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

                             3        COPY  IOG7822              ** MAP EC HISTORY **
                             4  ********************************************************************
                             5  *                                                                  *
                             6  *                    ***       PREREQUISITES        ***           *
                             7  *                                                                  *
                             8  *                                 NONE                             *
                             9  *                                                                  *
                            10  ********************************************************************
                            11  *                                                                  *
                            12  *                    ***       MODIFICATIONS        ***           *
                            13  *                                                                  *
                            14  *                CHANGES MADE TO MEET PROGRAM REQUIREMENTS          *
                            15  *                                                                  *
                            16  ********************************************************************
                            17  *                                                                  *
                            18  *                    ***     RFA'S INCORPORATED     ***           *
                            19  *                                                                  *
                            20  *                                 NONE                             *
                            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 01MAR78    *
                            33  *        E.C. 578486   E.C. 578638   E.C. 578625   E.C. 755285      *
                            34  *                                                                  *
                            35  ********************************************************************
002500                      37  I7822    START X'2500'            START ADDRESS OF ALL 'I' TYPE PROG
000100                      38  @QUES    EQU   X'0100'            EQUATED VALUE FOR MDI STATEMENT
000101                      39  @FIXT    EQU   X'0101'            EQUATED VALUE FOR MDI STATEMENT
000102                      40  @STOP    EQU   X'0102'            EQUATED VALUE FOR MDI STATEMENT
000200                      41  @GOTO    EQU   X'0200'            EQUATED VALUE FOR MDI STATEMENT
000201                      42  @CALL    EQU   X'0201'            EQUATED VALUE FOR MDI STATEMENT
000300                      43  @INPT    EQU   X'0300'            EQUATED VALUE FOR MDI STATEMENT
000400                      44  @QUXX    EQU   X'0400'            EQUATED VALUE FOR MDI STATEMENT
000500                      45  @TUXX    EQU   X'0500'            EQUATED VALUE FOR MDI STATEMENT
000600                      46  @NVLD    EQU   X'0600'            EQUATED VALUE FOR MDI STATEMENT
000000                      47  EQ       EQU   X'0000'            EQUATE FOR EQUAL
000004                      48  NE       EQU   X'0004'            EQUATE FOR NOT EQUAL
000008                      49  HI       EQU   X'0008'            EQUATE FOR HIGH
00000C                      50  NH       EQU   X'000C'            EQUATE FOR NOT HIGH
000010                      51  LO       EQU   X'0010'            EQUATE FOR LOW
000014                      52  NL       EQU   X'0014'            EQUATE FOR NOT LOW
000010                      53  LT       EQU   X'0010'            EQUATE FOR LESS THAN
00000C                      54  LE       EQU   X'000C'            EQUATE FOR LESS THAN OR EQUAL TO
000008                      55  GT       EQU   X'0008'            EQUATE FOR GREATER THAN
000014                      56  GE       EQU   X'0014'            EQUATE FOR GREATER THAN OR EQUAL TO
000200                      57  ON       EQU   X'0200'            EQUATE FOR ON
000202                      58  OF       EQU   X'0202'            EQUATE FOR OFF
000204                      59  MX       EQU   X'0204'            EQUATE FOR MIXED
000000                      60  EBC      EQU   X'0000'            EQUATE FOR EBCDIC DATA TRANSFER
000001                      61  HEX      EQU   X'0001'            EQUATE FOR HEX DATA TRANSFER
000001                      62  XTRNL    EQU   X'0001'            EQUATE FOR EXTERNAL REFERENCE
000000                      63  INTRNL   EQU   X'0000'            EQUATE FOR INTERNAL REFERENCE
000000                      64  PARM     EQU   X'0000'            EQUATE INDICATING PARAMETER
000001                      65  DA       EQU   X'0001'            EQUATE FOR DEVICE ADDRESS
000002                      66  UA       EQU   X'0002'            EQUATE FOR UNIT ADDRESS
000000                      67  DUMMY    EQU   X'0000'            DUMMY EQUATE
001800                      69  PID      EQU   *-X'0D00'          ADDRESS OF MDI HEADER
000232                      70  PTYPE    EQU   *-X'22CE'          ADDRESS OF PROCESSOR TYPE FIELD
00180C                      71  STEPNUM  EQU   PID+X'000C'        ADDRESS OF DECIMAL STEP NUMBER
00180E                      72  OPWD1    EQU   PID+X'000E'        ADDRESS OF OPTION WORD ONE
001810                      73  OPWD2    EQU   PID+X'0010'        ADDRESS OF OPTION WORD TWO
001818                      74  TUSTATUS EQU   PID+X'0018'        ADDRESS OF TU STATUS WORD
00181A                      75  TUWORK   EQU   PID+X'001A'        ADDRESS OF TU WORK AREA
00189A                      76  TUPARM1  EQU   PID+X'009A'        ADDRESS OF PARM 1 POINTER
00189C                      77  TUPARM2  EQU   PID+X'009C'        ADDRESS OF PARM 2 POINTER
00189E                      78  TUPARM3  EQU   PID+X'009E'        ADDRESS OF PARM 3 POINTER
0018A0                      79  TUPARM4  EQU   PID+X'00A0'        ADDRESS OF PARM 4 POINTER
0018A2                      80  TUPARM5  EQU   PID+X'00A2'        ADDRESS OF PARM 5 POINTER
0018A4                      81  TUPARM6  EQU   PID+X'00A4'        ADDRESS OF PARM 6 POINTER
0018A6                      82  TUPARM7  EQU   PID+X'00A6'        ADDRESS OF PARM 7 POINTER
0018A8                      83  TUPARM8  EQU   PID+X'00A8'        ADDRESS OF PARM 8 POINTER
0018AA                      84  TUPARM9  EQU   PID+X'00AA'        ADDRESS OF PARM 9 POINTER
0018AC                      85  TUPARM10 EQU   PID+X'00AC'        ADDRESS OF PARM 10 POINTER
0018AE                      86  TUPARM11 EQU   PID+X'00AE'        ADDRESS OF PARM 11 POINTER
0018B0                      87  TUPARM12 EQU   PID+X'00B0'        ADDRESS OF PARM 12 POINTER
0018B2                      88  TUPARM13 EQU   PID+X'00B2'        ADDRESS OF PARM 13 POINTER
0018B4                      89  TUPARM14 EQU   PID+X'00B4'        ADDRESS OF PARM 14 POINTER
0018B6                      90  TUPARM15 EQU   PID+X'00B6'        ADDRESS OF PARM 15 POINTER
0018B8                      91  TUPARM16 EQU   PID+X'00B8'        ADDRESS OF PARM 16 POINTER
0018BA                      92  TUMSGWTP EQU   PID+X'00BA'        ADDRESS OF -> TO COMMON MSG WRITER
0018BE                      93  TUUA     EQU   PID+X'00BE'        ADDRESS OF UNIT ADDRESS IN EBC
0018C0                      94  TUDA     EQU   PID+X'00C0'        ADDRESS OF DEVICE ADDRESS IN EBC
0018C2                      95  TUBUFF   EQU   PID+X'00C2'        ADDRESS OF LAST USED WORD IN MAP
0018C4                      96  TULAST   EQU   PID+X'00C4'        ADDRESS OF LAST ADDRESSABLE WORD
0018C6                      97  TURESULN EQU   PID+X'00C6'        ADDRESS OF LENGTH OF TU RESULTS
0018C8                      98  TURESUL  EQU   PID+X'00C8'        ADDRESS OF TU RESULTS FIELD
0018FC                      99  MAPNAME  EQU   PID+X'00FC'        ADDRESS OF MAP NAME FIELD IN HEX
001948                     100  TUINPT   EQU   PID+X'0148'        ADDRESS OF $INPT DATA
00196E                     101  PARMARA  EQU   PID+X'016E'        ADDRESS OF $INPT INPUT AREA
0019B8                     102  @DCADD1  EQU   PID+X'01B8'        MDI POINTER
0019BA                     103  @DCADD2  EQU   PID+X'01BA'        MDI POINTER
0019C4                     104  SUPSTAT  EQU   PID+X'01C4'        ADDRESS OF MDI STATUS
0019D0                     105  DEVADD   EQU   PID+X'01D0'        ADDRESS OF DEVICE ADDRESS TABLE 0
0019DA                     106  DEVADD1  EQU   PID+X'01DA'        ADDRESS OF DEVICE ADDRESS TABLE 1
0019E4                     107  DEVADD2  EQU   PID+X'01E4'        ADDRESS OF DEVICE ADDRESS TABLE 2
0019EE                     108  DEVADD3  EQU   PID+X'01EE'        ADDRESS OF DEVICE ADDRESS TABLE 3
0019F8                     109  DEVADD4  EQU   PID+X'01F8'        ADDRESS OF DEVICE ADDRESS TABLE 4
001A02                     110  DEVADD5  EQU   PID+X'0202'        ADDRESS OF DEVICE ADDRESS TABLE 5
001A0C                     111  DEVADD6  EQU   PID+X'020C'        ADDRESS OF DEVICE ADDRESS TABLE 6
001A16                     112  DEVADD7  EQU   PID+X'0216'        ADDRESS OF DEVICE ADDRESS TABLE 7
                           113         PRINT OFF
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976

002500  2606               198         DC    A(ENTPT)           POINT TO MAP ENTRY POINT TABLE
                           199  ********************************************************************
                           200  ********************************************************************
                           201  **                                                                **
                           202  **   THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D3C00)   **
                           203  **   TO LOCATE THE CORRECT RULE TO INVOKE, TO OBTAIN THE PROPER    **
                           204  **   PARAMETERS TO PASS TO THE TU'S AND TO PASS TO THE OPERATOR    **
                           205  **   THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS **
                           206  **   PURPOSE THEY ARE:                                            **
                           207  **                                                                **
                           208  **   STEP AND RULE ADDRESS TABLE                                  **
                           209  **        THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND   **
                           210  **        THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE.    **
                           211  **        ENTRIES ARE AS FOLLOWES                                 **
                           212  **                A)  AN ADDRESS OF THE RULE DC STAPT AREA         **
                           213  **                B)  THE STEP NUMBER IN DECIMAL                   **
                           214  **                C)  AN EQUATE FOR THE STEP NUMBER                **
                           215  **                                                                **
                           216  **   RULE INFORMATION TABLE                                       **
                           217  **        THIS TABLE CONTAINES THE REQUIRED INFORMATION TO EXECUTE **
                           218  **        THE APPROPPIATE RULE UNDER MDI. EACH RULE HAS ITS OWN    **
                           219  **        UNICUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS   **
                           220  **        INDICATED WITH A X'0000' FOR THE RULE EQUATE.            **
                           221  **                                                                **
                           222  **        $QUES                                                   **
                           223  **              A) RULE EQUATE X'0100'                            **
                           224  **              B) ADDRESS OF THE YES LEG RULE                    **
                           225  **                                                                **
                           226  **        $FIXT                                                   **
                           227  **              A) RULE EQUATE X'0101'                            **
                           228  **              B) ADDRESS OF MESSAGE TO PRINT                    **
                           229  **                                                                **
                           230  **        $STOP                                                   **
                           231  **              A) RULE EQUATE X'0102'                            **
                           232  **              B) ADDRESS OF MESSAGE                             **
                           233  **                                                                **
                           234  **        $GOTO                                                   **
                           235  **              A) RULE EQUATE X'0200'                            **
                           236  **              B) ADDRESS OF MESSAGE                             **
                           237  **              C) NAME OF MAP TO GO TO                           **
                           238  **              D) ENTRY POINT WITHIN GO TO MAP TO USE            **
                           239  **              E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE   **
                           241  **                                                                **
                           242  **        $CALL                                                   **
                           243  **              A) RULE EQUATE X'0201'                            **
                           244  **              B) ADDRESS OF MESSAGE                             **
                           245  **              C) NAME OF MAP TO CALL                            **
                           246  **              D) ENTRY POINT WITHIN CALLED MAP TO USE           **
                           247  **              E) INDICATOR FOR EXTERNAL OF INTERNAL REFERENCE   **
                           248  **                                                                **
                           249  **        $INPT                                                   **
                           250  **              A) RULE EQUATE X'0300'                            **
                           251  **              B) INPUT TYPE (EBCDIC OR HEX)                     **
                           252  **              C) ADDRESS OF YES LEG RULE                        **
                           253  **              D) DESTINATION LOCATION OF INPUT DATA             **
                           254  **              E) LENGTH OF INPUT DATA                           **
                           255  **              F) LOWER LIMIT OF GOOD DATA                       **
                           256  **              G) HIGHER LIMIT OF GOOD DATA                      **
                           257  **                                                                **
                           258  **        $QUXX                                                   **
                           259  **              A) RULE EQUATE X'0400'                            **
                           260  **              B) ADDRESS OF YES LEG RULE                        **
                           261  **              C) TU BRANCH TO ADDRESS (INITIAL)                 **
                           262  **              D) TU BRANCH TO ADDRESS (SECONDARY)               **
                           263  **              E) LENGTH OF PARAMETER IN BYTES                   **
                           264  **              F) PARAMETER TO PASS TO TU                        **
                           265  **              G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER   **
                           265  **                                                                **
                           267  **        $TUXX                                                   **
                           268  **              A) RULE EQUATE X'0500'                            **
                           269  **              B) ADDRESS OF YES LEG RULE                        **
                           270  **              C) TU BRANCH TO ADDRESS                           **
                           271  **              D) TYPE OF COMPARE TO MAKE ON RESULTS             **
                           272  **              E) LENGTH OF COMPARED RESULTS                     **
                           273  **              F) MASK FIELD FOR COMPARE                         **
                           274  **              G) LENGTH OF PARAMETER IN BYTES                   **
                           275  **              H) PARAMETER TO PASS TO THE TU                    **
                           276  **              I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER   **
                           277  **                                                                **
                           278  **        $NVLD                                                   **
                           279  **              A) RULE EQUATE X'0600'                            **
                           281  **                                                                **
                           282  **   ENTRY POINT TABLE                                            **
                           283  **        THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT **
                           284  **        THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE       **
                           285  **        REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWES: **
                           286  **                                                                **
                           287  **             A) NAME OF ENTRY POINT                             **
                           288  **             B) ADDRESS OF ENTRY POINT RULE TABLE               **
                           289  **                                                                **
                           290  **        THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'     **
                           291  **                                                                **
                           292  **   MESSAGE TABLE                                                **
                           293  **        THIS TABLE CONTAINES THE MESSAGE PASSED TO THE OPERATOR  **
                           294  **        VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWES:       **
                           295  **                                                                **
                           296  **             A) EQUATE FOR START OF MESSAGE BLOCK               **
                           297  **             B) NUMBER OF LINES OF MESSAGE                      **
                           298  **             C) LENGTH OF FOLLOWING LINE                        **
                           299  **             D) FIRST LINE OF MESSAGE                           **
                           300  **             E) LENGTH OF FOLLOWING LINE                        **
                           301  **             F) SECOND LINE OF MESSAGE                          **
                           302  **             G) ETC.                                            **
                           303  **                                                                **
                           304  ********************************************************************
                           305  ********************************************************************
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                   COPYRIGHT IBM CORP 1976
                           308 ********************************************************************************
                           309 ********************************************************************************
                           310 **                                                                            **
                           311 **                        STEP AND RULE ADDRESS TABLE                         **
                           312 **                                                                            **
                           313 ********************************************************************************
                           314 ********************************************************************************
002502  2548               315          DC    AL2(N00001)
002504  0001               316          DC    XL2'0001'
000001                     317 EQN00001 EQU       0001
002506  255A               318          DC    AL2(N00002)
002508  0002               319          DC    XL2'0002'
000002                     320 EQN00002 EQU       0002
00250A  256C               321          DC    AL2(N00003)
00250C  0003               322          DC    XL2'0003'
000003                     323 EQN00003 EQU       0003
00250E  2570               324          DC    AL2(N00004)
002510  0004               325          DC    XL2'0004'
000004                     326 EQN00004 EQU       0004
002512  2574               327          DC    AL2(N00005)
002514  0005               328          DC    XL2'0005'
000005                     329 EQN00005 EQU       0005
002516  2586               330          DC    AL2(N00006)
002518  0006               331          DC    XL2'0006'
000006                     332 EQN00006 EQU       0006
00251A  2598               333          DC    AL2(N00007)
00251C  0007               334          DC    XL2'0007'
000007                     335 EQN00007 EQU       0007
00251E  259C               336          DC    AL2(N00008)
002520  0008               337          DC    XL2'0008'
000008                     338 EQN00008 EQU       0008
002522  25A0               339          DC    AL2(N00009)
002524  0009               340          DC    XL2'0009'
000009                     341 EQN00009 EQU       0009
002526  25B2               342          DC    AL2(N00010)
002528  0010               343          DC    XL2'0010'
00000A                     344 EQN00010 EQU       0010
00252A  25C4               345          DC    AL2(N00011)
00252C  0011               346          DC    XL2'0011'
00000B                     347 EQN00011 EQU       0011
00252E  25C8               348          DC    AL2(N00012)
002530  0012               349          DC    XL2'0012'
00000C                     350 EQN00012 EQU       0012
002532  25CC               351          DC    AL2(N00013)
002534  0013               352          DC    XL2'0013'
00000D                     353 EQN00013 EQU       0013
002536  25DE               354          DC    AL2(N00014)
002538  0014               355          DC    XL2'0014'
00000E                     356 EQN00014 EQU       0014
00253A  25F0               357          DC    AL2(N00015)
00253C  0015               358          DC    XL2'0015'
00000F                     359 EQN00015 EQU       0015
00253E  25F4               360          DC    AL2(N00016)
002540  0016               361          DC    XL2'0016'
000010                     362 EQN00016 EQU       0016
002542  25F8               363          DC    AL2(N00017)
002544  0017               364          DC    XL2'0017'
000011                     365 EQN00017 EQU       0017
002546  0000               366          DC    AL2(DUMMY)
                           367 ********************************************************************************
                           368 ********************************************************************************
                           369 **                                                                            **
                           370 **                          RULE INFORMATION TABLE                            **
                           371 **                                                                            **
                           372 ********************************************************************************
                           373 ********************************************************************************
002548  0500               374 N00001   $TUXX T7869,02,0000,EQ,QT=(Q00074),YES=N00005,CT=(C00072),     X
00254A  2574               375+N00001   DC    A(@TUXX)
00254C  2C20               376+         DC    AL2(N00005)
00254E  0000               377+         DC    A(T7869)
002550  0002               378+         DC    AL2(EQ)
002552  0000               379+         DC    AL2(02)
                           380+         DC    X'0000'
002554  0000               381+         ALIGN WORD
002556  C1C1               382+         DC    AL2(0)
                           383+         DC    C'AA'
002558  196E               384+         ALIGN WORD
                           385+         DC     AL2(PARMARA)
00255A  0500               386 N00002   $TUXX T3C02,02,0002,ON,QT=(Q00078),YES=N00004,CT=(C00077)
00255C  2570               387+N00002   DC    A(@TUXX)
00255E  2740               388+         DC    AL2(N00004)
002560  0200               389+         DC    A(T3C02)
002562  0002               390+         DC    AL2(ON)
002564  0002               391+         DC    AL2(02)
                           392+         DC    X'0002'
002566  0000               393+         ALIGN WORD
002568  C1C1               394+         DC    AL2(0)
                           395+         DC    C'AA'
00256A  196E               396+         ALIGN WORD
                           397+         DC     AL2(PARMARA)
00256C  0101               398 N00003   $FIXT FT=(F00004),CT=(C00045)
00256E  260C               399+N00003   DC    A(@FIXT)
                           400+         DC    A(F00004)
002570  0101               401 N00004   $FIXT FT=(F00008),CT=(C00045)
002572  268C               402+N00004   DC    A(@FIXT)
                           403+         DC    A(F00008)
002574  0500               404 N00005   $TUXX T7871,02,0000,EQ,QT=(Q00087),YES=N00009,CT=(C00086)
002576  25A0               405+N00005   DC    A(@TUXX)
002578  2EE2               406+         DC    AL2(N00009)
00257A  0000               407+         DC    A(T7871)
00257C  0002               408+         DC    AL2(EQ)
00257E  0000               409+         DC    AL2(02)
                           410+         DC    X'0000'
002580  0000               411+         ALIGN WORD
002582  C1C1               412+         DC    AL2(0)
                           413+         DC    C'AA'
002584  196E               414+         ALIGN WORD
                           415+         DC     AL2(PARMARA)
002586  0500               416 N00006   $TUXX T3C02,02,0002,ON,QT=(Q00090),YES=N00008,CT=(C00089)
002588  259C               417+N00006   DC    A(@TUXX)
00258A  2740               418+         DC    AL2(N00008)
00258C  0200               419+         DC    A(T3C02)
00258E  0002               420+         DC    AL2(ON)
                           421+         DC    AL2(02)
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                   COPYRIGHT IBM CORP 1976
002590  0002               422+         DC    X'0002'
                           423+         ALIGN WORD
002592  0000               424+         DC    AL2(0)
002594  C1C1               425+         DC    C'AA'
                           426+         ALIGN WORD
002596  196E               427+         DC     AL2(PARMARA)
                           428 N00007   $FIXT FT=(F00004),CT=(C00045)
002598  0101               429+N00007   DC    A(@FIXT)
00259A  260C               430+         DC    A(F00004)
                           431 N00008   $FIXT FT=(F00008),CT=(C00045)
00259C  0101               432+N00008   DC    A(@FIXT)
00259E  268C               433+         DC    A(F00008)
                           434 N00009   $TUXX T7873,02,0000,EQ,QT=(Q00099),YES=N00013,CT=(C00098)
0025A0  0500               435+N00009   DC    A(@TUXX)
0025A2  25CC               436+         DC    AL2(N00013)
0025A4  3308               437+         DC    A(T7873)
0025A6  0000               438+         DC    AL2(EQ)
0025A8  0002               439+         DC    AL2(02)
0025AA  0000               440+         DC    X'0000'
                           441+         ALIGN WORD
0025AC  0000               442+         DC    AL2(0)
0025AE  C1C1               443+         DC    C'AA'
                           444+         ALIGN WORD
0025B0  196E               445+         DC     AL2(PARMARA)
                           446 N00010   $TUXX T3C02,02,0002,ON,QT=(Q00102),YES=N00012,CT=(C00101)
0025B2  0500               447+N00010   DC    A(@TUXX)
0025B4  25C8               448+         DC    AL2(N00012)
0025B6  2740               449+         DC    A(T3C02)
0025B8  0200               450+         DC    AL2(ON)
0025BA  0002               451+         DC    AL2(02)
0025BC  0002               452+         DC    X'0002'
                           453+         ALIGN WORD
0025BE  0000               454+         DC    AL2(0)
0025C0  C1C1               455+         DC    C'AA'
                           456+         ALIGN WORD
0025C2  196E               457+         DC     AL2(PARMARA)
                           458 N00011   $FIXT FT=(F00004),CT=(C00045)
0025C4  0101               459+N00011   DC    A(@FIXT)
0025C6  260C               460+         DC    A(F00004)
                           461 N00012   $FIXT FT=(F00008),CT=(C00045)
0025C8  0101               462+N00012   DC    A(@FIXT)
0025CA  268C               463+         DC    A(F00008)
                           464 N00013   $TUXX T7874,02,0000,EQ,QT=(Q00111),YES=N00017,CT=(C00110)
0025CC  0500               465+N00013   DC    A(@TUXX)
0025CE  25F8               466+         DC    AL2(N00017)
0025D0  36E0               467+         DC    A(T7874)
0025D2  0000               468+         DC    AL2(EQ)
0025D4  0002               469+         DC    AL2(02)
0025D6  0000               470+         DC    X'0000'
                           471+         ALIGN WORD
0025D8  0000               472+         DC    AL2(0)
0025DA  C1C1               473+         DC    C'AA'
                           474+         ALIGN WORD
0025DC  196E               475+         DC     AL2(PARMARA)
                           476 N00014   $TUXX T3C02,02,0002,ON,QT=(Q00114),YES=N00016,CT=(C00113)
0025DE  0500               477+N00014   DC    A(@TUXX)
0025E0  25F4               478+         DC    AL2(N00016)
0025E2  2740               479+         DC    A(T3C02)
0025E4  0200               480+         DC    AL2(ON)
0025E6  0002               481+         DC    AL2(02)
0025E8  0002               482+         DC    X'0002'
                           483+         ALIGN WORD
0025EA  0000               484+         DC    AL2(0)
0025EC  C1C1               485+         DC    C'AA'
                           486+         ALIGN WORD
0025EE  196E               487+         DC     AL2(PARMARA)
                           488 N00015   $FIXT FT=(F00004),CT=(C00045)
0025F0  0101               489+N00015   DC    A(@FIXT)
0025F2  260C               490+         DC    A(F00004)
                           491 N00016   $FIXT FT=(F00008),CT=(C00045)
0025F4  0101               492+N00016   DC    A(@FIXT)
0025F6  268C               493+         DC    A(F00008)
                           494 N00017   $GOTO TYPE=XTRNL,EP=A,MAP=7823,FT=(F00122),GTO=((7823,A))
0025F8  0200               495+N00017   DC    A(@GOTO)
0025FA  2E86               496+         DC    A(F00122)
0025FC  F7F8F2F3           497+         DC    CL4'7823'
002600  C140               498+         DC    CL2'A'
002602  0001               499+         DC    AL2(XTRNL)
002604  0000               500          DC    AL2(DUMMY)
002606                     501 ENTPT    EQU   *
                           502 ********************************************************************************
                           503 ********************************************************************************
                           504 **                                                                            **
                           505 **                             ENTRY POINT TABLE                              **
                           506 **                                                                            **
                           507 ********************************************************************************
                           508 ********************************************************************************
                           509          ENTPT EP=A,STEP=00001
002606  C140               510+         DC    CL2'A'
002608  2548               511+         DC    A(N00001)
00260A  0000               512          DC    AL2(DUMMY)
                           513 ********************************************************************************
                           514 ********************************************************************************
                           515 **                                                                            **
                           516 **                              MESSAGE TABLE                                 **
                           517 **                                                                            **
                           518 ********************************************************************************
                           519 ********************************************************************************
00260C                     520 F00004   EQU   *
00260C  0003               521          DC    AL2(0003)
00260E  002C               522          DC    A(0044)
002610  D9C5D7D3C1C3C540F  523          DC    CL0044'REPLACE 4962 CARDS A-A1C2,A-A1D2,ATTACHMENT.'
00263C  002C               524          DC    A(0044)
00263E  C9D5E2D7C5C3E340C  525          DC    CL0044'INSPECT AND RESEAT CABLES BETWEEN ATTACHMFNT'
00266A  0020               526          DC    A(0032)
00266C  C1D5C440F4F9F6F24  527          DC    CL0032'AND 4962. REPLACE A-A1G2, A-A1H2'
00268C                     528 F00008   EQU   *
00268C  0002               529          DC    AL2(0002)
00268E  002A               530          DC    A(0042)
002690  D9C5D7D3C1C3C540F  531          DC    CL0042'REPLACE 4962 ATTACHMENT CARD, INSPECT AND '
0026BA  002A               532          DC    A(0042)
0026BC  D9C5E2C5C1E340C3C  533          DC    CL0042'RESEAT CABLES BETWEEN ATTACHMENT AND 4962 '
0026E6                     534 F00122   EQU   *
0026E6  0001               535          DC    AL2(0001)
```

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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
0026E8  0010                536           DC    A(0016)
0026EA  D4C1D7F7F8F2F240C   537           DC    CL0016'MAP7822 CORRECT '
                            538         HDIT  00B2
0026FA  0000                540+OPTN1 DC    X'0000'                  PROGRAM OPTION CONTROL WORD 1
                            541+*
0026FC  0000                542+OPTN2 DC    X'0000'                  PROGRAM OPTION CONTROL WORD 2
                            543+*                       BIT     HEX
000010                      544+B48   EQU   16      0       8        PROBLEM PROGRAM CONTROL BITS
000011                      545+B49   EQU   17      1       4        *
000012                      546+B50   EQU   18      2       2        * THESE BITS ARE USED WITH THE
000013                      547+B51   EQU   19      3       1        * SECOND OPTION WD  AND ARE TO
000014                      548+B52   EQU   20      4       8        * BE ASSIGNED BY EACH PROGRAMMER
000015                      549+B53   EQU   21      5       4        *
000016                      550+B54   EQU   22      6       2        *
000017                      551+B55   EQU   23      7       1        *
000018                      552+B56   EQU   24      8       8        *
000019                      553+B57   EQU   25      9       4        *
00001A                      554+B58   EQU   26      10      2        *
00001B                      555+B59   EQU   27      11      1        *
00001C                      556+B60   EQU   28      12      8        *
00001D                      557+B61   EQU   29      13      4        *
00001E                      558+B62   EQU   30      14      2        *
00001F                      559+B63   EQU   31      15      1        *
00001E                      560+CH    EQU   30      14      2        CHARACTER SUPPLIED
00001F                      561+CMP   EQU   31      15      1        COMPARE OPERATION
0026FE  0000                563+OPTN3 DC    X'0000'                  PROGRAM OPTION CONTROL WORD 3
                            564+*
                            565+*  0  MYSTERY INTERRUPT     MI        8  CS STATUS IN PROGRESS    CS
                            566+*  1  ERROR INTERRUPT       ER        9  CS AVAILABLE             CSA
                            567+*  2  EXPECTED INTERRUPT    XI       10  CS STATUS INTERPUPT ERR  CE
                            568+*  3  INTERRUPT RECEIVED    IN       11  ISB BITS ON (1-7)        ISBON
                            569+*
                            570+*  4  EXPECTED ERR/ATTENT   XE       12  TEST UNIT RESULTS VOID   NG
                            571+*  5  HARD ERROR FOUND      HE       13  OIO CC ERROR             IOCC
                            572+*  6  WRONG INTR LEVEL      $LE      14  NO INTERRUPT             NOIN
                            573+*  7  NO INTP EXPECTED      NI       15  INTERPUPT CC ERROR       INCC
                            574+*                       BIT     HEX
000020                      575+MI    EQU   32      0       8        MYSTERY INTERRUPT HAPPENED
000021                      576+ER    EQU   33      1       4        ERROR RECEIVED ON INTERRUPT
000022                      577+XI    EQU   34      2       2        EXPECTED INTERRUPT CONTROI BIT
000023                      578+IN    EQU   35      3       1        INTERRUPT RECEIVED CONTROL BIT
000024                      579+XE    EQU   36      4       8        EXPECTED ERROR RESPONSE
000025                      580+HE    EQU   37      5       4        HARD ERROR, 8 RETRIES
000026                      581+$LE   EQU   38      6       2        INTERRUPT ON WRONG LEVEL ERROR
000027                      582+NI    EQU   39      7       1        NO INTERPUPT EXPECTED E
000028                      583+CS    EQU   40      8       8        CYCLE STATUS IN PROGRESS
000029                      584+CSA   EQU   41      9       4        CYCLE STEAL AVAILABLE
00002A                      585+CE    EQU   42      10      2        CYCLE STEAL STATUS INEPPRUPT ERROR
00002B                      586+ISBON EQU   43      11      1        ISB BITS ON (1-7)
00002C                      587+NG    EQU   44      12      8        TEST UNIT RESULTS NO GOOD
00002D                      588+IOCC  EQU   45      13      4        OIO CC ERROR
00002E                      589+NOIN  EQU   46      14      2        NO INTERRUPT
00002F                      590+INCC  EQU   47      15      1        INTERRUPT CC ERROR
                            591+*
                            592+*     COMMON BUFFER FOR PRINTING DATA
                            593+*
002700  0000                595+$TUID DC    A(*-*)                   TEST UNIT IDENTIFICATION
002702  0000                596+$IOIN DC    A(*-*)                   I/O AND INTR CONDITION CODES
002704  0000                597+$ISB  DC    A(*-*)                   R7, INTR STATUS BYTE & DEV ADRS
002706  0000                598+LSTIO DC    A(*-*)                   ADRS OF LAST I/O + 4 BYTES
002708  0000                599+DEV1  DC    A(*-*)                   DEVICE DEPENDENT DATA
00270A  0000                600+DEV2  DC    A(*-*)                   *
00270C  0000                601+DEV3  DC    A(*-*)                   *
00270E  0000                602+DEV4  DC    A(*-*)                   *
002708                      603+SCTID EQU   DEV1                     READ ID BUFFER FOR IBIS & TERN
002710                      604+DCBUF EQU   *                        DCB BUFFER FOR LAST DCB USED
002710  0000                605+DCB1  DC    A(*-*)                   LAST DCB TABLE, CONTFOL WORD
002712  0000                606+DCB2  DC    A(*-*)                   LAST DCB TABLE, DEV DEP WORD
002714  0000                607+DCB3  DC    A(*-*)                   LAST DCB TABLE, DEV DEP WORD
002716  0000                608+DCB4  DC    A(*-*)                   LAST DCB TABLE, DEV DEP WORD
002718  0000                609+DCB5  DC    A(*-*)                   LAST DCB TABLE, CHAIN ADRS
00271A  0000                610+DCB6  DC    A(*-*)                   LAST DCB TABLE, BYTE COUNT
00271C  0000                611+DCB7  DC    A(*-*)                   LAST DCB TABLE, BUFFER ADDRESS
00271E  0000                612+DCB8  DC    A(*-*)
                            613+*
002720                      614+CSBUF EQU   *                        CYCLE STEAL DATA BUFFER
002720  0000                615+CSTL1 DC    A(*-*)                   CYCLE STEAL BUFFER, RESIDUAL ADRS
002722  0000                616+CSTL2 DC    A(*-*)                   CYCLE STEAL WD 2, DEVICE DEPEND
002724  0000                617+CSTL3 DC    A(*-*)                   CYCLE STEAL WD 3, DEVICE DEPEND
002726  0000                618+CSTL4 DC    A(*-*)                   CYCLE STEAL WD 4, DEVICE DEPEND
002728  0000                619+CSTL5 DC    A(*-*)                   CYCLE STEAL WD 5, DEVICE DEPEND
00272A  0000                620+CSTL6 DC    A(*-*)                   CYCLE STEAL WD 6, DEVICE DEPEND
00272C  0000                621+CSTL7 DC    A(*-*)                   CYCLE STEAL WD 7, DEVICE DEPEND
00272E  0000                622+CSTL8 DC    A(*-*)                   CYCLE STEAL WD 8, DEVICE DEPEND
                            623+*
002730  0000                624+$SUBN DC    A(*-*)                   LAST SUBPOUTINE ADDPESS USED
002732  00000000            625+$DATA DC    2A(*-*)                  OPTIONAL DATA
002736  0021                626+$INTL DC    X'0021'                  INTERRUPT LEVEL REQUESTED
002738  0000                627+TURTN DC    A(*-*)                   TEST UNIT RETURN ADRS TO MDI
00273A  00B2                628+$DVID DC    X'00B2'                  DEVICE ID
00273C  19D0                629+SVCAL DC    A(DEVADD)                ADRS OF DEVICE ADDPESS
00273E  0000                630+      DC    A(*-*)                   IBIS CYLINDER ADDRESS
                            631+*
                            632+*     THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
                            633+*     FUNCTION.  THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
                            634+*     STILL VALID BUT A DIFFERENT TEST IS TO BE PEPFORMED.
                            635+*
002740  4020 2700 3C02      636+T3C02 MVWI  X'3C02',$TUID              SET UP TEST UNIT ID
002746  5700                637+      BXS   (R7)                       RETURN TO MDI SUPVR
                            639       COPY  COMPOU
                            640 ************************************************************************
                            641 *                                                                      *
                            642 *                EQUATED NAMES FOR SUPPORTED SVC'S                     *
                            643 *                                                                      *
                            644 ************************************************************************
000000                      645 OUT   EQU   0                        OUT SVC
000001                      646 OUTIN EQU   1                        OUTIN SVC
000002                      647 IDLE  EQU   2                        IDLE SVC
000003                      648 ASCII EQU   3                        HEX TO ASCII SVC
000004                      649 CHNGE EQU   4                        CHANGE LEVEL SVC
000005                      650 PGMCK EQU   5                        ALLOW RETURN ON PROGRAM CHECK SVC
000006                      651 EXIT  EQU   6                        EXIT SVC
000007                      652 TERM  EQU   7                        TERMINATE SVC
000008                      653 RESET EQU   8                        RESET DEVICE SVC
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
000009                       654 RID   EQU   9                        READ ID SVC
00000A                       655 START EQU   10                       START CYCLE STEAL SVC
00000B                       656 STCSS EQU   11                       START CYCLE STEAL STATUS SVC
00000C                       657 PREP  EQU   12                       PREPARE DEVICE SVC
00000D                       658 READO EQU   13                       READ WITH FUNCTION BIT 3 OFF SVC
00000E                       659 READ1 EQU   14                       READ WITH FUNCTION BIT 3 ON SVC
00000F                       660 RSTAT EQU   15                       READ STATUS SVC
000010                       661 WRITO EQU   16                       WRITE WITH FUNCTION BIT 3 OFF SVC
000011                       662 WRIT1 EQU   17                       WRITE WITH FUNCTION BIT 3 ON SVC
000012                       663 CTRL  EQU   18                       CONTROL SVC
000013                       664 RICB  EQU   19                       RELEASE INTERUPT CONTROL BLOCK SVC
000014                       665 CICB  EQU   20                       CONNECT INTERUPT CONTROL BLOCK SVC
000015                       666 HIO   EQU   21                       HALT ALL I/O
000016                       667 REQSD EQU   22                       REQUEST USE OF DCP DISK SVC
000017                       668 RELSD EQU   23                       RELEASE USE OF DCP DISK SVC
000018                       669 HALT  EQU   24                       HALT SVC
000019                       670 ETOH  EQU   25                       EBCDIC TO HEX SVC (STRING)
00001A                       671 HTOE  EQU   26                       HEX TO EBCDIC SVC (STRING)
00001B                       672 ATOH  EQU   27                       ASCII TO HEX SVC (STRING)
00001C                       673 HTOA  EQU   28                       HEX TO ASCII SVC (STRING)
00001D                       674 ETOA  EQU   29                       EBCDIC TO ASCII SVC (STRING)
00001E                       675 ATOE  EQU   30                       ASCII TO EBCDIC SVC (STRING)
00001F                       676 READI EQU   31                       READ DATA SETS FOR MDI/UTIL
000020                       677 WRITI EQU   32                       WRITE DATA SETS FOR UTIL
                             679 ************************************************************************
                             680 *                                                                      *
                             681 *                EQUATES USED BY TU'S AS CONSTANTS                     *
                             682 *                                                                      *
                             683 ************************************************************************
00004E                       684 PLUS  EQU   C'+'                     PLUS CHAR
000060                       685 MINUS EQU   C'-'                     MINUS CHAR
000000                       687 ZERO  EQU   0
000001                       688 ONE   EQU   1
000002                       689 TWO   EQU   2
000003                       690 THREE EQU   3
000004                       691 FOUP  EQU   4
000005                       692 FIVE  EQU   5
000006                       693 SIX   EQU   6
000007                       694 SEVEN EQU   7
000008                       695 EIGHT EQU   8
000009                       696 NINE  EQU   9
00000A                       697 TEN   EQU   10
00000B                       698 ELEVN EQU   11                                       11
00000C                       699 TWELV EQU   12                                       12
00000D                       700 THRTN EQU   13                                       13
00000F                       701 FIVTN EQU   15                                       15
000010                       702 SIXTN EQU   16                                       16
000020                       703 THRY2 EQU   32                                       32
000040                       704 SIXT4 EQU   64                                       64
000080                       705 ONE28 EQU   128                                      128
000100                       706 TWO56 EQU   256                                      256
000400                       707 ONEK  EQU   1024                                     1024
000800                       708 TWOK  EQU   2048                                     2048
000C00                       709 THREK EQU   3072                                     3072
001000                       710 FOURK EQU   4096                                     4096
FFFFFF                       712 M1    EQU   -1                                     -1
FFFFFE                       713 M2    EQU   -2                                     -2
FFFFFD                       714 M3    EQU   -3                                     -3
FFFFFC                       715 M4    EQU   -4                                     -4
                             717 ************************************************************************
                             718 *                                                                      *
                             719 *     THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE         *
                             720 *     BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES.       *
                             721 *                                                                      *
                             722 ************************************************************************
000000                       723 BS0   EQU   0
000001                       724 BS1   EQU   1
000002                       725 BS2   EQU   2
000003                       726 BS3   EQU   3
000004                       727 BS4   EQU   4
000005                       728 BS5   EQU   5
000006                       729 BS6   EQU   6
000007                       730 BS7   EQU   7
000008                       731 BS8   EQU   8
000009                       732 BS9   EQU   9
00000A                       733 BS10  EQU   10
00000B                       734 BS11  EQU   11
00000C                       735 BS12  EQU   12
00000D                       736 BS13  EQU   13
00000E                       737 BS14  EQU   14
00000F                       738 BS15  EQU   15
                             740       COPY  CK78DCB                  01DEC76
                             741 ** (T78DCB)                          13AUG76
                             742 ************************************************************************
                             743 *
                             744 *     DCB TABLES AND DC'S
                             745 *
                             746 ************************************************************************
                             747 *
                             748 ***** DIAGNOSTIC DCB   ********
002748  2008                 749 *
                             750 DGDCB DC    X'2008'                  DIAGNOSTIC DCB
00274A  0000                 751       DC    X'0000'                  NOT USED
00274C  0000                 752       DC    X'0000'                  NOT USED
00274E  0000                 753       DC    X'0000'                  NOT USED
002750  0000                 754       DC    X'0000'                  NOT USED
002752  0000                 755       DC    A(*-*)                   CHAINING ADDRESS
002754  0100                 756       DC    X'0100'                  BYTE COUNT
002756  0000                 757       DC    A(*-*)                   DATA ADDRESS
                             758 *
                             760 ***** RECALIBRATE DCB  ********
                             761 *
002758  0007                 762 CLDCB DC    X'0007'                  RECALIBRATE DCB
00275A  00000000000000000    763       DC    7A(*-*)
                             764 *
                             765 ***** WRITE SECTOR ID  **
                             766 *
002768  0002                 767 WSDCB  DC    X'0002'                  WRITE SECTOR ID CONTROL WORD
00276A  0000                 768       DC    X'0000'                  NOT USED
00276C  0000                 769       DC    A(*-*)                   0-7 = PHYSICAL SECTOR # MINUS ONE
00276E  0000                 770       DC    A(*-*)                   NOT USED
002770  0000                 771       DC    A(*-*)                   NOT USED
002772  0000                 772       DC    A(*-*)                   CHAIN ADDRESS
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
002774  0006                773        DC    X'0006'               BYTE COUNT
002776  2814                774        DC    A(WRSID)              ADDR OF SECTOR ID DATA
                            775 ***** READ SECTOR ID DCB  *******
                            776 *
002778  200A                777 RSDCB  DC    X'200A'               READ SECTOR ID
00277A  0000                778        DC    X'0000'               NOT USED
00277C  0000                779        DC    X'0000'               0-7 = PHYSICAL SECTOR # MINUS ONE
00277E  0000                780        DC    X'0000'               NOT USED
002780  0000                781        DC    X'0000'               NOT USED
002782  0000                782        DC    X'0000'               CHAIN ADDRESS
002784  0006                783        DC    X'0006'               BYTE COUNT FOR READ SECTOR ID
002786  2708                784        DC    A(SCTID)              SECTOR ID DATA ADDRESS
                            785 *
                            786 *
                            787 ***** READ SECTOR ID IMMEDIATE DCB  *******
                            788 *
002788  200E                789 RIDCB  DC    X'200E'               READ SECTOR ID
00278A  0000                790        DC    X'0000'               NOT USED
00278C  0000                791        DC    X'0000'               NOT USED
00278E  0000                792        DC    X'0000'               NOT USED
002790  0000                793        DC    X'0000'               NOT USED
002792  0000                794        DC    A(*-*)                CHAIN ADDRESS
002794  0006                795        DC    X'0006'               BYTE COUNT FOR READ SECTOR ID
002796  2708                796        DC    A(SCTID)              SECTOR ID DATA ADDRESS
                            797 *
                            798 *
                            799 ***** SEEK DCB  ********
                            800 *
002798  0005                801 SKDCB  DC    X'0005'               SEEK DCB
00279A  0000                802        DC    X'0000'               BIT 0-3=0;BIT4=DIRECTION;5-15=DIFFER
00279C  0000                803        DC    F'0'
00279E  0000                804        DC    F'0'
0027A0  0000                805        DC    X'0000'               0-7 = HEAD;8-15 NOT USED
0027A2  0000                806        DC    A(*-*)                CHAIN ADDRESS
0027A4  0000                807        DC    F'0'                  NOT USED
0027A6  0000                808        DC    F'0'                  NOT USED
                            809 *
                            810 ***** CYCLE STEAL STATUS DCB  ********
                            811 *
0027A8  2000                812 CSDCB  DC    X'2000'               CONTROL WORD
0027AA  0000                813        DC    F'0'                  NOT USED
0027AC  0000                814        DC    F'0'                  NOT USED
0027AE  0000                815        DC    F'0'                  NOT USED
0027B0  0000                816        DC    F'0'                  NOT USED
0027B2  0000                817        DC    F'0'                  NOT USED
0027B4  0008                818        DC    X'0008'               4 WORDS OF STATS
0027B6  2720                819        DC    A(CSBUF)              ADDRESS OF CYCLE STEAL STATUS DATA
                            820 *
                            821 ***** WRITE DCB  **********
                            822 *
0027B8  0001                823 WRDCB  DC    X'0001'               WRITE CONTROL WORD
0027BA  0000                824        DC    F'0'                  NOT USED
0027BC  0000                825        DC    X'0000'               0-7=0;8-15 = FLAG BYTE
0027BE  0000                826        DC    X'0000'               SERCH ARGUMENT CYLINDER
0027C0  0000                827        DC    X'0000'               SEARCH ARGUMENT HEAD-SECTOR
0027C2  0000                828        DC    A(*-*)                CHAIN ADDRESS
0027C4  0000                829        DC    F'0'                  BYTE COUNT
0027C6  0000                830        DC    A(*-*)                WRITE DATA ADDRESS
                            831 *
                            832 ***** VERIFY DCB   *******
                            833 *
0027C8  200C                834 VRDCB  DC    X'200C'               CONTROL WORD
0027CA  0000                835        DC    F'0'                  NOT USED
0027CC  0000                836        DC    X'0000'               0-7=0;8-15 = FLAG BYTE
0027CE  0000                837        DC    X'0000'               CYLINDER
0027D0  0000                838        DC    X'0000'               HEAD - SECTOR
0027D2  0000                839        DC    A(*-*)                CHAIN ADDRESS
0027D4  0000                840        DC    F'0'                  BYTE COUNT
0027D6  0000                841        DC    A(*-*)                VERIFY DATA ADDRESS
                            842 *
                            843 ***** READ DCB   *******
                            844 *
0027D8  2009                845 RDDCB  DC    X'2009'               READ DCB CONTROL WORD
0027DA  0000                846        DC    F'0'                  NOT USED
0027DC  0000                847        DC    X'0000'               0-7=0,8-15 = FLAG BYTE
0027DE  0000                848        DC    X'0000'               SEARCH ARGUMENT CYLINDER
0027E0  0101                849        DC    X'0101'               SEARCH ARGUMENT H-R
0027E2  0000                850        DC    A(*-*)                CHAIN ADDRESS
0027E4  0000                851        DC    F'0'                  BYTE COUNT
0027E6  0000                852        DC    A(*-*)                READ DATA ADDRESS
                            853 *
                            854 ****  WRITE SECTOR ID SKEWED   ****
                            855 *
0027E8  0003                856 WKDCB  DC    X'0003'               CONTROL WORD
0027EA  0000                857        DC    X'0000'               NOT USED
0027EC  0000                858        DC    A(*-*)                0-7 = PHYSICAL SECTOR # MINUS ONE
0027EE  0000                859        DC    A(*-*)                NOT USED
0027F0  0000                860        DC    A(*-*)                NOT USED
0027F2  0000                861        DC    A(*-*)                CHAIN ADDRESS
0027F4  0006                862        DC    X'0006'               BYTE COUNT
0027F6  2814                863        DC    A(WRSID)              ADDR OF SECTOR ID DATA
                            864 *
                            865 ****  READ SECTOR ID SKEWED    ****
                            866 *
0027F8  200B                867 RKDCB  DC    X'200B'               CONTROL WORD
0027FA  0000                868        DC    X'0000'               NOT USED
0027FC  0000                869        DC    X'0000'               0-7 = PHYSICAL SECTOR # MINUS ONE
0027FE  0000                870        DC    X'0000'               NOT USED
002800  0000                871        DC    X'0000'               NOT USED
002802  0000                872        DC    A(*-*)                CHAIN ADDRESS
002804  0006                873        DC    X'0006'               BYTE COUNT FOR READ SECTOR ID
002806  2708                874        DC    A(SCTID)              SECTOR ID DATA ADDRESS
                            875 *
                            876 *     CONSTANTS AND DEFINED STORAGE  LOCATIONS
002808  0000                877 ZERO0  DC    X'0000'               CONSTANT ZERO
00280A  0001                878 ONE1   DC    X'0001'               CONSTANT ONE
00280C  0000                879 LGSEC  DC    X'0000'               LOGICAL SECTOR #
00280E  0000                880 PHYSC  DC    X'0000'               CONVERTED PHYSICAL SEC #
002810  1D00                881 CB29   DC    X'1D00'               CONSTANT BYTE 29
002812  3B00                882 FIVE9  DC    X'3B00'               CONSTANT BYTE 59
002814  0000                883 WRSID  DC    X'0000'               FLAG,CYLINDER (WRT SECTOR ID DATA)
002816  0000                884        DC    X'0000'               CYLINDER,HEAD
002818  0000                885        DC    X'0000'               LOG SECTOR,NOT USED
00281A  FF34                886 WSIDT  DC    X'FF34'               WRITE SECTOR ID TEST DATA
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
00281C  5678                887        DC    X'5678'               *
00281E  9A00                888        DC    X'9A00'               *
002820  0000                889 SCTST  DC    X'0000'               READ SECTOP ID TEST DATA BUFFER
002822  0000                890        DC    X'0000'
002824  0000                891        DC    X'0000'               *
002826  0000                892 CTR01  DC    X'0000'               COUNTER
002828  0000                893 DIFF   DC    X'0000'               DIFFERENCE LOC
00282A  0000                894 XXX    DC    X'0000'               DIRECTION
                            895 *
                            897        COPY  T78DPCIO              01DEC76
                            898 ** (T78DPCIO)
                            899 *                                                    2/07/77
                            900 *     EXECUTE DPC INPUT/OUTPUT COMMANDS
                            901 *     THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                            902 *
                            903 * 1   BAL   CEOP1,R6                CE DIAGNOSTIC OP1(TURN ON DIAG MODE)
                            904 *
                            905 * 2   BAL   CEOP2,R6                WRITE DIAG CLOCK STEP DATA
                            906 *
                            907 * 3   BAL   SENS0,R6                CE READ SENSE WORD ZERO
                            908 *
                            909 * 4   BAL   SENS1,R6                CE READ SENSE WORD ONE
                            910 *
                            911 * 5   BAL   WRAP,R6                 READ DIAGNOSTIC WRAP
                            912 *
                            913 *     BXS   (R6,2)                  RETURN
                            914 *
                            915 ***************************************************************
                            916 *
                            917 *     CE DIAGNOSTIC OP2 DATA WORD  (CLOCK STEP)
                            918 *
                            919 *     BIT 00  - SET READY
                            920 *     BIT 01  - RESET READY
                            921 *     BIT 02  - SET WRITE CLOCK
                            922 *     BIT 03  - SET READ CLOCK
                            923 *     BIT 04  - INDEX PULSE
                            924 *     BIT 05  - SECTOR PULSE
                            925 *     BIT 06  - STANDARD READ DATA
                            926 *     BIT 07  - SPEED PULSE
                            927 *     BIT 08  - BEHIND HOME
                            928 *     BIT 09  - SET SEEK COMPLETE
                            929 *     BIT 10  - RESET SEEK COMPLETE
                            930 *     BIT 11  - PIO OUT OF SYNC
                            931 *     BIT 12  - RST RD/WRT CLOCK
                            932 *     BIT 13  -
                            933 *     BIT 14  -
                            934 *     BIT 15  - RESET DIAGNOSTIC MODE
                            935 *
                            936 ***************************************************************
                            937 *
                            938 *
002828  6E0D 2706           939 WRAP   MVW   R6,LSTIO              SAVE ADDRESS OF LAST IO
002830  8028 19D0 28AF      940        MVB   DEVADD,IDCBRAP+1      LOAD DEVICE ADDRESS IN IDCB
002836  680C 28AE           941        IO    IDCBRAP               READ SENSE WORD 1
00283A  6F05 2890           942        BNCC  7,CCERR               CHECK COND CODE
00283E  5601                943        BXS   (R6,2)                RETURN TO CALLER
                            944 *
002840  6E0D 2706           945 CEOP1  MVW   R6,LSTIO              SAVE ADDRESS OF LAST IO
002844  8028 19D0 28A7      946        MVB   DEVADD,IDCBCE1+1      LOAD DEVICE ADDRESS IN IDCB
00284A  680C 28A6           947        IO    IDCBCE1               SET DIAGNOSTIC MODE
00284E  6F05 2890           948        BNCC  7,CCERR               CHECK COND CODE
002852  5601                949        BXS   (R6,2)                RETURN TO CALLER
                            950 *
002854  6E0D 2706           951 CEOP2  MVW   R6,LSTIO              SAVE ADDRESS OF LAST IO
002858  8028 19D0 28AE      952        MVB   DEVADD,IDCBCE2+1      LOAD DEVICE ADDRESS IN IDCB
00285E  680C 28AA           953        IO    IDCBCE2               WRITE DIAG CLOCK STEP
002862  6F05 2890           954        BNCC  7,CCERR               CHECK COND CODE
002866  5601                955        BXS   (R6,2)                RETURN TO CALLER
                            956 *
                            957 *
002868  6E0D 2706           958 SENS1  MVW   R6,LSTIO              SAVE ADDRESS OF LAST IO
00286C  8028 19D0 28A3      959        MVB   DEVADD,IDCB1+1        LOAD DEVICE ADDRESS IN IDCB
002872  680C 28A2           960        IO    IDCB1                 READ SENSE WORD 2
002876  6F05 2890           961        BNCC  7,CCERR               CHECK COND CODE
00287A  5601                962        BXS   (R6,2)                RETURN TO CALLER
                            963 *
00287C  6E0D 2706           964 SENS0  MVW   R6,LSTIO              SAVE ADDRESS OF LAST IO
002880  8028 19D0 289F      965        MVB   DEVADD,IDCB0+1        LOAD DEVICE ADDRESS IN IDCB
002886  680C 289E           966        IO    IDCB0                 READ SENSE WORD 1
00288A  6F05 2890           967        BNCC  7,CCERR               CHECK COND CODE
00288E  5601                968        BXS   (R6,2)                RETURN TO CALLER
                            969 *
002890  706E                970 CCERR  DC    X'706E'               COPY STATUS ANY LEVEL INTO R3
002892  336A                971        SRL   13,R3                 POSITION CC CODE TO BITS 13-15
002894  C328 2702           972        MVB   R3,$IOIN              * PUT IN LOG AREA
002898  68D2 0000           973        B     (R6)*                 RETURN TO USER
                            974 *
00289C  6F05                975 IORST  DC    X'6F05'               RESET IO
00289E  2205                976 IDCB0  DC    X'2205'               SENSE WORD ZERO
0028A0  0000                977 RDATA0 DC    A(*-*)                DATA WORD
0028A2  2105                978 IDCB1  DC    X'2105'               SENSE WORD ONE
0028A4  0000                979 RDATA  DC    A(*-*)
0028A6  4005                980 IDCBCE1 DC   X'4005'               CE DIAG OP1
0028A8  0000                981 CEDAT  DC    A(*-*)                SENSE DATA
0028AA  4105                982 IDCBCE2 DC   X'4105'               CE DIAG OP2
0028AC  0000                983 CEDAT2 DC    A(*-*)                SENSE DATA
0028AE  2F05                984 IDCBRAP DC   X'2F05'               READ DIAG WRAP
0028B0  0000                985 RAPDAT DC    A(*-*)                SENSE DATA
000232                      986 CPUID  EQU   X'0232'               CPU ID
                            987 *
                            989        COPY  CK78IO                01DEC76
                            990 ** (T78IO)                        01DEC76
                            991 *
                            992 *     EXECUTE INPUT & OUTPUT COMMANDS
                            993 *     TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
                            994 *     EACH OF THESE ENTRIES SET R7 WITH THE ADRS OF ITS PARAMETER
                            995 *     LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE
                            996 *     SUPVR CALL.
                            997 *
                            998 *     THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:
                            999 *
                           1000 *     1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP
                           1001 *     2. ERROR INTERRUPTS RECEIVED FROM SUPVR
                           1002 *     3. LOOP ON ERROR, THE CALL MUST HAVE A 'DC' STATEMENT AFTER
```

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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                           1003 *      .  THE CALL WITH THE ADDRESS OF THE RETRY STATEMENT
                           1004 *      4. CYCLE STEAL IN PROGRESS WITH AN ERROR
                           1005 *      5. SOMETHING ELSE
                           1006 *
                           1007 *      THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                           1008 *
                           1009 *  1   BAL   $RKEW,R6              READ SECTOR ID SKEWED
                           1010 *
                           1011 *  2   BAL   $WKST,R6              WRITE SECTOR ID SKEWED (TEST)
                           1012 *
                           1013 *  3   BAL   $RWST,R6              READ SECTOR ID SKEWED (TEST)
                           1014 *
                           1015 *  4   BAL   $RIDS,R6              READ SECTOR ID (TEST)
                           1016 *
                           1017 *  5   BAL   $WKEW,R6              WRITE SECTOR ID SKEWED
                           1018 *
                           1019 *  6   BAL   $WSEC,R6              WRITE SECTOR ID
                           1020 *
                           1021 *  7   BAL   $WSTS,R6              WRITE SECTOR ID (TEST
                           1022 *
                           1023 *  8   BAL   $DIAG,R6              DIAGNOSTIC
                           1024 *
                           1025 *  9   BAL   XIOCS,R6              CYCLE STEAL STATUS
                           1026 *
                           1027 *  10  BAL   $SEEK,R6              SEEK
                           1028 *
                           1029 *  11  BAL   $RECL,R6              RECALIBRATE
                           1030 *
                           1031 *  12  BAL   $RDID,R6              READ SECTOR ID
                           1032 *
                           1033 *  13  BAL   $RD,R6                READ
                           1034 *
                           1035 *  14  BAL   $RDVY,R6              READ VERIFY
                           1036 *
                           1037 *  15  BAL   $WRT,R6               WRITE
                           1038 *
                           1039 *
0028B2  4020 2A6C 2798     1040 $SEEK  MVA   SKDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
0028B8  5058               1041        J     XIO
                           1042 *
0028BA  4020 2A6C 2758     1043 $RECL  MVA   CLDCB,IODCB           SET UP BLOCK FOR SVC CALL
0028C0  5054               1044        J     XIO
                           1045 *
0028C2  4020 2A6C 2778     1046 $RDID  MVA   RSDCB,IODCB           SET UP BLOCK FOR SVC CALL
0028C8  0BFF               1047        MVBI  X'FF',R3            SET BUFFER TO F'S
0028CA  4524 2708          1048        MVA   SCTID,R5            SETUP READ SECTOR ID BUFFER ADRS
0028CE  4724 0006          1049        MVWI  6,R7                SETUP BUFFER LENGTH
0028D2  2BAC               1050        FFN   R3,(R5)             INIT READ SECTOR ID BUFFER
0028D4  4020 2786 2708     1051        MVA   SCTID,RSDCB+14      DATA ADDR
0028DA  5047               1052        J     XIO
                           1053 *
0028DC  4020 2A6C 27D8     1054 $RD    MVA   RDDCB,IODCB           SET UP BLOCK FOR SVC CALL
0028E2  5043               1055        J     XIO
                           1056 *
0028E4  4020 2A6C 27C8     1057 $RDVY  MVA   VRDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
0028EA  503F               1058        J     XIO
                           1059 *
0028EC  4020 2A6C 27B8     1060 $WRT   MVA   WRDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
0028F2  503B               1061        J     XIO
                           1062 *
0028F4  4020 2A6C 27F8     1063 $RKEW  MVA   RKDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
0028FA  4020 2806 2708     1064        MVA   SCTID,RKDCB+14        DATA ADDR
002900  5034               1065        J     XIO
                           1066 *
002902  4020 2A6C 27E8     1067 $WKST  MVA   WKDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
002908  4020 27F6 281A     1068        MVA   WSIDT,WKDCB+14      DATA ADDR
00290E  502D               1069        J     XIO
                           1070 *
002910  4020 2A6C 27F8     1071 $RWST  MVA   RKDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
002916  4020 2806 2820     1072        MVA   SCTST,RKDCB+14      DATA ADDR
00291C  5026               1073        J     XIO
                           1074 *
00291E  4020 2A6C 2778     1075 $RIDS  MVA   RSDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
002924  0BFF               1076        MVBI  X'FF',R3            SET BUFFER TO F'S
002926  4524 2820          1077        MVA   SCTST,R5            SETUP READ SECTOR ID BUFFER ADRS
00292A  4724 0006          1078        MVWI  6,R7                SETUP BUFFER LENGTH
00292E  2BAC               1079        FFN   R3,(R5)             INIT READ SECTOR ID BUFFER
002930  4020 2786 2820     1080        MVA   SCTST,RSDCB+14      DATA ADDR
002936  5019               1081        J     XIO
                           1082 *
002938  4020 2A6C 27E8     1083 $WKEW  MVA   WKDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
00293E  4020 27F6 2814     1084        MVA   WRSID,WKDCB+14      DATA ADDR
002944  5012               1085        J     XIO
                           1086 *
002946  4020 2A6C 2768     1087 $WSEC  MVA   WSDCB,IODCB            SET UP CONTROL BLOCK FOR SVC CALL
00294C  4020 2776 2814     1088        MVA   WRSID,WSDCB+14      DATA ADDR
002952  500B               1089        J     XIO
002954  4020 2A6C 2768     1090 $WSTS  MVA   WSDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
00295A  4020 2776 281A     1091        MVA   WSIDT,WSDCB+14      DATA ADDR
002960  5004               1092        J     XIO
                           1093 *
002962  4020 2A6C 2748     1094 $DIAG  MVA   DGDCB,IODCB           SET UP CONTROL BLOCK FOR SVC CALL
002968  5000               1095        J     XIO
                           1096        XEQIT
                           1097+*************************************************************************29JUL76**
                           1098+*
                           1099+** SUB-ROUTINE
                           1100+*
                           1101+**     EXECUTE INPUT AND OUTPUT COMMANDS
                           1102+**
                           1103+** PURPOSE
                           1104+**
                           1105+**     TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
                           1106+**     THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
                           1107+**
                           1108+**        1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
                           1109+**           THE I/O COMMAND.
                           1110+**        2. SAVES THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
                           1111+**           ISSUED BY THIS SUBROUTINE.
                           1112+**        3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
                           1113+**           START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
                           1114+**        4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
                           1115+**           SINCE THE LAST EXPECTED INTERRUPT. IF AN INTERRUPT IS FOUND,
                           1116+**           MYSTERY INTERRUPT (MI) CONTROL BIT IS SET.
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                           1117+**        5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7, SET THE
                           1118+**           EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC  START'.
                           1119+**        6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
                           1120+**           STARTS TO DETERMINE A LOST INTERRUPT.
                           1121+**        7. EXCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
                           1122+**           WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
                           1123+**        8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
                           1124+**        9. CHECK IF AN ERROR WAS EXPECTED AND IF THERE WAS RETURN.
                           1125+**       10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
                           1126+**       11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
                           1127+**       12. CHECK IF A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
                           1128+**           ISSUED BY THIS SUBROUTINE.
                           1129+**       13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
                           1130+**           CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
                           1131+**           COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
                           1132+**
                           1133+** CALLING SEQUENCE
                           1134+**
                           1135+**     THIS ROUTINE HAS THE FOLLOWING ENTRIES:
                           1136+**
                           1137+** --> BAL   XIO         OR        XEQ ANY CYCLE STEAL COMMAND, MOD=0
                           1138+** --> BAL   XIO1                 MOD PARM PRELOADED IN 'IOMOD'
                           1139+** --> BAL   XIOCS,R6    OR        XEQ START CYCLE STEAL STATUS, MOD=F
                           1140+** --> BAL   XIOCS-4,R6           AUTO CS STATUS (FOLLOWING OTHER XIO
                           1141+**     .                         AND DOES NOT POST INTERRUPT STATUS)
                           1142+**
                           1143+** RETURN CONTROL
                           1144+**
                           1145+**     BXS   (R6,2)              RETURN TO USER NO ERROR
                           1146+** OR  B     (R6)*               RETURN AND RETRY ON ERROR
                           1147+*************************************************************************
002896A  CB25 2A6E         1149+XIO    MVWZ  IOMOD,R3            SET MOF OF 0 FOR CYCLE STEAL OP
002896E  500A              1150+       J     XIO1                CS I/O'S ARE NOT RETRIED
                           1151+*
002970  4CAA               1152+       TBTR  (R4,CE)             RESET CS STATUS INTER ERROR INDICAT.
002972  4C68               1153+       TBTS  (R4,CS)             SET 'CYCLE STEAL STATUS' IN PROGRESS
002974  4020 2A6C 27A8     1154+XIOCS  MVA   CSDCB,IODCB         SET UP CONTROL BLOCK FOR SVC CALL
00297A  4020 2A6E 000F     1155+       MVWI  X'000F',IOMOD       SET CYCLE STEAL MODIFIER
002980  4C28               1156+       TBT   (R4,CS)             IS CS IN PROGRESS, ERROR CONDITION
002982  1213               1157+       JON   XIO2                * YES, BYPASS SAVING I/O ADRS
002984  6E0D 2706          1158+XIO1   MVW   R6,LSTIO            SAVE IAR FOR RETRY IF REQUESTED
002988  4324 2710          1159+       MVA   DCBUF,R3            SET UP TO ADRS TO MOVE DCB TAELE
00298C  6D08 2A6C          1160+       MVW   IODCB,R5            * AND THE FROM ADRS, ALONG WITH
002990  0F10               1161+       MVBI  16,R7               * THE NUMBER OF MOVES
002992  2D64               1162+       MVFN  (R5),(R3)           MOVE 1 STATUS WORD AND ADJUST
002994  0BFF               1163+       MVBI  255,R3              CLEAR CYCLE STATUS BUFFER
002996  4524 2720          1164+       MVA   CSBUF,R5            *  TO ALL ONES  *
00299A  0F10               1165+       MVBI  16,R7               *
00299C  2BAC               1166+       FFN   R3,(R5)             *
00299E  4020 2702 0708     1167+       MVWI  X'0708',$IOIN       OVERLAY OLD CONDITION CODES
0029A4  CB25 2704          1168+       MVWZ  $ISB,R3             ZERO OUT OLD ISB VALUE
                           1169+**
0029A8  4CA1               1170+       TBTR  (R4,ER)             RESET ANY ERROR BEFORE I/O COMMAND
0029AA  4CA3               1171+XIO2   TBTR  (R4,IN)             CLEAR INTERRUPT RECEIVED CNTL BIT
0029AC  4724 2A68          1172+       MVA   IOBLK,R7            SET UP CONTROL BLOCK FOR SUPVR
0029B0  4CA6               1173+       TBTR  (R4,$LE)            RESET LEVEL ERROR INDICATOR
0029B2  4C62               1174+       TBTS  (R4,XI)             SET EXPECTED INTR CONTROL BIT
0029B4  600A               1175+       SVC   START               CALL SUPVR FOR I/O COMMAND
                           1176+**
0029B6  4CA7               1177+       TBTR  (R4,NI)             IS AN INTR EXPECTED
0029B8  6AC0 0002          1178+       BN    (R6,2)              * NO, RETURN TO USER
                           1179+**
                           1180+**           THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
                           1181+**
0029BC  0D00               1182+       MVBI  X'00',R5            SET UP WORK REG FOR 'LOST INTR'
0029BE  4CA3               1183+XIO8   TBTR  (R4,IN)             HAS INTERRUPT BEEN RECEIVED
0029C0  1238               1184+       JON   XIOCK               * YES, CHECK IF ALL WAS SATISFACTORY
0029C2  6002               1185+       SVC   IDLE                ALLOW ANOTHER PROGRAM A CHANCE TO RUN
                           1186+**                              SUPVR WILL RETURN HERE
0029C4  7DA1 0001          1187+       AWI   1,R5                ADVANCE TIME OUT COUNT
0029C8  18FA               1188+       JNZ   XIO8                BCH IF TIME OUT NOT REACHED
0029CA  4C61               1189+       TBTS  (R4,ER)             SET ON ERROR CONTROL BIT
0029CC  68D2 0000          1190+       B     (R6)*               ERR 'NO INTERRUPT'
                           1191+*************************************************************************03FEB76**
                           1193+**
                           1194+** SUBROUTINE
                           1195+**
                           1196+**     I/O EXECUTE ERROR HANDLING ROUTINE
                           1197+**
                           1198+** PURPOSE
                           1199+**
                           1200+**     THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
                           1201+**     PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
                           1202+**     SUPERVISOR AND IT WAS NOT ACCEPTED.
                           1203+**
                           1204+** CALLING SEQUENCE
                           1205+**
                           1206+**     SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
                           1207+**
                           1208+** RETURN CONTROL
                           1209+**
                           1210+**     B     (R6)*               PETURN TO USERS ERROR HANDLER
                           1211+**
                           1212+*************************************************************************
                           1213+**
                           1214+** CC        0= DEVICE NOT ATTACHED
                           1215+** FOR       1= DEVICE BUSY
                           1216+** I/O       2= DEVICE BUSY AFTEP RESET
                           1217+**           3= COMMAND REJECT
                           1218+**           4= INTERVENTION FEQUIRED
                           1219+**           5= INTERFACE DATA CHECK
                           1220+**           6= CONTROLLER BUSY
                           1221+**           7= I/O COMMAND EXCEPTED
                           1222+**
0029D0  706E               1223+XIOER  DC    X'706E'             COPY STATUS ANY LEVEL INTO R3
0029D2  336A               1224+       SRL   13,R3               POSITION CC CODE TO BITS 13-15
0029D4  C328 2702          1225+       MVB   R3,$IOIN            * PUT IN LOG OUT AREA
0029D8  68D2 0000          1226+       B     (R6)*               RETURN TO USER ERROR HANDLER
                           1228+*************************************************************************14APR76**
                           1229+**                                                                        IL
                           1230+** SUB-ROUTINE                                                           IL
                           1231+**                                                                        IL
                           1232+**     ERROR INTEPRUPT           RUNS ON INTERRUPT LEVEL '$INTL'      IL
                           1233+**
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                           1234+* PURPOSE                                                  IL
                           1235+*                                                          IL
                           1236+*     THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR  IL
                           1237+*     OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE    IL
                           1238+*     EXPECTED CODE.                                       IL
                           1239+*                                                          IL
                           1240+* CALLING SEQUENCE                                        IL
                           1241+*                                                          IL
                           1242+*     SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT     IL
                           1243+*                                                          IL
                           1244+* RETURN CONTROL                                         IL
                           1245+*                                                          IL
                           1246+*     SVC   EXIT                    RETURN TO USER VIA SUPVR        IL
                           1247+*                                                          IL
                           1248+*************************************************************IL
                           1249+*                                                          IL
                           1250+* CC         0= CONTROLLER END                 ISB   0= ADD STATUS   IL
                           1251+* FOR        1= PROGRAM CONTROL INTERRUPT      BITS  1= COMD REJECT  IL
                           1252+* INTR       2= EXCEPTION INTERRUPT            FOR   2= INCOR LENGTH IL
                           1253+*            3= DEVICE END INTERRUPT           INTR  3= DCB SPEC CK  IL
                           1254+*            4= ATTENTION INTERRUPT                  4= STG DATA CK  IL
                           1255+*            5= ATTENTION / PROGRAM CNTL INTR        5= INV STG ADRS IL
                           1256+*            6= ATTENTION / EXCEPTION INTR           6= PROTRCT CK   IL
                           1257+*            7= ATTENTION / DEVICE END INTR          7= I-FACE DATA  IL
                           1258+*                                                          IL
0029DC  706E               1259+INTER DC     X'706E'                 COPY STATUS ANY LEVEL INTO R3   IL
0029DE  336A               1260+      SRL    13,R3                   POSITION INDICATORS IN R3       IL
0029E0  4424 26FA          1261+      MVA    OPTN1,R4                SET UP BASE ADRS                IL
0029E4  4C28               1262+      TBT    (R4,CS)                 IS CS IN PROGRESS               IL
0029E6  1006               1263+      JOFF   INTES                   * NO                            IL
0029E8  4C6A               1264+      TBTS   (R4,CE)                 TURN ON CYCLE STEAL INTER ERROR IL
0029EA  6F0D 272E          1265+      MVW    R7,CSTL8                SAVE CS ERR ISB VALUE, BITS 0-7 IL
0029EE  C328 272F          1266+      MVB    R3,CSTL8+1              * AND THE COND CODE             IL
0029F2  500A               1267+      J      INTR1                                           IL
0029F4  4C24               1268+INTES TBT    (R4,XE)                 TEST  EXPECTED ATTEN / ERROR IND IL
0029F6  1002               1269+      JOFF   INTET                   BCH IF NOT EXPECTED             IL
0029F8  F304               1270+      CBI    4,R3                    IS THIS AN 'ATTENTION' INTR     IL
0029FA  1006               1271+      JE     INTR1                   * YES,  BCH TO END INTR SEQUENCE IL
0029FC  4C61               1272+INTET TBTS   (R4,ER)                 SET ERROR ON I/O COMMAND CNTL BIT IL
0029FE  5004               1273+      J      INTR1                                           IL
                           1274+*                                                          IL
                           1275+*                                    THE ERROR INTERRUPT USES THE SAME IL
                           1276+*                                    ENDING SEQUENCE AS THE NORMAL INTR IL
                           1277+*************************************************************14APR76IL
                           1278+*                                                          IL
                           1279+* SOUBROUTINE                                            IL
                           1280+*                                                          IL
                           1281+*     OKAY  INTERRUPT               RUNS ON INTERRUPT LEVEL '$INTL' IL
                           1282+*                                                          IL
                           1283+* PURPOSE                                                 IL
                           1284+*                                                          IL
                           1285+*     TO CHECK THE INTERRUPT AND CONTINUE THE TEST                  IL
                           1286+*                                                          IL
                           1287+* CALLING SEQUENCE                                       IL
                           1288+*                                                          IL
                           1289+*     SUPERVISOR WILL ENTER HERE  IF INTR CC IS AS REQUESTED IL
                           1290+*     THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE       IL
                           1291+*     AFTER THE SPECIAL PART HAS BEEN COMPLETED  AND THE            IL
                           1292+*     COMMON SECTION IS HANDLED HERE.                               IL
                           1293+*                                                          IL
                           1294+* RETURN CONTROL                                         IL
                           1295+*                                                          IL
                           1296+*     SVC   EXIT                    RETURN TO USER VIA SUPVR        IL
                           1297+*                                                          IL
                           1298+*************************************************************IL
002A00  706E               1299+INTOK DC     X'706E'                 COPY STATUS ANY LEVEL INTO R3   IL
002A02  336A               1300+      SRL    13,R3                   POSITION INDICATORS IN R3       IL
002A04  4424 26FA          1301+      MVA    OPTN1,R4                SET UP BASE ADRS                IL
002A08  4C63               1302+INTR1 TBTS   (R4,IN)                 SET  INTERRUPT RECEIVED         IL
002A0A  4C28               1303+      TBT    (R4,CS)                 IS 'CS IN PROGRESS' ON          IL
002A0C  1204               1304+      JON    INTR2                   * YES, BCH  AROUND UPDATE       IL
002A0E  C328 2703          1305+      MVB    R3,$IOIN+1              SAVE INTERRUPTING CC CODE       IL
002A12  6F0D 2704          1306+      MVW    R7,$ISB                 SAVE INTR STATUS AND DEV ADRS   IL
002A16                     1307+INTR2 EQU    *                                               IL
                           1308+*     CPCL   R5                      CURRENT LEVEL COPIED BY DCP     IL
002A16  3521               1309+      SLL    4,R5                    POSITION INTR LEVEL AND PUT     IL
002A18  0501               1310+      ABI    1,R5                    * IN BITS                       IL
002A1A  CD24 2736          1311+      CW     $INTL,R5                IS THIS THE CORRECT INTR LEVEL  IL
002A1E  1002               1312+      JE     INTR3                   * YES, GO EXIT THIS LEVEL       IL
002A20  4C66               1313+      TBTS   (R4,LE)                 SET INTR LEVEL ERROR CONTROL BIT IL
002A22  4C61               1314+      TBTS   (R4,ER)                 SET ERROR ON I/O COMMAND CNTL BIT IL
002A24  4CA2               1315+INTR3 TBTR   (R4,XI)                 WAS INTERRUPT EXPECTED          IL
002A26  1204               1316+      JON    INTRX                   * YES, EXIT OFF THIS INTR LEVEL IL
002A28  4C60               1317+      TBTS   (R4,MI)                 * NO, SET MYSTERY INTR CONTROL BIT IL
002A2A  F304               1318+      CBI    4,R3                    ATTENTION INTERRUPT?            IL
002A2C  1001               1319+      JE     INTRX                   YES                             IL
002A2E  4C6C               1320+      TBTS   (R4,NG)                 ERROR,UNEXPECTED INTERRUPT      IL
002A30  6006               1321+INTRX SVC    EXIT                    EXIT THIS LEVEL VIA SUPVR TO PGM IL
                           1323+*************************************************************03FEB76**
                           1324+*                                                          IL
                           1325+*     THIS IS THE CONTINUATION OF EXECUTE I/O AFTER THE INTERRUPT    IL
                           1326+*     HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN   IL
                           1327+*     RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.  IL
                           1328+*                                                          IL
                           1329+*                                                          IL
002A32  4CA4               1330+XIOCK TBTR   (R4,XE)                 WAS AN ERROR EXPECTED           IL
002A34  6AC0 0002          1331+      BN     (R6,2)                  * YES,  EXIT THIS ROUTINE       IL
002A38  4CA8               1332+      TBTR   (R4,CS)                 WAS AUTO CS IN PROGRESS         IL
002A3A  1006               1333+      JOFF   XIOCC                   * NO, CONTINUE CHECKING         IL
002A3C  4C2A               1334+      TBT    (R4,CE)                 IS CS IN AN ERR CONDITION       IL
002A3E  1002               1335+      JOFF   XIOCO                   * NO,  BCH                      IL
002A40  68D2 0000          1336+      B      (R6)*                   CS ERROR                        IL
002A44  4C69               1337+XIOCO TBTS   (R4,CSA)                TURN ON CS STATS AVAIL FLAG     IL
002A46  5601               1338+      BXS    (R6,2)                  GO TO USER                      IL
002A48  4C21               1339+XIOCV TBT    (R4,ER)                 WAS ERROR INTR CONTROL BIT ON   IL
002A4A  100B               1340+      JOFF   XIOCX                   * NO, EXIT THIS ROUTINE         IL
                           1341+*                                                          IL
002A4C  C520 2703          1342+      MVB    $IOIN+1,R5              GET LAST INTR CC CODE           IL
002A50  F502               1343+      CBI    2,R5                    IS THIS CC=2                    IL
002A52  68D1 0000          1344+      BNE    (R6)*                   * NO,  BCH TO ERROR HANDLER     IL
002A56  C520 2704          1345+XIOCQ MVB    $ISB,R5                 GET LAST ISB DATA BYTE AND IF CS IL
002A5A  6A00 2970          1346+      BN     XIOCS-4                 * AVAILABLE, GO AND GET IT      IL
002A5E  68D2 0000          1347+      B      (R6)*                   ERROR                           IL
002A62  CB25 26FE          1348+XIOCX MVWZ   OPTN3,R3                CLEAR OUT OPTION 3 CNTL BITS    IL
002A66  5601               1349+      BXS    (R6,2)                  RETURN TO USER VIA REG 6        IL
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                           1350+*                                                          IL
                           1351+*                I/O   PARAMETER LIST                      IL
                           1352+*                                                          IL
002A68  19D0               1353+IOBLK DC     A(DEVADD)               ADRS OF DEVICE ADRS             IL
002A6A  29D0               1354+      DC     A(XIOER)                ERROR ROUTINE ADRS              IL
002A6C  0000               1355+IODCB DC     A(*-*)                  DCB ADRS OR LEVEL & INTR        IL
002A6E  0000               1356+IOMOD DC     A(*-*)                  MODIFIER                        IL
002A70  0000               1357+      DC     A(*-*)                  ADRS OF LAST SVC CALL           IL
002A72  0000               1358+IORSP DC     A(*-*)                  SECOND WORD OF LAST IDCB        IL
                           1359+*                                                          IL
                           1360+*                INTERRUPT CONTROL BLOCK FOR I/O COMMANDS  IL
                           1361+*                                                          IL
002A74  19D0               1362+INTBL DC     A(DEVADD)               ADRS OF DEVICE ADRS             IL
002A76  2A00               1363+      DC     A(INTOK)                INTERRUPT OK RETURN ADRS        IL
002A78  29DC               1364+      DC     A(INTER)                INTERRUPT ERROR ADRS            IL
002A7A  0003               1365+INTCC DC     X'0003'                 INTERRUPT CODE EXPECTED         IL
                           1367+*************************************************************11MAY76**
                           1368+*                                                          IL
                           1369+* SUBROUTINE                                             IL
                           1370+*                                                          IL
                           1371+*     CONNECT INTERRUPT CONTROL BLOCK & PREPARE DEVICE              IL
                           1372+*                                                          IL
                           1373+* PURPOSE                                                 IL
                           1374+*                                                          IL
                           1375+*     TO CONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND      IL
                           1376+*     PREPARE ON THE DESIRED INTERRUPT LEVEL AND TO ALLOW THE DEVICE IL
                           1377+*     TO INTERRUPT.                                        IL
                           1378+*                                                          IL
                           1379+* CALLING SEQUENCE                                       IL
                           1380+*                                                          IL
                           1381+*     THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:                    IL
                           1382+*                                                          IL
                           1383+* --> BAL    $CONC,R6                CLEAR DEV DEP STG AND CONNECT I/O BLK IL
                           1384+* --> BAL    $CONP,R6                PREPARE DEVICE ONLY, ALREADY CONNECT IL
                           1385+*                                                          IL
                           1386+* RETURN CONTROL                                         IL
                           1387+*                                                          IL
                           1388+*     BXS    (R6,2)                  RETURN TO USER VIA REG 6 IF OKAY IL
                           1389+* OR  B      (R6)*                   IF THE DEVICE COULD NOT BE CONNECTED IL
                           1390+*                                                          IL
                           1391+*************************************************************IL
002A7C  0F06               1392+$CONC MVBI   6,R7                    NUMBER OF BYTE TO CLEAR         IL
002A7E  0B00               1393+      MVBI   0,R3                    * AND THE DATA TO USE           IL
002A80  4524 2708          1394+      MVA    DEV1,R5                 * ALONG WITH THE ADRS TO USE    IL
002A84  2BAC               1395+      FFN    R3,(R5)                 *                               IL
002A86  CB25 26FE          1396+      MVWZ   OPTN3,R3                CLEAR OLD CONTROLS FOR NEW ROUTINE IL
002A8A  4724 2A74          1397+      MVA    INTBL,R7                SET R7 TO CONTROL  BLOCK AND    IL
002A8E  6014               1398+      SVC    CICB                    * CONNECT IT TO THIS DEVICE     IL
002A90  6AD0 0000          1399+      BN     (R6)*                   ERROR RETURN TO USER            IL
                           1400+*                                                          IL
002A94  8828 2736 2A6C     1401+$CONP MVW    $INTL,IODCB             PUT IN LEVEL & INTR PARAMETER   IL
002A9A  4724 2A68          1402+      MVA    IOBLK,R7                SET R7 TO CONTROL BLOCK TO PREPARE IL
002A9E  4020 2702 0708     1403+      MVWI   X'0708',$IOIN           INITIALIZE CONDITION CODE STORAGE IL
002AA4  CB25 2704          1404+      MVWZ   $ISB,R3                 * AND CLEAR OLD ISB VALUE       IL
002AA8  6B0D 2706          1405+      MVW    R6,LSTIO                SET UP ADDRESS THAT STARTED LAST I/O IL
002AAC  600C               1406+      SVC    PREP                    * AND CALL ON SUPVR             IL
002AAE  5601               1407+      BXS    (R6,2)                  RETURN TO USER                  IL
                           1409+*************************************************************06APR76**
                           1410+*                                                          IL
                           1411+* SUBROUTINE                                             IL
                           1412+*                                                          IL
                           1413+*     DISCONNECT THE INTERRUPT CONTROL BLOCK AND LOG ERRORS          IL
                           1414+*                                                          IL
                           1415+* PURPOSE                                                 IL
                           1416+*                                                          IL
                           1417+*     DISCONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND      IL
                           1418+*     SET THE 'NO GOOD' CONTROL BIT, THEN LOG THE DATA THAT HAS     IL
                           1419+*     BEEN FOUND TO HELP THE OPERATOR DEFINE THE ERROR CONDITION.   IL
                           1420+*                                                          IL
                           1421+* CALLING SEQUENCE                                       IL
                           1422+*                                                          IL
                           1423+*     THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:                    IL
                           1424+*                                                          IL
                           1425+* --> B      $ERR$                   SET 'NG' BIT AND CONVERT DATA TO LOG IL
                           1426+* --> B      $CONX                   RETURN TO MDI SUPERVISOR TO TEST STS IL
                           1427+*                                                          IL
                           1428+* RETURN CONTROL                                         IL
                           1429+*                                                          IL
                           1430+*     B      TURTN*                  RETURN TO MDI                   IL
                           1431+* OR  B      (R6)*                   IF THE DEVICE COULD NOT BE CONNECTED IL
                           1432+*                                                          IL
                           1433+*************************************************************IL
002AB0  4020 1818 8000     1434+$ERR$ MVWI   X'8000',TUSTATUS        SET ON 'NO GOOD' STATUS BIT     IL
002AB6  4724 2C1A          1435+      MVA    HEBLK,R7                GET ADRS OF CONTROL BLOCK       IL
002ABA  601A               1436+      SVC    HTOE                    CONVERT HEX TO EBC VIS DCP      IL
002ABC  0D03               1437+$PRNT MVBI   3,R5                                            IL
002ABE  4324 181A          1438+      MVA    TUWORK,R3               SET UP BUFFER STORAGE           IL
002AC2  6B0D 2C12          1439+      MVW    R3,BUFPT                                        IL
002AC6  4124 2B42          1440+      MVA    LINE1,R1                                        IL
002ACA  0F04               1441+      MVBI   4,R7                                            IL
002ACC  0B08               1442+      MVBI   8,R6                                            IL
002ACE  2B24               1443+MVBUF MVFN   (R3),(R1)                                       IL
002AD0  0F04               1444+      MVBI   4,R7                                            IL
002AD2  0A40               1445+      MVBI   X'40',R2                                        IL
002AD4  C258               1446+      MVB    R2,(R1)+                                        IL
002AD6  BEFB               1447+      JCT    MVBUF,R6                                        IL
002AD8  0B08               1448+      MVBI   8,R6                                            IL
002ADA  7921 002C          1449+      AWI    44,R1                                           IL
002ADE  BDF7               1450+      JCT    MVBUF,R5                                        IL
002AE0  4020 1802 F1F0     1451+      MVWI   PIDMSG10,PID+2                                  IL
002AE6  4020 19B8 2C18     1452+      MVA    FAKETU,@DCADD1                                  IL
002AEC  4020 19BA 2C14     1453+      MVA    DC2PT,@DCADD2                                   IL
002AF2  402C 19C4 0080     1454+      OWI    BIT0080,SUPSTAT                                 IL
002AF8  4324 2700          1455+      MVA    $TUID,R3                SET UP BUFFER STORAGE           IL
002AFC  6F13 18BA          1456+      BAL    TUMSGWTR*,R7            GO TO MESSAGE WRITER            IL
                           1457+*                                                          IL
002B00                     1458+$CONX EQU    *                                               IL
002B00  C720 19D0          1459+      MVB    DEVADD,R7               GET DEVICE ADDRESS FROM MDI     IL
002B04  6013               1460+      SVC    RICB                    RELEASE INTERRUPT CONTROL BLOCK IL
002B06  6812 2738          1461+      B      TURTN*                  RETURN TO MDI SUPERVISOR        IL
                           1462+*                                                          IL
002B0A  0007               1463+BEGIN DC     A(0007)                 NUMBER OF LINES TO PRINT        IL
002B0C  0008               1464+      DC     A(0008)                 LINE LENGTH = 8 CHAR            IL
002B0E  5C5C40C1C2D6D9E3   1465+      DC     C'** ABORT'                                     IL
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

002B16  0028            1466+        DC    A(0040)                    LINE LENGTH = 40 CHAR
002B18  E3E4C9C440C9D6C9D 1467+       DC    C'TUID IOIN ISB  INST DEV1 DEV2 DEV3 DEV4 '
002B40  0028            1468+        DC    A(0040)                    LINE LENGTH = 40 CHAR
002B42  404040404040404040 1469+LINE1 DC    C'                                     '
002B6A  0028            1470+        DC    A(0040)                    LINE LENGTH = 40 CHAR
002B6C  C3D5E3D340C4C3C2F 1471+       DC    C'CNTL DCB2 DCB3 DCB4 DCB5 CHAD BYCT ADRS '
002B94  0028            1472+        DC    A(0040)                    LINE LENGTH = 40 CHAR
002B96  404040404040404040 1473+LINE2 DC    C'                                     '
002BBE  0028            1474+        DC    A(0040)                    LINE LENGTH = 40 CHAR
002BC0  D9E2C9C440C3E260F 1475+       DC    C'PSID CS-2 CS-3 CS-4 CS-5 CS-6 CS-7 CS-8 '
002BE8  0028            1476+        DC    A(0040)                    LINE LENGTH = 40 CHAR
002BEA  404040404040404040 1477+LINE3 DC    C'                                     '
                        1478+*
002C12  0000            1479+BUFPT   DC    A(*-*)
002C14  2B0A            1480+DC2PT   DC    A(BEGIN)
002C16  0101            1481+FIXTU   DC    X'0101'
002C18  0101            1482+FAKETU    DC  X'0101'
00F1F0                  1483+PIDMSG10  EQU   X'F1F0'
000080                  1484+BIT0080   EQU   X'0080'
                        1485+*
                        1486+*       DATA CONTPOL BLOCK FOR CONVERTING HEX TO EBCDIC
                        1487+*
002C1A  0030            1488+HEBLK   DC    A(48)                      NUMBER OF BYTES TO CONVERT
002C1C  2700            1489+        DC    A($TUID)                   FROM ADPS
002C1E  181A            1490+        DC    A(TUWORK)                  AND THE TO ADPS
                        1491         COPY  T7869                    01DEC76
                        1492 T7869 TUIT T69ER
                        1493*********************************************************************06FEB76**
                        1494*
                        1495** TEST UNIT
                        1496*
                        1497**      4962 CONTROL CLOCK STEP DIAGNOSTIC (WRITE SECTOR ID)   3/11/77
                        1498*
                        1499** PURPOSE
                        1500*
                        1501*                                              (FORCE WRITE GATE CHECK)
                        1502** CALLING SEQUENCE
                        1503*
                        1504**      THIS ROUTINE WILL SIMULATE FILE 'CLOCK  AND DATA' INFORMATION
                        1505**      VIA THE 'CLOCK STEP DIAGNOSTIC' TO TEST THE 4962 CONTROL CARDS.
                        1506**      .
                        1507**      PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                        1508**      .       TURESUL BIT 0------------NOT USED
                        1509**      .       TURESUL BIT 1------------NOT USED
                        1510**      .       TURESUL BIT 2------------NOT USED
                        1511**      .       TURESUL BIT 3------------NOT USED
                        1512**      .
                        1513**      .       TURESUL BIT 4------------NOT USED
                        1514**      .       TURESUL BIT 5------------ NOT USED
                        1515**      .       TURESUL BIT 6------------NOT USED
                        1516**      .       TURESUL BIT 7------------ NOT USED
                        1517**      .
                        1518**      .       TURESUL BIT 8------------NOT USED
                        1519**      .       TURESUL BIT 9------------ NOT USED
                        1520**      .       TURESUL BIT 10----------- NOT USED
                        1521**      .       TURESUL BIT 11-----------NOT USED
                        1522**      .
                        1523**      .       TURESUL BIT 12-----------NOT USED
                        1524**      .       TURESUL BIT 13----------- NOT USED
                        1525**      .       TURESUL BIT 14-----------CIO CC ERROP
                        1526**      .       TURESUL BIT 15-COMPARE ERROR BETWEEN EXPECT TABLE & SENSE
                        1527**      .                                    INFORMATION
                        1528**
                        1529** RETURN CONTROL
                        1530*
                        1531**       B     TUPTN*                     RETURN TO MDI SUPERVISOP
                        1532**
                        1533*********************************************************************
                        1534+T7869  MVW   R7,TURTN                    SAVE RETURN ADDRESS
002C20  6F0D 2738       1535+       MVWI  X'7869',$TUID              SAVE TU ID FOR DISPLAY
002C24  4020 2700 7869  1536+       MVA   OPTN1,R4                   SET UP POINTER ADRS IN R4
002C2A  4424 26FA       1537+       BAL   $CONC,R6                   CLEAR DEV DEP STG AND CONNECT I/O BL
002C2E  6E03 2A7C       1538+       DC    A(T69ER)                   EPROR ADPS FOP INVALID PREP
002C32  2D3A            1539**
                        1540        MVB   DEVADD,IDCB1+1             LOAD DEVICE ADDRESS IN IDCB
002C34  8028 19D0 28A3  1541        MVA   T69ST,R2                   ADDRESS OF CLOCK STEP BUFFER
002C3A  4224 2EC6       1542        MVWI  0,T69U                     CLEAR SUM COUNTERS
002C3E  4020 2EB8 0000  1543        MVWI  0,T69U+2                    *
002C44  4020 2EBA 0000  1544        MVWZ  TURESUL,R5                 CLEAR RESULTS WORD
002C4A  CD25 18C8       1545        MVA   IOBLK,R7                   ISSUE DEVICE RESET
002C4E  4724 2A68       1546        SVC   RESET                       *
002C52  6008            1547        MVWZ  TURESUL+2,R5               CLEAR RESULTS WORD 2
002C54  4020 28A8 0000  1548        MVWI  0,CEDAT                    SET DIAGNOSTIC MODE
002C58  6E03 2840       1549        BAL   CEOP1,R6                    *
002C5E  2D3A            1550        DC    A(T69ER)                    *
002C62  4C62            1551        TBTS  (R4,XI)                    TURN ON EXPECTED INTERRUPT (ATTEN)
002C64  4020 28AC 8000  1552        MVWI  X'8000',CEDAT2             TURN ON READY
002C6A  6E03 2854       1553        BAL   CEOP2,R6                    *
002C70  2D3A            1554        DC    A(T69ER)                    *
002C72  4CA3            1555        TBTR  (R4,IN)                    TURN OFF ATTENTION INTERRUPT
002C74  6800 2D3A       1556        BOFF  T69ER                      NO INTERRUPT RECEIVED
002C78  402F 2702 0704  1557        CWI   X'0704',$IOIN              CHECK FOR INT COND CODE OF 4
002C7E  1002            1558        JE    T69H                       OK
002C80  6802 2D3A       1559        B     T69ER                      WRONG INTERRUPT CODE
002C84  4020 2826 0018  1560 T69H   MVWI  24,CTR01                    INIT COUNTER
002C8A  4020 28AC 08C0  1561        MVWI  X'08C0',CEDAT2             SEND INDEX PULSE,BEHIND HOME,
002C90  6E03 2854       1562        BAL   CEOP2,R6                   * SEEK COMPLETE
002C94  2D3A            1563        DC    A(T69ER)                   ERROR
002C96  4020 28AC 0400  1564        MVWI  X'0400',CEDAT2             SEND SECTOR PULSE
002C9C  6E03 2854       1565        BAL   CEOP2,R6                    *
002CA0  2D3A            1566        DC    A(T69ER)                   ERROR
002CA2  4020 28AC 3000  1567 T69S   MVWI  X'3000',CEDAT2             SEND CEOP2 USING '3000' DATA
002CA8  6E03 2854       1568        BAL   CEOP2,R6                    *
002CAC  2D3A            1569        DC    A(T69ER)                    *
002CAE  4020 28AC 0200  1570        MVWI  X'0200',CEDAT2             SEND CEOP2 USING '0200' DATA
002CB4  6E03 2854       1571        BAL   CEOP2,R6                    *
002CB8  2D3A            1572        DC    A(T69ER)                    *
002CBA  4020 28AC 0008  1573        MVWI  X'0008',CEDAT2             SEND CEOP2 USING '0008' DATA
002CC0  6E03 2854       1574        BAL   CEOP2,R6                    *
002CC4  2D3A            1575        DC    A(T69ER)                    *
002CC6  402F 2826 0001  1576        SWI   1,CTR01                    DECREMENT COUNT
002CCC  18EA            1577        JNZ   T69S                       CONTINUE TO SEND CLOCKS
002CCE  4C67            1578        TBTS  (R4,NI)                    TURN ON NO INTEP MODE INDICATOR
002CD0  4020 276C 0000  1579        MVWI  X'0000',WSDCB+4            PHYSICAL SECTOR = ZERO
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

002CD6  4020 2814 1234  1580        MVWI  X'1234',WFSID              SECTOR ID DATA
002CDC  4020 2816 5678  1581        MVWI  X'5678',WRSID+2            *
002CE2  4020 2818 9A00  1582        MVWI  X'9A00',WRSID+4            *
002CE8  6E03 2946       1583        BAL   $WSEC,R6                   WRITE SECTOR ID
002CEC  2D3A            1584        DC    A(T69ER)                   ERROR
002CEE  4024 0400       1585        MVWI  1024,R0                    TIME OUT 2 MSEC
002CF2  B8FF            1586        JCT   *,R0                       *
002CF4  4324 FFFF       1587        MVWI  X'FFFF',R3                 INIT XOP REGISTER
002CF8  6D03 2D52       1588 T69D   BAL   T69CC,R5                   STIMULATE CLOCK BITS
002CFC  6D03 2E60       1589        BAL   T69SS,R5                   READ SENSE WORDS
002D00  50FB            1590        J     T69D                       LOOP
                        1591 *
                        1592 *
002D02  4CA3            1593 T69F   TBTR  (R4,IN)                    HAS INTERRUPT OCCURRED?
002D04  101E            1594        JOFF  T69I                       NO-ERROR
002D06  4020 28AC 0001  1595        MVWI  1,CEDAT2                   RESET CE DIAG MODE
002D0C  6E03 2854       1596        BAL   CEOP2,R6                    *
002D10  2D3A            1597        DC    A(T69ER)                    *
002D12  CB24 2EC4       1598        CW    T69XF,R3                   COMPARE RESULTS
002D16  1818            1599        JNE   T69E                       ERROR
002D18  6E03 2974       1600        BAL   XIOCS,R6                   START CYCLE STEAL STATS
002D1C  2D3A            1601        DC    A(T69ER)                   OIO CC ERROR
002D1E  4CA1            1602        TBTR  (R4,ER)                    TEST FOR ERROR
002D20  120C            1603        JON   T69ER                      ERROR
002D22  A828 2722 2EB8  1604        AW    CSTL2,T69U                 ADD CYCLE STEAL DATA TO SJM CHECK
002D28  882B 2EB8 2EC0  1605        CW    T69U,T69PE                 COMPARE RESULTS
002D2E  180C            1606        JNE   T69E                       ERROR
002D30  8028 2EBA 2EC2  1607        CB    T69U+2,T69PE+2             COMPARE RESULTS
002D36  1808            1608        JNE   T69E                       EPROR
002D38  500A            1609        J     T69X
                        1610 *
002D3A  402C 18C8 0002  1611 T69ER  OWI   X'0002',TURESUL            SET OIO CC ERROR
002D40  5006            1612        J     T69X
002D42  4724 2A68       1613 T69I   MVA   IOBLK,R7                   ISSUE DEVICE RESET
002D46  6008            1614        SVC   RESET                      *
002D48  402C 18C8 0001  1615 T69E   OWI   X'0001',TURESUL            SET CLOCK STEP ERROR
                        1616 T69X TXIT
002D4E  6802 2B00       1617+T69X   B     $CONX                      RETURN TO MDI CONTROLLER
                        1618*********************************************************************
                        1619 *
                        1620 *
002D52  6D0D 2E5E       1621 T69CC  MVW   R5,T69C+2                  SET RETURN ADDRESS
002D56  408F FFFF       1622        CWI   -1,(R2)                    CHK FOP END OF STIMULATE TABLE
002D5A  6800 2D02       1623        BE    T69F                       BCH   IF END OF TABLE
002D5E  408F FFFE       1624        CWI   X'FFFE',(R2)               TST FOR DATA
002D62  101F            1625        JE    T69T                       YES
002D64  408F FFFD       1626        CWI   X'FFFD',(R2)               TEST FOP CLOCKS
002D68  1002            1627        JE    T69M                       YES
002D6A  6802 2E4E       1628        B     T69EE
002D6E  7A41 0002       1629 T69M   AWI   2,R2                       INC TABLE ADDRESS
002D72  C880            1630        MVW   (R2),R0                    GET CLOCK COUNT
002D74  7806 0000       1631 T69N   CWI   0,R0                       COUNT ZERO?
002D78  6800 2E58       1632        BE    T69FF                      RETURN
002D7C  4020 28AC 3000  1633        MVWI  X'3000',CEDAT2             SEND CEOP2 USING '3000' DATA
002D82  6E03 2854       1634        BAL   CEOP2,R6                    *
002D86  2D3A            1635        DC    A(T69ER)                    *
002D88  6D03 2E60       1636        BAL   T69SS,R5                   SENSE DATA
002D8C  4020 28AC 0008  1637        MVWI  X'0008',CEDAT2             SEND CEOP2 USING '0008' DATA
002D92  6E03 2854       1638        BAL   CEOP2,R6                    *
002D96  2D3A            1639        DC    A(T69ER)                    *
002D98  6D03 2E60       1640        BAL   T69SS,R5                   SENSE DATA
002D9C  7802 0001       1641        SWI   1,R0                       DECREMENT CLOCK COUNT
002DA0  50E9            1642        J     T69N                       LOOP
002DA2  7A41 0002       1643 T69T   AWI   2,R2                       INC TABLE ADDRESS
002DA6  408F FFFE       1644        CWI   X'FFFE',(R2)               END OF DATA?
002DAA  1056            1645        JE    T69FF                      YES
002DAC  408F FFFC       1646        CWI   X'FFFC',(R2)               REPEAT READ DATA?
002DB0  1003            1647        JE    T69R                       YES
002DB2  6D03 2DD8       1648        BAL   T69L,R5                    READ DATA
002DB6  50F5            1649        J     T69T
002DB8  7A41 0002       1650 T69R   AWI   2,R2                       INC TABLE ADDRESS
002DBC  C980            1651        MVW   (R2),R1                    REPEAT COUNT
002DBE  7906 0000       1652        CWI   0,R1                       REPEAT COUNT ZERO?
002DC2  1DEF            1653        JE    T69T                       YES
002DC4  7A41 0002       1654        AWI   2,R2                       INC TABLE ADDRESS
002DC8  6D03 2DD8       1655 T69V   BAL   T69L,R5                    READ DATA
002DCC  7922 0001       1656        SWI   1,R1                       DECREMENT REPEAT COUNT
002DD0  7906 0000       1657        CWI   0,R1                       REPEAT COUNT ZERO?
002DD4  10E6            1658        JE    T69T                       YES
002DD6  50F8            1659        J     T69V                       REPEAT DATA LOOP
002DD8  6D0D 2E4C       1660 T69L   MVW   R5,T69JJ+2                 SET UP RETURN ADDRESS
002DDC  4020 2826 0000  1661        MVWI  0,CTR01                    INIT SHIFT COUNTER
002DE2  C880            1662        MVW   (R2),R0                    GET DATA
002DE4  3009            1663 T69LL  SLL   1,R0                       TEST IF DATA '1'
002DE6  1F19            1664        JNCY  T69G                       NO
002DE8  4020 28AC 3000  1665        MVWI  X'3000',CEDAT2             SEND CEOP2 USING '3000' DATA
002DEE  6E03 2854       1666        BAL   CEOP2,R6                    *
002DF2  2D3A            1667        DC    A(T69ER)                    *
002DF4  6D03 2E60       1668        BAL   T69SS,R5                   SENSE DATA
002DF8  4020 28AC 0200  1669        MVWI  X'0200',CEDAT2             SEND CEOP2 USING '0200' DATA
002DFE  6E03 2854       1670        BAL   CEOP2,R6                    *
002E02  2D3A            1671        DC    A(T69ER)                    *
002E04  6D03 2E60       1672        BAL   T69SS,R5                   SENSE DATA
002E08  4020 28AC 0008  1673        MVWI  X'0008',CEDAT2             SEND CEOP2 USING '0008' DATA
002E0E  6E03 2854       1674        BAL   CEOP2,R6                    *
002E12  2D3A            1675        DC    A(T69ER)                    *
002E14  6D03 2E60       1676        BAL   T69SS,R5                   SENSE DATA
002E18  5010            1677        J     T69HH
002E1A  4020 28AC 3000  1678 T69G   MVWI  X'3000',CEDAT2             SEND '3000' DATA
002E20  6E03 2854       1679        BAL   CEOP2,R6                    *
002E24  2D3A            1680        DC    A(T69ER)                    *
002E26  6D03 2E60       1681        BAL   T69SS,R5                   SENSE DATA
002E2A  4020 28AC 0008  1682        MVWI  X'0008',CEDAT2             SEND '0008' DATA
002E30  6E03 2854       1683        BAL   CEOP2,R6                    *
002E34  2D3A            1684        DC    A(T69ER)                    *
002E36  6D03 2E60       1685        BAL   T69SS,R5                   SENSE DATA
002E3A  4029 2826 0001  1686 T69HH   AWI   1,CTR01                    ADD ONE TO SHIFT COUNTER
002E40  402F 2826 0010  1687        CWI   16,CTR01                    SHIFT COUNT = 16?
002E46  1001            1688        JE    T69JJ                      YES
002E48  50CD            1689        J     T69LL
002E4A  6802 0000       1690 T69JJ  B     *-*                        RETURN TO CALLER
002E4E  8A08 28AC       1691 T69EE  MVW   (R2),CEDAT2                LD  DATA INTO IO BLOCK
002E52  6E03 2854       1692        BAL   CEOP2,R6                   WRITE CLOCK DATA
002E56  2D3A            1693        DC    A(T69ER)
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

002E58  7A41 0002       1694 T69FF AWI   2,R2                  INC TABLE ADDRESS
002E5C  6802 0000       1695 T69C  B     *-*                   RETURN TO CALLER
                        1696 *
002E60  6E03 287C       1697 T69SS BAL   SENS0,R6              READ SENSE WORD ONE
002E64  2D3A            1698       DC    A(T69ER)
002E66  4C23            1699       TBT   (R4,IN)               INTERRUPT?
002E68  1003            1700       JOFF  T69A                  NO
002E6A  402C 28A0 4000  1701       OWI   X'0200',RDATA0        SET INTERRUPT BIT IN SENSE WORD
002E70  8828 28A0 2EBC  1702 T69A  MVW   RDATA0,T69TP          SAVE DATA
002E76  6E03 2868       1703       BAL   SENS1,R6              READ SENSE WORD ONE
002E7A  2D3A            1704       DC    A(T69ER)
002E7C  402D 28A4 4E7F  1705       RBTWI X'4E7F',RDATA         RESET UNUSED BITS
002E82  402B 28A4 0080  1706       TWI   X'0080',RDATA         MOVE BIT FROM BYTE TO BYTE
002E88  1003            1707       JOFF  T69B                  BIT NOT ON
002E8A  402C 28A4 0200  1708       OWI   X'0200',RDATA         SET BIT ON
002E90  C720 28A4       1709 T69B  MVB   RDATA,R7              SAVE DATA
002E94  C72E 2EBA       1710       AB    R7,T69U+2             DEVELOP SUM CHECK
002E98  1F03            1711       JNCY  T69RR                 JUMP IF NO CARRY
002E9A  4029 2EB8 0001  1712       AWI   1,T69U
002EA0  A828 2EBC 2EB8  1713 T69RR AW    T69TP,T69U
002EA6  C323 2EBE       1714       XB    T69TP+2,R3            XOR EXPECT DATA
002EAA  6E0B 2EBC       1715       XB    T69TP,R3              *
002EAE  4C23            1716 T69K  TBT   (R4,IN)               TEST FOR INTER IN GEN MODE
002EB0  1002            1717       JOFF  T69J                  NO INTERRUPT
002EB2  4080 FFFF       1718       MVWI  X'FFFF',(R2)          INSERT END OF TABLE CHAR
002EB6  5500            1719 T69J  BXS   (R5)                  RETURN TO CALLER
                        1720 *
                        1721 *
                        1722 *
002EB8  00000000        1723 T69U  DC    2A(*-*)
002EBC  00000000        1724 T69TP DC    2A(*-*)
002EC0  C89A            1725 T69RE DC    X'C89A'               EXPECTED RESULTS  (DUTCHESS)
002EC2  0B00            1726       DC    X'0B00'               *
002EC4  BDBD            1727 T69XR DC    X'BDBD'               *
                        1728 *
002EC6                  1729 T69ST EQU   *                     WRITE CLOCK STIMULATE TABLE
002EC6  8048            1730       DC    X'8048'               WRITE SECTOR ID
002EC8  0400            1731       DC    X'0400'
002ECA  0800            1732       DC    X'0800'
002ECC  0400            1733       DC    X'0400'
002ECE  FFFD            1734       DC    X'FFFD'               SEND 99 WRITE CLOCKS
002ED0  0063            1735       DC    X'0063'               *
002ED2  FFFE            1736       DC    X'FFFE'               START ID
002ED4  0E12            1737       DC    X'0E12'               FLAG
002ED6  3456            1738       DC    X'3456'               CYL
002ED8  789A            1739       DC    X'789A'               HEAD,SECTOR
002EDA  F8A0            1740       DC    X'F8A0'               CRC
002EDC  FFFE            1741       DC    X'FFFE'               END ID
002EDE  0400            1742       DC    X'0400'               SECTOR PULSE-FORCE WRITE GATE CHECK
002EE0  FFFF            1743       DC    X'FFFF'               END OF TABLE
                        1744 *
                        1745 *
                        1747       COPY  T7871                 01DEC76
                        1748 T7871 TUIT T71ER
                        1749+*********************************************************************06FEB76**
                        1750+*
                        1751+* TEST UNIT
                        1752+*
                        1753+*     4962 CONTROL CLOCK STEP DIAGNOSTIC (WRITE DATA)        3/11/77
                        1754+*
                        1755+* PURPOSE
                        1756+*
                        1757+*                                  (FORCE WRITE GATE CHECK)
                        1758+* CALLING SEQUENCE
                        1759+*
                        1760+*     THIS ROUTINE WILL SIMULATE FILE 'CLOCK  AND DATA' INFORMATION
                        1761+*     VIA THE 'CLOCK STEP DIAGNOSTIC' TO TEST THE 4962 CONTROL CARDS.
                        1762+*
                        1763+*     PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                        1764+*     .       TURESUL BIT 0----------NOT USED
                        1765+*     .       TURESUL BIT 1----------NOT USED
                        1766+*     .       TURESUL BIT 2----------NOT USED
                        1767+*     .       TURESUL BIT 3----------NOT USED
                        1768+*     .
                        1769+*     .       TURESUL BIT 4----------NOT USED
                        1770+*     .       TURESUL BIT 5----------NOT USED
                        1771+*     .       TURESUL BIT 6----------NOT USED
                        1772+*     .       TURESUL BIT 7---------- NOT USED
                        1773+*     .
                        1774+*     .       TURESUL BIT 8----------NOT USED
                        1775+*     .       TURESUL BIT 9---------- NOT USED
                        1776+*     .       TURESUL BIT 10---------- NOT USED
                        1777+*     .       TURESUL BIT 11----------NOT USED
                        1778+*     .
                        1779+*     .       TURESUL BIT 12----------NOT USED
                        1780+*     .       TURESUL BIT 13---------- NOT USED
                        1781+*     .       TURESUL BIT 14----------OIO CC ERROR
                        1782+*     .       TURESUL BIT 15-COMPARE ERROR BETWEEN EXPECT TABLE & SENSE
                        1783+*     .                                INFORMATION
                        1784+*
                        1785+* RETURN CONTROL
                        1786+*
                        1787+*      B     TUPTN*                   RETURN TO MDI SUPERVISOR
                        1788+*
                        1789+*********************************************************************

002EE2  6F0D 2738       1790+T7871  MVW   R7,TURTN               SAVE RETURN ADDRESS
002EE6  4020 2700 7871  1791+       MVWI  X'7871',$TUID          SAVE TU ID FOR DISPLAY
002EEC  4424 26FA       1792+       MVA   GPTN1,R4               SET UP POINTER ADRS IN R4
002EF0  6E03 2A7C       1793+       BAL   $CONC,R6               CLEAR DEV DEP STG AND CONNECT I/O BL
002EF4  3002            1794+       DC    A(T71ER)               ERROR ADRS FOR INVALID PREP
                        1795+*
002EF6  8028 19D0 28A3  1796       MVB   DEVADD,IDCB1+1         LOAD DEVICE ADDRESS IN IDCB
002EFC  4224 328E       1797       MVA   T71ST,R2               ADDRESS OF CLOCK STEP BUFFER
002F00  4020 3180 0000  1798       MVWI  0,T71U                 CLEAR SUM COUNTERS
002F06  4020 3182 0000  1799       MVWI  0,T71U+2               *
002F0C  CD25 18C8       1800       MVWZ  TURESUL,R5             CLEAR RESULTS WORD
002F10  4724 2A68       1801       MVA   IOBLK,R7               ISSUE DEVICE RESET
002F14  6008            1802       SVC   RESET                  *
002F16  CD25 18CA       1803       MVWZ  TURESUL+2,R5           CLEAR RESULTS WORD 2
002F1A  4020 28A8 0000  1804       MVWI  0,CEDAT                SET DIAGNOSTIC MODE
002F20  6E03 2840       1805       BAL   CEOP1,R6               *
002F24  3002            1806       DC    A(T71ER)               *
002F26  4C62            1807       TBTS  (R4,XI)                TURN ON EXPECTED INTERRUPT (ATTEN)
002F28  4020 28AC 8000  1808       MVWI  X'8000',CEDAT2         TURN ON READY
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

002F2E  6E03 2854       1809       BAL   CEOP2,R6               *
002F32  3002            1810       DC    A(T71ER)               *
002F34  4CA3            1811       TBTR  (R4,IN)                TURN OFF ATTENTION INTERRUPT
002F36  6800 3002       1812       BOFF  T71ER                  NO INTERRUPT RECEIVED
002F3A  402F 2702 0704  1813       CWI   X'0704',$IOIN          CHECK FOR INT COND CODE OF 4
002F40  1002            1814       JE    T71H                   OK
002F42  6802 3002       1815       B     T71ER                  WRONG INTERRUPT CODE
002F46  4020 2826 0018  1816 T71H   MVWI  24,CTR01               INIT COUNTER
002F4C  4020 28AC 08C0  1817       MVWI  X'08C0',CEDAT2         SEND INDEX PULSE,BEHIND HOME,
002F52  6E03 2854       1818       BAL   CEOP2,R6               * SEEK COMPLETE
002F56  3002            1819       DC    A(T71ER)               ERROR
002F58  4020 28AC 0400  1820       MVWI  X'0400',CEDAT2         SEND SECTOP PULSE
002F5E  6E03 2854       1821       BAL   CEOP2,R6               *
002F62  3002            1822       DC    A(T71ER)               ERROR
002F64  4020 28AC 3000  1823 T71S   MVWI  X'3000',CEDAT2         SEND CEOP2 USING '3000' DATA
002F6A  6E03 2854       1824       BAL   CEOP2,R6               *
002F6E  3002            1825       DC    A(T71ER)               *
002F70  4020 28AC 0200  1826       MVWI  X'0200',CEDAT2         SEND CEOP2 USING '0200' DATA
002F76  6E03 2854       1827       BAL   CEOP2,R6               *
002F7A  3002            1828       DC    A(T71ER)               *
002F7C  4020 28AC 0008  1829       MVWI  X'0008',CEDAT2         SEND CEOP2 USING '0008' DATA
002F82  6E03 2854       1830       BAL   CEOP2,R6               *
002F86  3002            1831       DC    A(T71ER)               *
002F88  402E 2826 0001  1832       SWI   1,CTR01                DECREMENT COUNT
002F8E  18EA            1833       JNZ   T71S                   CONTINUE TO SEND CLOCKS
002F90  4C67            1834       TBTS  (R4,NI)                TURN ON NO INTER MODE INDICATOR
002F92  4020 27BC 0000  1835       MVWI  X'0000',WRDCB+4        8-15 FLAG BYTE
002F98  4020 27BE 00FF  1836       MVWI  X'00FF',WRDCB+6        CYLINDER
002F9E  4020 27C0 0112  1837       MVWI  X'0112',WRDCB+8        HEAD AND SECTOR
002FA4  4020 27C4 0100  1838       MVWI  X'0100',WRDCB+12       BYTE COUNT
002FAA  4020 27C6 318E  1839       MVA   WRBUF,WRDCB+14         DATA ADDRESS
002FB0  6E03 28EC       1840       BAL   $WRT,R6                WRITE DATA
002FB4  3002            1841       DC    A(T71ER)               ERROR
002FB6  4024 0400       1842       MVWI  1024,R0                TIME OUT 2 MSEC
002FBA  B8FF            1843       JCT   *,R0                   *
002FBC  4324 FFFF       1844       MVWI  X'FFFF',R3             INIT XOR REGISTER
002FC0  6D03 301A       1845 T71D   BAL   T71CC,R5               STIMULATE CLOCK BITS
002FC4  6D03 3128       1846       BAL   T71SS,R5               READ SENSE WORDS
002FC8  50FB            1847       J     T71D                   LOOP
                        1848 *
                        1849 *
002FCA  4CA3            1850 T71F   TBTR  (R4,IN)                HAS INTERRUPT OCCURRED?
002FCC  101E            1851       JOFF  T71I                   NO-ERROR
002FCE  4020 28AC 0001  1852       MVWI  1,CEDAT2               RESET CE DIAG MODE
002FD4  6E03 2854       1853       BAL   CEOP2,R6               *
002FD8  3002            1854       DC    A(T71ER)               *
002FDA  CB24 318C       1855       CW    T71XF,R3               COMPARE RESULTS
002FDE  1818            1856       JNE   T71E                   ERROR
002FE0  6E03 2974       1857       BAL   XIOCS,R6               START CYCLE STEAL STATS
002FE4  3002            1858       DC    A(T71ER)               OIO CC ERROR
002FE6  4CA1            1859       TBTR  (R4,ER)                TEST FOR ERROR
002FE8  120C            1860       JON   T71ER                  ERROR
002FEA  A828 2722 3180  1861       AW    CSTL2,T71U             ADD CYCLE STEAL DATA TO SUM CHECK
002FF0  882B 3180 3188  1862       CW    T71U,T71RE             COMPARE RESULTS
002FF6  180C            1863       JNE   T71E                   ERROR
002FF8  802B 3182 318A  1864       CB    T71U+2,T71RE+2         COMPARE RESULTS
002FFE  1808            1865       JNE   T71E                   ERROR
003000  500A            1866       J     T71X
                        1867 *
003002  402C 18C8 0002  1868 T71ER  OWI   X'0002',TURESUL        SET OIO CC ERROR
003008  5006            1869       J     T71X
00300A  4724 2A68       1870 T71I   MVA   IOBLK,R7               ISSUE DEVICE RESET
00300E  6008            1871       SVC   RESET                  *
003010  402C 18C8 0001  1872 T71E   OWI   X'0001',TURESUL        SET CLOCK STEP ERROR
                        1873 T71X TXIT
003016  6802 2B00        1874+T71X   B     $CONX                  RETURN TO MDI CONTPOLLER
                        1875+*********************************************************************
                        1876 *
                        1877 *
00301A  6D0D 3126       1878 T71CC  MVW   R5,T71C+2              SET RETURN ADDRESS
00301E  408F FFFF       1879       CWI   -1,(R2)                CHK FOR END OF STIMULATE TABLE
003022  6800 2FCA       1880       BE    T71F                   BCH   IF END OF TABLE
003026  408F FFFE       1881       CWI   X'FFFE',(R2)           TST FOR DATA
00302A  101F            1882       JE    T71T                   YES
00302C  408F FFFD       1883       CWI   X'FFFD',(R2)           TEST FOR CLOCKS
003030  1002            1884       JE    T71M                   YES
003032  6802 3116       1885       B     T71EE
003036  7A41 0002       1886 T71M   AWI   2,R2                  INC TABLE ADDRESS
00303A  C880            1887       MVW   (R2),R0                GET CLOCK COUNT
00303C  7806 0000       1888 T71N   CWI   0,R0                  COUNT ZERO?
003040  6800 3120       1889       BE    T71FF                  RETURN
003044  4020 28AC 3000  1890       MVWI  X'3000',CEDAT2         SEND CEOP2 USING '3000' DATA
00304A  6E03 2854       1891       BAL   CEOP2,R6               *
00304E  3002            1892       DC    A(T71ER)               *
003050  6D03 3128       1893       BAL   T71SS,R5               SENSE DATA
003054  4020 28AC 0008  1894       MVWI  X'0008',CEDAT2         SEND CEOP2 USING '0008' DATA
00305A  6E03 2854       1895       BAL   CEOP2,R6               *
00305E  3002            1896       DC    A(T71ER)               *
003060  6D03 3128       1897       BAL   T71SS,R5               SENSE DATA
003064  7802 0001       1898       SWI   1,R0                   DECREMENT CLOCK COUNT
003068  50B9            1899       J     T71N                   LOOP
00306A  7A41 0002       1900 T71T   AWI   2,R2                  INC TABLE ADDRESS
00306E  408F FFFE       1901       CWI   X'FFFE',(R2)           END OF DATA?
003072  1056            1902       JE    T71FF                  YES
003074  408F FFFC       1903       CWI   X'FFFC',(R2)           REPEAT READ DATA?
003078  1003            1904       JE    T71R                   YES
00307A  6D03 30A0       1905       BAL   T71L,R5                READ DATA
00307E  50F5            1906       J     T71T
003080  7A41 0002       1907 T71R   AWI   2,R2                  INC TABLE ADDRESS
003084  C980            1908       MVW   (R2),R1                REPEAT COUNT
003086  7906 0000       1909       CWI   0,R1                   REPEAT COUNT ZERO?
00308A  10EF            1910       JE    T71T                   YES
00308C  7A41 0002       1911       AWI   2,R2                   INC TABLE ADDRESS
003090  6D03 30A0       1912 T71V   BAL   T71L,R5                READ DATA
003094  7922 0001       1913       SWI   1,R1                   DECREMENT REPEAT COUNT
003098  7906 0000       1914       CWI   0,R1                   REPEAT COUNT ZERO?
00309C  10E6            1915       JE    T71T                   YES
00309E  50F8            1916       J     T71V                   REPEAT DATA LOOP
0030A0  6D0D 3114       1917 T71L   MVW   R5,T71JJ+2            SET UP RETURN ADDRESS
0030A4  4020 2826 0000  1918       MVWI  0,CTR01                INIT SHIFT COUNTER
0030AA  C880            1919       MVW   (R2),R0                GET DATA
0030AC  3009            1920 T71LL  SLL   1,R0                   TEST IF DATA '1'
0030AE  1F19            1921       JNCY  T71G                   NO
0030B0  4020 28AC 3000  1922       MVWI  X'3000',CEDAT2         SEND CEOP2 USING '3000' DATA
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
00030B6  6E03 2854          1923         BAL   CEOP2,R6            *
00030BA  3002               1924         DC    A(T71ER)            *
00030BC  6D03 3128          1925         BAL   T71SS,R5            SENSE DATA
00030C0  4020 28AC 0200     1926         MVWI  X'0200',CEDAT2      SEND CEOP2 USING '0200' DATA
00030C6  6E03 2854          1927         BAL   CEOP2,R6            *
00030CA  3002               1928         DC    A(T71ER)            *
00030CC  6D03 3128          1929         BAL   T71SS,R5            SENSE DATA
00030D0  4020 28AC 0008     1930         MVWI  X'0008',CEDAT2      SEND CEOP2 USING '0008' DATA
00030D6  6E03 2854          1931         BAL   CEOP2,R6            *
00030DA  3002               1932         DC    A(T71ER)            *
00030DC  6D03 3128          1933         BAL   T71SS,R5            SENSE DATA
00030E0  5010               1934         J     T71HH
00030E2  4020 28AC 3000     1935 T71G    MVWI  X'3000',CEDAT2      SEND '3000' DATA
00030E8  6E03 2854          1936         BAL   CEOP2,R6            *
00030EC  3002               1937         DC    A(T71ER)            *
00030EE  6D03 3128          1938         BAL   T71SS,R5            SENSE DATA
00030F2  4020 28AC 0008     1939         MVWI  X'0008',CEDAT2      SEND '0008' DATA
00030F8  6E03 2854          1940         BAL   CEOP2,R6            *
00030FC  3002               1941         DC    A(T71ER)            *
00030FE  6D03 3128          1942         BAL   T71SS,R5            SENSE DATA
003102  4029 2826 0001      1943 T71HH   AWI   1,CTR01             ADD ONE TO SHIFT COUNTER
003108  402F 2826 0010      1944         CWI   16,CTR01            SHIFT COUNT = 16?
00310E  1001                1945         JE    T71JJ               YES
003110  50CD                1946         J     T71LL
003112  6802 0000          1947 T71JJ   B     *-*                 RETURN TO CALLER
003116  8A08 28AC          1948 T71EE   MVW   (R2),CEDAT2          LD  DATA INTO IO BLOCK
00311A  6E03 2854          1949         BAL   CEOP2,R6            WRITE CLOCK DATA
00311E  3002               1950         DC    A(T71ER)
003120  7A45 0002          1951 T71FF   AWI   2,R2                INC TABLE ADDRESS
003124  6802 0000          1952 T71C    B     *-*                 RETURN TO CALLER
                           1953 *
003128  6E03 287C          1954 T71SS   BAL   SENS0,R6            READ SENSE WORD ONE
00312C  3002               1955         DC    A(T71ER)
00312E  4C23               1956         TBT   (R4,IN)             INTERRUPT?
003130  1003               1957         JOFF  T71A                NO
003132  402C 28A0 4000     1958         OWI   X'4000',RDATA0      SET INTERRUPT BIT IN SENSE WORD
003138  8828 28A0 3184     1959 T71A    MVW   RDATA0,T71TP        SAVE DATA
00313E  6E03 2868          1960         BAL   SENS1,R6            READ SENSE WORD ONE
003142  3002               1961         DC    A(T71ER)
003144  402D 28A4 4E7F     1962         RBTWI X'4E7F',RDATA       RESET UNUSED BITS
00314A  402B 28A4 0080     1963         TWI   X'0080',RDATA       MOVE BIT FROM BYTE TO BYTE
003150  1003               1964         JOFF  T71B                BIT NOT ON
003152  402C 28A4 0200     1965         OWI   X'0200',RDATA       SET BIT ON
003158  C720 28A4          1966 T71B    MVB   RDATA,R7            SAVE DATA
00315C  C72E 3182          1967         AB    R7,T71U+2           DEVELOP SUM CHECK
003160  1F03               1968         JNCY  T71RR               JUMP IF NO CARRY
003162  4029 3180 0001     1969         AWI   1,T71U
003168  A828 3184 3180     1970 T71RR   AW    T71TP,T71U
00316E  C323 3186          1971         XB    T71TP+2,R3          XOR EXPECT DATA
003172  6B0B 3184          1972         XW    T71TP,R3            *
003176  4C27               1973 T71K    TBT   (R4,IN)             TEST FOR INTER IN GEN MODE
003178  1002               1974         JOFF  T71J                NO INTERRUPT
00317A  4080 FFFF          1975         MVWI  X'FFFF',(R2)        INSERT END OF TABLE CHAR
00317E  5500               1976 T71J    BXS   (R5)                RETURN TO CALLER
                           1977 *
                           1978 *
                           1979 *
003180  00000000           1980 T71U    DC    2A(*-*)
003184  00000000           1981 T71TP   DC    2A(*-*)
003188  0B67               1982 T71RE   DC    X'0B67'             EXPECTED RESULTS  (DUTCHESS)
00318A  7D00               1983         DC    X'7D00'             *
00318C  933F               1984 T71XR   DC    X'933F'             *
00318E  0123               1985 WREUF   DC    X'0123'             WRITE BUFFER
003190  4567               1986         DC    X'4567'
003192  89AB               1987         DC    X'89AB'
003194  CDEF               1988         DC    X'CDEF'
003196  00000000000000000  1989         DC    124A(*-*)           ZEROS
                           1990 *
00328E                     1991 T71ST   EQU   *                   WRITE CLOCK STIMULATE TABLE
00328E  8048               1992         DC    X'8048'             WRITE DATA
003290  0400               1993         DC    X'0400'
003292  0400               1994         DC    X'0400'
003294  FFFD               1995         DC    X'FFFD'             CLOCKS
003296  0049               1996         DC    X'0049'
003298  3000               1997         DC    X'3000'
00329A  0200               1998         DC    X'0200'
00329C  0008               1999         DC    X'0008'
00329E  3000               2000         DC    X'3000'
0032A0  0200               2001         DC    X'0200'
0032A2  0008               2002         DC    X'0008'             START ID FIELD
0032A4  FFFE               2003         DC    X'FFFE'             'OE'-F
0032A6  0E00               2004         DC    X'0E00'              C-C
0032A8  00FF               2005         DC    X'00FF'              H-S
0032AA  0112               2006         DC    X'0112'             CRC
0032AC  DF2D               2007         DC    X'DF2D'
0032AE  FFFE               2008         DC    X'FFFE'
0032B0  3000               2009         DC    X'3000'
0032B2  0008               2010         DC    X'0008'
0032B4  3000               2011         DC    X'3000'
0032B6  0008               2012         DC    X'0008'
0032B8  3000               2013         DC    X'3000'
0032BA  0008               2014         DC    X'0008'
0032BC  3000               2015         DC    X'3000'
0032BE  0008               2016         DC    X'0008'
0032C0  FFFD               2017         DC    X'FFFD'             SEND    WRITE CLOCKS
0032C2  0077               2018         DC    X'0077'
0032C4  3000               2019         DC    X'3000'
0032C6  0200               2020         DC    X'0200'
0032C8  0008               2021         DC    X'0008'
0032CA  3000               2022         DC    X'3000'
0032CC  0200               2023         DC    X'0200'
0032CE  0008               2024         DC    X'0008'
0032D0  3000               2025         DC    X'3000'
0032D2  0008               2026         DC    X'0008'
0032D4  3000               2027         DC    X'3000'
0032D6  0008               2028         DC    X'0008'
0032D8  3000               2029         DC    X'3000'
0032DA  0008               2030         DC    X'0008'
0032DC  3000               2031         DC    X'3000'
0032DE  0008               2032         DC    X'0008'
0032E0  3000               2033         DC    X'3000'
0032E2  0200               2034         DC    X'0200'
0032E4  0008               2035         DC    X'0008'
0032E6  3000               2036         DC    X'3000'
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
0032E8  0200               2037         DC    X'0200'
0032EA  0008               2038         DC    X'0008'
0032EC  3000               2039         DC    X'3000'
0032EE  0200               2040         DC    X'0200'
0032F0  0008               2041         DC    X'0008'
0032F2  3000               2042         DC    X'3000'
0032F4  0008               2043         DC    X'0808'
0032F6  FFFE               2044         DC    X'FFFE'             DATA FIELD
0032F8  0123               2045         DC    X'0123'
0032FA  4567               2046         DC    X'4567'
0032FC  89AB               2047         DC    X'89AB'
0032FE  CDEF               2048         DC    X'CDEF'
003300  FFFE               2049         DC    X'FFFE'
003302  0800               2050         DC    X'0800'             INDEX PULSE-FORCE WRITE GATE CHECK
003304  FFFF               2051         DC    X'FFFF'
003306  FFFF               2052         DC    X'FFFF'
                           2054         COPY  T7873               01DEC76
                           2055 T7873 TUTT T73ER
                           2056+*********************************************************06FEB76**
                           2057+*
                           2058+* TEST UNIT
                           2059+*
                           2060+*     4962 CONTROL CLOCK STEP DIAGNOSTIC (READ DATA)          3/11/77
                           2061+*
                           2062+* PURPOSE
                           2063+*
                           2064+*                                  (DROP READY DURING OP)
                           2065+* CALLING SEQUENCE
                           2066+*
                           2067+*     THIS ROUTINE WILL SIMULATE FILE 'CLOCK  AND DATA' INFORMATION
                           2068+*     VIA THE 'CLOCK STEP DIAGNOSTIC' TO TEST THE 4962 CONTROL CARDS.
                           2069+*     .
                           2070+*     PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                           2071+*     .       TURESUL BIT 0------------NOT USED
                           2072+*     .       TURESUL BIT 1------------NOT USED
                           2073+*     .       TURESUL BIT 2------------NOT USED
                           2074+*     .       TURESUL BIT 3------------NOT USED
                           2075+*     .
                           2076+*     .       TURESUL BIT 4------------NOT USED
                           2077+*     .       TURESUL BIT 5------------ NOT USED
                           2078+*     .       TURESUL BIT 6------------NOT USED
                           2079+*     .       TURESUL BIT 7------------ NOT USED
                           2080+*     .
                           2081+*     .       TURESUL BIT 8------------NOT USED
                           2082+*     .       TURESUL BIT 9------------ NOT USED
                           2083+*     .       TURESUL BIT 10----------- NOT USED
                           2084+*     .       TURESUL BIT 11-----------NOT USED
                           2085+*     .
                           2086+*     .       TURESUL BIT 12-----------NOT USED
                           2087+*     .       TURESUL BIT 13---------- NOT USED
                           2088+*     .       TURESUL BIT 14-----------DIO CC ERROR
                           2089+*     .       TURESUL BIT 15-COMPARE ERROR BETWEEN EXPECT TABLE & SENSE
                           2090+*     .                                INFORMATION
                           2091+*
                           2092+* RETURN CONTROL
                           2093+*
                           2094+*       B     TURTN*                   RETURN TO MDI SUPERVISOR
                           2095+*
                           2096+*************************************************************************
003308  6F0D 2738          2097+T7873   MVW   R7,TURTN                SAVE RETURN ADDRESS
00330C  4020 2700 7873     2098+        MVWI  X'7873',$TUID          SAVE TU ID FOR DISPLAY
003312  4424 26FA          2099+        MVA   OPTN1,R4               SET UP POINTER ADRS IN R4
003316  6E03 2A7C          2100+        BAL   $CONC,R6               CLEAR DEV DEP STG AND CONNECT I/O BL
00331A  3428               2101+        DC    A(T73ER)               ERROR ADRS FOR INVALID PREP
                           2102+*
00331C  8028 19D0 28A3     2103         MVB   DEVADD,IDCB1+1         LOAD DEVICE ADDRESS IN IDCB
003322  4224 36B4          2104         MVA   T73ST,R2               ADDRESS OF CLOCK STEP BUFFER
003326  4020 35A6 0000     2105         MVWI  0,T73U                 CLEAR SUM COUNTERS
00332C  4020 35A8 0000     2106         MVWI  0,T73U+2                *
003332  4F6E 2C68          2107         MVWZ  TURESUL,R5             CLEAR RESULTS WORD
003336  4724 2A68          2108         MVA   IOBLK,R7               ISSUE DEVICE RESET
00333A  6008               2109         SVC   RESET                  *
00333C  CD25 18CA          2110         MVWZ  TURESUL+2,R5           CLEAR RESULTS WORD 2
003340  4020 28A8 0000     2111         MVWI  0,CEDAT                SET DIAGNOSTIC MODE
003346  6E03 2840          2112         BAL   CEOP1,R6               *
00334A  3428               2113         DC    A(T73ER)               *
00334C  4C52               2114         TBTS  (R4,XI)                TURN ON EXPECTED INTERRUPT (ATTEN)
00334E  4020 28AC 8000     2115         MVWI  X'8000',CEDAT2         TURN ON READY
003354  6E03 2854          2116         BAL   CEOP2,R6               *
003358  3428               2117         DC    A(T73ER)               *
00335A  4CA3               2118         TBTR  (R4,IN)                TURN OFF ATTENTION INTERRUPT
00335C  6800 3428          2119         BOFF  T73ER                  NO INTERRUPT RECEIVED
003360  402F 2702 0704     2120         CWI   X'0704',$IOIN          CHECK FOR INT COND CODE OF 4
003366  1002               2121         JE    T73H                   OK
003368  6802 3428          2122         B     T73ER                  WRONG INTERRUPT CODE
00336C  4020 2826 0018     2123 T73H    MVWI  24,CTR01               INIT COUNTER
003372  4020 28AC 08C0     2124         MVWI  X'08C0',CEDAT2         SEND INDEX PULSE,BEHIND HOME,
003378  6E03 2854          2125         BAL   CEOP2,R6               * SEEK COMPLETE
00337C  3428               2126         DC    A(T73ER)               ERROR
00337E  4020 28AC 0400     2127         MVWI  X'0400',CEDAT2         SEND SECTOR PULSE
003384  6E03 2854          2128         BAL   CEOP2,R6               *
003388  3428               2129         DC    A(T73ER)               ERROR
00338A  4020 28AC 3000     2130 T73S    MVWI  X'3000',CEDAT2         SEND CEOP2 USING '3000' DATA
003390  6E03 2854          2131         BAL   CEOP2,R6               *
003394  3428               2132         DC    A(T73ER)               *
003396  4020 28AC 0200     2133         MVWI  X'0200',CEDAT2         SEND CEOP2 USING '0200' DATA
00339C  6E03 2854          2134         BAL   CEOP2,R6               *
0033A0  3428               2135         DC    A(T73ER)               *
0033A2  4020 28AC 0008     2136         MVWI  X'0008',CEDAT2         SEND CEOP2 USING '0008' DATA
0033A8  6E03 2854          2137         BAL   CEOP2,R6               *
0033AC  3428               2138         DC    A(T73ER)               *
0033AE  402E 2826 0001     2139         SWI   1,CTR01                DECREMENT COUNT
0033B4  18EA               2140         JNZ   T73S                   CONTINUE TO SEND CLOCKS
0033B6  4C67               2141         TBTS  (R4,NI)                TURN ON NO INTER MODE INDICATOR
0033B8  4020 27DC 0000     2142         MVWI  X'0000',RDDCB+4        8-15 FLAG BYTE
0033BE  4020 27DE 00FF     2143         MVWI  X'00FF',RDDCB+6        CYLINDER
0033C4  4020 27E0 0112     2144         MVWI  X'0112',RDDCB+8        HEAD AND SECTOR
0033CA  4020 27E4 00FE     2145         MVWI  X'00FE',RDDCB+12       BYTE COUNT
0033D0  4020 27E6 35B4     2146         MVA   RDBUF,RDDCB+14         DATA ADDRESS
0033D6  6E03 28DC          2147         BAL   $RD,R6                 READ DATA
0033DA  3428               2148         DC    A(T73ER)               ERROR
0033DC  4024 0400          2149         MVWI  1024,R0                TIME OUT 2 MSEC
0033E0  B8FF               2150         JCT   *-R0                   *
0033E2  4324 FFFF          2151         MVWI  X'FFFF',R3             INIT XOR REGISTER
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
00033E6  6D03 3440      2152 T73D   BAL   T73CC,R5          STIMULATE CLOCK BITS
00033EA  6D03 354E      2153        BAL   T73SS,R5          READ SENSE WORDS
00033EE  50FB           2154        J     T73D              LOOP
                        2155 *
                        2156 *
00033F0  4CA3           2157 T73F   TBTR  (R4,IN)           HAS INTERRUPT OCCURRED?
00033F2  101E           2158        JOFF  T73I              NO-ERROR
00033F4  4020 28AC 0001 2159        MVNI  1,CEDAT2          RESET CE DIAG MODE
00033FA  6E03 2854      2160        BAL   CEOP2,R6          *
00033FE  3428           2161        DC    A(T73ER)          *
003400  CB24 35B2       2162        CW    T73XR,P3          COMPARE RESULTS
003404  1818           2163        JNE   T73E              ERROR
003406  6E03 2974       2164        BAL   XIOCS,R6          START CYCLE STEAL STATS
00340A  3428           2165        DC    A(T73ER)          OIO CC ERROR
00340C  4CA1           2166        TBTR  (R4,ER)           TEST FOR ERROR
00340E  120C           2167        JON   T73ER             ERROR
003410  A828 2722 35A6 2168        AW    CSTL2,T73U        ADD CYCLE STEAL DATA TO SUM CHECK
003416  882B 35A6 35AE 2169        CW    T73U,T73RE        COMPARE RESULTS
00341C  180C           2170        JNE   T73E              ERROR
00341E  802B 35A8 35B0 2171        CB    T73U+2,T73RE+2    COMPARE RESULTS
003424  1808           2172        JNE   T73E              ERROR
003426  500A           2173        J     T73X
                        2174 *
003428  402C 18C8 0002 2175 T73ER  OWI   X'0002',TURESUL    SET OIO CC ERROR
00342E  5006           2176        J     T73X
003430  4724 2A68      2177 T73I   MVA   IOBLK,R7          ISSUE DEVICE RESET
003434  6008           2178        SVC   RESET             *
003436  402C 18C8 0001 2179 T73E   OWI   X'0001',TURESUL    SET CLOCK STEP ERROR
                        2180 T73X  TXIT
00343C  6802 2B00       2181+T73X  B     $CONX             RETURN TO MDI CONTROLLER
                        2182+*********************************************************************
                        2183 *
                        2184 *
003440  6D0D 354C       2185 T73CC  MVW   R5,T73C+2         SET RETURN ADDRESS
003444  408F FFFF       2186        CWI   -1,(R2)           CHK FOR END OF STIMULATE TABLE
003448  6800 33F0       2187        BE    T73F              BCH  IF END OF TABLE
00344C  408F FFFE       2188        CWI   X'FFFE',(R2)      TST FOR DATA
003450  101F           2189        JE    T73T              YES
003452  408F FFFD       2190        CWI   X'FFFD',(R2)      TEST FOR CLOCKS
003456  1002           2191        JE    T73M              YES
003458  6802 353C       2192        B     T73EE
00345C  7A41 0002       2193 T73M   AWI   2,R2             INC TABLE ADDRESS
003460  C880           2194        MVW   (R2),R0           GET CLOCK COUNT
003462  7806 0000       2195 T73N   CWI   0,R0             COUNT ZERO?
003466  6800 3546       2196        BE    T73FF             RETURN
00346A  4020 28AC 3000  2197        MVWI  X'3000',CEDAT2    SEND CEOP2 USING '3000' DATA
003470  6E03 2854       2198        BAL   CEOP2,R6          *
003474  3428           2199        DC    A(T73ER)          *
003476  6D03 354E       2200        BAL   T73SS,R5          SENSE DATA
00347A  4020 28AC 0008  2201        MVWI  X'0008',CEDAT2    SEND CEOP2 USING '0008' DATA
003480  6E03 2854       2202        BAL   CEOP2,R6          *
003484  3428           2203        DC    A(T73ER)          *
003486  6D03 354E       2204        BAL   T73SS,R5          SENSE DATA
00348A  7802 0001       2205        SWI   1,R0              DECREMENT CLOCK COUNT
00348E  50E9           2206        J     T73N              LOOP
003490  7A41 0002       2207 T73T   AWI   2,R2             INC TABLE ADDRESS
003494  408F FFFE       2208        CWI   X'FFFE',(R2)      END OF DATA?
003498  1056           2209        JE    T73FF             YES
00349A  408F FFFC       2210        CWI   X'FFFC',(R2)      REPEAT READ DATA?
00349E  1003           2211        JE    T73E              YES
0034A0  6D03 34C6       2212        BAL   T73L,R5           READ DATA
0034A4  50F5           2213        J     T73T
0034A6  7A41 0002       2214 T73R   AWI   2,R2             INC TABLE ADDRESS
0034AA  C980           2215        MVW   (R2),R1           REPEAT COUNT
0034AC  7906 0000       2216        CWI   0,R1              REPEAT COUNT ZERO?
0034B0  10EF           2217        JE    T73T              YES
0034B2  7A41 0002       2218        AWI   2,R2             INC TABLE ADDRESS
0034B6  6D03 34C6       2219 T73V   BAL   T73L,R5           READ DATA
0034BA  7922 0001       2220        SWI   1,R1              DECREMENT REPEAT COUNT
0034BE  7906 0000       2221        CWI   0,R1              REPEAT COUNT ZERO?
0034C2  10E6           2222        JE    T73T              YES
0034C4  50F8           2223        J     T73V              REPEAT DATA LOOP
0034C6  6D0D 353A       2224 T73L   MVW   R5,T73JJ+2       SET UP RETURN ADDRESS
0034CA  4020 2826 0000  2225        MVWI  0,CTR01           INIT SHIFT COUNTER
0034D0  C880           2226        MVW   (R2),R0           GET DATA
0034D2  3009           2227 T73LL  SLL   1,R0              TEST IF DATA '1'
0034D4  1F19           2228        JNCY  T73G              NO
0034D6  4020 28AC 3000  2229        MVWI  X'3000',CEDAT2    SEND CEOP2 USING '3000' DATA
0034DC  6E03 2854       2230        BAL   CEOP2,R6          *
0034E0  3428           2231        DC    A(T73ER)          *
0034E2  6D03 354E       2232        BAL   T73SS,R5          SENSE DATA
0034E6  4020 28AC 0200  2233        MVWI  X'0200',CEDAT2    SEND CEOP2 USING '0200' DATA
0034EC  6E03 2854       2234        BAL   CEOP2,R6          *
0034F0  3428           2235        DC    A(T73ER)          *
0034F2  6D03 354E       2236        BAL   T73SS,R5          SENSE DATA
0034F6  4020 28AC 0008  2237        MVWI  X'0008',CEDAT2    SEND CEOP2 USING '0008' DATA
0034FC  6E03 2854       2238        BAL   CEOP2,R6          *
003500  3428           2239        DC    A(T73ER)          *
003502  6D03 354E       2240        BAL   T73SS,R5          SENSE DATA
003506  5010           2241        J     T73HH
003508  4020 28AC 3000  2242 T73G   MVWI  X'3000',CEDAT2    SEND '3000' DATA
00350E  6E03 2854       2243        BAL   CEOP2,R6          *
003512  3428           2244        DC    A(T73ER)          *
003514  6D03 354E       2245        BAL   T73SS,R5          SENSE DATA
003518  4020 28AC 0008  2246        MVWI  X'0008',CEDAT2    SEND '0008' DATA
00351E  6E03 2854       2247        BAL   CEOP2,R6          *
003522  3428           2248        DC    A(T73ER)          *
003524  6D03 354E       2249        BAL   T73SS,R5          SENSE DATA
003528  4029 2826 0001  2250 T73HH  AWI   1,CTR01           ADD ONE TO SHIFT COUNTER
00352E  402F 2826 0010  2251        CWI   16,CTR01          SHIFT COUNT = 16?
003534  1001           2252        JE    T73JJ             YES
003536  50CD           2253        J     T73LL
003538  6802 0000       2254 T73JJ  B     *-*               RETURN TO CALLER
00353C  9A08 28AC       2255 T73EE  MVW   (R2),CEDAT2       LD DATA INTO IO BLOCK
003540  6E03 2854       2256        BAL   CEOP2,R6          WRITE CLOCK DATA
003544  3428           2257        DC    A(T73ER)
003546  7A41 0002       2258 T73FF  AWI   2,R2             INC TABLE ADDRESS
00354A  6802 0000       2259 T73C   B     *-*               RETURN TO CALLER
                        2260 *
00354E  6E03 287C       2261 T73SS  BAL   SENSO,R6          READ SENSE WORD ONE
003552  3428           2262        DC    A(T73ER)
003554  4C23           2263        TBT   (R4,IN)           INTEPRUPT?
003556  1003           2264        JOFF  T73A              NO
003558  402C 28A0 4000  2265        OWI   X'4000',RDATA0    SET INTERRUPT BIT IN SENSE WORD
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
00355E  8828 28A0 35AA  2266 T73A   MVW   RDATA0,T73TP       SAVE DATA
003564  6E03 2868       2267        BAL   SENS1,R6          READ SENSE WORD ONE
003568  3428           2268        DC    A(T73ER)
00356A  402D 28A4 4E7F  2269        RBTWI X'4E7F',RDATA     RESET UNUSED BITS
003570  402B 28A4 0080  2270        TWI   X'0080',RDATA      MOVE BIT FROM BYTE TO BYTE
003576  1003           2271        JOFF  T73B              BIT NOT ON
003578  402C 28A4 0200  2272        OWI   X'0200',RDATA     SET BIT ON
00357E  C720 28A4       2273 T73B   MVB   RDATA,R7         SAVE DATA
003582  1702 35A8       2274        AB    R7,T73U+2         DEVELOP SUM CHECK
003586  1F03           2275        JNCY  T73FR             JUMP IF NO CARRY
003588  4029 35A6 0001  2276        AWI   1,T73U
00358E  A828 35AA 35A6  2277 T73RR  AW    T73TP,T73U
003594  C323 35AC       2278        XB    T73TP+2,R3        XOR EXPECT DATA
003598  6B0B 35AA       2279        XW    T73TP,R3          *
00359C  4C25           2280 T73K   TBT   (R4,IN)          TEST FOR INTER IN GEN MODE
00359E  1702           2281        JOFF  T73A              NO INTERRUPT
0035A0  4080 FFFF       2282        MVNI  X'FFFF',(R2)      INSERT END OF TABLE CHAR
0035A4  5500           2283 T73J   BXS   (R5)              RETURN TO CALLER
                        2284 *
                        2285 *
0035A6  00000000        2286 *
0035AA  00000000        2287 T73U   DC    2A(*-*)
0035AE  F7BA            2288 T73TP  DC    2A(*-*)
0035B0  D000            2289 T73RE  DC    X'F7BA'           EXPECTED RESULTS (DUTCHESS)
0035B2  31A5            2290        DC    X'D000'           *
0035B4  00000000000000000 2291 T73XR  DC    X'31A5'           *
                        2292 RDBUF  DC    128A(*-*)         READ BUFFER
                        2293 *
0036B4                  2294 T73ST  EQU   *                 WRITE CLOCK STIMULATE TABLE
0036B4  8048            2295        DC    X'8048'           READ DATA
0036B6  0400            2296        DC    X'0400'
0036B8  0400            2297        DC    X'0400'
0036BA  FFFD            2298        DC    X'FFFD'
0036BC  0049            2299        DC    X'0049'           CLOCKS
0036BE  3000            2300        DC    X'3000'
0036C0  0200            2301        DC    X'0200'
0036C2  0008            2302        DC    X'0008'
0036C4  3000            2303        DC    X'3000'
0036C6  0200            2304        DC    X'0200'
0036C8  0008            2305        DC    X'0008'
0036CA  FFFE            2306        DC    X'FFFE'           START ID FIELD
0036CC  0E00            2307        DC    X'0E00'           '0E'-F
0036CE  00FF            2308        DC    X'00FF'           C-C
0036D0  0112            2309        DC    X'0112'           H-S
0036D2  DF2D            2310        DC    X'DF2D'           CRC
0036D4  FFFE            2311        DC    X'FFFE'
0036D6  3000            2312        DC    X'3000'
0036D8  0008            2313        DC    X'0008'
0036DA  4000            2314        DC    X'4000'           RESET READY (FORCE ERROR)
0036DC  FFFF            2315        DC    X'FFFF'
0036DE  FFFF            2316        DC    X'FFFF'
                        2317        COPY  T7874             01DEC76
                        2318 T7874  TUIT  T74ER
                        2319+*********************************************************************06FEB76**
                        2320+**
                        2321+** TEST UNIT
                        2322+**
                        2323+**      4962 CONTROL CLOCK STEP DIAGNOSTIC (READ DATA)          3/11/77
                        2324+**
                        2325+** PURPOSE
                        2326+**                                  (FORCE END OF TRACK)
                        2327+** CALLING SEQUENCE
                        2328+**
                        2329+**      THIS ROUTINE WILL SIMULATE FILE 'CLOCK  AND DATA' INFORMATION
                        2330+**      VIA THE 'CLOCK STEP DIAGNOSTIC' TO TEST THE 4962 CONTROL CARDS.
                        2331+**
                        2332+**      PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
                        2333+**      .       TURESUL BIT 0----------NOT USED
                        2334+**      .       TURESUL BIT 1----------NOT USED
                        2335+**      .       TURESUL BIT 2----------NOT USED
                        2336+**      .       TURESUL BIT 3----------NOT USED
                        2337+**      .
                        2338+**      .       TURESUL BIT 4----------NOT USED
                        2339+**      .       TURESUL BIT 5----------NOT USED
                        2340+**      .       TURESUL BIT 6----------NOT USED
                        2341+**      .       TURESUL BIT 7---------- NOT USED
                        2342+**      .
                        2343+**      .       TURESUL BIT 8----------NOT USED
                        2344+**      .       TURESUL BIT 9---------- NOT USED
                        2345+**      .       TURESUL BIT 10--------- NOT USED
                        2346+**      .       TURESUL BIT 11---------NOT USED
                        2347+**      .
                        2348+**      .       TURESUL BIT 12---------NOT USED
                        2349+**      .       TURESUL BIT 13---------- NOT USED
                        2350+**      .       TUPESUL BIT 14---------OTO CC ERROR
                        2351+**      .       TURESUL BIT 15-COMPARE ERROR BETWEEN EXPECT TABLE & SENSE
                        2352+**      .                              INFORMATION
                        2353+**
                        2354+** RETURN CONTROL
                        2355+**
                        2356+**      B       TURTN*              RETURN TO MDI SUPERVISOR
                        2357+**
                        2358+**********************************************************************
0036E0  6F0D 2738       2359+T7874  MVW   R7,TURTN            SAVE RETURN ADDRESS
0036E4  4020 2700 7874  2360+       MVWI  X'7874',$TUID       SAVE TU ID FOR DISPLAY
0036EA  4424 26FA       2361+       MVA   OPTN1,R4            SET UP POINTER ADRS IN R4
0036EE  6E03 2A7C       2362+       BAL   $CONC,R6            CLEAR DEV DEP STG AND CONNECT I/O BL
0036F2  3800            2363+       DC    A(T74ER)          ERROR ADRS FOR INVALID PREP
                        2364+**
0036F4  8028 19D0 28A3  2365        MVB   DEVADD,IDCB1+1    LOAD DEVICE ADDRESS IN IDCB
0036FA  4224 398C       2366        MVA   T74ST,R2          ADDRESS OF CLOCK STEP BUFFEP
0036FE  4020 397E 0000  2367        MVWI  0,T740            CLEAR SUM COUNTERS
003704  4020 3980 0000  2368        MVWI  0,T74U+2          *
00370A  CD25 18C8       2369        MVWZ  TURESUL,R5        CLEAR RESULTS WORD
00370E  4724 2A68       2370        MVA   IOBLK,R7          ISSUE DEVICE RESET
003712  6008           2371        SVC   RESET             *
003714  CD25 18CA       2372        MVWZ  TURESUL+2,R5      CLEAR RESULTS WORD 2
003718  4020 28A8 0000  2373        MVWI  0,CEDAT           SET DIAGNOSTIC MODE
00371E  6E03 2840       2374        BAL   CEOP1,R6          *
003722  3800           2375        DC    A(T74ER)          *
003724  4C62 18C8       2376        TBTS  (R4,XI)           TURN ON EXPECTED INTERRUPT (ATTEN)
003726  4020 28AC 8000  2377        MVNI  X'8000',CEDAT2    TURN ON READY
00372C  6E03 2854       2378        BAL   CEOP2,R6          *
```

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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
003730  3800            2381         DC    A(T74ER)              *
003732  4CA3            2382         TBTR  (R4,IN)               TURN OFF ATTENTION INTERRUPT
003734  6800 3800       2383         BOFF  T74ER                 NO INTERRUPT RECEIVED
003738  402F 2702 0704  2384         CWI   X'0704',$IOIN         CHECK FOR INT COND CODE OF 4
00373E  1002            2385         JE    T74H                  OK
003740  6802 3800       2386         B     T74ER                 WRONG INTERRUPT CODE
003744  4020 2826 0018  2387 T74H     MVWI  24,CTR01              INIT COUNTER
00374A  4020 28AC 08C0  2388         MVWI  X'08C0',CEDAT2        SEND INDEX PULSE,BEHIND HOME,
003750  6E03 2854       2389         BAL   CEOP2,R6              * SEEK COMPLETE
003754  3800            2390         DC    A(T74ER)              ERROR
003756  4020 28AC 0400  2391         MVWI  X'0400',CEDAT2        SEND SECTOR PULSE
00375C  6E03 2854       2392         BAL   CEOP2,R6              *
003760  3800            2393         DC    A(T74ER)              ERROR
003762  4020 28AC 3000  2394 T74S     MVWI  X'3000',CEDAT2        SEND CEOP2 USING '3000' DATA
003768  6E03 2854       2395         BAL   CEOP2,R6              *
00376C  3800            2396         DC    A(T74ER)              *
00376E  4020 28AC 0200  2397         MVWI  X'0200',CEDAT2        SEND CEOP2 USING '0200' DATA
003774  6E03 2854       2398         BAL   CEOP2,R6              *
003778  3800            2399         DC    A(T74ER)              *
00377A  4020 28AC 0008  2400         MVWI  X'0008',CEDAT2        SEND CEOP2 USING '0008' DATA
003780  6E03 2854       2401         BAL   CEOP2,R6              *
003784  3800            2402         DC    A(T74ER)              *
003786  402E 2826 0001  2403         SWI   1,CTR01               DECREMENT COUNT
00378C  18EA            2404         JNZ   T74S                  CONTINUE TO SEND CLOCKS
00378E  4C67            2405         TBTS  (R4,NI)               TURN ON NO INTER MODE INDICATOR
003790  4020 27DC 0000  2406         MVWI  X'0000',RDDCB+4       8-15 FLAG BYTE
003796  4020 27DE 012E  2407         MVWI  X'012E',RDDCB+6       CYLINDER
00379C  4020 27E0 873B  2408         MVWI  X'873B',RDDCB+8       HEAD AND SECTOR
0037A2  4020 27E4 0102  2409         MVWI  X'0102',RDDCB+12      BYTE COUNT
0037A8  4020 27E6 35B4  2410         MVA   RDBUF,RDDCB+14        DATA ADDRESS
0037AE  6E03 28DC       2411         BAL   $RD,R6                READ DATA
0037B2  3800            2412         DC    A(T74ER)              ERROR
0037B4  4024 0400       2413         MVWI  1024,P0               TIME OUT 2 MSEC
0037B8  B8FF            2414         JCT   *,R0                  *
0037BA  432F FFFF       2415         MVWI  X'FFFF',R3            INIT XOR REGISTER
0037BE  6D03 3818       2416 T74D    BAL   T74CC,R5              STIMULATE CLOCK BITS
0037C2  6D03 3926       2417         BAL   T74SS,P5              READ SENSE WORDS
0037C6  50FB            2418         J     T74D                  LOOP
                        2419 *
                        2420 *
0037C8  4CA3            2421 T74F    TBTR  (R4,IN)               HAS INTERRUPT OCCURRED?
0037CA  101E            2422         JOFF  T74H                  NO-ERROR
0037CC  4020 28AC 0001  2423         MVWI  1,CEDAT2              RESET CE DIAG MODE
0037D2  6E03 2854       2424         BAL   CEOP2,R6              *
0037D6  3800            2425         DC    A(T74ER)              *
0037D8  CE24 398A       2426         CW    T74XR,R3              COMPARE RESULTS
0037DC  1818            2427         JNE   T74E                  ERROR
0037DE  6E03 2974       2428         BAL   XIOCS,R6              START CYCLE STEAL STATS
0037E2  3800            2429         DC    A(T74ER)              OIO CC ERROR
0037E4  4CA1            2430         TBTR  (R4,ER)               TEST FOR ERROR
0037E6  120C            2431         JON   T74EP                 EPROR
0037E8  A828 2722 397E  2432         AW    CSTL2,T74U            ADD CYCLE STEAL DATA TO SUM CHECK
0037EE  882B 397E 3986  2433         CW    T74U,T74RE            COMPARE RESULTS
0037F4  180C            2434         JNE   T74E                  ERROR
0037F6  802B 3980 3988  2435         CB    T74U+2,T74RE+2        COMPARE RESULTS
0037FC  1808            2436         JNE   T74E                  EPROR
0037FE  500A            2437         J     T74X
                        2438 *
003800  402C 18C8 0002  2439 T74EP    OWI   X'0002',TURESUL       SET OIO CC ERROR
003806  5006            2440         J     T74X
003808  4724 2A68       2441 T74I    MVA   IOBLK,R7               ISSUE DEVICE RESET
00380C  6008            2442         SVC   RESET                 *
00380E  402C 18C8 0001  2443 T74E    OWI   X'0001',TURESUL       SET CLOCK STEP ERROR
                        2444 T74X    TXIT
003814  6802 2B00       2445+T74X    B     $CONX                 RETURN TO MDI CONTROLLER
                        2446+*********************************************************************
                        2447 *
                        2448 *
003818  6D0D 3924       2449 T74CC   MVW   R5,T74C+2             SET RETURN ADDRESS
00381C  408F FFFF       2450         CWI   -1,(R2)               CHK FOR END OF STIMULATE TABLE
003820  6800 37C8       2451         BE    T74F                  BCH    IF END OF TABLE
003824  408F FFFE       2452         CWI   X'FFFE',(R2)          TST FOR DATA
003828  101F            2453         JE    T74T                  YES
00382A  408F FFFD       2454         CWI   X'FFFD',(R2)          TEST FOR CLOCKS
00382E  1002            2455         JE    T74M                  YES
003830  6802 3914       2456         B     T74EE
003834  7A41 0002       2457 T74M    AWI   2,R2                  INC TABLE ADDRESS
003838  C880            2458         MVW   (R2),R0               GET CLOCK COUNT
00383A  7806 0000       2459 T74N    CWI   0,R0                  COUNT ZERO?
00383E  6800 391E       2460         BE    T74FF                 RETURN
003842  4020 28AC 3000  2461         MVWI  X'3000',CEDAT2        SEND CEOP2 USING '3000' DATA
003848  6E03 2854       2462         BAL   CEOP2,R6              *
00384C  3800            2463         DC    A(T74ER)              *
00384E  6D03 3926       2464         BAL   T74SS,R5              SENSE DATA
003852  4020 28AC 0008  2465         MVWI  X'0008',CEDAT2        SEND CEOP2 USING '0008' DATA
003858  6E03 2854       2466         BAL   CEOP2,R6              *
00385C  3800            2467         DC    A(T74ER)              *
00385E  6D03 3926       2468         BAL   T74SS,R5              SENSE DATA
003862  7802 0001       2469         SWI   1,R0                  DECREMENT CLOCK COUNT
003866  50E9            2470         J     T74N                  LOOP
003868  7A41 0002       2471 T74T    AWI   2,R2                  INC TABLE ADDRESS
00386C  408F FFFE       2472         CWI   X'FFFE',(R2)          END OF DATA?
003870  1056            2473         JE    T74FF                 YES
003872  408F FFFC       2474         CWI   X'FFFC',(R2)          REPEAT READ DATA?
003876  1003            2475         JE    T74R                  YES
003878  6D03 389E       2476         BAL   T74L,R5               READ DATA
00387C  50F5            2477         J     T74T
00387E  7A41 0002       2478 T74R    AWI   2,R2                  INC TABLE ADDRESS
003882  C980            2479         MVW   (R2),R1               REPEAT COUNT
003884  7906 0000       2480         CWI   0,R1                  REPEAT COUNT ZERO?
003888  10EF            2481         JE    T74T                  YES
00388A  7A41 0002       2482         AWI   2,R2                  INC TABLE ADDRESS
00388E  6D03 389E       2483 T74V    BAL   T74L,R5               READ DATA
003892  7922 0001       2484         SWI   1,R1                  DECREMENT REPEAT COUNT
003896  7906 0000       2485         CWI   0,R1                  REPEAT COUNT ZERO?
00389A  10E6            2486         JE    T74T                  YES
00389C  50F8            2487         J     T74V                  REPEAT DATA LOOP
00389E  6D0D 3912       2488 T74L    MVW   R5,T74JJ+2            SET UP RETURN ADDRESS
0038A2  4020 2826 0000  2489         MVWI  0,CTR01               INIT SHIFT COUNTER
0038A8  C880            2490         MVW   (R2),R0               GET DATA
0038AA  3009            2491 T74LL   SLL   1,R0                  TEST IF DATA '1'
0038AC  1F19            2492         JNCY  T74G                  NO
0038AE  4020 28AC 3000  2493         MVWI  X'3000',CEDAT2        SEND CEOP2 USING '3000' DATA
0038B4  6E03 2854       2494         BAL   CEOP2,R6              *
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
0038B8  3800            2495         DC    A(T74ER)              *
0038BA  6D03 3926       2496         BAL   T74SS,P5              SENSE DATA
0038BE  4020 28AC 0200  2497         MVWI  X'0200',CEDAT2        SEND CEOP2 USING '0200' DATA
0038C4  6E03 2854       2498         BAL   CEOP2,R6              *
0038C8  3800            2499         DC    A(T74ER)              *
0038CA  6D03 3926       2500         BAL   T74SS,P5              SENSE DATA
0038CE  4020 28AC 0008  2501         MVWI  X'0008',CEDAT2        SEND CEOP2 USING '0008' DATA
0038D4  6E03 2854       2502         BAL   CEOP2,R6              *
0038D8  3800            2503         DC    A(T74ER)              *
0038DA  6D03 3926       2504         BAL   T74SS,P5              SENSE DATA
0038DE  5010            2505         J     T74HH
0038E0  4020 28AC 3000  2506 T74G     MVWI  X'3000',CEDAT2        SEND '3000' DATA
0038E6  6E03 2854       2507         BAL   CEOP2,R6              *
0038EA  3800            2508         DC    A(T74ER)              *
0038EC  6D03 3926       2509         BAL   T74SS,P5              SENSE DATA
0038F0  4020 28AC 0008  2510         MVWI  X'0008',CEDAT2        SEND '0008' DATA
0038F6  6E03 2854       2511         BAL   CEOP2,R6              *
0038FA  3800            2512         DC    A(T74ER)              *
0038FC  6D03 3926       2513         BAL   T74SS,R5              SENSE DATA
003900  4029 2826 0001  2514 T74HH    AWI   1,CTR01              ADD ONE TO SHIFT COUNTER
003906  402F 2826 0010  2515         CWI   16,CTR01              SHIFT COUNT = 16?
00390C  1001            2516         JE    T74JJ                 YES
00390E  50CD            2517         J     T74LL
003910  6802 0000       2518 T74JJ    B     *-*                   RETURN TO CALLER
003914  8A08 28AC       2519 T74EE    MVW   (R2),CEDAT2           LD  DATA INTO IO BLOCK
003918  6E03 2854       2520         BAL   CEOP2,R6              WRITE CLOCK DATA
00391C  3800            2521         DC    A(T74ER)
00391E  7A41 0002       2522 T74FF    AWI   2,R2                  INC TABLE ADDRESS
003922  6802 0000       2523 T74C     B     *-*                   RETURN TO CALLER
                        2524 *
003926  6E03 287C       2525 T74SS    BAL   SENS0,R6              READ SENSE WORD ONE
00392A  3800            2526         DC    A(T74ER)
00392C  4C23            2527         TBT   (R4,IN)               INTERRUPT?
00392E  1003            2528         JOFF  T74A                  NO
003930  402C 28A0 4000  2529         OWI   X'4000',RDATA0        SET INTERRUPT BIT IN SENSE WORD
003936  882C 28A0 3982  2530 T74A     MVW   RDATA0,T74TP          SAVE DATA
00393C  6E03 2868       2531         BAL   SENS1,R6              READ SENSE WORD ONE
003940  3800            2532         DC    A(T74ER)
003942  402D 28A4 4E7F  2533         RETWI X'4E7F',RDATA         RESET UNUSED BITS
003948  402B 28A4 0080  2534         TWI   X'0080',RDATA         MOVE BIT FROM BYTE TO BYTE
00394E  1003            2535         JOFF  T74B                  BIT NOT ON
003950  402C 28A4 0200  2536         OWI   X'0200',RDATA         SET BIT ON
003956  C720 28AA       2537 T74B     MVB   RDATA,R7              SAVE DATA
00395A  C72E 3980       2538         AE    R7,T74U+2             DEVELOP SUM CHECK
00395E  1F03            2539         JNCY  T74RR                 JUMP IF NO CARRY
003960  4029 397E 0001  2540         AWI   1,T74U
003966  A828 3982 397E  2541 T74PP    AW    T74TP,T74U
00396C  C323 3984       2542         XB    T74TP+2,R3            XOR EXPECT DATA
003970  6B0B 3982       2543         XW    T74TP,R3              *
003974  4C23            2544 T74K     TBT   (R4,IN)               TEST FOR INTER IN GEN MODE
003976  1002            2545         JOFF  T74J                  NO INTERRUPT
003978  4080 FFFF       2546         MVWI  X'FFFF',(R2)          INSERT END OF TABLE CHAR
00397C  5500            2547 T74J     BXS   (P5)                  RETURN TO CALLER
                        2548 *
                        2549 *
                        2550 *
00397E  00000000        2551 T74U     DC    2A(*-*)
003982  00000000        2552 T74TP    DC    2A(*-*)
003986  C499            2553 T74RE    DC    X'C499'               EXPECTED RESULTS  (DUTCHESS)
003988  5600            2554         DC    X'5600'               *
00398A  1066            2555 T74XR    DC    X'1066'               *
                        2556 *
00398C                  2557 T74ST    EQU   *                     WRITE CLOCK STIMULATE TABLE
00398C  8048            2558         DC    X'8048'               READ DATA
00398E  0400            2559         DC    X'0400'               SECTOR PULSE
003990  0400            2560         DC    X'0400'               SECTOR PULSE
003992  FFFD            2561         DC    X'FFFD'
003994  0049            2562         DC    X'0049'               CLOCKS
003996  3000            2563         DC    X'3000'
003998  0200            2564         DC    X'0200'
00399A  0008            2565         DC    X'0008'
00399C  3000            2566         DC    X'3000'
00399E  0200            2567         DC    X'0200'
0039A0  0008            2568         DC    X'0008'
0039A2  FFFE            2569         DC    X'FFFE'               START ID FIELD
0039A4  0E00            2570         DC    X'0E00'               'OE'-F
0039A6  012E            2571         DC    X'012E'               C-C
0039A8  873B            2572         DC    X'873B'               H-S
0039AA  FF48            2573         DC    X'FF48'               CRC
0039AC  FFFE            2574         DC    X'FFFE'
0039AE  3000            2575         DC    X'3000'
0039B0  0008            2576         DC    X'0008'
0039B2  3000            2577         DC    X'3000'
0039B4  0008            2578         DC    X'0008'
0039B6  3000            2579         DC    X'3000'
0039B8  0008            2580         DC    X'0008'
0039BA  3000            2581         DC    X'3000'
0039BC  0008            2582         DC    X'0008'
0039BE  FFFD            2583         DC    X'FFFD'               SEND    WRITE CLOCKS
0039C0  004D            2584         DC    X'004D'
0039C2  3000            2585         DC    X'3000'
0039C4  0200            2586         DC    X'0200'
0039C6  0008            2587         DC    X'0008'
0039C8  3000            2588         DC    X'3000'
0039CA  0200            2589         DC    X'0200'
0039CC  0008            2590         DC    X'0008'
0039CE  3000            2591         DC    X'3000'
0039D0  0008            2592         DC    X'0008'
0039D2  3000            2593         DC    X'3000'
0039D4  0008            2594         DC    X'0008'
0039D6  3000            2595         DC    X'3000'
0039D8  0008            2596         DC    X'0008'
0039DA  3000            2597         DC    X'3000'
0039DC  0008            2598         DC    X'0008'
0039DE  3000            2599         DC    X'3000'
0039E0  0200            2600         DC    X'0200'
0039E2  0008            2601         DC    X'0008'
0039E4  3000            2602         DC    X'3000'
0039E6  0200            2603         DC    X'0200'
0039E8  0008            2604         DC    X'0008'
0039EA  3000            2605         DC    X'3000'
0039EC  0200            2606         DC    X'0200'
0039EE  0008            2607         DC    X'0008'
0039F0  3000            2608         DC    X'3000'
```

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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT
00039F2  0008            2609        DC    X'0008'
00039F4  FFFE            2610        DC    X'FFFE'
00039F6  0123            2611        DC    X'0123'
00039F8  4567            2612        DC    X'4567'
00039FA  89AB            2613        DC    X'89AB'
00039FC  CDEF            2614        DC    X'CDEF'
00039FE  FFFE            2615        DC    X'FFFE'
003A00   FFFE            2616        DC    X'FFFE'
003A02   FFFC            2617        DC    X'FFFC'
003A04   007C            2618        DC    X'007C'
003A06   0000            2619        DC    X'0000'
003A08   7B8B            2620        DC    X'7B8B'
003A0A   FFFE            2621        DC    X'FFFE'
003A0C   FFFD            2622        DC    X'FFFD'
003A0E   0105            2623        DC    X'0105'
003A10   3000            2624        DC    X'3000'
003A12   0400            2625        DC    X'0400'
003A14   0400            2626        DC    X'0400'
003A16   FFFF            2627        DC    X'FFFF'
003A18   FFFF            2628        DC    X'FFFF'
000000                   2630        END

                                     DATA FIELD


                                     REPEAT READ DATA (TOTAL COUNT 7C)
                                     *
                                     'DATA'
                                     CRC

                                     SEND CLOCKS

                                     SECTOR PULSE (FORCE END OF TRACK)
                                     SECTOR PULSE
```


CROSS-REFERENCE LISTING

```
DECLARED  NAME      ATTRIBUTES AND REFERENCES
       0  .R0.       ABSOLUTE. HEX VALUE(00000000)
                  1585  1586  1630  1631  1641  1662  1663  1842  1843
                  1887  1888  1898  1919  1920  2149  2150  2194  2195
                  2205  2226  2227  2413  2414  2458  2459  2469  2490
                  2491
       0  .R1.       ABSOLUTE. HEX VALUE(00000001)
                  1440  1443  1446  1449  1651  1652  1656  1657  1908
                  1909  1913  1914  2215  2216  2220  2221  2479  2480
                  2484  2485
       0  .R2.       ABSOLUTE. HEX VALUE(00000002)
                  1445  1446  1541  1622  1624  1626  1629  1630  1630
                  1630  1643  1644  1646  1650  1651  1651  1651  1654
                  1662  1662  1662  1691  1694  1718  1797  1879  1881
                  1883  1886  1887  1887  1887  1900  1901  1903  1907
                  1908  1908  1908  1911  1919  1919  1919  1948  1951
                  1975  2104  2186  2188  2190  2193  2194  2194  2194
                  2207  2208  2210  2214  2215  2215  2215  2218  2226
                  2226  2226  2255  2258  2282  2368  2450  2452  2454
                  2457  2458  2458  2458  2471  2472  2474  2478  2479
                  2479  2479  2482  2490  2490  2490  2519  2522  2546
       0  .R3.       ABSOLUTE. HEX VALUE(00000003)
                   971   972  1047  1050  1076  1079  1149  1159  1162
                  1163  1166  1168  1224  1225  1260  1266  1270  1300
                  1305  1318  1348  1393  1395  1396  1404  1438  1439
                  1443  1455  1587  1598  1714  1715  1844  1855  1971
                  1972  2151  2162  2278  2279  2415  2426  2542  2543
       0  .R4.       ABSOLUTE. HEX VALUE(00000004)
                  1152  1153  1156  1170  1171  1173  1174  1177  1183
                  1189  1261  1262  1264  1268  1272  1301  1302  1303
                  1311  1314  1315  1317  1320  1330  1332  1334  1337
                  1339  1536  1551  1555  1578  1593  1602  1699  1716
                  1792  1807  1811  1834  1850  1859  1956  1973  2099
                  2114  2118  2141  2157  2166  2263  2280  2363  2378
                  2382  2405  2421  2430  2527  2544
       0  .R5.       ABSOLUTE. HEX VALUE(00000005)
                  1048  1050  1077  1079  1160  1162  1164  1166  1182
                  1187  1309  1310  1311  1342  1343  1345  1394  1395
                  1437  1450  1544  1547  1588  1589  1621  1636  1640
                  1648  1655  1660  1668  1672  1676  1681  1685  1719
                  1800  1803  1845  1846  1878  1893  1897  1905  1912
                  1917  1925  1929  1933  1938  1942  1976  2107  2110
                  2152  2153  2185  2200  2204  2212  2219  2224  2232
                  2236  2240  2245  2249  2283  2371  2374  2416  2417
                  2449  2464  2468  2476  2483  2488  2496  2500  2504
                  2509  2513  2547
       0  .R6.       ABSOLUTE. HEX VALUE(00000006)
                   939   943   945   949   951   955   958   962   964
                   968   973  1158  1178  1190  1226  1331  1336  1338
                  1344  1347  1349  1399  1405  1407  1442  1447  1448
                  1537  1549  1553  1562  1565  1568  1571  1574  1583
                  1596  1600  1634  1638  1666  1670  1674  1679  1683
                  1692  1697  1703  1793  1805  1809  1818  1821  1824
                  1827  1830  1840  1853  1857  1891  1895  1923  1927
                  1931  1936  1940  1949  1954  1960  2100  2112  2116
                  2125  2128  2131  2134  2137  2147  2160  2164  2198
                  2202  2230  2234  2238  2243  2247  2256  2261  2267
                  2364  2376  2380  2389  2392  2395  2398  2401  2411
                  2424  2428  2462  2466  2494  2498  2502  2507  2511
                  2520  2525  2531
       0  .R7.       ABSOLUTE. HEX VALUE(00000007)
                   637  1049  1078  1161  1165  1172  1265  1306  1392
                  1397  1402  1435  1441  1444  1456  1459  1534  1545
                  1613  1709  1710  1790  1801  1870  1966  1967  2097
                  2108  2177  2273  2274  2361  2372  2441  2537  2538
    1392  $CONC       ADDRESS. HEX LOCATION(00002A7C) IN CSECT(I7822   ) LENGTH(2)
                  1537  1793  2100  2364
    1458  $CONX       ADDRESS. HEX LOCATION(00002B00) IN CSECT(I7822   ) LENGTH(1)
                  1617  1874  2181  2445
     626  $INTL       ADDRESS. HEX LOCATION(00002736) IN CSECT(I7822   ) LENGTH(2)
                  1311  1401
     596  $IOIN       ADDRESS. HEX LOCATION(00002702) IN CSECT(I7822   ) LENGTH(2)
                   972  1167  1225  1305  1342  1403  1557  1813  2120
                  2384
     597  $ISB        ADDRESS. HEX LOCATION(00002704) IN CSECT(I7822   ) LENGTH(2)
                  1168  1306  1345  1404
     581  $LE         ABSOLUTE. HEX VALUE(00000026)
                  1173  1313
    1054  $RD         ADDRESS. HEX LOCATION(000028DC) IN CSECT(I7822   ) LENGTH(6)
                  2147  2411
     595  $TUID       ADDRESS. HEX LOCATION(00002700) IN CSECT(I7822   ) LENGTH(2)
                   636  1455  1489  1535  1791  2098  2362
    1060  $WRT        ADDRESS. HEX LOCATION(000028EC) IN CSECT(I7822   ) LENGTH(6)
                  1840
    1087  $WSEC       ADDRESS. HEX LOCATION(00002946) IN CSECT(I7822   ) LENGTH(6)
                  1583
     102  @DCADD1     ADDRESS. HEX LOCATION(000019B8) IN CSECT(I7822   ) LENGTH(1)
                  1452
     103  @DCADD2     ADDRESS. HEX LOCATION(000019BA) IN CSECT(I7822   ) LENGTH(1)
                  1453
      39  @FIXT       ABSOLUTE. HEX VALUE(00000101)
                   399   402   429   432   459   462   489   492
      41  @GOTO       ABSOLUTE. HEX VALUE(00000200)
                   495
      45  @TUXX       ABSOLUTE. HEX VALUE(00000500)
                   375   387   405   417   435   447   465   477
    1463  BEGIN      ADDRESS. HEX LOCATION(00002B0A) IN CSECT(I7822   ) LENGTH(2)
                  1480
    1484  BIT0080     ABSOLUTE. HEX VALUE(00000080)
                  1454
    1479  BUFPT       ADDRESS. HEX LOCATION(00002C12) IN CSECT(I7822   ) LENGTH(2)
                  1439
     970  CCERR       ADDRESS. HEX LOCATION(00002890) IN CSECT(I7822   ) LENGTH(2)
                   942   948   954   961   967
     585  CE          ABSOLUTE. HEX VALUE(0000002A)
                  1152  1264  1334
     981  CEDAT       ADDRESS. HEX LOCATION(000028A8) IN CSECT(I7822   ) LENGTH(2)
                  1548  1804  2111  2375
     983  CEDAT2      ADDRESS. HEX LOCATION(000028AC) IN CSECT(I7822   ) LENGTH(2)
                  1552  1561  1564  1567  1570  1573  1595  1633  1637
                  1665  1669  1673  1678  1682  1691  1808  1817  1820
                  1823  1826  1829  1852  1890  1894  1922  1926  1930
                  1935  1939  1948  2115  2124  2127  2130  2133  2136
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CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
		2159 2197 2201 2229 2233 2237 2242 2246 2255
		2379 2388 2391 2394 2397 2400 2423 2461 2465
		2493 2497 2501 2506 2510 2519
945	CEOP1	ADDRESS. HEX LOCATION(00002840) IN CSECT(I7822) LENGTH(4)
		1549 1805 2112 2376
951	CEOP2	ADDRESS. HEX LOCATION(00002854) IN CSECT(I7822) LENGTH(4)
		1553 1562 1565 1568 1571 1574 1596 1634 1638
		1666 1670 1674 1679 1683 1692 1809 1818 1821
		1824 1827 1830 1853 1891 1895 1923 1927 1931
		1936 1940 1949 2116 2125 2128 2131 2134 2137
		2160 2198 2202 2230 2234 2238 2243 2247 2256
		2380 2389 2392 2395 2398 2401 2424 2462 2466
		2494 2498 2502 2507 2511 2520
665	CICB	ABSOLUTE. HEX VALUE(00000014)
		1398
762	CLDCB	ADDRESS. HEX LOCATION(00002758) IN CSECT(I7822) LENGTH(2)
		1043
583	CS	ABSOLUTE. HEX VALUE(00000028)
		1153 1156 1262 1303 1332
584	CSA	ABSOLUTE. HEX VALUE(00000029)
		1337
614	CSBUF	ADDRESS. HEX LOCATION(00002720) IN CSECT(I7822) LENGTH(1)
		819 1164
812	CSDCB	ADDRESS. HEX LOCATION(000027A8) IN CSECT(I7822) LENGTH(2)
		1154
616	CSTL2	ADDRESS. HEX LOCATION(00002722) IN CSECT(I7822) LENGTH(2)
		1604 1861 2168 2432
622	CSTL8	ADDRESS. HEX LOCATION(0000272E) IN CSECT(I7822) LENGTH(2)
		1265 1266
892	CTR01	ADDRESS. HEX LOCATION(00002826) IN CSECT(I7822) LENGTH(2)
		1560 1576 1661 1686 1687 1816 1832 1918 1943
		1944 2123 2139 2225 2250 2251 2387 2403 2489
		2514 2515
604	DCBUF	ADDRESS. HEX LOCATION(00002710) IN CSECT(I7822) LENGTH(1)
		1159
1480	DC2PT	ADDRESS. HEX LOCATION(00002C14) IN CSECT(I7822) LENGTH(2)
		1453
105	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I7822) LENGTH(1)
		629 940 946 952 959 965 1353 1362 1459
		1540 1796 2103 2367
599	DEV1	ADDRESS. HEX LOCATION(00002708) IN CSECT(I7822) LENGTH(2)
		603 1394
750	DGDCB	ADDRESS. HEX LOCATION(00002748) IN CSECT(I7822) LENGTH(2)
		1094
67	DUMMY	ABSOLUTE. HEX VALUE(00000000)
		366 500 512
501	ENTPT	ADDRESS. HEX LOCATION(00002606) IN CSECT(I7822) LENGTH(1)
		198
47	EQ	ABSOLUTE. HEX VALUE(00000000)
		378 408 438 468
576	ER	ABSOLUTE. HEX VALUE(00000021)
		1170 1189 1272 1314 1339 1602 1859 2166 2430
651	EXIT	ABSOLUTE. HEX VALUE(00000006)
		1321
1482	FAKETU	ADDRESS. HEX LOCATION(00002C18) IN CSECT(I7822) LENGTH(2)
		1452
520	F00004	ADDRESS. HEX LOCATION(0000260C) IN CSECT(I7822) LENGTH(1)
		400 430 460 490
528	F00008	ADDRESS. HEX LOCATION(0000268C) IN CSECT(I7822) LENGTH(1)
		403 433 463 493
534	F00122	ADDRESS. HEX LOCATION(000026E6) IN CSECT(I7822) LENGTH(1)
		496
1488	HEBLK	ADDRESS. HEX LOCATION(00002C1A) IN CSECT(I7822) LENGTH(2)
		1435
671	HTOE	ABSOLUTE. HEX VALUE(0000001A)
		1436
980	IDCBCE1	ADDRESS. HEX LOCATION(000028A6) IN CSECT(I7822) LENGTH(2)
		946 947
982	IDCBCE2	ADDRESS. HEX LOCATION(000028AA) IN CSECT(I7822) LENGTH(2)
		952 953
984	IDCBRAP	ADDRESS. HEX LOCATION(000028AE) IN CSECT(I7822) LENGTH(2)
		940 941
976	IDCB0	ADDRESS. HEX LOCATION(0000289E) IN CSECT(I7822) LENGTH(2)
		965 966
978	IDCB1	ADDRESS. HEX LOCATION(000028A2) IN CSECT(I7822) LENGTH(2)
		959 960 1540 1796 2103 2367
647	IDLE	ABSOLUTE. HEX VALUE(00000002)
		1185
578	IN	ABSOLUTE. HEX VALUE(00000023)
		1171 1183 1302 1595 1593 1699 1716 1811 1850
		1956 1973 2118 2157 2263 2280 2382 2421 2527
		2544
1362	INTBL	ADDRESS. HEX LOCATION(00002A74) IN CSECT(I7822) LENGTH(2)
		1397
1259	INTER	ADDRESS. HEX LOCATION(000029DC) IN CSECT(I7822) LENGTH(2)
		1364
1268	INTES	ADDRESS. HEX LOCATION(000029F4) IN CSECT(I7822) LENGTH(2)
		1263
1272	INTET	ADDRESS. HEX LOCATION(000029FC) IN CSECT(I7822) LENGTH(2)
		1269
1299	INTOK	ADDRESS. HEX LOCATION(00002A00) IN CSECT(I7822) LENGTH(2)
		1363
1321	INTRX	ADDRESS. HEX LOCATION(00002A30) IN CSECT(I7822) LENGTH(2)
		1316 1319
1302	INTR1	ADDRESS. HEX LOCATION(00002A08) IN CSECT(I7822) LENGTH(2)
		1267 1271 1273
1307	INTR2	ADDRESS. HEX LOCATION(00002A16) IN CSECT(I7822) LENGTH(1)
		1304
1315	INTR3	ADDRESS. HEX LOCATION(00002A24) IN CSECT(I7822) LENGTH(2)
		1312
1353	IOBLK	ADDRESS. HEX LOCATION(00002A68) IN CSECT(I7822) LENGTH(2)
		1172 1402 1545 1613 1801 1870 2108 2177 2372
		2441
1355	IODCB	ADDRESS. HEX LOCATION(00002A6C) IN CSECT(I7822) LENGTH(2)
		1040 1043 1046 1054 1057 1060 1063 1067 1071
		1075 1083 1087 1090 1094 1154 1160 1401
1356	IOMOD	ADDRESS. HEX LOCATION(00002A6E) IN CSECT(I7822) LENGTH(2)
		1149 1155
37	I7822	CSECT. START(00002500) LENGTH(5402) ESDID(0)
		37
1469	LINE1	ADDRESS. HEX LOCATION(00002B42) IN CSECT(I7822) LENGTH(40)

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
		1440
598	LSTIO	ADDRESS. HEX LOCATION(00002706) IN CSECT(I7822) LENGTH(2)
		939 945 951 958 964 1158 1405
575	MI	ABSOLUTE. HEX VALUE(00000020)
		1317
1443	MVBUF	ADDRESS. HEX LOCATION(00002ACE) IN CSECT(I7822) LENGTH(2)
		1447 1450
587	NG	ABSOLUTE. HEX VALUE(0000002C)
		1320
582	NI	ABSOLUTE. HEX VALUE(00000027)
		1177 1578 1834 2141 2405
375	N00001	ADDRESS. HEX LOCATION(00002548) IN CSECT(I7822) LENGTH(2)
		315 511
387	N00002	ADDRESS. HEX LOCATION(0000255A) IN CSECT(I7822) LENGTH(2)
		318
399	N00003	ADDRESS. HEX LOCATION(0000256C) IN CSECT(I7822) LENGTH(2)
		321
402	N00004	ADDRESS. HEX LOCATION(00002570) IN CSECT(I7822) LENGTH(2)
		324 388
405	N00005	ADDRESS. HEX LOCATION(00002574) IN CSECT(I7822) LENGTH(2)
		327 376
417	N00006	ADDRESS. HEX LOCATION(00002586) IN CSECT(I7822) LENGTH(2)
		330
429	N00007	ADDRESS. HEX LOCATION(00002598) IN CSECT(I7822) LENGTH(2)
		333
432	N00008	ADDRESS. HEX LOCATION(0000259C) IN CSECT(I7822) LENGTH(2)
		336 418
435	N00009	ADDRESS. HEX LOCATION(000025A0) IN CSECT(I7822) LENGTH(2)
		339 406
447	N00010	ADDRESS. HEX LOCATION(000025B2) IN CSECT(I7822) LENGTH(2)
		342
459	N00011	ADDRESS. HEX LOCATION(000025C4) IN CSECT(I7822) LENGTH(2)
		345
462	N00012	ADDRESS. HEX LOCATION(000025C8) IN CSECT(I7822) LENGTH(2)
		348 448
465	N00013	ADDRESS. HEX LOCATION(000025CC) IN CSECT(I7822) LENGTH(2)
		351 436
477	N00014	ADDRESS. HEX LOCATION(000025DE) IN CSECT(I7822) LENGTH(2)
		354
489	N00015	ADDRESS. HEX LOCATION(000025F0) IN CSECT(I7822) LENGTH(2)
		357
492	N00016	ADDRESS. HEX LOCATION(000025F4) IN CSECT(I7822) LENGTH(2)
		360 478
495	N00017	ADDRESS. HEX LOCATION(000025F8) IN CSECT(I7822) LENGTH(2)
		363 466
57	ON	ABSOLUTE. HEX VALUE(00000200)
		390 420 450 480
540	OPTN1	ADDRESS. HEX LOCATION(000026FA) IN CSECT(I7822) LENGTH(2)
		1261 1301 1536 1792 2099 2363
563	OPTN3	ADDRESS. HEX LOCATION(000026FE) IN CSECT(I7822) LENGTH(2)
		1348 1396
101	PARMARA	ADDRESS. HEX LOCATION(0000196E) IN CSECT(I7822) LENGTH(1)
		385 397 415 427 445 457 475 487
69	PID	ADDRESS. HEX LOCATION(00001800) IN CSECT(I7822) LENGTH(1)
		71 72 73 74 75 76 77 78 79
		80 81 82 83 84 85 86 87 88
		89 90 91 92 93 94 95 96 97
		98 99 100 101 102 103 104 105 106
		107 108 109 110 111 112 1451
1483	PIDMSG10	ABSOLUTE. HEX VALUE(0000F1F0)
		1451
657	PREP	ABSOLUTE. HEX VALUE(0000000C)
		1406
979	RDATA	ADDRESS. HEX LOCATION(000028A4) IN CSECT(I7822) LENGTH(2)
		1705 1706 1708 1709 1962 1963 1965 1966 2269
		2270 2272 2273 2533 2534 2536 2537
977	RDATA0	ADDRESS. HEX LOCATION(000028A0) IN CSECT(I7822) LENGTH(2)
		1701 1702 1958 1959 2265 2266 2529 2530
2292	RDBUF	ADDRESS. HEX LOCATION(000035B4) IN CSECT(I7822) LENGTH(2)
		2146 2410
845	RDDCB	ADDRESS. HEX LOCATION(000027D8) IN CSECT(I7822) LENGTH(2)
		1054 2142 2143 2144 2145 2146 2406 2407 2408
		2409 2410
653	RESET	ABSOLUTE. HEX VALUE(00000008)
		1546 1614 1802 1871 2109 2178 2373 2442
664	RICB	ABSOLUTE. HEX VALUE(00000013)
		1460
867	RKDCB	ADDRESS. HEX LOCATION(000027F8) IN CSECT(I7822) LENGTH(2)
		1063 1064 1071 1072
777	RSDCB	ADDRESS. HEX LOCATION(00002778) IN CSECT(I7822) LENGTH(2)
		1046 1051 1075 1080
603	SCTID	ADDRESS. HEX LOCATION(00002708) IN CSECT(I7822) LENGTH(2)
		784 796 874 1048 1051 1064
889	SCTST	ADDRESS. HEX LOCATION(00002820) IN CSECT(I7822) LENGTH(2)
		1072 1077 1080
964	SENS0	ADDRESS. HEX LOCATION(0000287C) IN CSECT(I7822) LENGTH(4)
		1697 1954 2261 2525
958	SENS1	ADDRESS. HEX LOCATION(00002868) IN CSECT(I7822) LENGTH(4)
		1703 1960 2267 2531
801	SKDCB	ADDRESS. HEX LOCATION(00002798) IN CSECT(I7822) LENGTH(2)
		1040
655	START	ABSOLUTE. HEX VALUE(0000000A)
		1175
104	SUPSTAT	ADDRESS. HEX LOCATION(000019C4) IN CSECT(I7822) LENGTH(1)
		1454
92	TUMSGWTR	ADDRESS. HEX LOCATION(000018BA) IN CSECT(I7822) LENGTH(1)
		1456
98	TURESUL	ADDRESS. HEX LOCATION(000018C8) IN CSECT(I7822) LENGTH(1)
		1544 1547 1611 1615 1800 1803 1868 1872 2107
		2110 2175 2179 2371 2374 2439 2443
627	TURTN	ADDRESS. HEX LOCATION(00002738) IN CSECT(I7822) LENGTH(2)
		1461 1534 1790 2097 2361
74	TUSTATUS	ADDRESS. HEX LOCATION(00001818) IN CSECT(I7822) LENGTH(1)
		1434
75	TUWORK	ADDRESS. HEX LOCATION(0000181A) IN CSECT(I7822) LENGTH(1)
		1438 1490
636	T3C02	ADDRESS. HEX LOCATION(00002740) IN CSECT(I7822) LENGTH(6)
		389 419 449 479
1702	T69A	ADDRESS. HEX LOCATION(00002E70) IN CSECT(I7822) LENGTH(6)
		1700
1709	T69B	ADDRESS. HEX LOCATION(00002E90) IN CSECT(I7822) LENGTH(4)

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
		1707
1695	T69C	ADDRESS. HEX LOCATION(00002E5C) IN CSECT(I7822) LENGTH(4)
		1621
1621	T69CC	ADDRESS. HEX LOCATION(00002D52) IN CSECT(I7822) LENGTH(4)
		1588
1588	T69D	ADDRESS. HEX LOCATION(00002CF8) IN CSECT(I7822) LENGTH(4)
		1590
1615	T69E	ADDRESS. HEX LOCATION(00002D48) IN CSECT(I7822) LENGTH(6)
		1599 1606 1608
1691	T69EE	ADDRESS. HEX LOCATION(00002E4E) IN CSECT(I7822) LENGTH(4)
		1628
1611	T69ER	ADDRESS. HEX LOCATION(00002D3A) IN CSECT(I7822) LENGTH(6)
		1538 1550 1554 1556 1559 1563 1566 1569 1572
		1575 1584 1597 1601 1603 1635 1639 1667 1671
		1675 1680 1684 1693 1698 1704
1593	T69F	ADDRESS. HEX LOCATION(00002D02) IN CSECT(I7822) LENGTH(2)
		1623
1694	T69FF	ADDRESS. HEX LOCATION(00002E58) IN CSECT(I7822) LENGTH(4)
		1632 1645
1678	T69G	ADDRESS. HEX LOCATION(00002E1A) IN CSECT(I7822) LENGTH(6)
		1664
1560	T69H	ADDRESS. HEX LOCATION(00002C84) IN CSECT(I7822) LENGTH(6)
		1558
1686	T69HH	ADDRESS. HEX LOCATION(00002E3A) IN CSECT(I7822) LENGTH(6)
		1677
1613	T69I	ADDRESS. HEX LOCATION(00002D42) IN CSECT(I7822) LENGTH(4)
		1594
1719	T69J	ADDRESS. HEX LOCATION(00002EB6) IN CSECT(I7822) LENGTH(2)
		1717
1690	T69JJ	ADDRESS. HEX LOCATION(00002E4A) IN CSECT(I7822) LENGTH(4)
		1660 1688
1660	T69L	ADDRESS. HEX LOCATION(00002DD8) IN CSECT(I7822) LENGTH(4)
		1648 1655
1663	T69LL	ADDRESS. HEX LOCATION(00002DE4) IN CSECT(I7822) LENGTH(2)
		1689
1629	T69M	ADDRESS. HEX LOCATION(00002D6E) IN CSECT(I7822) LENGTH(4)
		1627
1631	T69N	ADDRESS. HEX LOCATION(00002D74) IN CSECT(I7822) LENGTH(4)
		1642
1650	T69R	ADDRESS. HEX LOCATION(00002DB8) IN CSECT(I7822) LENGTH(4)
		1647
1725	T69RE	ADDRESS. HEX LOCATION(00002EC0) IN CSECT(I7822) LENGTH(2)
		1605 1607
1713	T69RR	ADDRESS. HEX LOCATION(00002EA0) IN CSECT(I7822) LENGTH(6)
		1711
1567	T69S	ADDRESS. HEX LOCATION(00002CA2) IN CSECT(I7822) LENGTH(6)
		1577
1697	T69SS	ADDRESS. HEX LOCATION(00002E60) IN CSECT(I7822) LENGTH(4)
		1589 1636 1640 1668 1672 1676 1681 1685
1729	T69ST	ADDRESS. HEX LOCATION(00002EC6) IN CSECT(I7822) LENGTH(1)
		1541
1643	T69T	ADDRESS. HEX LOCATION(00002DA2) IN CSECT(I7822) LENGTH(4)
		1625 1649 1653 1658
1724	T69TP	ADDRESS. HEX LOCATION(00002EBC) IN CSECT(I7822) LENGTH(2)
		1702 1713 1714 1715
1723	T69U	ADDRESS. HEX LOCATION(00002EB8) IN CSECT(I7822) LENGTH(2)
		1542 1543 1604 1605 1607 1710 1712 1713
1655	T69V	ADDRESS. HEX LOCATION(00002DC8) IN CSECT(I7822) LENGTH(4)
		1659
1617	T69X	ADDRESS. HEX LOCATION(00002D4E) IN CSECT(I7822) LENGTH(4)
		1609 1612
1727	T69XR	ADDRESS. HEX LOCATION(00002EC4) IN CSECT(I7822) LENGTH(2)
		1598
1959	T71A	ADDRESS. HEX LOCATION(00003138) IN CSECT(I7822) LENGTH(6)
		1957
1966	T71B	ADDRESS. HEX LOCATION(00003158) IN CSECT(I7822) LENGTH(4)
		1964
1952	T71C	ADDRESS. HEX LOCATION(00003124) IN CSECT(I7822) LENGTH(4)
		1878
1878	T71CC	ADDRESS. HEX LOCATION(0000301A) IN CSECT(I7822) LENGTH(4)
		1845
1845	T71D	ADDRESS. HEX LOCATION(00002FC0) IN CSECT(I7822) LENGTH(4)
		1847
1872	T71E	ADDRESS. HEX LOCATION(00003010) IN CSECT(I7822) LENGTH(6)
		1856 1863 1865
1948	T71EE	ADDRESS. HEX LOCATION(00003116) IN CSECT(I7822) LENGTH(4)
		1885
1868	T71ER	ADDRESS. HEX LOCATION(00003002) IN CSECT(I7822) LENGTH(6)
		1794 1806 1810 1812 1815 1819 1822 1825 1828
		1831 1841 1854 1858 1860 1892 1896 1924 1928
		1932 1937 1941 1950 1955 1961
1850	T71F	ADDRESS. HEX LOCATION(00002FCA) IN CSECT(I7822) LENGTH(2)
		1880
1951	T71FF	ADDRESS. HEX LOCATION(00003120) IN CSECT(I7822) LENGTH(4)
		1889 1902
1935	T71G	ADDRESS. HEX LOCATION(000030E2) IN CSECT(I7822) LENGTH(6)
		1921
1816	T71H	ADDRESS. HEX LOCATION(00002F46) IN CSECT(I7822) LENGTH(6)
		1814
1943	T71HH	ADDRESS. HEX LOCATION(00003102) IN CSECT(I7822) LENGTH(6)
		1934
1870	T71I	ADDRESS. HEX LOCATION(0000300A) IN CSECT(I7822) LENGTH(4)
		1851
1976	T71J	ADDRESS. HEX LOCATION(0000317E) IN CSECT(I7822) LENGTH(2)
		1974
1947	T71JJ	ADDRESS. HEX LOCATION(00003112) IN CSECT(I7822) LENGTH(4)
		1917 1945
1917	T71L	ADDRESS. HEX LOCATION(000030A0) IN CSECT(I7822) LENGTH(4)
		1905 1912
1920	T71LL	ADDRESS. HEX LOCATION(000030AC) IN CSECT(I7822) LENGTH(2)
		1946
1886	T71M	ADDRESS. HEX LOCATION(00003036) IN CSECT(I7822) LENGTH(4)
		1884
1888	T71N	ADDRESS. HEX LOCATION(0000303C) IN CSECT(I7822) LENGTH(4)
		1899
1907	T71R	ADDRESS. HEX LOCATION(00003080) IN CSECT(I7822) LENGTH(4)
		1904
1982	T71RE	ADDRESS. HEX LOCATION(00003188) IN CSECT(I7822) LENGTH(2)
		1862 1864
1970	T71RR	ADDRESS. HEX LOCATION(00003168) IN CSECT(I7822) LENGTH(6)
		1968

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
1823	T71S	ADDRESS. HEX LOCATION(00002F64) IN CSECT(I7822) LENGTH(6)
		1833
1954	T71SS	ADDRESS. HEX LOCATION(00003128) IN CSECT(I7822) LENGTH(4)
		1846 1893 1897 1925 1929 1933 1938 1942
1991	T71ST	ADDRESS. HEX LOCATION(0000328E) IN CSECT(I7822) LENGTH(1)
		1797
1900	T71T	ADDRESS. HEX LOCATION(0000306A) IN CSECT(I7822) LENGTH(4)
		1882 1906 1910 1915
1981	T71TP	ADDRESS. HEX LOCATION(00003184) IN CSECT(I7822) LENGTH(2)
		1959 1970 1971 1972
1980	T71U	ADDRESS. HEX LOCATION(00003180) IN CSECT(I7822) LENGTH(2)
		1798 1799 1861 1862 1864 1967 1969 1970
1912	T71V	ADDRESS. HEX LOCATION(00003090) IN CSECT(I7822) LENGTH(4)
		1916
1874	T71X	ADDRESS. HEX LOCATION(00003016) IN CSECT(I7822) LENGTH(4)
		1866 1869
1984	T71XR	ADDRESS. HEX LOCATION(0000318C) IN CSECT(I7822) LENGTH(2)
		1855
2266	T73A	ADDRESS. HEX LOCATION(0000355E) IN CSECT(I7822) LENGTH(6)
		2264
2273	T73B	ADDRESS. HEX LOCATION(0000357E) IN CSECT(I7822) LENGTH(4)
		2271
2259	T73C	ADDRESS. HEX LOCATION(0000354A) IN CSECT(I7822) LENGTH(4)
		2185
2185	T73CC	ADDRESS. HEX LOCATION(00003440) IN CSECT(I7822) LENGTH(4)
		2152
2152	T73D	ADDRESS. HEX LOCATION(000033E6) IN CSECT(I7822) LENGTH(4)
		2154
2179	T73E	ADDRESS. HEX LOCATION(00003436) IN CSECT(I7822) LENGTH(6)
		2163 2170 2172
2255	T73EE	ADDRESS. HEX LOCATION(0000353C) IN CSECT(I7822) LENGTH(4)
		2192
2175	T73ER	ADDRESS. HEX LOCATION(00003428) IN CSECT(I7822) LENGTH(6)
		2101 2113 2117 2119 2122 2126 2129 2132 2135
		2138 2148 2161 2165 2167 2199 2203 2231 2235
		2239 2244 2248 2257 2262 2268
2157	T73F	ADDRESS. HEX LOCATION(000033F0) IN CSECT(I7822) LENGTH(2)
		2187
2258	T73FF	ADDRESS. HEX LOCATION(00003546) IN CSECT(I7822) LENGTH(4)
		2196 2209
2242	T73G	ADDRESS. HEX LOCATION(00003508) IN CSECT(I7822) LENGTH(6)
		2228
2123	T73H	ADDRESS. HEX LOCATION(0000336C) IN CSECT(I7822) LENGTH(6)
		2121
2250	T73HH	ADDRESS. HEX LOCATION(00003528) IN CSECT(I7822) LENGTH(6)
		2241
2177	T73I	ADDRESS. HEX LOCATION(00003430) IN CSECT(I7822) LENGTH(4)
		2158
2283	T73J	ADDRESS. HEX LOCATION(000035A4) IN CSECT(I7822) LENGTH(2)
		2281
2254	T73JJ	ADDRESS. HEX LOCATION(00003538) IN CSECT(I7822) LENGTH(4)
		2224 2252
2224	T73L	ADDRESS. HEX LOCATION(000034C6) IN CSECT(I7822) LENGTH(4)
		2212 2219
2227	T73LL	ADDRESS. HEX LOCATION(000034D2) IN CSECT(I7822) LENGTH(2)
		2253
2193	T73M	ADDRESS. HEX LOCATION(0000345C) IN CSECT(I7822) LENGTH(4)
		2191
2195	T73N	ADDRESS. HEX LOCATION(00003462) IN CSECT(I7822) LENGTH(4)
		2206
2214	T73R	ADDRESS. HEX LOCATION(000034A6) IN CSECT(I7822) LENGTH(4)
		2211
2289	T73RE	ADDRESS. HEX LOCATION(000035AE) IN CSECT(I7822) LENGTH(2)
		2169 2171
2277	T73RR	ADDRESS. HEX LOCATION(0000358E) IN CSECT(I7822) LENGTH(6)
		2275
2130	T73S	ADDRESS. HEX LOCATION(0000338A) IN CSECT(I7822) LENGTH(6)
		2140
2261	T73SS	ADDRESS. HEX LOCATION(0000354E) IN CSECT(I7822) LENGTH(4)
		2153 2200 2204 2232 2236 2240 2245 2249
2294	T73ST	ADDRESS. HEX LOCATION(000036B4) IN CSECT(I7822) LENGTH(1)
		2104
2207	T73T	ADDRESS. HEX LOCATION(00003490) IN CSECT(I7822) LENGTH(4)
		2189 2213 2217 2222
2288	T73TP	ADDRESS. HEX LOCATION(000035AA) IN CSECT(I7822) LENGTH(2)
		2266 2277 2278 2279
2287	T73U	ADDRESS. HEX LOCATION(000035A6) IN CSECT(I7822) LENGTH(2)
		2105 2106 2168 2169 2171 2274 2276 2277
2219	T73V	ADDRESS. HEX LOCATION(000034B6) IN CSECT(I7822) LENGTH(4)
		2223
2181	T73X	ADDRESS. HEX LOCATION(0000343C) IN CSECT(I7822) LENGTH(4)
		2173 2176
2291	T73XR	ADDRESS. HEX LOCATION(000035B2) IN CSECT(I7822) LENGTH(2)
		2162
2530	T74A	ADDRESS. HEX LOCATION(00003936) IN CSECT(I7822) LENGTH(6)
		2528
2537	T74B	ADDRESS. HEX LOCATION(00003956) IN CSECT(I7822) LENGTH(4)
		2535
2523	T74C	ADDRESS. HEX LOCATION(00003922) IN CSECT(I7822) LENGTH(4)
		2449
2449	T74CC	ADDRESS. HEX LOCATION(00003818) IN CSECT(I7822) LENGTH(4)
		2416
2416	T74D	ADDRESS. HEX LOCATION(000037BE) IN CSECT(I7822) LENGTH(4)
		2418
2443	T74E	ADDRESS. HEX LOCATION(0000380E) IN CSECT(I7822) LENGTH(6)
		2427 2434 2436
2519	T74EE	ADDRESS. HEX LOCATION(00003914) IN CSECT(I7822) LENGTH(4)
		2456
2439	T74ER	ADDRESS. HEX LOCATION(00003800) IN CSECT(I7822) LENGTH(6)
		2365 2377 2381 2383 2386 2390 2393 2396 2399
		2402 2412 2425 2429 2431 2463 2467 2495 2499
		2503 2508 2512 2521 2526 2532
2421	T74F	ADDRESS. HEX LOCATION(000037C8) IN CSECT(I7822) LENGTH(2)
		2451
2522	T74FF	ADDRESS. HEX LOCATION(0000391E) IN CSECT(I7822) LENGTH(4)
		2460 2473
2506	T74G	ADDRESS. HEX LOCATION(000038E0) IN CSECT(I7822) LENGTH(6)
		2492
2387	T74H	ADDRESS. HEX LOCATION(00003744) IN CSECT(I7822) LENGTH(6)
		2385
2514	T74HH	ADDRESS. HEX LOCATION(00003900) IN CSECT(I7822) LENGTH(6)

CROSS-REFERENCE LISTING

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DECLARED  NAME     ATTRIBUTES AND REFERENCES

                    2505
   2441   T74I      ADDRESS. HEX LOCATION(00003808) IN CSECT(I7822   ) LENGTH(4)
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   2547   T74J      ADDRESS. HEX LOCATION(0000397C) IN CSECT(I7822   ) LENGTH(2)
                    2545
   2518   T74JJ     ADDRESS. HEX LOCATION(00003910) IN CSECT(I7822   ) LENGTH(4)
                    2488  2516
   2488   T74L      ADDRESS. HEX LOCATION(0000389E) IN CSECT(I7822   ) LENGTH(4)
                    2476  2483
   2491   T74LL     ADDRESS. HEX LOCATION(000038AA) IN CSECT(I7822   ) LENGTH(2)
                    2517
   2457   T74M      ADDRESS. HEX LOCATION(00003834) IN CSECT(I7822   ) LENGTH(4)
                    2455
   2459   T74N      ADDRESS. HEX LOCATION(0000383A) IN CSECT(I7822   ) LENGTH(4)
                    2470
   2478   T74R      ADDRESS. HEX LOCATION(0000387E) IN CSECT(I7822   ) LENGTH(4)
                    2475
   2553   T74RE     ADDRESS. HEX LOCATION(00003986) IN CSECT(I7822   ) LENGTH(2)
                    2433  2435
   2541   T74RR     ADDRESS. HEX LOCATION(00003966) IN CSECT(I7822   ) LENGTH(6)
                    2539
   2394   T74S      ADDRESS. HEX LOCATION(00003762) IN CSECT(I7822   ) LENGTH(6)
                    2404
   2525   T74SS     ADDRESS. HEX LOCATION(00003926) IN CSECT(I7822   ) LENGTH(4)
                    2417  2464  2468  2496  2500  2504  2509  2513
   2557   T74ST     ADDRESS. HEX LOCATION(0000398C) IN CSECT(I7822   ) LENGTH(1)
                    2368
   2471   T74T      ADDRESS. HEX LOCATION(00003868) IN CSECT(I7822   ) LENGTH(4)
                    2453  2477  2481  2486
   2552   T74TP     ADDRESS. HEX LOCATION(00003982) IN CSECT(I7822   ) LENGTH(2)
                    2530  2541  2542  2543
   2551   T74U      ADDRESS. HEX LOCATION(0000397E) IN CSECT(I7822   ) LENGTH(2)
                    2369  2370  2432  2433  2435  2538  2540  2541
   2483   T74V      ADDRESS. HEX LOCATION(0000388E) IN CSECT(I7822   ) LENGTH(4)
                    2487
   2445   T74X      ADDRESS. HEX LOCATION(00003814) IN CSECT(I7822   ) LENGTH(4)
                    2437  2440
   2555   T74XR     ADDRESS. HEX LOCATION(0000398A) IN CSECT(I7822   ) LENGTH(2)
                    2426
   1534   T7869     ADDRESS. HEX LOCATION(00002C20) IN CSECT(I7822   ) LENGTH(4)
                     377
   1790   T7871     ADDRESS. HEX LOCATION(00002EE2) IN CSECT(I7822   ) LENGTH(4)
                     407
   2097   T7873     ADDRESS. HEX LOCATION(00003308) IN CSECT(I7822   ) LENGTH(4)
                     437
   2361   T7874     ADDRESS. HEX LOCATION(000036E0) IN CSECT(I7822   ) LENGTH(4)
                     467
    834   VRDCB     ADDRESS. HEX LOCATION(000027C8) IN CSECT(I7822   ) LENGTH(2)
                    1057
    856   WKDCB     ADDRESS. HEX LOCATION(000027E8) IN CSECT(I7822   ) LENGTH(2)
                    1067  1068  1083  1084
   1985   WRBUF     ADDRESS. HEX LOCATION(0000318E) IN CSECT(I7822   ) LENGTH(2)
                    1839
    823   WRDCB     ADDRESS. HEX LOCATION(000027B8) IN CSECT(I7822   ) LENGTH(2)
                    1060  1835  1836  1837  1838  1839
    883   WRSID     ADDRESS. HEX LOCATION(00002814) IN CSECT(I7822   ) LENGTH(2)
                     774   863  1084  1088  1580  1581  1582
    767   WSDCB     ADDRESS. HEX LOCATION(00002768) IN CSECT(I7822   ) LENGTH(2)
                    1087  1088  1090  1091  1579
    886   WSIDT     ADDRESS. HEX LOCATION(0000281A) IN CSECT(I7822   ) LENGTH(2)
                    1068  1091
    579   XE        ABSOLUTE. HEX VALUE(00000024)
                    1268  1330
    577   XI        ABSOLUTE. HEX VALUE(00000022)
                    1174  1315  1551  1807  2144  2378
   1149   XIO       ADDRESS. HEX LOCATION(0000296A) IN CSECT(I7822   ) LENGTH(4)
                    1041  1044  1052  1055  1058  1061  1065  1069  1073
                    1081  1085  1089  1092  1095
   1330   XIOCK     ADDRESS. HEX LOCATION(00002A32) IN CSECT(I7822   ) LENGTH(2)
                    1184
   1337   XIOCO     ADDRESS. HEX LOCATION(00002A44) IN CSECT(I7822   ) LENGTH(2)
                    1335
   1154   XIOCS     ADDRESS. HEX LOCATION(00002974) IN CSECT(I7822   ) LENGTH(6)
                    1346  1600  1857  2164  2428
   1339   XIOCV     ADDRESS. HEX LOCATION(00002A48) IN CSECT(I7822   ) LENGTH(2)
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   1348   XIOCX     ADDRESS. HEX LOCATION(00002A62) IN CSECT(I7822   ) LENGTH(4)
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   1223   XIOER     ADDRESS. HEX LOCATION(000029D0) IN CSECT(I7822   ) LENGTH(2)
                    1354
   1158   XIO1      ADDRESS. HEX LOCATION(00002984) IN CSECT(I7822   ) LENGTH(4)
                    1150
   1171   XIO2      ADDRESS. HEX LOCATION(000029AA) IN CSECT(I7822   ) LENGTH(2)
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   1183   XIO8      ADDRESS. HEX LOCATION(000029BE) IN CSECT(I7822   ) LENGTH(2)
                    1188
     62   XTRNL     ABSOLUTE. HEX VALUE(00000001)
                     499

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