```
 LOCTR  OBJECT TEXT   STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                         3       COPY  LOG7801              ** MAP EC HISTORY **
                         4 ********************************************************************
                         5 *                                                                  *
                         6 *                     ***       PREREQUISITES       ***            *
                         7 *                                                                  *
                         8 *                               NONE                               *
                         9 *                                                                  *
                        10 ********************************************************************
                        11 *                                                                  *
                        12 *                     ***       MODIFICATIONS       ***            *
                        13 *                                                                  *
                        14 *     CHANGES MADE TO CORRECT ERROR INDICATION DURING AUTO MODE    *
                        15 *                                                                  *
                        16 ********************************************************************
                        17 *                                                                  *
                        18 *                     ***     REA'S INCORPORATED     ***           *
                        19 *                                                                  *
                        20 *                               27-11985                           *
                        21 *                                                                  *
                        22 ********************************************************************
                        23 *                                                                  *
                        24 *                     ***    SPECIAL INSTRUCTIONS    ***           *
                        25 *                                                                  *
                        26 *                               NONE                               *
                        27 *                                                                  *
                        28 ********************************************************************
                        29 *                                                                  *
                        30 *                     ***       E. C. HISTORY       ***            *
                        31 *                                                                  *
                        32 *        DATE 17DEC76  DATE 04MAR77  DATE 10JUN77  DATE 15SEP77    *
                        33 *        E.C. 578486   E.C. 578638   E.C. 578625   E.C. 754882     *
                        34 *                                                                  *
                        35 *        DATE 01MAR78  DATE 01JUN78  DATE 01SEP78  DATE            *
                        36 *        E.C. 755285   E.C. 755285P  E.C. 374888   E.C.           *
                        37 *                                                                  *
                        38 ********************************************************************
002500                  40 I7801    START X'2500'            START ADDRESS OF ALL 'I' TYPE PROG
000100                  41 @QUES    EQU   X'0100'            EQUATED VALUE FOR MDI STATEMENT
000101                  42 @FIXT    EQU   X'0101'            EQUATED VALUE FOR MDI STATEMENT
000102                  43 @STOP    EQU   X'0102'            EQUATED VALUE FOR MDI STATEMENT
000200                  44 @GOTO    EQU   X'0200'            EQUATED VALUE FOR MDI STATEMENT
000201                  45 @CALL    EQU   X'0201'            EQUATED VALUE FOR MDI STATEMENT
000300                  46 @INPT    EQU   X'0300'            EQUATED VALUE FOR MDI STATEMENT
000400                  47 @QUXX    EQU   X'0400'            EQUATED VALUE FOR MDI STATEMENT
000500                  48 @TUXX    EQU   X'0500'            EQUATED VALUE FOR MDI STATEMENT
000600                  49 @NVLD    EQU   X'0600'            EQUATED VALUE FOR MDI STATEMENT
000000                  50 EQ       EQU   X'0000'            EQUATE FOR EQUAL
000004                  51 NE       EQU   X'0004'            EQUATE FOR NOT EQUAL
000008                  52 HI       EQU   X'0008'            EQUATE FOR HIGH
00000C                  53 NH       EQU   X'000C'            EQUATE FOR NOT HIGH
000010                  54 LO       EQU   X'0010'            EQUATE FOR LOW
000014                  55 NL       EQU   X'0014'            EQUATE FOR NOT LOW
000010                  56 LT       EQU   X'0010'            EQUATE FOR LESS THAN
00000C                  57 LE       EQU   X'000C'            EQUATE FOR LESS THAN OR EQUAL TO
000008                  58 GT       EQU   X'0008'            EQUATE FOR GREATER THAN
000014                  59 GE       EQU   X'0014'            EQUATE FOR GREATER THAN OR EQUAL TO
000200                  60 ON       EQU   X'0200'            EQUATE FOR ON
000202                  61 OF       EQU   X'0202'            EQUATE FOR OFF
000204                  62 MX       EQU   X'0204'            EQUATE FOR MIXED
000000                  63 EBC      EQU   X'0000'            EQUATE FOR EBCDIC DATA TRANSFER
000001                  64 HEX      EQU   X'0001'            EQUATE FOR HEX DATA TRANSFER
000001                  65 XTRNL    EQU   X'0001'            EQUATE FOR EXTERNAL REFERENCE
000000                  66 INTRNL   EQU   X'0000'            EQUATE FOR INTERNAL REFERENCE
000000                  67 PARM     EQU   X'0000'            EQUATE INDICATING PARAMETER
000001                  68 DA       EQU   X'0001'            EQUATE FOR DEVICE ADDRESS
000002                  69 UA       EQU   X'0002'            EQUATE FOR UNIT ADDRESS
000000                  70 DUMMY    EQU   X'0000'            DUMMY EQUATE
001800                  72 PID      EQU   *-X'0D00'          ADDRESS OF MDI HEADER
000232                  73 PTYPE    EQU   *-X'22CE'          ADDRESS OF PROCESSOR TYPE FIELD
00180C                  74 STEPNUM  EQU   PID+X'000C'        ADDRESS OF DECIMAL STEP NUMBER
00180E                  75 OPWD1    EQU   PID+X'000E'        ADDRESS OF OPTION WORD ONE
001810                  76 OPWD2    EQU   PID+X'0010'        ADDRESS OF OPTION WORD TWO
001818                  77 TUSTATUS EQU   PID+X'0018'        ADDRESS OF TU STATUS WORD
00181A                  78 TUWORK   EQU   PID+X'001A'        ADDRESS OF TU WORK AREA
00189A                  79 TUPARM1  EQU   PID+X'009A'        ADDRESS OF PARM 1 POINTER
00189C                  80 TUPARM2  EQU   PID+X'009C'        ADDRESS OF PARM 2 POINTER
00189E                  81 TUPARM3  EQU   PID+X'009E'        ADDRESS OF PARM 3 POINTER
0018A0                  82 TUPARM4  EQU   PID+X'00A0'        ADDRESS OF PARM 4 POINTER
0018A2                  83 TUPARM5  EQU   PID+X'00A2'        ADDRESS OF PARM 5 POINTER
0018A4                  84 TUPARM6  EQU   PID+X'00A4'        ADDRESS OF PARM 6 POINTER
0018A6                  85 TUPARM7  EQU   PID+X'00A6'        ADDRESS OF PARM 7 POINTER
0018A8                  86 TUPARM8  EQU   PID+X'00A8'        ADDRESS OF PARM 8 POINTER
0018AA                  87 TUPARM9  EQU   PID+X'00AA'        ADDRESS OF PARM 9 POINTER
0018AC                  88 TUPARM10 EQU   PID+X'00AC'        ADDRESS OF PARM 10 POINTER
0018AE                  89 TUPARM11 EQU   PID+X'00AE'        ADDRESS OF PARM 11 POINTER
0018B0                  90 TUPARM12 EQU   PID+X'00B0'        ADDRESS OF PARM 12 POINTER
0018B2                  91 TUPARM13 EQU   PID+X'00B2'        ADDRESS OF PARM 13 POINTER
0018B4                  92 TUPARM14 EQU   PID+X'00B4'        ADDRESS OF PARM 14 POINTER
0018B6                  93 TUPARM15 EQU   PID+X'00B6'        ADDRESS OF PARM 15 POINTER
0018B8                  94 TUPARM16 EQU   PID+X'00B8'        ADDRESS OF PARM 16 POINTER
0018BA                  95 TUMSGWTR EQU   PID+X'00BA'        ADDRESS OF -> TO COMMON MSG WRITER
0018BE                  96 TUUA     EQU   PID+X'00BE'        ADDRESS OF UNIT ADDRESS IN EBC
0018C0                  97 TUDA     EQU   PID+X'00C0'        ADDRESS OF DEVICE ADDRESS IN EBC
0018C2                  98 TUBUFF   EQU   PID+X'00C2'        ADDRESS OF LAST USED WORD IN MAP
0018C4                  99 TULAST   EQU   PID+X'00C4'        ADDRESS OF LAST ADDRESSABLE WORD
0018C6                 100 TURESULN EQU   PID+X'00C6'        ADDRESS OF LENGTH OF TU RESULTS
0018C8                 101 TURESUL  EQU   PID+X'00C8'        ADDRESS OF TU RESULTS FIELD
0018FC                 102 MAPNAME  EQU   PID+X'00FC'        ADDRESS OF MAP NAME FIELD IN HEX
001948                 103 TUINPT   EQU   PID+X'0148'        ADDRESS OF $INPT DATA
00196E                 104 PARMARA  EQU   PID+X'016E'        ADDRESS OF $INPT INPUT AREA
0019B8                 105 @DCADD1  EQU   PID+X'01B8'        MDI POINTER
0019BA                 106 @DCADD2  EQU   PID+X'01BA'        MDI POINTER
0019C4                 107 SUPSTAT  EQU   PID+X'01C4'        ADDRESS OF MDI STATUS
0019D0                 108 DEVADD   EQU   PID+X'01D0'        ADDRESS OF DEVICE ADDRESS TABLE 0
0019DA                 109 DEVADD1  EQU   PID+X'01DA'        ADDRESS OF DEVICE ADDRESS TABLE 1
0019E4                 110 DEVADD2  EQU   PID+X'01E4'        ADDRESS OF DEVICE ADDRESS TABLE 2
0019EE                 111 DEVADD3  EQU   PID+X'01EE'        ADDRESS OF DEVICE ADDRESS TABLE 3
0019F8                 112 DEVADD4  EQU   PID+X'01F8'        ADDRESS OF DEVICE ADDRESS TABLE 4
001A02                 113 DEVADD5  EQU   PID+X'0202'        ADDRESS OF DEVICE ADDRESS TABLE 5
001A0C                 114 DEVADD6  EQU   PID+X'020C'        ADDRESS IF DEVICE ADDRESS TABLF 6
001A16                 115 DEVADD7  EQU   PID+X'0216'        ADDRESS OF DEVICE ADDRESS TABLE 7
                       116          PRINT OFF
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 LOCTR  OBJECT TEXT   STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
002500  25F4           201       DC    A(ENTPT)             POINT TO MAP ENTRY POINT TABLE
                       202 ********************************************************************
                       203 ********************************************************************
                       204 **                                                                **
                       205 **   THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D3C00)   **
                       206 **   TO LOCATE THE CORRECT RULE TO INVOKE, TO OBTAIN THE PROPER    **
                       207 **   PARAMETERS TO PASS TO THE TU'S AND TO PASS TO THE OPERATOR    **
                       208 **   THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS **
                       209 **   PURPOSE THEY ARE:                                            **
                       210 **                                                                **
                       211 **   STEP AND RULE ADDRESS TABLE                                  **
                       212 **        THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND  **
                       213 **        THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE.   **
                       214 **        ENTRIES ARE AS FOLLOWES                                 **
                       215 **                  A)  AN ADDRESS OF THE RULE DC START AREA      **
                       216 **                  B)  THE STEP NUMBER IN DECIMAL               **
                       217 **                  C)  AN EQUATE FOR THE STEP NUMBER            **
                       218 **                                                               **
                       219 **   RULE INFORMATION TABLE                                       **
                       220 **        THIS TABLE CONTAINES THE REQUIRED INFORMATION TO EXECUTE **
                       221 **        THE APPROPRIATE RULE UNDER MDI. EACH RULE HAS ITS OWN   **
                       222 **        UNIQUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS  **
                       223 **        INDICATED WITH A X'0000' FOR THE RULE EQUATE.           **
                       224 **                                                                **
                       225 **        $QUES                                                   **
                       226 **              A) RULE EQUATE X'0100'                            **
                       227 **              B) ADDRESS OF THE YES LEG RULE                    **
                       228 **                                                                **
                       229 **        $FIXT                                                   **
                       230 **              A) RULE EQUATE X'0101'                            **
                       231 **              B) ADDRESS OF MESSAGE TO PRINT                    **
                       232 **                                                                **
                       233 **        $STOP                                                   **
                       234 **              A) RULE EQUATE X'0102'                            **
                       235 **              B) ADDRESS OF MESSAGE                             **
                       236 **                                                                **
                       237 **        $GOTO                                                   **
                       238 **              A) RULE EQUATE X'0200'                            **
                       239 **              B) ADDRESS OF MESSAGE                             **
                       240 **              C) NAME OF MAP TO GO TO                           **
                       241 **              D) ENTRY POINT WITHIN GO TO MAP TO USE            **
                       242 **              E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE   **
                       244 **                                                                **
                       245 **        $CALL                                                   **
                       246 **              A) RULE EQUATE X'0201'                            **
                       247 **              B) ADDRESS OF MESSAGE                             **
                       248 **              C) NAME OF MAP TO CALL                            **
                       249 **              D) ENTRY POINT WITHIN CALLED MAP TO USE           **
                       250 **              E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE   **
                       251 **                                                                **
                       252 **        $INPT                                                   **
                       253 **              A) RULE EQUATE X'0300'                            **
                       254 **              B) INPUT TYPE (EBCDIC OR HEX)                     **
                       255 **              C) ADDRESS OF YES LEG RULE                        **
                       256 **              D) DESTINATION LOCATION OF INPUT DATA             **
                       257 **              E) LENGTH OF INPUT DATA                           **
                       258 **              F) LOWER LIMIT OF GOOD DATA                       **
                       259 **              G) HIGHER LIMIT OF GOOD DATA                      **
                       260 **                                                                **
                       261 **        $QUXX                                                   **
                       262 **              A) RULE EQUATE X'0400'                            **
                       263 **              B) ADDRESS OF YES LEG RULE                        **
                       264 **              C) TU BRANCH TO ADDRESS (INITIAL)                 **
                       265 **              D) TU BRANCH TO ADDRESS (SECONDARY)               **
                       266 **              E) LENGTH OF PARAMETER IN BYTES                   **
                       267 **              F) PARAMETER TO PASS TO TU                        **
                       268 **              G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER   **
                       269 **                                                                **
                       270 **        $TUXX                                                   **
                       271 **              A) RULE EQUATE X'0500'                            **
                       272 **              B) ADDRESS OF YES LEG RULE                        **
                       273 **              C) TU BRANCH TO ADDRESS                           **
                       274 **              D) TYPE OF COMPARE TO MAKE ON RESULTS             **
                       275 **              E) LENGTH OF COMPARED RESULTS                     **
                       276 **              F) MASK FIELD FOR COMPARE                         **
                       277 **              G) LENGTH OF PARAMETER IN BYTES                   **
                       278 **              H) PARAMETER TO PASS TO THE TU                    **
                       279 **              I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER   **
                       280 **                                                                **
                       281 **        $NVLD                                                   **
                       282 **              A) RULE EQUATE X'0600'                            **
                       284 **                                                                **
                       285 **   ENTRY POINT TABLE                                            **
                       286 **        THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT **
                       287 **        THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE      **
                       288 **        REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWES:**
                       289 **                                                                **
                       290 **             A) NAME OF ENTRY POINT                             **
                       291 **             B) ADDRESS OF ENTRY POINT RULE TABLE               **
                       292 **                                                                **
                       293 **        THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'     **
                       294 **                                                                **
                       295 **   MESSAGE TABLE                                                **
                       296 **        THIS TABLE CONTAINES THE MESSAGE PASSED TO THE OPERATOR **
                       297 **        VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWES:       **
                       298 **                                                                **
                       299 **             A) EQUATE FOR START OF MESSAGE BLOCK               **
                       300 **             B) NUMBER OF LINES OF MESSAGE                      **
                       301 **             C) LENGTH OF FOLLOWING LINE                        **
                       302 **             D) FIRST LINE OF MESSAGE                           **
                       303 **             E) LENGTH OF FOLLOWING LINE                        **
                       304 **             F) SECOND LINE OF MESSAGE                          **
                       305 **             G) ETC.                                            **
                       306 **                                                                **
                       307 ********************************************************************
                       308 ********************************************************************
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                   COPYRIGHT IBM CORP 1976
                           311 ********************************************************************************
                           312 ********************************************************************************
                           313 **                                                                            **
                           314 **                      STEP AND RULE ADDRESS TABLE                           **
                           315 **                                                                            **
                           316 ********************************************************************************
                           317 ********************************************************************************
002502  2530               318          DC    AL2(N00001)
002504  0001               319          DC    XL2'0001'
000001                     320 EQN00001 EQU       0001
002506  254A               321          DC    AL2(N00002)
002508  0002               322          DC    XL2'0002'
000002                     323 EQN00002 EQU       0002
00250A  2556               324          DC    AL2(N00003)
00250C  0003               325          DC    XL2'0003'
000003                     326 EQN00003 EQU       0003
00250E  2568               327          DC    AL2(N00004)
002510  0004               328          DC    XL2'0004'
000004                     329 EQN00004 EQU       0004
002512  2574               330          DC    AL2(N00005)
002514  0005               331          DC    XL2'0005'
000005                     332 EQN00005 EQU       0005
002516  258E               333          DC    AL2(N00006)
002518  0006               334          DC    XL2'0006'
000006                     335 EQN00006 EQU       0006
00251A  259A               336          DC    AL2(N00007)
00251C  0007               337          DC    XL2'0007'
000007                     338 EQN00007 EQU       0007
00251E  25B4               339          DC    AL2(N00008)
002520  0008               340          DC    XL2'0008'
000008                     341 EQN00008 EQU       0008
002522  25C0               342          DC    AL2(N00009)
002524  0009               343          DC    XL2'0009'
000009                     344 EQN00009 EQU       0009
002526  25DA               345          DC    AL2(N00010)
002528  0010               346          DC    XL2'0010'
00000A                     347 EQN00010 EQU       0010
00252A  25E6               348          DC    AL2(N00011)
00252C  0011               349          DC    XL2'0011'
00000B                     350 EQN00011 EQU       0011
00252E  0000               351          DC    AL2(DUMMY)
                           352 ********************************************************************************
                           353 ********************************************************************************
                           354 **                                                                            **
                           355 **                        RULE INFORMATION TABLE                              **
                           356 **                                                                            **
                           357 ********************************************************************************
                           358 ********************************************************************************
                           359 N00001   $TUXX T7801,10,0000000000000000000,EQ,QT=(Q00006),YES=N00003,X
002530  0500               360+N00001   DC    A(@TUXX)
002532  2556               361+         DC    AL2(N00003)
002534  26A0               362+         DC    A(T7801)
002536  0000               363+         DC    AL2(EQ)
002538  000A               364+         DC    AL2(10)
00253A  00000000000000000  365+         DC    X'00000000000000000000'
                           366+         ALIGN WORD
002544  0000               367+         DC    AL2(0)
002546  C1C1               368+         DC    C'AA'
                           369+         ALIGN WORD
002548  196E               370+         DC     AL2(PARMARA)
                           371 N00002   $CALL TYPE=XTRNL,MAP=7803,EP=A,FT=(F00009),GTO=((7803,A))
00254A  0201               372+N00002   DC    A(@CALL)
00254C  25FA               373+         DC    A(F00009)
00254E  F7F8F0F3           374+         DC    CL4'7803'
002552  C140               375+         DC    CL2'A'
002554  0001               376+         DC    AL2(XTRNL)
                           377 N00003   $TUXX T7804,02,0000,EQ,QT=(Q00013),YES=N00005,CT=(C00012)
002556  0500               378+N00003   DC    A(@TUXX)
002558  2574               379+         DC    AL2(N00005)
00255A  2950               380+         DC    A(T7804)
00255C  0000               381+         DC    AL2(EQ)
00255E  0002               382+         DC    AL2(02)
002560  0000               383+         DC    X'0000'
                           384+         ALIGN WORD
002562  0000               385+         DC    AL2(0)
002564  C1C1               386+         DC    C'AA'
                           387+         ALIGN WORD
002566  196E               388+         DC     AL2(PARMARA)
                           389 N00004   $CALL TYPE=XTRNL,MAP=7803,EP=A,FT=(F00015),GTO=((7803,A))
002568  0201               390+N00004   DC    A(@CALL)
00256A  2600               391+         DC    A(F00015)
00256C  F7F8F0F3           392+         DC    CL4'7803'
002570  C140               393+         DC    CL2'A'
002572  0001               394+         DC    AL2(XTRNL)
                           395 N00005   $TUXX T7806,10,0000000000000000000,EQ,QT=(Q00019),YES=N00007,X
002574  0500               396+N00005   DC    A(@TUXX)
002576  259A               397+         DC    AL2(N00007)
002578  2AA0               398+         DC    A(T7806)
00257A  0000               399+         DC    AL2(EQ)
00257C  000A               400+         DC    AL2(10)
00257E  00000000000000000  401+         DC    X'00000000000000000000'
                           402+         ALIGN WORD
002588  0000               403+         DC    AL2(0)
00258A  C1C1               404+         DC    C'AA'
                           405+         ALIGN WORD
00258C  196E               406+         DC     AL2(PARMARA)
                           407 N00006   $CALL TYPE=XTRNL,MAP=7803,EP=A,FT=(F00022),GTO=((7803,A))
00258E  0201               408+N00006   DC    A(@CALL)
002590  2606               409+         DC    A(F00022)
002592  F7F8F0F3           410+         DC    CL4'7803'
002596  C140               411+         DC    CL2'A'
002598  0001               412+         DC    AL2(XTRNL)
                           413 N00007   $TUXX T7807,10,0000000000000000000,EQ,PLNG=02,PARM=01,       X
00259A  0500               414+N00007   DC    A(@TUXX)
00259C  25C0               415+         DC    AL2(N00009)
00259E  2B7C               416+         DC    A(T7807)
0025A0  0000               417+         DC    AL2(EQ)
0025A2  000A               418+         DC    AL2(10)
0025A4  00000000000000000  419+         DC    X'00000000000000000000'
                           420+         ALIGN WORD
0025AE  0002               421+         DC    AL2(02)
0025B0  F0F1               422+         DC    C'01'
                           423+         ALIGN WORD
0025B2  196E               424+         DC     AL2(PARMARA)
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                   COPYRIGHT IBM CORP 1976
                           425 N00008   $CALL TYPE=XTRNL,MAP=7803,EP=A,FT=(F00029),GTO=((7803,A))
0025B4  0201               426+N00008   DC    A(@CALL)
0025B6  260C               427+         DC    A(F00029)
0025B8  F7F8F0F3           428+         DC    CL4'7803'
0025BC  C140               429+         DC    CL2'A'
0025BE  0001               430+         DC    AL2(XTRNL)
                           431 N00009   $TUXX T7807,10,0000000000000000000,EQ,PLNG=02,PARM=04,       X
0025C0  0500               432+N00009   DC    A(@TUXX)
0025C2  25E6               433+         DC    AL2(N00011)
0025C4  2B7C               434+         DC    A(T7807)
0025C6  0000               435+         DC    AL2(EQ)
0025C8  000A               436+         DC    AL2(10)
0025CA  00000000000000000  437+         DC    X'00000000000000000000'
                           438+         ALIGN WORD
0025D4  0002               439+         DC    AL2(02)
0025D6  F0F4               440+         DC    C'04'
                           441+         ALIGN WORD
0025D8  196E               442+         DC     AL2(PARMARA)
                           443 N00010   $CALL TYPE=XTRNL,MAP=7803,EP=A,FT=(F00036),GTO=((7803,A))
0025DA  0201               444+N00010   DC    A(@CALL)
0025DC  2612               445+         DC    A(F00036)
0025DE  F7F8F0F3           446+         DC    CL4'7803'
0025E2  C140               447+         DC    CL2'A'
0025E4  0001               448+         DC    AL2(XTRNL)
                           449 N00011   $GOTO TYPE=XTRNL,EP=A,MAP=7820,FT=(F00039),GTO=((7820,A))
0025E6  0200               450+N00011   DC    A(@GOTO)
0025E8  2618               451+         DC    A(F00039)
0025EA  F7F8F2F0           452+         DC    CL4'7820'
0025EE  C140               453+         DC    CL2'A'
0025F0  0001               454+         DC    AL2(XTRNL)
0025F2  0000               455          DC    AL2(DUMMY)
0025F4                     456 ENTPT    EQU   *
                           457 ********************************************************************************
                           458 ********************************************************************************
                           459 **                                                                            **
                           460 **                          ENTRY POINT TABLE                                 **
                           461 **                                                                            **
                           462 ********************************************************************************
                           463 ********************************************************************************
                           464          ENTPT EP=A,STEP=00001
0025F4  C140               465+         DC    CL2'A'
0025F6  2530               466+         DC    A(N00001)
0025F8  0000               467          DC    AL2(DUMMY)
                           468 ********************************************************************************
                           469 ********************************************************************************
                           470 **                                                                            **
                           471 **                          MESSAGE TABLE                                     **
                           472 **                                                                            **
                           473 ********************************************************************************
                           474 ********************************************************************************
0025FA                     475 F00009   EQU   *
0025FA  0001               476          DC    AL2(0001)
0025FC  0002               477          DC    A(0002)
0025FE  4040               478          DC    CL0002' '
002600                     479 F00015   EQU   *
002600  0001               480          DC    AL2(0001)
002602  0002               481          DC    A(0002)
002604  4040               482          DC    CL0002' '
002606                     483 F00022   EQU   *
002606  0001               484          DC    AL2(0001)
002608  0002               485          DC    A(0002)
00260A  4040               486          DC    CL0002' '
00260C                     487 F00029   EQU   *
00260C  0001               488          DC    AL2(0001)
00260E  0002               489          DC    A(0002)
002610  4040               490          DC    CL0002' '
002612                     491 F00036   EQU   *
002612  0001               492          DC    AL2(0001)
002614  0002               493          DC    A(0002)
002616  4040               494          DC    CL0002' '
002618                     495 F00039   EQU   *
002618  0002               496          DC    AL2(0002)
00261A  002C               497          DC    A(0044)
00261C  C1D3D340C1E3E3C1C  498          DC    CL0044'ALL ATTACHMENT TESTS RUN ALL RIGHT,GOTO EP=A'
002648  0008               499          DC    A(0008)
00264A  D4C1D77EF7F8F2F0   500          DC    CL0008'MAP=7820'
                           501          HDIT  00B2
002652  0000               503+OPTN1 DC     X'0000'                 PROGRAM OPTION CONTROL WORD 1
                           504+*
002654  0000               505+OPTN2 DC     X'0000'                 PROGRAM OPTION CONTROL WORD 2
                           506+*                      BIT     HEX
000010                     507+B48   EQU    16       0       8      PROBLEM PROGRAM CONTROL BITS
000011                     508+B49   EQU    17       1       4      *
000012                     509+B50   EQU    18       2       2      * THESE BITS ARE USED WITH THE
000013                     510+B51   EQU    19       3       1      * SECOND OPTION WD   AND ARE TO
000014                     511+B52   EQU    20       4       8      * BE ASSIGNED BY EACH PROGRAMMER
000015                     512+B53   EQU    21       5       4      *
000016                     513+B54   EQU    22       6       2      *
000017                     514+B55   EQU    23       7       1      *
000018                     515+B56   EQU    24       8       8      *
000019                     516+B57   EQU    25       9       4      *
00001A                     517+B58   EQU    26      10       2      *
00001B                     518+B59   EQU    27      11       1      *
00001C                     519+B60   EQU    28      12       8      *
00001D                     520+B61   EQU    29      13       4      *
00001E                     521+B62   EQU    30      14       2      *
00001F                     522+B63   EQU    31      15       1      *
00001E                     523+CH    EQU    30      14       2      CHARACTER SUPPLIED
00001F                     524+CMP   EQU    31      15       1      COMPARE OPERATION
002656  0000               526+OPTN3 DC     X'0000'                 PROGRAM OPTION CONTROL WORD 3
                           527+*
                           528+*   0  MYSTERY INTERRUPT     MI          8  CS STATUS IN PROGRESS    CS
                           529+*   1  ERROR INTERRUPT       EP          9  CS AVAILABLE             CSA
                           530+*   2  EXPECTED INTERRUPT    XI         10  CS STATUS INTERRUPT ERP  CE
                           531+*   3  INTERRUPT RECEIVED    IN         11  ISB BITS ON (1-7)        ISBON
                           532+*
                           533+*   4  EXPECTED ERR/ATTENT   XF         12  TEST UNIT RESULTS VOID   NG
                           534+*   5  HARD ERROR FOUND      HE         13  OTO CC ERROR             IOCC
                           535+*   6  WRONG INTR LEVEL      WLE        14  NO INTERRUPT             NOIN
                           536+*   7  NO INTR EXPECTED      NI         15  INTERRUPT CC ERROR       INCC
                           537+*                           BIT     HEX
000020                     538+MI    EQU    32       0       8      MYSTERY INTERRUPT HAPPENED
000021                     539+ER    EQU    33       1       4      ERROR RECEIVED ON INTERRUPT
000022                     540+XI    EQU    34       2       2      EXPECTED INTERRUPT CONTROL BIT
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
000023                    541+IN     EQU   35      3       1     INTERRUPT RECEIVED CONTROL BIT
000024                    542+XE     EQU   36      4       8     EXPECTED ERROR RESPONSE
000025                    543+HE     EQU   37      5       4     HARD ERROR, 8 RETRIES
000026                    544+$LE    EQU   38      6       2     INTERRUPT ON WRONG LEVEL ERROR
000027                    545+NI     EQU   39      7       1     NO INTERRUPT EXPECTED E
000028                    546+CS     EQU   40      8       8     CYCLE STATUS IN PROGRESS
000029                    547+CSA    EQU   41      9       4     CYCLE STEAL AVAILABLE
00002A                    548+CE     EQU   42      10      2     CYCLE STEAL STATUS INERRRUPT ERROR
00002B                    549+ISBON  EQU   43      11      1     ISB BITS ON (1-7)
00002C                    550+NG     EQU   44      12      8     TFST UNIT RESULTS NO GOOD
00002D                    551+IOCC   EQU   45      13      4     OIO CC ERROR
00002E                    552+NOIN   EQU   46      14      2     NO INTERRUPT
00002F                    553+INCC   EQU   47      15      1     INTERRUPT CC ERROR
                          554+*
                          555+*      COMMON BUFFER FOR PRINTING DATA
                          556+*
002658  0000              558+$TUID  DC    A(*-*)                 TEST UNIT IDENTIFICATION
00265A  0000              559+$IOIN  DC    A(*-*)                 I/O AND INTR CONDITION CODES
00265C  0000              560+$ISB   DC    A(*-*)                 R7, INTR STATUS BYTE & DEV ADRS
00265E  0000              561+LSTIO  DC    A(*-*)                 ADRS OF LAST I/O + 4 BYTES
002660  0000              562+DEV1   DC    A(*-*)                 DEVICE DEPENDENT DATA
002662  0000              563+DEV2   DC    A(*-*)                 *
002664  0000              564+DEV3   DC    A(*-*)                 *
002666  0000              565+DEV4   DC    A(*-*)                 *
002660                    566+SCTID  EQU   DEV1                   READ ID BUFFER FOR IBIS & TERN
002668                    567+DCBUF  EQU   *                      DCB BUFFER FOR LAST DCB USED
002668  0000              568+DCB1   DC    A(*-*)                 LAST DCB TABLE, CONTROL WORD
00266A  0000              569+DCB2   DC    A(*-*)                 LAST DCB TABLE, DEV DEP WORD
00266C  0000              570+DCB3   DC    A(*-*)                 LAST DCB TABLE, DEV DEP WORD
00266E  0000              571+DCB4   DC    A(*-*)                 LAST DCB TABLE, DEV DEP WORD
002670  0000              572+DCB5   DC    A(*-*)                 LAST DCB TABLE, DEV DEP WORD
002672  0000              573+DCB6   DC    A(*-*)                 LAST DCB TABLE, CHAIN ADRS
002674  0000              574+DCB7   DC    A(*-*)                 LAST DCB TABLE, BYTE COUNT
002676  0000              575+DCB8   DC    A(*-*)                 LAST DCB TABLE, BUFFER ADDRESS
                          576+*
002678                    577+CSBUF  EQU   *                      CYCLE STEAL DATA BUFFER
002678  0000              578+CSTL1  DC    A(*-*)                 CYCLE STEAL BUFFER, RESIDUAL ADRS
00267A  0000              579+CSTL2  DC    A(*-*)                 CYCLE STEAL WD 2, DEVICE DEPEND
00267C  0000              580+CSTL3  DC    A(*-*)                 CYCLE STEAL WD 3, DEVICE DEPEND
00267E  0000              581+CSTL4  DC    A(*-*)                 CYCLE STEAL WD 4, DEVICE DEPEND
002680  0000              582+CSTL5  DC    A(*-*)                 CYCLE STEAL WD 5, DEVICE DEPEND
002682  0000              583+CSTL6  DC    A(*-*)                 CYCLE STEAL WD 6, DEVICE DEPEND
002684  0000              584+CSTL7  DC    A(*-*)                 CYCLE STEAL WD 7, DEVICE DEPEND
002686  0000              585+CSTL8  DC    A(*-*)                 CYCLE STEAL WD 8, DEVICE DEPEND
                          586+*
002688  0000              587+$SUBN  DC    A(*-*)                 LAST SUBROUTINE ADDRESS USED
00268A  00000000          588+$DATA  DC    2A(*-*)                OPTIONAL DATA
00268E  0021              589+$INTL  DC    X'0021'                INTERRUPT LEVEL REQUESTED
002690  0000              590+TURTN  DC    A(*-*)                 TEST UNIT RETURN ADRS TO MDI
002692  00B2              591+$DVID  DC    X'00B2'                DEVICE ID
002694  19D0              592+SVCAL  DC    A(DEVADD)              ADRS OF DEVICE ADDRESS
002696  0000              593+       DC    A(*-*)                 IBIS CYLINDER ADDRESS
                          594+*
                          595+*      THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
                          596+*      FUNCTION. THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
                          597+*      STILL VALID BUT A DIFFERENT TEST IS TO BE PERFORMED.
                          598+*
002698  4020 2658 3C02    599+T3C02  MVWI  X'3C02',$TUID            SET UP TEST UNIT ID
00269E  5700              600+       BXS   (R7)                     RETURN TO MDI SUPVR
                          602        COPY  COMEQU
                          603 ********************************************************************
                          604 *                                                                  *
                          605 *                EQUATED NAMES FOR SUPPORTED SVC'S                 *
                          606 *                                                                  *
                          607 ********************************************************************
000000                    608 OUT    EQU   0                        OUT SVC
000001                    609 OUTIN  EQU   1                        OUTIN SVC
000002                    610 IDLE   EQU   2                        IDLE SVC
000003                    611 IDLE5  EQU   3                        IDLE SVC - INDEPENDENT OF CPU TYPE
000004                    612 CHNGE  EQU   4                        CHANGE LEVEL SVC
000005                    613 PGMCK  EQU   5                        ALLOW RETURN ON PROGRAM CHECK SVC
000006                    614 EXIT   EQU   6                        EXIT SVC
000007                    615 TERM   EQU   7                        TERMINATE SVC
000008                    616 RESET  EQU   8                        RESET DEVICE SVC
000009                    617 RID    EQU   9                        READ ID SVC
00000A                    618 START  EQU   10                       START CYCLE STEAL SVC
00000B                    619 STCSS  EQU   11                       START CYCLE STEAL STATUS SVC
00000C                    620 PREP   EQU   12                       PREPARE DEVICE SVC
00000D                    621 READ0  EQU   13                       READ WITH FUNCTION BIT 3 OFF SVC
00000E                    622 READ1  EQU   14                       READ WITH FUNCTION BIT 3 ON SVC
00000F                    623 RSTAT  EQU   15                       READ STATUS SVC
000010                    624 WRIT0  EQU   16                       WRITE WITH FUNCTION BIT 3 OFF SVC
000011                    625 WRIT1  EQU   17                       WRITE WITH FUNCTION BIT 3 ON SVC
000012                    626 CTRL   EQU   18                       CONTROL SVC
000013                    627 RICB   EQU   19                       RELEASE INTERUPT CONTROL BLOCK SVC
000014                    628 CICB   EQU   20                       CONNECT INTERUPT CONTROL BLOCK SVC
000015                    629 HIO    EQU   21                       HALT ALL I/O
000016                    630 REQSD  EQU   22                       REQUEST USE OF DCP DISK SVC
000017                    631 RELSD  EQU   23                       RELEASE USE OF DCP DISK SVC
000018                    632 HALT   EQU   24                       HALT SVC
000019                    633 ETOH   EQU   25                       EBCDIC TO HEX SVC (STRING)
00001A                    634 HTOE   EQU   26                       HEX TO EBCDIC SVC (STRING)
00001B                    635 ATOH   EQU   27                       ASCII TO HEX SVC (STRING)
00001C                    636 HTOA   EQU   28                       HEX TO ASCII SVC (STRING)
00001D                    637 ETOA   EQU   29                       EBCDIC TO ASCII SVC (STRING)
00001E                    638 ATOE   EQU   30                       ASCII TO EBCDIC SVC (STRING)
00001F                    639 READI  EQU   31                       READ DATA SETS FOR MDI/UTIL
000020                    640 WRITI  EQU   32                       WRITE DATA SETS FOR UTIL
                          642 ********************************************************************
                          643 *                                                                  *
                          644 *                EQUATES USED BY TU'S AS CONSTANTS                 *
                          645 *                                                                  *
                          646 ********************************************************************
00004E                    647 PLUS   EQU   C'+'                    PLUS CHAR
000060                    648 MINUS  EQU   C'-'                    MINUS CHAR
000000                    650 ZERO   EQU   0
000001                    651 ONE    EQU   1
000002                    652 TWO    EQU   2
000003                    653 THREE  EQU   3
000004                    654 FOUR   EQU   4
000005                    655 FIVE   EQU   5
000006                    656 SIX    EQU   6
000007                    657 SEVEN  EQU   7
000008                    658 EIGHT  EQU   8
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
000009                    659 NINE   EQU   9
00000A                    660 TEN    EQU   10
00000B                    661 ELEVN  EQU   11                     11
00000C                    662 TWELV  EQU   12                     12
00000D                    663 THRTN  EQU   13                     13
00000F                    664 FIVTN  EQU   15                     15
000010                    665 SIXTN  EQU   16                     16
000020                    666 THRY2  EQU   32                     32
000040                    667 SIXT4  EQU   64                     64
000080                    668 ONE28  EQU   128                    128
000100                    669 TWO56  EQU   256                    256
000400                    670 ONEK   EQU   1024                   1024
000800                    671 TWOK   EQU   2048                   2048
000C00                    672 THREK  EQU   3072                   3072
001000                    673 FOURK  EQU   4096                   4096
FFFFFF                    675 M1     EQU   -1                     -1
FFFFFE                    676 M2     EQU   -2                     -2
FFFFFD                    677 M3     EQU   -3                     -3
FFFFFC                    678 M4     EQU   -4                     -4
                          680 ********************************************************************
                          681 *                                                                  *
                          682 *      THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE    *
                          683 *      BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES.  *
                          684 *                                                                  *
                          685 ********************************************************************
000000                    686 BS0    EQU   0
000001                    687 BS1    EQU   1
000002                    688 BS2    EQU   2
000003                    689 BS3    EQU   3
000004                    690 BS4    EQU   4
000005                    691 BS5    EQU   5
000006                    692 BS6    EQU   6
000007                    693 BS7    EQU   7
000008                    694 BS8    EQU   8
000009                    695 BS9    EQU   9
00000A                    696 BS10   EQU   10
00000B                    697 BS11   EQU   11
00000C                    698 BS12   EQU   12
00000D                    699 BS13   EQU   13
00000E                    700 BS14   EQU   14
00000F                    701 BS15   EQU   15
                          703        COPY  T7801                01DEC76
                          704 T7801 TUIT  1
                          705+*************************************************************06FEB76**
                          706+*
                          707+** TEST UNIT
                          708+*
                          709+**     4962 ATTACHMENT TEST                                   5/09/77
                          710+*
                          711+** PURPOSE
                          712+*
                          713+*
                          714+** CALLING SEQUENCE
                          715+*
                          716+**     ROUTINE WILL  PREPARE THE I/O DEVICE TO INTERRUPT ON LEVEL ZERO
                          717+**     AND CAUSE AN INTERRUPT. WHEN THE INTERRUPT OCCURS,  THE LEVEL IS
                          718+**     COMPARED TO THE EXPECTED LEVEL. THIS IS DONE ON ALL LEVELS.
                          719+**     LEVEL THREE WILL NOT OCCUR BECAUSE THIS PROGRAM WILL BE RUNNING
                          720+**     AS A BACKGROUND PROGRAM.
                          721+**     CYCLE STEAL STATUS OP IS USED TO FORCE AN INTERRUPT. RESIDUAL
                          722+**     ADDRESS AND STATUS WORD ARE ALSO CHECKED.
                          723+*
                          724+**     PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                          725+**     .      TURESUL BIT 0------------NOT USED
                          726+**     .      TURESUL BIT 1------------NOT USED
                          727+**     .      TURESUL BIT 2------------FALSE STORE PROTECT CHECK
                          728+**     .      TURESUL BIT 3------------DCB SPEC CK NOT ON IN ISB
                          729+**     .
                          730+**     .      TURESUL BIT 4------------DCB SPEC CHECK NOT REPORTED
                          731+**     .      TURESUL BIT 5------------ STOR PROT NOT ON IN ISB
                          732+**     .      TURESUL BIT 6------------STOR PROTECT CHECK NOT REPORTED
                          733+**     .      TURESUL BIT 7------------ INV STOR CK NOT ON IN ISB
                          734+**     .
                          735+**     .      TURESUL BIT 8------------WRONG CONDITION CODE
                          736+**     .      TURESUL BIT 9------------ INVAL STOR ADDRESS NOT DETECTED
                          737+**     .      TURESUL BIT 10----------- WRONG CYCLE STEAL ADDRESS
                          738+**     .      TURESUL BIT 11----------RESIDUAL ADDRESS ERROR
                          739+**     .
                          740+**     .      TURESUL BIT 12-----------NOT USED
                          741+**     .      TURESUL BIT 13-----------OIO CC ERROR
                          742+**     .      TURESUL BIT 14---------- DEVICE ID MISCOMPARE
                          743+**     .      TURESUL BIT 15---------- SEEK NO-OP ERROR OR CS STATUS ERR
                          744+**     .
                          745+**     .      TURESUL BIT 16-31 ------ CYCLE STEAL STATUS FOR FAILING OP
                          746+**     .      TURESUL BIT 32-47 ------ CC - 32-39 OIO CC,40-47 INT CC
                          747+**     .      TURESUL BIT 48-63 ------ IBS
                          748+**     .      TURESUL BIT 64-79 ------ OPTION WORD 3 (ERROR INDICATORS)
                          749+**     .
                          750+*
                          751+** RETURN CONTROL
                          752+*
                          753+**      B      TURTN*                 RETURN TO MDI SUPERVISOR
                          754+*
                          755+*************************************************************
0026A0  6F0D 2690         756+T7801  MVW   R7,TURTN                 SAVE RETURN ADDRESS
0026A4  4020 2658 7801    757+       MVWI  X'7801',$TUID            SAVE TU ID FOR DISPLAY
0026AA  4424 2652         758+       MVA   OPTN1,R4                 SET UP POINTER ADRS IN R4
                          759+*
0026AE  4020 268E 0020    760        MVWI  X'0020',$INTL            RESET PREPARE 'I' BIT & CONNECT
0026B4  6E03 3C58         761        BAL   $CONC,R6                 *
0026B8  2934              762        DC    A(T01EB)                 *
0026BA  CA25 18C8         763        MVWZ  TURESUL,R2               CLEAR RESULTS WORD
0026BE  CA25 18CA         764        MVWZ  TURESUL+2,R2             CLEAR RESULTS WORD 2
0026C2  CA25 18CC         765        MVWZ  TURESUL+4,R2             CLEAR RESULTS WORD 3
0026C6  CA25 18CE         766        MVWZ  TURESUL+6,R2             CLEAR RESULTS WORD 4
0026CA  CA25 18D0         767        MVWZ  TURESUL+8,R2             CLEAR RESULTS WORD 5
0026CE  4224 18C8         768        MVA   TURESUL,R2               ADDRESS OF RESULTS
0026D2  4224 18C8         769        MVA   TURESUL,R2               ADDRESS OF RESULTS WORD
0026D6  C020 0232         770        MVB   CPUID,R0                 DETERMINE TYPE OF PROCESSOR
0026DA  F025              771        CBI   37,R0                    *
0026DC  1804              772        JNE   T01T                     JUMP IF NOT 4955
0026DE  4020 26FE 254C    773        MVWI  X'254C',T01T1+2          LOAD TIMF CONSTANT FOR 2 SEC
0026E4  5003              774        J     T01T2
0026E6  4020 26FE 0C0E    775 T01T   MVWI  X'0C0E',T01T1+2          (4953) LOAD TIME CONS FOR 2 SEC
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 LOCTR  OBJECT TEXT          STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

0026EC  4020 268E FFF1        776 T01T2 MVWI  X'FFF1',$INTL              SET UP INTERRUPT LEVEL FOR PREP
0026F2  4724 3C44             777       MVA   IOBLK,R7                   RESET DEVICE
0026F6  4624 273A             778       MVA   ITST1+10,R6                SETUP RETURN ADDRESS IF ERROR
0026FA  6008                  779       SVC   RESET                      *
0026FC  4024 0000             780 T01T1 MVWI  X'0000',R0                 TIME OUT 2 SEC
002700  6002                  781 ITST5 SVC   IDLE                       *
002702  B8FE                  782       JCT   ITST5,R0                   *
002704  4724 3C44             783       MVA   IOBLK,R7                   PESET DEVICE
002708  6008                  784       SVC   RESET                      *
00270A  4724 3C44             785       MVA   IOBLK,R7                   READ DEVICE ID
00270E  4624 273A             786       MVA   ITST1+10,R6                SETUP RETURN ADDRESS IF ERROR
002712  6009                  787 T01D  SVC   RID                        *
002714  402F 3C4E 00BA        788       CWI   X'00BA',IOMOD+4            VERIFY DEVICE ID-DUT,FIXED HEADS
00271A  100A                  789       JE    ITST1
00271C  402F 3C4E 00AA        790       CWI   X'00AA',IOMOD+4            VERIFY DEVICE ID-DUT,NO FIXED HEADS
002722  1006                  791       JE    ITST1
002724  402F 3C4E 00CA        792       CWI   X'00CA',IOMOD+4            VFRIFY DEVICE ID-LARGE FILE
00272A  1002                  793       JE    ITST1
00272C  6802 28EC             794       B     T01A                       DEVICE ID ERROR
002730  4029 268E 0010        795 ITST1 AWI   X'10',$INTL                ADV INTR LEVEL, STARTING AT 0
002736  6E03 3C70             796       BAL   $CONP,R6                   CONNECT DEV CNTL BLOCK AND PREP DEV
00273A  2934                  797       DC    A(T01ER)                   ERROR
00273C  4020 39F6 0008        798       MVWI  8,CEDAT                    SET DIAG MODF 1 AND 4
002742  6E03 398E             799       BAL   CEOP1,R6                   *
002746  2934                  800       DC    A(T01ER)                   ERROR
002748  4C64                  801 ITST3 TBTS  (R4,XE)                    SET EXPECTED ERROR
00274A  6E03 3B50             802       BAL   XIOCS,R6                   CYCLE STEAL STATUS TO CAUSE INTER
00274E  2934                  803       DC    A(T01ER)                   ERROR
002750  4CA1                  804       TBTR  (R4,ER)                    INTERRUPT ERROR?
002752  6A00 28F0             805       BON   T01B                       YES
002756  802B 38EA 265C        806       CB    ZERO0,$ISB                 CHECK ISB(0-7) FOR ZEROS
00275C  6801 28F0             807       BNE   T01B                       ERROR
002760  802B 19D0 265D        808       CB    DEVADD,$ISB+1              CHECK DEVICE ADDRESS IN ISB
002766  6801 28F0             809       BNE   T01B                       ERROR
00276A  402B 267A 0001        810       TWI   1,CSTL2                    CHECK CS STATS WORD 1 FOR NOT RDY
002770  6800 28F0             811       BOFF  T01B                       ERROR
002774  402F 267E 0000        812       CWI   0,CSTL4                    CHECK CS STATS WORD 3 FOR ZEROS
00277A  6801 28F0             813       BNE   T01B                       ERROR
00277E  402F 268E 0021        814       CWI   X'21',$INTL                HAS INTR LEVEL COME DOWN TO 2
002784  18D5                  815       JNE   ITST1                      * NO, BCH AND CONTINUE TEST
002786  4020 387A 8005        816       MVWI  X'8005',SKDCB              SEEK CONTROL WORD - CHAINED TO XIOCS
00278C  4020 387C 0000        817       MVWI  0,SKDCB+2                  SFEK NO OP
002792  4020 3882 0000        818       MVWI  0,SKDCB+8                  SELECT HEAD
002798  4020 3884 388A        819       MVA   CSDCB,SKDCB+10             CHAINING ADDPESS
00279E  4020 39F6 000A        820       MVWI  X'000A',CEDAT              SET DIAG MODE 2 & 4 TURN ON INTERNAL
0027A4  6E03 398E             821       BAL   CEOP1,R6                   * READY TO ALLOW CYCLE STEALS
0027A8  28F0                  822       DC    A(T01B)                    *
0027AA  4C64                  823       TBTS  (R4,XE)                    SET EXPECTED ERROR
0027AC  6E03 3A76             824       BAL   $SEEK,R6                   SEEK NO-OP
0027B0  28F0                  825       DC    A(T01B)                    ERROR
0027B2  4CA1                  826       TBTR  (R4,ER)                    INTERRUPT ERROR?
0027B4  6800 2910             827       BOFF  T01V                       NO-DCB SPEC CHECK NOT DETECTED
0027B8  402B 265C 1000        828       TWI   X'1000',$ISB               DCB SPEC CHECK?
0027BE  6800 2914             829       BOFF  T01W                       NO ERROR
0027C2  4020 387A 0005        830       MVWI  X'0005',SKDCB              RESTORE SEEK CONTROL WORD
0027C8  6E03 2938             831       BAL   $CKSK,R6                   SEEK CHAINED TO SEEK
0027CC  28F0                  832       DC    A(T01B)
0027CE  4124 3887             833       MVA   SKDCB+13,R1                SHOULD BE RESIDULA ADDRESS
0027D2  4C64                  834       TBTS  (R4,XE)                    SET EXPECTED EPROR
0027D4  6E03 3B50             835       BAL   XIOCS,R6                   CYCLE STEAL STATUS
0027D8  2934                  836       DC    A(T01ER)
0027DA  4CA1                  837       TBTR  (R4,ER)                    INTERRUPT ERROR?
0027DC  6A00 28F0             838       BON   T01B                       YES
0027E0  C924 2678             839       CW    CSTL1,R1                   CHECK RESIDUAL ADDRESS
0027E4  6801 28F4             840       BNE   T01L                       RESIDUAL ADDRESS ERROR
0027E8  6808 18C4             841       MVW   TULAST,R0                  LAST VALID STORAGE ADDRESS
0027EC  7802 000E             842       SWI   14,R0                      DEV LAST VALID STORAGE ADDR FOR CS
0027F0  8828 18C2 3898        843       MVW   TUBUFF,CSDCB+14            FIRST AVAILABLF STOR LOCATION
0027F6  4C64                  844 T01H  TBTS  (R4,XE)                    SET EXPECTED ERROR
0027F8  6E03 3B50             845       BAL   XIOCS,R6                   CYCLE STEAL STATUS
0027FC  2934                  846       DC    A(T01ER)                   ERROR
0027FE  4CA1                  847       TBTR  (R4,ER)                    INTERRUPT ERROR?
002800  1277                  848       JON   T01B                       YES
002802  C934 3898             849       CW    CSDCB+14*,R1               CHECK RESIDUAL ADDRESS
002806  1878                  850       JNE   T01M                       WRONG CYCLE STEAL ADDRESS
002808  C824 3898             851       CW    CSDCB+14,R0                END OF PHYSICAL STORAGE?
00280C  1704                  852       JLLT  T01G                       YES
00280E  4029 3898 0008        853       AWI   8,CSDCB+14                 INCREMENT BUFFER ADDRESS
002814  50F0                  854       J     T01H
002816  7806 FFF0             855 T01G  CWI   X'FFF0',R0                 MAX STORAGE?
00281A  1011                  856       JE    T01J                       YES
00281C  4029 3898 000A        857       AWI   10,CSDCB+14                FORCE INVALID STG ADDRESS
002822  4C64                  858       TBTS  (R4,XE)                    SET EXPECTED ERROR
002824  6E03 3B50             859       BAL   XIOCS,R6                   CYCLE STEAL STATUS
002828  2934                  860       DC    A(T01ER)                   ERROR
00282A  4CA1                  861       TBTR  (R4,ER)                    INTERRUPT ERROR?
00282C  1067                  862       JOFF  T01N                       NO,INV STG ADDR NOT REPORTED
00282E  402F 265A 0702        863       CWI   X'0702',$IOIN              ARE COND CODES 7 AND 2?
002834  1865                  864       JNE   T01P                       NO-ERROR
002836  402B 265C 0400        865       TWI   X'0400',$ISB               INVALID STORAGE BIT ON IN ISB?
00283C  1063                  866       JOFF  T01Q                       NO-ERROR
00283E  4020 3898 2678        867 T01J  MVA   CSBUF,CSDCB+14             CS ADDRESS
002844  C020 0232             868       MVB   CPUID,R0                   DETERMINE TYPE OF PROCESSOR
002848  F025                  869       CBI   37,R0                      *
00284A  1826                  870       JNE   T01Z                       JUMP IF NOT 4955
00284C  4020 388A 2000        871       MVWI  X'2000',CSDCB              CS CONTROL WORD
002852  6208                  872       EN    X'08'                      ENABLE STORE PROTECT KEY
002854  4C64                  873       TBTS  (R4,XE)                    SET EXPECTED ERROR
002856  6E03 3B50             874       BAL   XIOCS,R6                   CYCLE STEAL STATUS TO CAUSE INTER
00285A  2934                  875       DC    A(T01ER)                   ERROR
00285C  4CA1                  876       TBTR  (R4,ER)                    INTERRUPT ERROR?
00285E  125C                  877       JON   T01Y                       YES-FLASE STORE PROTECT KEY
002860  4029 388A 0100        878 T01K  AWI   X'0100',CSDCB              SET OR INCREMENT KEYS
002866  4C64                  879       TBTS  (R4,XE)                    SFT EXPECTED ERROR
002868  6E03 3B50             880       BAL   XIOCS,R6                   CYCLF STEAL STATUS
00286C  2934                  881       DC    A(T01ER)                   ERROR
00286E  4CA1                  882       TBTR  (R4,ER)                    INTERRUPT ERROR?
002870  104B                  883       JOFF  T01X                       NO,STOR PROTECT NOT REPORTED
002872  402F 265A 0702        884       CWI   X'0702',$IOIN              ARE COND CODES 7 AND 2?
002878  1843                  885       JNE   T01P                       NO-ERROR
00287A  402B 265C 0200        886       TWI   X'0200',$ISB               STOR PROT BIT NOT ON IN ISB?
002880  1045                  887       JOFF  T01U                       NO-ERROR
002882  402F 388A 2700        888       CWI   X'2700',CSDCB              ALL KEYS CHECKED?
002888  18EB                  889       JNE   T01K                       NO
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 LOCTR  OBJECT TEXT          STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

00288A  6308                  890       DIS   X'08'                      DISABLE STORAGE PROTECT
00288C  4020 388A 2000        891       MVWI  X'2000',CSDCB              RESTORE CS DCB
002892  4020 3898 2678        892       MVA   CSBUF,CSDCB+14             *
002898  4029 3898 0001        893 T01Z  AWI   1,CSDCB+14                 FORCE DCB SPEC CHECK
00289E  4C64                  894       TBTS  (R4,XE)                    SET EXPECTED ERROR
0028A0  6E03 3B50             895       BAL   XIOCS,R6                   CYCLE STEAL STATUS
0028A4  2934                  896       DC    A(T01ER)                   ERROR
0028A6  4CA1                  897       TBTR  (R4,ER)                    INTERRUPT ERROR?
0028A8  1033                  898       JOFF  T01V                       NO,DCB SPEC CHECK NOT REPORTED
0028AA  402F 265A 0702        899       CWI   X'0702',$IOIN              ARE COND CODES 7 AND 2?
0028B0  1827                  900       JNE   T01P                       NO-ERROR
0028B2  402B 265C 1000        901       TWI   X'1000',$ISB               DCB SPEC CHECK BIT ON IN ISB?
0028B8  102D                  902       JOFF  T01W                       NO-ERROR
0028BA  500C                  903       J     T1END
0028BC  8828 267A 18CA        904 T01C  MVW   CSTL2,TURESUL+2            CYCLE STEAL STATUS FOR FAILING OP
0028C2  8828 265A 18CC        905       MVW   $IOIN,TURESUL+4            CONDITION CODES
0028C8  8828 265C 18CE        906       MVW   $ISB,TURESUL+6             ISB
0028CE  8828 2656 18D0        907       MVW   OPTN3,TURESUL+8            OPTION WORD 3 (CONDITION CODES)
0028D4  6308                  908 T1END DIS   X'08'                      DISABLE STORAGE PROTECT
0028D6  4020 388A 2000        909       MVWI  X'2000',CSDCB              RESTORE VALID CS DCB
0028DC  4020 3898 2678        910       MVA   CSBUF,CSDCB+14             *
0028E2  4724 3C44             911       MVA   IOBLK,R7                   RESET
0028E6  6008                  912       SVC   RESET                      *
                              913       TXIT
0028E8  6802 3CDC             914+       B    $CONX                       RETURN TO MDI CONTROLLER
                              915+**********************************************************************
                              916 *
0028EC  4A4E                  917 T01A  TBTS  (R2,14)                    DEVICE ID MISCOMPARE
0028EE  50E6                  918       J     T01C                       EXIT
0028F0  4A4F                  919 T01B  TBTS  (R2,15)                    CYCLF STFAL STATUS OR SEEK ERROR
0028F2  50E4                  920       J     T01C                       EXIT
0028F4  4A4B                  921 T01L  TBTS  (R2,11)                    RESIDUAL ADDRESS ERROR
0028F6  50E2                  922       J     T01C                       EXIT
0028F8  4A4A                  923 T01M  TBTS  (R2,10)                    WRONG CYCLE STEAL ADDRESS
0028FA  50E0                  924       J     T01C                       EXIT
0028FC  4A49                  925 T01N  TBTS  (R2,9)                     INVALID STOR ADDR NOT DETECTED
0028FE  50DE                  926       J     T01C                       EXIT
002900  4A48                  927 T01P  TBTS  (R2,8)                     WRONG CONDITION CODE
002902  50DC                  928       J     T01C                       EXIT
002904  4A47                  929 T01Q  TBTS  (R2,7)                     INV STOR BIT NOT ON IN ISB
002906  50DA                  930       J     T01C                       EXIT
002908  4A46                  931 T01X  TBTS  (R2,6)                     STOR PROTECT NOT DETECTED
00290A  50D8                  932       J     T01C                       EXIT
00290C  4A45                  933 T01U  TBTS  (R2,5)                     STOR PROT NOT ON IN ISB
00290E  50D6                  934       J     T01C                       EXIT
002910  4A44                  935 T01V  TBTS  (R2,4)                     DCB SPFC CHECK NOT REPORTED
002912  50D4                  936       J     T01C                       EXIT
002914  4A43                  937 T01W  TBTS  (R2,3)                     DCB SPEC CK NOT ON IN ISB
002916  50D2                  938       J     T01C                       EXIT
002918  4A42                  939 T01Y  TBTS  (R2,2)                     FALSE STORE PROTECT CHECK
00291A  50D0                  940       J     T01C                       EXIT
00291C  CA25 18C8             941 T01R  MVWZ  TURESUL,R2                 CLEAR RESULTS WORD
002920  CA25 18CA             942       MVWZ  TURESUL+2,R2               CLEAR RESULTS WORD 2
002924  CA25 18CC             943       MVWZ  TURESUL+4,R2               CLEAR RESULTS WORD 3
002928  CA25 18CE             944       MVWZ  TURESUL+6,R2               CLEAR RESULTS WORD 4
00292C  CA25 18D0             945       MVWZ  TURESUL+8,R2               CLEAR RESULTS WORD 5
002930  4224 18C8             946       MVA   TURESUL,R2                 ADDRESS OF RESULTS
002934  4A4D                  947 T01ER TBTS  (R2,13)                    OIO CC ERROR
002936  50C2                  948       J     T01C                       EXIT
                              949 *
002938  4020 3C48 2942        950 $CKSK MVA   CHSK,IODCB                 SET UP CONTROL BLOCK FOR SVC CALL
00293E  6802 3B46             951       B     XIO
                              952 *
002942  8005                  953 CHSK  DC    X'8005'                    SEEK CONTROL WORD - CHAINNING
002944  0000                  954       DC    X'0000'                    NO OP
002946  0000                  955       DC    X'0000'
002948  0000                  956       DC    X'0000'
00294A  0000                  957       DC    X'0000'
00294C  387A                  958       DC    A(SKDCB)                   CHAIN ADDRESS
00294E  0000                  959       DC    X'0000'
                              960 *
                              962       COPY  T7804                      01DEC76
                              963 T7804 TUIT $ERR$
                              964+****************************************************************06FEB76**
                              965+*
                              966+* TEST UNIT
                              967+*
                              968+*      THIS ROUTINE WILL FORCE ERRORS THAT THE ATTACHMENT WILL REJECT
                              969+*
                              970+* PURPOSE
                              971+*
                              972+*                                                       5/05/77
                              973+* CALLING SEQUENCE
                              974+*
                              975+*      THE FOLLOWING ERRORS ARE FORCED:
                              976+*      .
                              977+*      0.     INVALID COMMAND
                              978+*      1.     INVALID SECTOR NUMBER (RD OP)
                              979+*      2.     INVALID SECTOR NUMBER (RD SECTOR ID)
                              980+*      3.     INVALID SECTOR NUMBER (DIAG OP)
                              981+*      4.     ODD BYTE COUNT
                              982+*      5.     INVALID BYTE COUNT (READ SECTOR ID)
                              983+*      6.     INVALID BYTE COUNT (START DIAG)
                              984+*      7.     ODD DATA ADDRESS
                              985+*      .
                              986+*      PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                              987+*      .      TURESUL BIT 0--INVALID COMMAND
                              988+*      .      TURESUL BIT 1--INVALID SECTOR # (RD OP)
                              989+*      .      TURESUL BIT 2--INVALID SECTOR # (RD SECTOR ID)
                              990+*      .      TURESUL BIT 3--INVALID SECTOR # (DIAG OP)
                              991+*      .      TURESUL BIT 4--ODD BYTE COUNT
                              992+*      .      TURESUL BIT 5--INVALID BYTE COUNT (RD SECTOR ID)
                              993+*      .      TURESUL BIT 6--INVALID BYTE COUNT (START ID)
                              994+*      .      TURESUL BIT 7--ODD DATA ADDRESS
                              995+*      .      TURESUL BIT 8--OIO ERROR
                              996+*      .      TURESUL BIT 9---------- NOT USED
                              997+*      .      TURESUL BIT 10---------- NOT USED
                              998+*      .      TURESUL BIT 11-----------NOT USED
                              999+*      .      TURESUL BIT 12-----------NOT USED
                             1000+*      .      TURESUL BIT 13-----------NOT USED
                             1001+*      .      TURESUL BIT 14---------- NOT USED
                             1002+*      .      TURESUL BIT 15---------- NOT USED
                             1003+*      .
                             1004+*
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                         1005+* RETURN CONTROL
                         1006+**
                         1007+**      B     TURTN*                 RETURN TO MDI SUPERVISOR
                         1008+*
                         1009+*****************************************************************
002950  6F0D 2690       1010+T7804  MVW   R7,TURTN                  SAVE RETURN ADDRESS
002954  4020 2658 7804  1011+       MVWI  X'7804',$TUID             SAVE TU ID FOR DISPLAY
00295A  4424 2652       1012+       MVA   OPTN1,R4                  SET UP POINTER ADRS IN R4
00295E  6E03 3C58       1013+       BAL   $CONC,R6                  CLEAR DEV DEP STG AND CONNECT I/O BL
002962  3C8C            1014+       DC    A($ERR$)                  ERROR ADRS FOR INVALID PREP
                        1015+**
002964  4020 39F6 000A  1016        MVWI  X'000A',CEDAT             TURN ON READY, MODE 164
00296A  6E03 398E       1017        BAL   CEOP1,R6                  *
00296E  2A9C            1018        DC    A(T04K)                   *
002970  CA25 18C8       1019        MVWZ  TURESUL,R2                CLEAR RESULTS WORD
002974  4024 18C8       1020        MVA   TURESUL,R0                ADDRESS OF RESULTS
002978  4020 38BA 2006  1021        MVWI  X'2006',RDDCP             INVALID READ COMMAND
                        1022        ERTST 1,$RD$                    USE SPECIAL XIO ROUTINE
00297E  4020 3E00 3AAC  1023+       MVA   $RD$,ERTST+4              SET UP ADDRESS FOR I/O COMMAND
002984  6A03 3DFC       1024+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
002988  0001            1025+       DC    A(1)                      DISP FROM TOP OF DCB IN BYTES
00298A  2A7C            1026        DC    A(T04A)                   ERROR ADDPESS
                        1027 *
00298C  4020 38BA 2009  1028        MVWI  X'2009',RDDCB             READ CONTROL WORD
002992  4020 38C2 004C  1029        MVWI  X'004C',RDDCB+8           SETUP INVALID SECTOR #
002998  4020 38C6 0002  1030        MVWI  X'0002',RDDCP+12          SETUP VALID BYTE COUNT
                        1031        ERTST 5,$RD$                    USE SPECIAL XIO ROUTINE
00299E  4020 3E00 3AAC  1032+       MVA   $RD$,ERTST+4              SET UP ADDRESS FOR I/O COMMAND
0029A4  6A03 3DFC       1033+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
0029A8  0009            1034+       DC    A(9)                      DISP FROM TOP OF DCB IN BYTES
0029AA  2A80            1035        DC    A(T04B)                   EPROR ADDPESS
                        1036 *
0029AC  4020 385E 3C00  1037        MVWI  X'3C00',RSDCB+4           SETUP INVALID SEC NUM
                        1038        ERTST 3,$RDID                   USE SPECIAL XIO ROUTINE
0029R2  4020 3E00 3A86  1039+       MVA   $RDID,ERTST+4             SET UP ADDRESS FOR I/O COMMAND
0029B8  6A03 3DFC       1040+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
0029BC  0005            1041+       DC    A(5)                      DISP FROM TOP OF DCB IN BYTES
0029BE  2A84            1042        DC    A(T04C)                   EPROR ADDPESS
                        1043 *
0029C0  4020 382E 3C00  1044        MVWI  X'3C00',DGDCB+4           SETUP INVALID SECTOR #
0029C6  4020 3836 0100  1045        MVWI  X'0100',DGDCB+12          SETUP VALID PYTE COUNT
                        1046        ERTST 3,$DIAG                   USE SPECIAL XIO ROUTINE
0029CC  4020 3E00 3B3E  1047+       MVA   $DIAG,ERTST+4             SET UP ADDRESS FOR I/O COMMAND
0029D2  6A03 3DFC       1048+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
0029D6  0005            1049+       DC    A(5)                      DISP FROM TOP OF DCB IN BYTES
0029D8  2A88            1050        DC    A(T04D)                   ERROR ADDRESS
                        1051 *
0029DA  4020 38BA 2009  1052        MVWI  X'2009',RDDCB             READ CONTROL WORD
0029E0  4020 38C2 003B  1053        MVWI  X'003B',RDDCB+8           RESTORE VALID SECTOR #
0029E6  4020 38C6 0003  1054        MVWI  X'0003',RDDCB+12          SETUP INVALID BYTE COUNT
                        1055        ERTST 7,$RD$                    USE SPECIAL XIO ROUTINE
0029EC  4020 3E00 3AAC  1056+       MVA   $RD$,ERTST+4              SET UP ADDRESS FOR I/O COMMAND
0029F2  6A03 3DFC       1057+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
0029F6  000D            1058+       DC    A(13)                     DISP FROM TOP OF DCB IN BYTES
0029F8  2A8C            1059        DC    A(T04E)                   ERROR ADDRESS
                        1060 *
0029FA  4020 385A 200A  1061        MVWI  X'200A',RSDCB             READ SECTOR ID CONTROL WORD
002A00  4020 385E 0000  1062        MVWI  X'0000',RSDCB+4           VALIDATE SECTOP #
002A06  4020 3866 0008  1063        MVWI  X'0008',RSDCB+12          SETUP INVALID BYTE COUNT
                        1064        ERTST 7,$RDID                   USE SPECIAL XIO ROUTINE
002A0C  4020 3E00 3A86  1065+       MVA   $RDID,ERTST+4             SET UP ADDRESS FOR I/O COMMAND
002A12  6A03 3DFC       1066+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
002A16  000D            1067+       DC    A(13)                     DISP FROM TOP OF DCB IN BYTES
002A18  2A90            1068        DC    A(T04F)                   ERROR ADDRESS
002A1A  4020 3866 0006  1069        MVWI  X'0006',RSDCB+12          RESTORE VALID BYTE COUNT
                        1070 *
002A20  4020 382E 0000  1071        MVWI  X'0000',DGDCB+4           RESTORE VALID SECTOR #
002A26  4020 3836 0006  1072        MVWI  X'0006',DGDCB+12          SETUP INVALID BYTE COUNT
                        1073        ERTST 7,$DIAG                   USE SPECIAL XIO ROUTINE
002A2C  4020 3E00 3B3E  1074+       MVA   $DIAG,ERTST+4             SET UP ADDRESS FOR I/O COMMAND
002A32  6A03 3DFC       1075+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
002A36  000D            1076+       DC    A(13)                     DISP FROM TOP OF DCB IN BYTES
002A38  2A94            1077        DC    A(T04G)                   ERROR ADDPESS
002A3A  4020 3836 0100  1078        MVWI  X'0100',DGDCB+12          RESTORE VALID BYTE COUNT
                        1079 *
002A40  4020 38BA 2009  1080        MVWI  X'2009',RDDCB             READ CONTROL WORD
002A46  4020 38C6 0002  1081        MVWI  X'0002',RDDCB+12          RESTORE VALID BYTE COUNT
002A4C  4020 38C8 3FF9  1082        MVWI  X'3FF9',RDDCB+14          SETUP INVALID DATA ADDRESS
                        1083        ERTST 8,$RD$                    USE SPECIAL XIO ROUTINE
002A52  4020 3E00 3AAC  1084+       MVA   $RD$,ERTST+4              SET UP ADDRESS FOR I/O COMMAND
002A58  6A03 3DFC       1085+       BAL   ERTST,R2                  USE COMMON ERROR TESTING SUBROUTINE
002A5C  000F            1086+       DC    A(15)                     DISP FROM TOP OF DCB IN BYTES
002A5E  2A98            1087        DC    A(T04H)                   ERROR ADDRESS
002A60  4020 3836 0100  1088        MVWI  X'0100',DGDCB+12          RESTORE VALID BYTE COUNT
002A66  8828 18C2 38C8  1089        MVW   TUBUFF,RDDCB+14           RESTORE VALID DATA ADDPESS
002A6C  4029 38C8 0500  1090        AWI   X'0500',RDDCB+14          *
                        1091 *
002A72  4724 3C44       1092 T04J   MVA   IOBLK,P7                  RESET
002A76  6008            1093        SVC   RESET                     *
                        1094        TXIT
002A78  6802 3CDC       1095+        B     $CONX                    RETURN TO MDI CONTROLLER
                        1096+*****************************************************************
                        1097 *
002A7C  4840            1098 T04A   TBTS  (R0,0)                    INVALID COMMAND
002A7E  50F9            1099        J     T04J
002A80  4841            1100 T04B   TBTS  (R0,1)                    INVALID SECTOR # (RD OP)
002A82  50F7            1101        J     T04J
002A84  4842            1102 T04C   TBTS  (R0,2)                    INVALID SECTOR # (RD SECTOR ID)
002A86  50F5            1103        J     T04J
002A88  4843            1104 T04D   TBTS  (R0,3)                    INVALID SECTOR # (DIAG OP)
002A8A  50F3            1105        J     T04J
002A8C  4844            1106 T04E   TBTS  (R0,4)                    ODD BYTE COUNT
002A8E  50F1            1107        J     T04J
002A90  4845            1108 T04F   TBTS  (R0,5)                    INVALID BYTE COUNT (RD SECTOR ID)
002A92  50EF            1109        J     T04J
002A94  4846            1110 T04G   TBTS  (R0,6)                    INVALID BYTE COUNT (START DIAG)
002A96  50ED            1111        J     T04J
002A98  4847            1112 T04H   TBTS  (R0,7)                    ODD DATA ADDRESS
002A9A  50EB            1113        J     T04J
002A9C  4848            1114 T04K   TBTS  (R0,8)                    OIO ERROR
002A9E  50E9            1115        J     T04J
                        1116 *
                        1117 *
                        1118 *
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                        1119        COPY  T7806                   01DEC76
                        1120 T7806 TUIT T06ER
                        1121+*****************************************************************06FEB76**
                        1122+*
                        1123+* TEST UNIT
                        1124+**
                        1125+*     DATA BUFFER WRAP  TEST                                    5/05/77
                        1126+**
                        1127+* PURPOSE
                        1128+*
                        1129+*
                        1130+* CALLING SEQUENCE
                        1131+**
                        1132+*     THIS ROUTINE WILL VERIFY THE DATA BUFFER IN THE 4962 ATTACHMENT
                        1133+*     CARD BY TURNING ON DIAGNOSTIC MODE AND RUNNING BUFFER WRAP TEST.
                        1134+**
                        1135+*     PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                        1136+*          .      TURESUL BIT 0-----------NOT USED
                        1137+*          .      TURESUL BIT 1-----------NOT USED
                        1138+*          .      TURESUL BIT 2-----------NOT USED
                        1139+*          .      TURESUL BIT 3-----------NOT USED
                        1140+**
                        1141+*          .      TURFSUL BIT 4-----------NOT USED
                        1142+*          .      TURESUL BIT 5----------- NOT USED
                        1143+*          .      TURESUL BIT 6-----------NOT USED
                        1144+*          .      TURESUL BIT 7----------- NOT USED
                        1145+*          .
                        1146+*          .      TURESUL BIT 8-----------NOT USED
                        1147+*          .      TURESUL BIT 9----------- NOT USED
                        1148+*          .      TURESUL BIT 10---------- NOT USED
                        1149+*          .      TURESUL BIT 11----------NOT DIAGNOSTIC MODE
                        1150+*          .
                        1151+*          .      TURESUL BIT 12----------NOT USED
                        1152+*          .      TURESUL BIT 13----------OIO CC ERROR
                        1153+*          .      TURESUL BIT 14----------- WRAP TEST FAILED
                        1154+*          .      TURFSUL BIT 15---------- NO INTERRUPT RECEIVED
                        1155+*          .
                        1156+*          .      TURESUL BIT 16-31 ------ CYCLE STEAL STATUS FOR FAILING OP
                        1157+*          .      TURESUL BIT 32-47 ------ CC - 32-39 OIO CC,40-47 INT CC
                        1158+*          .      TURESUL BIT 48-63 ------ IPS
                        1159+*          .      TURESUL BIT 64-79 ------ OPTION WORD 3 (ERROR INDICATORS)
                        1160+*          .
                        1161+**
                        1162+* RETURN CONTROL
                        1163+**
                        1164+*      B     TURTN*                 RETURN TO MDI SUPERVISOR
                        1165+*
                        1166+*****************************************************************
002AA0  6F0D 2690       1167+T7806  MVW   R7,TURTN                  SAVE RETURN ADDRESS
002AA4  4020 2658 7806  1168+       MVWI  X'7806',$TUID             SAVE TU ID FOR DISPLAY
002AAA  4424 2652       1169+       MVA   OPTN1,R4                  SET UP POINTER ADRS IN R4
002AAE  6E03 3C58       1170+       BAL   $CONC,R6                  CLEAR DEV DEP STG AND CONNECT I/O BL
002AB2  2B44            1171+       DC    A(T06ER)                  ERROR ADRS FOR INVALID PREP
                        1172+**
002AB4  CA25 18C8       1173        MVWZ  TURESUL,R2                CLEAR RESULTS WORD
002AB8  CA25 18CA       1174        MVWZ  TURESUL+2,R2              CLEAR RESULTS WORD 2
002ABC  CA25 18CC       1175        MVWZ  TURESUL+4,R2              CLEAR RESULTS WORD 3
002AC0  CA25 18CE       1176        MVWZ  TURESUL+6,R2              CLEAR RESULTS WORD 4
002AC4  CA25 18D0       1177        MVWZ  TURESUL+8,R2              CLEAR RESULTS WORD 5
002AC8  4224 18C8       1178        MVA   TURESUL,R2                ADDRESS OF RESULTS
002ACC  4C67            1179        TBTS  (R4,NI)                   TURN ON NO INTER MODE INDICATOR
002ACE  4724 3C44       1180        MVA   IOBLK,R7                  ISSUE DEVICE RESET
002AD2  6008            1181        SVC   RESET                     *
002AD4  4020 39F6 0000  1182        MVWI  0,CEDAT                   SET DIAGNOSTIC MODE
002ADA  6E03 398E       1183        BAL   CEOP1,R6                  *
002ADE  2B44            1184        DC    A(T06ER)                  ERROR
002AE0  6E03 39CA       1185        BAL   SENS0,R6                  READ SENSE WORD ONE
002AE4  2B44            1186        DC    A(T06ER)                  ERROR
002AE6  402F 39EE 8000  1187        CWI   X'8000',RDATA0            CHECK FOR DIAGNOSTIC MODE
002AEC  1025            1188        JOFF  T06D                      DIAG MODE NOT ON
002AEE  6E03 397A       1189        BAL   WRAP,R6                   READ DIAGNOSTIC WRAP
002AF2  2B44            1190        DC    A(T06ER)                  ERROR
002AF4  882B 39F6 39FE  1191        CW    CEDAT,RAPDAT              COMPARE DATA BUFFER
002AFA  1820            1192        JNE   T06A                      ERROR
002AFC  4020 39F6 FFFF  1193        MVWI  X'FFFF',CEDAT             SET ALL ONES AS DATA PATTERN
002B02  6E03 398E       1194        BAL   CEOP1,R6                  WRITE BUFFER DATA PATTERN
002B06  2B44            1195        DC    A(T06ER)                  ERROR
002B08  6E03 397A       1196        BAL   WRAP,R6                   READ DIAGNOSTIC WRAP
002B0C  2B44            1197        DC    A(T06ER)                  ERROR
002B0E  882B 39F6 39FE  1198        CW    CEDAT,RAPDAT              COMPARE DATA BUFFER
002B14  1813            1199        JNE   T06A                      ERROR
002B16  4124 0001       1200        MVWI  1,R1                      INIT DATA PATTERN TO 1
002B1A  690D 39F6       1201 T06L   MVW   R1,CEDAT                  LOAD DATA PATTERN IN WRT DATA WD
002B1E  6E03 398E       1202        BAL   CEOP1,R6                  WRITE BUFFER DATA PATTERN
002B22  2B44            1203        DC    A(T06ER)                  ERROR
002B24  6E03 397A       1204        BAL   WRAP,R6                   READ DIAGNOSTIC WRAP
002B28  2B44            1205        DC    A(T06ER)                  ERROR
002B2A  882B 39F6 39FE  1206        CW    CEDAT,RAPDAT              COMPARE DATA BUFFER
002B30  1805            1207        JNE   T06A                      ERROR
002B32  3109            1208        SLL   1,R1                      SHIFT DATA PATTERN
002B34  1718            1209        JCY   T6END                     ALL DATA PATTERNS TESTED
002B36  50F1            1210        J     T06L                      LOOP
002B38  444B            1211 T06D   TBTS  (R2,11)                  NOT DIAGNOSTIC MODE
002B3A  5009            1212        J     T06C                      EXIT
002B3C  444E            1213 T06A   TBTS  (R2,14)                  DATA BUFFER FAILURE
002B3E  5007            1214        J     T06C                      EXIT
002B40  444F            1215 T06B   TBTS  (R2,15)                  NO INTERRUPT RECEIVED
002B42  5005            1216        J     T06C                      EXIT
002B44  CA25 18C8       1217 T06ER  MVWZ  TURESUL,R2                CLEAR RESULTS WORD
002B48  4224 18C8       1218        MVA   TURESUL,R2                ADDRESS OF RESULTS
002B4C  444D            1219        TBTS  (R2,13)                   OIO CC ERROR
002B4E  8828 267A 18CA  1220 T06C   MVW   CSTL2,TURESUL+2           CYCLE STEAL STATUS FOR FAILING OP
002B54  8828 265A 18CC  1221        MVW   $IOIN,TURESUL+4           CONDITION CODES
002B5A  8828 265C 18CE  1222        MVW   $ISB,TURESUL+6            ISB
002B60  8828 2656 18D0  1223        MVW   OPTN3,TURESUL+8           OPTION WORD 3 (CONDITION CODES)
002B66  4020 39FA 0001  1224 T6END  MVWI  1,CEDAT2                  RESET DIAG MODE
002B6C  6E03 39A2       1225        BAL   CEOP2,R6                  *
002B70  2B44            1226        DC    A(T06ER)                  *
002B72  4724 3C44       1227        MVA   IOBLK,R7                  RESET
002B76  6008            1228        SVC   RESET                     *
                        1229        TXIT                            EXIT
002B78  6802 3CDC       1230+        B     $CONX                    RETURN TO MDI CONTROLLER
                        1231+*****************************************************************
                        1232 *
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                           1234        COPY  T7807                  01DEC76
                           1235 T7807 TUIT T07ER
                           1236+*****************************************************************06FEB76**
                           1237+*
                           1238+* TEST UNIT
                           1239+*
                           1240+*     RAM AND BUFFER CONTROL DIAGNOSTIC WRAP                    7/10/78
                           1241+*
                           1242+* PURPOSE
                           1243+*
                           1244+*
                           1245+* CALLING SEQUENCE
                           1246+*
                           1247+*     THIS ROUTINE WILL VERIFY THE DATA RETENTION OF THE FSU RAM.
                           1248+*     PATTERNS 5555,AAAA,ETC ARE TESTED WITH VARIOUS BYTE COUNTS UP
                           1249+*     TO '0400'.
                           1250+*     PARM1=TEST NUMBER (1,2,4,8,10)
                           1251+*
                           1252+*     PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                           1253+*     .       TURESUL BIT 0------------NOT USED
                           1254+*     .       TURESUL BIT 1------------NOT USED
                           1255+*     .       TURESUL BIT 2------------NOT USED
                           1256+*     .       TURESUL BIT 3------------NOT USED
                           1257+*     .
                           1258+*     .       TURESUL BIT 4------------NOT USED
                           1259+*     .       TURESUL BIT 5------------ NOT USED
                           1260+*     .       TURESUL BIT 6------------ NOT USED
                           1261+*     .       TURESUL BIT 7------------ NOT USED
                           1262+*     .
                           1263+*     .       TURESUL BIT 8------------NOT USED
                           1264+*     .       TURESUL BIT 9------------ FRACTIONAL COUNT ERORR
                           1265+*     .       TURESUL BIT 10----------- TIME OUT ERROR
                           1266+*     .       TURESUL BIT 11-----------OTO CC EPROP
                           1267+*     .
                           1268+*     .       TURESUL BIT 12-----------TEST 1 DATA COMPARE ERROR
                           1269+*     .       TURESUL BIT 13------------ NOT USED
                           1270+*     .       TURESUL BIT 14------------NOT USED
                           1271+*     .       TURESUL BIT 15---------- INTERPUPT ERROR
                           1272+*     .
                           1273+*     .       TURESUL BIT 16-31 ------ CYCLE STEAL STATUS FOR FAILING OP
                           1274+*     .       TURESUL BIT 32-47 ------ CC - 32-39 OTO CC,40-47 INT CC
                           1275+*     .       TURESUL BIT 48-63 ------ IBS
                           1276+*     .       TURESUL BIT 64-79 ------ OPTION WORD 3 (ERROR INDICATORS)
                           1277+*     .
                           1278+*
                           1279+* RETURN CONTROL
                           1280+*
                           1281+*      B     TURTN*                    RETURN TO MDI SUPERVISOR
                           1282+*
                           1283+*****************************************************************
002B7C  6F0D 2690          1284+T7807  MVW   R7,TURTN                  SAVE RETURN ADDRESS
002B80  4020 2658 7807     1285+       MVWI  X'7807',$TUID             SAVE TU ID FOR DISPLAY
002B86  4424 2652          1286+       MVA   OPTN1,R4                  SET UP POINTER ADRS IN R4
002B8A  6E03 3C58          1287+       BAL   $CONC,R6                  CLEAR DEV DEP STG AND CONNECT I/O BL
002B8E  2FE2               1288+       DC    A(T07ER)                  ERROR ADRS FOR INVALID PREP
                           1289+*
002B90  CA25 18C8          1290        MVWZ  TURESUL,R2                CLEAR RESULTS WORD
002B94  CA25 18CA          1291        MVWZ  TURESUL+2,R2              CLEAR RESULTS WORD 2
002B98  CA25 18CC          1292        MVWZ  TURESUL+4,R2              CLEAR RESULTS WORD 3
002B9C  CA25 18CE          1293        MVWZ  TURESUL+6,R2              CLEAR RESULTS WORD 4
002BA0  CA25 18D0          1294        MVWZ  TURESUL+8,R2              CLEAR RESULTS WORD 5
002BA4  8028 19D0 39F1     1295        MVB   DEVADD,IDCB1+1            LOAD DEVICE ADDRESS IN IDCB
002BAA  C020 0232          1296        MVB   CPUID,R0
002BAE  F025               1297        CBI   37,R0                     DETERMINE CPU TYPE
002BB0  180D               1298        JNE   TT07                      JUMP IF NOT CLINGSTONE
002BB2  4020 2E08 0300     1299        MVWI  X'0300',TT7A+2            LOAD TIME CONSTANT FOR 10 MSEC
002BB8  4020 2E32 254C     1300        MVWI  X'254C',TT7B+2            LOAD TIME CONSTANT FOR 2 SEC
002BBE  4020 2E8C 000B     1301        MVWI  X'000B',TT7C+2            LOAD TIME CONSTANT FOR 40 USEC
002BC4  4020 2F0E 7860     1302        MVWI  X'7860',TT7D+2            LOAD TIME CONSTANT FOR 400 MSEC
002BCA  500D               1303        J     TT7E
002BCC  4020 2E08 0200     1304 TT07   MVWI  X'0200',TT7A+2            (ELBERTA) LOAD TIME CONS FOR 10  MSEC
002BD2  4020 2E32 0C00     1305        MVWI  X'0C00',TT7B+2            (ELBERTA) LOAD TIME CONS FOR 2 SEC
002BD8  4020 2E8C 0007     1306        MVWI  X'0007',TT7C+2            (ELBERTA) LOAD TIME CONS FOR 40 USEC
002BDE  4020 2F0E 5000     1307        MVWI  X'5000',TT7D+2            (ELBERTA) LOAD TIME CONS FOR 400 MSEC
002BE4  4C9C               1308        TBTR  (R4,B60)                  RESET TABLE INDICATOR
002BE6  4020 3AA8 0400     1309 TT7E   MVWI  X'0400',$RD+8             SETUP COUNT TO CLEAR READ BUFFER
002BEC  4020 38A8 302A     1310        MVA   WRBUF,WRDCB+14            WRITE BUFFER ADDRESS IN DCB
002BF2  4020 38C8 342A     1311        MVA   RDBUF,RDDCB+14            READ BUFFER ADDRESS IN DCB
002BF8  8038 189A 2FFE     1312        MVB   TUPARM1*,TEST             SET TEST NUMBER TO BE RUN
002BFE  4724 3C44          1313        MVA   IOBLK,P7                  ISSUE DEVICE RESET
002C02  6008               1314        SVC   RESET                     *
002C04  402B 2FFE 1000     1315        TWI   X'1000',TEST              TEST 10?
002C0A  6A00 2D92          1316        BON   T807                      YES
002C0E  4020 3AA0 0BAA     1317        MVWI  X'0BAA',$RD               READ BUFFER INIT CHARACTER
002C14  4020 2F7A AAAA     1318        MVWI  X'AAAA',T7AA+2            *
002C1A  4C5B               1319        TBTS  (R4,B59)                  SET TWO SEC INDICATOR
002C1C  08FF               1320        MVBI  X'FF',R0                  DATA PATTERN 'FF'
002C1E  4124 302A          1321        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C22  4724 0400          1322        MVWI  X'0400',R7                BYTE COUNT
002C26  282C               1323        FFN   R0,(R1)                   LOAD WRITE BUFFER
002C28  6E03 2DAC          1324        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002C2C  4020 3AA0 0BFF     1325        MVWI  X'0BFF',$RD               READ BUFFER INIT CHARACTER
002C32  4020 2F7A FFFF     1326        MVWI  X'FFFF',T7AA+2            *
002C38  4C9B               1327        TBTR  (R4,B59)                  RESET TWO SEC INDICATOR
002C3A  0855               1328        MVBI  X'55',R0                  DATA PATTERN '55'
002C3C  4124 302A          1329        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C40  4724 0400          1330        MVWI  X'0400',R7                BYTE COUNT
002C44  282C               1331        FFN   R0,(R1)                   LOAD WRITE BUFFER
002C46  6E03 2DAC          1332        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002C4A  08AA               1333        MVBI  X'AA',R0                  DATA PATTERN 'AA'
002C4C  4124 302A          1334        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C50  4724 0400          1335        MVWI  X'0400',R7                BYTE COUNT
002C54  282C               1336        FFN   R0,(R1)                   LOAD WRITE BUFFER
002C56  6E03 2DAC          1337        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002C5A  4C5C               1338        TBTS  (R4,B60)                  SET TABLE INDICATOR FOR ONLY 400 BYTS
002C5C  4124 302A          1339        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C60  4724 0200          1340        MVWI  X'0200',R7                WORD COUNT
002C64  4050 DFB6          1341 TT7G   MVWI  X'DEB6',(R1)+             LOAD WRITE BUFFER
002C68  BFFD               1342        JCT   TT7G,R7                   DECREMENT WORD COUNT
002C6A  6E03 2DAC          1343        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002C6E  4124 302A          1344        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C72  4724 0200          1345        MVWI  X'0200',R7                WORD COUNT
002C76  4050 0001          1346 TT7H   MVWI  X'0001',(R1)+             LOAD WRITE BUFFER
002C7A  BFFD               1347        JCT   TT7H,R7                   DECREMENT WORD COUNT
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
002C7C  6E03 2DAC          1348        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002C80  4124 302A          1349        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C84  4724 0200          1350        MVWI  X'0200',R7                WORD COUNT
002C88  4050 0002          1351 TT7J   MVWI  X'0002',(R1)+             LOAD WRITE BUFFER
002C8C  BFFD               1352        JCT   TT7J,R7                   DECREMENT WORD COUNT
002C8E  6E03 2DAC          1353        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002C92  4124 302A          1354        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002C96  4724 0200          1355        MVWI  X'0200',R7                WORD COUNT
002C9A  4050 0004          1356 TT7K   MVWI  X'0004',(R1)+             LOAD WRITE BUFFER
002C9E  BFFD               1357        JCT   TT7K,R7                   DECREMENT WORD COUNT
002CA0  6E03 2DAC          1358        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002CA4  4124 302A          1359        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002CA8  4724 0200          1360        MVWI  X'0200',R7                WORD COUNT
002CAC  4050 0008          1361 TT7L   MVWI  X'0008',(R1)+             LOAD WRITE BUFFER
002CB0  BFFD               1362        JCT   TT7L,R7                   DECREMENT WORD COUNT
002CB2  6E03 2DAC          1363        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002CB6  4124 302A          1364        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002CBA  4724 0200          1365        MVWI  X'0200',R7                WORD COUNT
002CBE  4050 0010          1366 TT7M   MVWI  X'0010',(R1)+             LOAD WRITE BUFFER
002CC2  BFFD               1367        JCT   TT7M,R7                   DECREMENT WORD COUNT
002CC4  6E03 2DAC          1368        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002CC8  4124 302A          1369        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002CCC  4724 0200          1370        MVWI  X'0200',R7                WORD COUNT
002CD0  4050 0020          1371 TT7N   MVWI  X'0020',(R1)+             LOAD WRITE BUFFER
002CD4  BFFD               1372        JCT   TT7N,R7                   DECREMENT WORD COUNT
002CD6  6E03 2DAC          1373        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002CDA  4124 302A          1374        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002CDE  4724 0200          1375        MVWI  X'0200',R7                WORD COUNT
002CE2  4050 0040          1376 TT7P   MVWI  X'0040',(R1)+             LOAD WRITE BUFFER
002CE6  BFFD               1377        JCT   TT7P,R7                   DECREMENT WORD COUNT
002CE8  6E03 2DAC          1378        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002CEC  4124 302A          1379        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002CF0  4724 0200          1380        MVWI  X'0200',R7                WORD COUNT
002CF4  4050 0080          1381 TT7Q   MVWI  X'0080',(R1)+             LOAD WRITE BUFFER
002CF8  BFFD               1382        JCT   TT7Q,R7                   DECREMENT WORD COUNT
002CFA  6E03 2DAC          1383        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002CFE  4124 302A          1384        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D02  4724 0200          1385        MVWI  X'0200',R7                WORD COUNT
002D06  4050 0100          1386 TT7R   MVWI  X'0100',(R1)+             LOAD WRITE BUFFER
002D0A  BFFD               1387        JCT   TT7R,R7                   DECREMENT WORD COUNT
002D0C  6E03 2DAC          1388        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D10  4124 302A          1389        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D14  4724 0200          1390        MVWI  X'0200',R7                WORD COUNT
002D18  4050 0200          1391 TT7S   MVWI  X'0200',(R1)+             LOAD WRITE BUFFER
002D1C  BFFD               1392        JCT   TT7S,R7                   DECREMENT WORD COUNT
002D1E  6E03 2DAC          1393        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D22  4124 302A          1394        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D26  4724 0200          1395        MVWI  X'0200',R7                WORD COUNT
002D2A  4050 0400          1396 TT7T   MVWI  X'0400',(R1)+             LOAD WRITE BUFFER
002D2E  BFFD               1397        JCT   TT7T,R7                   DECREMENT WORD COUNT
002D30  6E03 2DAC          1398        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D34  4124 302A          1399        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D38  4724 0200          1400        MVWI  X'0200',R7                WORD COUNT
002D3C  4050 0800          1401 TT7U   MVWI  X'0800',(R1)+             LOAD WRITE BUFFER
002D40  BFFD               1402        JCT   TT7U,R7                   DECREMENT WORD COUNT
002D42  6E03 2DAC          1403        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D46  4124 302A          1404        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D4A  4724 0200          1405        MVWI  X'0200',R7                WORD COUNT
002D4E  4050 1000          1406 TT7V   MVWI  X'1000',(R1)+             LOAD WRITE BUFFER
002D52  BFFD               1407        JCT   TT7V,R7                   DECREMENT WORD COUNT
002D54  6E03 2DAC          1408        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D58  4124 302A          1409        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D5C  4724 0200          1410        MVWI  X'0200',R7                WORD COUNT
002D60  4050 2000          1411 TT7W   MVWI  X'2000',(R1)+             LOAD WRITE BUFFER
002D64  BFFD               1412        JCT   TT7W,R7                   DECREMENT WORD COUNT
002D66  6E03 2DAC          1413        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D6A  4124 302A          1414        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D6E  4724 0200          1415        MVWI  X'0200',R7                WORD COUNT
002D72  4050 4000          1416 TT7X   MVWI  X'4000',(R1)+             LOAD WRITE BUFFER
002D76  BFFD               1417        JCT   TT7X,R7                   DECREMENT WORD COUNT
002D78  6E03 2DAC          1418        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D7C  4124 302A          1419        MVA   WRBUF,R1                  WRITE BUFFER ADDRESS FROM MDI
002D80  4724 0200          1420        MVWI  X'0200',R7                WORD COUNT
002D84  4050 8000          1421 TT7Y   MVWI  X'8000',(R1)+             LOAD WRITE BUFFER
002D88  BFFD               1422        JCT   TT7Y,R7                   DECREMENT WORD COUNT
002D8A  6E03 2DAC          1423        BAL   T07X,R6                   GO TO WRITE/READ ROUTINE
002D8E  6802 2ED8          1424        B     T7END                     EXIT
002D92  6E03 3B50          1425 T807   BAL   XIOCS,R6                  CYCLE STEAL STATS-CABLES OUT OR
002D96  2FE2               1426        DC    A(T07ER)                  * POWER OFF
002D98  4CA1               1427        TBTR  (R4,ER)                   INTERRUPT EPROP?
002D9A  6A00 2FE2          1428        BON   T07ER                     YES
002D9E  402F 267A FFFD     1429        CWI   X'FFFD',CSTL2             CYCLE STEAL STATUS BITS ON?
002DA4  6801 2FE2          1430        BNE   T07ER                     NO - ERROR
002DA8  6802 2ED8          1431        B     T7END                     EXIT
                           1432 *
                           1433 *
                           1434 *     WRITE/READ ROUTINE
                           1435 *
002DAC  6E0D 2FEA          1436 T07X   MVW   R6,T07Y+2                 SAVE RETURN ADDRESS
002DB0  4C1C               1437        TBT   (R4,B60)                  TEST TABLE INDICATOR (400 BYTS ONLY)
002DB2  1204               1438        JON   T07SS                     YES
002DB4  4020 38FE 3000     1439        MVA   T07WW,JOE                 LOAD PARM LIST ADDRESS
002DBA  5003               1440        J     T07T
002DBC  4020 38FE 3024     1441 T07SS  MVA   T07WW,JOE                 LOAD PARM LIST ADDRESS (400 BYTS )
002DC2  4020 39F6 000A     1442 T07T   MVWI  X'000A',CEDAT              SET DIAGNOSTIC MODE 1,2 & 4
002DC8  6E03 398E          1443        BAL   CEOP1,R6                  *
002DCC  2FE2               1444        DC    A(T07ER)                  ERROR
002DCE  4020 39FA 8000     1445        MVWI  X'8000',CEDAT2            TURN ON READY
002DD4  6E03 39A2          1446        BAL   CEOP2,R6                  *
002DD8  2FE2               1447        DC    A(T07ER)                  *
002DDA  4C9D               1448        TBTR  (R4,B61)                  CLEAR INDICATOR
002DDC  8838 38FE 38FC     1449        MVW   JOE*,BCNT                 LOAD BYTE COUNT- 1ST COUNT
002DE2  4029 38FE 0002     1450        AWI   2,JOE                     INCREMENT TABLE ADDRESS TO 2ND COUNT
002DE8  4020 389A 0001     1451        MVWI  X'0001',WRDCB             CONTROL WORD - NO CHAINING
002DEE  4020 38A0 012E     1452        MVWI  X'012E',WRDCB+6           SETUP CYLINDER
002DF4  4020 389E 0000     1453        MVWI  X'0000',WRDCB+4           SETUP FLAG
002DFA  4020 38A2 0000     1454        MVWI  X'0000',WRDCB+8           SETUP HEAD,SECTOR
002E00  8828 38FC 38A6     1455        MVW   BCNT,WRDCB+12             SETUP BYTE COUNT
002E06  4024 FFFF          1456 TT7A   MVWI  X'FFFF',R0                SET UP TIME OUT CONSTANT FOR 10MS
002E0A  4C67               1457        TBTS  (R4,N1)                   TURN ON NO INTEP MODE INDICATOR
002E0C  6E03 3ABC          1458        BAL   $WRT,R6                   WRITE
002E10  2FE2               1459        DC    A(T07ER)                  ERROR
002E12  4CA3               1460 T07A   TBTR  (R4,IN)                   HAS AN INTERRUPT OCCURED?
002E14  6A00 2EB4          1461        BON   T07J                      YES-ERROR
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
002E18  B8FC             1462         JCT   T07A,R0               TIME OUT 10 MS
002E1A  4020 39FA 0001   1463         MVWI  1,CEDAT2              RPSET DIAG MODE
002E20  6E03 39A2        1464         BAL   CEOP2,R6              *
002E24  2FE2             1465         DC    A(T07ER)              *
002E26  4724 3C44        1466         MVA   IOBLK,R7              RESET DPVICE
002E2A  6008             1467         SVC   RESET                 *
002E2C  4C1B             1468         TBT   (R4,B59)              2 SEC TIME OUT?
002E2E  1004             1469         JOFF  TTTF                  NO
002E30  4024 FFFF        1470  TT7B   MVWI  X'FFFF',R0            CONSTANT FOR 2 SEC TIME OUT
002E34  6002             1471  TTTT   SVC   IDLE                  TIME OUT 2 SEC
002E36  B8FE             1472         JCT   TTTT,R0               *
002E38  402B 2FFE 0C00   1473  TTTF   TWI   X'0C00',TEST          TEST 4 OR 8?
002E3E  1106             1474         JMIX  T07B                  YES
002E40  4020 39F6 0004   1475         MVWI  4,CEDAT               SET DIAGNOSTIC MODE 1&3
002E46  6E03 398E        1476         BAL   CEOP1,R6              *
002E4A  2FE2             1477         DC    A(T07ER)              ERROR
002E4C  4020 39F6 000A   1478  T07B   MVWI  X'000A',CEDAT         SET DIAGNOSTIC MODE 1,2 & 4
002E52  6E03 398E        1479         BAL   CEOP1,R6              *
002E56  2FE2             1480         DC    A(T07ER)              ERROR
002E58  4020 39FA 8000   1481         MVWI  X'8000',CEDAT2        TURN ON READY
002E5E  6E03 39A2        1482         BAL   CEOP2,R6              *
002E62  2FE2             1483         DC    A(T07ER)              *
002E64  8828 38FC 38C6   1484  T07S   MVW   BCNT,RDDCB+12         SETUP BYTE COUNT
002E6A  4020 38BA 2009   1485         MVWI  X'2009',RDDCB         CONTROL WORD - NO CHAINING
002E70  4020 38C0 012E   1486         MVWI  X'012E',RDDCB+6       SETUP CYLINDER
002E76  4020 38BE 0000   1487         MVWI  X'0000',RDDCB+4       SETUP FLAG
002E7C  4020 38C2 0000   1488         MVWI  X'0000',RDDCB+8       SETUP HEAD,SECTOR
002E82  4C67             1489         TBTS  (R4,NI)               TURN ON NO INTER MODE INDICATOR
002E84  6E03 3AA0        1490         BAL   $RD,R6                READ
002E88  2FE2             1491         DC    A(T07ER)              ERROR
002E8A  4024 FFFF        1492  TT7C   MVWI  X'FFFF',R0            SET UP CONSTANT FOR 40 US TIME OUT
002E8E  B8FE             1493         JCT   *,R0                  TIME OUT 40 USEC
002E90  6F18 38FE        1494         MVW   JOE*,R7               FULL SECT BT CT FOR FILE RAM REQUEST
002E94  370A             1495         SRL   1,R7                  DEVELOP WORD CTN FOR RAM REQUESTS
002E96  4020 39FA 0004   1496         MVWI  4,CEDAT2              DIAG RAM REQUEST
002E9C  6E03 39A2        1497  T07C   BAL   CEOP2,R6              *
002EA0  2FE2             1498         DC    A(T07ER)              ERROR
002EA2  7FE2 0001        1499         SWI   1,R7                  DECREMENT WORD COUNT
002EA6  18FA             1500         JNZ   T07C                  LOOP
002EA8  4CA3             1501         TBTR  (R4,IN)               HAS INTEPRUPT OCCURRED?
002EAA  1021             1502         JOFF  T07J                  NO-
002EAC  402B 2FFE 0C00   1503  T07JJ  TWI   X'0C00',TEST          TEST 4 OR 8?
002EB2  1112             1504         JMIX  T7END                 YES
002EB4  402C 18C8 0001   1505  T07J   OWI   X'0001',TURESUL       INTERRUPT ERROR
002EBA  6E03 3B4C        1506         BAL   XIOCS-4,R6            FORCE CYCLE STEAL STATUS
002EBE  2FE2             1507         DC    A(T07ER)              *
002EC0  8828 267A 18CA   1508  T07CD  MVW   CSTL2,TURESUL+2       CYCLE STEAL STATUS FOR FAILING OP
002EC6  8828 265A 18CC   1509         MVW   $IOIN,TURESUL+4       CONDITION CODES
002ECC  8828 265C 18CE   1510         MVW   $ISB,TURESUL+6        ISB
002ED2  8828 2656 18D0   1511         MVW   OPTN3,TURESUL+8       OPTION WORD 3 (CONDITION CODES)
002ED8  4020 39FA 0001   1512  T7END  MVWI  1,CEDAT2              RESET DIAG MODE
002EDE  6E03 39A2        1513         BAL   CEOP2,R6              *
002EE2  2FE2             1514         DC    A(T07ER)              *
002EE4  4724 3C44        1515         MVA   IOBLK,R7              DEVICE RESET
002EE8  6008             1516         SVC   RESET                 *
                         1517         TXIT                        EXIT
002EEA  6802 3CDC        1518*        B     $CONX                 RETURN TO MDI CONTROLLER
                         1519+*****************************************************************
002EEE  402B 2FFE 0300   1520  T07Z   TWI   X'0300',TEST          TEST 1 OR 2?
002EF4  1105             1521         JMIX  T07BB                 YES
002EF6  50DA             1522         J     T07JJ
002EF8  402C 18C8 0040   1523  T07Q   OWI   X'0040',TURESUL       FRACTION SECTOR ERROR
002EFE  50E0             1524         J     T07CD
002F00  4020 39FA 0002   1525  T07BB  MVWI  2,CEDAT2              DIAG END SECTOR PULSE
002F06  6E03 39A2        1526         BAL   CEOP2,R6              *
002F0A  2FE2             1527         DC    A(T07ER)              ERROR
002F0C  4024 FFFF        1528  TT7D   MVWI  X'FFFF',R0            TIME OUT CONSTANT 400MS
002F10  4CA3             1529  T07E   TBTR  (R4,IN)               HAS INTEPRUPT OCCURRED?
002F12  1205             1530         JON   T07G                  YES
002F14  B8FD             1531         JCT   T07E,R0               TIME OUT 400MS
002F16  402C 18C8 0020   1532         OWI   X'0020',TURESUL       TIME OUT ERROR
002F1C  50D1             1533  T07CE  J     T07CD
002F1E  6F08 38FC        1534  T07G   MVW   BCNT,R7               BYTE COUNT
002F22  4524 302A        1535         MVA   WRBUF,R5              WRITE DATA ADDRESS
002F26  4324 342A        1536         MVA   RDBUF,R3              READ DATA ADDRESS
002F2A  2BA6             1537         CFNEN (R3),(R5)             COMPARE READ DATA TO WRITE
002F2C  6801 2FBC        1538         BNE   T07L                  COMPARE ERROR
002F30  4724 0400        1539         MVWI  X'0400',R7            MAX SIZE READ BUFFER
002F34  6F0F 38FC        1540         SW    BCNT,R7               ADJ BYTE COUNT (UNUSED BYTE CTN)
002F38  1003             1541         JZ    T07K                  RESULTANT BYTE COUNT IS ZERO
002F3A  2BA7             1542         CFEN  (R3),(R5)             COMP REMAINDER OF FIELD
002F3C  6800 2EF8        1543         BE    T07O                  TOO MUCH READ
002F40  6918 38FE        1544  T07K   MVW   JOE*,R1               FULL SECTOR BYTE COUNT-2ND COUNT
002F44  402E 38FE 0002   1545         SWI   2,JOE                 ADJ TABLE POINTER TO 1ST COUNT
002F4A  6A18 38FE        1546         MVW   JOE*,R2               FRACTIONAL SECTOR BYTE COUNT-1ST CTN
002F4E  4029 38FE 0002   1547         AWI   2,JOE                 ADJ TABLE POINTER TO 2ND COUNT
002F54  722A             1548         SW    R2,R1                 SUBTRACT BYTE COUNTS
002F56  1015             1549         JZ    T07M                  RESULTANT BYTE COUNT IS ZERO
002F58  6B08 38A8        1550         MVW   WRDCB+14,R3           ADDRESS OF WRITE BUFFER
002F5C  7268             1551         AW    R2,R3                 FRAC CTN ADDED TO ADDR OF WR BUFF
002F5E  6D08 38C8        1552         MVW   RDDCB+14,R5           ADDRESS OF READ BUFFER
002F62  72A8             1553         AW    R2,R5                 FRAC CTN ADDED TO ADDR  OF RD BUFF
002F64  71E4             1554         MVW   R1,R7                 LOAD BYTE COUNT IN R7 (DIFFERENCE)
002F66  03FF             1555         ABI   -1,R3                 ADJ WR BUF PTR TO LAST BYTE WRITTEN
002F68  C3C0             1556         MVB   (R3),R3               LAST BYTE WRITTEN IN FRACTIONAL SEC
002F6A  2BAF             1557         SFEN  R3,(R5)               COMP LAST BYTE TO READ BUFFER
002F6C  6800 2EF8        1558         BE    T07O                  TOO MUCH READ ON FRACT SECT READ OP
002F70  6D08 38C8        1559         MVW   RDDCB+14,R5           ADDR OF RD BUFFER
002F74  72A8             1560         AW    R2,R5                 FRAC CTN ADDED TO ADDR OF RD BUF
002F76  71E4             1561         MVW   R1,R7                 RESIDUAL BYTE COUNT
002F78  4324 FFFF        1562  T7AA   MVWI  X'FFFF',R3           LOAD 'FFFF' OR 'AAAA'
002F7C  2BAE             1563         SFNEN R3,(R5)               COMPARE FOR 'FF'
002F7E  6801 2EF8        1564         BNE   T07O                  TOO MUCH READ
002F82  4029 38FE 0002   1565  T07M   AWI   2,JOE                 INCREMENT TABLE ADDRESS
002F88  4CDD             1566  T07P   TBTV  (R4,B61)              TEST AND INVERT BIT
002F8A  1208             1567         JON   T07AR                 BCH IF ON
002F9C  402E 38FE 0002   1568         SWI   2,JOE                 INCREMENT TABLE ADDRESS-2ND COUNT
002F92  8838 38FE 38FC   1569         MVW   JOE*,BCNT             SETUP FULL BYTE COUNT-2ND COUNT
002F98  6802 2E64        1570         B     T07S                  READ FULL SECTOR
002F9C  4020 39FA 0001   1571  T07RR  MVWI  1,CEDAT2              RESET DIAG MODE
002FA2  6E03 39A2        1572         BAL   CEOP2,R6              *
002FA6  2FE2             1573         DC    A(T07ER)              *
002FA8  4724 3C44        1574         MVA   IOBLK,R7              DEVICE RESET
002FAC  6008             1575         SVC   RESET                 *
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
002FAE  403F 38FE FFFF   1576         CWI   -1,JOE*               CHECK FOR END OF TABLE
002FB4  6801 2DC2        1577         BNE   T07T
002FB8  6802 0000        1578  T07Y   B     *-*                   RETURN ADDRESS
002FBC  6918 38FE        1579  T07L   MVW   JOE*,R1               LOAD FULL SECTOR BYTE COUNT-2ND CTN
002FC0  402E 38FE 0002   1580         SWI   2,JOE                 ADJ TABLE POINTER-1ST COUNT
002FC6  6A18 38FE        1581         MVW   JOE*,R2               LOAD FRACTIONAL SECT BYTE COUNT-1ST
002FCA  4029 38FE 0004   1582         AWI   4,JOE                 ADJ TABLE POINTER-NEXT 1ST OR END(P)
002FD0  722A             1583         SW    R2,R1                 SUB BYTE COUNTS
002FD2  6800 2FDA        1584         BZ    T07V                  NO FRACTION SECT -- COMP ERROR
002FD6  71E5             1585         CW    R1,R7                 TEST RESIDUAL BYTE COUNT IN R7
002FD8  10D7             1586         JE    T07P                  BCH IF OK
002FDA  402C 18C8 0008   1587  T07V   OWI   X'0008',TURESUL       COMPARE ERROR (TEST1)
002FE0  509D             1588         J     T07CE
                         1589  *
                         1590  *
002FE2  CA25 18C8        1591  T07ER  MVWZ  TURESUL,R2             CLEAR RESULTS WORD
002FE6  CA25 18CA        1592         MVWZ  TURESUL+2,R2          CLEAR RESULTS WORD 2
002FEA  CA25 18CC        1593         MVWZ  TURESUL+4,R2          CLEAR RESULTS WORD 3
002FEE  CA25 18CE        1594         MVWZ  TURESUL+6,R2          CLEAR RESULTS WORD 4
002FF2  CA25 18D0        1595         MVWZ  TURESUL+8,R2          CLEAR RESULTS WORD 5
002FF6  4224 18C8        1596         MVA   TURESUL,R2            ADDRESS OF RESULTS
002FFA  4A4B             1597         TBTS  (R2,11)               OIO CC ERROR
002FFC  508F             1598         J     T07CE                 EXIT
                         1599  *
002FFE  0000             1600  TEST   DC    A(*-*)                TEST NUMBER FROM MDI
                         1601  *
                         1602  ********************************************************************
                         1603  *
                         1604  *     WRITE PARAMETER TABLE
                         1605  *
                         1606  ********************************************************************
                         1607  *
003000  0002             1608  T07W   DC    F'2'                  BYTE COUNT
003002  0100             1609         DC    F'256'                FULL SECTOR BYTE COUNT
003004  0064             1610         DC    F'100'                BYTE COUNT
003006  0100             1611         DC    F'256'                FULL SECTOR BYTE COUNT
003008  00FE             1612         DC    F'254'                BYTE COUNT
00300A  0100             1613         DC    F'256'                FULL SECTOR BYTE COUNT
00300C  0100             1614         DC    F'256'                BYTE COUNT
00300E  0100             1615         DC    F'256'                FULL SECTOR BYTE COUNT
003010  0102             1616         DC    F'258'                BYTE COUNT
003012  0200             1617         DC    F'512'                FULL SECTOR BYTE COUNT
003014  012C             1618         DC    F'300'                BYTE COUNT
003016  0200             1619         DC    F'512'                FULL SECTOR BYTE COUNT
003018  01FE             1620         DC    F'510'                BYTE COUNT
00301A  0200             1621         DC    F'512'                FULL SECTOR BYTE COUNT
00301C  0200             1622         DC    F'512'                BYTE COUNT
00301E  0200             1623         DC    F'512'                FULL SECTOR BYTE COUNT
003020  03FE             1624         DC    F'1022'               BYTE COUNT
003022  0400             1625         DC    F'1024'               FULL SECTOR BYTE COUNT
003024  0400             1626  T07WW  DC    F'1024'               BYTE COUNT
003026  0400             1627         DC    F'1024'               FULL SECTOR BYTE COUNT
003028  FFFF             1628         DC    X'FFFF'               END OF PAP LIST
                         1629  *
00302A                   1630  WRBUF  EQU   *                     WRITE DATA BUFFER
                         1631         ORG   WRBUF+X'0400'         *
00342A                   1632  RDBUF  EQU   *                     READ DATA BUFFER
                         1633         ORG   RDBUF+X'0400'         *
                         1634  *
                         1636         COPY  T78DCB                01DEC76
                         1637  ** (T78DCB)
                         1638  ************************************************12/1/76***********
                         1639  *
                         1640  *     DCB TABLES AND DC'S
                         1641  *
                         1642  ********************************************************************
                         1643  *
                         1644  ***** DIAGNOSTIC DCB   ********
                         1645  *
003800  2008             1646  DGDCB  DC    X'2008'               DIAGNOSTIC DCB
003802  0000             1647         DC    X'0000'               NOT USED
003804  0000             1648         DC    A(*-*)                0-7 = PHYSICAL SECTOR # MINUS ONE
003830  0000             1649         DC    X'0000'               NOT USED
003832  0000             1650         DC    X'0000'               NOT USED
003834  0000             1651         DC    A(*-*)                CHAINING ADDRESS
003836  0100             1652         DC    X'0100'               BYTE COUNT
003838  0000             1653         DC    A(*-*)                DATA ADDRESS
                         1654  *
                         1655  *
                         1656  ***** RECALIBRATE DCB  ********
                         1657  *
00383A  0007             1658  CLDCB  DC    X'0007'               RECALIBRATE DCB
00383C  00000000000000000 1659         DC    7A(*-*)
                         1660  *
                         1661  ***** WRITE SECTOR ID  **
                         1662  *
00384A  0002             1663  WSDCB  DC    X'0002'               WRITE SECTOR ID CONTROL WORD
00384C  0000             1664         DC    X'0000'               NOT USED
00384E  0000             1665         DC    A(*-*)                0-7 = PHYSICAL SECTOR # MINUS ONE
003850  0000             1666         DC    A(*-*)                NOT USED
003852  0000             1667         DC    A(*-*)                NOT USED
003854  0000             1668         DC    A(*-*)                CHAIN ADDRESS
003856  0006             1669         DC    X'0006'               BYTE COUNT
003858  3910             1670         DC    A(WRSID)              ADDR OF SECTOP ID DATA
                         1671  ***** READ SECTOR ID DCB  *******
                         1672  *
00385A  200A             1673  RSDCB  DC    X'200A'               READ SECTOR ID
00385C  0000             1674         DC    X'0000'               NOT USED
00385E  0000             1675         DC    A(*-*)                0-7 = PHYSICAL SECTOR # MINUS ONE
003860  0000             1676         DC    X'0000'               NOT USED
003862  0000             1677         DC    X'0000'               NOT USED
003864  0000             1678         DC    X'0000'               CHAIN ADDRESS
003866  0006             1679         DC    X'0006'               BYTE COUNT FOR READ SECTOR ID
003868  2660             1680         DC    A(SCTID)              SECTOR ID DATA ADDRESS
                         1681  *
                         1682  *
                         1683  ***** READ SECTOR ID IMMEDIATE DCB  *******
                         1684  *
00386A  200E             1685  RIDCB  DC    X'200E'               READ SECTOR ID
00386C  0000             1686         DC    X'0000'               NOT USED
00386E  0000             1687         DC    X'0000'               NOT USED
003870  0000             1688         DC    X'0000'               NOT USED
003872  0000             1689         DC    X'0000'               NOT USED
003874  0000             1690         DC    A(*-*)                CHAIN ADDRESS
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 LOCTR  OBJECT TEXT   STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
003876  0006         1691        DC    X'0006'              PYTE COUNT FOR READ SECTOR ID
003878  2660         1692        DC    A(SCTID)             SECTOR ID DATA ADDRESS
                     1693 *
                     1694 *
                     1695 ***** SEEK DCB  ********
                     1696 *
00387A  0005         1697 SKDCB  DC    X'0005'              SEEK DCB
00387C  0000         1698        DC    X'0000'              BIT 0-3=0;BIT4=DIRECTION;5-15=DIFFER
00387E  0000         1699        DC    F'0'
003880  0000         1700        DC    F'0'
003882  0000         1701        DC    X'0000'              0-7 = HEAD;8-15 NOT USED
003884  0000         1702        DC    A(*-*)               CHAIN ADDRESS
003886  0000         1703        DC    F'0'                 NOT USED
003888  0000         1704        DC    F'0'                 NOT USED
                     1705 *
                     1706 ***** CYCLE STEAL STATUS DCB  ********
                     1707 *
00388A  2000         1708 CSDCB  DC    X'2000'              CONTROL WORD
00388C  0000         1709        DC    F'0'                 NOT USED
00388E  0000         1710        DC    F'0'                 NOT USED
003890  0000         1711        DC    F'0'                 NOT USED
003892  0000         1712        DC    F'0'                 NOT USED
003894  0000         1713        DC    F'0'                 NOT USED
003896  0008         1714        DC    X'0008'              4 WORDS OF STATS
003898  2678         1715        DC    A(CSBUF)             ADDRESS OF CYCLE STEAL STATUS DATA
                     1716 *
                     1717 ***** WRITE DCB  **********
                     1718 *
00389A  0001         1719 WRDCB  DC    X'0001'              WRITE CONTROL WORD
00389C  0000         1720        DC    F'0'                 NOT USED
00389E  0000         1721        DC    X'0000'              0-7=0;8-15 = FIAG BYTE
0038A0  0000         1722        DC    X'0000'              SERCH ARGUMENT CYLINDER
0038A2  0000         1723        DC    X'0000'              SEARCH ARGUMENT HEAD-SECTOR
0038A4  0000         1724        DC    A(*-*)               CHAIN ADDRESS
0038A6  0000         1725        DC    F'0'                 BYTE COUNT
0038A8  0000         1726        DC    A(*-*)               WPITE DATA ADDRESS
                     1727 *
                     1728 ***** VERIFY DCB   *******
                     1729 *
0038AA  200C         1730 VRDCB  DC    X'200C'              CONTPOL WORD
0038AC  0000         1731        DC    F'0'                 NOT USED
0038AE  0000         1732        DC    X'0000'              0-7=0;8-15 = FIAG BYTE
0038B0  0000         1733        DC    X'0000'              CYLINDER
0038B2  0000         1734        DC    X'0000'              HEAD - SECTOR
0038B4  0000         1735        DC    A(*-*)               CHAIN ADDRESS
0038B6  0000         1736        DC    F'0'                 BYTE COUNT
0038B8  0000         1737        DC    A(*-*)               VERIFY DATA ADDRESS
                     1738 *
                     1739 ***** READ DCB   *******
                     1740 *
0038BA  2009         1741 RDDCB  DC    X'2009'              READ DCB CONTROL WORD
0038BC  0000         1742        DC    F'0'                 NOT USED
0038BE  0000         1743        DC    X'0000'              0-7=0,8-15 = FLAG BYTE
0038C0  0000         1744        DC    X'0000'              SEARCH ARGUMENT CYLINDER
0038C2  0101         1745        DC    X'0101'              SEARCH ARGUMENT H-R
0038C4  0000         1746        DC    A(*-*)               CHAIN ADDRESS
0038C6  0000         1747        DC    F'0'                 BYTE COUNT
0038C8  0000         1748        DC    A(*-*)               READ DATA ADDRESS
                     1749 *
                     1750 ****  WRITE SECTOR ID SKEWED    ****
                     1751 *
0038CA  0003         1752 WKDCB  DC    X'0003'              CONTROL WORD
0038CC  0000         1753        DC    X'0000'              NOT USED
0038CE  0000         1754        DC    A(*-*)               0-7 = PHYSICAL SECTOR # MINUS ONE
0038D0  0000         1755        DC    A(*-*)               NOT USED
0038D2  0000         1756        DC    A(*-*)               NOT USED
0038D4  0000         1757        DC    A(*-*)               CHAIN ADDRESS
0038D6  0006         1758        DC    X'0006'              BYTE COUNT
0038D8  3910         1759        DC    A(WRSID)             ADDR OF SECTOR ID DATA
                     1760 *
                     1761 ****  READ SECTOR ID SKEWED     ****
                     1762 *
0038DA  200B         1763 RKDCB  DC    X'200B'              CONTROL WORD
0038DC  0000         1764        DC    X'0000'              NOT USED
0038DE  0000         1765        DC    X'0000'              0-7 = PHYSICAL SECTOR # MINUS ONE
0038E0  0000         1766        DC    X'0000'              NOT USED
0038E2  0000         1767        DC    X'0000'              NOT USED
0038E4  0000         1768        DC    A(*-*)               CHAIN ADDRESS
0038E6  0006         1769        DC    X'0006'              BYTE COUNT FOR READ SECTOR ID
0038E8  2660         1770        DC    A(SCTID)             SECTOR ID DATA ADDRESS
                     1771 *
                     1772 *     CONSTANTS AND DEFINED STORAGE  LOCATIONS
0038EA  0000         1773 ZERO0  DC    X'0000'              CONSTANT ZERO
0038EC  0001         1774 ONE1   DC    X'0001'              CONSTANT ONE
0038EE  00000000     1775 TIMEOUT_DC   2A(*-*)              TIMEOUT COUNTER
0038F2  0000         1776 TONE   DC    X'0000'              CONSTANT FOR ADD DOUBLE
0038F4  0001         1777        DC    X'0001'              *
0038F6  0500         1778 COUNT  DC    F'1280'              BYTE COUNT (1280)
0038F8  0000         1779 DIFF   DC    A(*-*)               SEEK DIFFERENCE
0038FA  0000         1780 XXX    DC    A(*-*)               WORK WORD INT TO ZERO
0038FC  0000         1781 BCNT   DC    X'0000'              BYTE COUNT
0038FE  0000         1782 JOE    DC    A(*-*)               WRITE PARAMETER POINTER
003900  0000         1783 JOE1   DC    A(*-*)               SAVE LOC FOR PARM LIST ADDRESS
003902  DEB6         1784 WDATA  DC    X'DEB6'              WPITE DATA
003904  6BED         1785        DC    X'6BED'              *
003906  0000         1786 TABLE  DC    A(*-*)               ADDR OF WFT PAR LIST FOR FORMAT RTNS
003908  0000         1787 LGSEC  DC    X'0000'              LOGICAL SECTOR #
00390A  0000         1788 PHYSC  DC    X'0000'              CONVERTED PHYSICAL SEC #
00390C  1D00         1789 CB29   DC    X'1D00'              CONSTANT BYTE 29
00390E  3B00         1790 FIVE9  DC    X'3B00'              CONSTANT BYTE 59
003910  0000         1791 WRSID  DC    X'0000'              FLAG,CYLINDER (WRT SECTOR ID DATA)
003912  0000         1792        DC    X'0000'              CYLINDER,HEAD
003914  0000         1793        DC    X'0000'              LOG SECTOR,NOT USED
003916  00FF         1794 CDAT   DC    X'00FF'              INVALID DATA CONSTANT
003918  FF34         1795 WSIDT  DC    X'FF34'              WRITE SECTOR ID TEST DATA
00391A  5678         1796        DC    X'5678'              *
00391C  9A00         1797        DC    X'9A00'              *
00391E  0000         1798 SCTST  DC    X'0000'              READ SECTOR ID TEST DATA BUFFER
003920  0000         1799        DC    X'0000'              *
003922  0000         1800        DC    X'0000'              *
003924  0000         1801 CTR01  DC    X'0000'              COUNTER
003926  0000         1802 CTR02  DC    X'0000'              COUNTER
003928  0000         1803 CTR03  DC    X'0000'              COUNTER
00392A  0000         1804 CTR04  DC    X'0000'              COUNTER
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 LOCTR  OBJECT TEXT   STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
00392C  0000         1805 CTR05  DC    X'0000'              COUNTER
00392E  0000         1806 CTR06  DC    X'0000'              COUNTER
003930  0000         1807 SAVR3  DC    X'0000'              SAVE AREA
003932  0000         1808 SAVR5  DC    X'0000'              SAVE AREA
003934  0000         1809 WR2    DC    X'0000'
003936  0000         1810 SVSEK  DC    X'0000'
003938  0000         1811 LCT    DC    X'0000'
00393A  0000         1812 T56AA  DC    X'0000'
00393C  0000         1813 T56BB  DC    X'0000'
00393E  0000         1814 T56CC  DC    X'0000'
003940  0000         1815 T56DD  DC    X'0000'
003942  0000         1816 T56EE  DC    X'0000'
003944  0000         1817 T56FF  DC    X'0000'
003946  0000         1818 T56GG  DC    X'0000'
003948  0000         1819 T86AA  DC    X'0000'
00394A  0000         1820 T86BB  DC    X'0000'
00394C  0000         1821 T86CC  DC    X'0000'
00394E  0000         1822 T86DD  DC    X'0000'
003950  0000         1823 T86EE  DC    X'0000'
003952  0000         1824 T86FF  DC    X'0000'
003954  0000         1825 T86GG  DC    X'0000'
003956  0000         1826 T41D   DC    X'0000'
003958  0000         1827 T41LP  DC    X'0000'
00395A  0000         1828 WRLCT  DC    X'0000'
00395C  0000         1829 CYLOC  DC    X'0000'
00395E  0000         1830 PASS1  DC    A(*-*)
003960  0000         1831 HEAD0  DC    A(*-*)
003962  0000         1832 HEAD1  DC    A(*-*)
003964  0000         1833 GDSE0  DC    A(*-*)
003966  0000         1834 GDSE1  DC    A(*-*)
003968  0000         1835 ER00   DC    A(*-*)
00396A  0000         1836 ER01   DC    A(*-*)
00396C  0000         1837 HDOSV  DC    A(*-*)
00396E  0000         1838 HD1SV  DC    A(*-*)
003970  0000         1839 ERDSV  DC    A(*-*)
003972  0000         1840 ER1SV  DC    A(*-*)
003974  0000         1841 PATTR  DC    A(*-*)
003976  0000         1842 CECYL  DC    A(*-*)
003978  0000         1843 STATS  DC    A(*-*)
                     1844 *
                     1846        COPY  T78DPCIO             01DEC76
                     1847 ** (T78DPCIO)
                     1848 *                                                    2/07/77
                     1849 *     EXECUTE DPC INPUT/OUTPUT COMMANDS
                     1850 *     THIS ROUTINE HAS THE FOLLOWING ENTRIFS:
                     1851 *
                     1852 *  1  BAL   CEOP1,R6             CE DIAGNOSTIC OP1(TURN ON DIAG MODE)
                     1853 *
                     1854 *  2  BAL   CEOP2,R6             WRITE DIAG CLOCK STEP DATA
                     1855 *
                     1856 *  3  BAL   SENS0,R6             CE READ SENSE WORD ZERO
                     1857 *
                     1858 *  4  BAL   SENS1,R6             CE READ SENSE WOPD ONE
                     1859 *
                     1860 *  5  BAL   WRAP,R6              READ DIAGNOSTIC WRAP
                     1861 *
                     1862 *     BXS   (R6,2)               RETURN
                     1863 *
                     1864 ********************************************************************
                     1865 *
                     1866 *     CE DIAGNOSTIC OP2 DATA WOPD  (CLOCK STEP)
                     1867 *
                     1868 *     BIT 00  - SET READY
                     1869 *     BIT 01  - RESET READY
                     1870 *     BIT 02  - SET WRITE CLOCK
                     1871 *     BIT 03  - SET PEAD CLOCK
                     1872 *     BIT 04  - INDEX PULSE
                     1873 *     BIT 05  - SECTOR PULSE
                     1874 *     BIT 06  - STANDARD READ DATA
                     1875 *     BIT 07  - SPEED PULSE
                     1876 *     BIT 08  - BEHIND HOME
                     1877 *     BIT 09  - SET SEEK COMPLETE
                     1878 *     BIT 10  - RESET SEEK COMPLETE
                     1879 *     BIT 11  - PLO OUT OF SYNC
                     1880 *     BIT 12  - PST RD/WRT CLOCK
                     1881 *     BIT 13  -
                     1882 *     BIT 14  -
                     1883 *     BIT 15  - RESET DIAGNOSTIC MODE
                     1884 *
                     1885 ********************************************************************
                     1886 *
                     1887 *
00397A  6E0D 265E    1888 WRAP   MVW   R6,LSTIO             SAVE ADDRESS OF LAST IO
00397E  8028 19D0 39FD           1889        MVB   DEVADD,IDCBRAP+1     LOAD DEVICE ADDRESS IN IDCB
003984  680C 39FC    1890        IO    IDCBRAP              READ SENSE WORD 1
003988  6F05 39DE    1891        BNCC  7,CCERR              CHECK COND CODE
00398C  5601         1892        BXS   (R6,2)               RETURN TO CALLER
                     1893 *
00398E  6E0D 265E    1894 CEOP1  MVW   R6,LSTIO             SAVE ADDRESS OF LAST IO
003992  8028 19D0 39F5           1895        MVB   DEVADD,IDCBCE1+1     LOAD DEVICE ADDRESS IN IDCB
003998  680C 39F4    1896        IO    IDCBCE1              SET DIAGNOSTIC MODE
00399C  6F05 39DE    1897        BNCC  7,CCERR              CHECK COND CODE
0039A0  5601         1898        BXS   (R6,2)               RETURN TO CALLER
                     1899 *
0039A2  6E0D 265E    1900 CEOP2  MVW   R6,LSTIO             SAVE ADDRESS OF LAST IO
0039A6  8028 19D0 39F9           1901        MVB   DEVADD,IDCBCE2+1     LOAD DEVICE ADDRESS IN IDCB
0039AC  680C 39F8    1902        IO    IDCBCE2              WRITE DIAG CLOCK STEP
0039B0  6F05 39DE    1903        BNCC  7,CCERR              CHECK COND CODE
0039B4  5601         1904        BXS   (R6,2)               RETURN TO CALLER
                     1905 *
                     1906 *
0039B6  6E0D 265E    1907 SENS1  MVW   R6,LSTIO             SAVE ADDRESS OF LAST IO
0039BA  8028 19D0 39F1           1908        MVB   DEVADD,IDCB1+1       LOAD DEVICE ADDRESS IN IDCB
0039C0  680C 39F0    1909        IO    IDCB1                READ SENSE WORD 2
0039C4  6F05 39DE    1910        BNCC  7,CCERR              CHECK COND CODE
0039C8  5601         1911        BXS   (R6,2)               RETURN TO CALLER
                     1912 *
0039CA  6E0D 265E    1913 SENS0  MVW   R6,LSTIO             SAVE ADDRESS OF LAST IO
0039CE  8028 19D0 39ED           1914        MVB   DEVADD,IDCB0+1       LOAD DEVICE ADDRESS IN IDCB
0039D4  680C 39EC    1915        IO    IDCB0                READ SENSE WORD 1
0039D8  6F05 39DE    1916        BNCC  7,CCERR              CHECK COND CODE
0039DC  5601         1917        BXS   (R6,2)               RETURN TO CALLER
                     1918 *
0039DE  706E         1919 CCERR  DC    X'706E'              COPY STATUS ANY LEVEL INTO R3
```

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 LOCTR   OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                          1920         SRL   13,R3                 POSITION CC CODE TO BITS 13-15
                          1921         MVB   R3,SIOIN              * PUT IN LOG AREA
                          1922         B     (R6)*                 RETURN TO USER
                          1923 *
0039E0  336A              1924 IORST   DC    X'6F05'               RESET IO
0039E2  C328 265A         1925 IDCB0   DC    X'2205'               SENSE WORD ZERO
0039E6  68D2 0000         1926 RDATA0  DC    A(*-*)                DATA WORD
                          1927 IDCB1   DC    X'2105'               SENSE WORD ONE
0039EA  6F05              1928 RDATA   DC    A(*-*)
0039EC  2205              1929 IDCBCE1 DC    X'4005'               CE DIAG OP1
0039EE  0000              1930 CEDAT   DC    A(*-*)                SENSE DATA
0039F0  2105              1931 IDCBCE2 DC    X'4105'               CE DIAG OP2
0039F2  0000              1932 CEDAT2  DC    A(*-*)                SENSE DATA
0039F4  4005              1933 IDCBRAP DC    X'2F05'               READ DIAG WRAP
0039F6  0000              1934 RAPDAT  DC    A(*-*)                SENSE DATA
0039F8  4105              1935 CPUID   EQU   X'0232'               CPU ID
0039FA  0000              1936 *
0039FC  2F05              1938         COPY  T78IO                 01DEC76
0039FE  0000              1939 ** (T78IO)
000232                    1940 ****************************12/01/76**********************************
                          1941 *
                          1942 *  SUBROUTINE
                          1943 *
                          1944 *     PURPOSE
                          1945 *
                          1946 *          COMPARE READ SECTOR ID DATA TO WRITE SECTOR ID DATA
                          1947 *          NORMAL AND TEST DATA.
                          1948 *
                          1949 *     CALLING SEQUENCE
                          1950 *
                          1951 *          BAL  CMPRW,R6          (NORMAL)
                          1952 *          BAL  CMPRT,R6          (TEST)
                          1953 *
                          1954 *     RETURN
                          1955 *
                          1956 *          BXS (R6,2)     -   NORMAL
                          1957 *
                          1958 *
                          1959 ********************************************************************
                          1960 *
003A00  4724 0005         1961 CMPRT MVWI  5,R7                   BYTE COUNT
003A04  4324 391F         1962       MVA   SCTST+1,R3             ADDR OF RD SECT ID DATA  (TEST)
003A08  4524 3918         1963       MVA   WSIDT,R5               ADDR OF WR SECT ID DATA  (TEST)
003A0C  5006              1964       J     TT4Y
003A0E  4724 0005         1965 CMPRW MVWI  5,R7                   COMPARE BYTE COUNT
003A12  4324 2661         1966       MVA   SCTID+1,R3             ADDR OF RD SEC ID DATA
003A16  4524 3910         1967       MVA   WRSID,R5               ADDR OF WR SEC ID DATA
003A1A  2BA6              1968 TT4Y  CFNEN  (R3),(R5)             COMPARE ID DATA
003A1C  68C0 0002         1969       BE    (R6,2)                 BCH IF WRITE ID DATA OK
003A20  68D2 0000         1970       B     (R6)*                  COMPARE ERROR
                          1971 *
                          1972 ********************************************************************
                          1973 *
                          1974 *  SUBROUTINE
                          1975 *
                          1976 *     PURPOSE
                          1977 *          CONVERT LOGICAL SECTOR NUMBER TO A PHYSICAL SECTOR MINUS
                          1978 *          ONE.
                          1979 *          SETUP LOGICAL SECTOR # IN LOCATION 'LGSEC'
                          1980 *          PHYSICAL SECTOR # WILL BE LOADED IN LOCATION 'PHYSC'
                          1981 *
                          1982 *     LOGICAL SECTOR# TO PHYSICAL SECTOR# CONVERSION
                          1983 * LOGICAL- X 00, 1E, 01, 1F, 02, 20, 03, 21, 04, 22, 05, 23, 06, 24,
                          1984 * PHYSICAL X 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D,
                          1985 *
                          1986 * LOGICAL-   07, 25, 08, 26, 09, 27, 0A, 28, 0B, 29, 0C, 2A, 0D, 2B,
                          1987 * PHYSICAL   0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B,
                          1988 *
                          1989 * LOGICAL-   0E, 2C, 0F, 2D, 10, 2E, 11, 2F, 12, 30, 13, 31, 14, 32,
                          1990 * PHYSICAL   1C, 1D, 1E, 1F, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29,
                          1991 *
                          1992 * LOGICAL-   15, 33, 16, 34, 17, 35, 18, 36, 19, 37, 1A, 38, 1B, 39,
                          1993 * PHYSICAL   2A, 2B, 2C, 2D, 2E, 2F, 30, 31, 32, 33, 34, 35, 36, 37,
                          1994 *
                          1995 * LOGICAL-   1C, 3A, 1D, 3B, X
                          1996 * PHYSICAL   38, 39, 3A, 3B, X
                          1997 *
                          1998 *
                          1999 *     CALLING SEQUENCE
                          2000 *
                          2001 *          BAL  CONVT,R6
                          2002 *
                          2003 *     RETURN
                          2004 *
                          2005 *          B    (TT304+2)
                          2006 *
                          2007 ********************************************************************
                          2008 *
003A24  6E0D 3A64         2009 CONVT MVW   R6,TT304+2             SETUP RETURN ADDR
003A28  802B 38EA 3909    2010       CB    ZERO0,LGSEC+1          CK FOR LOG # ZERO
003A2E  1C0D              2011       JE    TT303                  BCH IF LOG # IS ZERO
003A30  802B 3909 390C    2012       CB    LGSEC+1,CB29           COMP LOG TO 29
003A36  1C0D              2013       JGE   RTT01                  BCH IF LGSEC EQ OR LESS THAN CB29
003A38  4024 0002         2014       MVWI  2,R0                   SETUP MULTIPLIER
003A3C  E821 3909         2015       MB    LGSEC+1,R0             LOG SECTOR # TIMES 2
003A40  7802 003C         2016       SWI   60,R0                  LOG SEC TIMES 2 MINUS 60
003A44  C028 390B         2017       MVB   R0,PHYSC+1             PHYSICAL SECTOR NUMBER
003A48  500C              2018       J     TT304                  RETURN TO CALLER
003A4A  8028 390E 390B    2019 TT303 MVB   FIVE9,PHYSC+1          PHYSICAL SECTOR # 59
003A50  5008              2020       J     TT304                  RETURN TO CALLER
003A52  4024 0002         2021 RTT01 MVWI  2,R0                   LOAD MULTIPLIER
003A56  E821 3909         2022       MB    LGSEC+1,R0             LOG SECTOR # TIMES 2
003A5A  7802 0001         2023       SWI   1,R0                   SUBTRACT ONE
003A5E  C028 390B         2024       MVB   R0,PHYSC+1             LOAD PHYSICAL SECTOR #
003A62  6802 0000         2025 TT304 B     *-*                    RETURN TO CALLER
                          2026 *
                          2027 ********************************************************************
                          2028 *
                          2029 *  SUBROUTINE
                          2030 *
                          2031 *     PURPOSE
                          2032 *
                          2033 *          LOAD WRITE SECTOR ID DATA BUFFER FROM RD SEC ID BUFFER
```



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 LOCTR   OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                          2035 *     CALLING SEQUENCE
                          2036 *
                          2037 *          BAL  LWSID,P6
                          2038 *
                          2039 *     RETURN
                          2040 *
                          2041 *          BXS    (R6)
                          2042 *
                          2043 ********************************************************************
                          2044 *
                          2045 *
003A66  4724 0005         2046 LWSID MVWI  5,R7                   BYTE COUNT
003A6A  4324 2661         2047       MVA   SCTID+1,R3             ADDR OF RD SECT ID DATA BUFFER
003A6E  4524 3910         2048       MVA   WRSID,R5               ADDR OF WR SECT ID DATA BUFFER
003A72  2BA4              2049       MVFN  (R3),(R5)              MOV DATA FROM RD TO WR BUFFER
003A74  5600              2050       BXS   (R6)                   RETURN TO CALLER
                          2051 *
                          2053 *
                          2054 *     EXECUTF INPUT & OUTPUT COMMANDS
                          2055 *     TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
                          2056 *     EACH OF THESE ENTRIES SET R7 WITH THE ADRS OF ITS PARAMETER
                          2057 *     LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE
                          2058 *     SUPVR CALL.
                          2059 *
                          2060 *     THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:
                          2061 *
                          2062 *     1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP
                          2063 *     2. ERROR INTERRUPTS RECEIVED FROM SUPVR
                          2064 *
                          2065 *     THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                          2066 *
                          2067 *  1  BAL   $RKEW,R6               READ SECTOR ID SKEWED
                          2068 *
                          2069 *  2  BAL   $WKST,R6               WRITE SECTOR ID SKEWED  (TEST)
                          2070 *
                          2071 *  3  BAL   $RWST,R6               READ SECTOR ID SKEWED (TEST)
                          2072 *
                          2073 *  4  BAL   $RIDS,R6               READ SECTOR ID (TEST)
                          2074 *
                          2075 *  5  BAL   $WKEW,R6               WRITE SECTOR ID SKEWED
                          2076 *
                          2077 *  6  BAL   $WSEC,R6               WRITE SECTOR ID
                          2078 *
                          2079 *  7  BAL   $WSTS,R6               WRITE SECTOR ID (TEST
                          2080 *
                          2081 *  8  BAL   $DIAG,R6               DIAGNOSTIC
                          2082 *
                          2083 *  9  BAL   XIOCS,R6               CYCLE STEAL STATUS
                          2084 *
                          2085 *  10 BAL   $SEEK,R6               SEEK
                          2086 *
                          2087 *  11 BAL   $RECL,R6               RECALIBRATE
                          2088 *
                          2089 *  12 BAL   $RDID,R6               READ SECTOR ID
                          2090 *
                          2091 *  13 BAL   $RD,R6                 READ
                          2092 *
                          2093 *  14 BAL   $RDVY,R6               READ VERIFY
                          2094 *
                          2095 *  15 BAL   $WRT,R6                WRITE
                          2096 *
                          2097 *
003A76  4020 3C48 387A    2098 $SEEK MVA   SKDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
003A7C  5064              2099       J     XIO
                          2100 *
003A7E  4020 3C48 383A    2101 $RECL MVA   CLDCB,IODCB            SET UP BLOCK FOR SVC CALL
003A84  5060              2102       J     XIO
                          2103 *
003A86  4020 3C48 385A    2104 $RDID MVA   RSDCB,IODCB            SET UP BLOCK FOR SVC CALL
003A8C  0BFF              2105       MVBI  X'FF',R3               SET BUFFER TO F'S
003A8E  4524 2660         2106       MVA   SCTID,R5               SETUP READ SECTOR ID BUFFER ADRS
003A92  4724 0006         2107       MVWI  6,R7                   SETUP BUFFER LENGTH
003A96  2BAC              2108       FFN   R3,(R5)                INIT READ SECTOR ID BUFFER
003A98  4020 3868 2660    2109       MVA   SCTID,RSDCB+14         DATA ADDR
003A9E  5053              2110       J     XIO
                          2111 *
003AA0  0BFF              2112 $RD   MVBI  X'FF',R3               SETRD BUFFER TO ALL F'S
003AA2  6D08 38C8         2113       MVW   PDDCB+14,R5            SET UP READ BUFFER ADRS
003AA6  4724 0100         2114       MVWI  X'0100',R7             SET UP BUFFER LENGTH
003AAA  2BAC              2115       FFN   R3,(R5)                CLEAR READ BUFFER
003AAC  4020 3C48 38BA    2116 $RD$  MVA   RDDCB,IODCB            SET UP BLOCK FOR SVC CALL
003AB2  5049              2117       J     XIO
                          2118 *
003AB4  4020 3C48 38AA    2119 $RDVY MVA   VRDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
003ABA  5045              2120       J     XIO
                          2121 *
003ABC  4020 3C48 389A    2122 $WRT  MVA   WRDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
003AC2  5041              2123       J     XIO
                          2124 *
003AC4  4020 3C48 38DA    2125 $RKEW MVA   RKDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
003ACA  0BFF              2126       MVBI  X'FF',R3               SET BUFFER TO F'S
003ACC  4524 2660         2127       MVA   SCTID,R5               SETUP READ SECTOR ID BUFFER ADRS
003AD0  4724 0006         2128       MVWI  6,R7                   SETUP BUFFER LENGTH
003AD4  2BAC              2129       FFN   R3,(R5)                INIT READ SECTOR ID BUFFER
003AD6  4020 38E8 2660    2130       MVA   SCTID,RKDCB+14          DATA ADDR
003ADC  5034              2131       J     XIO
                          2132 *
003ADE  4020 3C48 38CA    2133 $WKST MVA   WKDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
003AE4  4020 38D8 3918    2134       MVA   WSIDT,WKDCB+14         DATA ADDR
003AEA  502D              2135       J     XIO
                          2136 *
003AEC  4020 3C48 38DA    2137 $RWST MVA   RKDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
003AF2  4020 38E8 391E    2138       MVA   SCTST,RKDCB+14         DATA ADDR
003AF8  5026              2139       J     XIO
                          2140 *
003AFA  4020 3C48 385A    2141 $RIDS MVA   RSDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
003B00  0BFF              2142       MVBI  X'FF',R3               SET BUFFER TO F'S
003B02  4524 391E         2143       MVA   SCTST,R5               SETUP READ SECTOR ID BUFFER ADRS
003B06  4724 0006         2144       MVWI  6,R7                   SETUP BUFFER LENGTH
003B0A  2BAC              2145       FFN   R3,(R5)                INIT READ SECTOR ID BUFFER
003B0C  4020 3868 391E    2146       MVA   SCTST,RSDCB+14         DATA ADDR
003B12  5019              2147       J     XIO
                          2148 *
003B14  4020 3C48 38CA    2149 $WKEW MVA   WKDCB,IODCB             SET UP CONTROL BLOCK FOR SVC CALL
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976

003B1A  4020 38D8 3910  2150          MVA   WRSID,WKDCB+14       DATA ADDR
003B20  5012            2151          J     XIO
                        2152  *
003B22  4020 3C48 384A  2153  $WSEC   MVA   WSDCP,IODCB          SET UP CONTROL BLOCK FOR SVC CALL
003B28  4020 3858 3910  2154          MVA   WRSID,WSDCB+14       DATA ADDR
003B2E  500B            2155          J     XIO
003B30  4020 3C48 384A  2156  $WSTS   MVA   WSDCB,IODCB          SET UP CONTROL BLOCK FOR SVC CALL
003B36  4020 3858 3918  2157          MVA   WSIDT,WSDCB+14       DATA ADDR
003B3C  5004            2158          J     XIO
                        2159  *
003B3E  4020 3C48 382A  2160  $DIAG   MVA   DGDCB,IODCB          SET UP CONTROL BLOCK FOR SVC CALL
003B44  5000            2161          J     XIO
                        2162          XEQIT
                        2163+*****************************************************************29JUL76**
                        2164+*
                        2165+* SUB-ROUTINE
                        2166+*
                        2167+*      EXECUTE INPUT AND OUTPUT COMMANDS
                        2168+*
                        2169+* PURPOSE
                        2170+*
                        2171+*      TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
                        2172+*      THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
                        2173+*
                        2174+*        1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
                        2175+*           THE I/O COMMAND.
                        2176+*        2. SAVES THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
                        2177+*           ISSUED BY THIS SUBROUTINE.
                        2178+*        3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
                        2179+*           START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
                        2180+*        4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
                        2181+*           SINCE THE LAST EXPECTED INTERRUPT. IF AN INTERRUPT IS FOUND,
                        2182+*           MYSTERY INTERRUPT (MI)  CONTROL BIT IS SET.
                        2183+*        5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7, SET THE
                        2184+*           EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC START'.
                        2185+*        6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
                        2186+*           STARTS TO DETERMINE A LOST INTERRUPT.
                        2187+*        7. ACCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
                        2188+*           WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
                        2189+*        8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
                        2190+*        9. CHECK IF AN ERROR WAS EXPECTED AND IF THERE WAS RETURN.
                        2191+*       10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
                        2192+*       11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
                        2193+*       12. CHECK IF A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
                        2194+*           ISSUED BY THIS SUBROUTINE.
                        2195+*       13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
                        2196+*           CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
                        2197+*           COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
                        2198+*
                        2199+* CALLING SEQUENCE
                        2200+*
                        2201+*      THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                        2202+*
                        2203+* --> BAL   XIO         OR        XEQ ANY CYCLE STEAL COMMAND, MOD=0
                        2204+* --> BAL   XIO1                  MOD PARM PRELOADED IN 'IOMOD'
                        2205+* --> BAL   XIOCS,R6    OR        XEQ START CYCLE STEAL STATUS, MOD=F
                        2206+* --> BAL   XIOCS-4,R6            AUTO CS STATUS (FOLLOWING OTHER XIO
                        2207+*                                 AND DOES NOT POST INTERRUPT STATUS)
                        2208+*
                        2209+* RETURN CONTROL
                        2210+*
                        2211+*      BXS   (R6,2)              RETURN TO USER NO ERROR
                        2212+* OR   B     (R6)*               RETURN AND RETRY ON ERROR
                        2213+*****************************************************************
003B46  CB25 3C4A       2215+XIO    MVWZ  IOMOD,R3            SET MOF OF 0 FOR CYCLE STEAL OP
003B4A  500A            2216+       J     XIO1                CS I/O'S ARE NOT RETRIED
                        2217+*
003B4C  4CAA            2218+       TBTR  (R4,CE)             RESET CS STATUS INTER ERROR INDICAT.
003B4E  4C68            2219+       TBTS  (R4,CS)             SET 'CYCLE STEAL STATUS' IN PROGRESS
003B50  4020 3C48 388A  2220+XIOCS  MVA   CSDCB,IODCB         SET UP CONTROL BLOCK FOR SVC CALL
003B56  4020 3C4A 000F  2221+       MVWI  X'000F',IOMOD       SET CYCLE STEAL MODIFIER
003B5C  4C28            2222+       TBT   (R4,CS)             IS CS IN PROGRESS, ERROR CONDITION
003B5E  1213            2223+       JON   XIO2                * YES, BYPASS SAVING I/O ADRS
003B60  6E0D 265E       2224+XIO1   MVW   R6,LSTIO            SAVE IAR FOR RETRY IF REQUESTED
003B64  4324 2668       2225+       MVA   DCBUF,R3            SET UP TO ADRS TO MOVE DCB TABLE
003B68  6D08 3C48       2226+       MVW   IODCB,R5            * AND THE FROM ADRS, ALONG WITH
003B6C  0F10            2227+       MVBI  16,R7               * THE NUMBER OF MOVES
003B6E  2D64            2228+       MVFN  (R5),(R3)           MOVE 1 STATUS WORD AND ADJUST
003B70  0BFF            2229+       MVBI  255,R3              CLEAR CYCLE STATUS BUFFER
003B72  4524 2678       2230+       MVA   CSBUF,R5            *  TO ALL ONES  *
003B76  0F10            2231+       MVBI  16,R7               *
003B78  2BAC            2232+       FFN   R3,(R5)             *
003B7A  4020 265A 0708  2233+       MVWI  X'0708',$IOIN       OVERLAY OLD CONDITION CODES
003B80  CB25 265C       2234+       MVWZ  $ISB,R3             ZERO OUT OLD ISB VALUE
                        2235+*
003B84  4CA1            2236+       TBTR  (R4,ER)             RESET ANY ERROR BEFORE I/O COMMAND
003B86  4CA3            2237+XIO2   TBTR  (R4,IN)             CLEAR INTERRUPT RECEIVED CNTL BIT
003B88  4724 3C44       2238+       MVA   IOBLK,R7            SET UP CONTROL BLOCK FOR SUPVR
003B8C  4CA6            2239+       TBTR  (R4,$LE)            RESET LEVEL ERROR INDICATOR
003B8E  4C62            2240+       TBTS  (R4,XI)             SET EXPECTED INTR CONTROL BIT
003B90  600A            2241+       SVC   START               CALL SUPVR FOR I/O COMMAND
                        2242+*
003B92  4CA7            2243+       TBTR  (R4,NI)             IS AN INTR EXPECTED
003B94  6AC0 0002       2244+       BN    (R6,2)              * NO, RETURN TO USER
                        2245+*
                        2246+*           THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
                        2247+*
003B98  0D00            2248+       MVBI  X'00',R5            SET UP WORK REG FOR 'LOST INTR'
003B9A  4CA3            2249+XIO8   TBTR  (R4,IN)             HAS INTERRUPT BEEN RECEIVED
003B9C  1238            2250+       JON   XIOCK               * YES, CHECK IF ALL WAS SATISFACTORY
003B9E  6002            2251+       SVC   IDLE                ALLOW ANOTHER PROGRAM A CHANCE TO RUN
                        2252+*                                 SUPVR WILL RETURN HERE
003BA0  7DA1 0001       2253+       AWI   1,R5                ADVANCE TIME OUT COUNT
003BA4  18FA            2254+       JNZ   XIO8                BCH IF TIME OUT NOT REACHED
003BA6  4C61            2255+       TBTS  (R4,ER)             SET ON ERROR CONTROL BIT
003BA8  68D2 0000       2256+       B     (R6)*               ERR 'NO INTERRUPT'
                        2258+*****************************************************************03FEB76**
                        2259+*
                        2260+* SUBROUTINE
                        2261+*
                        2262+*      I/O EXECUTE ERROR HANDLING ROUTINE
                        2263+*
                        2264+* PURPOSE
                        2265+*
```



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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976

                        2266+*      THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
                        2267+*      PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
                        2268+*      SUPERVISOR AND IT WAS NOT ACCEPTED.
                        2269+*
                        2270+* CALLING SEQUENCE
                        2271+*
                        2272+*      SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
                        2273+*
                        2274+* RETURN CONTROL
                        2275+*
                        2276+*      B     (R6)*               RETURN TO USERS ERROR HANDLER
                        2277+*
                        2278+*****************************************************************
                        2279+*
                        2280+* CC         0= DEVICE NOT ATTACHED
                        2281+* FOR        1= DEVICE BUSY
                        2282+* I/O        2= DEVICE BUSY AFTER RESET
                        2283+*            3= COMMAND REJECT
                        2284+*            4= INTERVENTION REQUIRED
                        2285+*            5= INTERFACE DATA CHECK
                        2286+*            6= CONTROLLER BUSY
                        2287+*            7= I/O COMMAND ACCEPTED
                        2288+*
003BAC  706E            2289+XIOER  DC    X'706E'             COPY STATUS ANY LEVEL INTO R3
003BAE  336A            2290+       SRL   13,R3               POSITION CC CODE TO BITS 13-15
003BB0  C328 265A       2291+       MVB   R3,$IOIN            * PUT IN LOG OUT AREA
003BB4  68D2 0000       2292+       B     (R6)*               RETURN TO USER ERROR HANDLER
                        2294+*****************************************************14APR76**IL
                        2295+*                                                              IL
                        2296+* SUB-ROUTINE                                                 IL
                        2297+*                                                              IL
                        2298+*      ERROR INTERRUPT           RUNS ON INTERRUPT LEVEL '$INTL'  IL
                        2299+*                                                              IL
                        2300+* PURPOSE                                                     IL
                        2301+*                                                              IL
                        2302+*      THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR  IL
                        2303+*      OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE    IL
                        2304+*      EXPECTED CODE.                                          IL
                        2305+*                                                              IL
                        2306+* CALLING SEQUENCE                                           IL
                        2307+*                                                              IL
                        2308+*      SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT     IL
                        2309+*                                                              IL
                        2310+* RETURN CONTROL                                             IL
                        2311+*                                                              IL
                        2312+*      SVC   EXIT                RETURN TO USER VIA SUPVR      IL
                        2313+*                                                              IL
                        2314+*****************************************************************IL
                        2315+*                                                              IL
                        2316+* CC         0= CONTROLLER END              ISB   0= ADD STATUS   IL
                        2317+* FOR        1= PROGRAM CONTROL INTERRUPT   BITS  1= COND REJECT  IL
                        2318+* INTR       2= EXCEPTION INTERRUPT         FOR   2= INCOR LENGTH IL
                        2319+*            3= DEVICE END INTERRUPT        INTR  3= DCB SPEC CK  IL
                        2320+*            4= ATTENTION INTERRUPT               4= STG DATA CK  IL
                        2321+*            5= ATTENTION / PROGRAM CNTL INTR     5= INV STG ADRS IL
                        2322+*            6= ATTENTION / EXCEPTION INTR        6= PROTECT CK   IL
                        2323+*            7= ATTENTION / DEVICE END INTR       7= I-FACE DATA  IL
                        2324+*                                                              IL
003BB8  706E            2325+INTER  DC    X'706E'             COPY STATUS ANY LEVEL INTO R3 IL
003BBA  336A            2326+       SRL   13,R3               POSITION INDICATORS IN R3     IL
003BBC  4424 2652       2327+       MVA   OPTN1,R4            SET UP BASE ADRS              IL
003BC0  4C28            2328+       TBT   (R4,CS)             IS CS IN PROGRESS             IL
003BC2  1006            2329+       JOFF  INTES               * NO                          IL
003BC4  4C6A            2330+       TBTS  (R4,CE)             TURN ON CYCLE STEAL INTER ERROR IL
003BC6  6F0D 2686       2331+       MVW   R7,CSTL8            SAVE CS ERR ISB VALUE, BITS 0-7 IL
003BCA  C328 2687       2332+       MVB   R3,CSTL8+1          * AND THE COND CODE           IL
003BCE  500A            2333+       J     INTR1               *                             IL
003BD0  4C24            2334+INTES  TBT   (R4,XE)             TEST  EXPECTED ATTEN / ERROR IND IL
003BD2  1002            2335+       JOFF  INTET               BCH IF NOT EXPECTED           IL
003BD4  F304            2336+       CBI   4,R3                IS THIS AN 'ATTENTION' INTR    IL
003BD6  1006            2337+       JE    INTR1               * YES, BCH TO END INTR SEQUENCE IL
003BD8  4C61            2338+INTET  TBTS  (R4,ER)             SET ERROR ON I/O COMMAND CNTL BIT IL
003BDA  5004            2339+       J     INTR1               *                             IL
                        2340+*                                THE ERROR INTERRUPT USES THE SAME  IL
                        2341+*                                ENDING SEQUENCE AS THE NORMAL INTP IL
                        2343+*****************************************************14APR76**IL
                        2344+*                                                              IL
                        2345+* SOUBROUTINE                                                 IL
                        2346+*                                                              IL
                        2347+*      OKAY  INTERRUPT           RUNS ON INTERRUPT LEVEL '$INTL'  IL
                        2348+*                                                              IL
                        2349+* PURPOSE                                                     IL
                        2350+*                                                              IL
                        2351+*      TO CHECK THE INTERRUPT AND CONTINUE THE TEST            IL
                        2352+*                                                              IL
                        2353+* CALLING SEQUENCE                                           IL
                        2354+*                                                              IL
                        2355+*      SUPERVISOR WILL ENTER HERE  IF INTR CC IS AS REQUESTED  IL
                        2356+*      THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE  IL
                        2357+*      AFTER THE SPECIAL PART HAS BEEN COMPLETED  AND THE      IL
                        2358+*      COMMON SECTION IS HANDLED HERE.                         IL
                        2359+*                                                              IL
                        2360+* RETURN CONTROL                                             IL
                        2361+*                                                              IL
                        2362+*      SVC   EXIT                RETURN TO USER VIA SUPVR      IL
                        2363+*                                                              IL
                        2364+*****************************************************************IL
003BDC  706E            2365+INTOK  DC    X'706E'             COPY STATUS ANY LEVEL INTO R3 IL
003BDE  336A            2366+       SRL   13,R3               POSITION INDICATORS IN R3     IL
003BE0  4424 2652       2367+       MVA   OPTN1,R4            SET UP BASE ADRS              IL
003BE4  4C63            2368+INTR1  TBTS  (R4,IN)             SET   INTERRUPT RECEIVED      IL
003BE6  4C28            2369+       TBT   (R4,CS)             IS 'CS IN PROGRESS' ON        IL
003BE8  1204            2370+       JON   INTR2               * YES, BCH AROUND UPDATE      IL
003BEA  C328 265B       2371+       MVB   R3,$IOIN+1          SAVE INTERRUPTING CC CODE     IL
003BEE  6F0D 265C       2372+       MVW   R7,$ISB             SAVE INTR STATUS AND DEV ADRS IL
003BF2                  2373+INTR2  EQU   *                   *                             IL
                        2374+*      CPCL  R5                  CURRENT LEVEL COPIED BY DCP   IL
003BF2  3521            2375+       SLL   4,R5                POSITION INTR LEVEL AND PUT   IL
003BF4  0501            2376+       ABI   1,R5                * IN 'I' BIT                  IL
003BF6  CD24 268E       2377+       CW    $INTL,R5            IS THIS THE CORRECT INTR LEVEL  IL
003BFA  1002            2378+       JE    INTR3               * YES, GO EXIT THIS LEVEL     IL
003BFC  4C66            2379+       TBTS  (R4,$LE)            SET INTR LEVEL ERROR CONTROL BIT IL
003BFE  4C61            2380+       TBTS  (R4,ER)             SET ERROR ON I/O COMMAND CNTL BIT IL
003C00  4CA2            2381+INTR3  TBTR  (R4,XI)             WAS INTERRUPT EXPECTED        IL
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

003C02  1204            2382+       JON   INTRX                 * YES, EXIT OFF THIS INTR LEVEL    IL
003C04  4C60            2383+       TBTS  (R4,MI)               * NO, SET MYSTERY INTR CONTROL BIT IL
003C06  F304            2384+       CBI   4,R3                  ATTENTION INTERRUPT?               IL
003C08  1001            2385+       JE    INTRX                 YES                                IL
003C0A  4C6C            2386+       TBTS  (R4,NG)               ERROR,UNEXPECTED INTERRUPT         IL
003C0C  6006            2387+INTRX SVC    EXIT                  EXIT THIS LEVEL VIA SUPVR TO PGM   IL
                        2388+*************************************************************03FEB76**
                        2390+*
                        2391+**     THIS IS THE CONTINUATION OF EXECUTF I/O AFTER THE INTERRUPT
                        2392+**     HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN
                        2393+**     RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.
                        2394+**
                        2395+**
003C0E  4CA4            2396+XIOCK TBTF   (R4,XE)               WAS AN ERROR EXPECTED
003C10  6AC0 0002       2397+       BN    (R6,2)                * YES, EXIT THIS ROUTINE
003C14  4CA8            2398+       TBTR  (R4,CS)               WAS AUTO CS IN PROGRESS
003C16  1006            2399+       JOFF  XIOCV                 * NO, CONTINUE CHECKING
003C18  4C2A            2400+       TBT   (R4,CE)               IS CS IN AN ERR CONDITION
003C1A  1002            2401+       JOFF  XIOCO                 * NO, BCH
003C1C  68D2 0000       2402+       B     (R6)*                 CS ERROR
003C20  4C69            2403+XIOCO TBTS   (R4,CSA)              TURN ON CS STATS AVAIL FLAG
003C22  5601            2404+       BXS   (R6,2)                GO TO USER
003C24  4C21            2405+XIOCV TBT    (R4,ER)               WAS FRROR INTR CONTROL BIT ON
003C26  100B            2406+       JOFF  XIOCX                 * NO, EXIT THIS ROUTINE
                        2407+**
003C28  C520 265B       2408+       MVB   $IOIN+1,R5            GET LAST INTR CC CODE
003C2C  F502            2409+       CBI   2,R5                  IS THIS CC=2
003C2E  68D1 0000       2410+       BNE   (R6)*                 * NO, BCH TO ERROR HANDLER
003C32  C520 265C       2411+XIOCQ MVB    $ISB,R5               GET LAST ISB DATA BYTE AND IF CS
003C36  6A00 3B4C       2412+       BN    XIOCS-4               * AVAILABLE, GO AND GET IT
003C3A  68D2 0000       2413+       B     (R6)*                 ERROR
003C3E  CB25 2656       2414+XIOCX MVWZ   OPTN3,R3              CLEAR OUT OPTION 3 CNTL BITS
003C42  5601            2415+       BXS   (R6,2)                RETURN TO USER VIA REG 6
                        2416+**
                        2417+**                 I/O   PARAMETER LIST
                        2418+**
003C44  19D0            2419+IOBLK DC     A(DEVADD)             ADRS OF DEVICE ADRS
003C46  3BAC            2420+       DC    A(XIOERR)             ERROR ROUTINE ADRS
003C48  0000            2421+IODCB DC     A(*-*)                DCB ADRS OR LEVEL & INTR
003C4A  0000            2422+IOMOD DC     A(*-*)                MODIFIER
003C4C  0000            2423+       DC    A(*-*)                ADRS OF LAST SVC CALL
003C4E  0000            2424+IORSP DC     A(*-*)                SECOND WORD OF LAST IDCB
                        2425+**
                        2426+**                 INTERRUPT CONTROL BLOCK FOR I/O COMMANDS
                        2427+**
003C50  19D0            2428+INTBL DC     A(DEVADD)             ADRS OF DEVICE ADRS
003C52  3BDC            2429+       DC    A(INTOK)              INTERRUPT OK RETURN ADRS
003C54  3BB8            2430+       DC    A(INTER)              INTERRUPT ERROR ADRS
003C56  0003            2431+INTCC DC     X'0003'               INTERRUPT CODE EXPECTED
                        2433+*************************************************************11MAY76**
                        2434+*
                        2435+** SUBROUTINE
                        2436+**
                        2437+**     CONNECT INTERRUPT CONTROL BLOCK & PREPARE DEVICE
                        2438+**
                        2439+** PURPOSE
                        2440+**
                        2441+**     TO CONNECT THE INTERRUPT CONTPOL BLOCK TO THIS DEVICE AND
                        2442+**     PREPARE ON THE DESIRED INTERRUPT LEVEL AND TO ALLOW THE DEVICF
                        2443+**     TO INTERRUPT.
                        2444+**
                        2445+** CALLING SEQUENCE
                        2446+**
                        2447+**     THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
                        2448+**
                        2449+** --> BAL   $CONC,R6              CLEAR DEV DEP STG AND CONNECT I/O BLK
                        2450+** --> BAL   $CONP,R6              PREPARE DEVICE ONLY, ALREADY CONNECT
                        2451+**
                        2452+** RETURN CONTROL
                        2453+**
                        2454+**     BXS   (R6,2)                RETURN TO USER VIA REG 6 IF OKAY
                        2455+** OR  B     (R6)*                 IF THE DEVICE COULD NOT BE CONNECTED
                        2456+**
                        2457+*************************************************************
003C58  0F06            2458+$CONC MVBI   6,R7                  NUMBER OF BYTE TO CLEAR
003C5A  0B00            2459+       MVBI  0,R3                  * AND THE DATA TO USE
003C5C  4524 2660       2460+       MVA   DEV1,R5               * ALONG WITH THE ADRS TO USE
003C60  2BAC            2461+       FFN   R3,(R5)               *
003C62  CB25 2656       2462+       MVWZ  OPTN3,R3              CLEAR OID CONTROLS FOR NEW ROUTINE
003C66  4724 3C50       2463+       MVA   INTBL,R7              SET R7 TO CONTROL BLOCK AND
003C6A  6014            2464+       SVC   CICB                  * CONNECT IT TO THIS DEVICE
003C6C  6AD0 0000       2465+       BN    (R6)*                 ERROR RETURN TO USER
                        2466+**
003C70  8828 268E 3C48  2467+$CONP MVW    $INTL,IODCB           PUT IN LEVEL & INTR PARAMETER
003C76  4724 3C44       2468+       MVA   IOBLK,R7              SET R7 TO CONTPOL BLOCK TO PREPARF
003C7A  4020 265A 0708  2469+       MVWI  X'0708',$IOIN         INITIALIZE CONDITION CODE STORAGE
003C80  CB25 265C       2470+       MVWZ  $ISB,R3               * AND CLFAR OLD ISB VALUE
003C84  6E0D 265E       2471+       MVW   R6,LSTIO              SET UP ADDRESS THAT STARTED LAST I/O
003C88  600C            2472+       SVC   PREP                  * AND CALL ON SUPVR
003C8A  5601            2473+       BXS   (R6,2)                RETURN TO USER
                        2475+*************************************************************06APR76**
                        2476+*
                        2477+** SUBROUTINE
                        2478+**
                        2479+**     DISCONNFCT THE INTERRUPT CONTROL BLOCK AND LOG ERRORS
                        2480+**
                        2481+** PURPOSE
                        2482+**
                        2483+**     DISCONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
                        2484+**     SET THE 'NO GOOD' CONTPOL BIT, THEN LOG THE DATA THAT HAS
                        2485+**     BEEN FOUND TO HELP THE OPERATOR DEFINE THE ERROR CONDITION.
                        2486+**
                        2487+** CALLING SEQUENCE
                        2488+**
                        2489+**     THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
                        2490+**
                        2491+** --> B     $ERR$                 SET 'NG' BIT AND CONVERT DATA TO LOG
                        2492+** --> B     $CONX                 RETURN TO MDI SUPERVISOR TO TEST STS
                        2493+**
                        2494+** RETURN CONTROL
                        2495+**
                        2496+**     B     TURTN*                RETURN TO MDI
                        2497+** OR  B     (R6)*                 IF THE DEVICE COULD NOT BE CONNECTED
                        2498+**
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

                        2499+*************************************************************************
003C8C  4020 1818 8000  2500+$ERR$  MVWI   X'8000',TUSTATUS      SET ON 'NO GOOD' STATUS BIT
003C92  4724 3DF6       2501+       MVA    HEBLK,R7             GET ADRS OF CONTROL BLOCK
003C96  601A            2502+       SVC    HTOE                 CONVERT HEX TO EBC VIS DCP
003C98  0D03            2503+$PRNT  MVBI   3,R5
003C9A  4324 181A       2504+       MVA    TUWORK,R3            SET UP BUFFER STORAGE
003C9E  6B0D 3DEE       2505+       MVW    R3,BUFPT
003CA2  4124 3D1E       2506+       MVA    LINE1,R1
003CA6  0F04            2507+       MVBI   4,R7
003CA8  0E08            2508+       MVBI   8,R6
003CAA  2B24            2509+MVBUF  MVFN   (R3),(R1)
003CAC  0F04            2510+       MVBI   4,R7
003CAE  0A40            2511+       MVBI   X'40',R2
003CB0  C258            2512+       MVB    R2,(R1)+
003CB2  BEFB            2513+       JCT    MVBUF,R6
003CB4  0E08            2514+       MVBI   8,R6
003CB6  7921 002C       2515+       AWI    44,R1
003CBA  BDF7            2516+       JCT    MVBUF,R5
003CBC  4020 1802 F1F0  2517+       MVWI   PIDMSG10,PID+2
003CC2  4020 19B8 3DF4  2518+       MVA    FAKETU,@DCADD1
003CC8  4020 19BA 3DF0  2519+       MVA    DC2PT,@DCADD2
003CCE  4020 19C4 0080  2520+       OWI    BIT0080,SUPSTAT
003CD4  4324 2658       2521+       MVA    $TUID,R3             SET UP BUFFER STORAGE
003CD8  6F13 18BA       2522+       BAL    TUMSG#TR*,R7         GO TO MESSAGE WRITER
                        2523+**
003CDC                  2524+$CONX  EQU    *
003CDC  C720 19D0       2525+       MVB    DFVADD,R7            GET DEVICE ADDRESS FROM MDI
003CE0  6013            2526+       SVC    RICB                 RELEASE INTERRUPT CONTROL BLOCK
003CE2  6812 2690       2527+       B      TURTN*               RETURN TO MDI SUPERVISOR
                        2528+**
003CE6  0007            2529+BEGIN  DC     A(0007)              NUMBER OF LINES TO PRINT
003CE8  0008            2530+       DC     A(0008)              LINE LENGTH = 8 CHAR
003CEA  5C5C40C1C2D6D9E3 2531+      DC     C'** ABORT'
003CF2  0028            2532+       DC     A(0040)              LINE LENGTH = 40 CHAR
003CF4  E3E4C9C440C9D6C9D 2533+     DC     C'TUID IOIN ISB  INST DEV1 DEV2 DEV3 DEV4 '
003D1C  0028            2534+       DC     A(0040)              LINE LENGTH = 40 CHAR
003D1E  4040404040404040 2535+LINE1 DC     C'                   '
003D46  0028            2536+       DC     A(0040)              LINE LENGTH = 40 CHAR
003D48  C3D5E3D340C4C3C2F 2537+     DC     C'CNTL DCB2 DCB3 DCB4 DCB5 CHAD BYCT ADRS '
003D70  0028            2538+       DC     A(0040)              LINE LENGTH = 40 CHAR
003D72  4040404040404040 2539+LINE2 DC     C'                   '
003D9A  0028            2540+       DC     A(0040)              LINE LENGTH = 40 CHAR
003D9C  D9E2C9C440C3E260F 2541+     DC     C'RSID CS-2 CS-3 CS-4 CS-5 CS-6 CS-7 CS-8 '
003DC4  0028            2542+       DC     A(0040)              LINE LENGTH = 40 CHAR
003DC6  4040404040404040 2543+LINE3 DC     C'                   '
                        2544+**
003DEE  0000            2545+BUFPT  DC     A(*-*)
003DF0  3CE6            2546+DC2PT  DC     A(BEGIN)
003DF2  0101            2547+FIXTU  DC     X'0101'
003DF4  0101            2548+FAKETU   DC   X'0101'
00F1F0                  2549+PIDMSG10 EQU    X'F1F0'
000080                  2550+BIT0080  EQU    X'0080'
                        2551+**
                        2552+**     DATA CONTROL BLOCK FOR CONVFRTING HEX TO FBCDIC
                        2553+**
003DF6  0030            2554+HEBLK  DC     A(48)                NUMBER OF BYTFS TO CONVERT
003DF8  2658            2555+       DC     A($TUID)             FROM ADRS
003DFA  181A            2556+       DC     A(TUWORK)            AND THF TO ADPS
                        2558+*************************************************************11SEP75**
                        2559+*
                        2560+** SUBROUTINE
                        2561+**
                        2562+**     SPECIAL ERROR CHECKING OF THF DCB
                        2563+**
                        2564+** PURPOSE
                        2565+**
                        2566+**     TO SET THE CONTROL BITS BEFORE ISSUEING THE I/O COMMAND,
                        2567+**     TESTING TO VERIFY THAT THE ERROR DID OCCUR, AND VERIFYING
                        2568+**     THAT THE RESIDUAL ADDRESS IS WHAT IT SHOULD BE.
                        2569+**
                        2570+** CALLING SEQUENCE
                        2571+**
                        2572+** -->  BAL   ERTST,R2              USE COMMON ERROR TEST SUBRTN
                        2573+**      DC    A(1)                 DISPLACEMENT FOR RESIDUAL ADRS
                        2574+**      DC    A(*-*)               FRROR ADDRESS
                        2575+**
                        2576+** RETURN CONTROL
                        2577+**
                        2578+**     BXS   (R2,6)                RETURN TO USER VIA REG 2
                        2579+**
                        2580+*************************************************************
003DFC  4C64            2581+ERTST  TBTS  (R4,XE)               SET EXPECTED ERROR FOR EACH FAULT
003DFE  6E03 0000       2582+       BAL   *-*,R6                GO XEQ I/O COMMAND
003E02  3C8C            2583+       DC    A($ERR$)              RETRY
003E04  4C21            2584+       TBT   (R4,ER)               DID ERROR CONTPOL BIT GET SET
003E06  1202            2585+       JON   ERTSV                 * YES,GO CKECK RESIDUAL ADDRESS
003E08  6852 0002       2586+       B     (R2,2)*               ERROR
                        2587+**
003E0C  AA08 3C48       2588+ERTSV  AW    (R2),IODCB            DEVELOP DCB FRROR ADDRESS
003E10  5000            2589+       NOP   ,                     FOR ALL ARCH ADD (SWI 1,IODCB)
003E12  5000            2590+       NOP   ,                     * (402E (ADD OF IODCB) 0001
003E14  5000            2591+       NOP   ,                     *
003E16  8828 3C48 3E3A  2592+       MVW   IODCB,ERTSZ           SAVE DCB ADDPESS
003E1C  4CA1            2593+       TBTR  (R4,ER)               PESET EPROR BIT
003E1E  6E03 3B4C       2594+       BAL   XIOCS-4,R6            REQUEST START CYCLE STEAL STAPTS
003E22  3C8C            2595+       DC    A($ERR$)              RETRY
003E24  4C21            2596+       TBT   (R4,ER)               DID ERROR CONTPOL BIT GET SET
003E26  6A00 3C8C       2597+       BON   $ERR$                 YES-ERROR
003E2A  882B 2678 3E3A  2598+       CW    CSTL1,ERTSZ           TEST FOR CORRECT RESIDUAL ADDPS
003E30  1002            2599+       JE    ERTSX                 RESIDUAL ADDRESS OK
003E32  6852 0002       2600+       P     (R2,2)*               ERROR
003E36  4CA8            2601+ERTSX  TBTR  (R4,CS)               RESET CS IN PROGRESS CNTL BIT
003E38  5202            2602+       BXS   (R2,4)                OK, RFTURN TO CALLER
                        2603+*
003E3A  0000            2604+ERTSZ  DC    A(*-*)                DCB SAVE LOCATION
000000                  2605        END
```

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
950	$CKSK	ADDRESS. HEX LOCATION(00002938) IN CSECT(I7801) LENGTH(6) 831
2458	$CONC	ADDRESS. HEX LOCATION(00003C58) IN CSECT(I7801) LENGTH(2) 761 1013 1170 1287
2467	$CONP	ADDRESS. HEX LOCATION(00003C70) IN CSECT(I7801) LENGTH(6) 796
2524	$CONX	ADDRESS. HEX LOCATION(00003CDC) IN CSECT(I7801) LENGTH(1) 914 1095 1230 1518
2160	$DIAG	ADDRESS. HEX LOCATION(00003B3E) IN CSECT(I7801) LENGTH(6) 1047 1074
2500	ERR	ADDRESS. HEX LOCATION(00003C8C) IN CSECT(I7801) LENGTH(6) 1014 2583 2595 2597
589	$INTL	ADDRESS. HEX LOCATION(0000268E) IN CSECT(I7801) LENGTH(2) 760 776 795 814 2377 2467
559	$IOIN	ADDRESS. HEX LOCATION(0000265A) IN CSECT(I7801) LENGTH(2) 863 884 899 905 1221 1509 1921 2233 2291 2371 2408 2469
560	$ISB	ADDRESS. HEX LOCATION(0000265C) IN CSECT(I7801) LENGTH(2) 806 808 828 865 886 901 906 1222 1510 2234 2372 2411 2470
544	$LE	ABSOLUTE. HEX VALUE(00000026) 2239 2379
2112	$RD	ADDRESS. HEX LOCATION(00003AA0) IN CSECT(I7801) LENGTH(2) 1309 1317 1325 1490
2116	RD	ADDRESS. HEX LOCATION(00003AAC) IN CSECT(I7801) LENGTH(6) 1023 1032 1056 1084
2104	$RDID	ADDRESS. HEX LOCATION(00003A86) IN CSECT(I7801) LENGTH(6) 1039 1065
2098	$SEEK	ADDRESS. HEX LOCATION(00003A76) IN CSECT(I7801) LENGTH(6) 824
558	$TUID	ADDRESS. HEX LOCATION(00002658) IN CSECT(I7801) LENGTH(2) 599 757 1011 1168 1285 2521 2555
2122	$WRT	ADDRESS. HEX LOCATION(00003ABC) IN CSECT(I7801) LENGTH(6) 1458
45	@CALL	ABSOLUTE. HEX VALUE(00000201) 372 390 408 426 444
105	@DCADD1	ADDRESS. HEX LOCATION(000019B8) IN CSECT(I7801) LENGTH(1) 2518
106	@DCADD2	ADDRESS. HEX LOCATION(000019BA) IN CSECT(I7801) LENGTH(1) 2519
44	@GOTO	ABSOLUTE. HEX VALUE(00000200) 450
48	@TUXX	ABSOLUTE. HEX VALUE(00000500) 360 378 396 414 432
1781	BCNT	ADDRESS. HEX LOCATION(000038FC) IN CSECT(I7801) LENGTH(2) 1449 1455 1484 1534 1540 1569
2529	BEGIN	ADDRESS. HEX LOCATION(00003CE6) IN CSECT(I7801) LENGTH(2) 2546
2550	BIT0080	ABSOLUTE. HEX VALUE(00000080) 2520
2545	BUFPT	ADDRESS. HEX LOCATION(00003DEE) IN CSECT(I7801) LENGTH(2) 2505
518	B59	ABSOLUTE. HEX VALUE(0000001B) 1319 1327 1468
519	B60	ABSOLUTE. HEX VALUE(0000001C) 1308 1338 1437
520	B61	ABSOLUTE. HEX VALUE(0000001D) 1448 1566
1789	CB29	ADDRESS. HEX LOCATION(0000390C) IN CSECT(I7801) LENGTH(2) 2012
1919	CCERR	ADDRESS. HEX LOCATION(000039DE) IN CSECT(I7801) LENGTH(2) 1891 1897 1903 1910 1916
548	CE	ABSOLUTE. HEX VALUE(0000002A) 2218 2330 2400
1930	CEDAT	ADDRESS. HEX LOCATION(000039F6) IN CSECT(I7801) LENGTH(2) 798 820 1016 1182 1191 1193 1198 1201 1206 1442 1475 1478
1932	CEDAT2	ADDRESS. HEX LOCATION(000039FA) IN CSECT(I7801) LENGTH(2) 1224 1445 1463 1481 1496 1512 1525 1571
1894	CEOP1	ADDRESS. HEX LOCATION(0000398E) IN CSECT(I7801) LENGTH(4) 799 821 1017 1183 1194 1202 1443 1476 1479
1900	CEOP2	ADDRESS. HEX LOCATION(000039A2) IN CSECT(I7801) LENGTH(4) 1225 1446 1464 1482 1497 1513 1526 1572
953	CHSK	ADDRESS. HEX LOCATION(00002942) IN CSECT(I7801) LENGTH(2) 950
628	CICB	ABSOLUTE. HEX VALUE(00000014) 2464
1658	CLDCB	ADDRESS. HEX LOCATION(0000383A) IN CSECT(I7801) LENGTH(2) 2101
1935	CPUID	ABSOLUTE. HEX VALUE(00000232) 770 868 1296
546	CS	ABSOLUTE. HEX VALUE(00000028) 2219 2222 2328 2369 2398 2601
547	CSA	ABSOLUTE. HEX VALUE(00000029) 2403
577	CSBUF	ADDRESS. HEX LOCATION(00002678) IN CSECT(I7801) LENGTH(1) 867 892 910 1715 2230
1708	CSDCB	ADDRESS. HEX LOCATION(00003884) IN CSECT(I7801) LENGTH(2) 819 843 849 851 853 857 867 871 878 888 891 892 893 909 910 2220
578	CSTL1	ADDRESS. HEX LOCATION(00002678) IN CSECT(I7801) LENGTH(2) 839 2598
579	CSTL2	ADDRESS. HEX LOCATION(0000267A) IN CSECT(I7801) LENGTH(2) 810 904 1220 1429 1508
581	CSTL4	ADDRESS. HEX LOCATION(0000267E) IN CSECT(I7801) LENGTH(2) 812
585	CSTL8	ADDRESS. HEX LOCATION(00002686) IN CSECT(I7801) LENGTH(2) 2331 2332
567	DCBUF	ADDRESS. HEX LOCATION(00002668) IN CSECT(I7801) LENGTH(1) 2225
2546	DC2PT	ADDRESS. HEX LOCATION(00003DF0) IN CSECT(I7801) LENGTH(2) 2519
108	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I7801) LENGTH(1) 592 808 1295 1889 1895 1901 1908 1914 2419 2428 2525
562	DEV1	ADDRESS. HEX LOCATION(00002660) IN CSECT(I7801) LENGTH(2) 566 2460
1646	DGDCB	ADDRESS. HEX LOCATION(0000382A) IN CSECT(I7801) LENGTH(2) 1044 1045 1071 1072 1078 1088 2160
70	DUMMY	ABSOLUTE. HEX VALUE(00000000) 351 455 467

CROSS-PEFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND PEFERENCES
456	ENTPT	ADDRESS. HEX LOCATION(000025F4) IN CSECT(I7801) LENGTH(1) 201
50	EQ	ABSOLUTE. HEX VALUE(00000000) 363 381 399 417 435
539	ER	ABSOLUTE. HEX VALUE(00000021) 804 826 837 847 861 876 882 897 1427 2236 2255 2338 2380 2405 2584 2593 2596
2581	ERTST	ADDRESS. HEX LOCATION(00003DFC) IN CSECT(I7801) LENGTH(2) 1023 1024 1032 1033 1039 1040 1047 1048 1056 1057 1065 1066 1074 1075 1084 1085
2588	ERTSV	ADDRESS. HEX LOCATION(00003E0C) IN CSECT(I7801) LENGTH(4) 2585
2601	ERTSX	ADDRESS. HEX LOCATION(00003E36) IN CSECT(I7801) LENGTH(2) 2599
2604	ERTSZ	ADDRESS. HEX LOCATION(00003E3A) IN CSECT(I7801) LENGTH(2) 2592 2598
614	EXIT	ABSOLUTE. HEX VALUE(00000006) 2387
2548	FAKETU	ADDRESS. HEX LOCATION(00003DF4) IN CSECT(I7801) LENGTH(2) 2518
1790	FIVE9	ADDRESS. HEX LOCATION(0000390E) IN CSECT(I7801) LENGTH(2) 2019
475	F00009	ADDRESS. HEX LOCATION(000025FA) IN CSECT(I7801) LENGTH(1) 373
479	F00015	ADDRESS. HEX LOCATION(00002600) IN CSECT(I7801) LENGTH(1) 391
483	F00022	ADDRESS. HEX LOCATION(00002606) IN CSECT(I7801) LENGTH(1) 409
487	F00029	ADDRESS. HEX LOCATION(0000260C) IN CSECT(I7801) LENGTH(1) 427
491	F00036	ADDRESS. HEX LOCATION(00002612) IN CSECT(I7801) LENGTH(1) 445
495	F00039	ADDRESS. HEX LOCATION(00002618) IN CSECT(I7801) LENGTH(1) 451
2554	HEBLK	ADDRESS. HEX LOCATION(00003DF6) IN CSECT(I7801) LENGTH(2) 2501
634	HTOE	ABSOLUTE. HEX VALUE(0000001A) 2502
1929	IDCBCE1	ADDRESS. HEX LOCATION(000039F4) IN CSECT(I7801) LENGTH(2) 1895 1896
1931	IDCBCE2	ADDRESS. HEX LOCATION(000039F8) IN CSECT(I7801) LENGTH(2) 1901 1902
1933	IDCBRAP	ADDRESS. HEX LOCATION(000039FC) IN CSECT(I7801) LENGTH(2) 1889 1890
1925	IDCB0	ADDRESS. HEX LOCATION(000039EC) IN CSECT(I7801) LENGTH(2) 1914 1915
1927	IDCB1	ADDRESS. HEX LOCATION(000039F0) IN CSECT(I7801) LENGTH(2) 1295 1908 1909
610	IDLE	ABSOLUTE. HEX VALUE(00000002) 781 1471 2251
541	IN	ABSOLUTE. HEX VALUE(00000023) 1460 1501 1529 2237 2249 2368
2428	INTBL	ADDRESS. HEX LOCATION(00003C50) IN CSECT(I7801) LENGTH(2) 2463
2325	INTER	ADDRESS. HEX LOCATION(00003BB8) IN CSECT(I7801) LENGTH(2) 2430
2334	INTES	ADDRESS. HEX LOCATION(00003BD0) IN CSECT(I7801) LENGTH(2) 2329
2338	INTET	ADDRESS. HEX LOCATION(00003BD8) IN CSECT(I7801) LENGTH(2) 2335
2365	INTOK	ADDRESS. HEX LOCATION(00003BDC) IN CSECT(I7801) LENGTH(2) 2429
2387	INTRX	ADDRESS. HEX LOCATION(00003C0C) IN CSECT(I7801) LENGTH(2) 2382 2385
2368	INTR1	ADDRESS. HEX LOCATION(00003BE4) IN CSECT(I7801) LENGTH(2) 2333 2337 2339
2373	INTR2	ADDRESS. HEX LOCATION(00003BF2) IN CSECT(I7801) LENGTH(1) 2370
2381	INTR3	ADDRESS. HEX LOCATION(00003C00) IN CSECT(I7801) LENGTH(2) 2378
2419	IOBLK	ADDRESS. HEX LOCATION(00003C44) IN CSECT(I7801) LENGTH(2) 777 783 785 911 1092 1180 1227 1313 1466 1515 1574 2238 2468
2421	IODCB	ADDRESS. HEX LOCATION(00003C48) IN CSECT(I7801) LENGTH(2) 950 2098 2101 2104 2116 2119 2122 2125 2133 2137 2141 2149 2153 2156 2160 2220 2226 2467 2588 2592
2422	IOMOD	ADDRESS. HEX LOCATION(00003C4A) IN CSECT(I7801) LENGTH(2) 788 790 792 2215 2221
795	ITST1	ADDRESS. HEX LOCATION(00002730) IN CSECT(I7801) LENGTH(6) 778 786 789 791 793 815
781	ITST5	ADDRESS. HEX LOCATION(00002700) IN CSECT(I7801) LENGTH(2) 782
40	I7801	CSECT. START(00002500) LENGTH(6460) ESDID(1) 40
1782	JOE	ADDRESS. HEX LOCATION(000038FE) IN CSECT(I7801) LENGTH(2) 1439 1441 1449 1450 1494 1544 1545 1546 1547 1565 1568 1569 1576 1579 1580 1581 1582
1787	LGSEC	ADDRESS. HEX LOCATION(00003908) IN CSECT(I7801) LENGTH(2) 2010 2012 2015 2022
2535	LINE1	ADDRESS. HEX LOCATION(00003D1E) IN CSECT(I7801) LENGTH(40) 2506
561	LSTIO	ADDRESS. HEX LOCATION(0000265E) IN CSECT(I7801) LENGTH(2) 1888 1894 1900 1907 1913 2224 2471
538	MI	ABSOLUTE. HEX VALUE(00000020) 2383
2509	MVBUF	ADDRESS. HEX LOCATION(00003CAA) IN CSECT(I7801) LENGTH(2) 2513 2516
550	NG	ABSOLUTE. HEX VALUE(0000002C) 2386
545	NI	ABSOLUTE. HEX VALUE(00000027) 1179 1457 1489 2243
360	N00001	ADDRESS. HEX LOCATION(00002530) IN CSECT(I7801) LENGTH(2) 318 466
372	N00002	ADDRESS. HEX LOCATION(0000254A) IN CSECT(I7801) LENGTH(2) 321
378	N00003	ADDRESS. HEX LOCATION(00002556) IN CSECT(I7801) LENGTH(2) 324 361
390	N00004	ADDRESS. HEX LOCATION(00002568) IN CSECT(I7801) LENGTH(2) 327
396	N00005	ADDRESS. HEX LOCATION(00002574) IN CSECT(I7801) LENGTH(2)

CROSS-REFERENCE LISTING

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DECLARED  NAME       ATTRIBUTES AND REFERENCES
     408  N00006      330   379
                      ADDRESS. HEX LOCATION(0000258E) IN CSECT(I7801   ) LENGTH(2)
     414  N00007      333
                      ADDRESS. HEX LOCATION(0000259A) IN CSECT(I7801   ) LENGTH(2)
     426  N00008      336   397
                      ADDRESS. HEX LOCATION(000025B4) IN CSECT(I7801   ) LENGTH(2)
     432  N00009      339
                      ADDRESS. HEX LOCATION(000025C0) IN CSECT(I7801   ) LENGTH(2)
     444  N00010      342   415
                      ADDRESS. HEX LOCATION(000025DA) IN CSECT(I7801   ) LENGTH(2)
     450  N00011      345
                      ADDRESS. HEX LOCATION(000025E6) IN CSECT(I7801   ) LENGTH(2)
     503  OPTN1       348   433
                      ADDRESS. HEX LOCATION(00002652) IN CSECT(I7801   ) LENGTH(2)
     526  OPTN3       758  1012  1169  1286  2327  2367
                      ADDRESS. HEX LOCATION(00002656) IN CSECT(I7801   ) LENGTH(2)
     104  PARMARA     907  1223  1511  2414  2462
                      ADDRESS. HEX LOCATION(0000196E) IN CSECT(I7801   ) LENGTH(1)
    1788  PHYSC       370   388   406   424   442
                      ADDRESS. HEX LOCATION(0000390A) IN CSECT(I7801   ) LENGTH(2)
      72  PID        2017  2019  2024
                      ADDRESS. HEX LOCATION(00001800) IN CSECT(I7801   ) LENGTH(1)
                        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   113   114   115  2517
    2549  PIDMSG10     ABSOLUTE. HEX VALUE(0000F1F0)
                      2517
     620  PREP         ABSOLUTE. HEX VALUE(0000000C)
                      2472
    1934  RAPDAT       ADDRESS. HEX LOCATION(000039FE) IN CSECT(I7801   ) LENGTH(2)
    1926  RDATA0      1191  1198  1206
                      ADDRESS. HEX LOCATION(000039EF) IN CSECT(I7801   ) LENGTH(2)
    1632  RDBUF       1187
                      ADDRESS. HEX LOCATION(0000342A) IN CSECT(I7801   ) LENGTH(1)
    1741  RDDCB      1311  1536  1633
                      ADDRESS. HEX LOCATION(000038BA) IN CSECT(I7801   ) LENGTH(2)
                       1021  1028  1029  1030  1052  1053  1054  1080  1081
                       1082  1089  1090  1311  1484  1485  1486  1487  1488
                       1552  1559  2113  2116
     616  RESET        ABSOLUTE. HEX VALUE(00000008)
                       779   784   912  1093  1181  1228  1314  1467  1516
                       1575
     627  RICB         ABSOLUTE. HEX VALUE(00000013)
                      2526
     617  RID          ABSOLUTE. HEX VALUE(00000009)
                       787
    1763  RKDCB        ADDRESS. HEX LOCATION(000038DA) IN CSECT(I7801   ) LENGTH(2)
                      2125  2130  2137  2138
    1673  RSDCB        ADDRESS. HEX LOCATION(0000385A) IN CSECT(I7801   ) LENGTH(2)
    2021  RTT01       1037  1061  1062  1063  1069  2104  2109  2141  2146
                      ADDRESS. HEX LOCATION(00003A52) IN CSECT(I7801   ) LENGTH(4)
       0  R0         2013
                      REGISTER. HEX VALUE(00000000)
                       770   771   780   782   841   842   851   855   868
                       869  1020  1098  1100  1102  1104  1106  1108  1110
                      1112  1114  1296  1297  1320  1323  1328  1331  1333
                      1336  1456  1462  1470  1472  1492  1493  1528  1531
                      2014  2015  2016  2017  2021  2022  2023  2024
       0  R1         REGISTER. HEX VALUE(00000001)
                       833   839   849  1200  1201  1208  1321  1323  1329
                      1331  1334  1336  1339  1341  1344  1346  1349  1351
                      1354  1356  1359  1361  1364  1366  1369  1371  1374
                      1376  1379  1381  1384  1386  1389  1391  1394  1396
                      1399  1401  1404  1406  1409  1411  1414  1416  1419
                      1421  1544  1548  1554  1561  1579  1583  1585  2506
                      2509  2512  2515
       0  R2         REGISTER. HEX VALUE(00000002)
                       763   764   765   766   767   768   769   917   919
                       921   923   925   927   929   931   933   935   937
                       939   941   942   943   944   945   946   947  1019
                      1024  1033  1040  1048  1057  1066  1075  1085  1173
                      1174  1175  1176  1177  1178  1211  1213  1215  1217
                      1218  1219  1290  1291  1292  1293  1294  1545  1548
                      1551  1553  1560  1581  1583  1591  1592  1593  1594
                      1595  1596  1597  2511  2512  2586  2588  2600  2602
       0  R3         REGISTER. HEX VALUE(00000003)
                      1536  1537  1542  1550  1551  1555  1556  1556  1557
                      1562  1563  1920  1921  1962  1966  1968  2047  2049
                      2105  2108  2112  2115  2126  2129  2142  2145  2215
                      2225  2228  2229  2231  2234  2290  2291  2326  2332
                      2336  2366  2371  2384  2414  2459  2461  2462  2470
                      2504  2505  2509  2521
       0  R4         REGISTER. HEX VALUE(00000004)
                       758   801   804   823   826   834   837   844   847
                       858   861   873   876   879   882   894   897  1012
                      1169  1179  1286  1308  1319  1327  1338  1427  1437
                      1448  1457  1460  1468  1489  1501  1529  1566  2218
                      2219  2222  2236  2237  2239  2240  2243  2249  2255
                      2327  2328  2330  2334  2338  2367  2368  2369  2379
                      2380  2381  2383  2386  2396  2398  2400  2403  2405
                      2581  2584  2593  2596  2601
       0  R5         REGISTER. HEX VALUE(00000005)
                      1535  1537  1542  1552  1553  1557  1559  1560  1563
                      1963  1967  1968  2048  2049  2106  2108  2113  2115
                      2127  2129  2143  2145  2226  2228  2230  2232  2248
                      2253  2375  2376  2377  2408  2409  2411  2460  2461
                      2503  2516
       0  R6         REGISTER. HEX VALUE(00000006)
                       761   778   786   796   799   802   821   824   831
                       835   845   859   874   880   895  1013  1017  1170
                      1183  1185  1189  1194  1196  1202  1204  1225  1287
                      1324  1332  1337  1343  1348  1353  1358  1363  1368
                      1373  1378  1383  1388  1393  1398  1403  1408  1413
                      1418  1423  1425  1436  1443  1446  1458  1464  1476
                      1479  1482  1490  1497  1506  1513  1526  1572  1888
                      1892  1894  1898  1900  1904  1907  1911  1913  1917
                      1922  1969  1970  2009  2050  2224  2244  2256  2292
                      2397  2402  2404  2410  2413  2415  2465  2471  2473
                      2508  2513  2514  2582  2594
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CROSS-REFERENCE LISTING

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DECLARED  NAME       ATTRIBUTES AND REFERENCES
       0  R7         REGISTER. HEX VALUE(00000007)
                       600   756   777   783   785   911  1010  1092  1167
                      1180  1227  1284  1313  1322  1330  1335  1340  1342
                      1345  1347  1350  1352  1355  1357  1360  1362  1365
                      1367  1370  1372  1375  1377  1380  1382  1385  1387
                      1390  1392  1395  1397  1400  1402  1405  1407  1410
                      1412  1415  1417  1420  1422  1466  1494  1495  1499
                      1515  1534  1539  1540  1554  1561  1574  1585  1961
                      1965  2046  2107  2114  2128  2144  2227  2231  2238
                      2331  2372  2458  2463  2468  2501  2507  2510  2522
                      2525
     566  SCTID        ADDRESS. HEX LOCATION(00002660) IN CSECT(I7801   ) LENGTH(2)
                      1680  1692  1770  1966  2047  2106  2109  2127  2130
    1798  SCTST        ADDRESS. HEX LOCATION(0000391E) IN CSECT(I7801   ) LENGTH(2)
    1913  SENS0       1962  2138  2143  2146
                      ADDRESS. HEX LOCATION(000039CA) IN CSECT(I7801   ) LENGTH(4)
    1697  SKDCB       1185
                      ADDRESS. HEX LOCATION(0000387A) IN CSECT(I7801   ) LENGTH(2)
     618  START        816   817   818   819   830   833   958  2098
                      ABSOLUTE. HEX VALUE(0000000A)
                      2241
     107  SUPSTAT      ADDRESS. HEX LOCATION(000019C4) IN CSECT(I7801   ) LENGTH(1)
    1600  TEST        2520
                      ADDRESS. HEX LOCATION(00002FFE) IN CSECT(I7801   ) LENGTH(2)
    1473  TTTF        1312  1315  1473  1503  1520
                      ADDRESS. HEX LOCATION(00002E38) IN CSECT(I7801   ) LENGTH(6)
    1471  TTTT        1469
                      ADDRESS. HEX LOCATION(00002E34) IN CSECT(I7801   ) LENGTH(2)
    1304  TT07        1472
                      ADDRESS. HEX LOCATION(00002BCC) IN CSECT(I7801   ) LENGTH(6)
    2019  TT303       1298
                      ADDRESS. HEX LOCATION(00003A4A) IN CSECT(I7801   ) LENGTH(6)
    2025  TT304       2011
                      ADDRESS. HEX LOCATION(00003A62) IN CSECT(I7801   ) LENGTH(4)
    1968  TT4Y        2009  2018  2020
                      ADDRESS. HEX LOCATION(00003A1A) IN CSECT(I7801   ) LENGTH(2)
    1456  TT7A        1964
                      ADDRESS. HEX LOCATION(00002E06) IN CSECT(I7801   ) LENGTH(4)
    1470  TT7B        1299  1304
                      ADDRESS. HEX LOCATION(00002E30) IN CSECT(I7801   ) LENGTH(4)
    1492  TT7C        1300  1305
                      ADDRESS. HEX LOCATION(00002E8A) IN CSECT(I7801   ) LENGTH(4)
    1528  TT7D        1301  1306
                      ADDRESS. HEX LOCATION(00002F0C) IN CSECT(I7801   ) LENGTH(4)
    1309  TT7E        1302  1307
                      ADDRESS. HEX LOCATION(00002BE6) IN CSECT(I7801   ) LENGTH(6)
    1341  TT7G        1303
                      ADDRESS. HEX LOCATION(00002C64) IN CSECT(I7801   ) LENGTH(4)
    1346  TT7H        1342
                      ADDRESS. HEX LOCATION(00002C76) IN CSECT(I7801   ) LENGTH(4)
    1351  TT7J        1347
                      ADDRESS. HEX LOCATION(00002C88) IN CSECT(I7801   ) LENGTH(4)
    1356  TT7K        1352
                      ADDRESS. HEX LOCATION(00002C9A) IN CSECT(I7801   ) LENGTH(4)
    1361  TT7L        1357
                      ADDRESS. HEX LOCATION(00002CAC) IN CSECT(I7801   ) LENGTH(4)
    1366  TT7M        1362
                      ADDRESS. HEX LOCATION(00002CBE) IN CSECT(I7801   ) LENGTH(4)
    1371  TT7N        1367
                      ADDRESS. HEX LOCATION(00002CD0) IN CSECT(I7801   ) LENGTH(4)
    1376  TT7P        1372
                      ADDRESS. HEX LOCATION(00002CE2) IN CSECT(I7801   ) LENGTH(4)
    1381  TT7Q        1377
                      ADDRESS. HEX LOCATION(00002CF4) IN CSECT(I7801   ) LENGTH(4)
    1386  TT7R        1382
                      ADDRESS. HEX LOCATION(00002D06) IN CSECT(I7801   ) LENGTH(4)
    1391  TT7S        1387
                      ADDRESS. HEX LOCATION(00002D18) IN CSECT(I7801   ) LENGTH(4)
    1396  TT7T        1392
                      ADDRESS. HEX LOCATION(00002D2A) IN CSECT(I7801   ) LENGTH(4)
    1401  TT7U        1397
                      ADDRESS. HEX LOCATION(00002D3C) IN CSECT(I7801   ) LENGTH(4)
    1406  TT7V        1402
                      ADDRESS. HEX LOCATION(00002D4E) IN CSECT(I7801   ) LENGTH(4)
    1411  TT7W        1407
                      ADDRESS. HEX LOCATION(00002D60) IN CSECT(I7801   ) LENGTH(4)
    1416  TT7X        1412
                      ADDRESS. HEX LOCATION(00002D72) IN CSECT(I7801   ) LENGTH(4)
    1421  TT7Y        1417
                      ADDRESS. HEX LOCATION(00002D84) IN CSECT(I7801   ) LENGTH(4)
      98  TUBUFF      1422
                      ADDRESS. HEX LOCATION(000018C2) IN CSECT(I7801   ) LENGTH(1)
      99  TULAST       843  1089
                      ADDRESS. HEX LOCATION(000018C4) IN CSECT(I7801   ) LENGTH(1)
      95  TUMSGWTR     841
                      ADDRESS. HEX LOCATION(000018BA) IN CSECT(I7801   ) LENGTH(1)
      79  TUPARM1     2522
                      ADDRESS. HEX LOCATION(0000189A) IN CSECT(I7801   ) LENGTH(1)
     101  TURESUL     1312
                      ADDRESS. HEX LOCATION(000018C8) IN CSECT(I7801   ) LENGTH(1)
                       763   764   765   766   767   768   769   904   905
                       906   907   941   942   943   944   945   946  1019
                      1020  1173  1174  1175  1176  1177  1178  1217  1218
                      1220  1221  1222  1223  1290  1291  1292  1293  1294
                      1505  1508  1509  1510  1511  1523  1532  1587  1591
                      1592  1593  1594  1595  1596
     590  TURTN        ADDRESS. HEX LOCATION(00002690) IN CSECT(I7801   ) LENGTH(2)
                       756  1010  1167  1284  2527
      77  TUSTATUS     ADDRESS. HEX LOCATION(00001818) IN CSECT(I7801   ) LENGTH(1)
      78  TUWORK      2500
                      ADDRESS. HEX LOCATION(0000181A) IN CSECT(I7801   ) LENGTH(1)
     917  T01A        2504  2556
                      ADDRESS. HEX LOCATION(000028EC) IN CSECT(I7801   ) LENGTH(2)
     919  T01B         794
                      ADDRESS. HEX LOCATION(000028F0) IN CSECT(I7801   ) LENGTH(2)
     904  T01C         805   807   809   811   813   822   825   832   838
                       848
                      ADDRESS. HEX LOCATION(000028BC) IN CSECT(I7801   ) LENGTH(6)
                       918   920   922   924   926   928   930   932   934
                       936   938   940   948
     947  T01ER       ADDRESS. HEX LOCATION(00002934) IN CSECT(I7801   ) LENGTH(2)
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CROSS-REFERENCE LISTING

DECLARED NAME ATTRIBUTES AND REFERENCES

762 797 800 803 836 846 860 875 881 896
855 T01G ADDRESS. HEX LOCATION(00002816) IN CSECT(I7801) LENGTH(4)
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844 T01H ADDRESS. HEX LOCATION(000027F6) IN CSECT(I7801) LENGTH(2)
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867 T01J ADDRESS. HEX LOCATION(0000283E) IN CSECT(I7801) LENGTH(6)
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878 T01K ADDRESS. HEX LOCATION(00002860) IN CSECT(I7801) LENGTH(6)
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921 T01L ADDRESS. HEX LOCATION(000028F4) IN CSECT(I7801) LENGTH(2)
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923 T01M ADDRESS. HEX LOCATION(000028F8) IN CSECT(I7801) LENGTH(2)
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925 T01N ADDRESS. HEX LOCATION(000028FC) IN CSECT(I7801) LENGTH(2)
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927 T01P ADDRESS. HEX LOCATION(00002900) IN CSECT(I7801) LENGTH(2)
864 885 900
929 T01Q ADDRESS. HEX LOCATION(00002904) IN CSECT(I7801) LENGTH(2)
866
775 T01T ADDRESS. HEX LOCATION(000026E6) IN CSECT(I7801) LENGTH(6)
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780 T01T1 ADDRESS. HEX LOCATION(000026FC) IN CSECT(I7801) LENGTH(4)
773 775
776 T01T2 ADDRESS. HEX LOCATION(000026EC) IN CSECT(I7801) LENGTH(6)
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933 T01U ADDRESS. HEX LOCATION(0000290C) IN CSECT(I7801) LENGTH(2)
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935 T01V ADDRESS. HEX LOCATION(00002910) IN CSECT(I7801) LENGTH(2)
827 898
937 T01W ADDRESS. HEX LOCATION(00002914) IN CSECT(I7801) LENGTH(2)
829 902
931 T01X ADDRESS. HEX LOCATION(00002908) IN CSECT(I7801) LENGTH(2)
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939 T01Y ADDRESS. HEX LOCATION(00002918) IN CSECT(I7801) LENGTH(2)
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893 T01Z ADDRESS. HEX LOCATION(00002898) IN CSECT(I7801) LENGTH(6)
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1098 T04A ADDRESS. HEX LOCATION(00002A7C) IN CSECT(I7801) LENGTH(2)
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1100 T04B ADDRESS. HEX LOCATION(00002A80) IN CSECT(I7801) LENGTH(2)
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1102 T04C ADDRESS. HEX LOCATION(00002A84) IN CSECT(I7801) LENGTH(2)
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1104 T04D ADDRESS. HEX LOCATION(00002A88) IN CSECT(I7801) LENGTH(2)
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1106 T04E ADDRESS. HEX LOCATION(00002A8C) IN CSECT(I7801) LENGTH(2)
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1108 T04F ADDRESS. HEX LOCATION(00002A90) IN CSECT(I7801) LENGTH(2)
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1110 T04G ADDRESS. HEX LOCATION(00002A94) IN CSECT(I7801) LENGTH(2)
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1112 T04H ADDRESS. HEX LOCATION(00002A98) IN CSECT(I7801) LENGTH(2)
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1092 T04J ADDRESS. HEX LOCATION(00002A72) IN CSECT(I7801) LENGTH(4)
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1114 T04K ADDRESS. HEX LOCATION(00002A9C) IN CSECT(I7801) LENGTH(2)
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1213 T06A ADDRESS. HEX LOCATION(00002B3C) IN CSECT(I7801) LENGTH(2)
1192 1199 1207
1220 T06C ADDRESS. HEX LOCATION(00002B4E) IN CSECT(I7801) LENGTH(6)
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1211 T06D ADDRESS. HEX LOCATION(00002B38) IN CSECT(I7801) LENGTH(2)
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1217 T06ER ADDRESS. HEX LOCATION(00002B44) IN CSECT(I7801) LENGTH(4)
1171 1184 1186 1190 1195 1197 1203 1205 1226
1201 T06L ADDRESS. HEX LOCATION(00002B1A) IN CSECT(I7801) LENGTH(4)
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1460 T07A ADDRESS. HEX LOCATION(00002E12) IN CSECT(I7801) LENGTH(2)
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1478 T07B ADDRESS. HEX LOCATION(00002E4C) IN CSECT(I7801) LENGTH(6)
1474
1525 T07BB ADDRESS. HEX LOCATION(00002F00) IN CSECT(I7801) LENGTH(6)
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1497 T07C ADDRESS. HEX LOCATION(00002E9C) IN CSECT(I7801) LENGTH(4)
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1508 T07CD ADDRESS. HEX LOCATION(00002EC0) IN CSECT(I7801) LENGTH(6)
1524 1533
1533 T07CE ADDRESS. HEX LOCATION(00002F1C) IN CSECT(I7801) LENGTH(2)
1588 1598
1529 T07E ADDRESS. HEX LOCATION(00002F10) IN CSECT(I7801) LENGTH(2)
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1591 T07ER ADDRESS. HEX LOCATION(00002FE2) IN CSECT(I7801) LENGTH(4)
1288 1426 1428 1430 1444 1447 1459 1465 1477
1480 1483 1491 1498 1507 1514 1527 1573
1534 T07G ADDRESS. HEX LOCATION(00002F1E) IN CSECT(I7801) LENGTH(4)
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1505 T07J ADDRESS. HEX LOCATION(00002EB4) IN CSECT(I7801) LENGTH(6)
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1503 T07JJ ADDRESS. HEX LOCATION(00002EAC) IN CSECT(I7801) LENGTH(6)
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1544 T07K ADDRESS. HEX LOCATION(00002F40) IN CSECT(I7801) LENGTH(4)
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1579 T07L ADDRESS. HEX LOCATION(00002FBC) IN CSECT(I7801) LENGTH(4)
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1565 T07M ADDRESS. HEX LOCATION(00002F82) IN CSECT(I7801) LENGTH(6)
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1566 T07P ADDRESS. HEX LOCATION(00002F88) IN CSECT(I7801) LENGTH(2)
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1523 T07Q ADDRESS. HEX LOCATION(00002EF8) IN CSECT(I7801) LENGTH(6)
1543 1558 1564
1571 T07RR ADDRESS. HEX LOCATION(00002F9C) IN CSECT(I7801) LENGTH(6)
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1484 T07S ADDRESS. HEX LOCATION(00002E64) IN CSECT(I7801) LENGTH(6)
1570
1441 T07SS ADDRESS. HEX LOCATION(00002DBC) IN CSECT(I7801) LENGTH(6)
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1442 T07T ADDRESS. HEX LOCATION(00002DC2) IN CSECT(I7801) LENGTH(6)
1440 1577
1587 T07V ADDRESS. HEX LOCATION(00002FDA) IN CSECT(I7801) LENGTH(6)
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CROSS-REFERENCE LISTING

DECLARED NAME ATTRIBUTES AND REFERENCES

1608 T07W ADDRESS. HEX LOCATION(00003000) IN CSECT(I7801) LENGTH(2)
1439
1626 T07WW ADDRESS. HEX LOCATION(00003024) IN CSECT(I7801) LENGTH(2)
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1436 T07X ADDRESS. HEX LOCATION(00002DAC) IN CSECT(I7801) LENGTH(4)
1324 1332 1337 1343 1348 1353 1358 1363 1368
1373 1378 1383 1388 1393 1398 1403 1408 1413
1418 1423
1578 T07Y ADDRESS. HEX LOCATION(00002FB8) IN CSECT(I7801) LENGTH(4)
1436
1520 T07Z ADDRESS. HEX LOCATION(00002EEE) IN CSECT(I7801) LENGTH(6)
1502
908 T1END ADDRESS. HEX LOCATION(000028D4) IN CSECT(I7801) LENGTH(2)
903
1224 T6END ADDRESS. HEX LOCATION(00002B66) IN CSECT(I7801) LENGTH(6)
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1562 T7AA ADDRESS. HEX LOCATION(00002F78) IN CSECT(I7801) LENGTH(4)
1318 1326
1512 T7END ADDRESS. HEX LOCATION(00002ED8) IN CSECT(I7801) LENGTH(6)
1424 1431 1504
756 T7801 ADDRESS. HEX LOCATION(000026A0) IN CSECT(I7801) LENGTH(4)
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1010 T7804 ADDRESS. HEX LOCATION(00002950) IN CSECT(I7801) LENGTH(4)
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1167 T7806 ADDRESS. HEX LOCATION(00002AA0) IN CSECT(I7801) LENGTH(4)
398
1284 T7807 ADDRESS. HEX LOCATION(00002B7C) IN CSECT(I7801) LENGTH(4)
416 434
1425 T807 ADDRESS. HEX LOCATION(00002D92) IN CSECT(I7801) LENGTH(4)
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1730 WRDCB ADDRESS. HEX LOCATION(000038AA) IN CSECT(I7801) LENGTH(2)
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1752 WKDCB ADDRESS. HEX LOCATION(000038CA) IN CSECT(I7801) LENGTH(2)
2133 2134 2149 2150
1888 WRAP ADDRESS. HEX LOCATION(0000397A) IN CSECT(I7801) LENGTH(4)
1189 1196 1204
1630 WRBUF ADDRESS. HEX LOCATION(0000302A) IN CSECT(I7801) LENGTH(1)
1310 1321 1329 1334 1339 1344 1349 1354 1359
1364 1369 1374 1379 1384 1389 1394 1399 1404
1409 1414 1419 1535 1631
1719 WRDCB ADDRESS. HEX LOCATION(0000389A) IN CSECT(I7801) LENGTH(2)
1310 1451 1452 1453 1454 1455 1550 2122
1791 WRSID ADDRESS. HEX LOCATION(00003910) IN CSECT(I7801) LENGTH(2)
1670 1759 1967 2048 2150 2154
1663 WSDCB ADDRESS. HEX LOCATION(0000384A) IN CSECT(I7801) LENGTH(2)
2153 2154 2156 2157
1795 WSIDT ADDRESS. HEX LOCATION(00003918) IN CSECT(I7801) LENGTH(2)
1963 2134 2157
542 XE ABSOLUTE. HEX VALUE(00000024)
801 823 834 844 858 873 879 894 2334
2396 2581
540 XI ABSOLUTE. HEX VALUE(00000022)
2240 2381
2215 XIO ADDRESS. HEX LOCATION(00003B46) IN CSECT(I7801) LENGTH(4)
951 2099 2102 2110 2117 2120 2123 2131 2135
2139 2147 2151 2155 2158 2161
2396 XIOCK ADDRESS. HEX LOCATION(00003C0E) IN CSECT(I7801) LENGTH(2)
2250
2403 XIOCO ADDRESS. HEX LOCATION(00003C20) IN CSECT(I7801) LENGTH(2)
2401
2220 XIOCS ADDRESS. HEX LOCATION(00003B50) IN CSECT(I7801) LENGTH(6)
802 835 845 859 874 880 895 1425 1506
2412 2594
2405 XIOCV ADDRESS. HEX LOCATION(00003C24) IN CSECT(I7801) LENGTH(2)
2399
2414 XIOCX ADDRESS. HEX LOCATION(00003C3E) IN CSECT(I7801) LENGTH(4)
2406
2289 XIOER ADDRESS. HEX LOCATION(00003BAC) IN CSECT(I7801) LENGTH(2)
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2224 XIO1 ADDRESS. HEX LOCATION(00003B60) IN CSECT(I7801) LENGTH(4)
2216
2237 XIO2 ADDRESS. HEX LOCATION(00003B86) IN CSECT(I7801) LENGTH(2)
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2249 XIO8 ADDRESS. HEX LOCATION(00003B9A) IN CSECT(I7801) LENGTH(2)
2254
65 XTRNL ABSOLUTE. HEX VALUE(00000001)
376 394 412 430 448 454
1773 ZERO0 ADDRESS. HEX LOCATION(000038EA) IN CSECT(I7801) LENGTH(2)
806 2010

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