```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                           3         COPY  LOG4813                 ** MAP EC HISTORY **
                           4 ********************************************************************************
                           5 *                                                                              *
                           6 *                        ***       PREREQUISITES        ***                    *
                           7 *                                                                              *
                           8 *                                  NONE                                        *
                           9 *                                                                              *
                          10 ********************************************************************************
                          11 *                                                                              *
                          12 *                        ***       MODIFICATIONS        ***                    *
                          13 *                                                                              *
                          14 *  MODIFICATION'S MADE TO CORRECT PROBLEMS ENCOUNTERED DURING TESTING          *
                          15 *                                                                              *
                          16 ********************************************************************************
                          17 *                                                                              *
                          18 *                        ***     REA'S INCORPORATED     ***                    *
                          19 *                                                                              *
                          20 *                                  NONE                                        *
                          21 *                                                                              *
                          22 ********************************************************************************
                          23 *                                                                              *
                          24 *                        ***    SPECIAL INSTRUCTIONS    ***                    *
                          25 *                                                                              *
                          26 *                                  NONE                                        *
                          27 *                                                                              *
                          28 ********************************************************************************
                          29 *                                                                              *
                          30 *                        ***       E. C. HISTORY        ***                    *
                          31 *                                                                              *
                          32 *          DATE 010CT76  DATE 15MAR77  DATE 10JUN77  DATE 22JUL77              *
                          33 *          E.C. 578468   E.C. 578714   E.C. 578625   E.C. 578757               *
                          34 *                                                                              *
                          35 ********************************************************************************
002500                    37 I4813    START X'2500'              START ADDRESS OF ALL 'I' TYPE PROG
000100                    38 @QUES    EQU   X'0100'              EQUATED VALUE FOR MDI STATEMENT
000101                    39 @FIXT    EQU   X'0101'              EQUATED VALUE FOR MDI STATEMENT
000102                    40 @STOP    EQU   X'0102'              EQUATED VALUE FOR MDI STATEMENT
000200                    41 @GOTO    EQU   X'0200'              EQUATED VALUE FOR MDI STATEMENT
000201                    42 @CALL    EQU   X'0201'              EQUATED VALUE FOR MDI STATEMENT
000300                    43 @INPT    EQU   X'0300'              EQUATED VALUE FOR MDI STATEMENT
000400                    44 @QUXX    EQU   X'0400'              EQUATED VALUE FOR MDI STATEMENT
000500                    45 @TUXX    EQU   X'0500'              EQUATED VALUE FOR MDI STATEMENT
000600                    46 @NVLD    EQU   X'0600'              EQUATED VALUE FOR MDI STATEMENT
000000                    47 EQ       EQU   X'0000'              EQUATE FOR EQUAL
000004                    48 NE       EQU   X'0004'              EQUATE FOR NOT EQUAL
000008                    49 HI       EQU   X'0008'              EQUATE FOR HIGH
00000C                    50 NH       EQU   X'000C'              EQUATE FOR NOT HIGH
000010                    51 LO       EQU   X'0010'              EQUATE FOR LOW
000014                    52 NL       EQU   X'0014'              EQUATE FOR NOT LOW
000010                    53 LT       EQU   X'0010'              EQUATE FOR LESS THAN
00000C                    54 LE       EQU   X'000C'              EQUATE FOR LESS THAN OR EQUAL TO
000008                    55 GT       EQU   X'0008'              EQUATE FOR GREATER THAN
000014                    56 GE       EQU   X'0014'              EQUATE FOR GREATER THAN OR EQUAL TO
000200                    57 CN       EQU   X'0200'              EQUATE FOR ON
000202                    58 OF       EQU   X'0202'              EQUATE FOR OFF
000204                    59 MX       EQU   X'0204'              EQUATE FOR MIXED
000000                    60 EBC      EQU   X'0000'              EQUATE FOR EBCDIC DATA TRANSFER
000001                    61 HEX      EQU   X'0001'              EQUATE FOR HEX DATA TRANSFER
000001                    62 XTRNL    EQU   X'0001'              EQUATE FOR EXTERNAL REFERENCE
000000                    63 INTRNL   EQU   X'0000'              EQUATE FOR INTERNAL REFERENCE
000000                    64 PARM     EQU   X'0000'              EQUATE INDICATING PARAMETER
000001                    65 DA       EQU   X'0001'              EQUATE FOR DEVICE ADDRESS
000002                    66 UA       EQU   X'0002'              EQUATE FOR UNIT ADDRESS
000000                    67 DUMMY    EQU   X'0000'              DUMMY EQUATE
001800                    69 PID      EQU   *-X'0D00'            ADDRESS OF MDI HEADER
000232                    70 PTYPE    EQU   *-X'22CE'            ADDRESS OF PROCESSOR TYPE FIELD
00180C                    71 STEPNUM  EQU   PID+X'000C'          ADDRESS OF DECIMAL STEP NUMBER
00180E                    72 OPWD1    EQU   PID+X'000E'          ADDRESS OF OPTION WORD ONE
001810                    73 OPWD2    EQU   PID+X'0010'          ADDRESS OF OPTION WORD TWO
001818                    74 TUSTATUS EQU   PID+X'0018'          ADDRESS OF TU STATUS WORD
00181A                    75 TUWORK   EQU   PID+X'001A'          ADDRESS OF TU WORK AREA
00189A                    76 TUPARM1  EQU   PID+X'009A'          ADDRESS OF PARM 1 POINTER
00189C                    77 TUPARM2  EQU   PID+X'009C'          ADDRESS OF PARM 2 POINTER
00189E                    78 TUPARM3  EQU   PID+X'009E'          ADDRESS OF PARM 3 POINTER
0018A0                    79 TUPARM4  EQU   PID+X'00A0'          ADDRESS OF PARM 4 POINTER
0018A2                    80 TUPARM5  EQU   PID+X'00A2'          ADDRESS OF PARM 5 POINTER
0018A4                    81 TUPARM6  EQU   PID+X'00A4'          ADDRESS OF PARM 6 POINTER
0018A6                    82 TUPARM7  EQU   PID+X'00A6'          ADDRESS OF PARM 7 POINTER
0018A8                    83 TUPARM8  EQU   PID+X'00A8'          ADDRESS OF PARM 8 POINTER
0018AA                    84 TUPARM9  EQU   PID+X'00AA'          ADDRESS OF PARM 9 POINTER
0018AC                    85 TUPARM10 EQU   PID+X'00AC'          ADDRESS OF PARM 10 POINTER
0018AE                    86 TUPARM11 EQU   PID+X'00AE'          ADDRESS OF PARM 11 POINTER
0018B0                    87 TUPARM12 EQU   PID+X'00B0'          ADDRESS OF PARM 12 POINTER
0018B2                    88 TUPARM13 EQU   PID+X'00B2'          ADDRESS OF PARM 13 POINTER
0018B4                    89 TUPARM14 EQU   PID+X'00B4'          ADDRESS OF PARM 14 POINTER
0018B6                    90 TUPARM15 EQU   PID+X'00B6'          ADDRESS OF PARM 15 POINTER
0018B8                    91 TUPARM16 EQU   PID+X'00B8'          ADDRESS OF PARM 16 POINTER
0018BA                    92 TUMSGWTR EQU   PID+X'00BA'          ADDRESS OF -> TO COMMON MSG WRITER
0018BE                    93 TUUA     EQU   PID+X'00BE'          ADDRESS OF UNIT ADDRESS IN EBC
0018C0                    94 TUDA     EQU   PID+X'00C0'          ADDRESS OF DEVICE ADDRESS IN EBC
0018C2                    95 TUBUFF   EQU   PID+X'00C2'          ADDRESS OF LAST USED WORD IN MAP
0018C4                    96 TULAST   EQU   PID+X'00C4'          ADDRESS OF LAST ADDRESSABLE WORD
0018C6                    97 TURESULN EQU   PID+X'00C6'          ADDRESS OF LENGTH OF TU RESULTS
0018C8                    98 TURESUL  EQU   PID+X'00C8'          ADDRESS OF TU RESULTS FIELD
0018FC                    99 MAPNAME  EQU   PID+X'00FC'          ADDRESS OF MAP NAME FIELD IN HEX
001948                   100 TUINPT   EQU   PID+X'0148'          ADDRESS OF $INPT DATA
00196E                   101 PARMARA  EQU   PID+X'016E'          ADDRESS OF $INPT INPUT AREA
0019B8                   102 @DCADD1  EQU   PID+X'01B8'          MDI POINTER
0019BA                   103 @DCADD2  EQU   PID+X'01BA'          MDI POINTER
0019C4                   104 SUBSTAT  EQU   PID+X'01C4'          ADDRESS OF MDI STATUS
0019D0                   105 DEVADD   EQU   PID+X'01D0'          ADDRESS OF DEVICE ADDRESS TABLE 0
0019Da                   106 DEVADD1  EQU   PID+X'01DA'          ADDRESS OF DEVICE ADDRESS TABLE 1
0019E4                   107 DEVADD2  EQU   PID+X'01E4'          ADDRESS OF DEVICE ADDRESS TABLE 2
0019EE                   108 DEVADD3  EQU   PID+X'01EE'          ADDRESS OF DEVICE ADDRESS TABLE 3
0019F8                   109 DEVADD4  EQU   PID+X'01F8'          ADDRESS OF DEVICE ADDRESS TABLE 4
001A02                   110 DEVADD5  EQU   PID+X'0202'          ADDRESS OF DEVICE ADDRESS TABLE 5
001A0C                   111 DEVADD6  EQU   PID+X'020C'          ADDRESS IF DEVICE ADDRESS TABLE 6
001A16                   112 DEVADD7  EQU   PID+X'0216'          ADDRESS OF DEVICE ADDRESS TABLE 7
                         113          PRINT OFF
```



```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
002500  27FA             198         DC    A(ENTPT)             POINT TO MAP ENTRY POINT TABLE
                         199 ********************************************************************************
                         200 ********************************************************************************
                         201 **                                                                            **
                         202 **   THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D3C00)               **
                         203 **   TO LOCATE THE CORRECT RULE TO INVOKE, TO OBTAIN THE PROPER                **
                         204 **   PARAMETERS TO PASS TO THE TU'S AND TO PASS TO THE OPERATOR                **
                         205 **   THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS             **
                         206 **   PURPOSE THEY ARE:                                                        **
                         207 **                                                                            **
                         208 **   STEP AND RULE ADDRESS TABLE                                              **
                         209 **        THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND              **
                         210 **        THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE.               **
                         211 **        ENTRIES ARE AS FOLLOWES                                             **
                         212 **             A)  AN ADDRESS OF THE RULE DC START AREA                       **
                         213 **             B)  THE STEP NUMBER IN DECIMAL                                 **
                         214 **             C)  AN EQUATE FOR THE STEP NUMBER                              **
                         215 **                                                                            **
                         216 **   RULE INFORMATION TABLE                                                   **
                         217 **        THIS TABLE CONTAINES THE REQUIRED INFORMATION TO EXECUTE            **
                         218 **        THE APPROPRIATE RULE UNDER MDI. EACH RULE HAS ITS OWN               **
                         219 **        UNIQUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS              **
                         220 **        INDICATED WITH A X'0000' FOR THE RULE EQUATE.                       **
                         221 **                                                                            **
                         222 **        $QUES                                                               **
                         223 **             A) RULE EQUATE X'0100'                                         **
                         224 **             B) ADDRESS OF THE YES LEG RULE                                 **
                         225 **                                                                            **
                         226 **        $FIXT                                                               **
                         227 **             A) RULE EQUATE X'0101'                                         **
                         228 **             B) ADDRESS OF MESSAGE TO PRINT                                 **
                         229 **                                                                            **
                         230 **        $STOP                                                               **
                         231 **             A) RULE EQUATE X'0102'                                         **
                         232 **             B) ADDRESS OF MESSAGE                                          **
                         233 **                                                                            **
                         234 **        $GOTO                                                               **
                         235 **             A) RULE EQUATE X'0200'                                         **
                         236 **             B) ADDRESS OF MESSAGE                                          **
                         237 **             C) NAME OF MAP TO GO TO                                        **
                         238 **             D) ENTRY POINT WITHIN GO TO MAP TO USE                         **
                         239 **             E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE                **
                         240 **                                                                            **
                         241 **        $CALL                                                               **
                         242 **             A) RULE EQUATE X'0201'                                         **
                         243 **             B) ADDRESS OF MESSAGE                                          **
                         244 **             C) NAME OF MAP TO CALL                                         **
                         245 **             D) ENTRY POINT WITHIN CALLED MAP TO USE                        **
                         246 **             E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE                **
                         247 **                                                                            **
                         248 **        $INPT                                                               **
                         249 **             A) RULE EQUATE X'0300'                                         **
                         250 **             B) INPUT TYPE (EBCDIC OR HEX)                                  **
                         251 **             C) ADDRESS OF YES LEG RULE                                     **
                         252 **             D) DESTINATION LOCATION OF INPUT DATA                          **
                         253 **             E) LENGTH OF INPUT DATA                                        **
                         254 **             F) LOWER LIMIT OF GOOD DATA                                    **
                         255 **             G) HIGHER LIMIT OF GOOD DATA                                   **
                         256 **                                                                            **
                         257 **        $QUXX                                                               **
                         258 **             A) RULE EQUATE X'0400'                                         **
                         259 **             B) ADDRESS OF YES LEG RULE                                     **
                         260 **             C) TU BRANCH TO ADDRESS (INITIAL)                              **
                         261 **             D) TU BRANCH TO ADDRESS (SECONDARY)                            **
                         262 **             E) LENGTH OF PARAMETER IN BYTES                                **
                         263 **             F) PARAMETER TO PASS TO TU                                     **
                         264 **             G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER                **
                         265 **                                                                            **
                         266 **        $TUXX                                                               **
                         267 **             A) RULE EQUATE X'0500'                                         **
                         268 **             B) ADDRESS OF YES LEG RULE                                     **
                         269 **             C) TU BRANCH TO ADDRESS                                        **
                         270 **             D) TYPE OF COMPARE TO MAKE ON RESULTS                          **
                         271 **             E) LENGTH OF COMPARED RESULTS                                  **
                         272 **             F) MASK FIELD FOR COMPARE                                      **
                         273 **             G) LENGTH OF PARAMETER IN BYTES                                **
                         274 **             H) PARAMETER TO PASS TO THE TU                                 **
                         275 **             I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER                **
                         276 **                                                                            **
                         277 **        $NVLD                                                               **
                         278 **             A) RULE EQUATE X'0600'                                         **
                         279 **                                                                            **
                         280 **   ENTRY POINT TABLE                                                        **
                         281 **        THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT            **
                         282 **        THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE                  **
                         283 **        REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWES:            **
                         284 **                                                                            **
                         285 **             A) NAME OF ENTRY POINT                                         **
                         286 **             B) ADDRESS OF ENTRY POINT RULE TABLE                           **
                         287 **                                                                            **
                         288 **        THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'                 **
                         289 **                                                                            **
                         290 **   MESSAGE TABLE                                                            **
                         291 **        THIS TABLE CONTAINES THE MESSAGE PASSED TO THE OPERATOR             **
                         292 **        VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWES:                   **
                         293 **                                                                            **
                         294 **             A) EQUATE FOR START OF MESSAGE BLOCK                           **
                         295 **             B) NUMBER OF LINES OF MESSAGE                                  **
                         296 **             C) LENGTH OF FOLLOWING LINE                                    **
                         297 **             D) FIRST LINE OF MESSAGE                                       **
                         298 **             E) LENGTH OF FOLLOWING LINE                                    **
                         299 **             F) SECOND LINE OF MESSAGE                                      **
                         300 **             G) ETC.                                                        **
                         301 **                                                                            **
                         302 ********************************************************************************
                         303 ********************************************************************************
```

```
                                                                               ********************************************************************************
                                                                               ********************************************************************************
                                                                               **                                                                            **
                                                                               **                    STEP AND RULE ADDRESS TABLE                             **
                                                                               **                                                                            **
                                                                               ********************************************************************************
                                                                               ********************************************************************************
002502  25F8                                                          DC       AL2(N00001)
002504  0001                                                          DC       XL2'0001'
000001                                                        EQN00001  EQU          0001
002506  260A                                                          DC       AL2(N00002)
002508  0002                                                          DC       XL2'0002'
000002                                                        EQN00002  EQU          0002
00250A  261C                                                          DC       AL2(N00003)
00250C  0003                                                          DC       XL2'0003'
000003                                                        EQN00003  EQU          0003
00250E  262E                                                          DC       AL2(N00004)
002510  0004                                                          DC       XL2'0004'
000004                                                        EQN00004  EQU          0004
002512  2640                                                          DC       AL2(N00005)
002514  0005                                                          DC       XL2'0005'
000005                                                        EQN00005  EQU          0005
002516  265A                                                          DC       AL2(N00006)
002518  0006                                                          DC       XL2'0006'
000006                                                        EQN00006  EQU          0006
00251A  2674                                                          DC       AL2(N00007)
00251C  0007                                                          DC       XL2'0007'
000007                                                        EQN00007  EQU          0007
00251E  2680                                                          DC       AL2(N00008)
002520  0008                                                          DC       XL2'0008'
000008                                                        EQN00008  EQU          0008
002522  268C                                                          DC       AL2(N00009)
002524  0009                                                          DC       XL2'0009'
000009                                                        EQN00009  EQU          0009
002526  26A2                                                          DC       AL2(N00010)
002528  0010                                                          DC       XL2'0010'
00000A                                                        EQN00010  EQU          0010
00252A  26A6                                                          DC       AL2(N00011)
00252C  0011                                                          DC       XL2'0011'
00000B                                                        EQN00011  EQU          0011
00252E  26AA                                                          DC       AL2(N00012)
002530  0012                                                          DC       XL2'0012'
00000C                                                        EQN00012  EQU          0012
002532  26AE                                                          DC       AL2(N00013)
002534  0013                                                          DC       XL2'0013'
00000D                                                        EQN00013  EQU          0013
002536  26B2                                                          DC       AL2(N00014)
002538  0014                                                          DC       XL2'0014'
00000E                                                        EQN00014  EQU          0014
00253A  26B6                                                          DC       AL2(N00015)
00253C  0015                                                          DC       XL2'0015'
00000F                                                        EQN00015  EQU          0015
00253E  26BA                                                          DC       AL2(N00016)
002540  0016                                                          DC       XL2'0016'
000010                                                        EQN00016  EQU          0016
002542  26BE                                                          DC       AL2(N00017)
002544  0017                                                          DC       XL2'0017'
000011                                                        EQN00017  EQU          0017
002546  26C2                                                          DC       AL2(N00018)
002548  0018                                                          DC       XL2'0018'
000012                                                        EQN00018  EQU          0018
00254A  26C6                                                          DC       AL2(N00019)
00254C  0019                                                          DC       XL2'0019'
000013                                                        EQN00019  EQU          0019
00254E  26CA                                                          DC       AL2(N00020)
002550  0020                                                          DC       XL2'0020'
000014                                                        EQN00020  EQU          0020
002552  26CE                                                          DC       AL2(N00021)
002554  0021                                                          DC       XL2'0021'
000015                                                        EQN00021  EQU          0021
002556  26D2                                                          DC       AL2(N00022)
002558  0022                                                          DC       XL2'0022'
000016                                                        EQN00022  EQU          0022
00255A  26E6                                                          DC       AL2(N00023)
00255C  0023                                                          DC       XL2'0023'
000017                                                        EQN00023  EQU          0023
00255E  26EA                                                          DC       AL2(N00024)
002560  0024                                                          DC       XL2'0024'
000018                                                        EQN00024  EQU          0024
002562  26EE                                                          DC       AL2(N00025)
002564  0025                                                          DC       XL2'0025'
000019                                                        EQN00025  EQU          0025
002566  26F2                                                          DC       AL2(N00026)
002568  0026                                                          DC       XL2'0026'
00001A                                                        EQN00026  EQU          0026
00256A  26F6                                                          DC       AL2(N00027)
00256C  0027                                                          DC       XL2'0027'
00001B                                                        EQN00027  EQU          0027
00256E  26FA                                                          DC       AL2(N00028)
002570  0028                                                          DC       XL2'0028'
00001C                                                        EQN00028  EQU          0028
002572  270E                                                          DC       AL2(N00029)
002574  0029                                                          DC       XL2'0029'
00001D                                                        EQN00029  EQU          0029
002576  2712                                                          DC       AL2(N00030)
002578  0030                                                          DC       XL2'0030'
00001E                                                        EQN00030  EQU          0030
00257A  2716                                                          DC       AL2(N00031)
00257C  0031                                                          DC       XL2'0031'
00001F                                                        EQN00031  EQU          0031
00257E  271A                                                          DC       AL2(N00032)
002580  0032                                                          DC       XL2'0032'
000020                                                        EQN00032  EQU          0032
002582  2730                                                          DC       AL2(N00033)
002584  0033                                                          DC       XL2'0033'
000021                                                        EQN00033  EQU          0033
002586  2734                                                          DC       AL2(N00034)
002588  0034                                                          DC       XL2'0034'
000022                                                        EQN00034  EQU          0034
00258A  2746                                                          DC       AL2(N00035)
00258C  0035                                                          DC       XL2'0035'
000023                                                        EQN00035  EQU          0035
00258E  274A                                                          DC       AL2(N00036)
002590  0036                                                          DC       XL2'0036'
000024                                                        EQN00036  EQU          0036
002592  274E                                                          DC       AL2(N00037)
```



```
002594  0037                                                          DC       XL2'0037'
000025                                                        EQN00037  EQU          0037
002596  2752                                                          DC       AL2(N00038)
002598  0038                                                          DC       XL2'0038'
000026                                                        EQN00038  EQU          0038
00259A  2756                                                          DC       AL2(N00039)
00259C  0039                                                          DC       XL2'0039'
000027                                                        EQN00039  EQU          0039
00259E  27B2                                                          DC       AL2(N00040)
0025A0  0040                                                          DC       XL2'0040'
000028                                                        EQN00040  EQU          0040
0025A2  2766                                                          DC       AL2(N00041)
0025A4  0041                                                          DC       XL2'0041'
000029                                                        EQN00041  EQU          0041
0025A6  276A                                                          DC       AL2(N00042)
0025A8  0042                                                          DC       XL2'0042'
00002A                                                        EQN00042  EQU          0042
0025AA  276E                                                          DC       AL2(N00043)
0025AC  0043                                                          DC       XL2'0043'
00002B                                                        EQN00043  EQU          0043
0025AE  2772                                                          DC       AL2(N00044)
0025B0  0044                                                          DC       XL2'0044'
00002C                                                        EQN00044  EQU          0044
0025B2  2776                                                          DC       AL2(N00045)
0025B4  0045                                                          DC       XL2'0045'
00002D                                                        EQN00045  EQU          0045
0025B6  277A                                                          DC       AL2(N00046)
0025B8  0046                                                          DC       XL2'0046'
00002E                                                        EQN00046  EQU          0046
0025BA  2786                                                          DC       AL2(N00047)
0025BC  0047                                                          DC       XL2'0047'
00002F                                                        EQN00047  EQU          0047
0025BE  278A                                                          DC       AL2(N00048)
0025C0  0048                                                          DC       XL2'0048'
000030                                                        EQN00048  EQU          0048
0025C2  278E                                                          DC       AL2(N00049)
0025C4  0049                                                          DC       XL2'0049'
000031                                                        EQN00049  EQU          0049
0025C6  2792                                                          DC       AL2(N00050)
0025C8  0050                                                          DC       XL2'0050'
000032                                                        EQN00050  EQU          0050
0025CA  2796                                                          DC       AL2(N00051)
0025CC  0051                                                          DC       XL2'0051'
000033                                                        EQN00051  EQU          0051
0025CE  279A                                                          DC       AL2(N00052)
0025D0  0052                                                          DC       XL2'0052'
000034                                                        EQN00052  EQU          0052
0025D2  279E                                                          DC       AL2(N00053)
0025D4  0053                                                          DC       XL2'0053'
000035                                                        EQN00053  EQU          0053
0025D6  27A2                                                          DC       AL2(N00054)
0025D8  0054                                                          DC       XL2'0054'
000036                                                        EQN00054  EQU          0054
0025DA  27AE                                                          DC       AL2(N00055)
0025DC  0055                                                          DC       XL2'0055'
000037                                                        EQN00055  EQU          0055
0025DE  27BC                                                          DC       AL2(N00056)
0025E0  0056                                                          DC       XL2'0056'
000038                                                        EQN00056  EQU          0056
0025E2  27CA                                                          DC       AL2(N00057)
0025E4  0057                                                          DC       XL2'0057'
000039                                                        EQN00057  EQU          0057
0025E6  27CE                                                          DC       AL2(N00058)
0025E8  0058                                                          DC       XL2'0058'
00003A                                                        EQN00058  EQU          0058
0025EA  27DA                                                          DC       AL2(N00059)
0025EC  0059                                                          DC       XL2'0059'
00003B                                                        EQN00059  EQU          0059
0025EE  27E8                                                          DC       AL2(N00060)
0025F0  0060                                                          DC       XL2'0060'
00003C                                                        EQN00060  EQU          0060
0025F2  27F4                                                          DC       AL2(N00061)
0025F4  0061                                                          DC       XL2'0061'
00003D                                                        EQN00061  EQU          0061
0025F6  0000                                                          DC       AL2(DUMMY)
                                                                      ********************************************************************************
                                                                      ********************************************************************************
                                                                      **                                                                            **
                                                                      **                    RULE INFORMATION TABLE                                  **
                                                                      **                                                                            **
                                                                      ********************************************************************************
                                                                      ********************************************************************************
                                                              N00001  $TUXX T4801,02,0008,ON,QT=(Q00053),YES=N00055,CT=(C00052)
0025F8  0500                                                  N00001  DC       A(@TUXX)
0025FA  27AE                                                          DC       AL2(N00055)
0025FC  2DAA                                                          DC       A(T4801)
0025FE  0200                                                          DC       AL2(ON)
002600  0002                                                          DC       AL2(02)
002602  0008                                                          DC       X'0008'
                                                                      ALIGN    WORD
002604  0000                                                          DC       AL2(0)
002606  C1C1                                                          DC       C'AA'
                                                                      ALIGN    WORD
002608  196E                                                          DC       AL2(PARMARA)
                                                              N00002  $TUXX T4803,02,0040,ON,QT=(Q00056),YES=N00052
00260A  0500                                                  N00002  DC       A(@TUXX)
00260C  279A                                                          DC       AL2(N00052)
00260E  346E                                                          DC       A(T4803)
002610  0200                                                          DC       AL2(ON)
002612  0002                                                          DC       AL2(02)
002614  0040                                                          DC       X'0040'
                                                                      ALIGN    WORD
002616  0000                                                          DC       AL2(0)
002618  C1C1                                                          DC       C'AA'
                                                                      ALIGN    WORD
00261A  196E                                                          DC       AL2(PARMARA)
                                                              N00003  $TUXX T4853,02,0001,CN,QT=(Q00060),YES=N00041
00261C  0500                                                  N00003  DC       A(@TUXX)
00261E  2766                                                          DC       AL2(N00041)
002620  2ECA                                                          DC       A(14853)
002622  0200                                                          DC       AL2(ON)
002624  0002                                                          DC       AL2(02)
002626  0001                                                          DC       X'0001'
                                                                      ALIGN    WORD
002628  0000                                                          DC       AL2(0)
00262A  C1C1                                                          DC       C'AA'
```

```
 LOCTR  OBJECT TEXT          STMT SOURCE STATEMENT                                    COPYRIGHT IBM CORP 1976
                             540+          ALIGN WORD
00262C  196E                 541+          DC    AL2(PARMARA)
                             542 N00004    $TUXX T3C02,02,0001,ON,QT=(Q00063),YES=N00022,ST=(S00030)
00262E  0500                 543+N00004    DC    A(@TUXX)
002630  26D2                 544+          DC    AL2(N00022)
002632  2DA2                 545+          DC    A(T3C02)
002634  0200                 546+          DC    AL2(ON)
002636  0002                 547+          DC    AL2(02)
002638  0001                 548+          DC    X'0001'
                             549+          ALIGN WORD
00263A  0000                 550+          DC    AL2(0)
00263C  C1C1                 551+          DC    C'AA'
                             552+          ALIGN WORD
00263E  196E                 553+          DC    AL2(PARMARA)
                             554 N00005    $TUXX T4853,10,0000000000000006E00,ON,QT=(Q00067),YES=N00009
002640  0500                 555+N00005    DC    A(@TUXX)
002642  268C                 556+          DC    AL2(N00009)
002644  2EC2                 557+          DC    A(T4853)
002646  0200                 558+          DC    AL2(ON)
002648  000A                 559+          DC    AL2(10)
00264A  0000000000000006     560+          DC    X'0000000000000006E00'
                             561+          ALIGN WORD
002654  0000                 562+          DC    AL2(0)
002656  C1C1                 563+          DC    C'AA'
                             564+          ALIGN WORD
002658  196E                 565+          DC    AL2(PARMARA)
                             566 N00006    $TUXX T4853,10,0000000000000000091FF,OF,QT=(Q00071),YES=N00008
00265A  0500                 567+N00006    DC    A(@TUXX)
00265C  2680                 568+          DC    AL2(N00008)
00265E  2EC2                 569+          DC    A(T4853)
002660  0202                 570+          DC    AL2(0F)
002662  000A                 571+          DC    AL2(10)
002664  00000000000000009    572+          DC    X'0000000000000000091FF'
                             573+          ALIGN WORD
00266E  0000                 574+          DC    AL2(0)
002670  C1C1                 575+          DC    C'AA'
                             576+          ALIGN WORD
002672  196E                 577+          DC    AL2(PARMARA)
                             578 N00007    $GOTO TYPE=INTRNL,EP=E,FT=(F00074),GTO=(N00055)
002674  0200                 579+N00007    DC    A(@GOTO)
002676  2814                 580+          DC    A(F00074)
002678  F3C3F0F0             581+          DC    CL4'3C00'
00267C  C540                 582+          DC    CL2'E'
00267E  0000                 583+          DC    AL2(INTRNL)
                             584 N00008    $GOTO TYPE=INTRNL,EP=A,FT=(F00076),GTO=(N00009)
002680  0200                 585+N00008    DC    A(@GOTO)
002682  2820                 586+          DC    A(F00076)
002684  F3C3F0F0             587+          DC    CL4'3C00'
002688  C140                 588+          DC    CL2'A'
00268A  0000                 589+          DC    AL2(INTRNL)
                             590 N00009    $TUXX T3C00,02,0708,EQ,PLNG=6,PARM=6F0000,QT=(Q00080),          X
00268C  0500                 591+N00009    DC    A(@TUXX)
00268E  26A6                 592+          DC    AL2(N00011)
002690  33FA                 593+          DC    A(T3C00)
002692  0000                 594+          DC    AL2(EQ)
002694  0002                 595+          DC    AL2(02)
002696  0708                 596+          DC    X'0708'
                             597+          ALIGN WORD
002698  0006                 598+          DC    AL2(6)
00269A  F6C6F0F0F0F0         599+          DC    C'6F0000'
                             600+          ALIGN WORD
0026A0  196E                 601+          DC    AL2(PARMARA)
                             602 N00010    $FIXT FT=(F00083),CT=(C00029)
0026A2  0101                 603+N00010    DC    A(@FIXT)
0026A4  282C                 604+          DC    A(F00083)
                             605 N00011    $QUES QT=(Q00094),YES=N00015,CT=(C00087),ST=(S00013)
0026A6  0100                 606+N00011    DC    A(@QUES)
0026A8  26B6                 607+          DC    AL2(N00015)
                             608 N00012    $QUES QT=(Q00100),YES=N00014,CT=(C00097)
0026AA  0100                 609+N00012    DC    A(@QUES)
0026AC  26B2                 610+          DC    AL2(N00014)
                             611 N00013    $FIXT FT=(F00006)
0026AE  0101                 612+N00013    DC    A(@FIXT)
0026B0  286C                 613+          DC    A(F00006)
                             614 N00014    $FIXT FT=(F00104),CT=(C00029)
0026B2  0101                 615+N00014    DC    A(@FIXT)
0026B4  293C                 616+          DC    A(F00104)
                             617 N00015    $QUES QT=(Q00113),YES=N00019,CT=(C00107),ST=(S00013)
0026B6  0100                 618+N00015    DC    A(@QUES)
0026B8  26C6                 619+          DC    AL2(N00019)
                             620 N00016    $QUES QT=(Q00118),YES=N00018,CT=(C00115)
0026BA  0100                 621+N00016    DC    A(@QUES)
0026BC  26C2                 622+          DC    AL2(N00018)
                             623 N00017    $FIXT FT=(F00120),CT=(C00029)
0026BE  0101                 624+N00017    DC    A(@FIXT)
0026C0  2954                 625+          DC    A(F00120)
                             626 N00018    $FIXT FT=(F00125),CT=(C00029)
0026C2  0101                 627+N00018    DC    A(@FIXT)
0026C4  29B0                 628+          DC    A(F00125)
                             629 N00019    $QUES QT=(Q00136),YES=N00021,CT=(C00129)
0026C6  0100                 630+N00019    DC    A(@QUES)
0026C8  26CE                 631+          DC    AL2(N00021)
                             632 N00020    $FIXT FT=(F00138),GTO=((4880,A))
0026CA  0101                 633+N00020    DC    A(@FIXT)
0026CC  29E0                 634+          DC    A(F00138)
                             635 N00021    $FIXT FT=(F00144),CT=(C00029)
0026CE  0101                 636+N00021    DC    A(@FIXT)
0026D0  2A3C                 637+          DC    A(F00144)
                             638 N00022    $QUXX T4854,PLNG=8,PARM=4C/4C/00,QT=(Q00156),YES=N00026,        X
0026D2  0400                 639+N00022    DC    A(@QUXX)
0026D4  26F2                 640+          DC    AL2(N00026)
0026D6  2F5E                 641+          DC    A(T4854)
0026D8  0000                 642+          DC    AL2(DUMMY)
0026DA  0008                 643+          DC    AL2(8)
0026DC  F4C361F4C361F0F0     644+          DC    C'4C/4C/00'
                             645+          ALIGN WORD
0026E4  196E                 646+          DC    AL2(PARMARA)
                             647 N00023    $QUES QT=(Q00162),YES=N00025,CT=(C00159)
0026E6  0100                 648+N00023    DC    A(@QUES)
0026E8  26EE                 649+          DC    AL2(N00025)
                             650 N00024    $FIXT FT=(F00006)
0026EA  0101                 651+N00024    DC    A(@FIXT)
0026EC  286C                 652+          DC    A(F00006)
                             653 N00025    $FIXT FT=(F00166),CT=(C00029)
0026EE  0101                 654+N00025    DC    A(@FIXT)
0026F0  2AA0                 655+          DC    A(F00166)
```



```
 LOCTR  OBJECT TEXT          STMT SOURCE STATEMENT                                    COPYRIGHT IBM CORP 1976
                             656 N00026    $QUES QT=(Q00174),YES=N00028,CT=(C00169)
0026F2  0100                 657+N00026    DC    A(@QUES)
0026F4  26FA                 658+          DC    AL2(N00028)
                             659 N00027    $FIXT FT=(F00006)
0026F6  0101                 660+N00027    DC    A(@FIXT)
0026F8  286C                 661+          DC    A(F00006)
                             662 N00028    $QUXX T4854,PLNG=8,PARM=4C/4C/00,QT=(Q00182),YES=N00032,        X
0026FA  0400                 663+N00028    DC    A(@QUXX)
0026FC  271A                 664+          DC    AL2(N00032)
0026FE  2F5E                 665+          DC    A(T4854)
002700  0000                 666+          DC    AL2(DUMMY)
002702  0008                 667+          DC    AL2(8)
002704  F4C361F4C361F0F0     668+          DC    C'4C/4C/00'
                             669+          ALIGN WORD
00270C  196E                 670+          DC    AL2(PARMARA)
                             671 N00029    $QUES QT=(Q00188),YES=N00031,CT=(C00185)
00270E  0100                 672+N00029    DC    A(@QUES)
002710  2716                 673+          DC    AL2(N00031)
                             674 N00030    $FIXT FT=(F00006)
002712  0101                 675+N00030    DC    A(@FIXT)
002714  286C                 676+          DC    A(F00006)
                             677 N00031    $FIXT FT=(F00192),CT=(C00029)
002716  0101                 678+N00031    DC    A(@FIXT)
002718  2AC6                 679+          DC    A(F00192)
                             680 N00032    $TUXX T3C00,02,0708,EQ,PLNG=6,PARM=6F0000,QT=(Q00197),          X
00271A  0500                 681+N00032    DC    A(@TUXX)
00271C  2734                 682+          DC    AL2(N00034)
00271E  33FA                 683+          DC    A(T3C00)
002720  0000                 684+          DC    AL2(EQ)
002722  0002                 685+          DC    AL2(02)
002724  0708                 686+          DC    X'0708'
                             687+          ALIGN WORD
002726  0006                 688+          DC    AL2(6)
002728  F6C6F0F0F0F0         689+          DC    C'6F0000'
                             690+          ALIGN WORD
00272E  196E                 691+          DC    AL2(PARMARA)
                             692 N00033    $FIXT FT=(F00006)
002730  0101                 693+N00033    DC    A(@FIXT)
002732  286C                 694+          DC    A(F00006)
                             695 N00034    $TUXX T4852,01,00,EQ,PLNG=2,PARM=00,QT=(Q00203),YES=N00036,     X
002734  0500                 696+N00034    DC    A(@TUXX)
002736  274A                 697+          DC    AL2(N00036)
002738  2E6E                 698+          DC    A(T4852)
00273A  0000                 699+          DC    AL2(EQ)
00273C  0001                 700+          DC    AL2(01)
00273E  00                   701+          DC    X'00'
00273F  00                   702+          ALIGN WORD
002740  0002                 703+          DC    AL2(2)
002742  F0F0                 704+          DC    C'00'
                             705+          ALIGN WORD
002744  196E                 706+          DC    AL2(PARMARA)
                             707 N00035    $FIXT FT=(F00006)
002746  0101                 708+N00035    DC    A(@FIXT)
002748  286C                 709+          DC    A(F00006)
                             710 N00036    $QUES QT=(Q00214),YES=N00038,CT=(C00208),ST=(S00013)
00274A  0100                 711+N00036    DC    A(@QUES)
00274C  2752                 712+          DC    AL2(N00038)
                             713 N00037    $FIXT FT=(F00006)
00274E  0101                 714+N00037    DC    A(@FIXT)
002750  286C                 715+          DC    A(F00006)
                             716 N00038    $QUES QT=(Q00222),YES=N00040,CT=(C00218),ST=(S00013)
002752  0100                 717+N00038    DC    A(@QUES)
002754  2762                 718+          DC    AL2(N00040)
                             719 N00039    $GOTO TYPE=XTRNL,MAP=4820,EP=A,FT=(F00224),GTO=((4820,A))
002756  0200                 720+N00039    DC    A(@GOTO)
002758  2AEE                 721+          DC    A(F00224)
00275A  F4F8F2F0             722+          DC    CL4'4820'
00275E  C140                 723+          DC    CL2'A'
002760  0001                 724+          DC    AL2(XTRNL)
                             725 N00040    $FIXT FT=(F00006)
002762  0101                 726+N00040    DC    A(@FIXT)
002764  286C                 727+          DC    A(F00006)
                             728 N00041    $QUES QT=(Q00237),YES=N00051,CT=(C00229),ST=(S00013)
002766  0100                 729+N00041    DC    A(@QUES)
002768  2796                 730+          DC    AL2(N00051)
                             731 N00042    $QUES QT=(Q00244),YES=N00050,CT=(C00239)
00276A  0100                 732+N00042    DC    A(@QUES)
00276C  2792                 733+          DC    AL2(N00050)
                             734 N00043    $QUES QT=(Q00246),YES=N00049,CT=(C00028)
00276E  0100                 735+N00043    DC    A(@QUES)
002770  278E                 736+          DC    AL2(N00049)
                             737 N00044    $QUES QT=(Q00255),YES=N00048,CT=(C00250)
002772  0100                 738+N00044    DC    A(@QUES)
002774  278A                 739+          DC    AL2(N00048)
                             740 N00045    $QUES QT=(Q00261),YES=N00047,CT=(C00257)
002776  0100                 741+N00045    DC    A(@QUES)
002778  2786                 742+          DC    AL2(N00047)
                             743 N00046    $GOTO TYPE=XTRNL,MAP=4830,EP=A,FT=(F00263),GTO=((4830,A))
00277A  0200                 744+N00046    DC    A(@GOTO)
00277C  2AFA                 745+          DC    A(F00263)
00277E  F4F8F3F0             746+          DC    CL4'4830'
002782  C140                 747+          DC    CL2'A'
002784  0001                 748+          DC    AL2(XTRNL)
                             749 N00047    $FIXT FT=(F00266),CT=(C00029)
002786  0101                 750+N00047    DC    A(@FIXT)
002788  2B06                 751+          DC    A(F00266)
                             752 N00048    $FIXT FT=(F00270),CT=(C00029)
00278A  0101                 753+N00048    DC    A(@FIXT)
00278C  2B30                 754+          DC    A(F00270)
                             755 N00049    $FIXT FT=(F00274),CT=(C00029)
00278E  0101                 756+N00049    DC    A(@FIXT)
002790  2B5E                 757+          DC    A(F00274)
                             758 N00050    $FIXT FT=(F00278),CT=(C00029)
002792  0101                 759+N00050    DC    A(@FIXT)
002794  2B8C                 760+          DC    A(F00278)
                             761 N00051    $FIXT FT=(F00281)
002796  0101                 762+N00051    DC    A(@FIXT)
002798  2BA8                 763+          DC    A(F00281)
                             764 N00052    $QUES QT=(Q00286),YES=N00054,CT=(C00285)
00279A  0100                 765+N00052    DC    A(@QUES)
00279C  27A2                 766+          DC    AL2(N00054)
                             767 N00053    $FIXT FT=(F00288)
00279E  0101                 768+N00053    DC    A(@FIXT)
0027A0  2C9C                 769+          DC    A(F00288)
                             770 N00054    $GOTO TYPE=XTRNL,MAP=4830,EP=D,FT=(F00291),GTO=((4830,D))
0027A2  0200                 771+N00054    DC    A(@GOTO)
```

```
 LOCTR  OBJECT TEXT          STMT SOURCE STATEMENT                                   COPYRIGHT IBM CORP 1976

0027A4  2CD0                772+          DC    A(F00291)
0027A6  F4F8F3F0            773+          DC    CL4'4830'
0027AA  C440                774+          DC    CL2'D'
0027AC  0001                775+          DC    AL2(XTRNL)
                            776 N00055    $QUXX T4807,QT=(Q00297),YES=N00059,CT=(C00294),ST=(S00045)
0027AE  0400                777+N00055    DC    A(@QUXX)
0027B0  27DA                778+          DC    AL2(N00059)
0027B2  35CC                779+          DC    A(T4807)
0027B4  0000                780+          DC    AL2(DUMMY)
0027B6  0000                781+          DC    AL2(0)
0027B8  C1C1                782+          DC    C'AA'
                            783+          ALIGN WORD
0027BA  196E                784+          DC    AL2(PARMARA)
                            785 N00056    $QUXX T4807,QT=(Q00302),YES=N00058,CT=(C00299),ST=(S00045)
0027BC  0400                786+N00056    DC    A(@QUXX)
0027BE  27CE                787+          DC    AL2(N00058)
0027C0  35CC                788+          DC    A(T4807)
0027C2  0000                789+          DC    AL2(DUMMY)
0027C4  0000                790+          DC    AL2(0)
0027C6  C1C1                791+          DC    C'AA'
                            792+          ALIGN WORD
0027C8  196E                793+          DC    AL2(PARMARA)
                            794 N00057    $FIXT FT=(F00006)
0027CA  0101                795+N00057    DC    A(@FIXT)
0027CC  286C                796+          DC    A(F00006)
                            797 N00058    $GOTO TYPE=INTRNL,EP=F,FT=(F00307),GTO=(N00059)
0027CE  0200                798+N00058    DC    A(@GOTO)
0027D0  2CDC                799+          DC    A(F00307)
0027D2  F3C3F0F0            800+          DC    CL4'3C00'
0027D6  C640                801+          DC    CL2'F'
0027D8  0000                802+          DC    AL2(INTRNL)
                            803 N00059    $QUXX T4807,QT=(Q00314),YES=N00061,CT=(C00309),ST=(S00045)
0027DA  0400                804+N00059    DC    A(@QUXX)
0027DC  27F4                805+          DC    AL2(N00061)
0027DE  35CC                806+          DC    A(T4807)
0027E0  0000                807+          DC    AL2(DUMMY)
0027E2  0000                808+          DC    AL2(0)
0027E4  C1C1                809+          DC    C'AA'
                            810+          ALIGN WORD
0027E6  196E                811+          DC    AL2(PARMARA)
                            812 N00060    $GOTO TYPE=INTRNL,EP=C,FT=(F00317),GTO=(N00041)
0027E8  0200                813+N00060    DC    A(@GOTO)
0027EA  2CE8                814+          DC    A(F00317)
0027EC  F3C3F0F0            815+          DC    CL4'3C00'
0027F0  C340                816+          DC    CL2'C'
0027F2  0000                817+          DC    AL2(INTRNL)
                            818 N00061    $FIXT FT=(F00319)
0027F4  0101                819+N00061    DC    A(@FIXT)
0027F6  2CF4                820+          DC    A(F00319)
0027F8  0000                821           DC    AL2(DUMMY)
0027FA                      822 ENTPT     EQU   *
                            823 ********************************************************************************
                            824 ********************************************************************************
                            825 **                                                                            **
                            826 **                          ENTRY POINT TABLE                                 **
                            827 **                                                                            **
                            828 ********************************************************************************
                            829 ********************************************************************************
                            830           ENTPT EP=A,STEP=00009
0027FA  C140                831+          DC    CL2'A'
0027FC  268C                832+          DC    A(N00009)
                            833           ENTPT EP=B,STEP=00022
0027FE  C240                834+          DC    CL2'B'
002800  26D2                835+          DC    A(N00022)
                            836           ENTPT EP=C,STEP=00041
002802  C340                837+          DC    CL2'C'
002804  2766                838+          DC    A(N00041)
                            839           ENTPT EP=D,STEP=00052
002806  C440                840+          DC    CL2'D'
002808  279A                841+          DC    A(N00052)
                            842           ENTPT EP=E,STEP=00055
00280A  C540                843+          DC    CL2'E'
00280C  27AE                844+          DC    A(N00055)
                            845           ENTPT EP=F,STEP=00059
00280E  C640                846+          DC    CL2'F'
002810  27DA                847+          DC    A(N00059)
002812  0000                848           DC    AL2(DUMMY)
                            849 ********************************************************************************
                            850 ********************************************************************************
                            851 **                                                                            **
                            852 **                            MESSAGE TABLE                                   **
                            853 **                                                                            **
                            854 ********************************************************************************
                            855 ********************************************************************************
002814                      856 F00074    EQU   *
002814  0001                857           DC    AL2(0001)
002816  0008                858           DC    A(0008)
002818  C9D5E3C5D9D5C1D3    859           DC    CL0008'INTERNAL'
00281A                      860 F00076    EQU   *
002820  0001                861           DC    AL2(0001)
002822  0008                862           DC    A(0008)
002824  C9D5E3C5D9D5C1D3    863           DC    CL0008'INTERNAL'
00282C                      864 F00083    EQU   *
00282C  0002                865           DC    AL2(0002)
00282E  002A                866           DC    A(0042)
002830  C6C1C9D3C5C440E3D   867           DC    CL0042'FAILED TO RESET. REPLACE THE DISKETTE UNIT'
00285A  0010                868           DC    A(0016)
00285C  C1E3E3C1C3C8D4C5D   869           DC    CL0016'ATTACHMENT CARE.'
00286C                      870 F00006    EQU   *
00286C  0005                871           DC    AL2(0005)
00286E  002E                872           DC    A(0046)
002870  C3C8C5C3D240E3C8C   873           DC    CL0046'CHECK THE VOLTAGES IN THE DEVICE ON THE DRIVE '
00289E  0028                874           DC    A(0040)
0028A0  C3D6D5E3D9D6D340C   875           DC    CL0040'CONTROL CARD (+24,+5,-5). SEE MLD VOL.1 '
0028C8  002C                876           DC    A(0044)
0028CA  E2C6F1F4F04B40C9C   877           DC    CL0044'SF140. IF THE VOLTAGES ARE CORRECT, REPLACE '
0028F6  002A                878           DC    A(0042)
0028F8  C1E3E3C1C3C840C3C   879           DC    CL0042'ATTACH CARD. IF THEY ARE BAD GO TO DEVICE '
002922  0018                880           DC    A(0024)
002924  D7D6E6C5D940E2E4D   881           DC    CL0024'POWER SUPPLY MAE, 4880. '
00293C                      882 F00104    EQU   *
00293C  0001                883           DC    AL2(0001)
00293E  0014                884           DC    A(0020)
002940  D9C5D7D3C1C3C540C   885           DC    CL0020'REPLACE ATTACH CABLE'
002954                      886 F00120    EQU   *
002954  0002                887           DC    AL2(0002)
```



```
 LOCTR  OBJECT TEXT          STMT SOURCE STATEMENT                                   COPYRIGHT IBM CORP 1976

002956  002A                888           DC    A(0042)
002958  D9C5D7D3C1C3C540E   889           DC    CL0042'REPLACE VFO CARD. IF NO REPAIR REPLACE THE'
002982  002C                890           DC    A(0044)
002984  C4C9E2D2C5E3E3C54   891           DC    CL0044'DISKETTE UNIT ATTACH CARD. SEE MIM PARA A3.7'
0029B0                      892 F00125    EQU   *
0029B0  0001                893           DC    AL2(0001)
0029B2  002C                894           DC    A(0044)
0029B4  D9C5D7D3C1C3C540C   895           DC    CL0044'REPLACE DISKETTE UNIT DEVICE CABLE ASSEMBLY '
0029E0                      896 F00138    EQU   *
0029E0  0003                897           DC    AL2(0003)
0029E2  002E                898           DC    A(0046)
0029E4  C3C8C5C3D240C4C9E   899           DC    CL0046'CHECK DISKETTE UNIT DEVICE CABLE ASSEMBLY FOR '
002A12  0020                900           DC    A(0032)
002A14  C3D6D5E3C9D5E4C9E   901           DC    CL0032'CONTINUITY. SEE MLD VOL.1 SF136.'
002A34  0006                902           DC    A(0006)
002A36  C9C640D6D240        903           DC    CL0006'IF OK '
002A3C                      904 F00144    EQU   *
002A3C  0003                905           DC    AL2(0003)
002A3E  002C                906           DC    A(0044)
002A40  D9C5D7D3C1C3C540C   907           DC    CL0044'REPLACE DISKETTE UNIT ATTACHMENT CARD. IF NO'
002A6C  002A                908           DC    A(0042)
002A6E  D9C5D7C1C9D940D9C   909           DC    CL0042'REPAIR REPLACE THE VFO CARD. SEE MIM PARA.'
002A98  0006                910           DC    A(0006)
002A9A  C1F24BF1F04B        911           DC    CL0006'A2.10.'
002AA0                      912 F00166    EQU   *
002AA0  0001                913           DC    AL2(0001)
002AA2  0022                914           DC    A(0034)
002AA4  D9C5D7D3C1C3C540C   915           DC    CL0034'REPLACE DISKETTE UNIT ATTACH CABLE'
002AC6                      916 F00192    EQU   *
002AC6  0001                917           DC    AL2(0001)
002AC8  0024                918           DC    A(0036)
002ACA  D9C5D7D3C1C3C540C   919           DC    CL0036'REPLACE DISKETTE UNIT ATTACH CABLE. '
002AEE                      920 F00224    EQU   *
002AEE  0001                921           DC    AL2(0001)
002AF0  0008                922           DC    A(0008)
002AF2  C5E7E3C5D9D5C1D3    923           DC    CL0008'EXTERNAL'
002AFA                      924 F00263    EQU   *
002AFA  0001                925           DC    AL2(0001)
002AFC  0008                926           DC    A(0008)
002AFE  C5E7E3C5D9D5C1D3    927           DC    CL0008'EXTERNAL'
002B06                      928 F00266    EQU   *
002B06  0001                929           DC    AL2(0001)
002B08  0026                930           DC    A(0038)
002B0A  C4C9E2D2C5E3E3C54   931           DC    CL0038'DISKETTE UNIT ATTACHMENT CARD WAS BAD.'
002B30                      932 F00270    EQU   *
002B30  0001                933           DC    AL2(0001)
002B32  002A                934           DC    A(0042)
002B34  C4C9E2D2C5E3E3C54   935           DC    CL0042'DISKETTE UNIT DRIVE CONTROL CARD WAS BAD. '
002B5E                      936 F00274    EQU   *
002B5E  0001                937           DC    AL2(0001)
002B60  002A                938           DC    A(0042)
002B62  D9C5D7D3C1C3C540E   939           DC    CL0042'REPLACE THE CABLE WITH THE SHORT CIRCUIT. '
002B8C                      940 F00278    EQU   *
002B8C  0001                941           DC    AL2(0001)
002B8E  0018                942           DC    A(0024)
002B90  D9C5D7D3C1C3C540E   943           DC    CL0024'REPLACE THE OPEN CABLE. '
002BA8                      944 F00281    EQU   *
002BA8  0006                945           DC    AL2(0006)
002BAA  002E                946           DC    A(0046)
002BAC  C3C8C5C3D240E3C8C   947           DC    CL0046'CHECK THE VOLTAGES IN THE DEVICE ON THE DRIVE '
002BDA  0028                948           DC    A(0040)
002BDC  C3D6D5E3D9D6D340C   949           DC    CL0040'CONTROL CARD (+24,+5,-5). SEE MLD VOL.1 '
002C04  002C                950           DC    A(0044)
002C06  E2C6F1F4F04B40C9C   951           DC    CL0044'SF140. IF THE VOLTAGES ARE CORRECT, REPLACE '
002C32  002A                952           DC    A(0042)
002C34  C1E3E3C1C3C840C3C   953           DC    CL0042'ATTACH CARD. IF THEY ARE BAD GO TO DEVICE '
002C5E  0018                954           DC    A(0024)
002C60  D7D6E6C5D940E2E4D   955           DC    CL0024'POWER SUPPLY MAE, 4880. '
002C78  0022                956           DC    A(0034)
002C7A  C9C640D3C5E2E340E   957           DC    CL0034'IF TEST STILL FAILS LOAD MAP 4830.'
002C9C                      958 F00288    EQU   *
002C9C  0002                959           DC    AL2(0002)
002C9E  0028                960           DC    A(0040)
002CA0  C9D5E2C5D9E340E3E   961           DC    CL0040'INSERT TWO SIDED DISKETTE AND START TEST'
002CC8  0006                962           DC    A(0006)
002CCA  C1C7C1C9D54B        963           DC    CL0006'AGAIN.'
002CD0                      964 F00291    EQU   *
002CD0  0001                965           DC    AL2(0001)
002CD2  0008                966           DC    A(0008)
002CD4  C5E7E3C5D9D5C1D3    967           DC    CL0008'EXTERNAL'
002CDC                      968 F00307    EQU   *
002CDC  0001                969           DC    AL2(0001)
002CDE  0008                970           DC    A(0008)
002CE0  C9D5E3C5D9D5C1D3    971           DC    CL0008'INTERNAL'
002CE8                      972 F00317    EQU   *
002CE8  0001                973           DC    AL2(0001)
002CEA  0008                974           DC    A(0008)
002CEC  C9D5E3C5D9D5C1D3    975           DC    CL0008'INTERNAL'
002CF4                      976 F00319    EQU   *
002CF4  0003                977           DC    AL2(0003)
002CF6  002A                978           DC    A(0042)
002CF8  E3C8C9E240C9E240E   979           DC    CL0042'THIS IS THE END OF MAP 4813. THE READY/NOT'
002D22  0014                980           DC    A(0020)
002D24  D9C5C1C4E540E3C5E   981           DC    CL0020'READY TEST IS GOOD. '
002D38  0022                982           DC    A(0034)
002D3A  C6D6D940D4D6D9C54   983           DC    CL0034'FOR MORE TESTING EXECUTE MAP 4800.'
                            984           HDIT  G106
002D5C  0000                986+OPTN1 DC    X'0000'                 PROGRAM OPTION CONTROL WORD 1
                            987+*
002D5E  0000                988+OPTN2 DC    X'0000'                 PROGRAM OPTION CONTROL WORD 2
                            989+*                       BIT   HEX
000010                      990+B48   EQU   16    0     8         PROBLEM PROGRAM CONTROL BITS
000011                      991+B49   EQU   17    1     4         *
000012                      992+B50   EQU   18    2     2         * THESE BITS ARE USED WITH THE
000013                      993+B51   EQU   19    3     1         * SECOND OPTION WD   AND ARE TO
000014                      994+B52   EQU   20    4     8         * BE ASSIGNED BY EACH PROGRAMMER
000015                      995+B53   EQU   21    5     4         *
000016                      996+B54   EQU   22    6     2         *
000017                      997+B55   EQU   23    7     1         *
000018                      998+B56   EQU   24    8     8         *
000019                      999+B57   EQU   25    9     4         *
00001A                     1000+B58   EQU   26   10     2         *
00001B                     1001+B59   EQU   27   11     1         *
00001C                     1002+B60   EQU   28   12     8         *
00001D                     1003+B61   EQU   29   13     4         *
00001E                     1004+B62   EQU   30   14     2         *
```

```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

00001F                     1005+B63    EQU   31      15      1       *
00001E                     1006+CH     EQU   30      14      2       CHARACTER SUPPLIED
00001F                     1007+CMP    EQU   31      15      1       COMPARE OPERATION
002D60  0000               1009+OPTN3  DC    X'0000'                 PROGRAM OPTION CONTROL WORD 3
                           1010+**
                           1011+**  0  MYSTERY INTERRUPT     MI        8  CS STATUS IN PROGRESS    CS
                           1012+**  1  ERROR INTERRUPT       ER        9  CS AVAILABLE             CSA
                           1013+**  2  EXPECTED INTERRUPT    XI       10  CS STATUS INTERRUPT ERR CE
                           1014+**  3  INTERRUPT RECEIVED    IN       11  ISB BITS ON (1-7)        ISBON
                           1015+**
                           1016+**  4  EXPECTED ERR/ATTENT   XE       12  TEST UNIT RESULTS VOID   NG
                           1017+**  5  HARD ERROR FOUND      HE       13  OIO CC ERROR             IOCC
                           1018+**  6  WRONG INTR LEVEL      $LE      14  NO INTERRUPT             NOIN
                           1019+**  7  NO INTR EXPECTED      NI       15  INTERRUPT CC ERROR       INCC
                           1020+**                      BIT    HEX
000020                     1021+MI     EQU   32      0       8       MYSTERY INTERRUPT HAPPENED
000021                     1022+ER     EQU   33      1       4       ERROR RECEIVED ON INTERRUPT
000022                     1023+XI     EQU   34      2       2       EXPECTED INTERRUPT CONTROL BIT
000023                     1024+IN     EQU   35      3       1       INTERRUPT RECEIVED CONTROL BIT
000024                     1025+XE     EQU   36      4       8       EXPECTED ERROR RESPONSE
000025                     1026+HE     EQU   37      5       4       HARD ERROR, 8 RETRIES
000026                     1027+$LE    EQU   38      6       2       INTERRUPT ON WRONG LEVEL ERROR
000027                     1028+NI     EQU   39      7       1       NO INTERRUPT EXPECTED E
000028                     1029+CS     EQU   40      8       8       CYCLE STATUS IN PROGRESS
000029                     1030+CSA    EQU   41      9       4       CYCLE STEAL AVAILABLE
00002A                     1031+CE     EQU   42      10      2       CYCLE STEAL STATUS INERRRUPT ERROR
00002B                     1032+ISBON  EQU   43      11      1       ISB BITS ON (1-7)
00002C                     1033+NG     EQU   44      12      8       TEST UNIT RESULTS NO GOOD
00002D                     1034+IOCC   EQU   45      13      4       OIO CC ERROR
00002E                     1035+NCIN   EQU   46      14      2       NO INTERRUPT
00002F                     1036+INCC   EQU   47      15      1       INTERRUPT CC ERROR
                           1037+**
                           1038+**     COMMON BUFFER FOR PRINTING DATA
                           1039+**
002D62  0000               1041+$TUID  DC    A(*-*)                  TEST UNIT IDENTIFICATION
002D64  0000               1042+$IOIN  DC    A(*-*)                  I/O AND INTR CONDITION CODES
002D66  0000               1043+$ISB   DC    A(*-*)                  R7, INTR STATUS BYTE & DEV ADRS
002D68  0000               1044+LSTIO  DC    A(*-*)                  ADRS OF LAST I/O + 4 BYTES
002D6A  0000               1045+DEV1   DC    A(*-*)                  DEVICE DEPENDENT DATA
002D6C  0000               1046+DEV2   DC    A(*-*)                  *
002D6E  0000               1047+DEV3   DC    A(*-*)                  *
002D70  0000               1048+DEV4   DC    A(*-*)                  *
002D6A                     1049+SCTID  EQU   DEV1                    READ ID BUFFER FOR IBIS & TERN
002D72                     1050+DCBUF  EQU   *                       DCB BUFFER FOR LAST DCB USED
002D72  0000               1051+DCB1   DC    A(*-*)                  LAST DCB TABLE, CONTROL WORD
002D74  0000               1052+DCB2   DC    A(*-*)                  LAST DCB TABLE, DEV DEP WORD
002D76  0000               1053+DCB3   DC    A(*-*)                  LAST DCB TABLE, DEV DEP WORD
002D78  0000               1054+DCB4   DC    A(*-*)                  LAST DCB TABLE, DEV DEP WORD
002D7A  0000               1055+DCB5   DC    A(*-*)                  LAST DCB TABLE, DEV DEP WORD
002D7C  0000               1056+DCB6   DC    A(*-*)                  LAST DCB TABLE, CHAIN ADRS
002D7E  0000               1057+DCB7   DC    A(*-*)                  LAST DCB TABLE, BYTE COUNT
002D80  0000               1058+DCB8   DC    A(*-*)                  LAST DCB TABLE, BUFFER ADDRESS
                           1059+**
002D82                     1060+CSBUF  EQU   *                       CYCLE STEAL DATA BUFFER
002D82  0000               1061+CSTL1  DC    A(*-*)                  CYCLE STEAL BUFFER, RESIDUAL ADRS
002D84  0000               1062+CSTL2  DC    A(*-*)                  CYCLE STEAL WD 2, DEVICE DEPEND
002D86  0000               1063+CSTL3  DC    A(*-*)                  CYCLE STEAL WD 3, DEVICE DEPEND
002D88  0000               1064+CSTL4  DC    A(*-*)                  CYCLE STEAL WD 4, DEVICE DEPEND
002D8A  0000               1065+CSTL5  DC    A(*-*)                  CYCLE STEAL WD 5, DEVICE DEPEND
002D8C  0000               1066+CSTL6  DC    A(*-*)                  CYCLE STEAL WD 6, DEVICE DEPEND
002D8E  0000               1067+CSTL7  DC    A(*-*)                  CYCLE STEAL WD 7, DEVICE DEPEND
002D90  0000               1068+CSTL8  DC    A(*-*)                  CYCLE STEAL WD 8, DEVICE DEPEND
                           1069+**
002D92  0000               1070+$SUBN  DC    A(*-*)                  LAST SUBROUTINE ADDRESS USED
002D94  00000000           1071+$DATA  DC    2A(*-*)                 OPTIONAL DATA
002D98  0021               1072+$INTL  DC    X'0021'                 INTERRUPT LEVEL REQUESTED
002D9A  0000               1073+TURTN  DC    A(*-*)                  TEST UNIT RETURN ADRS TO MDI
002D9C  0106               1074+$DVID  DC    X'0106'                 DEVICE ID
002D9E  1900               1075+$VCAL  DC    A(DEVADD)               ADRS OF DEVICE ADDRESS
002DA0  0000               1076+       DC    A(*-*)                  IBIS CYLINDER ADDRESS
                           1077+**
                           1078+**     THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
                           1079+**     FUNCTION. THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
                           1080+**     STILL VALID BUT A DIFFERENT TEST IS TO BE PERFORMED.
                           1081+**
002DA2  4020 2D62 3C02     1082+T3C02  MVWI  X'3C02',$TUID             SET UP TEST UNIT ID
002DA8  5700               1083+       BXS   (R7)                      RETURN TO MDI SUPVR
                           1085        COPY  COMEQU
                           1086 ********************************************************************
                           1087 *                                                                  *
                           1088 *              EQUATED NAMES FOR SUPPORTED SVC'S                   *
                           1089 *                                                                  *
                           1090 ********************************************************************
000000                     1091 OUT    EQU   0                         OUT SVC
000001                     1092 OUTIN  EQU   1                         OUTIN SVC
000002                     1093 IDLE   EQU   2                         IDLE SVC
000003                     1094 ASCII  EQU   3                         HEX TO ASCII SVC
000004                     1095 CHNGE  EQU   4                         CHANGE LEVEL SVC
000005                     1096 PGMCK  EQU   5                         ALLOW RETURN ON PROGRAM CHECK SVC
000006                     1097 EXIT   EQU   6                         EXIT SVC
000007                     1098 TERM   EQU   7                         TERMINATE SVC
000008                     1099 RESET  EQU   8                         RESET DEVICE SVC
000009                     1100 RID    EQU   9                         READ ID SVC
00000A                     1101 START  EQU   10                        START CYCLE STEAL SVC
00000B                     1102 SICSS  EQU   11                        START CYCLE STEAL STATUS SVC
00000C                     1103 PREP   EQU   12                        PREPARE DEVICE SVC
00000D                     1104 READ0  EQU   13                        READ WITH FUNCTION BIT 3 OFF SVC
00000E                     1105 READ1  EQU   14                        READ WITH FUNCTION BIT 3 ON SVC
00000F                     1106 RSTAT  EQU   15                        READ STATUS SVC
000010                     1107 WRIT0  EQU   16                        WRITE WITH FUNCTION BIT 3 OFF SVC
000011                     1108 WRIT1  EQU   17                        WRITE WITH FUNCTION BIT 3 ON SVC
000012                     1109 CTRL   EQU   18                        CONTROL SVC
000013                     1110 RICB   EQU   19                        RELEASE INTERUPT CONTROL BLOCK SVC
000014                     1111 CICB   EQU   20                        CONNECT INTERUPT CONTROL BLOCK SVC
000015                     1112 HIO    EQU   21                        HALT ALL I/O
000016                     1113 REQSD  EQU   22                        REQUEST USE OF DCP DISK SVC
000017                     1114 RELSD  EQU   23                        RELEASE USE OF DCP DISK SVC
000018                     1115 HALT   EQU   24                        HALT SVC
000019                     1116 ETOH   EQU   25                        EBCDIC TO HEX SVC (STRING)
00001A                     1117 HTOE   EQU   26                        HEX TO EBCDIC SVC (STRING)
00001B                     1118 ATOH   EQU   27                        ASCII TO HEX SVC (STRING)
00001C                     1119 HTOA   EQU   28                        HEX TO ASCII SVC (STRING)
00001D                     1120 ETOA   EQU   29                        EBCDIC TO ASCII SVC (STRING)
00001E                     1121 ATOE   EQU   30                        ASCII TO EBCDIC SVC (STRING)
00001F                     1122 READI  EQU   31                        READ DATA SETS FOR MDI/UTIL
000020                     1123 WRITI  EQU   32                        WRITE DATA SETS FOR UTIL
```



```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

                           1125 ********************************************************************
                           1126 *                                                                  *
                           1127 *                EQUATES USED BY TU'S AS CONSTANTS                 *
                           1128 *                                                                  *
                           1129 ********************************************************************
00004E                     1130 PLUS   EQU   C'+'                      PLUS CHAR
000060                     1131 MINUS  EQU   C'-'                      MINUS CHAR
000000                     1133 ZERO   EQU   0
000001                     1134 ONE    EQU   1
000002                     1135 TWO    EQU   2
000003                     1136 THREE  EQU   3
000004                     1137 FOUR   EQU   4
000005                     1138 FIVE   EQU   5
000006                     1139 SIX    EQU   6
000007                     1140 SEVEN  EQU   7
000008                     1141 EIGHT  EQU   8
000009                     1142 NINE   EQU   9
00000A                     1143 TEN    EQU   10
00000B                     1144 ELEVN  EQU   11                                    11
00000C                     1145 TWELV  EQU   12                                    12
00000D                     1146 THRTN  EQU   13                                    13
00000F                     1147 FIVTN  EQU   15                                    15
000010                     1148 SIXTN  EQU   16                                    16
000020                     1149 THRY2  EQU   32                                    32
000040                     1150 SIXT4  EQU   64                                    64
000080                     1151 ONE28  EQU   128                                   128
000100                     1152 TWO56  EQU   256                                   256
000400                     1153 ONEK   EQU   1024                                  1024
000800                     1154 TWOK   EQU   2048                                  2048
000C00                     1155 THREEK EQU   3072                                  3072
001000                     1156 FOURK  EQU   4096                                  4096
FFFFFF                     1158 M1     EQU   -1                                    -1
FFFFFE                     1159 M2     EQU   -2                                    -2
FFFFFD                     1160 M3     EQU   -3                                    -3
FFFFFC                     1161 M4     EQU   -4                                    -4
                           1163 ********************************************************************
                           1164 *                                                                  *
                           1165 *     THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE     *
                           1166 *     BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES.   *
                           1167 *                                                                  *
                           1168 ********************************************************************
000000                     1169 BS0    EQU   0
000001                     1170 BS1    EQU   1
000002                     1171 BS2    EQU   2
000003                     1172 BS3    EQU   3
000004                     1173 BS4    EQU   4
000005                     1174 BS5    EQU   5
000006                     1175 BS6    EQU   6
000007                     1176 BS7    EQU   7
000008                     1177 BS8    EQU   8
000009                     1178 BS9    EQU   9
00000A                     1179 BS10   EQU   10
00000B                     1180 BS11   EQU   11
00000C                     1181 BS12   EQU   12
00000D                     1182 BS13   EQU   13
00000E                     1183 BS14   EQU   14
00000F                     1184 BS15   EQU   15
                           1186        COPY  T4801
                           1187 T4801 TUIT T01R                3/03/76
                           1188+********************************************************************06FEB76**
                           1189+**
                           1190+** TEST UNIT
                           1191+**
                           1192+**     CHANNEL INTERFACE TEST      AUTOMATIC SELECTION
                           1193+**
                           1194+** PURPOSE
                           1195+**
                           1196+**     TO VERIFY THE CHANNEL INTERFACE CAN INTERRUPT ON ALL LEVELS
                           1197+**
                           1198+** CALLING SEQUENCE
                           1199+**
                           1200+**     THE HOST WILL PREPARE THE I/O DEVICE TO INTERRUPT ON LEVEL ZERO
                           1201+**     AND CAUSE AN INTERRUPT. WHEN THE INTERRUPT OCCURS, THE LEVEL IS
                           1202+**     COMPARED TO THE EXPECTED LEVEL. THIS IS DONE ON ALL LEVELS.
                           1203+**     LEVEL THREE WILL NOT OCCUR BECAUSE THIS PROGRAM WILL BE RUNNING
                           1204+**     AS A BACKGROUND PROGRAM.
                           1205+**     PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                           1206+**     .     TURESUL BIT 0-----------NOT USED
                           1207+**     .     TURESUL BIT 1-----------NOT USED
                           1208+**     .     TURESUL BIT 2-----------NOT USED
                           1209+**     .     TURESUL BIT 3-----------NOT USED
                           1210+**     .     TURESUL BIT 4-----------NOT USED
                           1211+**     .     TURESUL BIT 5-----------NOT USED
                           1212+**     .     TURESUL BIT 6-----------NOT USED
                           1213+**     .     TURESUL BIT 7----------- NOT USED
                           1214+**     .     TURESUL BIT 8----------NOT USED
                           1215+**     .     TURESUL BIT 9---------- NOT USED
                           1216+**     .     TURESUL BIT 10---------- NOT USED
                           1217+**     .     TURESUL BIT 11----------NOT USED
                           1218+**     .     TURESUL BIT 12----------NOT READY
                           1219+**     .     TURESUL BIT 13----------OIO CC ERROR
                           1220+**     .     TURESUL BIT 14---------- DEVICE ID MISCOMPARE
                           1221+**     .     TURESUL BIT 15---------- SEEK NO-OP ERROR
                           1222+**     .     TURESUL BIT 16-31------- CYCLE STEAL STATUS FOR FAILING OP
                           1223+**     .     TURESUL BIT 32-47------- CC - 32-39 OIO CC,40-47 INT CC
                           1224+**     .     TURESUL BIT 48-63------- IBS
                           1225+**     .     TURESUL BIT 64-79------- OPTION WORD 3 (ERROR INDICATORS)
                           1226+**
                           1227+** RETURN CONTROL
                           1228+**     B     TURTN*                    RETURN TO MDI SUPERVISOR
                           1229+** RETURN CONTROL
                           1230+**
                           1231+**     B     TURTN*                    RETURN TO MDI SUPERVISOR
                           1232+**
                           1233+********************************************************************
002DAA  6E0D 2D9A          1234+T4801  MVW   R7,TURTN                    SAVE RETURN ADDRESS
002DAE  4020 2D62 4801     1235+       MVWI  X'4801',$TUID               SAVE TU ID FOR DISPLAY
002DB4  4424 2D5C          1236+       MVA   OPTN1,R4                    SET UP POINTER ADRS IN R4
002DB8  6E03 3240          1237+       BAL   $CONC,R6                    CLEAR DEV DEP STG AND CONNECT I/O BL
002DBC  2E52               1238+       DC    A(T01R)                     ERROR ADRS FOR INVALID PREP
                           1239+**
                           1240 *
                           1241 ********************************************************************
                           1242 *
002DBE  CA25 18C8          1243        MVWZ  TURESUL,R2                  CLEAR RESULTS WORD
002DC2  CA25 18CA          1244        MVWZ  TURESUL+2,R2                CLEAR RESULTS WORD 2
```

```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
002DC6  CA25 18CC        1245        MVWZ  TURESUL+4,R2          CLEAR RESULTS WORD 3
002DCA  CA25 18CE        1246        MVWZ  TURESUL+6,R2          CLEAR RESULTS WORD 4
002DCE  CA25 18D0        1247        MVWZ  TURESUL+8,R2          CLEAR RESULTS WORD 5
002DD2  4224 18C8        1248        MVA   TURESUL,R2           ADDRESS OF RESULTS
002DD6  4724 322C        1249        MVA   IOBLK,R7             RESET DEVICE
002DDA  6008             1250        SVC   RESET                *
                         1251 **********************************
                         1252 *    TEMPORARY DELAY
                         1253 *
                         1254 **********************************
                         1255 *
002DDC  4024 0FFF        1256        MVWI  X'0FFF',R0           DELAY ROUTINE TO GET BY BUSY AFTER
002DE0  6002             1257 TEMP  SVC   IDLE                 * RESET
002DE2  B8FE             1258        JCT   TEMP,R0              *
002DE4  4724 322C        1259        MVA   IOBLK,R7             READ DEVICE ID
002DE8  6009             1260        SVC   RID                  *
002DEA  882B 2D9C 3236   1261        CW    $DVID,IOMOD+4        CHECK DEVICE ID
002DF0  182C             1262        JNE   T01A                 DEVICE ID ERROR
002DF2  4020 3022 0005   1263        MVWI  5,SKDCB              SET UP CONTROL WORD FOR TESTING
002DF8  4020 3024 0000   1264        MVWI  0,SKDCB+2            SET UP SEEK NO DIFFERENCE (NO-OP)
002DFE  4020 2D98 FFF1   1265        MVWI  X'FFF1',$INTL        SET UP INTERRUPT LEVEL FOR PREP
002E04  4029 2D98 0010   1266 ITST1 AWI   X'10',$INTL           ADV INTR LEVEL, STARTING AT 0
002E0A  6E03 3240        1267        BAL   $CONC,R6             CONNECT DEV CNTL BLOCK AND PREP DEV
002E0E  2E52             1268        DC    A(T01R)              ERROR
002E10  6E03 30CE        1269 ITST3 BAL   $SEEK,R6             EXEC NO-OP TO GET AN INTR
002E14  2E6A             1270        DC    A(T01ER)             ERROR
002E16  4CA1             1271        TBTR  (R4,ER)              CC ERROR?
002E18  1212             1272        JON   T01Z                 YES
002E1A  402F 2D98 0021   1273 ITST5 CWI   X'21',$INTL           HAS INTR LEVEL COME DOWN TO 2
002E20  18F1             1274        JNE   ITST1                * NO, BCH AND CONTINUE TEST
002E22  8828 2D84 18CA   1275 T01C  MVW   CSTL2,TURESUL+2       CYCLE STEAL STATUS FOR FAILING OP
002E28  8828 2D64 18CC   1276        MVW   $IOIN,TURESUL+4      CONDITION CODES
002E2E  8828 2D66 18CE   1277        MVW   $ISB,TURESUL+6       ISB
002E34  8828 2D60 18D0   1278        MVW   OPTN3,TURESUL+8
                         1279        TXIT                       EXIT
002E3A  6802 32CE        1280+       B     $CONX                RETURN TO MDI CONTROLLER
                         1281+*****************************************************************
                         1282 *
002E3E  402B 2D84 0800   1283 T01Z  TWI   X'0800',CSTL2         WAS NOT READY BIT ON?
002E44  1004             1284        JOFF  T01B                 IF NO, JUMP
002E46  4A4C             1285        TBTS  (R2,12)              YES
002E48  50EC             1286        J     T01C                 EXIT
002E4A  4A4E             1287 T01A  TBTS  (R2,14)              DEVICE ID MISCOMPARE
002E4C  50EA             1288        J     T01C                 EXIT
002E4E  4A4F             1289 T01B  TBTS  (R2,15)              SEEK NO OP ERROR
002E50  50E8             1290        J     T01C                 EXIT
002E52  CA25 18C8        1291 T01R  MVWZ  TURESUL,R2           CLEAR RESULTS WORD
002E56  CA25 18CA        1292        MVWZ  TURESUL+2,R2         CLEAR RESULTS WORD 2
002E5A  CA25 18CC        1293        MVWZ  TURESUL+4,R2         CLEAR RESULTS WORD 3
002E5E  CA25 18CE        1294        MVWZ  TURESUL+6,R2         CLEAR RESULTS WORD 4
002E62  CA25 18D0        1295        MVWZ  TURESUL+8,R2         CLEAR RESULTS WORD 5
002E66  4224 18C8        1296        MVA   TURESUL,R2           ADDRESS OF RESULTS
002E6A  4A4D             1297 T01ER TBTS  (R2,13)              OIO CC ERROR
002E6C  50DA             1298        J     T01C                 EXIT
                         1299 *
                         1300        COPY  T4852
                         1301 T4852 TUIT $ERR$
                         1302+*****************************************************************06FEB76**
                         1303+*
                         1304+* TEST UNIT
                         1305+*
                         1306+*      FILE SEEK SETUP TEST #1.                                  3/11/76
                         1307+*
                         1308+* PURPOSE
                         1309+*
                         1310+*      DETERMINE THE FOLLOWING:
                         1311+*      1. MOVE HEADS TO CORRECT CYLINDER PRIOR TO DATA ACCESS
                         1312+*      COMMAND.
                         1313+*
                         1314+* CALLING SEQUENCE
                         1315+*
                         1316+*      PERFORM THE FOLLOWING:
                         1317+*      1. RECALIBRATE.
                         1318+*      2. ISSUE SEEK FORWARD.
                         1319+*      3. SELECT HEAD ZERO.
                         1320+*      .
                         1321+*      .
                         1322+*      PARAMETER IS PASSED TO PROGRAM IN THE FOLLOWING FORMAT.
                         1323+*      PARM1=SEEK DIFFERENCE FOR SEEK FORWARD COMMAND.
                         1324+*      .
                         1325+*
                         1326+* RETURN CONTROL
                         1327+*
002E6E  6F0D 2D9A        1328+       B     TURTN*               RETURN TO MDI SUPERVISOR
002E72  4020 2D62 4852   1329+*
002E78  4424 2D5C        1330+*****************************************************************
002E7C  6E03 3240        1331+T4852  MVW   R7,TURTN             SAVE RETURN ADDRESS
002E80  327E             1332+       MVWI  X'4852',$TUID        SAVE TU ID FOR DISPLAY
                         1333+       MVA   OPTN1,R4             SET UP POINTER ADRS IN R4
002E82  4024 5000        1334+       BAL   $CONC,R6             CLEAR DEV DEP STG AND CONNECT I/O BL
002E86  B8FF             1335+       DC    A($ERR$)             ERROR ADRS FOR INVALID PREP
002E88  6E03 30D6        1336+*
002E8C  327E             1337        MVWI  X'5000',R0           DELAY TO GET BY BUSY AFTER RESET
002E8E  4CA1             1338        JCT   *,R0                 *
002E90  6A00 327E        1339        BAL   $RECL,R6             RECALIBRATE
002E94  4020 3022 0005   1340        DC    A($ERR$)             ERROR
002E9A  4020 3024 0000   1341        TBTR  (R4,ER)              CHECK FOR CC ERROR
002EA0  4020 302A 0000   1342        BON   $ERR$                ERROR
002EA6  8038 189A 3025   1343        MVWI  X'0005',SKDCB        SEEK CONTROL WORD
002EAC  6E03 30CE        1344        MVWI  X'0000',SKDCB+2      SELECT HEAD ZERO FORWARD
002EB0  327E             1345        MVWI  X'0000',SKDCB+8      SELECT HEAD ZERO (NEW ARCH)
002EB2  4CA1             1346        MVB   TUPARM1$,SKDCB+3     DIFFERENCE FROM MDI
002EB4  6A00 327E        1347        BAL   $SEEK,R6             SEEK SELECT HEAD ZERO
002EB8  6E03 30DE        1348        DC    A($ERR$)             ERROR
002EBC  327E             1349        TBTR  (R4,ER)              INTERRUPT ERROR?
                         1350        BON   $ERR$                YES-ERROR
002EBE  6802 32CE        1351        BAL   $RDID,R6             READ ID TO ESTABLISH HEAD POSITION
                         1352        DC    A($ERR$)             TO BE PASSED BACK TO SUPERVISOR
                         1353        TXIT                       EXIT
                         1354+       B     $CONX                RETURN TO MDI CONTROLLER
                         1355+*****************************************************************
                         1356 *
                         1357        COPY  T4853
                         1358 T4853 TUIT $ERR$
                         1359+*****************************************************************06FEB76**
                         1360+*
```



```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                         1361+* TEST UNIT
                         1362+*
                         1363+*      ATTACHMENT CARD/VFO CHECK OUT TEST #10.                   3/11/76
                         1364+*
                         1365+* PURPOSE
                         1366+*
                         1367+*      DETERMINE THE FOLLOWING:
                         1368+*      1. ATTACHMENT CARD ROS IS FUNCTIONING CORRECTLY.
                         1369+*      2. ECHO CHECKS SHOW ATTACHMENT CARD FAILURE.
                         1370+*      3. VFO DATA WRAP WORKS.
                         1371+*      4. DISKETTE SPEED IS CORRECT.
                         1372+*
                         1373+* CALLING SEQUENCE
                         1374+*
                         1375+*      PERFORM THE FOLLOWING:
                         1376+*      1. ISSUE START DIAGNOSTIC COMMAND.
                         1377+*      2. CHECK ROS HASH TOTALS.
                         1378+*      3. CHECK DISKETTE SPEED WITH HEADS LOADED.
                         1379+*      4. VERIFY ECHO CHECKS.
                         1380+*      5. VERIFY DATA WRAP THROUGH VFO CARD IN FILE.
                         1381+*      .
                         1382+*
                         1383+*      PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                         1384+*      .      TURESUL BIT 00----NOT USED
                         1385+*      .      TURESUL BIT 01----NOT USED
                         1386+*      .      TURESUL BIT 02----NOT USED
                         1387+*      .      TURESUL BIT 03----NOT USED
                         1388+*      .      TURESUL BIT 04----NOT USED
                         1389+*      .      TURESUL BIT 05----NOT USED
                         1390+*      .      TURESUL BIT 06----NOT USED
                         1391+*      .      TURESUL BIT 07----NOT USED
                         1392+*      .      TURESUL BIT 08----NOT USED
                         1393+*      .      TURESUL BIT 09----NOT USED
                         1394+*      .      TURESUL BIT 10----NOT USED
                         1395+*      .      TURESUL BIT 11----NOT USED
                         1396+*      .      TURESUL BIT 12----NO INTERRUPT RECEIVED.
                         1397+*      .      TURESUL BIT 13----ROS CHECK MISCOMARE.
                         1398+*      .      TURESUL BIT 14----ECHO CHECK ERROR.
                         1399+*      .      TURESUL BIT 15----DISK SPEED INCORRECT.
                         1400+*      .      TURESUL BIT 16-31-FIRST ROS CHECK SUM.
                         1401+*      .      TURESUL BIT 32-47-SECOND ROS CHECK SUM.
                         1402+*      .      TURESUL BIT 48-63-INDEX PERIOD(5F7C=162.5MS/6934=170.9MS)
                         1403+*      .      TURESUL BIT 64-79-DIAGNOSTIC DATA RESULTS FROM WRAP TEST.
                         1404+*
                         1405+* RETURN CONTROL
                         1406+*
002EC2  6F0D 2D9A        1407+       B     TURTN*               RETURN TO MDI SUPERVISOR
002EC6  4020 2D62 4853   1408+*
002ECC  4424 2D5C        1409+*****************************************************************
002ED0  6E03 3240        1410+T4853  MVW   R7,TURTN             SAVE RETURN ADDRESS
002ED4  327E             1411+       MVWI  X'4853',$TUID        SAVE TU ID FOR DISPLAY
                         1412+       MVA   OPTN1,R4             SET UP POINTER ADRS IN R4
002ED6  CA25 18C8        1413+       BAL   $CONC,R6             CLEAR DEV DEP STG AND CONNECT I/O BL
002EDA  CA25 18CA        1414+       DC    A($ERR$)             ERROR ADRS FOR INVALID PREP
002EDE  CA25 18CC        1415+*
002EE2  CA25 18CE        1416        MVWZ  TURESUL,R2           CLEAR RESULTS WORD
002EE6  CA25 18D0        1417        MVWZ  TURESUL+2,R2         CLEAR RESULTS WORD 2
002EEA  4224 18C8        1418        MVWZ  TURESUL+4,R2         CLEAR RESULTS WORD 3
002EEE  4024 5000        1419        MVWZ  TURESUL+6,R2         CLEAR RESULTS WORD 4
002EF2  B8FF             1420        MVWZ  TURESUL+8,R2         CLEAR RESULTS WORD 5
002EF4  6E03 311E        1421        MVA   TURESUL,R2
002EF8  2F58             1422        MVWI  X'5000',R0           DELAY TO GET BY BUSY AFTER RESET
002EFA  4CA1             1423        JCT   *,R0                 *
002EFC  6A00 327E        1424        BAL   $DIAG,R6             READ DIAGNOSTIC
002F00  8828 30A4 18CA   1425        DC    A(T53Z)              ERROR
002F06  8828 30A8 18CC   1426        TBTR  (R4,ER)              CHECK FOR CC ERROR
002F0C  8828 30AC 18CE   1427        BON   $ERR$                ERROR
002F12  8828 30B0 18D0   1428        MVW   DIAGW,TURESUL+2      STORE DIAG RESULTS  (1ST WD)
002F18  A828 30A4 30A6   1429        MVW   DIAGW+4,TURESUL+4    *                   (3RD WD)
002F1E  402F 30A6 FFFF   1430        MVW   DIAGW+8,TURESUL+6    *                   (5TH WD)
002F24  1001             1431        MVW   DIAGW+12,TURESUL+8   *                   (7TH WD)
002F26  4A4D             1432        AW    DIAGW,DIAGW+2        CHECK ROS HASH TOTALS
002F28  A828 30A8 30AA   1433        CWI   X'FFFF',DIAGW+2      *
002F2E  402F 30AA FFFF   1434        JE    T53A                 OK
002F34  1001             1435        TBTS  (R2,13)              ROS ERROR
002F36  4A4D             1436 T53A  AW    DIAGW+4,DIAGW+6      CHECK ROS HASH TOTALS
002F38  402F 30AC 5F7C   1437        CWI   X'FFFF',DIAGW+6      *
002F3E  1405             1438        JE    T53B                 OK
002F40  402F 30AC 6934   1439        TBTS  (R2,13)              ROS ERROR
002F46  1D01             1440 T53B  CWI   X'5F7C',DIAGW+8      IS 5TH WD BETWEEN X'5F7C' & '6934'
002F48  5001             1441        JLT   T53C                 ERROR
002F4A  4A4F             1442        CWI   X'6934',DIAGW+8      *
002F4C  402B 30AE 00FF   1443        JGT   T53C                 ERROR
002F52  1003             1444        J     T53D
002F54  4A4E             1445 T53C  TBTS  (R2,15)              DISK SPEED INCORRECT
002F56  5001             1446 T53D  TWI   X'00FF',DIAGW+10     ANY BITS ON IN 8-15 OF 6TH WD
002F58  4A4C             1447        JOFF  T53X                 OK
                         1448        TBTS  (R2,14)              ECHO CHECK ERROR
002F5A  6802 32CE        1449        J     T53X
                         1450 T53Z  TBTS  (R2,12)              NO INTERRUPT RECEIVED
                         1451 T53X  TXIT                       EXIT
                         1452+T53X  B     $CONX                RETURN TO MDI CONTROLLER
                         1453+*****************************************************************
                         1454        COPY  T4854
                         1455 T4854 TUIT T54E
                         1456+*****************************************************************06FEB76**
                         1457+*
                         1458+* TEST UNIT
                         1459+*
                         1460+*      FILE SCOPE SEEK TEST #1.                                  3/11/76
                         1461+*
                         1462+* PURPOSE
                         1463+*
                         1464+*      DETERMINE THE FOLLOWING:
                         1465+*      1. PROVIDE SEEK COMMANDS TO FILE TO INSURE, VISUALLY,
                         1466+*      THAT THE SEEK MECHANISM IS OPERATING FROPERLY.
                         1467+*      .
                         1468+*
                         1469+* CALLING SEQUENCE
                         1470+*
                         1471+*      PERFORM-THE FOLLOWING:
                         1472+*      1. RECALIBRATE.
                         1473+*      2. SEEK FORWARD.
                         1474+*      3. SELECT HEAD ONE.
                         1475+*      4. SEEK REVEESE.
                         1476+*      5. SELECT HEAD ZERO.
```

```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                          1477**      6. SEEK FORWARD.
                          1478**      7. SELECT HEAD ONE.
                          1479**
                          1480**      PARAMETERS PASSED TO PROGRAM IN FOLLOWING FORMAT:
                          1481**      -      PARM1---SEEK DIFFERENCE FOR FIRST SEEK FORWARD COMMAND.
                          1482**      -      PARM2---SEEK DIFFERENCE FOR SEEK REVERSE COMMAND.
                          1483**      -      PARM3---SEEK DIFFERENCE FOR SECOND SEEK FORWARD COMMAND.
                          1484**
                          1485** RETURN CONTROL
                          1486**
002F5E  6F0D 2D9A         1487**       B     TURTN*                   RETURN TO MDI SUPERVISOR
                          1488**
                          1489+*************************************************************************
                          1490+T4854  MVW   R7,TURTN                  SAVE RETURN ADDRESS
002F62  4020 2D62 4854    1491+       MVWI  X'4854',$TUID              SAVE TU ID FOR DISPLAY
002F68  4424 2D5C         1492+       MVA   OPTN1,R4                   SET UP POINTER ADRS IN R4
002F6C  6E03 3240         1493+       BAL   $CCNC,R6                   CLEAR DEV DEP STG AND CONNECT I/O BL
002F70  2FD8              1494+       DC    A(T54E)                    ERROR ADRS FOR INVALID PREP
                          1495+**
002F72  4024 5000         1496        MVWI  X'5000',R0                 DELAY TO GET BY BUSY AFTER RESET
002F76  B8FF              1497        JCT   *,R0                       *
002F78  6E03 30D6         1498        BAL   $RECL,R6                   RECALIBRATE
002F7C  2FD8              1499        DC    A(T54E)                    ERROR
002F7E  4CA1              1500        TBTR  (R4,ER)                    CHECK FOR CC ERROR
002F80  122B              1501        JON   T54E                       ERROR
002F82  4020 3022 0005    1502        MVWI  X'0005',SKDCB              SEEK CONTROL WORD - NO CHAINING
002F88  4020 3024 1000    1503        MVWI  X'1000',SKDCB+2            SELECT HEAD ONE,FORWARD
002F8E  4020 302A 0100    1504        MVWI  X'0100',SKDCB+8            HEAD SELECT (NEW ARCH)
002F94  8038 189A 3025    1505        MVB   TUPARM1*,SKDCB+3           DIFFERENCE FROM MDI
002F9A  6E03 30CE         1506        BAL   $SEEK,R6                   SEEK
002F9E  2FD8              1507        DC    A(T54E)                    ERROR
002FA0  4CA1              1508        TBTR  (R4,ER)                    CHECK FOR CC ERROR
002FA2  121A              1509        JON   T54E                       ERROR
002FA4  4020 3024 0800    1510        MVWI  X'0800',SKDCB+2            SELECT HEAD ZERO,REVERSE
002FAA  4020 302A 0000    1511        MVWI  X'0000',SKDCB+8            HEAD SELECT (NEW ARCH)
002FB0  8038 189C 3025    1512        MVB   TUPARM2*,SKDCB+3           DIFFERENCE FROM MDI
002FB6  6E03 30CE         1513        BAL   $SEEK,R6                   SEEK
002FBA  2FD8              1514        DC    A(T54E)                    ERROR
002FBC  4CA1              1515        TBTR  (R4,ER)                    CHECK FOR CC ERROR
002FBE  120C              1516        JON   T54E                       ERROR
002FC0  4020 3024 1000    1517        MVWI  X'1000',SKDCB+2            SELECT HEAD ONE
002FC6  4020 302A 0100    1518        MVWI  X'0100',SKDCB+8            HEAD SELECT (NEW ARCH)
002FCC  8038 189E 3025    1519        MVB   TUPARM3*,SKDCB+3           DIFFERENCE FROM MDI
002FD2  6E03 30CE         1520        BAL   $SEEK,R6                   SEEK
002FD6  2FD8              1521        DC    A(T54E)                    ERROR
002FD8  6E03 30DE         1522  T54E  BAL   $RDID,R6                   READ ID TO ESTABLISH HEAD POSITION
002FDC  2FDE              1523        DC    A(T54F)                    TO BE PASSED BACK TO SUPERVISOR
                          1524  T54F  TXIT                             EXIT
002FDE  6802 32CE         1525+T54F   B     $CONX                      RETURN TO MDI CONTROLLER
                          1526+*************************************************************************
                          1527 *
                          1529 *
                          1530        COPY  T48DCB
                          1531 *
                          1532 ****************************2/17/76**********************************
                          1533 *                                                                   *
                          1534 *      DCB TABLES                                                   *
                          1535 *                                                                   *
                          1536 *************************************************************************
                          1537 *
                          1538 ***** DIAGNOSTIC DCB   ********
                          1539 *
002FE2  2000              1540 DGDCB DC    X'2000'                  DIAGNOSTIC DCB
002FE4  0000              1541       DC    X'0000'                  NOT USED
002FE6  0000              1542       DC    X'0000'                  NOT USED
002FE8  0000              1543       DC    X'0000'                  NOT USED
002FEA  0000              1544       DC    X'0000'                  NOT USED
002FEC  0000              1545       DC    X'0000'                  CHAIN ADDRESS
002FEE  000E              1546       DC    X'000E'                  BYTE COUNT FOR READ DIAG
002FF0  30A4              1547       DC    A(DIAGW)                 DATA ADDRESS
                          1548 *
                          1549 *
                          1550 ***** RECALIBRATE DCB  ********
                          1551 *
002FF2  0007              1552 CLDCB DC    X'0007'                  RECALIBRATE DCB
002FF4  00000000000000000 1553       DC    7A(*-*)
                          1554 *
                          1555 ***** FORMAT DCB  *******
                          1556 *
003002  0002              1557 FRDCB DC    X'0002'                  FORMAT CONTROL WORD
003004  0000              1558       DC    X'0000'                  NOT USED
003006  0000              1559       DC    A(*-*)                   FORMAT DATA WORD
003008  0000              1560       DC    A(*-*)                   N - C BYTES
00300A  0001              1561       DC    X'0001'                  H - R BYTES
00300C  0000              1562       DC    A(*-*)                   CHAIN ADDRESS
00300E  0000              1563       DC    F'0'                     NOT USED
003010  0000              1564       DC    F'0'                     NOT USED
                          1565 *
                          1566 ***** READ SECTOR ID DCB  *******
                          1567 *
003012  200A              1568 RSDCB DC    X'200A'                  READ SECTOR ID
003014  0000              1569       DC    X'0000'                  NOT USED
003016  0000              1570       DC    X'0000'                  NOT USED
003018  0000              1571       DC    X'0000'                  NOT USED
00301A  0000              1572       DC    X'0000'                  NOT USED
00301C  0000              1573       DC    X'0000'                  CHAIN ADDRESS
00301E  0004              1574       DC    X'0004'                  BYTE COUNT FOR READ SECTOR ID
003020  2D6A              1575       DC    A(SCTID)                 SECTOR ID DATA ADDRESS
                          1576 *
                          1577 ***** SEEK DCB  ********
                          1578 *
003022  0005              1579 SKDCB DC    X'0005'                  SEEK DCB
003024  0000              1580       DC    X'0000'                  BIT 3=HEAD;BIT 4=DIRECTION;8-15=DIFF
003026  0000              1581       DC    F'0'
003028  0000              1582       DC    F'0'
00302A  0000              1583       DC    F'0'                     0-7 HEAD SELECT (NEW ARCH)
00302C  0000              1584       DC    F'0'
00302E  0000              1585       DC    F'0'
003030  0000              1586       DC    F'0'
                          1587 *
                          1588 *
                          1589 ***** CYCLE STEAL STATUS DCB  ********
                          1590 *
003032  2000              1591 CSDCB DC    X'2000'                  CONTROL WORD
003034  0000              1592       DC    F'0'                     NOT USED
003036  0000              1593       DC    F'0'                     NOT USED
```



```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
003038  0000              1594       DC    F'0'                     NOT USED
00303A  0000              1595       DC    F'0'                     NOT USED
00303C  0000              1596       DC    F'0'                     NOT USED
00303E  0004              1597       DC    X'0004'                  2 WORDS OF STATS
003040  2D82              1598       DC    A(CSBUF)                 ADDRESS OF CYCLE STEAL STATUS DATA
                          1599 *
                          1600 ***** WRITE DCB  **********
                          1601 *
003042  0001              1602 WRDCB DC    X'0001'                  8-15=1- ATA AM;8-15=2-CONTROL AM
003044  0000              1603       DC    F'0'                     NOT USED
003046  0000              1604       DC    F'0'
003048  0000              1605       DC    X'0000'                  SERCH ARGUMENT N-C
00304A  0000              1606       DC    X'0000'                  SEARCH ARGUMENT H-R
00304C  0000              1607       DC    A(*-*)                   CHAIN ADDRESS
00304E  0000              1608       DC    F'0'                     BYTE COU T
003050  0000              1609       DC    A(*-*)                   WRITE DATA ADDRESS
                          1610 *
                          1611 ***** VERIFY DCB   *******
                          1612 *
003052  000C              1613 VRDCB DC    X'000C'                  CONTROL WORD
003054  0000              1614       DC    F'0'                     NOT USED
003056  0000              1615       DC    F'0'                     NCT USED
003058  0000              1616       DC    A(*-*)                   N-C
00305A  0000              1617       DC    A(*-*)                   H-R
00305C  0000              1618       DC    A(*-*)                   CHAIN ADDRESS
00305E  0000              1619       DC    F'0'                     BYTE CCUNT
003060  0000              1620       DC    A(*-*)                   VERIFY DATA ADDRESS
                          1621 *
                          1622 ***** READ DCB   *******
                          1623 *
003062  2009              1624 RDDCB DC    X'2009'                  READ DCB CONTROL WORD
003064  0000              1625       DC    F'0'                     NOT USED
003066  0000              1626       DC    F'0'                     NOT USED
003068  0000              1627       DC    X'0000'                  SEARCH ARGUMENT N-C
00306A  0101              1628       DC    X'0101'                  SEARCH ARGUMENT H-R
00306C  0000              1629       DC    A(*-*)                   CHAIN ADDRESS
00306E  0D00              1630       DC    F'3328'                  BYTE COUNT
003070  0000              1631       DC    A(*-*)                   READ DATA ADDRESS
                          1632 *
                          1633 *
                          1634 *
                          1635 *
003072  1000              1636 COUNT DC    F'4096'                  BYTE COUNT (4096)
003074  0C80              1637 CTN32 DC    F'3200'                  BYTE COUNT (3200)
003076  0000              1638 SAVE  DC    X'0000'                  SCTID INFO
003078  0000              1639       DC    X'0000'                  *
00307A  0000              1640 DIFF  DC    X'0000'                  SEEK DIFFERENCE
00307C  00C8              1641 FDATA DC    X'00C8'                  FORMAT DATA BYTE FOR COMPARE
00307E  0000              1642 XXX   DC    X'0000'                  WORK WORD INT TO ZERO
003080  0046              1643 ENDEX DC    X'0046'                  TERMINATING SEEK DIFFERENCE
003082  0000              1644 ZERCO DC    X'0000'                  CONSTANT ZERO
003084  0001              1645 CNE1  DC    X'0001'                  CONSTANT ONE
003086  0800              1646 REVR  DC    X'0800'                  SEEK REVERSE
003088  0000              1647 HHRR  DC    X'0000'                  H-R
00308A  0000              1648 BCNT  DC    X'0000'                  BYTE COUNT
00308C  0000              1649 JOE   DC    X'0000'                  WRITE PARAMETER POINTER
00308E  0000              1650 JOE1  DC    X'0000'                  SAVE LOC FOR PARM LIST ADDRESS
003090  7AE5              1651 WDATA DC    X'7AE5'                  WRITE DATA
003092  69BD              1652       DC    X'69BD'                  *
003094  0000              1653 CYLND DC    X'0000'                  TEMP SAVE AREA FOR CYLINDER #
003096  0000              1654       DC    X'0000'                  *
003098  0000              1655 FORMT DC    X'0000'                  FRCMAT BIT FROM OPERATOR
00309A  004C              1656 CYLIN DC    X'004C'                  CYLINDER NUM SELECTED FROM OPERATOR
00309C  0000              1657 HEAD  DC    F'0000'                  HEAD NUM SELECTED FROM OPERATOR
00309E  0001              1658 SECT  DC    F'0001'                  SECTOR # SELECT BY OPERATOR
0030A0  0D00              1659 BYCNO DC    F'3328'                  BYTE COUNT SELECTED BY OPER
0030A2  0000              1660 TABLE DC    A(*-*)                   ADDR OF WRT PAR LIST FOR FORMAT RTNS
0030A4  00000000000000000 1661 DIAGW DC    7A(*-*)                  DIAGNOSTIC BUFFER
0030B2  0000              1662 CONST DC    X'0000'                  SECTOR # PLUS ONE FOR N='X'
0030B4  0000              1663 SBYT  DC    X'0000'                  FULL BYTE COUNT FOR N='X'
0030B6  00FF              1664 CDAT  DC    X'00FF'                  CONSTANT '00' & 'FF'
0030B8  0000              1665 CTR01 DC    X'0000'                  COUNTER 1
0030BA  0000              1666 CTR02 DC    X'0000'                  COUNTER 2
0030BC  0000              1667 CTR03 DC    X'0000'                  COUNTER 3
0030BE  0000              1668 CTR04 DC    X'0000'                  COUNTER 4
0030C0  0000              1669 CTR05 DC    X'0000'                  COUNTER 5
0030C2  0000              1670 SAVR3 DC    X'0000'                  SAVE AREA
0030C4  0000              1671 SAVR5 DC    X'0000'                  SAVE AREA
0030C6  0000              1672 SIDE  DC    X'0000'                  SIDE BEING TESTED
0030C8  0000              1673 TRK   DC    X'0000'                  CURRENT CYLINDER NUMBER
0030CA  0000              1674 WTDAT DC    X'0000'                  WORK AREA
0030CC  4C00              1675 SVSIX DC    X'4C00'                  CYLINDER NUMBER 76
                          1677       COPY  T4810
                          1678 *                    4/15/76
                          1679 *      EXECUTE INPUT & OUTPUT COMMANDS
                          1680 *      TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
                          1681 *      EACH OF THESE ENTRIES SET R7 WITH THE ADRS OF ITS PARAMETER
                          1682 *      LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE
                          1683 *      SUPVR CALL.
                          1684 *      .
                          1685 *      THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:
                          1686 *      .
                          1687 *      1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP
                          1688 *      2. ERROR INTERRUPTS RECEIVED FROM SUPVR
                          1689 *      3. LOOP ON ERROR, THE CALL MUST HAVE A 'DC' STATEMENT AFTER
                          1690 *      .  THE CALL WITH THE ADDRESS OF THE RETRY STATEMENT
                          1691 *      4. CYCLE STEAL IN PROGRESS WITH AN ERROR
                          1692 *      5. SOMETHING ELSE
                          1693 *   .
                          1694 *      THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                          1695 *      .
                          1696 *  1   BAL   $SEEK,R6               SEEK
                          1697 *      .
                          1698 *  2   BAL   $RECL,R6               RECALIBRATE
                          1699 *      .
                          1700 *  3   BAL   $RDID,R6               READ SECTOR ID
                          1701 *      .
                          1702 *  4   BAL   $RD,R6                 READ
                          1703 *      .
                          1704 *  5   BAL   $RDVY,R6               READ VERIFY
                          1705 *      .
                          1706 *  6   BAL   $WRT,R6                WRITF
                          1707 *      .
                          1708 *  7   BAL   $FMT,R6                FORMAT
                          1709 *      .
                          1710 *  8   BAL   XIOCS,R6               CYCLE STEAL STATUSB
```

```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                           1711 *
                           1712 * 9   BAL   $DIAG,R6                READ DIAGNOSTICS
                           1713 *
                           1714 *
0030CE  4020 3230 3022     1715 $SEEK  MVA   SKDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
0030D4  502C               1716        J     XIO
                           1717 *
0030D6  4020 3230 2FF2     1718 $RECL  MVA   CLDCB,IODCB             SET UP BLOCK FOR SVC CALL
0030DC  5028               1719        J     XIO
                           1720 *
0030DE  4020 3230 3012     1721 $RDID  MVA   RSDCB,IODCB             SET UP BLOCK FOR SVC CALL
0030E4  4020 2D6A 9999     1722        MVWI  X'9999',SCTID           INVALIDATE SECTOR ID BUFFER AREA
0030EA  4020 2D6C 9999     1723        MVWI  X'9999',SCTID+2         *
0030F0  501E               1724        J     XIO
                           1725 *
0030F2  0BFF               1726 $RD    MVBI  255,R3                  INIT READ BUFFER TO FF'S
0030F4  6D08 3070          1727        MVW   RDDCB+14,R5             *
0030F8  4724 Q400          1728        MVWI  X'0400',R7              *
0030FC  2BAC               1729        FFN   R3,(R5)                 *
0030FE  4020 3230 3062     1730 $RD$   MVA   RDDCB,IODCB             SET UP BLOCK FOR SVC CALL
003104  5014               1731        J     XIO
                           1732 *
003106  4020 3230 3052     1733 $RDVY  MVA   VRDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
00310C  5010               1734        J     XIO
                           1735 *
00310E  4020 3230 3042     1736 $WRT   MVA   WRDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
003114  500C               1737        J     XIO
                           1738 *
003116  4020 3230 3002     1739 $FMT   MVA   FRDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
00311C  5008               1740        J     XIO
00311E  4020 3230 2FE2     1741 $DIAG  MVA   DGDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
003124  4020 3232 000D     1742        MVWI  X'000D',ICMOD           MODIFIER FOR DIAG OP
00312A  500E               1743        J     XIO1
00312C  5601               1744 CEOP2  BXS   (R6,2)                 DUMMY RETURN TO USER
                           1745 *      -
                           1746        XEQIT 1
                           1747+*************************************************************29JUL76**
                           1748+*
                           1749+* SUB-ROUTINE
                           1750+*
                           1751+*      EXECUTE INPUT AND OUTPUT COMMANDS
                           1752+*
                           1753+* PURPOSE
                           1754+*
                           1755+*      TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
                           1756+*      THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
                           1757+*
                           1758+*        1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
                           1759+*           THE I/O COMMAND.
                           1760+*        2. SAVES THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
                           1761+*           ISSUED BY THIS SUBROUTINE.
                           1762+*        3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
                           1763+*           START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
                           1764+*        4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
                           1765+*           SINCE THE LAST EXPECTED INTERRUPT. IF AN INTERRUPT IS FOUND,
                           1766+*           MYSTERY INTERRUPT (MI) CONTROL BIT IS SET.
                           1767+*        5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7, SET THE
                           1768+*           EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC  START'.
                           1769+*        6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
                           1770+*           STARTS TO DETERMINE A LOST INTERRUPT.
                           1771+*        7. EXCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
                           1772+*           WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
                           1773+*        8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
                           1774+*        9. CHECK IF AN ERROR WAS EXPECTED AND IF THERE WAS RETURN.
                           1775+*       10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
                           1776+*       11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
                           1777+*       12. CHECK IF A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
                           1778+*           ISSUED BY THIS SUBROUTINE.
                           1779+*       13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
                           1780+*           CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
                           1781+*           COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
                           1782+*
                           1783+* CALLING SEQUENCE
                           1784+*
                           1785+*      THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                           1786+*
                           1787+* --> BAL   XIO         OR          XEQ ANY CYCLE STEAL COMMAND, MOD=0
                           1788+* --> BAL   XIO1                   MOD PARM PRELOADED IN 'IOMOD'
                           1789+* --> BAL   XIOCS,R6    OR          XEQ START CYCLE STEAL STATUS, MOD=F
                           1790+* --> BAL   XIOCS-4,R6             AUTO CS STATUS (FOLLOWING OTHER XIO
                           1791+*      -                           AND DOES NOT POST INTERRUPT STATUS)
                           1792+*
                           1793+* RETURN CONTROL
                           1794+*
                           1795+*      BXS   (R6,2)                RETURN TO USER NO ERROR
                           1796+* OR  B     (R6)*                 RETURN AND RETRY ON ERROR
                           1797+*************************************************************
0031?E  CB25 3232          1799+XIO    MVWZ  IOMOD,R3              SET MOF OF 0 FOR CYCLE STEAL OP
003132  500A               1800+       J     XIO1                  CS I/O'S ARE NOT RETRIED
                           1801+*
003134  4CAA               1802+       TBTR  (R4,CE)               RESET CS STATUS INTER ERROR INDICAT.
003136  4C68               1803+       TBTS  (R4,CS)               SET 'CYCLE STEAL STATUS' IN PROGRESS
003138  4020 3230 3032     1804+XIOCS  MVA   CSDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
00313E  4020 3232 000F     1805+       MVWI  X'000F',IOMOD         SET CYCLE STEAL MODIFIER
003144  4C28               1806+       TBT   (R4,CS)               IS CS IN PROGRESS, ERROR CONDITION
003146  1213               1807+       JON   XIO2                  * YES, BYPASS SAVING I/O ADRS
003148  6E0D 2D68          1808+XIO1   MVW   R6,LSTIO              SAVE IAR FOR RETRY IF REQUESTED
00314C  4324 2D72          1809+       MVA   DCBUF,R3              SET UP TO ADRS TO MOVE DCB TABLE
003150  6D08 3230          1810+       MVW   IODCB,R5              * AND THE FROM ADRS, ALONG WITH
003154  0F10               1811+       MVBI  16,R7                 * THE NUMBER OF MOVES
003156  2D64               1812+       MVFN  (R5),(R3)             MOVE 1 STATUS WORD AND ADJUST
003158  0BFF               1813+       MVBI  255,R3                CLEAR CYCLE STATUS BUFFER
00315A  4524 2D82          1814+       MVA   CSBUF,R5              *  TO ALL ONES  *
00315E  0F10               1815+       MVBI  16,R7                 *
003160  2BAC               1816+       FFN   R3,(R5)               *
003162  4020 2D64 0708     1817+       MVWI  X'0708',$IOIN         OVERLAY OLD CONDITION CODES
003168  CB25 2D66          1818+       MVWZ  $ISB,R3               ZERO OUT OLD ISB VALUE
                           1819+*
00316C  4CA1               1820+       TBTR  (R4,ER)               RESET ANY ERROR BEFORE I/O COMMAND
00316E  4CA3               1821+XIO2   TBTR  (R4,IN)               CLEAR INTERRUPT RECEIVED CNTL BIT
003170  4724 322C          1822+       MVA   IOBLK,R7              SET UP CONTROL BLOCK FOR SUPVR
003174  4CA6               1823+       TBTR  (R4,$LE)              RESET LEVEL ERROR INDICATOR
003176  4C62               1824+       TBTS  (R4,XI)               SET EXPECTED INTR CONTROL BIT
003178  600A               1825+       SVC   START                 CALL SUPVR FOR I/O COMMAND
                           1826+*
00317A  4CA7               1827+       TBTR  (R4,NI)               IS AN INTR EXPECTED
```



```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
00317C  6AC0 0002          1828+       BN    (R6,2)                * NO, RETURN TO USER
                           1829+*
                           1830+*           THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
                           1831+*
003180  0D00               1832+       MVBI  X'00',R5              SET UP WORK REG FOR 'LOST INTR'
003182  4CA3               1833+XIO8   TBTR  (R4,IN)               HAS INTERRUPT BEEN RECEIVED
003184  1238               1834+       JON   XIOCK                 * YES, CHECK IF ALL WAS SATISFACTORY
003186  6002               1835+       SVC   IDLE                  ALLOW ANOTHER PROGRAM A CHANCE TO RUN
                           1836+*                                  SUPVR WILL RETURN HERE
003188  7DA1 0001          1837+       AWI   1,R5                  ADVANCE TIME OUT COUNT
00318C  18FA               1838+       JNZ   XIO8                  BCH IF TIME OUT NOT REACHED
00318E  4C61               1839+       TBTS  (R4,ER)               SET ON ERROR CONTROL BIT
003190  68D2 0000          1840+       B     (R6)*                 ERR 'NO INTERRUPT'
                           1842+*************************************************************03FEB76**
                           1843+*
                           1844+* SUBROUTINE
                           1845+*
                           1846+*      I/O EXECUTE ERROR HANDLING ROUTINE
                           1847+*
                           1848+* PURPOSE
                           1849+*
                           1850+*      THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
                           1851+*      PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
                           1852+*      SUPERVISOR AND IT WAS NOT ACCEPTED.
                           1853+*
                           1854+* CALLING SEQUENCE
                           1855+*
                           1856+*      SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
                           1857+*
                           1858+* RETURN CONTROL
                           1859+*
                           1860+*      B     (R6)*                 RETURN TO USERS ERROR HANDLER
                           1861+*
                           1862+*************************************************************************
                           1863+*
                           1864+* CC          0= DEVICE NOT ATTACHED
                           1865+* FOR         1= DEVICE BUSY
                           1866+* I/O         2= DEVICE BUSY AFTER RESET
                           1867+*            3= COMMAND REJECT
                           1868+*            4= INTERVENTION REQUIRED
                           1869+*            5= INTERFACE DATA CHECK
                           1870+*            6= CONTROLLER BUSY
                           1871+*            7= I/O COMMAND EXCEPTED
                           1872+*
003194  706E               1873+XIOER  DC    X'706E'                 COPY STATUS ANY LEVEL INTO R3
003196  336A               1874+       SRL   13,R3                   POSITION CC CODE TO BITS 13-15
003198  C328 2D64          1875+       MVB   R3,$IOIN                * PUT IN LOG OUT AREA
00319C  68D2 0000          1876+       B     (R6)*                   RETURN TO USER ERROR HANDLER
                           1878+*************************************************************14APR76** IL
                           1879+*                                                                       IL
                           1880+* SUB-ROUTINE                                                          IL
                           1881+*                                                                       IL
                           1882+*      ERROR INTERRUPT             RUNS ON INTERRUPT LEVEL '$INTL'      IL
                           1883+*                                                                       IL
                           1884+* PURPOSE                                                             IL
                           1885+*                                                                       IL
                           1886+*      THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR     IL
                           1887+*      OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE       IL
                           1888+*      EXPECTED CODE.                                                   IL
                           1889+*                                                                       IL
                           1890+* CALLING SEQUENCE                                                    IL
                           1891+*                                                                       IL
                           1892+*      SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT        IL
                           1893+*                                                                       IL
                           1894+* RETURN CONTROL                                                      IL
                           1895+*                                                                       IL
                           1896+*      SVC   EXIT                  RETURN TO USER VIA SUPVR         IL
                           1897+*                                                                       IL
                           1898+*************************************************************************IL
                           1899+*                                                                       IL
                           1900+* CC          0= CONTROLLER END                 ISB   0= ADD STATUS    IL
                           1901+* FOR         1= PROGRAM CONTROL INTERRUPT      BITS  1= COMD REJECT   IL
                           1902+* INTR        2= EXCEPTION INTERRUPT            FOR   2= INCOR LENGTH  IL
                           1903+*            3= DEVICE END INTERRUPT           INTR  3= DCB SPEC CK   IL
                           1904+*            4= ATTENTION INTERRUPT                  4= STG DATA CK   IL
                           1905+*            5= ATTENTION / PROGRAM CNTL INTR        5= INV STG ADRS  IL
                           1906+*            6= ATTENTION / EXCEPTION INTR           6= PROTRCT CK    IL
                           1907+*            7= ATTENTION / DEVICE END INTR          7= I-FACE DATA   IL
                           1908+*                                                                       IL
0031A0  706E               1909+INTER  DC    X'706E'                 COPY STATUS ANY LEVEL INTO R3    IL
0031A2  336A               1910+       SRL   13,R3                   POSITION INDICATORS IN R3        IL
0031A4  4424 2D5C          1911+       MVA   OPTN1,R4                SET UP BASE ADRS                 IL
0031A8  4C28               1912+       TBT   (R4,CS)                 IS CS IN PROGRESS                IL
0031AA  1006               1913+       JOFF  INTES                   * NO                             IL
0031AC  4C6A               1914+       TBTS  (R4,CE)                 TURN ON CYCLE STEAL INTER ERROR   IL
0031AE  6F0D 2D90          1915+       MVW   R7,CSTL8                SAVE CS ERR ISB VALUE, BITS 0-7  IL
0031B2  C328 2D91          1916+       MVB   R3,CSTL8+1              * AND THE COND CODE              IL
0031B6  500A               1917+       J     INTR1                                                    IL
0031B8  4C24               1918+INTES  TBT   (R4,XE)                 TEST  EXPECTED ATTEN / ERROR IND IL
0031BA  1002               1919+       JOFF  INTE1                   BCH IF NOT EXPECTED              IL
0031BC  F304               1920+       CBI   4,R3                    IS THIS AN 'ATTENTION' INTR      IL
0031C0  4C61               1921+       JE    INTR1                   * YES, BCH TO END INTR SEQUENCE  IL
0031C2  5004               1922+INTET  TBTS  (R4,ER)                 SET ERROR ON I/C COMMAND CNTL BIT IL
                           1923+       J     INTR1                                                    IL
                           1924+*                                    THE ERROR INTERRUPT USES THE SAME IL
                           1925+*                                    ENDING SEQUENCE AS THE NORMAL INTR IL
                           1927+*************************************************************14APR76IL
                           1928+*                                                                       IL
                           1929+* SOUBROUTINE                                                         IL
                           1930+*                                                                       IL
                           1931+*      OKAY  INTERRUPT             RUNS ON INTERRUPT LEVEL '$INTL'      IL
                           1932+*                                                                       IL
                           1933+* PURPOSE                                                             IL
                           1934+*                                                                       IL
                           1935+*      TO CHECK THE INTERRUPT AND CONTINUE THE TEST                     IL
                           1936+*                                                                       IL
                           1937+* CALLING SEQUENCE                                                    IL
                           1938+*                                                                       IL
                           1939+*      SUPERVISOR WILL ENTER HERE  IF INTR CC IS AS REQUESTED           IL
                           1940+*      THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE          IL
                           1941+*      AFTER THE SPECIAL PART HAS BEEN COMPLETED  AND THE               IL
                           1942+*      COMMON SECTION IS HANDLED HERE.                                  IL
                           1943+*                                                                       IL
                           1944+* RETURN CONTROL                                                      IL
                           1945+*                                                                       IL
                           1946+*      SVC   EXIT                  RETURN TO USER VIA SUPVR         IL
```

```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                         1947+*                                                          IL
                         1948+*****************************************************************IL
0031C4  706E             1949+INTOK DC    X'706E'                 COPY STATUS ANY LEVEL INTO R3   IL
0031C6  336A             1950+      SRL   13,R3                   POSITION INDICATORS IN R3       IL
0031C8  4424 2D5C        1951+      MVA   OPTN1,R4                SET UP BASE ADRS                IL
0031CC  4C63             1952+INTR1 TBTS  (R4,IN)                 SET 'INTERRUPT RECEIVED         IL
0031CE  4C28             1953+      TBT   (R4,CS)                 IS 'CS IN PROGRESS' ON          IL
0031D0  1204             1954+      JON   INTR2                   * YES, BCH AROUND UPDATE        IL
0031D2  C328 2D65        1955+      MVB   R3,$IOIN+1              SAVE INTERRUPTING CC CODE       IL
0031D6  6F0D 2D66        1956+      MVW   R7,$ISB                 SAVE INTR STATUS AND DEV ADRS   IL
0031DA                   1957+INTR2 EQU   *                                                 IL
                         1958+*     CPCL  R5                      CURRENT LEVEL COPIED BY DCP     IL
0031DA  3521             1959+      SLL   4,R5                    POSITION INTR LEVEL AND PUT     IL
0031DC  0501             1960+      ABI   1,R5                    * IN 'I' BIT                    IL
0031DE  CD24 2D98        1961+      CW    $INTL,R5                IS THIS THE CORRECT INTR LEVEL  IL
0031E2  1002             1962+      JE    INTR3                   * YES, GO EXIT THIS LEVEL       IL
0031E4  4C66             1963+      TBTS  (R4,$LE)                SET INTR LEVEL ERROR CONTROL BIT IL
0031E6  4C61             1964+      TBTS  (R4,ER)                 SET ERROR ON I/O COMMAND CNTL BIT IL
0031E8  4CA2             1965+INTR3 TBTR  (R4,XI)                 WAS INTERRUPT EXPECTED          IL
0031EA  1204             1966+      JON   INTRX                   * YES, EXIT OFF THIS INTR LEVEL IL
0031EC  4C60             1967+      TBTS  (R4,MI)                 * NO, SET MYSTERY INTR CONTROL BIT IL
0031EE  F304             1968+      CBI   4,R3                    ATTENTION INTERRUPT?            IL
0031F0  1001             1969+      JE    INTRX                   YES                             IL
0031F2  4C6C             1970+      TBTS  (R4,NG)                 ERROR,UNEXPECTED INTERRUPT      IL
0031F4  6006             1971+INTRX SVC   EXIT                    EXIT THIS LEVEL VIA SUPVR TO PGM IL
                         1973+*****************************************************03FEB76**
                         1974+*
                         1975+*     THIS IS THE CONTINUATION OF EXECUTE I/O AFTER THE INTERRUPT
                         1976+*     HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN
                         1977+*     RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.
                         1978+*
                         1979+*
0031F6  4CA4             1980+XIOCK TBTR  (R4,XE)                 WAS AN ERROR EXPECTED
0031F8  6AC0 0002        1981+      BN    (R6,2)                 * YES, EXIT THIS ROUTINE
0031FC  4CA8             1982+      TBTR  (R4,CS)                WAS AUTO CS IN PROGRESS
0031FE  1006             1983+      JOFF  XIOCV                  * NO, CONTINUE CHECKING
003200  4C2A             1984+      TBT   (R4,CE)                IS CS IN AN ERR CONDITION
003202  1002             1985+      JOFF  XIOCO                  * NO, BCH
003204  68D2 0000        1986+      B     (R6)*                  CS ERROR
003208  4C69             1987+XIOCO TBTS  (R4,CSA)                TURN ON CS STATS AVAIL FLAG
00320A  5601             1988+      BXS   (R6,2)                 GO TO USER
00320C  4C21             1989+XIOCV TBT   (R4,ER)                 WAS ERROR INTR CONTROL BIT ON
00320E  100B             1990+      JOFF  XIOCX                  * NO, EXIT THIS ROUTINE
                         1991+*
003210  C520 2D65        1992+      MVB   $IOIN+1,R5             GET LAST INTR CC CODE
003214  F502             1993+      CBI   2,R5                   IS THIS CC=2
003216  68D1 0000        1994+      BNE   (R6)*                  * NO, BCH TO ERROR HANDLER
00321A  C520 2D66        1995+XIOCQ MVB   $ISB,R5                GET LAST ISB DATA BYTE AND IF CS
00321E  6A00 3134        1996+      BN    XIOCS-4                * AVAILABLE, GO AND GET IT
003222  68D2 0000        1997+      B     (R6)*                  ERROR
003226  CB25 2D60        1998+XIOCX MVWZ  OPTN3,R3               CLEAR OUT OPTION 3 CNTL BITS
00322A  5601             1999+      BXS   (R6,2)                 RETURN TO USER VIA REG 6
                         2000+*
                         2001+*          I/O   PARAMETER LIST
                         2002+*
00322C  19D0             2003+IOBLK DC    A(DEVADD)              ADRS OF DEVICE ADRS
00322E  3194             2004+      DC    A(XIOER)               ERROR ROUTINE ADRS
003230  0000             2005+IOLCB DC    A(*-*)                 DCB ADRS OR LEVEL & INTR
003232  0000             2006+IOMOD DC    A(*-*)                 MODIFIER
003234  0000             2007+      DC    A(*-*)                 ADRS OF LAST SVC CALL
003236  0000             2008+IORSP DC    A(*-*)                 SECOND WORD OF LAST IDCB
                         2009+*
                         2010+*          INTERRUPT CONTROL BLOCK FOR I/O COMMANDS
                         2011+*
003238  19D0             2012+INTBL DC    A(DEVADD)              ADRS OF DEVICE ADRS
00323A  31C4             2013+      DC    A(INTOK)               INTERRUPT OK RETURN ADRS
00323C  31A0             2014+      DC    A(INTER)               INTERRUPT ERROR ADRS
00323E  0003             2015+INTCC DC    X'0003'                INTERRUPT CODE EXPECTED
                         2017+*****************************************************11MAY76**
                         2018+*
                         2019+* SUBROUTINE
                         2020+*
                         2021+*     CONNECT INTERRUPT CONTROL BLOCK & PREPARE DEVICE
                         2022+*
                         2023+* PURPOSE
                         2024+*
                         2025+*     TO CONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
                         2026+*     PREPARE ON THE DESIRED INTERRUPT LEVEL AND TO ALLOW THE DEVICE
                         2027+*     TO INTERRUPT.
                         2028+*
                         2029+* CALLING SEQUENCE
                         2030+*
                         2031+*     THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
                         2032+*
                         2033+* --> BAL   $CONC,R6              CLEAR DEV DEP STG AND CONNECT I/O BLK
                         2034+* --> BAL   $CONP,R6              PREPARE DEVICE ONLY, ALREADY CONNECT
                         2035+*
                         2036+* RETURN CONTROL
                         2037+*
                         2038+*     BXS   (R6,2)                RETURN TO USER VIA REG 6 IF OKAY
                         2039+* OR  B     (R6)*                 IF THE DEVICE COULD NOT BE CONNECTED
                         2040+*
                         2041+*****************************************************************
003240  0F06             2042+$CONC MVBI  6,R7                   NUMBER OF BYTE TO CLEAR
003242  0B00             2043+      MVBI  0,R3                   * AND THE DATA TO USE
003244  4524 2D6A        2044+      MVA   DEV1,R5                * ALONG WITH THE ADRS TO USE
003248  2BAC             2045+      FFN   R3,(R5)                *
00324A  CB25 2D60        2046+      MVWZ  OPTN3,R3               CLEAR OLD CONTROLS FOR NEW ROUTINE
00324E  4724 2D9E        2047+      MVA   SVCAL,R7               SET UP TO REQUEST DCP SUPR DISK
003252  6016             2048+      SVC   REQSD                  *
003254  0FFF             2049+      MVBI  -1,R7                  SET UP DELAY FOR IBIS
003256  BFFF             2050+      JCT   *,R7                   * AND DECREMENT IT DOWN
003258  4724 3238        2051+      MVA   INTBL,R7               SET R7 TO CONTROL BLOCK AND
00325C  6014             2052+      SVC   CICB                   * CONNECT IT TO THIS DEVICE
00325E  6AD0 0000        2053+      BN    (R6)*                  ERROR RETURN TO USER
                         2054+*
003262  8828 2D98 3230   2055+$CONP MVW   $INTL,IODCB            PUT IN LEVEL & INTR PARAMETER
003268  4724 322C        2056+      MVA   IOBLK,R7               SET R7 TO CONTROL BLOCK TO PREPARE
00326C  4020 2D64 0708   2057+      MVWI  X'0708',$IOIN          INITIALIZE CONDITION CODE STORAGE
003272  CB25 2D66        2058+      MVWZ  $ISB,R3                * AND CLEAR OLD ISB VALUE
003276  6F0D 2D68        2059+      MVW   R7,LSTIO               SET UP ADDRESS THAT STARTED LAST I/O
00327A  600C             2060+      SVC   PREP                   * AND CALL ON SUPVR
00327C  5601             2061+      BXS   (R6,2)                 RETURN TO USER
                         2063+*****************************************************06APR76**
                         2064+*
                         2065+* SUBROUTINE
```



```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                         2066+*
                         2067+*     DISCONNECT THE INTERRUPT CONTROL BLOCK AND LOG ERRORS
                         2068+*
                         2069+* PURPOSE
                         2070+*
                         2071+*     DISCONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
                         2072+*     SET THE 'NO GOOD' CONTROL BIT, THEN LOG THE DATA THAT HAS
                         2073+*     BEEN FOUND TO HELP THE OPERATOR DEFINE THE ERROR CONDITION.
                         2074+*
                         2075+* CALLING SEQUENCE
                         2076+*
                         2077+*     THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
                         2078+*
                         2079+* --> B     $ERR$                 SET 'NG' BIT AND CONVERT DATA TO LOG
                         2080+* --> B     $CONX                 RETURN TO MDI SUPERVISOR TO TEST STS
                         2081+*
                         2082+* RETURN CONTROL
                         2083+*
                         2084+*     B     TURTN*                RETURN TO MDI
                         2085+* OR  B     (R6)*                 IF THE DEVICE COULD NOT BE CONNECTED
                         2086+*
                         2087+*****************************************************************
00327E  4020 1818 8000   2088+$ERR$  MVWI  X'8000',TUSTATUS      SET ON 'NO GOOD' STATUS BIT
003284  4724 33F4        2089+      MVA   HEBLK,R7               GET ADRS OF CONTROL BLOCK
003288  601A             2090+      SVC   HTOE                   CONVERT HEX TO EBC VIS DCP
00328A  0D03             2091+$PRNT MVBI  3,R5
00328C  4324 181A        2092+      MVA   TUWORK,R3              SET UP BUFFER STORAGE
003290  6B0D 33EC        2093+      MVW   R3,BUFPT
003294  4124 33TC        2094+      MVA   LINE1,R1
003298  0F04             2095+      MVBI  4,R7
00329A  0E08             2096+      MVBI  8,R6
00329C  2B24             2097+MVBUF MVFN  (R3),(R1)
00329E  0F04             2098+      MVBI  4,R7
0032A0  0A40             2099+      MVBI  X'40',R2
0032A2  C258             2100+      MVB   R2,(R1)+
0032A4  BEFB             2101+      JCT   MVBUF,R6
0032A6  0E08             2102+      MVBI  8,R6
0032A8  7921 002C        2103+      AWI   44,R1
0032AC  BDF7             2104+      JCT   MVBUF,R5
0032AE  4020 1802 F1F0   2105+      MVWI  PIDMSG10,PID+2
0032B4  4020 19B8 33F2   2106+      MVA   FAKETU,@DCADD1
0032BA  4020 19BA 33EE   2107+      MVA   DC2PT,@DCADD2
0032C0  402C 19C4 0080   2108+      OWI   BIT0080,SUPSTAT
0032C6  4324 2D62        2109+      MVA   $TUID,R3               SET UP BUFFER STORAGE
0032CA  6F13 18BA        2110+      BAL   TUMSGWTR*,R7           GO TO MESSAGE WRITER
                         2111+*
0032CE                   2112+$CONX  EQU   *
0032CE  8028 2D6B 2DA1   2113+      MVB   SCTID+1,SVCAL+3        SETUP CURRENT CYLINDER NUM
0032D4  4724 2D9E        2114+      MVA   SVCAL,R7               ADDR OF RELEASE PARM LIST
0032D8  6017             2115+      SVC   RELSD                  RELEASE CONTROL
0032DA  C720 19D0        2116+      MVB   DEVADD,R7              GET DEVICE ADDRESS FROM MDI
0032DE  6013             2117+      SVC   RICB                   RELEASE INTERRUPT CONTROL BLOCK
0032E0  6812 2D9A        2118+      B     TURTN*                 RETURN TO MDI SUPERVISOR
                         2119+*
0032E4  0007             2120+BEGIN  DC    A(0007)                NUMBER OF LINES TO PRINT
0032E6  0008             2121+      DC    A(0008)                LINE LENGTH = 8 CHAR
0032E8  5C5C40C1C2D6D9E3 2122+      DC    C'** ABORT'
0032F0  0028             2123+      DC    A(0040)                LINE LENGTH = 40 CHAR
0032F2  E3E4C9C440C9D6C9D 2124+     DC    C'TUID IGIN ISB  INST DEV1 DEV2 DEV3 DEV4 '
00331A  0028             2125+      DC    A(0040)                LINE LENGTH = 40 CHAR
00331C  4040404040404040 2126+LINE1 DC    C'                     '
003344  0028             2127+      DC    A(0040)                LINE LENGTH = 40 CHAR
003346  C3D5E3D340C4C3C2F 2128+     DC    C'CNTL DCB2 DCB3 DCB4  DCB5 CHAD BYCT ADRS '
00336E  0028             2129+      DC    A(0040)                LINE LENGTH = 40 CHAR
003370  4040404040404040 2130+LINE2 DC    C'                     '
003398  0028             2131+      DC    A(0040)                LINE LENGTH = 40 CHAR
00339A  D9E2C9C440C3E260F 2132+     DC    C'RSIB CS-2 CS-3 CS-4  CS-5 CS-6 CS-7 CS-8 '
0033C2  0028             2133+      DC    A(0040)                LINE LENGTH = 40 CHAR
0033C4  4040404040404040 2134+LINE3 DC    C'                     '
                         2135+*
0033EC  0000             2136+BUFPT  DC    A(*-*)
0033EE  32E4             2137+DC2PT  DC    A(BEGIN)
0033F0  0101             2138+FIXTU  DC    X'0101'
0033F2  0101             2139+FAKETU DC    X'0101'
00F1F0                   2140+PIDMSG10 EQU   X'F1F0'
000080                   2141+BIT0080  EQU   X'0080'
                         2142+*
                         2143+*     DATA CONTROL BLOCK FOR CONVERTING HEX TO EBCDIC
                         2144+*
0033F4  0030             2145+HEBLK  DC    A(48)                  NUMBER OF BYTES TO CONVERT
0033F6  2D62             2146+      DC    A($TUID)               FROM ADRS
0033F8  181A             2147+      DC    A(TUWORK)              AND THE TO ADRS
                         2148 *
                         2150       COPY  T3C00
                         2151 T3C00 TUIT  ,1
                         2152+*****************************************************06FEB76**
                         2153+*
                         2154+* TEST UNIT
                         2155+*
                         2156+*     DIRECT PROGRAM CONTROL TEST UNIT                    04MAY76
                         2157+*
                         2158+* PURPOSE
                         2159+*
                         2160+*     THREE PARAMETERS ARE NEEDED FOR THE EXECUTION OF THIS TU AND ARE
                         2161+*     .
                         2162+*     1. ONE BYTE OF FUNCTION-MODIFIER,IE, X'60' FOR PREPARE
                         2163+*     2. TWO BYTES OF DATA TO BE USED IN THE SECOND PART OF THE IDCB,
                         2164+*     .  IE, X'0005' TO SELECT LEVEL 2 FOR AN INTERRUPT.
                         2165+*
                         2166+* CALLING SEQUENCE
                         2167+*
                         2168+*     MDI=@TUXX,T3C00,2,0708,EQ,PLNG=6,PRAM=FFXXXX'
                         2169+*
                         2170+* RETURN CONTROL
                         2171+*
                         2172+*     B     TURTN*                RETURN TO MDI SUPERVISOR
                         2173+*
                         2174+*****************************************************************
0033FA  6F0D 2D9A        2175+T3C00  MVW   R7,TURTN               SAVE RETURN ADDRESS
0033FE  4020 2D62 3C00   2176+      MVWI  X'3C00',$TUID          SAVE TU ID FOR DISPLAY
003404  4424 2D5C        2177+      MVA   OPTN1,R4               SET UP POINTER ADRS IN R4
                         2178+*
003408  4724 3238        2179       MVA   INTBL,R7               SET R7 TO CONTROL BLOCK AND
00340C  6014             2180       SVC   CICB                   * CONNECT IT TO THIS DEVICE
00340E  4020 2D64 0708   2181       MVWI  X'0708',$IOIN          INIT THE CONDITION CODES
003414  6908 189A        2182       MVW   TUPARM1,R1             SET UP PARM ADRS
```

```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
003418  8118 346A        2183         MVB   (R1)+,T3C00I          * AND SET IN FUNCTION-MODIFIER
00341C  8028 19D0 346B   2184         MVB   DEVADD,T3C00I+1       * FOLLOWED BY THE DEVICE ADRS
003422  8118 346C        2185         MVB   (R1)+,T3C00I+2        * AND SET IN EVEN BYTE DATA
003426  8118 346D        2186         MVB   (R1)+,T3C00I+3        * AND SET IN ODD BYTE DATA
00342A  D020 346A        2187         MVD   T3C00I,R0             GET FUNCTION, MODIFIER AND DEV ADRS
                         2188 *
00342E  680C 346A        2189         IO    T3C00I                ISSUE THE I/O COMMAND AND
003432  70AE             2190         DC    X'70AE'               * GET THE I/O CONDITION CODE IN R5
003434  356A             2191         SRL   13,R5                 POSITION CC IN THE RESULTS FIELD
003436  C528 2D64        2192         MVB   R5,$IOIN              * AND SAVE IT IN THE RESULTS
00343A  3062             2193         SRL   12,R0                 * AND POSITION IT IN THE REG TO
00343C  100E             2194         JZ    T3C00S                * SEND BACK THE RESULTS IF READ DPC
00343E  F002             2195         CBI   X'02',R0              IS IT A READ STATUS
003440  1808             2196         JNE   T3C00N                * NO, CONTINUE TO CHECK
003442  6A08 346C        2197         MVW   T3C00I+2,R2           * YES, GET ID RECEIVED AND
003446  6A0B 2D9C        2198         XW    $DVID,R2              CHECK AGAINST SHOULD BE VALUE
00344A  1807             2199         JNZ   T3C00S                * SEND BACK ACTUAL DATA
00344C  6A0D 18CA        2200         MVW   R2,TURESUL+2          AND SEND BACK THE RESULTS(ZERO)
003450  5007             2201         J     T3C00X
003452  F001             2202 T3C00N  CBI   X'01',R0               IS IT A READ DPC COMMAND
003454  1002             2203         JE    T3C00S                * YES, SEND RESULTS TO MDI
003456  F00F             2204         CBI   X'0F',R0              * IF IT IS A READ ID FUNCTION
003458  1803             2205         JNE   T3C00X                * NO, GO TO EXIT
                         2206 *
00345A  8828 346C 18CA   2207 T3C00S MVW   T3C00I+2,TURESUL+2     SEND BACK DATA RECEIVED AND EXIT
003460  8828 2D64 18C8   2208 T3C00X MVW   $IOIN,TURESUL          PUT ANY INTR COND CODE FOUND IN
                         2209         TXIT                        * RESULTS AND EXIT
003466  6802 32CE        2210+        B     $CONX                 RETURN TO MDI CONTROLLER
                         2211+*********************************************************************
                         2212 *
                         2213 *            IDCB FOR DIRECT PROGRAM CONTROL COMMAND
                         2214 *
00346A  0000             2215 T3C00I DC     X'0000'                FUNCTION-MODIFIER-DEVICE ADDRESS
00346C  0000             2216         DC    X'0000'                IMMEDIATE DATA BUFFER
                         2217         COPY  T4803
                         2218 T4803 TUIT T03R          3/03/76
                         2219+*************************************************************06FEB76**
                         2220+*
                         2221+* TEST UNIT
                         2222+*
                         2223+*      SEEK AND READ TEST
                         2224+*
                         2225+* PURPOSE
                         2226+*
                         2227+*      VERIFY THE FOLLOWING:
                         2228+*      1. SEEK AND VERIFY SECTOR ID FOR ALL TRACKS.
                         2229+*      2. RECAL., SEEK AND READ SECTOR ID.
                         2230+*      PERFORM THE FOLLOWING:
                         2231+*      1 PREPARE TO INTERRUPT LEVEL 'X'.
                         2232+*      2. SEEK RECALIBRATE AND VERIFY TRACK EQUALS ZERO.
                         2233+*      3. SEEK TO CYLINDERS 76,1,75,2,74 ETC.
                         2234+*      4. READ SECTOR ID AND VERIFY THAT SEEK WAS PERFORMED CORRECTLY.
                         2235+*      PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                         2236+*           .
                         2237+*           .      TURESUL BIT 0----------NOT USED
                         2238+*           .      TURESUL BIT 1----------NOT USED
                         2239+*           .      TURESUL BIT 2----------NOT USED
                         2240+*           .      TURESUL BIT 3----------NOT USED
                         2241+*           .      TURESUL BIT 4----------NOT USED
                         2242+*           .      TURESUL BIT 5---------- VERIFY OP ERROR
                         2243+*           .      TURESUL BIT 6----------NOT USED
                         2244+*           .      TURESUL BIT 7----------NOT USED
                         2245+*           .      TURESUL BIT 8----------NOT USED
                         2246+*           .      TURESUL BIT 9---------- WRONG DISKETTE SIDE SELECTED
                         2247+*           .      TURESUL BIT 10---------- RECALIBRATE FAILURE
                         2248+*           .      TURESUL BIT 11----------SEEK FAILURE
                         2249+*           .      TURESUL BIT 12----------READ ID FAILURE
                         2250+*           .      TURESUL BIT 13----------SEEK & READ ID FAILURE (CHAINING)
                         2251+*           .      TURESUL BIT 14----------NOT USED
                         2252+*           .      TURESUL BIT 15---------- OIO CC ERROR
                         2253+*           .      TURESUL BIT 16-31 ------ CYCLE STEAL STATUS FOR FAILING OP
                         2254+*           .      TURESUL BIT 32-47 ------ CC 32-39 OIO CC, 40-47 INT CC
                         2255+*           .      TURESUL BIT 48-63 ------ IBS
                         2256+*           .      TURESUL BIT 64-79 ------ OPTION WORD 3 (ERROR INDICATORS)
                         2257+*
                         2258+* CALLING SEQUENCE
                         2259+*
                         2260+*
                         2261+* RETURN CONTROL
                         2262+*
                         2263+*      B      TURTN*                 RETURN TO MDI SUPERVISOR
                         2264+*
                         2265+*********************************************************************
003468  6F0D 2D9A        2266+T4803   MVW   R7,TURTN               SAVE RETURN ADDRESS
003472  4020 2D62 4803   2267+        MVWI  X'4803',$TUID         SAVE TU ID FOR DISPLAY
003478  4424 2D5C        2268+        MVA   OPTN1,R4              SET UP POINTER ADRS IN R4
00347C  6E03 3240        2269+        BAL   $CONC,R6              CLEAR DEV DEP STG AND CONNECT I/O BL
003480  355C             2270+        DC    A(T03R)               ERROR ADRS FOR INVALID PREP
                         2271+*
                         2272 *
                         2273 *
                         2274 *********************************************************************
                         2275 *
003482  CA25 18C8        2276         MVWZ  TURESUL,R2            CLEAR RESULTS WORD
003486  CA25 18CA        2277         MVWZ  TURESUL+2,R2          CLEAR RESULTS WORD 2
00348A  CA25 18CC        2278         MVWZ  TURESUL+4,R2          CLEAR RESULTS WORD 3
00348E  CA25 18CE        2279         MVWZ  TURESUL+6,R2          CLEAR RESULTS WORD 4
003492  CA25 18D0        2280         MVWZ  TURESUL+8,R2          CLEAR RESULTS WORD 5
003496  4124 18C8        2281         MVA   TURESUL,R1            ADDRESS OF RESULTS
00349A  4024 5000        2282         MVWI  X'5000',R0            DELAY TO GET BY BUSY AFTER RESET
00349E  B8FF             2283         JCT   *,R0                  *
0034A0  6E03 30D6        2284 RT210   BAL   $RECL,R6              RECALIBRATE
0034A4  3574             2285         DC    A(T03ER)              ERROR
0034A6  4CA1             2286         TBTR  (R4,ER)               CC ERROR?
0034A8  124F             2287         JON   T03K                  YES
0034AA  4020 3052 000C   2288         MVWI  X'000C',VRDCB         VERIFY CONTROL WORD
0034B0  4020 305E 0D00   2289         MVWI  X'0D00',VRDCB+12      BYTE COUNT FULL
0034B6  4020 3058 0000   2290         MVWI  0,VRDCB+6             N-C
0034BC  4020 305A 0001   2291         MVWI  X'0001',VRDCB+8       H-R
0034C2  6E03 3106        2292         BAL   $RDVY,R6              VERIFY TRK 0,H=0,N=0
0034C6  3574             2293         DC    A(T03ER)              ERROR
0034C8  4CA1             2294         TBTR  (R4,ER)               CC ERROR?
0034CA  6A00 3558        2295         BON   T03K                  VERIFY ERROR
0034CE  4020 3022 0005   2296         MVWI  X'0005',SKDCB         SEEK CONTROL WORD
0034D4  4020 3024 0000   2297         MVWI  X'0000',SKDCB+2       ZERO DIFF
0034DA  4020 302A 0100   2298         MVWI  X'0100',SKDCB+8       SELECT HD=1
```



```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
0034E0  6E03 30CE        2299         BAL   $SEEK,R6              SEEK
0034E4  3574             2300         DC    A(T03ER)              ERROR
0034E6  4CA1             2301         TBTR  (R4,ER)               CC ERROR?
0034E8  1229             2302         JON   T032                  YES
0034EA  4020 305A 0101   2303         MVWI  X'0101',VRDCB+8       H-R
0034F0  4020 3058 1000   2304         MVWI  X'1000',VRDCB+6       N-C
0034F6  4020 305E 0F00   2305         MVWI  X'0F00',VRDCB+12      BYTE COUNT-FULL TRK  N=1
0034FC  6E03 3106        2306         BAL   $RDVY,R6              VERIFY TRK COMMAND, H=1, N=1
003500  3574             2307         DC    A(T03ER)              ERROR
003502  4CA1             2308         TBTR  (R4,ER)               CC ERROR
003504  6A00 3558        2309         BON   T03K                  VERIFY ERROR
003508  4020 307A 004C   2310         MVWI  76,DIFF               LOAD 76 IN DIFFERENCE WORD
00350E  4020 302C 3012   2311         MVWI  RSDCB,SKDCB+10        MOVE RD SCTR ID DCB ADRS TO CHAIN ADR
003514  4020 302A 0000   2312         MVWI  0,SKDCB+8             H=0 FOR ALL REMAINING SEEKS
00351A  4020 307E 0000   2313         MVWI  0,XXX                 ZERO LOC XXX
003520  4C9F             2314         TBTR  (R4,B63)              CLEAR SEEK DIRECTION INDICATOR
003522  4CDF             2315 LOOP1   TBTV  (R4,B63)              TEST AND INVERT DIRECTION BIT
003524  1229             2316         JON   SKRV                  BCH NEG - BCH IF REV BIT ON
003526  8028 3082 3024   2317         MVB   ZERO0,SKDCB+2         H=0,D=0=FORWARD; PLUS DIFFERENCE
00352C  8028 307E        2318         MVB   XXX+1,R2              MOVE CONTENTS OF 'XXX' IN R2
00352F  C226 307B        2319         AB    DIFF,R2               SEEK DIFFERENCE PLUS 'XXX'
003534  A828 3084 307E   2320         AW    ONE1,XXX               ONE PLUS 'XXX'
00353A  5023             2321         J     GO1
                         2322 *
00353C  402B 2D64 0040   2323 T03Z     TWI   X'0040',CSTL2          WAS WRONG SIDE SELECTED?
003542  1008             2324         JCFF  T03D                   IF NO, JUMP
003544  4949             2325         TBTS  (R1,9)                 YES
003546  5034             2326         FINS
003548  494A             2327 T03A    TBTS  (R1,10)               RECALIBRATE FAILURE
00354A  5032             2328         J     FINS
00354C  494B             2329 T03B    TBTS  (R1,11)               SEEK FAILURE
00354E  5030             2330         J     FINS
003550  494C             2331 T03C    TBTS  (R1,12)               READ ID FAILURE
003552  502E             2332         J     FINS
003554  494D             2333 T03D    TBTS  (R1,13)               SEEK & READ ID FAILURE -CHAINING
003556  502C             2334         J     FINS
003558  4945             2335 T03K    TBTS  (R1,5)               READ VERIFY FAILURE
00355A  502A             2336         J     FINS
00355C  CA25 18C8        2337 T03R    MVWZ  TURESUL,R2            CLEAR RESULTS WORD
003560  CA25 18CA        2338         MVWZ  TURESUL+2,R2          CLEAR RESULTS WORD 2
003564  CA25 18CC        2339         MVWZ  TURESUL+4,R2          CLEAR RESULTS WORD 3
003568  CA25 18CE        2340         MVWZ  TURESUL+6,R2          CLEAR RESULTS WORD 4
00356C  CA25 18D0        2341         MVWZ  TURESUL+8,R2          CLEAR RESULTS WORD 5
003570  4124 18C8        2342         MVA   TURESUL,R1            ADDRESS OF RESULTS
003574  494F             2343 T03ER   TBTS  (R1,15)               OIO CC ERROR
003576  501C             2344         J     FINS
                         2345 *
003578  8028 3086 3024   2346 SKRV     MVB   REVR,SKDCB+2
00357E  C220 307F        2347         MVB   XXX+1,R2
003582  4020 3022 8005   2348 GO1      MVWI  X'8005',SKDCB         SEEK CONTROL WD - CHANING
003588  8028 307B 3025   2349         MVB   DIFF+1,SKDCL+3        SETUP SEEK DIFFERENCE
00358E  6E03 30CE        2350 RT201   BAL   $SEEK,R6              SEEK
003592  3574             2351         DC    A(T03ER)              ERROR
003594  4CA1             2352         TBTR  (R4,ER)               CC ERROR?
003596  12DA             2353         JON   T03E                  YES
003598  C224 2D6B        2354         CB    SCTID+1,R2            COMPARE CYLINDER NUMBER TO CAL NUM
00359C  18DB             2355         JNE   T03D                  SECTOR ID DOES NOT MATCH,SEEK ERROR
00359E  A829 3084 307A   2356         SW    ONE1,DIFF              SEEK DIFFERENCE - ONE
0035A4  402F 307A 0000   2357         CWI   0,DIFF                CHECK FOR END OF TEST
0035AA  6600 35B0        2358         BE    FINS                  CKECK LOOP ROUTINE
0035AE  5089             2359         J     LOOP1
0035B0  8828 2D84 18CA   2360 FINS     MVW   CSTL2,TURESUL+2       CYCLE STEAL STATUS FOR FAILING OP
0035B6  8828 2D64 18CC   2361         MVW   $IOIN,TURESUL+4       CONDITION CODES
0035BC  8828 2D66 18CE   2362         MVW   $ISB,TURESUL+6        ISB
0035C2  8828 2D60 18D0   2363         MVW   OPTN3,TURESUL+8       OPTION WORD 3 (ERROR INDICATORS)
                         2364         TXIT
0035C8  6802 32CE        2365+        B     $CONX                 RETURN TO MDI CONTROLLER
                         2366+*********************************************************************
                         2367 *
                         2368         COPY  T4807
                         2369 T4807  TUIT
                         2370+*************************************************************06FEB76**
                         2371+*
                         2372+* TEST UNIT
                         2373+*
                         2374+*      DISPLAY STATUS IN CONSOLE LIGHTS                    26APR76
                         2375+*
                         2376+* PURPOSE
                         2377+*
                         2378+*      THIS TU ISSUES A START CYCLE STEAL STATUS TO THE ATTACHMENT
                         2379+*      AND THEN DISPLAYS THE STATUS IN THE CONSOLE LIGHTS SO THE
                         2380+*      OPERATOR CAN SEE THE RESPONSE TO MANUAL FUNCTIONS.
                         2381+*      IN ADDITION, IF AN ATTENTION INTERRUPT OCCURS, THE INTERRUPT
                         2382+*      CONDITION CODE IS PLACE IN THE TU RESULTS AREA.
                         2383+*
                         2384+* CALLING SEQUENCE
                         2385+*
                         2386+*      MDI=$QUXX,'T4807'
                         2387+*
                         2388+* RETURN CONTROL
                         2389+*
                         2390+*      B      TURTN*                 RETURN TO MDI SUPERVISOR
                         2391+*
                         2392+*********************************************************************
0035CC  6F0D 2D9A        2393+T4807   MVW   R7,TURTN               SAVE RETURN ADDRESS
0035D0  4020 2D62 4807   2394+        MVWI  X'4807',$TUID         SAVE TU ID FOR DISPLAY
0035D6  4424 2D5C        2395+        MVA   OPTN1,R4              SET UP POINTER ADRS IN R4
0035DA  6E03 3240        2396+        BAL   $CONC,R6              CLEAR DEV DEP STG AND CONNECT I/O BL
0035DE  327E             2397+        DC    A($ERR5)              ERROR ADRS FOR INVALID PREP
                         2398+*
0035E0  4020 3230 3022   2399 T4807A  MVA   SKDCB,IODCB           PUT DCB ADRS IN I/O BLOCK
0035E6  6E03 312E        2400         BAL   XIO,R6                * AND GO DO THE SEEK I/O
0035EA  35EC             2401         DC    A(T4807D)             ADRS FOR ERROR RETURN
                         2402 *
0035EC  6E03 3138        2403 T4807D  BAL   XIOCS,R6              DO A START CYCLE STEAL STATUS
0035F0  35F2             2404         DC    A(T4807G)             ADRS FOR ERROR RETURN
0035F2  CA24 2D84        2405 T4807G  CW    CSTL2,R2              COMPARE OLD STATUS WITH NEW
0035F6  100B             2406         JE    T4807H                DOES OLD STATUS = NEW
                         2407 *
                         2408         LITES CSTL2                 NO,CALL MACRO TO DISPLAY STATUS
                         2409+*
                         2410+*       SET DATA INTO CONSOLE LIGHTS
                         2411+*       INSN EXECUTED ONE:          OLD LEVEL           NEW LEVEL
                         2412+*
0035F8  6C0D 360C        2413+        MVW   R4,**20               SAVE R4             SAVE R4
0035FC  6C08 2D84        2414+        MVW   CSTL2,R4              GET DATA            GET DATA
```

```
 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
003600  7C90            2415+        DC    X'7C90'              AND WORD IMMED      SET LITES PER R4
003602  5003            2416+        J     *+8                  IMMED DATA          JUMP
003604  6C08 2D84       2417+        MVW   CSTL2,R4             GET DATA            UNUSED
003608  6504            2418+        DC    X'6504'              SET LITES PER R4    UNUSED
00360A  4424 0000       2419+        MVWI  *-*,R4               RESTORE R4          RESTORE R4
                        2420+*
00360E  6A08 2D84       2421 T4807H  MVW   CSTL2,R2             YES,SAVE STATUS
003612  8028 2D67 18C8  2422         MVE   $ISE+1,TURESUL       SEND BACK INTR TYPE
                        2423         TXIT
003618  6802 32CE       2424+        B     $CONX                RETURN TO MDI CONTROLLER
                        2425+*********************************************************************
000000                  2426         END
```


CROSS-REFERENCE LISTING COPYRIGHT IBM CORP 1976

```
DECLARED  NAME      ATTRIBUTES AND REFERENCES
       0  .R0.      ABSOLUTE.  HEX VALUE(00000000)
                   1256  1258  1337  1338  1422  1423  1496  1497  2187
                   2193  2195  2202  2204  2282  2283
       0  .R1.      ABSOLUTE.  HEX VALUE(00000001)
                   2094  2097  2100  2103  2182  2183  2185  2186  2281
                   2325  2327  2329  2331  2333  2335  2342  2343
       0  .R2.      ABSOLUTE.  HEX VALUE(00000002)
                   1243  1244  1245  1246  1247  1248  1285  1287  1289
                   1291  1292  1293  1294  1295  1296  1297  1416  1417
                   1418  1419  1420  1421  1435  1439  1445  1448  1450
                   2099  2100  2197  2198  2200  2276  2277  2278  2279
                   2280  2318  2319  2337  2338  2339  2340  2341  2347
                   2354  2405  2421
       0  .R3.      ABSOLUTE.  HEX VALUE(00000003)
                   1726  1729  1799  1809  1812  1813  1816  1818  1874
                   1875  1910  1916  1920  1950  1955  1968  1998  2043
                   2045  2046  2058  2092  2093  2097  2109
       0  .R4.      ABSOLUTE.  HEX VALUE(00000004)
                   1236  1271  1333  1341  1349  1412  1426  1492  1500
                   1508  1515  1802  1803  1806  1820  1821  1823  1824
                   1827  1833  1839  1911  1912  1914  1918  1922  1951
                   1952  1953  1963  1964  1965  1967  1970  1980  1982
                   1984  1987  1989  2177  2268  2286  2294  2301  2308
                   2314  2315  2352  2395  2413  2414  2417  2419
       0  .R5.      ABSOLUTE.  HEX VALUE(00000005)
                   1727  1729  1810  1812  1814  1816  1832  1837  1959
                   1960  1961  1992  1993  1995  2044  2045  2091  2104
                   2191  2192
       0  .R6.      ABSOLUTE.  HEX VALUE(00000006)
                   1237  1267  1269  1334  1339  1347  1351  1413  1424
                   1493  1498  1506  1513  1520  1522  1744  1808  1828
                   1840  1876  1981  1986  1988  1994  1997  1999  2053
                   2059  2061  2096  2101  2102  2269  2284  2292  2299
                   2306  2350  2396  2400  2403
       0  .R7.      ABSOLUTE.  HEX VALUE(00000007)
                   1083  1134  1249  1259  1331  1410  1490  1728  1811
                   1815  1822  1915  1956  2042  2047  2049  2050  2051
                   2056  2089  2095  2098  2110  2114  2116  2175  2179
                   2266  2393
    2042  $CONC     ADDRESS.  HEX LOCATION(00003240) IN CSECT(I4813   ) LENGTH(2)
                   1237  1267  1334  1413  1493  2269  2396
    2112  $CONX     ADDRESS.  HEX LOCATION(000032CE) IN CSECT(I4813   ) LENGTH(1)
                   1280  1354  1452  1525  2210  2365  2424
    1741  $DIAG     ADDRESS.  HEX LOCATION(0000311E) IN CSECT(I4813   ) LENGTH(6)
                   1424
    1074  $DVID     ADDRESS.  HEX LOCATION(00002D9C) IN CSECT(I4813   ) LENGTH(2)
                   1261  2198
    2088  $ERR$     ADDRESS.  HEX LOCATION(0000327E) IN CSECT(I4813   ) LENGTH(6)
                   1335  1340  1342  1348  1350  1352  1414  1427  2397
    1072  $INTL     ADDRESS.  HEX LOCATION(00002D98) IN CSECT(I4813   ) LENGTH(2)
                   1265  1266  1273  1961  2055
    1042  $IOIN     ADDRESS.  HEX LOCATION(00002D64) IN CSECT(I4813   ) LENGTH(2)
                   1276  1817  1875  1955  1992  2057  2181  2192  2208
                   2361
    1043  $ISB      ADDRESS.  HEX LOCATION(00002D66) IN CSECT(I4813   ) LENGTH(2)
                   1277  1818  1956  1995  2058  2362  2422
    1027  $LE       ABSOLUTE.  HEX VALUE(00000026)
                   1823  1963
    1721  $RDID     ADDRESS.  HEX LOCATION(00003DDE) IN CSECT(I4813   ) LENGTH(6)
                   1351  1522
    1733  $RDVY     ADDRESS.  HEX LOCATION(00003106) IN CSECT(I4813   ) LENGTH(6)
                   2292  2306
    1718  $RECL     ADDRESS.  HEX LOCATION(000030D6) IN CSECT(I4813   ) LENGTH(6)
                   1339  1498  2284
    1715  $SEEK     ADDRESS.  HEX LOCATION(000030CE) IN CSECT(I4813   ) LENGTH(6)
                   1269  1347  1506  1513  1520  2299  2350
    1041  $TUID     ADDRESS.  HEX LOCATION(00002D62) IN CSECT(I4813   ) LENGTH(2)
                   1082  1235  1332  1411  1491  2109  2146  2176  2267
                   2394
     102  @DCADD1   ADDRESS.  HEX LOCATION(000019B8) IN CSECT(I4813   ) LENGTH(1)
                   2106
     103  @DCADD2   ADDRESS.  HEX LOCATION(000019BA) IN CSECT(I4813   ) LENGTH(1)
                   2107
      39  @FIXT     ABSOLUTE.  HEX VALUE(00000101)
                   603   612   615   624   627   633   636   651   654
                   660   675   678   693   708   714   726   750   753
                   756   759   762   768   795   819
      41  @GOTO     ABSOLUTE.  HEX VALUE(00000200)
                   579   585   720   744   771   798   813
      38  @QUES     ABSOLUTE.  HEX VALUE(00000100)
                   606   609   618   621   630   648   657   672   711
                   717   729   732   735   738   741   765
      44  @QUXX     ABSOLUTE.  HEX VALUE(00000400)
                   639   663   777   786   804
      45  @TUXX     ABSOLUTE.  HEX VALUE(00000500)
                   507   519   531   543   555   567   591   681   696
    2120  BEGIN     ADDRESS.  HEX LOCATION(000032E4) IN CSECT(I4813   ) LENGTH(2)
                   2137
    2141  BIT0080   ABSOLUTE.  HEX VALUE(00000080)
                   2108
    2136  BUFPT     ADDRESS.  HEX LOCATION(000033EC) IN CSECT(I4813   ) LENGTH(2)
                   2093
    1005  B63       ABSOLUTE.  HEX VALUE(0000001F)
                   2314  2315
    1031  CE        ABSOLUTE.  HEX VALUE(0000002A)
                   1802  1914  1984
    1111  CICB      ABSOLUTE.  HEX VALUE(00000014)
                   2052  2180
    1552  CLDCB     ADDRESS.  HEX LOCATION(00002FF2) IN CSECT(I4813   ) LENGTH(2)
                   1718
    1029  CS        ABSOLUTE.  HEX VALUE(00000028)
                   1803  1806  1912  1953  1982
    1030  CSA       ABSOLUTE.  HEX VALUE(00000029)
                   1987
    1060  CSBUF     ADDRESS.  HEX LOCATION(00002D82) IN CSECT(I4813   ) LENGTH(1)
                   1598  1814
    1591  CSDCB     ADDRESS.  HEX LOCATION(00003032) IN CSECT(I4813   ) LENGTH(2)
                   1804
    1062  CSTL2     ADDRESS.  HEX LOCATION(00002D84) IN CSECT(I4813   ) LENGTH(2)
                   1275  1283  2323  2360  2405  2414  2417  2421
    1068  CSTL8     ADDRESS.  HEX LOCATION(00002D90) IN CSECT(I4813   ) LENGTH(2)
                   1915  1916
    1050  DCBUF     ADDRESS.  HEX LOCATION(00002D72) IN CSECT(I4813   ) LENGTH(1)
```

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
		1809
2137	DC2PT	ADDRESS. HEX LOCATION(000033EE) IN CSECT(I4813) LENGTH(2)
		2107
105	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I4813) LENGTH(1)
		1075 2003 2012 2116 2184
1045	DEV1	ADDRESS. HEX LOCATION(00002D6A) IN CSECT(I4813) LENGTH(2)
		1049 2044
1540	DGDCB	ADDRESS. HEX LOCATION(00002FE2) IN CSECT(I4813) LENGTH(2)
		1741
1661	DIAGW	ADDRESS. HEX LOCATION(000030A4) IN CSECT(I4813) LENGTH(2)
		1428 1429 1430 1431 1432 1432 1433 1436 1436
		1437 1440 1442 1446 1547
1640	DIFF	ADDRESS. HEX LOCATION(0000307A) IN CSECT(I4813) LENGTH(2)
		2310 2319 2349 2356 2357
67	DUMMY	ABSOLUTE. HEX VALUE(00000000)
		498 642 666 780 789 807 821 848
822	ENTPT	ADDRESS. HEX LOCATION(000027FA) IN CSECT(I4813) LENGTH(1)
		198
47	EQ	ABSOLUTE. HEX VALUE(00000000)
		594 684 699
1022	ER	ABSOLUTE. HEX VALUE(00000021)
		1271 1341 1349 1426 1500 1508 1515 1820 1839
		1922 1964 1989 2286 2294 2301 2308 2352
1097	EXIT	ABSOLUTE. HEX VALUE(00000006)
		1971
2139	FAKETU	ADDRESS. HEX LOCATION(000033F2) IN CSECT(I4813) LENGTH(2)
		2106
2360	FINS	ADDRESS. HEX LOCATION(000035B0) IN CSECT(I4813) LENGTH(6)
		2326 2328 2330 2332 2334 2336 2344 2358
1557	FRDCB	ADDRESS. HEX LOCATION(00003002) IN CSECT(I4813) LENGTH(2)
		1739
870	F00006	ADDRESS. HEX LOCATION(0000286C) IN CSECT(I4813) LENGTH(1)
		613 652 661 676 694 709 715 727 796
856	F00074	ADDRESS. HEX LOCATION(00002814) IN CSECT(I4813) LENGTH(1)
		580
860	F00076	ADDRESS. HEX LOCATION(00002820) IN CSECT(I4813) LENGTH(1)
		586
864	F00083	ADDRESS. HEX LOCATION(0000282C) IN CSECT(I4813) LENGTH(1)
		604
882	F00104	ADDRESS. HEX LOCATION(0000293C) IN CSECT(I4813) LENGTH(1)
		616
886	F00120	ADDRESS. HEX LOCATION(00002954) IN CSECT(I4813) LENGTH(1)
		625
892	F00125	ADDRESS. HEX LOCATION(000029B0) IN CSECT(I4813) LENGTH(1)
		628
896	F00138	ADDRESS. HEX LOCATION(000029EQ) IN CSECT(I4813) LENGTH(1)
		634
904	F00144	ADDRESS. HEX LOCATION(00002A3C) IN CSECT(I4813) LENGTH(1)
		637
912	F00166	ADDRESS. HEX LOCATION(00002AA0) IN CSECT(I4813) LENGTH(1)
		655
916	F00192	ADDRESS. HEX LOCATION(00002AC6) IN CSECT(I4813) LENGTH(1)
		679
920	F00224	ADDRESS. HEX LOCATION(00002AEE) IN CSECT(I4813) LENGTH(1)
		721
924	F00263	ADDRESS. HEX LOCATION(00002AFA) IN CSECT(I4813) LENGTH(1)
		745
928	F00266	ADDRESS. HEX LOCATION(00002B06) IN CSECT(I4813) LENGTH(1)
		751
932	F00270	ADDRESS. HEX LOCATION(00002B30) IN CSECT(I4813) LENGTH(1)
		754
936	F00274	ADDRESS. HEX LOCATION(00002B5E) IN CSECT(I4813) LENGTH(1)
		757
940	F00278	ADDRESS. HEX LOCATION(00002B8C) IN CSECT(I4813) LENGTH(1)
		760
944	F00281	ADDRESS. HEX LOCATION(00002EA8) IN CSECT(I4813) LENGTH(1)
		763
958	F00288	ADDRESS. HEX LOCATION(00002C9C) IN CSECT(I4813) LENGTH(1)
		769
964	F00291	ADDRESS. HEX LOCATION(00002CD0) IN CSECT(I4813) LENGTH(1)
		772
968	F00307	ADDRESS. HEX LOCATION(00002CDC) IN CSECT(I4813) LENGTH(1)
		799
972	F00317	ADDRESS. HEX LOCATION(00002CE8) IN CSECT(I4813) LENGTH(1)
		814
976	F00319	ADDRESS. HEX LOCATION(00002CF4) IN CSECT(I4813) LENGTH(1)
		820
2348	GO1	ADDRESS. HEX LOCATION(00003582) IN CSECT(I4813) LENGTH(6)
		2321
2145	HEBLK	ADDRESS. HEX LOCATION(000033F4) IN CSECT(I4813) LENGTH(2)
		2089
1117	HTOE	ABSOLUTE. HEX VALUE(0000001A)
		2090
1093	IDLE	ABSOLUTE. HEX VALUE(00000002)
		1257 1835
1024	IN	ABSOLUTE. HEX VALUE(00000023)
		1821 1833 1952
2012	INTBL	ADDRESS. HEX LOCATION(00003238) IN CSECT(I4813) LENGTH(2)
		2051 2179
1909	INTER	ADDRESS. HEX LOCATION(000031A0) IN CSECT(I4813) LENGTH(2)
		2014
1918	INTES	ADDRESS. HEX LOCATION(000031B8) IN CSECT(I4813) LENGTH(2)
		1913
1922	INTET	ADDRESS. HEX LOCATION(000031C0) IN CSECT(I4813) LENGTH(2)
		1919
1949	INTOK	ADDRESS. HEX LOCATION(000031C4) IN CSECT(I4813) LENGTH(2)
		2013
63	INTRNL	ABSOLUTE. HEX VALUE(00000000)
		583 589 802 817
1971	INTRX	ADDRESS. HEX LOCATION(000031F4) IN CSECT(I4813) LENGTH(2)
		1966 1969
1952	INTR1	ADDRESS. HEX LOCATION(000031CC) IN CSECT(I4813) LENGTH(2)
		1917 1921 1923
1957	INTR2	ADDRESS. HEX LOCATION(000031DA) IN CSECT(I4813) LENGTH(1)
		1954
1965	INTR3	ADDRESS. HEX LOCATION(000031E8) IN CSECT(I4813) LENGTH(2)
		1962
2003	IOBLK	ADDRESS. HEX LOCATION(0000322C) IN CSECT(I4813) LENGTH(2)
		1249 1259 1822 2056
2005	IODCB	ADDRESS. HEX LOCATION(00003230) IN CSECT(I4813) LENGTH(2)
		1715 1718 1721 1730 1733 1736 1739 1741 1804
		1810 2055 2399
2006	IOMOD	ADDRESS. HEX LOCATION(00003232) IN CSECT(I4813) LENGTH(2)

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
		1261 1742 1799 1805
1266	ITST1	ADDRESS. HEX LOCATION(00002E04) IN CSECT(I4813) LENGTH(6)
		1274
37	I4813	CSECT. START(00002500), LENGTH(4380) ESDID(0)
		37
2126	LINE1	ADDRESS. HEX LOCATION(0000331C) IN CSECT(I4813) LENGTH(40)
		2094
2315	LOOP1	ADDRESS. HEX LOCATION(00003522) IN CSECT(I4813) LENGTH(2)
		2359
1044	LSTIO	ADDRESS. HEX LOCATION(00002D68) IN CSECT(I4813) LENGTH(2)
		1808 2059
1021	MI	ABSOLUTE. HEX VALUE(00000020)
		1967
2097	MVBUF	ADDRESS. HEX LOCATION(0000329C) IN CSECT(I4813) LENGTH(2)
		2101 2104
1033	NG	ABSOLUTE. HEX VALUE(0000002C)
		1970
1028	NI	ABSOLUTE. HEX VALUE(00000027)
		1827
507	N00001	ADDRESS. HEX LOCATION(000025F8) IN CSECT(I4813) LENGTH(2)
		315
519	N00002	ADDRESS. HEX LOCATION(0000260A) IN CSECT(I4813) LENGTH(2)
		318
531	N00003	ADDRESS. HEX LOCATION(0000261C) IN CSECT(I4813) LENGTH(2)
		321
543	N00004	ADDRESS. HEX LOCATION(0000262E) IN CSECT(I4813) LENGTH(2)
		324
555	N00005	ADDRESS. HEX LOCATION(00002640) IN CSECT(I4813) LENGTH(2)
		327
567	N00006	ADDRESS. HEX LOCATION(0000265A) IN CSECT(I4813) LENGTH(2)
		330
579	N00007	ADDRESS. HEX LOCATION(00002674) IN CSECT(I4813) LENGTH(2)
		333
585	N00008	ADDRESS. HEX LOCATION(00002680) IN CSECT(I4813) LENGTH(2)
		336 568
591	N00009	ADDRESS. HEX LOCATION(0000268C) IN CSECT(I4813) LENGTH(2)
		339 556 832
603	N00010	ADDRESS. HEX LOCATION(000026A2) IN CSECT(I4813) LENGTH(2)
		342
606	N00011	ADDRESS. HEX LOCATION(000026A6) IN CSECT(I4813) LENGTH(2)
		345 592
609	N00012	ADDRESS. HEX LOCATION(000026AA) IN CSECT(I4813) LENGTH(2)
		348
612	N00013	ADDRESS. HEX LOCATION(000026AE) IN CSECT(I4813) LENGTH(2)
		351
615	N00014	ADDRESS. HEX LOCATION(000026B2) IN CSECT(I4813) LENGTH(2)
		354 610
618	N00015	ADDRESS. HEX LOCATION(000026B6) IN CSECT(I4813) LENGTH(2)
		357 607
621	N00016	ADDRESS. HEX LOCATION(000026BA) IN CSECT(I4813) LENGTH(2)
		360
624	N00017	ADDRESS. HEX LOCATION(000026BE) IN CSECT(I4813) LENGTH(2)
		363
627	N00018	ADDRESS. HEX LOCATION(000026C2) IN CSECT(I4813) LENGTH(2)
		366 622
630	N00019	ADDRESS. HEX LOCATION(000026C6) IN CSECT(I4813) LENGTH(2)
		369 619
633	N00020	ADDRESS. HEX LOCATION(000026CA) IN CSECT(I4813) LENGTH(2)
		372
636	N00021	ADDRESS. HEX LOCATION(000026CE) IN CSECT(I4813) LENGTH(2)
		375 631
639	N00022	ADDRESS. HEX LOCATION(000026D2) IN CSECT(I4813) LENGTH(2)
		378 544 835
648	N00023	ADDRESS. HEX LOCATION(000026E6) IN CSECT(I4813) LENGTH(2)
		381
651	N00024	ADDRESS. HEX LOCATION(000026EA) IN CSECT(I4813) LENGTH(2)
		384
654	N00025	ADDRESS. HEX LOCATION(000026EE) IN CSECT(I4813) LENGTH(2)
		387 649
657	N00026	ADDRESS. HEX LOCATION(000026F2) IN CSECT(I4813) LENGTH(2)
		390 640
660	N00027	ADDRESS. HEX LOCATION(000026F6) IN CSECT(I4813) LENGTH(2)
		393
663	N00028	ADDRESS. HEX LOCATION(000026FA) IN CSECT(I4813) LENGTH(2)
		396 658
672	N00029	ADDRESS. HEX LOCATION(0000270E) IN CSECT(I4813) LENGTH(2)
		399
675	N00030	ADDRESS. HEX LOCATION(00002712) IN CSECT(I4813) LENGTH(2)
		402
678	N00031	ADDRESS. HEX LOCATION(00002716) IN CSECT(I4813) LENGTH(2)
		405 673
681	N00032	ADDRESS. HEX LOCATION(0000271A) IN CSECT(I4813) LENGTH(2)
		408 664
693	N00033	ADDRESS. HEX LOCATION(00002730) IN CSECT(I4813) LENGTH(2)
		411
696	N00034	ADDRESS. HEX LOCATION(00002734) IN CSECT(I4813) LENGTH(2)
		414 682
708	N00035	ADDRESS. HEX LOCATION(00002746) IN CSECT(I4813) LENGTH(2)
		417
711	N00036	ADDRESS. HEX LOCATION(0000274A) IN CSECT(I4813) LENGTH(2)
		420 697
714	N00037	ADDRESS. HEX LOCATION(0000274E) IN CSECT(I4813) LENGTH(2)
		423
717	N00038	ADDRESS. HEX LOCATION(00002752) IN CSECT(I4813) LENGTH(2)
		426 712
720	N00039	ADDRESS. HEX LOCATION(00002756) IN CSECT(I4813) LENGTH(2)
		429
726	N00040	ADDRESS. HEX LOCATION(00002762) IN CSECT(I4813) LENGTH(2)
		432 718
729	N00041	ADDRESS. HEX LOCATION(00002766) IN CSECT(I4813) LENGTH(2)
		435 532 838
732	N00042	ADDRESS. HEX LOCATION(0000276A) IN CSECT(I4813) LENGTH(2)
		438
735	N00043	ADDRESS. HEX LOCATION(0000276E) IN CSECT(I4813) LENGTH(2)
		441
738	N00044	ADDRESS. HEX LOCATION(00002772) IN CSECT(I4813) LENGTH(2)
		444
741	N00045	ADDRESS. HEX LOCATION(00002776) IN CSECT(I4813) LENGTH(2)
		447
744	N00046	ADDRESS. HEX LOCATION(0000277A) IN CSECT(I4813) LENGTH(2)
		450
750	N00047	ADDRESS. HEX LOCATION(00002786) IN CSECT(I4813) LENGTH(2)
		453 742

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
753	N00048	ADDRESS. HEX LOCATION(0000278A) IN CSECT(I4813) LENGTH(2) 456 739
756	N00049	ADDRESS. HEX LOCATION(0000278E) IN CSECT(I4813) LENGTH(2) 459 736
759	N00050	ADDRESS. HEX LOCATION(00002792) IN CSECT(I4813) LENGTH(2) 462 733
762	N00051	ADDRESS. HEX LOCATION(00002796) IN CSECT(I4813) LENGTH(2) 465 730
765	N00052	ADDRESS. HEX LOCATION(0000279A) IN CSECT(I4813) LENGTH(2) 468 520 841
768	N00053	ADDRESS. HEX LOCATION(0000279E) IN CSECT(I4813) LENGTH(2) 471
771	N00054	ADDRESS. HEX LOCATION(000027A2) IN CSECT(I4813) LENGTH(2) 474 766
777	N00055	ADDRESS. HEX LOCATION(000027AE) IN CSECT(I4813) LENGTH(2) 477 508 844
786	N00056	ADDRESS. HEX LOCATION(000027BC) IN CSECT(I4813) LENGTH(2) 480
795	N00057	ADDRESS. HEX LOCATION(000027CA) IN CSECT(I4813) LENGTH(2) 483
798	N00058	ADDRESS. HEX LOCATION(000027CE) IN CSECT(I4813) LENGTH(2) 486 787
804	N00059	ADDRESS. HEX LOCATION(000027DA) IN CSECT(I4813) LENGTH(2) 489 778 847
813	N00060	ADDRESS. HEX LOCATION(000027E8) IN CSECT(I4813) LENGTH(2) 492
819	N00061	ADDRESS. HEX LOCATION(000027F4) IN CSECT(I4813) LENGTH(2) 495 805
58	OF	ABSOLUTE. HEX VALUE(00000202) 570
57	ON	ABSOLUTE. HEX VALUE(00000200) 510 522 534 546 558
1645	ONE1	ADDRESS. HEX LOCATION(00003084) IN CSECT(I4813) LENGTH(2) 2320 2356
986	OPTN1	ADDRESS. HEX LOCATION(00002D5C) IN CSECT(I4813) LENGTH(2) 1236 1333 1412 1492 1911 1951 2177 2268 2395
1009	OPTN3	ADDRESS. HEX LOCATION(00002D60) IN CSECT(I4813) LENGTH(2) 1278 1998 2046 2363
101	PARMARA	ADDRESS. HEX LOCATION(0000196E) IN CSECT(I4813) LENGTH(1) 517 529 541 553 565 577 601 646 670 691 706 784 793 811
69	PID	ADDRESS. HEX LOCATION(00001800) IN CSECT(I4813) LENGTH(1) 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 2105
2140	PIDMSG10	ABSOLUTE. HEX VALUE(0000F1F0) 2105
1103	PREP	ABSOLUTE. HEX VALUE(0000000C) 2060
1624	RDDCB	ADDRESS. HEX LOCATION(00003062) IN CSECT(I4813) LENGTH(2) 1727 1730
1114	RELSD	ABSOLUTE. HEX VALUE(00000017) 2115
1113	REQSD	ABSOLUTE. HEX VALUE(00000016) 2048
1099	RESET	ABSOLUTE. HEX VALUE(00000008) 1250
1646	REVR	ADDRESS. HEX LOCATION(00003086) IN CSECT(I4813) LENGTH(2) 2346
1110	RICB	ABSOLUTE. HEX VALUE(00000013) 2117
1100	RID	ABSOLUTE. HEX VALUE(00000009) 1260
1568	RSDCB	ADDRESS. HEX LOCATION(00003012) IN CSECT(I4813) LENGTH(2) 1721 2311
1049	SCTID	ADDRESS. HEX LOCATION(00002D6A) IN CSECT(I4813) LENGTH(2) 1575 1722 1723 2113 2354
1579	SKDCB	ADDRESS. HEX LOCATION(00003022) IN CSECT(I4813) LENGTH(2) 1263 1264 1343 1344 1345 1346 1502 1503 1504 1505 1510 1511 1512 1517 1518 1519 1715 2296 2297 2298 2311 2312 2317 2346 2348 2349 2399
2346	SKRV	ADDRESS. HEX LOCATION(00003578) IN CSECT(I4813) LENGTH(6) 2316
1101	START	ABSOLUTE. HEX VALUE(0000000A) 1825
104	SUPSTAT	ADDRESS. HEX LOCATION(000019C4) IN CSECT(I4813) LENGTH(1) 2108
1075	SVCAL	ADDRESS. HEX LOCATION(00002D9E) IN CSECT(I4813) LENGTH(2) 2047 2113 2114
1257	TEMP	ADDRESS. HEX LOCATION(00002DE0) IN CSECT(I4813) LENGTH(2) 1258
92	TUMSGWTR	ADDRESS. HEX LOCATION(000018BA) IN CSECT(I4813) LENGTH(1) 2110
76	TUPARM1	ADDRESS. HEX LOCATION(0000189A) IN CSECT(I4813) LENGTH(1) 1346 1505 2182
77	TUPARM2	ADDRESS. HEX LOCATION(0000189C) IN CSECT(I4813) LENGTH(1) 1512
78	TUPARM3	ADDRESS. HEX LOCATION(0000189E) IN CSECT(I4813) LENGTH(1) 1519
98	TURESUL	ADDRESS. HEX LOCATION(000018C8) IN CSECT(I4813) LENGTH(1) 1243 1244 1245 1246 1247 1248 1275 1276 1277 1278 1291 1292 1293 1294 1295 1296 1416 1417 1418 1419 1420 1421 1428 1429 1430 1431 2200 2207 2208 2276 2277 2278 2279 2280 2281 2337 2338 2339 2340 2341 2342 2360 2361 2362 2363 2422
1073	TURTN	ADDRESS. HEX LOCATION(00002D9A) IN CSECT(I4813) LENGTH(2) 1234 1331 1410 1490 2118 2175 2266 2393
74	TUSTATUS	ADDRESS. HEX LOCATION(00001818) IN CSECT(I4813) LENGTH(1) 2088
75	TUWORK	ADDRESS. HEX LOCATION(0000181A) IN CSECT(I4813) LENGTH(1) 2092 2147
1287	T01A	ADDRESS. HEX LOCATION(00002E4A) IN CSECT(I4813) LENGTH(2) 1262
1289	T01B	ADDRESS. HEX LOCATION(00002E4E) IN CSECT(I4813) LENGTH(2) 1284
1275	T01C	ADDRESS. HEX LOCATION(00002E22) IN CSECT(I4813) LENGTH(6) 1286 1288 1290 1298
1297	T01EF	ADDRESS. HEX LOCATION(00002E6A) IN CSECT(I4813) LENGTH(2) 1270
1291	T01R	ADDRESS. HEX LOCATION(00002E52) IN CSECT(I4813) LENGTH(4)

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
		1238 1268
1283	T01Z	ADDRESS. HEX LOCATION(00002E3E) IN CSECT(I4813) LENGTH(6) 1272
2327	T03A	ADDRESS. HEX LOCATION(00003548) IN CSECT(I4813) LENGTH(2) 2287
2329	T03B	ADDRESS. HEX LOCATION(0000354C) IN CSECT(I4813) LENGTH(2) 2353
2333	T03D	ADDRESS. HEX LOCATION(00003554) IN CSECT(I4813) LENGTH(2) 2324 2355
2343	T03ER	ADDRESS. HEX LOCATION(00003574) IN CSECT(I4813) LENGTH(2) 2285 2293 2300 2307 2351
2335	T03K	ADDRESS. HEX LOCATION(00003558) IN CSECT(I4813) LENGTH(2) 2295 2309
2337	T03R	ADDRESS. HEX LOCATION(0000355C) IN CSECT(I4813) LENGTH(4) 2270
2323	T03Z	ADDRESS. HEX LOCATION(0000353C) IN CSECT(I4813) LENGTH(6) 2302
2175	T3C00	ADDRESS. HEX LOCATION(000033FA) IN CSECT(I4813) LENGTH(4) 593 683
2215	T3C001	ADDRESS. HEX LOCATION(0000346A) IN CSECT(I4813) LENGTH(2) 2183 2184 2185 2186 2187 2189 2197 2207
2202	T3C00N	ADDRESS. HEX LOCATION(00003452) IN CSECT(I4813) LENGTH(2) 2196
2207	T3C00S	ADDRESS. HEX LOCATION(0000345A) IN CSECT(I4813) LENGTH(6) 2194 2199 2203
2208	T3C00X	ADDRESS. HEX LOCATION(00003460) IN CSECT(I4813) LENGTH(6) 2201 2205
1082	T3C02	ADDRESS. HEX LOCATION(00002DA2) IN CSECT(I4813) LENGTH(4) 545
1234	T4801	ADDRESS. HEX LOCATION(00002DAA) IN CSECT(I4813) LENGTH(4) 509
2266	T4803	ADDRESS. HEX LOCATION(0000346E) IN CSECT(I4813) LENGTH(4) 521
2393	T4807	ADDRESS. HEX LOCATION(000035CC) IN CSECT(I4813) LENGTH(4) 779 788 806
2403	T4807D	ADDRESS. HEX LOCATION(000035EC) IN CSECT(I4813) LENGTH(4) 2401
2405	T4807G	ADDRESS. HEX LOCATION(000035F2) IN CSECT(I4813) LENGTH(4) 2404
2421	T4807H	ADDRESS. HEX LOCATION(0000360E) IN CSECT(I4813) LENGTH(4) 2406
1331	T4852	ADDRESS. HEX LOCATION(00002E6E) IN CSECT(I4813) LENGTH(4) 698
1410	T4853	ADDRESS. HEX LOCATION(00002EC2) IN CSECT(I4813) LENGTH(4) 533 557 569
1490	T4854	ADDRESS. HEX LOCATION(00002F5E) IN CSECT(I4813) LENGTH(4) 641 665
1436	T53A	ADDRESS. HEX LOCATION(00002F28) IN CSECT(I4813) LENGTH(6) 1434
1438	T53B	ADDRESS. HEX LOCATION(00002F38) IN CSECT(I4813) LENGTH(6) 1438
1445	T53C	ADDRESS. HEX LOCATION(00002F4A) IN CSECT(I4813) LENGTH(2) 1441 1443
1446	T53D	ADDRESS. HEX LOCATION(00002F4C) IN CSECT(I4813) LENGTH(6) 1444
1452	T53X	ADDRESS. HEX LOCATION(00002F5A) IN CSECT(I4813) LENGTH(4) 1447 1449
1450	T53Z	ADDRESS. HEX LOCATION(00002F58) IN CSECT(I4813) LENGTH(2) 1425
1522	T54E	ADDRESS. HEX LOCATION(00002FD8) IN CSECT(I4813) LENGTH(4) 1494 1499 1501 1507 1509 1514 1516 1521
1525	T54F	ADDRESS. HEX LOCATION(00002FDE) IN CSECT(I4813) LENGTH(4) 1523
1613	VRDCB	ADDRESS. HEX LOCATION(00003052) IN CSECT(I4813) LENGTH(2) 1733 2288 2289 2290 2291 2303 2304 2305
1602	WRDCB	ADDRESS. HEX LOCATION(00003042) IN CSECT(I4813) LENGTH(2) 1736
1025	XE	ABSOLUTE. HEX VALUE(00000024) 1918 1980
1023	XI	ABSOLUTE. HEX VALUE(00000022) 1824 1965
1799	XIO	ADDRESS. HEX LOCATION(0000312E) IN CSECT(I4813) LENGTH(4) 1716 1719 1724 1731 1734 1737 1740 2400
1980	XIOCK	ADDRESS. HEX LOCATION(000031F6) IN CSECT(I4813) LENGTH(2) 1834
1987	XIOCO	ADDRESS. HEX LOCATION(00003208) IN CSECT(I4813) LENGTH(2) 1985
1804	XIOCS	ADDRESS. HEX LOCATION(00003138) IN CSECT(I4813) LENGTH(6) 1996 2403
1989	XIOCV	ADDRESS. HEX LOCATION(0000320C) IN CSECT(I4813) LENGTH(2) 1983
1998	XIOCX	ADDRESS. HEX LOCATION(00003226) IN CSECT(I4813) LENGTH(4) 1990
1873	XIOER	ADDRESS. HEX LOCATION(00003194) IN CSECT(I4813) LENGTH(2) 2004
1808	XIO1	ADDRESS. HEX LOCATION(00003148) IN CSECT(I4813) LENGTH(4) 1743 1800
1821	XIO2	ADDRESS. HEX LOCATION(0000316E) IN CSECT(I4813) LENGTH(2) 1807
1833	XIO8	ADDRESS. HEX LOCATION(00003182) IN CSECT(I4813) LENGTH(2) 1838
62	XTRNL	ABSOLUTE. HEX VALUE(00000001) 724 748 775
1642	XXX	ADDRESS. HEX LOCATION(0000307E) IN CSECT(I4813) LENGTH(2) 2313 2318 2320 2347
1644	ZERO0	ADDRESS. HEX LOCATION(00003082) IN CSECT(I4813) LENGTH(2) 2317

********** LAST PAGE **********