FF12 SYSTEM TEST RELOCATING LOADER.

```
ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT

                              2         DECK  4
   0A00                       3 FF1     START X'A00'
                              4 ********************************************************************************
                              5 *                                                                              *
                              6 *       SYSTEM/3 SYSTEM TEST RELOCATING LOADER                                 *
                              7 *                                                                              *
                              8 ********************************************************************************
   0A00 FF12             0A01     9         DC    XL2'FF12'              PROGRAM IDENTIFICATION AND LEVEL
   0A02 80               0A02    10         DC    XL1'80'                FLAGS - NO SPUDT
   0A03 00               0A03    11         DC    IL1'0'                 CURRENT ROUTINE NUMBER
   0A04 0000             0A05    12         DC    XL2'0'                 RESERVED
   0A06 0DFC             0A07    13         DC    AL2(RTN01)             ADDRESS OF FIRST ROUTINE PREFIX
   0A08 0000             0A09    14         DC    XL2'0'                 RESERVED
                              15 ********************************************************************************
   0A0A 000000000000     0A0F    16         DC    XL6'0'                 RESERVED FOR SYSTEM TEST SUPERVISOR
                                 17
                         0A10    18 TABLE  EQU   *                      TABLE CONTAINING CATALOG OF PROGRAM
                                 19 *                                    MODULES IN CORE.  PROVISIONS ARE  *
                                 20 *                                    MADE FOR SUPERVISION OF UP TO 16  *
                                 21 *                                    MODULES.  INFORMATION IS CONTAINED*
                                 22 *                                    AS IN THE FOLLOWING DIAGRAM.      *
                                 23 *                                                                      *
                                 24 *           ********************************************             *
                                 25 *           *   ARR    I   XR1    I   XR2    I STARTING *             *
                                 26 *           *          I          I          I  ADDRESS *             *
                                 27 *           ********************************************             *
                                 28 *                                                                      *
                                 29 *       THIS RELOCATING LOADER INITIALIZES THIS TABLE                 *
   0A10 FFFFFFFFFFFFFFFF 0A27    30         DC    XL24'FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF'
   0A18 FFFFFFFFFFFFFFFF         30
   0A20 FFFFFFFFFFFFFFFF         30
   0A28 FFFFFFFFFFFFFFFF 0A3F    31         DC    XL24'FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF'
   0A30 FFFFFFFFFFFFFFFF         31
   0A38 FFFFFFFFFFFFFFFF         31
   0A40 FFFFFFFFFFFFFFFF 0A57    32         DC    XL24'FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF'
   0A48 FFFFFFFFFFFFFFFF         32
   0A50 FFFFFFFFFFFFFFFF         32
   0A58 FFFFFFFFFFFFFFFF 0A6F    33         DC    XL24'FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF'
   0A60 FFFFFFFFFFFFFFFF         33
   0A68 FFFFFFFFFFFFFFFF         33
   0A70 FFFFFFFFFFFFFFFF 0A87    34         DC    XL24'FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF'
   0A78 FFFFFFFFFFFFFFFF         34
   0A80 FFFFFFFFFFFFFFFF         34
   0A88 FFFFFFFFFFFFFFFF 0A90    35         DC    XL9'FFFFFFFFFFFFFFFFFF'
   0A90 FF                       35
                                 36 *       AND MODIFIES THESE CONSTANTS DU   LOADING.                    *
                         0A92    37         USING START,1
                         0A92    38         USING START,2
   0A91 0E00             0A92    39 START  DC    XL2'0E00'              STARTING ADDRESS OF NEXT MODULE
   0A93 0000             0A94    40 BASE   DC    AL2(*-*)               RELOCATION FACTOR FOR CURRENT MODULE
   0A95 10               0A95    41 NPROGS DC    IL1'16'                THIS COUNT IS DECREMENTED AFTER EACH
                                 42 *                                    MODULE LOADED - NO MORE THAN 16   *
                                 43 *                                    ALLOWED.                          *
   0A96 00               0A96    44 SKFLAG DC    XL1'0'                 WHEN FF, LOADER IS SKIPPING MODULE
                                 45 *                                   WHEN EE, LOADER HAS RUN OUT OF CORE*
   0A97 0000             0A98    46 MSIZE  DC    XL2'0'
   0A99 0A10             0A9A    47 PCINTR DC    AL2(TABLE)             POINTER TO MODULE TABLE
   0A9B C6C6F2           0A9D    48 FF2    DC    CL3'FF2'
   0A9E 0AC0             0A9F    49 XA00   DC    X'0A00'                STARTING ADDRESS OF ALL MODULES
   0AA0 FFFD             0AA1    50 [illegible] DC   X'FFFD'
   0AA2 FFFC             0AA3    51 MDG4   DC    X'FFFC'
   0AA4 0000             0AA5    52 WORK   DC    XL2'0'                 WORK AREA
   0AA6 0000             0AA7    53 LSTR   DC    XL2'0'
                                 54 ********************************************************************************
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FF12 SYSTEM TEST RELOCATING LOADER

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ERR LOC OBJECT CODE      ADDR  STMT SOURCE STATEMENT

                         0AA8    56 SETUP    EQU   *
   0AA8 3D A0 0232               57          CLI   UTAB,X'A0'              CHECK FOR DISK LOADER
   0AAC F2 01 30                 58          JNE   LOADC
   0AAF 3D C5 0880               59        CLI   INPUT,C'E'                CHECK FOR END CARD
   0AB3 F2 01 29                 60        JNE   LOADC
   0AB6 0E 01 0AA7 0D86          61        ALC   LPTR,EIGHT
   0ABC 35 01 0AA7               62        L     LPTR,XR1
   0AC0 78 20 00                 63        TBN   0(,XR1),X'20'
   0AC3 F2 90 0A                 64        JF    RDC
   0AC6 35 01 0A9A               65        L     POINTR,XR1
   0ACA 7C FF 00                 66        MVI   0(,XR1),X'FF'
   0ACD F2 87 23                 67        J     LDSV
                         0AD0    68 RDC      EQU   *
   0AD0 1C 01 0ADB 01            69          MVC   PID,1(2,XR1)
   0AD5 C0 87 022A               70          B     LOAD
   0AD9 20               0AD9    71          DC    XL1'20'
   0ADA 0000             0ADB    72 PID      DC    XL2'0'
   0ADC F2 87 05                 73          J     COMM
                         0ADF    74 LOADC    EQU   *
   0ADF C0 87 022A               75          B     LOAD
   0AE3 10               0AE3    76          DC    XL1'10'
                         0AE4    77 COMM     EQU   *
   0AE4 C2 01 0880               78          LA    INPUT,XR1
   0AE8 C2 02 0A92               79        LA    START,XR2
   0AEC 6D 02 5A 0B              80        CLC   90(3,XR1),FF2(,XR2)     BRANCH IF NOT FIRST CARD OF SPRVSR
   0AF0 F2 01 07                 81        JNE   CHKEE
                         0AF3    82 LDSV     EQU   *
   0AF3 C0 87 022A               83          B     LOAD                     LOAD SYSTEM TEST SUPERVISOR
   0AF7 08               0AF7    84          DC    XL1'08'
   0AF8 0FF2             0AF9    85          DC    XL2'FF2'                 CARDS.
   0AFA BD EE 04                 86 CHKEE    CLI   SKFLAG(,XR2),X'EE'     BRANCH IF OUT OF CORE
   0AFD E0 81 16                 87          BE    SETUP(,XR2)
   0B00 7D 40 00                 88          CLI   0(,XR1),C' '             BRANCH IF NOT HEADER CARD
   0B03 F2 01 AD                 89          JNE   CKSKIP
   0B06 7D 40 4B                 90          CLI   75(,XR1),C' '          IF NO DEVICE ID, GO AHEAD AND
   0B09 F2 81 2C                 91          JE    CLFLAG                   LOAD THE MODULE
   0B0C C0 87 0226               92          B     PACK                   PACK DEVICE IDENTIFICATION
   0B10 02               0B10    93          DC    IL1'2'
   0B11 08CC             0B12    94          DC    AL2(INPUT+76)
   0B13 08E7             0B14    95          DC    AL2(INPUT+7)
   0B15 C2 02 0232               96          LA    UTAB,XR2                 INITIALIZE POINTER TO DCP UNIT TABLE
   0B19 9D 00 0D 07              97 LOOP1    CLC   0(1,XR2),7(,XR1)         BRANCH IF UNIT IS ATTACHED TO SYSTEM
   0B1D F2 81 12                 98          JE    CLFLAG
   0B20 B8 10 01                 99          TBN   1(,XR2),X'10'            CHECK FOR LAST DCP ENTRY
   0B23 E2 02 03                100          LA    3(,XR2),XR2              INCREMENT TO NEXT UDT ENTRY
   0B26 C0 90 0B19              101          BF    LOOP1                    CONTINUE UNLESS DCP UNIT TABLE DONE
   0B2A 3C FF 0A96              102 SETSKP  MVI   SKFLAG,X'FF'             SET FLAG TO SKIP THIS MODULE
   0B2E C0 87 0AA8              103          B     SETUP
   0B32 C2 02 0A92              104 CLFLAG  LA    START,XR2                RELOAD BASE REGISTER
   0B36 BC 00 04                105          MVI   SKFLAG(,XR2),X'00'       CLEAR SKIP FLAG
   0B39 C0 87 0226              106          B     PACK                     PACK SIZE OF MODULE
   0B3D 04               0B3D   107          DC    IL1'4'
   0B3E 08D0             0B3F   108          DC    AL2(INPUT+80)
   0B40 0A98             0B41   109          DC    AL2(MSIZE)
   0B42 5C 1F 1F 3F             110          MVC   31(32,XR1),63(,XR1)
   0B46 7C 40 5F                111          MVI   95(,XR1),C' '
   0B49 5C 3E 5E 5F             112          MVC   94(63,XR1),95(,XR1)
   0B4D 35 01 0A9A              113          L     POINTR,XR1               PUT STARTING ADDRESS IN PROPER
   0B51 4C 01 07 0A92           114          MVC   7(2,XR1),START             TABLE ENTRY
   0B56 C0 87 021E              115          B     UNPACK                   UNPACK STARTING ADDRESS OF THIS
   0B5A 02               0B5A   116          DC    IL1'2'                    MODULE
   0B5B 0A92             0B5C   117          DC    AL2(START)
   0B5D 08A4             0B5E   118          DC    AL2(INPUT+36)
   0B5F AC 01 02 00             119          MVC   BASE(2,XR2),START(,XR2)  SET UP RELOCATION FACTOR FOR THIS
   0B63 AF 01 C2 0D             120          SUC   BASE(2,XR2),XA00(,XR2)     MODULE
   0B67 AC 01 13 00             121          MVC   WORK(2,XR2),START(,XR2)
   0B6B AE 01 13 06             122          ALC   WORK(2,XR2),MSIZE(,XR2)
   0B6F 8D 01 13 0203           123          CLC   WORK(2,XR2),SIZE         BRANCH IF THIS MODULE WILL FIT IN
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FF12 SYSTEM TEST RELOCATING LOADER

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT

    0B74 F2 04 16              124         JNH   PTITLE                CORE
    0B77 BC EE 04              125         MVI   SKFLAG(,XR2),X'EE'   SET FLAG TO INDICATE OUT OF CORE
    0B7A C0 87 021A            126         B     PRINT                  PRINT OVER CORE INDICATION
    0B7E C6              0B7E  127         DC    XL1'C6'
    0B7F 22              0B7F  128           DC    IL1'34'
    0B80 0DCE            0B81  129         DC    AL2(EMSG)
    0B82 FF01            0B83  130         DC    XL2'FF01'
    0B84 C0 87 0222            131         B     HALT                   HALT ON ERROR
    0B88 FF01            0B89  132         DC    XL2'FF01'
    0B8A E0 87 16              133         B     SETUP(,XR2)            GO READ NEXT CARD
    0B8D C0 87 021A            134 PTITLE  B     PRINT                  PRINT MODULE NAME & STARTING
    0B91 21              0B91  135         DC    XL1'21'
    0B92 38 80 C20B            136         TBN   SBYTE3,SSW18           SKIP HALT IF SENSE SWITCH 18 OFF
    0B96 E0 90 16              137         BF    SETUP(,XR2)
    0B99 C0 87 021A            138         B     PRINT                  SKIP 6 LINES
    0B9D 16              0B9D  139         DC    XL1'16'
    0B9E C0 87 0222            140         B     HALT                   HALT TO ALLOW BYPASSING MODULE
    0BA2 FFE0            0BA3  141         DC    XL2'FFE0'
    0BA4 B0 00 13              142         SNS   WORK(,XR2),X'0'         READ DATA SWITCHES
    0BA7 BB 0F 12              143         SBF   WORK-1(,XR2),X'0F'
    0BAA BD A0 12              144         CLI   WORK-1(,XR2),X'A0'     IF LEFTMOST DATA SWITCH IS -A-,
    0BAD E0 81 98              145         BE    SETSKP(,XR2)            SET FLAG TO BYPASS THIS MODULE
    0BB0 E0 87 16              146         B     SETUP(,XR2)            GO READ NEXT CARD
    0BB3 BD FF 04              147 CKSKIP  CLI   SKFLAG(,XR2),X'FF'     GO READ NEXT CARD IF SKIP FLAG ON
    0BB6 E0 81 16              148         BE    SETUP(,XR2)
    0BB9 7D E5 00              149         CLI   0(,XR1),C'T'           BRANCH IF NOT TEXT CARD
    0BBC F2 01 D3              150         JNE   CKREP
    0BBF 3D A0 0232            151         CLI   UTAB,X'A0'             BRANCH IF LOADING FROM DISK
    0BC3 F2 81 52              152         JE    TEDONE
    0BC6 7D D0 01              153 LOOP2   CLI   1(,XR1),X'D0'           REPLACE X'D0' BYTES WITH X'2A'
    0BC9 F2 01 03              154         JNE   *+6
    0BCC 7C 2A 01              155         MVI   1(,XR1),X'2A'
    0BCF D2 01 C1              156         LA    1(,XR1),XR1
    0BD2 B4 01 13              157         ST    WORK(,XR2),XR1
    0BD5 BD D8 13              158         CLI   WORK(,XR2),X'D8'
    0BD8 C0 82 0BC6            159         BL    LOOP2
    0BDC C2 03 0BD7            160         LA    INPUT+87,X'03'         INITIALIZE POINTERS
    0BE0 3C 00 0BEB            161 LENGTH  MVI   S1+1,0                 INITIALIZE LENGTH OF ADD FIELD
    0BE4 0C 00 0BEF 0BEB       162 CMLOOP  MVC   S2+1(1),S1+1
    0BEA AE 00 01 01           163 S1      ALC   1(*-*,XR2),1(,XR2)     SHIFT OFF HIGH ORDER TWO BITS
    0BEE AE 00 01 01           164 S2      ALC   1(*-*,XR2),1(,XR2)
    0BF2 0E C0 0BEB 0DFC       165         ALC   S1+1(1),ONE              PREPARE TO OPERATE ON NEXT BYTE
    0BF8 3D 04 0BEB            166         CLI   S1+1,4                 CONTINUE UNTIL 4 BYTES COMPRESSED
    0BFC C0 01 0BE4            167         BNE   CMLOOP
    0C00 6C 02 01 00           168         MVC   1(3,XR1),0(,XR2)       MOVE COMPRESSED BYTES TO TEMP FIELD
    0C04 36 01 0AA1            169         A     NEG3,XR1               PREPARE FOR NEXT 4 BYTES
    0C08 36 02 0AA3            170         A     NEG4,XR2
    0C0C 34 01 0AA5            171         ST    WORK,XR1
    0C10 3D 97 0AA5            172         CLI   WORK,X'97'
    0C14 C0 84 0BF0            173         BH    LENGTH                 CONTINUE UNTIL CARD DONE
    0C18 C2 01 C980            174 TEDONE  LA    INPUT,XR1              POINT XR1 AT READ-IN FIELD
    0C1C 3D A0 0232            175         CLI   UTAB,X'A0'             BRANCH IF LOADING FROM MFCU
    0C20 F2 01 27              176         JNE   CDSTP
                               177 *  DISK SETUP FOR RELOCATION.
    0C23 1C 02 0C8C 03         178         MVC   MOVE+3(3),3(,XR1)      SET UP DESTINATION ADDRESS
    0C28 0E 01 0C8C 0A94       179         ALC   MOVE+3(2),BASE         RELOCATE
    0C2E 1C 00 0C8D 01         180         MVC   MOVE+4(1),1(,XR1)      SET UP SOURCE DISPLACEMENT
    0C33 D2 02 FF              181         LA    255(,XR1),XR2          POINT XR2 AT LAST RELOCATION BYTE
    0C36 7C 00 00              182         MVI   0(,XR1),X'0'           SET UP LOWER LIMIT FOR RELOCATION
    0C39 76 01 01              183         A     1(,XR1),XR1              SEARCH
    0C3C D2 01 04              184         LA    4(,XR1),XR1
    0C3F 34 01 C881            185         ST    INPUT+1,XR1
    0C43 C2 01 C884            186         LA    INPUT+4,XR1            POINT AT FIRST BYTE TEXT DATA
    0C47 F2 87 23              187         J     LOOP3
                               188 *  CARD SETUP FOR RELOCATION
    0C4A 1C 02 0C8C 19         189 CDSTP   MVC   MOVE+3(3),25(,XR1)      SET UP DESTINATION ADDRESS
    0C4F 0E 01 0C8C 0A94       190         ALC   MOVE+3(2),BASE           RELOCATE
    0C55 1C 00 0C8D 17         191         MVC   MOVE+4(1),23(,XR1)     SET UP SOURCE DISPLACEMENT
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FF12 SYSTEM TEST RELOCATING LOADER

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT

   0C5A D2 02 55                 192        LA    85(,XR1),XR2          POINT XR2 AT TABLE OF RELOC BYTES
   0C5D 4E 00 17 0C6C            193        ALC   23(1,XR1),PTXR1+2      SET UP COMPARE LIMIT FOR RELOCATION
                                 194 *                                   SEARCH
   0C62 7C 00 16                 195        MVI   22(,XR1),X'0'
   0C65 4E 01 17 0AAB            196        ALC   23(2,XR1),SETUP+3
   0C6A D2 01 1A                 197 PTXR1  LA    26(,XR1),XR1          POINT XR1 AT BEGINNING OF TEXT DATA
   0C6D BD 00 00                 198 LOOP3  CLI   0(,XR2),X'0'          IF ZERO FILL, DONE
   0C70 F2 81 16                 199        JE    MOVE
   0C73 2C 00 0C7A 00            200        MVC   RELOC+2(1),0(,XR2)    SET UP DISPLACEMENT FOR RELOC ADJUST
   0C78 4E 01 00 0A94            201 RELOC  ALC   *-*(2,XR1),BASE       ADD RELOCATION FACTOR
   0C7D 36 02 0DFF               202        A     NEG1,XR2              ADJUST TO LOOK AT NEXT RELOC BYTE
   0C81 34 02 0AA5               203        ST    WORK,XR2
   0C85 C0 87 0C6D               204        B     LOOP3
   0C89 1C 00 0000 00            205 MOVE   MVC   *-*(*-*),*-*(,XR1)    MOVE TEXT DATA TO CORE
   0C8E C0 87 0AA8               206        B     SETUP                 GO READ NEXT CARD
   0C92 7D D9 00                 207 CKREP  CLI   0(,XR1),C'R'          BRANCH IF NOT REPLACE CARD
   0C95 F2 01 49                 208        JNE   CKCOM
   0C98 C0 87 0226               209        B     PACK                  PACK ADDRESS
   0C9C 04              0C9C     210        DC    IL1'4'
   0C9D C8E5            0C9E     211        DC    AL2(INPUT+5)
   0C9F 0CC3            0CA0     212        DC    AL2(DEST)
   0CA1 0E 01 0CC3 0A94          213        ALC   DEST(2),BASE            ADD RELOCATION FACTOP
   0CA7 7D C5 01                 214        CLI   1(,XR1),C'E'            BRANCH IF NOT PATCH EXECUTE CARD
   0CAA F2 01 07                 215        JNE   AJDEST
   0CAD 35 01 0CC3               216        L     DEST,XR1                BRANCH TO CARD ADDRESS IF IT IS
   0CB1 D0 87 00                 217        B     0(,XR1)
   0CB4 D2 01 08                 218 AJDEST LA    8(,XR1),XR1             POINT AT FIRST PAIR OF HEX DIGITS
   0CB7 34 01 0CC1               219 NEXT   ST    SRCE,XR1                LOAD POINTER FOR THIS PAIR
   0CBB C0 87 0226               220        B     PACK                    GO PACK THIS BYTE
   0CBF 02              0CBF     221        DC    IL1'2'
   0CC0 0000            0CC1     222 SRCE   DC    AL2(*-*)
   0CC2 0000            0CC3     223 DEST   DC    AL2(*-*)
   0CC4 0E 01 0CC3 0DFC          224        ALC   DEST,ONE(2)             INCREMENT DESTINATION POINTER
   0CCA 7D 40 01                 225 CKBLK  CLI   1(,XR1),C' '           DONE WHEN BLANK ENCOUNTERED
   0CCD E0 81 16                 226        BE    SETUP(,XR2)
   0CD0 D2 01 01                 227        LA    1(,XR1),XR1             INCREMENT TO NEXT POSITION
   0CD3 7D 6B 00                 228        CLI   0(,XR1),C','            BYPASS ANY COMMAS
   0CD6 C0 81 0CCA               229        BE    CKBLK
   0CDA D2 01 01                 230        LA    1(,XR1),XR1             INCREMENT POINTER TO RIGHT DIGIT
   0CDD C0 87 0CB7               231        B     NEXT                    GO PACK ANOTHER BYTE
   0CE1 7D 5C 00                 232 CKCOM  CLI   0(,XR1),C'*'           BRANCH IF THIS IS NOT COMMENT
   0CE4 F2 01 0F                 233        JNE   CKEND                    CARD
   0CE7 38 01 0208               234        TBN   X'208',X'01'             SWS07 ON?
   0CEB E0 10 16                 235        BT    SETUP(,XR2)
   0CEE C0 87 021A               236        B     PRINT                   PRINT CONTENTS OF THIS CARD
   0CF2 21              0CF2     237        DC    XL1'21'
   0CF3 E0 87 16                 238        B     SETUP(,XR2)             GO READ NEXT CARD
   0CF6 7D C5 00                 239 CKEND  CLI   0(,XR1),C'E'           BRANCH IF NOT END CARD
   0CF9 E0 01 16                 240        BNE   SETUP(,XR2)
   0CFC 35 01 0A9A               241        L     POINTR,XR1              LOAD MODULE TABLE POINTER
   0D00 75 01 07                 242        L     7(,XR1),XR1             POINT XR1 AT MODULE SECTION PREFACE
   0D03 78 80 02                 243        TBN   2(,XR1),X'80'           BRANCH IF NO UDT ENTRIES
   0D06 F2 10 58                 244        JF    LDEND
   0D09 C2 02 0232               245 UFIND1 LA    UTAB,XR2                POINT XR2 AT DCP UNIT TABLE
   0D0D 90 00 00 0A              246 UFIND2 CLC   0(1,XR2),10(,XR1)       BRANCH IF NOT PROPER UDT
   0D11 F2 01 18                 247        JNE   UFIND4
   0D14 6C 00 0C 02              248        MVC   12(1,XR1),2(,XR2)       LOAD SECTION PREFACE OPTION BITS
   0D18 68 03 0B 01              249        MNN   11(,XR1),1(,XR2)
   0D1C 7A 20 0B                 250        SBN   11(,XR1),X'20'          SET ASSIGNED FLAG
   0D1F 78 10 0B                 251 UFIND3 TBN   11(,XR1),X'10'
   0D22 D2 01 03                 252        LA    3(,XR1),XR1             INCREMENT SPUT POINTER
   0D25 C0 90 0D09               253        BF    UFIND1                  IF NOT LAST ENTRY, GO LOAD NEXT
   0D29 F2 87 35                 254        J     LDEND                   OTHERWISE - GO ON WITH LOADING
   0D2C B8 10 01                 255 UFIND4 TBN   1(,XR2),X'10'           TEST FOR LAST DCP UDT ENTRY
   0D2F E2 02 03                 256        LA    3(,XR2),XR2             INCREMENT DCP UNIT TABLE POINTER
   0D32 C0 90 0D0D               257        BF    UFIND2                  CONTINUE UNTIL ALL UDT CHECKED
                                 258 *  MODULE UDT REQUIREMENT COULD NOT BE FULFILLED.
   0D36 78 40 0B                 259        TBN   11(,XR1),X'40'          SKIP ERROR HALT IF REQUIRED FLAG NOT
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FF12 SYSTEM TEST RELOCATING LOADER

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT

   0D39 C0 90 0D1F            260         BF    UFIND3                    ON
   0D3D D2 01 0A              261         LA    10(,XR1),XR1              PUT UNIT IDENTIFICATION IN PRINTOUT
   0D40 34 01 0D4A            262         ST    DEVID,XR1
   0D44 C0 87 021E            263         B     UNPACK
   0D48 01              0D48  264         DC    IL1'1'
   0D49 0000            0D4A  265 DEVID   DC    AL2(*-*)
   0D4B 0D8F            0D4C  266         DC    AL2(EMSG1-29)
   0D4D C0 87 021A            267         B     PRINT                     PRINT ERROR MESSAGE TO INDICATE
   0D51 C1              0D51  268         DC    XL1'C1'                    THAT UNIT NOT DEFINED IN UDT
   0D52 26              0D52  269         DC    IL1'38'
   0D53 0DAC            0D54  270         DC    AL2(EMSG1)
   0D55 FF02            0D56  271         DC    XL2'FF02'
   0D57 C0 87 0222            272         B     HALT                     *HALT IF SSW06 IS OFF
   0D5B FF02            0D5C  273         DC    XL2'FF02'
   0D5D C0 87 0AA8            274         B     SETUP                     GO TO READ NEXT MODULE
   0D61 0E 01 0A92 0A98       275 LDEND   ALC   START(2),MSIZE            SET UP STARTING ADDRESS FOR
                              276 *                                        NEXT MODULE
   0D67 35 01 CA9A            277         L     POINTR,XR1                LOAD POINTER TO THIS TABLE SLOT
   0D6B 7C 00 00              278         MVI   0(,XR1),X'0'              INDICATE THAT ENTRY HAS BEEN FILLED
   0D6E 0E 01 0A9A 0D86       279         ALC   POINTR(2),EIGHT           INCREMENT FOR NEXT MODULE
   0D74 0F 00 0A95 0DFC       280         SLC   NPROGS(1),ONE             SET FLAG TO TERMINATE LOADING IF
   0D7A F2 01 04              281         JNZ   *+7                        16 MODULES HAVE BEEN LOADED
   0D7D 3C EE 0A96            282         MVI   SKFLAG,X'EE'
   0D81 C0 87 0AA8            283         B     SETUP                     GO READ NEXT CARD
                              284
                              285 *************
                              286 * CONSTANTS ***************************************************************
                              287 *************
   0D85 0008            0D86  288 EIGHT     DC    XL2'08'
                              289
                              290 *************
                              291 * PRINTOUTS ***************************************************************
                              292 *************
   0D87 C4C5E5C9C3C540E7 0DAC 293 EMSG1   DC    CL38'DEVICE XX NOT ATTACHED-MODULE BYPASSED'
   0D8F E740D5D6E340C1E3      293
   0D97 E3C1C3C8C5C460D4      293
   0D9F D6C4E4D3C540C2E8      293
   0DA7 D7C1E2E2C5C4          293
   0DAD C3D6D9C540D6E5C5 0DCE 294 EMSG    DC    CL34'CORE OVERFLOWED,LOADING TERMINATED'
   0DB5 D9C6D3D6E6C5C46B      294
   0DBD D3D6C1C4C9D5C740      294
   0DC5 E3C5D9D4C9D5C1E3      294
   0DCD C5C4                  294
   0DFB                       295         ORG   X'E00'-5
                              296 ***************************************************************************
                              297 *   ROUTINE 01 - RELOCATING LOADER                                        *
                              298 *                                                                         *
                              299 *   THE FOLLOWING CODE LOADS THE PROGRAM MODULES, RELOCATING THE           *
                              300 *   CONSECUTIVE PROGRAMS AND ALIGNING EACH ON A 256-BYTE BOUNDARY.        *
                              301 *   DCP LOADS THE SYSTEM TEST SUPERVISOR AND BRANCHES TO THIS LOADER.     *
                              302 *   CARDS RECOGNIZED BY THIS LOADER INCLUDE--                             *
                              303 *                                                                         *
                              30          HEADER                                                          *
                              3           TEXT                                                            *
                              3           REPLACE                                                         *
                              30.         COMMENT                                                         *
                              308 *       END                                                             *
                              309 ***************************************************************************
   0DFB 00              0DFB  310           DC    XL1'0'
   0DFC 01              0DFC  311 RTNO1   DC    XL1'01'                   CURRENT ROUTINE NUMBER
                        0DFC  312 ONE     EQU   *-1
   0DFD 00              0DFD  313         DC    XL1'0'                        FLAGS
   0DFE FFFF            0DFF  314         DC    XL2'FFFF'                     LAST ROUTINE PREFIX
                        0DFF  315 NEG1    EQU   *-1
                              316 ***************************************************************************
   0E00 3D A0 0232            317         CLI   UTAB,X'A0'
   0E04 C0 01 0E6B            318         BNE   PRTHD
   0E08 C0 87 022A            319         B     LOAD
```

FF12 SYSTEM TEST RELOCATING LOADER

```
ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT

   0E0C 02                0E0C  320         DC    XL1'02'            SEEK TO VTOC
   0E0D 3C 10 0E8D               321         MVI   TCNT,16
   0E11 C2 01 0A11               322         LA    TABLE+1,XR1
   0E15 34 01 0AA7               323         ST    LPTR,XR1
  *0E19 C0 87 022A               324 SEEK2   B     LOAD
   0E1D 10                0E1D  325         DC    XL1'10'                 READ A RECORD
   0E1E 0D 02 0882 0E90          326           CLC   DBUF+2(3),ACT           CHECK FOR ACTIVE ENTRY
   0E24 C0 01 0E6B               327           BNE   VEND
   0E28 0D 02 0887 0E93          328           CLC   DBUF+7(3),OLD           CHECK FOR OLD ENTRY
   0E2E C0 81 0E67               329           BE    NEXTS
   0E32 3D FF 088A               330           CLI   DBUF+10,X'FF'
   0E36 C0 81 0E67               331           BE    NEXTS
   0E3A 3D 40 088A               332           CLI   DBUF+10,C' '            CHECK FOR SYSTEM TEST MOD.
   0E3E C0 81 0E67               333           BE    NEXTS
   0E42 35 01 0AA7               334         L     LPTR,XR1
   0E46 34 01 0E56               335         ST    TO@,XR1
   0E4A 3C C4 0884               336         MVI   DBUF+4,C'D'
   0E4E C0 87 0226               337         B     PACK
   0E52 04                0E52  338         DC    XL1'4'
   0E53 0EE7              0E54  339         DC    AL2(DBUF+7)
   0E55 0000              0E56  340 TO@     DC    AL2(*-*)
   0E57 0E 01 0AA7 0D86          341         ALC   LPTR,EIGHT
   0E5D 0F 00 0E8D 0DFC          342         SLC   TCNT,ONE
   0E63 C0 81 0E6B               343         BZ    VEND
                          0E67  344 NEXTS   EQU   *
   0E67 C0 87 0E19               345         B     SEEK2
                          0E6B  346 VEND    EQU   *
   0E6B C0 87 021A               347 PRTHD   B     PRINT
   0E6F 42                0E6F  348         DC    XL1'42'
   0E70 24                0E70  349         DC    IL1'36'
   0E71 0EB7              0E72  350         DC    AL2(HDG)
   0E73 FF00              0E74  351         DC    XL2'FF00'
   0E75 C2 01 0A10               352         LA    TABLE,XR1
   0E79 34 01 0A9A               353         ST    POINTR,XR1
   0E7D C2 01 0A08               354         LA    TABLE-8,XR1
   0E81 34 01 0AA7               355         ST    LPTR,XR1
   0E85 3C C5 0680               356         MVI   INPUT,C'E'          FORCE CORRECT BRANCH FOR DISK
   0E89 C0 87 0AA8               357         B     SETUP                    WHILE LOADING MODULES
   0E8D 10                0E8D  358 TCNT    DC    IL1'16'
   0E8E C1C3E3            0E90  359 ACT     DC    CL3'ACT'
   0E91 D6D3C4            0E93  360 OLD     DC    CL3'OLD'
   0E94 D3C9E2E340D6C640  0EB7  361 HDG     DC    CL36'LIST OF MODULES & STARTING ADDRESSES'
   0E9C D4D6C4E4D3C5E240        361
   0EA4 5040E2E3C1D9E3C9        361
   0EAC D5C740C1C4C4D9C5        361
   0EB4 E2E2C5E2                361
                          C880  362 DBUF    EQU   X'880'
                                363
                                364 ***********
                                365 * EQUATES ***************************************************************
                                366 ***********
                          0001  367 XR1     EQU   1                       INDEX REGISTER 1
                          0002  368 XR2     EQU   2                       INDEX REGISTER 2
                          0008  369 ARR     EQU   X'08'                   ADDRESS RECALL REGISTER
                          0203  370 SIZE    EQU   X'203'                  SRT - CORE SIZE OF SYSTEM
                          020B  371 SBYTE3  EQU   X'20B'                  SECOND BYTE OF SECTION SENSE SWS
                          021A  372 PRINT   EQU   X'21A'                  SRT -ENTRY TO PRINT
                          021E  373 UNPACK  EQU   X'21E'                  SRT -ENTRY TO CONVERT HEX TO EBCDIC
                          0222  374 HALT    EQU   X'222'                  SRT -ENTRY TO HALT
                          0226  375 PACK    EQU   X'226'                  SRT -ENTRY TO PACK EBCDIC TO HEX
                          022A  376 LOAD    EQU   X'22A'                  SRT -ENTRY TO LOAD
                          0232  377 UTAB    EQU   X'232'                  SRT -FIRST BYTE
                          0880  378 INPUT   EQU   X'880'                  ADDRESS OF READIN AREA
                                379 *       SENSE SWITCH NUMBER
                          0080  380 SSW18   EQU   X'80'                   SSW TO HALT BEFORE LOADING MODULE
                          FFFF  381           END
```

FF12 SYSTEM TEST RELOCATING LOADER

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ACT	A	003	0E90	0359	0326
AJDEST	A	003	0CB4	0218	0215
ARR	C	001	0008	0369	
BASE	A	002	0A94	0040	0119* 0120* 0179 0190 0201 0213
CDSTP	A	005	0C4A	0189	0176
CHKEE	A	003	0AFA	0086	0081
CKBLK	A	003	0CCA	0225	0229
CKCCM	A	003	0CE1	0232	0208
CKEND	A	003	0CF6	0239	0233
CKREP	A	003	0C92	0207	0150
CKSKIP	A	003	0BF3	0147	0089
CLFLAG	A	004	0B32	0104	0091 0098
CMLOOP	A	006	0BE4	0162	0167
COMM	A	001	0AE4	0077	0073
DBUF	C	001	0880	0362	0326 0328 0330 0332 0336* 0339
DEST	A	002	0CC3	0223	0212 0213* 0216 0224*
DEVTD	A	002	0D4A	0265	0262*
EIGHT	A	002	0D86	0288	0061 0279 0341
EMSG	A	034	0DCE	0294	0129
EMSG1	A	038	0DAC	0293	0266 0270
FF1	A	001	0A00	0003	
FF2	A	003	0A9D	0048	0080
HALT	C	001	0222	0374	0131 0140 0272
HDG	A	036	0EB7	0361	0350
INPUT	C	001	0880	0378	0059 0078 0094 0095 0108 0118 0160 0174 0185* 0186 0211 0356*
LDEND	A	006	0D61	0275	0244 0254
LDSV	A	001	0AF3	0082	0067
LENGTH	A	004	0BE0	0161	0173
LOAD	C	001	C22A	0376	0070 0075 0083 0319 0324
LOADC	A	001	0ADF	0074	0058 0060
LOOP1	A	004	0B19	0097	0101
LOOP2	A	003	0BC6	0153	0159
LOOP3	A	003	0C6D	0198	0187 0204
LPTR	A	002	0AA7	0053	0061* 0062 0323* 0334 0341* 0355*
MOVE	A	005	0C89	0205	0178* 0179* 0180* 0189* 0190* 0191* 0199
MSIZE	A	002	0A98	0046	0109 0122 0275
NEG1	A	001	0DFF	0315	0202
NEG3	A	002	0AA1	0050	0169
NEG4	A	002	0AA3	0051	0170
NEXT	A	004	0CB7	0219	0231
NEXTS	A	001	0E67	0344	0329 0331 0333
NPROGS	A	001	0A95	0041	0280*
OLD	A	003	0E93	0360	0328
ONE	A	001	0DFC	0312	0165 0224 0280 0342
PACK	C	001	0226	0375	0092 0106 0209 0220 0337
PID	A	002	0ADB	0072	0069*
POINTR	A	002	0A9A	0047	0065 0113 0241 0277 0279* 0353*
PRINT	C	001	C21A	0372	0126 0134 0138 0236 0267 0347
PRTHD	A	004	0E6B	0347	0318
PTITLE	A	004	0B8D	0134	0124
PTXR1	A	003	0C6A	0197	0193
RDC	A	001	0AD0	0068	0064
RELOC	A	005	0C78	0201	0200*
RTN01	A	001	0DFC	0311	0013
SBYTE3	C	001	020B	0371	0136
SEEK2	A	004	0E19	0324	0345
SETSKP	A	004	0B2A	0102	0145
SETUP	A	001	0AA8	0056	0087 0103 0133 0137 0146 0148 0196 0206 0226 0235 0238 0240 0274 0283 0357
SIZE	C	001	0203	0370	0123
SKFLAG	A	001	0A96	0044	0086 0102* 0105* 0125* 0147 0282*
SRCE	A	002	0CC1	0222	0219*
SSW18	C	001	0080	0380	0136
START	A	002	0A92	0039	0037 0038 0079 0104 0114 0117 0119 0121 0275*
S1	A	004	0BFA	0163	0161* 0162 0165* 0166
S2	A	004	0BEE	0164	0162*

FF12 SYSTEM TEST RELOCATING LOADER

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
TABLE	A	001	0A10	0018	0047 0322 0352 0354
TCNT	A	001	0E8D	0358	0321* 0342*
TEDONE	A	004	0C18	0174	0152
TOP	A	0C2	0E56	0340	0335*
UFIND1	A	004	0D09	0245	0253
UFIND2	A	0C4	0D0L	0246	0257
UFIND3	A	003	0D1F	0251	0260
UFIND4	A	003	0D2C	0255	0247
UNPACK	C	001	021E	0373	0115 0263
UTAB	C	001	0232	0377	0057 0096 0151 0175 0245 0317
VEND	A	001	0E6B	0346	0327 0343
WORK	A	002	0AA5	0052	0121* 0122* 0123 0142* 0143* 0144 0157* 0158 0171* 0172 0203*
XA00	A	002	0A9F	0049	0120
XR1	C	001	0001	0367	0062* 0063 0065* 0066 0069 0078* 0080 0088 0090 0097 0110 0110
					0111 0112 0112 0113* 0114 0149 0153 0155 0156 0156* 0157 0168
					0169* 0171 0174* 0178 0180 0181 0182 0183 0183* 0184 0184* 0185
					0186* 0189 0191 0192 0193 0195 0196 0197 0197* 0201 0205 0207
					0214 0216* 0217 0218 0218* 0219 0225 0227 0227* 0228 0230 0230*
					0232 0239 0241* 0242 0242* 0243 0246 0248 0249 0250 0251 0252
					0252* 0259 0261 0261* 0262 0277* 0278 0322* 0323 0334* 0335 0352*
					0353 0354* 0355
XR2	C	001	0002	0368	0079* 0080 0086 0087 0096* 0097 0099 0100 0100* 0104* 0105 0119
					0119 0120 0120 0121 0121 0122 0122 0123 0125 0133 0137 0142
					0143 0144 0145 0146 0147 0148 0157 0158 0163 0163 0164 0164
					0168 0170* 0181* 0192* 0198 0200 0202* 0203 0226 0235 0238 0240
					0245* 0246 0248 0249 0255 0256 0256*

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

FF12 SYSTEM TEST RELOCATING LOADER

OBJECT CARD LISTING

THE CHARACTER ˙ INDICATES A BLANK COLUMN AND THE CHARACTERS D̄ Ē H̄ INDICATE NUMERIC SHIFT.

```
CL  1 THROUGH 16  CL 17 THROUGH 32  CL 33 THROUGH 48  CL 49 THROUGH 64  CL 65 THROUGH 80  CL 81 THROUGH 96

T+-Y:"1H̄˙˙˙˙˙C¬0 ˙˙˙˙˙˙˙˙˙˙|"""""  """""""""""""""""  """""""""""""""""  """""""""""""""""  """"@˙$:UFF120001
T+-Z5"""""""""""" """""""""""""""""  """""""""""""""""  """""""""""""""""  """""""""""""""""  """"@˙¬ZHFF120002
T+-D̄0"""""""""""" """""""""""""""""  """""""""""C-˙˙˙˙A˙  ˙˙˙˙H̄D<$F@-Y˙"""7  """˙˙˙˙˙˙˙'Y˙H2@-D  0|*M˙JZMFF120003
T+-,,BHC2˙KU+˙ED̄  XCQQ5˙ED̄X;B˙˙@Z˙  H̄(ED̄HWX3"˙|H̄GH10  AB_%A0H*BH̄S˙˙˙|H̄  GA*@G˙SYE0-DH-<H  BBZH˙RJ-FF120004
T+-%W$E&IĒB"HAA@B  G˙SYHC"H̄'#-L--JR  '&˙C2˙Ē5'ED?2-K$  ˙/0HW˙-T<BH¬B˙-H  2X&˙˙A"H̄AD,-&˙;H  B˙@˙˙¬8MFF120005
T+-_/U˙%R||@H̄V%B  GBD̄TB˙-D̄K?˙˙D0H*  BI-&H4˙D̄QPA@¬|71  ˙P5O=PV@5˙ED̄EL˙D  GBZ.˙/0H;˙-D̄KBH̄K  %˙&H˙EC&FF120006
T+->*˙H̄@A˙-6%˙J<  ˙˙,-DLAY4AD0HC@-&  O?+8D0H*BF%QSC*#  "˙*BG˙S."˙;BGE%B  G˙/Y/+H˙BB=B&E%B  G˙/Y˙N,*FF120007
T+-?PE%BG˙S."8.˙˙  D*%|D,6-D>BAW+B  GE,7"A+BAEX7T˙|H  A436-˙T.2-NI'4˙G  2˙&(@H̄-GK˙&P4˙J+  '6A<˙5$%FF120008
T+-0K0HH.1%HCB(*  @˙˙?,C˙˙.#0?,,-˙  A˙Ē8˙˙&D+˙˙?,C¬0  'A˙?,0˙D.9F0B˙&˙  6˙ED̄/(-HH̄Y3&ABD̄M  'V0Y˙6YYFF120009
T+-1(Z*BD3=CB˙&S  ˙|Ē˙B<?HAI10BCH0  CC-D<T˙D̄MG˙˙<T&G  K˙?'@˙˙A6˙&GK˙&&  4˙&SA0-DH/|H̄GH10  BCH0˙¬Q-FF120010
T+-2HF&8ACHCH̄VA0  ˙CH4P4-INL-˙PCF1  @˙AR+˙J*H̄D̄'HAP,4  ˙˙|H̄AES0˙CGY˙L-D  ˙BZ&6˙-7"(˙HH̄Z*B  GCP4˙N2YFF120011
T+-3CG˙˙˙˙˙C˙/0D̄  Y¬)U˙@-EI0H*BI-&  H/&3CC-D<00D̄M¬*M  A@-DG(&D<0'BG˙(H  ABC&AC<G˙/0HW˙-˙  ˙˙˙˙˙28<FF120012
T+-3=C-D<007@¬M˙  A8HD04-DA¬0%˙0HD  <2_HA˙*BGC.)'P˙C  2˙&@8˙&HH8A˙00H*  BFSG-/1R'1&C-˙JQ  5˙&Y˙J#*FF120013
T+-49WXMAA7S˙˙?H  &O<HB˙TH)˙˙˙H̄@-D  Q$˙˙<˙W-CB0E:H˙_  8D˙?K˙&|˙U˙4I@Y*  5>A˙A8-HC0I˙(CP/˙˙B@˙˙8L0FF120014
T+-54U˙4¬4-DH̄(˙D  (K*BG˙/8A˙˙˙(T@B  G˙/,AI-6%"0.˙/0H  S"0.˙/0D̄YC-DH̄U-D̄  Q(&DH̄WX0˙˙˙8ABZY  (/-@˙KHMFF120015
T+-6?˙˙D̄NC¬32˙&&  @*-D̄O0H*H̄D̄˙˙H1<P  V2*|E&+¬X&(PO84C  A8=|A0@TE1FCM5%L  U4@N˙O>TP0;.S1*L  C5_U˙MY@FF120016
TG-7+1MCO9*PR1_|  O9%PDĒ'|O0*LI5*)˙  ˙8@PR5<XN0;|E1˙˙  ˙˙˙˙˙˙˙˙˙˙˙˙˙˙  ˙˙˙˙˙˙˙˙˙˙˙˙˙˙  ˙˙˙˙˙:SHFF120017
T+-85˙˙D˙""@'Y˙H  20˙D+Ē@BG˙SYB|A˙  +T*HAB/D4˙ED̄X0H*  BH̄/˙(˙-SBCZC˙˙&9  ,C&HH/0:L0HD+R37  "BHY˙;-QFF120018
T+-900HD+R35˙8H,  ˙˙-&9X(&DH̄Z3&ACVQ  @1˙SD0H*BI-&H/0˙  ˙C-DH̄Z06FC0˙+T&7  @0HD+Ē@BGC/X˙/0H  Ē&S&˙@S˙FF120019
T+-:,C,¬"˙<HAB/˙  4˙&DĒ0-DH̄BC&ABL̄*  @1&S˙0H*H̄DACA0¬|  O4@LL2;.T&($F&(L  O1+LL1;I˙MDCS8@G  R9@U˙O1MFF120020
TB0:75*)˙0*LD6*P  S8%PS˙˙˙˙˙˙˙˙˙˙  ˙˙˙˙˙˙˙˙˙˙˙˙˙˙  ˙˙˙˙˙˙˙˙˙˙˙˙˙˙  ˙˙˙˙˙˙˙˙˙˙˙˙˙˙  ˙˙˙˙˙R&-FF120021
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FF12 SYSTEM TEST RELOCATING LOADER

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

E""!*E7*=¬DC"PH$ ="7H&F| | C F% ASC R A S0 Q 09310317710 4C571=H0FF120022