30/29 30/47 31/36 33/21
22/12 22/40 24/08 28/17 30/29 30/48 31/37 33/42
22/13 22/40 24/09 28/19 30/30 30/48 31/40 33/43
22/21 22/41 24/09 28/26 30/30 30/49 31/41 34/17
22/22 22/46 24/10 28/27 30/31 30/49 32/09 34/18
22/22 22/47 24/11 29/16 30/31 30/50 32/10 34/41
22/23 22/47 24/12 29/17 30/32 30/50 32/12 34/42
22/23 22/48 25/06 29/23 30/32 30/51 32/13 35/09
22/24 22/48 25/07 29/24 30/33 31/05 32/13 35/10
22/24 22/49 25/09 29/36 30/33 31/06 32/14 35/46
22/25 22/49 25/10 29/37 30/34 31/12 32/14 35/47
22/25 22/50 25/11 29/37 30/34 31/13 32/15 35/47
22/26 23/04 25/12 29/38 30/35 31/18 32/15 35/48
22/26 23/05 25/27 29/38 30/35 31/19 32/16 35/48
22/27 23/08 25/28 29/39 30/36 31/19 32/16 35/49
22/32 23/09 25/34 30/15 30/36 31/20 32/17 35/53
22/33 23/31 25/35 30/16 30/37 31/20 32/17 36/01
22/33 23/32 25/40 30/16 30/41 31/20 32/18 36/01
22/34 23/34 25/41 30/17 30/42 31/21 32/18 36/02
22/34 23/35 27/13 30/20 30/42 31/21 32/19 36/04
22/35 23/42 27/14 30/21 30/43 31/22 32/19 36/05
22/35 23/43 27/23 30/24 30/43 31/25 32/20 36/05
22/36 24/04 27/24 30/25 30/44 31/26 32/27 36/06
22/36 24/05 27/38 30/25 30/44 31/26 32/28 36/06
22/37 24/05 27/39 30/26 30/45 31/27 32/28 36/07
22/37 24/06 28/10 30/27 30/45 31/30 32/29 36/36
22/38 24/06 28/11 30/28 30/46 31/35 32/30 36/37
22/38 24/07 28/11 30/28 30/46 31/35 32/31 36/37
22/39 24/07 28/11 30/29 30/47 31/36 33/20 36/38
22/50 24/29 L
22/38 22/39 22/49 24/27 L
23/05 24/18 L 25/12 30/16 30/17 36/01
24/19 L 32/18 32/20 32/28 32/29
22/37 24/25 L
22/41 24/26 L
23/28 24/20 L 25/15
24/28 L 25/17
22/13 24/24 L 30/26
12/38 D 16/26 22/22 22/47 27/39 30/16
16/30 16/47 22/33 23/35 28/11 30/50
12/39 D 16/16 23/30 25/17 38/33
12/34 D 16/53 22/33 24/05 30/45 32/13 32/29
16/38 22/22 22/47 30/26 30/45 32/28
12/32 D 30/35 30/44 30/44
12/12 D 29/23 29/24
12/35 D 17/09 30/34 30/46 30/46 31/33 31/34
12/13 D 23/49 25/30 27/14 27/24 28/27 29/17
12/37 D 30/48 30/48 33/43 34/42
12/36 D 17/02 30/47 30/47
12/14 D 17/21 25/41 27/34
12/41 D 16/21 24/08 31/19 32/16 33/21 34/18
12/42 D 16/34 24/05 24/07 32/13 32/15
16/27 16/40 24/06 31/27 32/14

SYMBOLIC REFERENCE TABLE.

Y.MAST	103	11/18	16/37	17/33	19/24	19/31	19/38	19/45	30/42
		12/29 D	16/46	17/37	19/25	19/32	19/39	19/46	35/10
		16/10	16/52	19/19	19/26	19/33	19/40	19/47	38/32
		16/13	17/08	19/20	19/27	19/34	19/41	19/48	
		16/19	17/15	19/21	19/28	19/35	19/42	19/49	
		16/25	17/24	19/22	19/29	19/36	19/43	30/25	
		16/33	17/25	19/23	19/30	19/37	19/44	30/42	
Y.MPFL	17	12/15 D	14/32	28/32					
Y.NEWF	105	12/31 D	17/18						
Y.NMFL	26	12/22 D	23/05	23/09	23/43	25/22	25/28	25/35	
Y.NULL	123	12/46 D	30/17						
Y.NULL2	107	12/33 D							
Y.NWALLC	12	12/09 D	30/21	30/36	31/06	31/31			
		30/16	30/29	30/50	31/20	31/37			
Y.NWBLDC	27	12/23 D	30/37	30/43	30/45	30/47	30/49	30/51	31/27
		30/36	30/42	30/44	30/46	30/48	30/50	31/19	
Y.NWEV	13	12/10 D	30/17	30/49					
Y.NWRTCL	30	12/24 D	30/25	30/28	30/34	30/37	31/33		
		30/21	30/26	30/33	30/35	30/51	31/34		
Y.PARAMS	0	12/08 D	31/13	32/19	32/31				
Y.ROOTCC	104	12/30 D	23/29	25/16	30/43	32/18	32/20		
Y.ROOTCL	122	12/44 D	25/07	25/52	30/51	32/10	32/19		
Y.RTNX	33	12/27 D	18/11	35/28					
Y.SBCL	20	12/16 D	27/39	27/40	28/19	29/24	29/37	35/49	36/07
Y.SBCLSS	21	12/17 D	14/30	27/32	28/18	29/39	35/47	36/01	
Y.SBFTH	22	12/18 D	27/33	28/18					
Y.SBSCRF	23	12/19 D	28/11	28/12	28/13	29/38	35/48	36/05	36/06
Y.SBSON	32	12/26 D	36/01	36/02	36/37	36/37	36/38		
Y.SHTFV	121	12/43 D	24/10	24/12	25/41	30/49			
Y.SVCL	24	12/20 D	24/09	29/38	32/17	35/48			
		16/48	29/37	29/39	35/47	35/49			
Y.TEMP	25	12/21 D	22/47	31/19	43/38	44/06	44/27	44/53	45/21
		18/07	22/48	31/20	43/39	44/07	44/28	45/01	45/22
		22/13	22/49	31/21	43/40	44/08	44/29	45/02	45/23
		22/14	22/50	31/22	43/41	44/09	44/30	45/03	45/24
		22/22	22/51	31/26	43/42	44/10	44/31	45/04	45/25
		22/23	23/05	31/27	43/43	44/11	44/32	45/05	45/26
		22/24	23/16	31/31	43/44	44/12	44/33	45/06	45/27
		22/25	23/32	31/36	43/45	44/13	44/35	45/07	45/28
		22/26	23/33	31/37	43/46	44/14	44/38	45/08	45/29
		22/27	23/35	31/44	43/47	44/15	44/39	45/09	45/30
		22/28	23/35	35/10	43/48	44/16	44/40	45/10	45/31
		22/33	23/36	43/28	43/49	44/17	44/41	45/11	45/32
		22/34	25/12	43/29	43/50	44/18	44/42	45/12	45/33
		22/35	25/18	43/30	43/51	44/19	44/43	45/13	45/34
		22/36	30/29	43/31	43/52	44/20	44/44	45/14	45/40
		22/37	30/30	43/32	43/53	44/21	44/46	45/15	
		22/38	30/31	43/33	44/01	44/22	44/48	45/16	
		22/39	30/32	43/34	44/02	44/23	44/49	45/17	
		22/40	30/33	43/35	44/03	44/24	44/50	45/18	
		22/41	31/06	43/36	44/04	44/25	44/51	45/19	
		22/42	31/13	43/37	44/05	44/26	44/52	45/20	
Y.USROOT	31	12/25 D	30/27	30/28	30/43	31/31			

ZERO 2055 31/41 31/43 L