```
 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                             3       COPY  LOG4001                ** MAP EC HISTORY **
                             4 ********************************************************************
                             5 *                                                                  *
                             6 *                     ***       PREREQUISITES        ***           *
                             7 *                                                                  *
                             8 *                              HARDWARE EC 576943A                 *
                             9 *                                                                  *
                            10 ********************************************************************
                            11 *                                                                  *
                            12 *                     ***       MODIFICATIONS        ***           *
                            13 *                                                                  *
                            14 *                CHANGES MADE TO CORRECT FOR LOW BAUD RATE         *
                            15 *                                                                  *
                            16 ********************************************************************
                            17 *                                                                  *
                            18 *                     ***     REA'S INCORPORATED     ***           *
                            19 *                                                                  *
                            20 *                                NONE                              *
                            21 *                                                                  *
                            22 ********************************************************************
                            23 *                                                                  *
                            24 *                     ***    SPECIAL INSTRUCTIONS    ***           *
                            25 *                                                                  *
                            26 *                                NONE                              *
                            27 *                                                                  *
                            28 ********************************************************************
                            29 *                                                                  *
                            30 *                     ***       E. C. HISTORY        ***           *
                            31 *                                                                  *
                            32 *        DATE 01JUL76  DATE 010CT76  DATE 02DEC76  DATE 10JUN77    *
                            33 *        E.C. 578446   E.C. 578468   E.C. 578469   E.C. 578625     *
                            34 *                                                                  *
                            35 *        DATE 22JUL77  DATE 15SEP77  DATE 01SEP78  DATE            *
                            36 *        E.C. 578757   E.C. 754882   E.C. 374888   E.C.           *
                            37 *                                                                  *
                            38 ********************************************************************
002500                      40 I4001    START X'2500'            START ADDRESS OF ALL 'I' TYPE PROG
000100                      41 @QUES    EQU   X'0100'            EQUATED VALUE FOR MDI STATEMENT
000101                      42 @FIXT    EQU   X'0101'            EQUATED VALUE FOR MDI STATEMENT
000102                      43 @STOP    EQU   X'0102'            EQUATED VALUE FOR MDI STATEMENT
000200                      44 @GOTO    EQU   X'0200'            EQUATED VALUE FOR MDI STATEMENT
000201                      45 @CALL    EQU   X'0201'            EQUATED VALUE FOR MDI STATEMENT
000300                      46 @INPT    EQU   X'0300'            EQUATED VALUE FOR MDI STATEMENT
000400                      47 @QUXX    EQU   X'0400'            EQUATED VALUE FOR MDI STATEMENT
000500                      48 @TUXX    EQU   X'0500'            EQUATED VALUE FOR MDI STATEMENT
000600                      49 @NVLD    EQU   X'0600'            EQUATED VALUE FOR MDI STATEMENT
000000                      50 EQ       EQU   X'0000'            EQUATE FOR EQUAL
000004                      51 NE       EQU   X'0004'            EQUATE FOR NOT EQUAL
000008                      52 HI       EQU   X'0008'            EQUATE FOR HIGH
00000C                      53 NH       EQU   X'000C'            EQUATE FOR NOT HIGH
000010                      54 LO       EQU   X'0010'            EQUATE FOR LOW
000014                      55 NL       EQU   X'0014'            EQUATE FOR NOT LOW
000010                      56 LT       EQU   X'0010'            EQUATE FOR LESS THAN
00000C                      57 LE       EQU   X'000C'            EQUATE FOR LESS THAN OR EQUAL TO
000008                      58 GT       EQU   X'0008'            EQUATE FOR GREATER THAN
000014                      59 GE       EQU   X'0014'            EQUATE FOR GREATER THAN OR EQUAL TO
000200                      60 ON       EQU   X'0200'            EQUATE FOR ON
000202                      61 OF       EQU   X'0202'            EQUATE FOR OFF
000204                      62 MX       EQU   X'0204'            EQUATE FOR MIXED
000000                      63 EBC      EQU   X'0000'            EQUATE FOR EBCDIC DATA TRANSFER
000001                      64 HEX      EQU   X'0001'            EQUATE FOR HEX DATA TRANSFER
000001                      65 XTRNL    EQU   X'0001'            EQUATE FOR EXTERNAL REFERENCE
000000                      66 INTRNL   EQU   X'0000'            EQUATE FOR INTERNAL REFERENCE
000000                      67 PARM     EQU   X'0000'            EQUATE INDICATING PARAMETER
000001                      68 DA       EQU   X'0001'            EQUATE FOR DEVICE ADDRESS
000002                      69 UA       EQU   X'0002'            EQUATE FOR UNIT ADDRESS
000000                      70 DUMMY    EQU   X'0000'            DUMMY EQUATE
001800                      72 PID      EQU   *-X'0D00'          ADDRESS OF MDI HEADER
000232                      73 PTYPE    EQU   *-X'22CE'          ADDRESS OF PROCESSOR TYPE FIELD
00180C                      74 STEPNUM  EQU   PID+X'000C'        ADDRESS OF DECIMAL STEP NUMBER
00180E                      75 OPWD1    EQU   PID+X'000E'        ADDRESS OF OPTION WORD ONE
001810                      76 OPWD2    EQU   PID+X'0010'        ADDRESS OF OPTION WORD TWO
001818                      77 TUSTATUS EQU   PID+X'0018'        ADDRESS OF TU STATUS WORD
00181A                      78 TUWORK   EQU   PID+X'001A'        ADDRESS OF TU WORK AREA
00189A                      79 TUPARM1  EQU   PID+X'009A'        ADDRESS OF PARM 1 POINTER
00189C                      80 TUPARM2  EQU   PID+X'009C'        ADDRESS OF PARM 2 POINTER
00189E                      81 TUPARM3  EQU   PID+X'009E'        ADDRESS OF PARM 3 POINTER
0018A0                      82 TUPARM4  EQU   PID+X'00A0'        ADDRESS OF PARM 4 POINTER
0018A2                      83 TUPARM5  EQU   PID+X'00A2'        ADDRESS OF PARM 5 POINTER
0018A4                      84 TUPARM6  EQU   PID+X'00A4'        ADDRESS OF PARM 6 POINTER
0018A6                      85 TUPARM7  EQU   PID+X'00A6'        ADDRESS OF PARM 7 POINTER
0018A8                      86 TUPARM8  EQU   PID+X'00A8'        ADDRESS OF PARM 8 POINTER
0018AA                      87 TUPARM9  EQU   PID+X'00AA'        ADDRESS OF PARM 9 POINTER
0018AC                      88 TUPARM10 EQU   PID+X'00AC'        ADDRESS OF PARM 10 POINTER
0018AE                      89 TUPARM11 EQU   PID+X'00AE'        ADDRESS OF PARM 11 POINTER
0018B0                      90 TUPARM12 EQU   PID+X'00B0'        ADDRESS OF PARM 12 POINTER
0018B2                      91 TUPARM13 EQU   PID+X'00B2'        ADDRESS OF PARM 13 POINTER
0018B4                      92 TUPARM14 EQU   PID+X'00B4'        ADDRESS OF PARM 14 POINTER
0018B6                      93 TUPARM15 EQU   PID+X'00B6'        ADDRESS OF PARM 15 POINTER
0018B8                      94 TUPARM16 EQU   PID+X'00B8'        ADDRESS OF PARM 16 POINTER
0018BA                      95 TUMSGWTR EQU   PID+X'00BA'        ADDRESS OF -> TO COMMON MSG WRITER
0018BE                      96 TUUA     EQU   PID+X'00BE'        ADDRESS OF UNIT ADDRESS IN EBC
0018C0                      97 TUDA     EQU   PID+X'00C0'        ADDRESS OF DEVICE ADDRESS IN EBC
0018C2                      98 TUBUFF   EQU   PID+X'00C2'        ADDRESS OF LAST USED WORD IN MAP
0018C4                      99 TULAST   EQU   PID+X'00C4'        ADDRESS OF LAST ADDRESSABLE WORD
0018C6                     100 TURESULN EQU   PID+X'00C6'        ADDRESS OF LENGTH OF TU RESULTS
0018C8                     101 TURESUL  EQU   PID+X'00C8'        ADDRESS OF TU RESULTS FIELD
0018FC                     102 MAPNAME  EQU   PID+X'00FC'        ADDRESS OF MAP NAME FIELD IN HEX
001948                     103 TUINPT   EQU   PID+X'0148'        ADDRESS OF $INPT DATA
00196E                     104 PARMARA  EQU   PID+X'016E'        ADDRESS OF $INPT INPUT AREA
0019B8                     105 @DCADD1  EQU   PID+X'01B8'        MDI POINTER
0019BA                     106 @DCADD2  EQU   PID+X'01BA'        MDI POINTER
0019C4                     107 SUPSTAT  EQU   PID+X'01C4'        ADDRESS OF MDI STATUS
0019D0                     108 DEVADD   EQU   PID+X'01D0'        ADDRESS OF DEVICE ADDRESS TABLE 0
0019DA                     109 DEVADD1  EQU   PID+X'01DA'        ADDRESS OF DEVICE ADDRESS TABLE 1
0019E4                     110 DEVADD2  EQU   PID+X'01E4'        ADDRESS OF DEVICE ADDRESS TABLE 2
0019EE                     111 DEVADD3  EQU   PID+X'01EE'        ADDRESS OF DEVICE ADDRESS TABLE 3
0019F8                     112 DEVADD4  EQU   PID+X'01F8'        ADDRESS OF DEVICE ADDRESS TABLE 4
001A02                     113 DEVADD5  EQU   PID+X'0202'        ADDRESS OF DEVICE ADDRESS TABLE 5
001A0C                     114 DEVADD6  EQU   PID+X'020C'        ADDRESS OF DEVICE ADDRESS TABLE 6
001A16                     115 DEVADD7  EQU   PID+X'0216'        ADDRESS OF DEVICE ADDRESS TABLE 7
                           116          PRINT OFF
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
002500  25F2               201          DC    A(ENTPT)              POINT TO MAP ENTRY POINT TABLE
                           202 ********************************************************************
                           203 ********************************************************************
                           204 **                                                                **
                           205 **   THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D3C00)   **
                           206 **   TO LOCATE THE CORRECT RULE TO INVOKE, TO OBTAIN THE PROPER    **
                           207 **   PARAMETERS TO PASS TO THE TU'S AND TO PASS TO THE OPERATOR    **
                           208 **   THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS **
                           209 **   PURPOSE THEY ARE:                                            **
                           210 **                                                                **
                           211 **   STEP AND RULE ADDRESS TABLE                                  **
                           212 **        THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND  **
                           213 **        THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE.   **
                           214 **        ENTRIES ARE AS FOLLOWES                                 **
                           215 **                  A)  AN ADDRESS OF THE RULE DC START AREA      **
                           216 **                  B)  THE STEP NUMBER IN DECIMAL                **
                           217 **                  C)  AN EQUATE FOR THE STEP NUMBER             **
                           218 **                                                                **
                           219 **   RULE INFORMATION TABLE                                       **
                           220 **        THIS TABLE CONTAINES THE REQUIRED INFORMATION TO EXECUTE **
                           221 **        THE APPROPRIATE RULE UNDER MDI. EACH RULE HAS ITS OWN   **
                           222 **        UNIQUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS  **
                           223 **        INDICATED WITH A X'0000' FOR THE RULE EQUATE.           **
                           224 **                                                                **
                           225 **             $QUES                                              **
                           226 **                  A) RULE EQUATE X'0100'                        **
                           227 **                  B) ADDRESS OF THE YES LEG RULE                **
                           228 **                                                                **
                           229 **             $FIXT                                              **
                           230 **                  A) RULE EQUATE X'0101'                        **
                           231 **                  B) ADDRESS OF MESSAGE TO PRINT                **
                           232 **                                                                **
                           233 **             $STOP                                              **
                           234 **                  A) RULE EQUATE X'0102'                        **
                           235 **                  B) ADDRESS OF MESSAGE                         **
                           236 **                                                                **
                           237 **             $GOTO                                              **
                           238 **                  A) RULE EQUATE X'0200'                        **
                           239 **                  B) ADDRESS OF MESSAGE                         **
                           240 **                  C) NAME OF MAP TO GO TO                       **
                           241 **                  D) ENTRY POINT WITHIN GO TO MAP TO USE        **
                           242 **                  E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE **
                           244 **                                                                **
                           245 **             $CALL                                              **
                           246 **                  A) RULE EQUATE X'0201'                        **
                           247 **                  B) ADDRESS OF MESSAGE                         **
                           248 **                  C) NAME OF MAP TO CALL                        **
                           249 **                  D) ENTRY POINT WITHIN CALLED MAP TO USE       **
                           250 **                  E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE **
                           251 **                                                                **
                           252 **             $INPT                                              **
                           253 **                  A) RULE EQUATE X'0300'                        **
                           254 **                  B) INPUT TYPE (EBCDIC OR HEX)                 **
                           255 **                  C) ADDRESS OF YES LEG RULE                    **
                           256 **                  D) DESTINATION LOCATION OF INPUT DATA         **
                           257 **                  E) LENGTH OF INPUT DATA                       **
                           258 **                  F) LOWER LIMIT OF GOOD DATA                   **
                           259 **                  G) HIGHER LIMIT OF GOOD DATA                  **
                           260 **                                                                **
                           261 **             $QUXX                                              **
                           262 **                  A) RULE EQUATE X'0400'                        **
                           263 **                  B) ADDRESS OF YES LEG RULE                    **
                           264 **                  C) TU BRANCH TO ADDRESS (INITIAL)             **
                           265 **                  D) TU BRANCH TO ADDRESS (SECONDARY)           **
                           266 **                  E) LENGTH OF PARAMETER IN BYTES               **
                           267 **                  F) PARAMETER TO PASS TO TU                    **
                           268 **                  G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER **
                           269 **                                                                **
                           270 **             $TUXX                                              **
                           271 **                  A) RULE EQUATE X'0500'                        **
                           272 **                  B) ADDRESS OF YES LEG RULE                    **
                           273 **                  C) TU BRANCH TO ADDRESS                       **
                           274 **                  D) TYPE OF COMPARE TO MAKE ON RESULTS         **
                           275 **                  E) LENGTH OF COMPARED RESULTS                 **
                           276 **                  F) MASK FIELD FOR COMPARE                     **
                           277 **                  G) LENGTH OF PARAMETER IN BYTES               **
                           278 **                  H) PARAMETER TO PASS TO THE TU                **
                           279 **                  I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER **
                           280 **                                                                **
                           281 **             $NVLD                                              **
                           282 **                  A) RULE EQUATE X'0600'                        **
                           284 **                                                                **
                           285 **   ENTRY POINT TABLE                                            **
                           286 **        THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT **
                           287 **        THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE      **
                           288 **        REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWES: **
                           289 **                                                                **
                           290 **             A) NAME OF ENTRY POINT                             **
                           291 **             B) ADDRESS OF ENTRY POINT RULE TABLE               **
                           292 **                                                                **
                           293 **        THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'     **
                           294 **                                                                **
                           295 **   MESSAGE TABLE                                                **
                           296 **        THIS TABLE CONTAINES THE MESSAGE PASSED TO THE OPERATOR **
                           297 **        VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWES:       **
                           298 **                                                                **
                           299 **             A) EQUATE FOR START OF MESSAGE BLOCK               **
                           300 **             B) NUMBER OF LINES OF MESSAGE                      **
                           301 **             C) LENGTH OF FOLLOWING LINE                        **
                           302 **             D) FIRST LINE OF MESSAGE                           **
                           303 **             E) LENGTH OF FOLLOWING LINE                        **
                           304 **             F) SECOND LINE OF MESSAGE                          **
                           305 **             G) ETC.                                            **
                           306 **                                                                **
                           307 ********************************************************************
                           308 ********************************************************************
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                            311 ********************************************************************************
                            312 ********************************************************************************
                            313 **                                                                            **
                            314 **                      STEP AND RULE ADDRESS TABLE                           **
                            315 **                                                                            **
                            316 ********************************************************************************
                            317 ********************************************************************************
002502  2560                318          DC    AL2(N00001)
002504  0001                319          DC    XL2'0001'
000001                      320 EQN00001 EQU       0001
002506  2564                321          DC    AL2(N00002)
002508  0002                322          DC    XL2'0002'
000002                      323 EQN00002 EQU       0002
00250A  2568                324          DC    AL2(N00003)
00250C  0003                325          DC    XL2'0003'
000003                      326 EQN00003 EQU       0003
00250E  2576                327          DC    AL2(N00004)
002510  0004                328          DC    XL2'0004'
000004                      329 EQN00004 EQU       0004
002512  2582                330          DC    AL2(N00005)
002514  0005                331          DC    XL2'0005'
000005                      332 EQN00005 EQU       0005
002516  2594                333          DC    AL2(N00006)
002518  0006                334          DC    XL2'0006'
000006                      335 EQN00006 EQU       0006
00251A  2596                336          DC    AL2(N00007)
00251C  0007                337          DC    XL2'0007'
000007                      338 EQN00007 EQU       0007
00251E  259A                339          DC    AL2(N00008)
002520  0008                340          DC    XL2'0008'
000008                      341 EQN00008 EQU       0008
002522  25A6                342          DC    AL2(N00009)
002524  0009                343          DC    XL2'0009'
000009                      344 EQN00009 EQU       0009
002526  25B8                345          DC    AL2(N00010)
002528  0010                346          DC    XL2'0010'
00000A                      347 EQN00010 EQU       0010
00252A  25BC                348          DC    AL2(N00011)
00252C  0011                349          DC    XL2'0011'
00000B                      350 EQN00011 EQU       0011
00252E  25C0                351          DC    AL2(N00012)
002530  0012                352          DC    XL2'0012'
00000C                      353 EQN00012 EQU       0012
002532  25C4                354          DC    AL2(N00013)
002534  0013                355          DC    XL2'0013'
00000D                      356 EQN00013 EQU       0013
002536  25C8                357          DC    AL2(N00014)
002538  0014                358          DC    XL2'0014'
00000E                      359 EQN00014 EQU       0014
00253A  25CC                360          DC    AL2(N00015)
00253C  0015                361          DC    XL2'0015'
00000F                      362 EQN00015 EQU       0015
00253E  25D0                363          DC    AL2(N00016)
002540  0016                364          DC    XL2'0016'
000010                      365 EQN00016 EQU       0016
002542  25D4                366          DC    AL2(N00017)
002544  0017                367          DC    XL2'0017'
000011                      368 EQN00017 EQU       0017
002546  25D8                369          DC    AL2(N00018)
002548  0018                370          DC    XL2'0018'
000012                      371 EQN00018 EQU       0018
00254A  25DC                372          DC    AL2(N00019)
00254C  0019                373          DC    XL2'0019'
000013                      374 EQN00019 EQU       0019
00254E  25E0                375          DC    AL2(N00020)
002550  0020                376          DC    XL2'0020'
000014                      377 EQN00020 EQU       0020
002552  25E4                378          DC    AL2(N00021)
002554  0021                379          DC    XL2'0021'
000015                      380 EQN00021 EQU       0021
002556  25E8                381          DC    AL2(N00022)
002558  0022                382          DC    XL2'0022'
000016                      383 EQN00022 EQU       0022
00255A  25EC                384          DC    AL2(N00023)
00255C  0023                385          DC    XL2'0023'
000017                      386 EQN00023 EQU       0023
00255E  0000                387          DC    AL2(DUMMY)
                            388 ********************************************************************************
                            389 ********************************************************************************
                            390 **                                                                            **
                            391 **                        RULE INFORMATION TABLE                              **
                            392 **                                                                            **
                            393 ********************************************************************************
                            394 ********************************************************************************
                            395 N00001   $QUES QT=(Q00061),YES=N00003,CT=(C00057)
002560  0100                396+N00001   DC    A(@QUES)
002562  2568                397+         DC    AL2(N00003)
                            398 N00002   $FIXT FT=(F00064),GTO=((1470,A))
002564  0101                399+N00002   DC    A(@FIXT)
002566  2600                400+         DC    A(F00064)
                            401 N00003   $QUXX T400E,2,0000,EQ,REPT=T400D,QT=(Q00140),YES=N00005,      X
002568  0400                402+N00003   DC    A(@QUXX)
00256A  2582                403+         DC    AL2(N00005)
00256C  3682                404+         DC    A(T400E)
00256E  367E                405+         DC    AL2(T400D)
002570  0000                406+         DC    AL2(0)
002572  C1C1                407+         DC    C'AA'
                            408+         ALIGN WORD
002574  196E                409+         DC    AL2(PARMARA)
                            410 N00004   $GOTO TYPE=INTRNL,EP=B,FT=(F00146),GTO=(N00003)
002576  0200                411+N00004   DC    A(@GOTO)
002578  2612                412+         DC    A(F00146)
00257A  F3C3F0F0            413+         DC    CL4'3C00'
00257E  C240                414+         DC    CL2'B'
002580  0000                415+         DC    AL2(INTRNL)
                            416 N00005   $TUXX T4001,02,0000,EQ,QT=(Q00149),YES=N00007,CT=(C00148)
002582  0500                417+N00005   DC    A(@TUXX)
002584  2596                418+         DC    AL2(N00007)
002586  2D52                419+         DC    A(T4001)
002588  0000                420+         DC    AL2(EQ)
00258A  0002                421+         DC    AL2(02)
00258C  0000                422+         DC    X'0000'
                            423+         ALIGN WORD
00258E  0000                424+         DC    AL2(0)
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
002590  C1C1                425+         DC    C'AA'
                            426+         ALIGN WORD
002592  196E                427+         DC    AL2(PARMARA)
                            428 N00006   $NVLD FT=(F00151)
002594  0600                429+N00006   DC    A(@NVLD)
                            430 N00007   $QUES QT=(Q00162),YES=N00009,CT=(C00154),ST=(S00157)
002596  0100                431+N00007   DC    A(@QUES)
002598  25A6                432+         DC    AL2(N00009)
                            433 N00008   $GOTO TYPE=INTRNL,EP=C,FT=(F00164),GTO=(N00007)
00259A  0200                434+N00008   DC    A(@GOTO)
00259C  2642                435+         DC    A(F00164)
00259E  F3C3F0F0            436+         DC    CL4'3C00'
0025A2  C340                437+         DC    CL2'C'
0025A4  0000                438+         DC    AL2(INTRNL)
                            439 N00009   $TUXX T400F,2,0000,EQ,QT=(Q00166),YES=N00015
0025A6  0500                440+N00009   DC    A(@TUXX)
0025A8  25CC                441+         DC    AL2(N00015)
0025AA  3668                442+         DC    A(T400F)
0025AC  0000                443+         DC    AL2(EQ)
0025AE  0002                444+         DC    AL2(2)
0025B0  0000                445+         DC    X'0000'
                            446+         ALIGN WORD
0025B2  0000                447+         DC    AL2(0)
0025B4  C1C1                448+         DC    C'AA'
                            449+         ALIGN WORD
0025B6  196E                450+         DC    AL2(PARMARA)
                            451 N00010   $QUES QT=(Q00168),YES=N00012,CT=(C00170)
0025B8  0100                452+N00010   DC    A(@QUES)
0025BA  25C0                453+         DC    AL2(N00012)
                            454 N00011   $FIXT FT=(F00173),GTO=((1470,A))
0025BC  0101                455+N00011   DC    A(@FIXT)
0025BE  2648                456+         DC    A(F00173)
                            457 N00012   $QUES QT=(Q00176),YES=N00014,CT=(C00036)
0025C0  0100                458+N00012   DC    A(@QUES)
0025C2  25C8                459+         DC    AL2(N00014)
                            460 N00013   $FIXT FT=(F00180),CT=(C00037)
0025C4  0101                461+N00013   DC    A(@FIXT)
0025C6  265A                462+         DC    A(F00180)
                            463 N00014   $FIXT FT=(F00183),CT=(C00037)
0025C8  0101                464+N00014   DC    A(@FIXT)
0025CA  266E                465+         DC    A(F00183)
                            466 N00015   $QUES QT=(Q00186),YES=N00017,CT=(C00036)
0025CC  0100                467+N00015   DC    A(@QUES)
0025CE  25D4                468+         DC    AL2(N00017)
                            469 N00016   $STOP FT=(F00190)
0025D0  0102                470+N00016   DC    A(@STOP)
0025D2  2692                471+         DC    A(F00190)
                            472 N00017   $QUES QT=(Q00193),YES=N00019,CT=(C00036)
0025D4  0100                473+N00017   DC    A(@QUES)
0025D6  25DC                474+         DC    AL2(N00019)
                            475 N00018   $FIXT FT=(F00218),ST=(S00198)
0025D8  0101                476+N00018   DC    A(@FIXT)
0025DA  26C8                477+         DC    A(F00218)
                            478 N00019   $QUES QT=(Q00257),YES=N00021,CT=(C00223,C00228),ST=(,S00235)
0025DC  0100                479+N00019   DC    A(@QUES)
0025DE  25E4                480+         DC    AL2(N00021)
                            481 N00020   $FIXT FT=(F00260),CT=(C00037)
0025E0  0101                482+N00020   DC    A(@FIXT)
0025E2  273E                483+         DC    A(F00260)
                            484 N00021   $QUES QT=(Q00270,S00263),YES=N00023
0025E4  0100                485+N00021   DC    A(@QUES)
0025E6  25EC                486+         DC    AL2(N00023)
                            487 N00022   $FIXT FT=(F00274),CT=(C00037)
0025E8  0101                488+N00022   DC    A(@FIXT)
0025EA  2762                489+         DC    A(F00274)
                            490 N00023   $FIXT FT=(F00278)
0025EC  0101                491+N00023   DC    A(@FIXT)
0025EE  278C                492+         DC    A(F00278)
0025F0  0000                493          DC    AL2(DUMMY)
0025F2                      494 ENTPT    EQU   *
                            495 ********************************************************************************
                            496 ********************************************************************************
                            497 **                                                                            **
                            498 **                        ENTRY POINT TABLE                                   **
                            499 **                                                                            **
                            500 ********************************************************************************
                            501 ********************************************************************************
                            502          ENTPT EP=A,STEP=00001
0025F2  C140                503+         DC    CL2'A'
0025F4  2560                504+         DC    A(N00001)
                            505          ENTPT EP=B,STEP=00003
0025F6  C240                506+         DC    CL2'B'
0025F8  2568                507+         DC    A(N00003)
                            508          ENTPT EP=C,STEP=00007
0025FA  C340                509+         DC    CL2'C'
0025FC  2596                510+         DC    A(N00007)
0025FE  0000                511          DC    AL2(DUMMY)
                            512 ********************************************************************************
                            513 ********************************************************************************
                            514 **                                                                            **
                            515 **                        MESSAGE TABLE                                       **
                            516 **                                                                            **
                            517 ********************************************************************************
                            518 ********************************************************************************
002600                      519 FC0064   EQU   *
002600  0001                520          DC    AL2(0001)
002602  000E                521          DC    A(0014)
002604  C7D640C1D5C440D9C   522          DC    CL0014'GO AND REPAIR '
002612                      523 F00146   EQU   *
002612  0001                524          DC    AL2(0001)
002614  0002                525          DC    A(0002)
002616  4040                526          DC    CL0002' '
002618                      527 F00151   EQU   *
002618  0001                528          DC    AL2(0001)
00261A  0026                529          DC    A(0038)
00261C  7DD5D67D40C9E240D   530          DC    CL0038'''NO'' IS NOT CORRECT, GO TO NEXT STEP. '
002642                      531 F00164   EQU   *
002642  0001                532          DC    AL2(0001)
002644  0002                533          DC    A(0002)
002646  4040                534          DC    CL0002' '
002648                      535 F00173   EQU   *
002648  0001                536          DC    AL2(0001)
00264A  000E                537          DC    A(0014)
00264C  C7D640C1D5C440D9C   538          DC    CL0014'GO AND REPAIR.'
```

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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                          COPYRIGHT IBM CORP 1976

00265A                     539 F00180   EQU   *
00265A  0001               540          DC    AL2(0001)
00265C  0010               541          DC    A(0016)
00265E  E2C5C1E340C3C1D9C  542          DC    CL0016'SEAT CARD/CABLE.'
00266E                     543 F00183   EQU   *
00266E  0001               544          DC    AL2(0001)
002670  0020               545          DC    A(0032)
002672  D9C5D7D3C1C3C540E  546          DC    CL0032'REPLACE THE TTY ATTACHMENT CARD.'
002692                     547 F00190   EQU   *
002692  0002               548          DC    AL2(0002)
002694  001E               549          DC    A(0030)
002696  D5D640C5D9D9D6D94  550          DC    CL0030'NO ERROR FOUND, ATTACH CABLE. '
0026B4  0012               551          DC    A(0018)
0026B6  C7D6D6C440C5D5C44  552          DC    CL0018'GOOD END THIS MAP.'
0026C8                     553 F00218   EQU   *
0026C8  0004               554          DC    AL2(0004)
0026CA  0026               555          DC    A(0038)
0026CC  E5C5D9C9C6E840E3C  556          DC    CL0038'VERIFY THE CABLE (SEE NOTE AT RIGHT). '
0026F2  0002               557          DC    A(0002)
0026F4  4040               558          DC    CL0002' '
0026F6  002C               559          DC    A(0044)
0026F8  C9C640E3C8C540C3C  560          DC    CL0044'IF THE CABLE IS OK, THE PROBLEM IS EXTERNAL '
002724  0018               561          DC    A(0024)
002726  E3D640E3C8C540C1E  562          DC    CL0024'TO THE ATTACHMENT/CABLE.'
00273E                     563 F00260   EQU   *
00273E  0001               564          DC    AL2(0001)
002740  0020               565          DC    A(0032)
002742  D9C5D7D3C1C3C540E  566          DC    CL0032'REPLACE THE TTY ATTACHMENT CARD.'
002762                     567 F00274   EQU   *
002762  0001               568          DC    AL2(0001)
002764  0026               569          DC    A(0038)
002766  D9C5D7D3C1C9C540C  570          DC    CL0038'REPLACE F/C 7845 TTY ATTACHMENT CARD. '
00278C                     571 F00278   EQU   *
00278C  0004               572          DC    AL2(0004)
00278E  0026               573          DC    A(0038)
002790  D7D9D6C2D3C5D440D  574          DC    CL0038'PROBLEM POSSIBLY WITH ATTACHED DEVICE.'
0027B6  002C               575          DC    A(0044)
0027B8  C1D5C1D3E8E2C540E  576          DC    CL0044'ANALYSE SIZE AND VALIDITY OF TRANSMITTED IPL'
0027E4  002A               577          DC    A(0042)
0027E6  D9C5C3D6D9C44B40C  578          DC    CL0042'RECORD. IF DEVICE NOT SUSPECT, REPLACE TTY'
002810  0006               579          DC    A(0006)
002812  C3C1D9C44B40       580          DC    CL0006'CARD. '
                           581 PKRPKGM COPY  INTROM
                           582 ********************************************************************
                           583 ********************************************************************
                           584 **                                                                **
                           585 **  A)    PROGRAM NAME --- FC 7845 TTY ATTACHMENT MANUAL-MODE TEST  **
                           586 **                                                                **
                           587 **  B)    FUNCTION ------- TESTS THE FC 7845 TTY ATTACHMENT CARD IN **
                           588 **                         THE MANUAL-WRAP MODE.                  **
                           589 **                                                                **
                           590 **  C)    LINKAGE -------- THIS PROGRAM WILL BE ENTERED WITH       **
                           591 **                         REGISTER 7 CONTAINING THE RETURN ADDRESS. **
                           592 **                                                                **
                           593 **  D)    ENTRY POINT LABEL(S) --  PRIMARY --- RT00              **
                           594 **                                 SECONDARY - NONE               **
                           595 **                                                                **
                           596 **  E)    RETURN CODES AND/OR FORMATTED RETURNS                   **
                           597 **                  X'0000' IN 'TURESUL' = GOOD RETURN            **
                           598 **                  X'0001' IN 'TURESUL' = ERROR RETURN           **
                           599 **                                                                **
                           600 **  F)    EXTERNAL REFERENCES (SUBROUTINES OR TU'S):              **
                           601 **                                                 4001           **
                           602 **                                                                **
                           603 ********************************************************************
                           604 ********************************************************************
                           605          COPY  COMEQU
                           606 ********************************************************************
                           607 *                                                                  *
                           608 *              EQUATED NAMES FOR SUPPORTED SVC'S                   *
                           609 *                                                                  *
                           610 ********************************************************************
000000                     611 OUT    EQU   0                  OUT SVC
000001                     612 OUTIN  EQU   1                  OUTIN SVC
000002                     613 IDLE   EQU   2                  IDLE SVC
000003                     614 IDLE5  EQU   3                  IDLE SVC - INDEPENDENT OF CPU TYPE
000004                     615 CHNGE  EQU   4                  CHANGE LEVEL SVC
000005                     616 PGMCK  EQU   5                  ALLOW RETURN ON PROGRAM CHECK SVC
000006                     617 EXIT   EQU   6                  EXIT SVC
000007                     618 TERM   EQU   7                  TERMINATE SVC
000008                     619 RESET  EQU   8                  RESET DEVICE SVC
000009                     620 RID    EQU   9                  READ ID SVC
00000A                     621 START  EQU   10                 START CYCLE STEAL SVC
00000B                     622 STCSS  EQU   11                 START CYCLE STEAL STATUS SVC
00000C                     623 PREP   EQU   12                 PREPARE DEVICE SVC
00000D                     624 READ0  EQU   13                 READ WITH FUNCTION BIT 3 OFF SVC
00000E                     625 READ1  EQU   14                 READ WITH FUNCTION BIT 3 ON SVC
00000F                     626 RSTAT  EQU   15                 RFAD STATUS SVC
000010                     627 WRITO  EQU   16                 WRITE WITH FUNCTION BIT 3 OFF SVC
000011                     628 WRIT1  EQU   17                 WRITE WITH FUNCTION BIT 3 ON SVC
000012                     629 CTRL   EQU   18                 CONTROL SVC
000013                     630 RICB   EQU   19                 RELEASE INTERUPT CONTROL BLOCK SVC
000014                     631 CICB   EQU   20                 CONNECT INTERUPT CONTROL BLOCK SVC
000015                     632 HIO    EQU   21                 HALT ALL I/O
000016                     633 REQSD  EQU   22                 REQUEST USE OF DCP DISK SVC
000017                     634 RELSD  EQU   23                 RELEASE USE OF DCP DISK SVC
000018                     635 HALT   EQU   24                 HALT SVC
000019                     636 ETOH   EQU   25                 EBCDIC TO HEX SVC (STRING)
00001A                     637 HTOE   EQU   26                 HEX TO EBCDIC SVC (STRING)
00001B                     638 ATOH   EQU   27                 ASCII TO HEX SVC (STRING)
00001C                     639 HTOA   EQU   28                 HEX TO ASCII SVC (STRING)
00001D                     640 ETOA   EQU   29                 EBCDIC TO ASCII SVC (STRING)
00001E                     641 ATOE   EQU   30                 ASCII TO EBCDIC SVC (STRING)
00001F                     642 READI  EQU   31                 READ DATA SETS FOR MDI/UTIL
000020                     643 WRITI  EQU   32                 WRITE DATA SETS FOR UTIL
                           644 ********************************************************************
                           645 *                                                                  *
                           646 *                EQUATES USED BY TU'S AS CONSTANTS                 *
                           647 *                                                                  *
                           648 ********************************************************************
```



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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                          COPYRIGHT IBM CORP 1976

00004E                     649 PLUS   EQU   C'+'                PLUS CHAR
000060                     650 MINUS  EQU   C'-'                MINUS CHAR
000000                     651 ZERO   EQU   0
000001                     652 ONE    EQU   1
000002                     653 TWO    EQU   2
000003                     654 THREE  EQU   3
000004                     655 FOUR   EQU   4
000005                     656 FIVE   EQU   5
000006                     657 SIX    EQU   6
000007                     658 SEVEN  EQU   7
000008                     659 EIGHT  EQU   8
000009                     660 NINE   EQU   9
00000A                     661 TEN    EQU   10
00000B                     662 ELEVN  EQU   11                                11
00000C                     663 TWELV  EQU   12                                12
00000D                     664 THRTN  EQU   13                                13
00000F                     665 FIVTN  EQU   15                                15
000010                     666 SIXTN  EQU   16                                16
000020                     667 THRY2  EQU   32                                32
000040                     668 SIXT4  EQU   64                                64
000080                     669 ONE28  EQU   128                               128
000100                     670 TWO56  EQU   256                               256
000400                     671 ONEK   EQU   1024                              1024
000800                     672 TWOK   EQU   2048                              2048
000C00                     673 THREK  EQU   3072                              3072
001000                     674 FOURK  EQU   4096                              4096
FFFFFF                     675 M1     EQU   -1                                -1
FFFFFE                     676 M2     EQU   -2                                -2
FFFFFD                     677 M3     EQU   -3                                -3
FFFFFC                     678 M4     EQU   -4                                -4
                           679 ********************************************************************
                           680 *                                                                  *
                           681 *     THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE     *
                           682 *     BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES.   *
                           683 *                                                                  *
                           684 ********************************************************************
000000                     685 BS0    EQU   0
000001                     686 BS1    EQU   1
000002                     687 BS2    EQU   2
000003                     688 BS3    EQU   3
000004                     689 BS4    EQU   4
000005                     690 BS5    EQU   5
000006                     691 BS6    EQU   6
000007                     692 BS7    EQU   7
000008                     693 BS8    EQU   8
000009                     694 BS9    EQU   9
00000A                     695 BS10   EQU   10
00000B                     696 BS11   EQU   11
00000C                     697 BS12   EQU   12
00000D                     698 BS13   EQU   13
00000E                     699 BS14   EQU   14
00000F                     700 BS15   EQU   15
                           701          COPY  T4001
                           702 ********************************************************************
                           703 *                                                                  *
                           704 *              TEST OVERVIEW AND OPERATING PROCEDURES              *
                           705 *                                                                  *
                           706 * THIS TEST IS DESIGNED TO RUN THE TTY ATTACHMENT IN MANUAL MODE.  IT
                           707 * CANNOT ASSUME ANY ATTACHED DEVICE.  THIS PROGRAM RUNS UNDER CONTROL
                           708 * OF THE DIAGNOSTIC CONTROL PROGRAM (DCP), WITH THE ATTENDANT CONTROLS
                           709 * AND RESTRICTIONS.
                           710 *
                           711 ********************************************************************
                           712 *
                           713 ********************************************************************
                           714 *                                                                  *
                           715 *                    CONSTANTS AND EQUATES                         *
                           716 *                                                                  *
                           717 ********************************************************************
                           718 *
002818  4001               719 TUID   DC    X'4001'             TEST UNIT ID
00281A  0000               720 RTNE   DC    A(*-*)              CURRENT ROUTINE IN EXECUTION
00281C  0000               721 CKPT   DC    A(*-*)              CURRENT CHECKPOINT WITHIN A ROUTINE
00281E  00000000           722 IDCB   DC    2A(*-*)             IDCB LAST EXECUTED
002822  FF                 723 XIOCC  DC    X'FF'               LAST 'EXPECTED' OIO COND CODE
002823  FF                 724 RIOCC  DC    X'FF'               LAST 'RECEIVED' OIO COND CODE
002824  FF                 725 XINCC  DC    X'FF'               LAST 'EXPECTED' INTERRUPT COND CODE
002825  FF                 726 RINCC  DC    X'FF'               LAST 'RECEIVED' INTERRUPT COND CODE
002826  FF                 727 IDRDA  DC    X'FF'               DEVICE ID OR DEVICE ADDRESS
002827  FF                 728 LEVEL  DC    X'FF'               LEVEL LAST INTERRUPT OCCURRED ON
                           729 *
002828  10                 730          DC    X'10'               DEVICE ID OF THE TTY ATTACHMENT
002829  80                 731 BPHDR  DC    X'80'               'BYPASS HEADER PRINT' SWITCH
                           732 *
                           733          ALIGN WORD
00282A  4001               734 PGMID  DC    X'4001'             PROGRAM IDENTIFIER FOR MESSAGES
00282C  00000000000000000  735 BUFFR  DC    30A(*-*)            PRINT BUFFER
                           736 *
002868  0000               737 CCERR  DC    A(*-*)              'INTERRUPT CONDITION CODE ERROR' INDR
                           738 *
00286A  01                 739 CC1    DC    X'01'               'EXPECTED CONDITION CODES'
00286B  02                 740 CC2    DC    X'02'               * (USED FOR SETTING 'EXPECTED' INDRS
00286C  03                 741 CC3    DC    X'03'               *  FOR ERROR STATUS DISPLAYS)
00286D  06                 742 CC6    DC    X'06'               *
00286E  07                 743 CC7    DC    X'07'               *
002870  FFFFFFFF           744 CCX    DC    2A(-1)              * 'NO INTERRUPT (COND CODE) EXPECTED'
                           745 *                                * OR 'COND CODE INSIGNIFICANT' INDR
                           746 *
                           747          ALIGN WORD
002874  00                 748          DC    X'00'               SPACER
                           749 *
002875  00                 750 CTLSW  DC    X'00'               'SVC OUT' PRINT-CONTROL SWITCH
002876  282C               751 CTLBK  DC    A(BUFFR)            'SVC OUT' CONTROL BLOCK (MSSG ADDR)
                           752 *
                           753 *
002878  0000               754 DAPTR  DC    A(*-*)              POINTER TO DEVICE ADDRESS VECTOR
00287A  0000               755 DDB    DC    A(*-*)              SIA'S (FOR INTERRUPT SERVICE) GO HERE
00287C  0000               756 DVAER  DC    A(*-*)              'INCORRECT DEVICE ADDRESS' INDR
002878  01                 757 TBIT   DC    X'01'               CODE FOR SETTING 'I BIT' IN I/O OPS
002880  0000               758 INTIN  DC    A(*-*)              'INTERRUPT OCCURRED' INDR
                           759 *
002882  00000000000000000  760 LSB    DC    11A(*-*)            LEVEL STATUS BLOCK SAVE AREA
002898  00000000000000000  761 DLSB   DC    11A(*-*)            *
                           762 *
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
0028AE  0000                776 LVLER DC    A(*-*)              'INTERRUPTED TO WRONG LEVEL' INDR
                            777 *
0028B0  00                  778 LVL0  DC    X'00'               CODE FOR SETTING 'LEVEL 0' IN I/O OPS
0028B1  02                  779 LVL1  DC    X'02'               CODE FOR SETTING 'LEVEL 1' IN I/O OPS
0028B2  04                  780 LVL2  DC    X'04'               CODE FOR SETTING 'LEVEL 2' IN I/O OPS
                            781 *
0028B3  3803                782 MCKCD DC    X'3803'             'DCP/MDI MACHINE CHECK INDR' CODE
0028B6  0000                783 MCPSW DC    A(*-*)              'MACHINE CHECK PSW' SAVE AREA
                            784 *
0028B8  0000                785 PARM1 DC    A(*-*)              'HTOE' UTILITY ROUTINE CONTROL BLOCK
0028BA  0000                786 PARM2 DC    A(*-*)              * 'PARM1' = CHAR CNT, 'PARM2' = HEX
0028BC  0000                787 PARM3 DC    A(*-*)              * DATA ADDR, 'PARM3' = EBCDIC ADDR
                            788 *
0028BE  00                  789 PRHDR DC    X'00'               'PRINT HEADER' SWITCH
0028C0  0000                790 SAVER DC    A(*-*)              DCP MACH CHK INT XFER VCTR SAVE AREA
0028C2  0000                791 SDCP  DC    A(*-*)              DCP PRIORITY INT XFER VCTR SAVE AREA
                            792 *
002886                      793 LSR   EQU   LSB+4               'LSR' LOCATION WITHIN LSB AREA
                            794 *
00000A                      795 MCK   EQU   X'000A'             'MACHINE CHECK' CLASS INT XFER VCTR
                            796 *
                            798 ********************************************************************************
                            799 *
                            800 *          IMMEDIATE DEVICE CONTROL BLOCKS (IDCB'S)
                            801 *
                            802 ********************************************************************************
                            803 *
0028C4  00                  804 CRTST DC    X'00'               'COMMAND REJECT TEST' IDCB
0028C5  00                  805 CRTDA DC    X'00'               DEVICE ADDRESS
0028C6  0000                806       DC    A(0)                DATA WORD (CONTENTS UNPREDICTAPLE)
                            807 *
0028C8  60                  808 PREPR DC    X'60'               'PREPARE' DCB
0028C9  00                  809 PRPDA DC    X'00'               DEVICE ADDR
0028CA  00                  810       DC    X'00'               *
0028CB  00                  811 PDATA DC    X'00'               'PREPARE DATA' BYTE
                            812 *
0028CC  10                  813 READ  DC    X'10'               'READ' IDCB
0028CD  00                  814 RDDA  DC    X'00'               DEVICE ADDR
0028CE  00                  815       DC    X'00'               *
0028CF  00                  816 RDATA DC    X'00'               'READ DATA' BYTE
                            817 *
0028D0  6E                  818 RDW   DC    X'6E'               'RESET-TO-DIAG-WRAP' IDCB
0028D1  00                  819 RDWDA DC    X'00'               DEVICE ADDR
0028D2  0000                820       DC    X'0000'             *
                            821 *
0028D4  20                  822 RDID  DC    X'20'               'READ-ID' IDCB
0028D5  00                  823 RIDDA DC    X'00'               DEVICE ADDR
0028D6  00                  824       DC    X'00'               *
0028D7  00                  825 DVCID DC    X'00'               'DVC ID' BYTE
                            826 *
0028D8  6F                  827 RST   DC    X'6F'               'RESET' IDCB
0028D9  00                  828 RSTDA DC    X'00'               DEVICE ADDR
0028DA  0000                829       DC    X'0000'             *
                            830 *
0028DC  50                  831 WRITE DC    X'50'               'WRITE' IDCB
0028DD  00                  832 WRTDA DC    X'00'               DEVICE ADDR
0028DE  00                  833       DC    X'00'               *
0028DF  00                  834 WDATA DC    X'00'               'WRITE DATA' BYTE
                            835 *
                            837 ********************************************************************************
                            838 *
                            839 *                          MESSAGE TEXTS
                            840 *
                            841 ********************************************************************************
                            842 *
0028E0  C9D5C3D6D9D9C5C3E   843 MSG00 DC    C'INCORRECT OIO COND CODE ON ''READ ID'''
002904  00                  844       DC    X'00'
                            845 *
002905  C9D5C3D6D9D9C5C3E   846 MSG01 DC    C'INCORRECT DEVICE ID RETURNED ON ''READ ID'''
00292E  00                  847       DC    X'00'
                            848 *
00292F  C9D5C3D6D9D9C5C3E   849 MSG02 DC    C'INCORRECT OIO COND CODE ON ''RESET'''
002951  00                  850       DC    X'00'
                            851 *
002952  C9D5C3D6D9D9C5C3E   852 MSG03 DC    C'INCORRECT OIO COND CODE ON ''PREPARE'''
002976  00                  853       DC    X'00'
                            854 *
002977  C9D5E3C5D9D9E4D7E   855 MSG04 DC    C'INTERRUPTED AFTER SEQ: RESET, PREP-DISABLED'
0029A2  00                  856       DC    X'00'
                            857 *
0029A3  C9D5E3C5D9D9E4D7E   858 MSG05 DC  C'INTERRUPTED AFTER SEQ: RESET, PREP-DISABLED, PREP-ENABLED'
0029DC  00                  859       DC  X'00'
                            860 *
0029DD  C9D5C3D6D9D9C5C3E   861 MSG06 DC    C'INCORRECT OIO COND CODE ON ''WRITE'''
0029FF  00                  862       DC    X'00'
                            863 *
002A00  C9D5E3C5D9D9E4D7E   864 MSG07 DC    C'INTERRUPTED AFTER SEQ: PREP-DISABLED, WRITE'
002A2B  00                  865       DC    X'00'
                            866 *
                            867 MSG08 DC    C'INCORRECT OIO COND CODE AFTER SEQ: PREP-DISABLED, WRITE, W
002A6A  00                  868       DC    X'00'
                            869 *
002A6B  C9D5E3C5D9D9E4D7E   870 MSG09 DC    C'INTERRUPTED AFTER SEQ: PREP-DISABLED, WRITE, WRITE'
002A9D  00                  871       DC    X'00'
                            872 *
002A9E  D5D640C9D5E3C5D9D   873 MSG0A DC    C'NO INTERRUPT AFTER SEQ: WRITE, PREP-ENABLED'
002AC9  00                  874       DC    X'00'
                            875 *
002ACA  D5D640C9D5E3C5D9D   876 MSG0B DC    C'NO INTERRUPT AFTER SEQ: PREP-ENABLED, WRITE'
002AF5  00                  877       DC    X'00'
                            878 *
002AF6  C9D5E3C5D9D9E4D7E   881 MSG0C DC    C'INTERRUPTED TO WRONG LEVEL'
002B10  00                  882       DC    X'00'
                            883 *
                            884 MSG0D DC    C'INCORRECT DVC ADDR IN R7 ON INTERRUPT - ENTERED VIA CORREC
002B53  00                  885       DC    X'00'
                            886 *
002B54  C9D5E5C1D3C9C440C   887 MSG0E DC    C'INVALID INTERRUPT ON ''READ ID'''
002B72  00                  888       DC    X'00'
                            889 *
002B73  E4D5C5E7D7C5C3E3C   890 MSG0F DC    C'UNEXPECTED INTERRUPT COND CODE'
002B91  00                  891       DC    X'00'
                            892 *
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
002B92  C9D5E3C5D9D9E4D7E   893 MSG10 DC    C'INTERRUPTED AFTER SEQ: MASK, WRITE, RESET TO DIAG WRAP'
002BC8  00                  894       DC    X'00'
                            895 *
002BC9  C9D5C3D6D9D9C5C3E   896 MSG11 DC    C'INCORRECT DATA READ AFTER WRITE X''00'' IN DIAG WRAP'
002BFB  00                  897       DC    X'00'
                            898 *
002BFC  C4C1E3C140C3D3D6C   899 MSG12 DC    C'DATA CLOBBERED IN ''OVERRUN RCV'' OPERATION'
002C25  00                  900       DC    X'00'
                            901 *
002C26  E4D5C5E7D7C5C3E3C   902 MSG13 DC    C'UNEXPECTED INTERRUPT'
002C3A  00                  903       DC    X'00'
                            904 *
002C3B  C9D5C3D6D9D9C5C3E   905 MSG14 DC    C'INCORRECT OIO COND CODE IN ''CMD REJ'' TEST'
002C64  00                  906       DC    X'00'
                            907 *
002C65  E4D5C5E7D7C5C3E3C   908 MSG15 DC    C'UNEXPECTED INTERRUPT IN ''CMD REJ'' TEST'
002C8B  00                  909       DC    X'00'
                            910 *
002C8C  C9D5C3D6D9D9C5C3E   911 MSG16 DC    C'INCORRECT OIO COND CODE ON ''RESET TO DIAG WRAP'''
002CBB  00                  912       DC    X'00'
                            913 *
002CBC  C9D5C3D6D9D9C5C3E   914 MSG17 DC    C'INCORRECT OIO COND CODE ON ''READ'''
002CDD  00                  915       DC    X'00'
                            916 *
002CDE  2CDE                917 MSGND DC    A(MSGND)                 END OF ERROR MESSAGE TEXT STRING
                            918 *
                            920 *
                            921 ** INTERNAL 'RTNE/CKPT' MESSAGE TEXT
                            922 *
002CE0  C9D5E3C5D9D5C1D34   923 IRCPM DC    C'INTERNAL RTNE = '
002CF0  00000000            924 IR    DC    2A(*-*)
002CF4  4040C9D5E3C5D9D5C   925       DC    C' INTERNAL CKPT = '
002D06  0000                926 ICP   DC    A(*-*)
002D08  00                  927       DC    X'00'                    TERMINATOR
                            928 *
002D0A  2D0A                929 IRCND DC    A(IRCND)                 END OF INTERNAL RTNE/CKPT MESSAGE
                            930 *
                            931 ** 'MACHINE CHECK STATUS' MESSAGE TEXT
                            932 *
002D0C  D4C3D240D4C1D7407   933 MCMSG DC    C'MCK MAP = 4001'
002D1A  40E2E3C5D7407E40    934       DC    C' STEP = '
002D22  00000000            935 STEP  DC    2A(*-*)
002D26  40D7E2E6407E40      936       DC    C' PSW = '
002D2E  00000000            937 PSW   DC    2A(*-*)
002D32  40C9C1D9407E40      938       DC    C' IAR = '
002D3A  00000000            939 IAR   DC    2A(*-*)
002D3E  40C9C4C3C2407E40    940       DC    C' IDCB = '
002D46  0000000000000000    941 IDCBX DC    4A(*-*)
002D4E  00                  942       DC    X'00'                    TERMINATOR
                            943 *
002D50  2D50                944 MCMND DC    A(MCMND)                 END OF MESSAGE TEXT STRING
                            945 *
                            947 ********************************************************************************
                            948 *
                            949 *                          CONDITION CODES
                            950 *
                            951 *    CODE          OIO                    INTERRUPT
                            952 *    ----   ------------------      ------------------
                            953 *
                            954 *     0     DVC NOT ATTACHED
                            955 *     1     DEVICE BUSY
                            956 *     2                             EXCEPTION
                            957 *     3     COMMAND REJECT          DEVICE END
                            958 *     4                             ATTENTION
                            959 *     5     INTFC DATA CHECK
                            960 *     6                             ATTN & EXCEPTION
                            961 *     7     OIO ACCEPTED            ATTN & DEVICE END
                            962 *
                            963 ********************************************************************************
                            964 *
                            966 ********************************************************************************
                            967 *
                            968 *     NAME: RT00 (INITIALIZATION AND DCP INTERFACE)
                            969 *
                            970 *     PURPOSE: TO INITIALIZE PROGRAM EXECUTION AND INTERFACE WITH THE
                            971 *              DCP.
                            972 *
                            973 *     METHOD: THIS ROUTINE INITIALIZES THE IDCB'S AND SERVES AS THE
                            974 *             GENERAL INTERFACE WITH THE DCP.  THE ID OF THE DEVICE AT
                            975 *             THE SPECIFIED DEVICE ADDRESS IS VERIFIED.
                            976 *
                            977 ********************************************************************************
                            978 *
002D52                      979 T4001 EQU   *
002D52  6F0D 3602           980 RT00  MVW   R7,GOBCK+2               SET RETURN LINK
002D56  4020 281A 4001      981       MVWI  X'4001',RTNE             INITIALIZE ROUTINE AND
002D5C  4020 281C 0000      982       MVWI  0,CKPT                   * CHECKPOINT VALUES
002D62  6808 28C0           983       MVW   SAVER,R0                 WE ALREADY SAVED VECTOR ENTRY ?
002D66  1825                984       JNZ   RT01                     YES, JUMP
                            985 *
002D68  8828 000A 28C0      986       MVW   MCK,SAVER                NO.  SAVE IT
002D6E  4020 000A 3604      987       MVA   MACHK,MCK                PUT OUR OWN ROUTINE SIA IN THERE
002D74  C020 19D0           988       MVB   DEVADD,R0                GET DEVICE ADDRESS
002D78  7800 00FF           989       NWI   X'00FF',R0               STRIP OFF PROPOGATED BITS
002D7C  C028 28C5           990       MVB   R0,CRTDA                 SET
002D80  C028 28C9           991       MVB   R0,PRPDA                 * EACH
002D84  C028 28CD           992       MVB   R0,RDDA                  * IDCB
002D88  C028 28D1           993       MVB   R0,RDWDA                 * WITH
002D8C  C028 28D5           994       MVB   R0,RIDDA                 * SPECIFIED
002D90  C028 28D9           995       MVB   R0,RSTDA                 * DEVICE
002D94  C028 28DD           996       MVB   R0,WRTDA                 * ADDRESS
002D98  3009                997       SLL   1,R0                     SET UP VECTOR ADDR FOR THIS DVC ADDR
002D9A  0030                998       ABI   X'30',R0                 *
002D9C  680D 2878           999       MVW   R0,DAPTR                 SAVE IT
002DA0  8808 28C2          1000       MVW   (R0),SDCP                SAVE THE CONTENTS
002DA4  4000 287A          1001       MVA   DDB,(R0)                 SET TRANSFER VECTOR
002DA8  4324 2818          1002       MVA   TUID,R3                  SET RAS DISPLAY POINTER
002DAC  9028 2870 2822     1003       MVD   CCX,XIOCC                INITIALIZE CC INDRS
                           1004 *
                           1006 ********************************************************************************
                           1007 *
                           1008 *     NAME: RT01 (READ DEVICE IDENTIFICATION)
                           1009 *
                           1010 *     PURPOSE: TO INSURE THE PROPER RESPONSE(S) ARE RECEIVED FROM A
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

                           1011 *              'READ ID' COMMAND.
                           1012 *
                           1013 *      METHOD: THE 'READ ID' COMMAND IS MONITORED FOR THE RETURN OF THE
                           1014 *              PROPER CONDITION CODE, AND THE CORRECT DEVICE ID.  SHOULD
                           1015 *              AN ERROR OCCUR, IT WILL BE REPORTED, IF APPLICABLE.
                           1016 *
                           1017 ************************************************************************
                           1018 *
002DB2  4020 281A 0001     1019 RT01   MVWI  1,RTNE                                  *>*>*> R 1
002DB8  4020 281C 0001     1020        MVWI  1,CKPT                                  *>*>*>      CP  1
002DBE  4020 287A 2E1C     1021        MVA   ISS01,DDB              SET INT SERVICE ADDRESS
002DC4  C825 2880          1022        MVWZ  INTIN,R0               INITIALIZE 'INT OCCURRED' INDR
002DC8  8028 286E 2822     1023        MVB   CC7,XIOCC              SET 'EXPECTED' COND CODE INDR
002DCE  9028 28D4 281E     1024        MVD   RDID,IDCB              SET 'IDCB' INDR
002DD4  680C 28D4          1025        IO    RDID                   READ DEVICE ID
002DD8  6F04 2DF6          1026        BCC   7,RT105                 IF GOOD CC, BRANCH
                           1027 *
002DDC  70AE               1028        CPLSR R5                     SET 'RECEIVED' COND CODE INDR
002DDE  356A               1029        SRL   13,R5                  *
002DE0  C528 2823          1030        MVB   R5,RIOCC               *
002DE4  4124 28E0          1031        MVA   MSG00,R1               MOVE MESSAGE TO BUFFER
002DE8  4224 282C          1032        MVA   BUFFR,R2               *
002DEC  4724 0025          1033        MVWI  MSG01-MSG00,R7         *
002DF0  2944               1034        MVFN  (R1),(R2)              *
002DF2  6802 3664          1035        B     PRINT                  OUTPUT THE MESSAGE
                           1036 *
002DF6  4020 281C 0002     1037 RT105  MVWI  2,CKPT                                  *>*>*> R 1, CP  2
002DFC  802B 2828 28D7     1038        CB    ATTID,DVCID            INSURE ID IS CORRECT
002E02  1020               1039        JE    RT02                   JUMP IF IT IS
                           1040 *
002E04  8028 28D7 2826     1041        MVB   DVCID,IDRDA            SET 'RECEIVED' INDR
002E0A  4124 2905          1042        MVA   MSG01,R1               MOVE MESSAGE TO BUFFER
002E0E  4224 282C          1043        MVA   BUFFR,R2               *
002E12  4724 002A          1044        MVWI  MSG02-MSG01,R7         *
002E16  2944               1045        MVFN  (R1),(R2)              *
002E18  6802 3664          1046        B     PRINT                  OUTPUT THE MESSAGE
                           1047 *
                           1049 ************************************************************************
                           1050 *
                           1051 *      NAME: ISS01 (RT01 INTERRUPT SERVICE SUBROUTINE)
                           1052 *
                           1053 *      PURPOSE: TRAP UNEXPECTED INTERRUPTS
                           1054 *
                           1055 *      METHOD: BUILD A COND CODE, LEVEL AND DVC ADDR IN R5.
                           1056 *
                           1057 ************************************************************************
                           1058 *
002E1C  70AE               1059 ISS01  CPLSR R5                     SET 'RECEIVED' COND CODE INDR
002E1E  356A               1060        SRL   13,R5                  *
002E20  C528 2825          1061        MVB   R5,RINCC               *
002E24  7819               1062        CPCL  R0                     SET 'LEVEL' INDR
002E26  C028 2827          1063        MVB   R0,LEVEL               *
002E2A  C728 2826          1064        MVB   R7,IDRDA               SET 'DEVICE ADDRESS' INDR
002E2E  4124 2B54          1065        MVA   MSG0E,R1               MOVE MESSAGE TO BUFFER
002E32  4224 282C          1066        MVA   BUFFR,R2               *
002E36  4724 001F          1067        MVWI  MSG0F-MSG0E,R7         *
002E3A  2944               1068        MVFN  (R1),(R2)              *
002E3C  6F03 356C          1069        BAL   OFF,R7                 GET ON LEVEL 3
                           1070 *
002E40  6802 3664          1071        B     PRINT                  OUTPUT THE MESSAGE
                           1072 *
                           1074 ************************************************************************
                           1075 *
                           1076 *      NAME: RT02 (RESET AND PREPARE TESTS)
                           1077 *
                           1078 *      PURPOSE: INSURE THE TTY ATTACHMENT WILL ACCEPT RESET COMMANDS
                           1079 *               AND PREPARE COMMANDS, AND RETURN THE PROPER CONDITION
                           1080 *               CODES TO EACH.  THE PREPARE REGISTER IS THEN TESTED,
                           1081 *               ALONG WITH THE PROPER UTILIZATION OF THE PREPARE DATA
                           1082 *               ASSOCIATED WITH THE INTERRUPT REQUEST PRESENTATION.
                           1083 *
                           1084 *      METHOD: THE 'RESET' COMMAND IS ISSUED, THEN THE PREPARE REG IS
                           1085 *              TESTED FOR SETTINGS OF EACH LEVEL, BOTH ENABLED AND
                           1086 *              DISABLED.  THE ATTACHMENT IS THEN TESTED FOR CONDITIONS
                           1087 *              OF 'INTERRUPT PENDING', 'RESET' AND 'INTERRUPT REQUEST'
                           1088 *
                           1089 ************************************************************************
                           1090 *
002E44  4020 281A 0002     1091 RT02   MVWI  2,RTNE                                  *>*>*> R 2
002E4A  4020 281C 0001     1092        MVWI  1,CKPT                                  *>*>*>      CP  1
002E50  4020 287A 34CC     1093        MVA   ISS02,DDB              FLIP DDB
002E56  8028 286E 2822     1094        MVB   CC7,XIOCC              SET 'EXPECTED' COND CODE INDR
002E5C  9028 28D8 281E     1095        MVD   RST,IDCB               SET 'IDCB' INDR
002E62  680C 28D8          1096        IO    RST                    RESET
002E66  6F04 2E84          1097        BCC   7,RT205                IF GOOD CC, BRANCH
                           1098 *
002E6A  70AE               1099        CPLSR R5                     SET 'RECEIVED' COND CODE INDR
002E6C  356A               1100        SRL   13,R5                  *
002E6E  C528 2823          1101        MVB   R5,RIOCC               *
002E72  4124 2C8C          1102        MVA   MSG16,R1               MOVE MESSAGE TO BUFFER
002E76  4224 282C          1103        MVA   BUFFR,R2               *
002E7A  4724 0030          1104        MVWI  MSG17-MSG16,R7         *
002E7E  2944               1105        MVFN  (R1),(R2)              *
002E80  6802 3664          1106        B     PRINT                  OUTPUT THE MESSAGE
                           1107 *
002E84  4020 281C 0002     1108 RT205  MVWI  2,CKPT                                  *>*>*> R 2, CP  2
002E8A  8028 28B0 28CB     1109        MVB   LVL0,PDATA             SET 'PREP' IDCB FOR LVL 0, DISABLED
002E90  8028 286E 2822     1110        MVB   CC7,XIOCC              SET 'EXPECTED' COND CODE INDR
002E96  9028 28C8 281E     1111        MVD   PREPR,IDCB             SET 'IDCB' INDR
002E9C  680C 28C8          1112        IO    PREPR                  PREPARE TTY ATTACHMENT
002EA0  6F04 2EBE          1113        BCC   7,RT20A                IF ACCEPTED, BRANCH
                           1114 *
                           1116 *
002EA4  70AE               1117        CPLSR R5                     SET 'RECEIVED' COND CODE INDR
002EA6  356A               1118        SRL   13,R5                  *
002EA8  C528 2823          1119        MVB   R5,RIOCC               *
002EAC  4124 2952          1120        MVA   MSG03,R1               MOVE MESSAGE TO BUFFER
002EB0  4224 282C          1121        MVA   BUFFR,R2               *
002EB4  4724 0025          1122        MVWI  MSG04-MSG03,R7         *
002EB8  2944               1123        MVFN  (R1),(R2)              *
002EBA  6802 3664          1124        B     PRINT                  OUTPUT THE MESSAGE
                           1125 *
002EBE  6F03 36AC          1126 RT20A  BAL   DEL,R7                   WAIT FOR INTERRUPT
                           1127 *
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976

002EC2  4020 281C 0003     1128        MVWI  3,CKPT                                  *>*>*> R 2, CP  3
002EC8  C825 2880          1129        MVWZ  INTIN,R0               DID AN INTERRUPT OCCUR ? (SHOULD NOT)
002ECC  1009               1130        JZ    RT20C                  NO, JUMP
                           1131 *
002ECE  4124 2977          1132        MVA   MSG04,R1               MOVE MESSAGE TO BUFFER
002ED2  4224 282C          1133        MVA   BUFFR,R2               *
002ED6  4724 002C          1134        MVWI  MSG05-MSG04,R7         *
002EDA  2944               1135        MVFN  (R1),(R2)              *
002EDC  6802 3664          1136        B     PRINT                  OUTPUT THE MESSAGE
                           1137 *
002EE0  4020 281C 0004     1138 RT20C  MVWI  4,CKPT                                  *>*>*> R 2, CP  4
002EE6  8028 287E 2B0B     1139        OB    IEIT,PDATA             SET 'PREP' IDCB TO LVL 0, ENABLED
002EEC  8028 286E 2822     1140        MVB   CC7,XIOCC              SET 'EXPECTED COND CODE' INDR
002EF2  9028 29C8 281E     1141        MVD   PREPR,IDCB             SET 'IDCB' INDR
002EF8  680C 28C8          1142        IO    PREPR                  PREP TTY ATTACHMENT
002EFC  6F04 2F1A          1143        BCC   7,RT20H                IF CC OKAY, BRANCH
                           1144 *
002F00  70AE               1145        CPLSR R5                     SET 'RECEIVED' COND CODE INDR
002F02  356A               1146        SRL   13,R5                  *
002F04  C528 2823          1147        MVB   R5,RIOCC               *
002F08  4124 2952          1148        MVA   MSG03,R1               MOVE MESSAGE TO BUFFER
002F0C  4224 282C          1149        MVA   BUFFR,R2               *
002F10  4724 0025          1150        MVWI  MSG04-MSG03,R7         *
002F14  2944               1151        MVFN  (R1),(R2)              *
002F16  6802 3664          1152        B     PRINT                  OUTPUT THE MESSAGE
                           1153 *
                           1155 *
002F1A  6F03 36AC          1156 RT20H  BAL   DEL,R7                   WAIT FOR INTERRUPT
                           1157 *
002F1E  4020 281C 0005     1158        MVWI  5,CKPT                                  *>*>*> R 2, CP  5
002F24  C825 2880          1159        MVWZ  INTIN,R0               INTERRUPT OCCUR ? (SHOULD NOT)
002F28  1009               1160        JZ    RT20L                  NO, JUMP
                           1161 *
002F2A  4124 29A3          1162        MVA   MSG05,R1               MOVE MESSAGE TO BUFFER
002F2E  4224 282C          1163        MVA   BUFFR,R2               *
002F32  4724 003A          1164        MVWI  MSG06-MSG05,R7         *
002F36  2944               1165        MVFN  (R1),(R2)              *
002F38  6802 3664          1166        B     PRINT                  OUTPUT THE MESSAGE
                           1167 *
002F3C  4020 281C 0006     1168 RT20L  MVWI  6,CKPT                                  *>*>*> R 2, CP  6
002F42  8028 28B0 28CB     1169        MVB   LVL0,PDATA             SET 'PREP' IDCB TO LVL 0, DISABLED
002F48  8028 286E 2822     1170        MVB   CC7,XIOCC              SET 'EXPECTED COND CODE' INDR
002F4E  9028 28C8 281E     1171        MVD   PREPR,IDCB             SET 'IDCB' INDR
002F54  680C 28C8          1172        IO    PREPR                  PREP TTY ATTACHMENT
002F58  6F04 2F76          1173        BCC   7,RT20R                CC OKAY, BRANCH
                           1174 *
002F5C  70AE               1175        CPLSR R5                     SAVE COND CODE
002F5E  356A               1176        SRL   13,R5                  *
002F60  C528 2823          1177        MVB   R5,RIOCC               *
002F64  4124 2952          1178        MVA   MSG03,R1               MOVE MESSAGE TO BUFFER
002F68  4224 282C          1179        MVA   BUFFR,R2               *
002F6C  4724 0025          1180        MVWI  MSG04-MSG03,R7         *
002F70  2944               1181        MVFN  (R1),(R2)              *
002F72  6802 3664          1182        B     PRINT                  OUTPUT THE MESSAGE
                           1183 *
002F76  4020 281C 0007     1184 RT20R  MVWI  7,CKPT                                  *>*>*> R 2, CP  7
002F7C  4020 28DE 008D     1185        MVWI  X'008D',WDATA-1        SET IDCB TO WRITE 'C/R' OUT
002F82  8028 286E 2822     1186        MVB   CC7,XIOCC              SET 'EXPECTED COND CODE' INDR
002F88  9028 28DC 281E     1187        MVD   WRITE,IDCB             SET 'IDCB' INDR
002F8E  680C 28DC          1188        IO    WRITE                  ATTEMPT TO CAUSE AN INT TO TEST PREP
002F92  6F04 2FB0          1189        BCC   7,RT20W                IF ACCEPTED, BRANCH
                           1190 *
002F96  70AE               1191        CPLSR R5                     SAVE COND CODE
002F98  356A               1192        SRL   13,R5                  *
002F9A  C528 2823          1193        MVB   R5,RIOCC               *
002F9E  4124 29DD          1194        MVA   MSG06,R1               MOVE MESSAGE TO BUFFER
002FA2  4224 282C          1195        MVA   BUFFR,R2               *
002FA6  4724 0023          1196        MVWI  MSG07-MSG06,R7         *
002FAA  2944               1197        MVFN  (R1),(R2)              *
002FAC  6802 3664          1198        B     PRINT                  OUTPUT THE MESSAGE
                           1199 *
                           1201 *
002FB0  6F03 36AC          1202 RT20W  BAL   DEL,R7                   WAIT FOR INTERRUPT
                           1203 *
002FB4  4020 281C 0008     1204        MVWI  8,CKPT                                  *>*>*> R 2, CP  8
002FBA  C825 2880          1205        MVWZ  INTIN,R0               INTERRUPT OCCUR ? (SHOULD NOT)
002FBE  1009               1206        JZ    RT211                  NO, JUMP
                           1207 *
002FC0  4124 2A00          1208        MVA   MSG07,R1               MOVE MESSAGE TO BUFFER
002FC4  4224 282C          1209        MVA   BUFFR,R2               *
002FC8  4724 002C          1210        MVWI  MSG08-MSG07,R7         *
002FCC  2944               1211        MVFN  (R1),(R2)              *
002FCE  6802 3664          1212        B     PRINT                  OUTPUT THE MESSAGE
                           1213 *
002FD2  4020 281C 0009     1214 RT211  MVWI  9,CKPT                                  *>*>*> R 2, CP  9
002FD8  8028 286A 2822     1215        MVB   CC1,XIOCC              SET 'EXPECTED COND CODE' INDR
002FDE  9028 28DC 281E     1216        MVD   WRITE,IDCB             SET 'IDCB' INDR
002FE4  680C 28DC          1217        IO    WRITE                  FORCE 'BUSY'
002FE8  6904 3006          1218        BCC   1,RT216                COND CODE OK, BRANCH
                           1219 *
002FEC  70AE               1220        CPLSR R5                     SAVE COND CODE
002FEE  356A               1221        SRL   13,R5                  *
002FF0  C528 2823          1222        MVB   R5,RIOCC               *
002FF4  4124 2A2C          1223        MVA   MSG08,R1               MOVE MESSAGE TO BUFFER
002FF8  4224 282C          1224        MVA   BUFFR,R2               *
002FFC  4724 003F          1225        MVWI  MSG09-MSG08,R7         *
003000  2944               1226        MVFN  (R1),(R2)              *
003002  6802 3664          1227        B     PRINT                  OUTPUT THE MESSAGE
                           1228 *
003006  6F03 36AC          1229 RT216  BAL   DEL,R7                   WAIT FOR INTERRUPT
                           1230 *
00300A  4020 281C 000A     1231        MVWI  X'A',CKPT                               *>*>*> R 2, CP  A
003010  C825 2880          1232        MVWZ  INTIN,R0               INTERRUPT OCCUR ? (SHOULD NOT)
003014  1009               1233        JZ    RT21B                  NO, JUMP
                           1234 *
003016  4124 2A6B          1235        MVA   MSG09,R1               MOVE MESSAGE TO BUFFER
00301A  4224 282C          1236        MVA   BUFFR,R2               *
00301E  4724 0033          1237        MVWI  MSG0A-MSG09,R7         *
003022  2944               1238        MVFN  (R1),(R2)              *
003024  6802 3664          1239        B     PRINT                  OUTPUT THE MESSAGE
                           1240 *
                           1242 *
                           1243 ** TEST PREPARE TO LEVEL 0, ENABLED
                           1244 *
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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
003028 4020 281C 000B  1245 RT21B MVWI  X'B',CKPT                    *>*>*> R 2, CP  B
00302E 8029 287E 28CB  1246       OB    IBIT,PDATA                  SET 'I-BIT' IN PREP FIELD
003034 8028 286E 2822  1247       MVB   CC7,XIOCC                   SET 'EXPECTED COND CODE' INDRS
00303A 8028 286E 2824  1248       MVB   CC7,XINCC                   *
003040 9028 28C8 281E  1249       MVD   PREPR,IDCB                  SET 'IDCB' INDR
003046 680C 28C8       1250       IO    PREPR                       PREP, ENABLED
00304A 6F04 3068       1251       BCC   7,RT220                     COND CODE OK, BRANCH
                       1252 *
                       1253 ** FIRST INTERRUPT SHOULD OCCUR AT THIS POINT.  EXECUTION SHOULD RESUME
                       1254 ** ON THIS LEVEL (3), AT LOCATION 'RT220' AFTER THE INTERRUPT HAS BEEN
                       1255 ** SERVICED
                       1256 *
00304E 70AE            1257       CPLSR R5                          SAVE COND CODE
003050 356A            1258       SRL   13,R5                       *
003052 C528 2823       1259       MVB   R5,RIOCC                    *
003056 4124 2952       1260       MVA   MSG03,R1                    MOVE MESSAGE TO BUFFER
00305A 4224 282C       1261       MVA   BUFFR,R2                    *
00305E 4724 0025       1262       MVWI  MSG04-MSG03,R7              *
003062 2944            1263       MVFN  (R1),(R2)                   *
003064 6802 3664       1264       B     PRINT                       OUTPUT THE MESSAGE
                       1265 *
003068 6F03 36AC       1266 RT220 BAL   DEL,R7                      WAIT FOR INTERRUPT
                       1267 *
00306C 4020 281C 000C  1268       MVWI  X'C',CKPT                   *>*>*> R 2, CP  C
003072 C825 2880       1269       MVWZ  INTIN,R0                    INTERRUPT OCCUR ? (SHOULD)
003076 1809            1270       JNZ   RT228                       YES, JUMP
                       1271 *
003078 4124 2A9E       1272       MVA   MSG0A,R1                    MOVE MESSAGE TO BUFFER
00307C 4224 282C       1273       MVA   BUFFR,R2                    *
003080 4724 002C       1274       MVWI  MSG0B-MSG0A,R7              *
003084 2944            1275       MVFN  (R1),(R2)                   *
003086 6802 3664       1276       B     PRINT                       OUTPUT THE MESSAGE
                       1277 *
00308A 680C 28CC       1278 RT228 IO    READ                        CLEAR 'READ' BUFFER
                       1279 *
                       1281 *
00308E 8028 28E0 28CB  1282       MVB   LVL0,PDATA                  DISABLE INTERRUPTS
003094 680C 28C8       1283       IO    PREPR                       *
003098 4020 28DE 000A  1284       MVWI  X'000A',WDATA-1             SET IDCB TO WRITE 'L/F' OUT
00309E 8028 286E 2822  1285       MVB   CC7,XIOCC                   SET 'EXPECTED COND CODE' INDRS
0030A4 8028 286E 2824  1286       MVB   CC7,XINCC                   *
0030AA 9028 28DC 281E  1287       MVD   WRITE,IDCB                  SET 'IDCB' INDR
0030B0 680C 28DC       1288       IO    WRITE                       FORCE INTERRUPT
0030B4 6F04 30D2       1289       BCC   7,RT22D                     IF COND CODE OK, BRANCH
                       1290 *
0030B8 70AE            1291       CPLSR R5                          SAVE COND CODE
0030BA 356A            1292       SRL   13,R5                       *
0030BC C528 2823       1293       MVB   R5,RIOCC                    *
0030C0 4124 29DD       1294       MVA   MSG06,R1                    MOVE MESSAGE TO BUFFER
0030C4 4224 282C       1295       MVA   BUFFR,R2                    *
0030C8 4724 0023       1296       MVWI  MSG07-MSG06,R7              *
0030CC 2944            1297       MVFN  (R1),(R2)                   *
0030CE 6802 3664       1298       B     PRINT                       OUTPUT THE MESSAGE
                       1299 *
0030D2 6F03 36AC       1300 RT22D BAL   DEL,R7                      TEST DELAYS
                       1301 *                                       **** ******
0030D6 6F03 36AC       1302       BAL   DEL,R7                      **** ******
                       1303 *                                       **** ******
0030DA 6F03 36AC       1304       BAL   DEL,P7                      **** ******
                       1305 *                                       **** ******
0030DE 8029 287E 28CB  1306       OB    IBIT,PDATA                  ENABLE INTERRUPTS
0030E4 680C 28C8       1307       IO    PREPR                       *
0030E8 6F03 36AC       1308       BAL   DEL,R7                      WAIT FOR INTERRUPT
                       1309 *
0030EC 4020 281C 000E  1310       MVWI  X'E',CKPT                   *>*>*> R 2, CP  E
0030F2 C825 2880       1311       MVWZ  INTIN,R0                    INTERRUPT OCCUR ? (SHOULD)
0030F6 1809            1312       JNZ   RT231                       YES, JUMP
                       1313 *
0030F8 4124 2ACA       1314       MVA   MSG0B,R1                    MOVE MESSAGE TO BUFFER
0030FC 4224 282C       1315       MVA   BUFFR,R2                    *
003100 4724 002C       1316       MVWI  MSG0C-MSG0B,R7              *
003104 2944            1317       MVFN  (R1),(R2)                   *
003106 6802 3664       1318       B     PRINT                       OUTPUT THE MESSAGE
                       1319 *
                       1321 *
                       1322 ** TEST PREPARE TO LEVEL 1
                       1323 *
003108 4020 281C 000F  1324 RT231 MVWI  X'F',CKPT                   *>*>*> R 2, CP  F
00310E 8028 28B1 28CB  1325       MVB   LVL1,PDATA                  SET 'PREP' IDCB TO LVL 1, DISABLED
003114 8028 286E 2822  1326       MVB   CC7,XIOCC                   SET 'EXPECTED COND CODE' INDRS
00311A 8028 2870 2824  1327       MVB   CCX,XINCC                   *
003120 9028 28C8 281E  1328       MVD   PREPR,IDCB                  SET 'IDCB' INDR
003126 680C 28C8       1329       IO    PREPR                       PREP TTY ATTACHMENT
00312C 6F04 314A       1330       BCC   7,RT236                     CC OKAY, BRANCH
                       1331 *
003130 70AE            1332       CPLSR R5                          SAVE COND CODE
003132 356A            1333       SRL   13,R5                       *
003134 C528 2823       1334       MVB   R5,RIOCC                    *
003138 4124 2952       1335       MVA   MSG03,R1                    MOVE MESSAGE TO BUFFER
00313C 4224 282C       1336       MVA   BUFFR,R2                    *
003140 4724 0025       1337       MVWI  MSG04-MSG03,R7              *
003144 2944            1338       MVFN  (R1),(P2)                   *
003146 6802 3664       1339       B     PRINT                       OUTPUT THE MESSAGE
                       1340 *
00314A 4020 281C 0010  1341 RT236 MVWI  X'10',CKPT                  *>*>*> R 2, CP 10
003150 8028 286E 2822  1342       MVB   CC7,XIOCC                   SET 'EXPECTED COND CODE' INDR
003156 9028 28DC 281E  1343       MVD   WRITE,IDCB                  SET 'IDCB' INDR
00315C 680C 28DC       1344       IO    WRITE                       ATTEMPT TO CAUSE AN INT TO TEST PREP
003160 6F04 317E       1345       BCC   7,RT23C                     IF ACCEPTED, BRANCH
                       1346 *
003164 70AE            1347       CPLSR R5                          SAVE COND CODE
003166 356A            1348       SRL   13,P5                       *
003168 C528 2823       1349       MVB   R5,RIOCC                    *
00316C 4124 29DD       1350       MVA   MSG06,R1                    MOVE MESSAGE TO BUFFER
003170 4224 282C       1351       MVA   BUFFR,R2                    *
003174 4724 0023       1352       MVWI  MSG07-MSG06,R7              *
003178 2944            1353       MVFN  (R1),(R2)                   *
00317A 6802 3664       1354       B     PRINT                       OUTPUT THE MESSAGE
                       1355 *
00317E 6F03 36AC       1356 RT23C BAL   DEL,R7                      WAIT FOR INTERRUPT
                       1357 *
003182 4020 281C 0011  1358       MVWI  X'11',CKPT                  *>*>*> R 2, CP 11
003188 C825 2880       1359       MVWZ  INTIN,R0                    INTERRUPT OCCUR ? (SHOULD NOT)
00318C 1009            1360       JZ    RT240                       NO, JUMP
```



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 LOCTR  OBJECT TEXT      STMT SOURCE STATEMENT                                  COPYRIGHT IBM CORP 1976
                       1361 *
00318E 4124 2A00       1362       MVA   MSG07,R1                    MOVE MESSAGE TO BUFFER
003192 4224 282C       1363       MVA   BUFFR,R2                    *
003196 4724 002C       1364       MVWI  MSG08-MSG07,R7              *
00319A 2944            1365       MVFN  (R1),(R2)                   *
00319C 6802 3664       1366       B     PRINT                       OUTPUT THE MESSAGE
                       1367 *
                       1369 *
0031A0 4020 281C 0012  1370 RT240 MVWI  X'12',CKPT                  *>*>*> R 2, CP 12
0031A6 8028 286A 2822  1371       MVB   CC1,XIOCC                   SET 'EXPECTED COND CODE' INDR
0031AC 9028 28DC 281E  1372       MVD   WRITE,IDCB                  SET 'IDCB' INDR
0031B2 680C 28DC       1373       IO    WRITE                       FORCE 'BUSY'
0031B6 6904 31D4       1374       BCC   1,RT245                     COND CODE OK, BRANCH
                       1375 *
0031BA 70AE            1376       CPLSR R5                          SAVE COND CODE
0031BC 356A            1377       SRL   13,R5                       *
0031BE C528 2823       1378       MVB   R5,RIOCC                    *
0031C2 4124 2A2C       1379       MVA   MSG08,R1                    MOVE MESSAGE TO BUFFER
0031C6 4224 282C       1380       MVA   BUFFR,R2                    *
0031CA 4724 003F       1381       MVWI  MSG09-MSG08,R7              *
0031CE 2944            1382       MVFN  (R1),(R2)                   *
0031D0 6802 3664       1383       B     PRINT                       OUTPUT THE MESSAGE
                       1384 *
0031D4 6F03 36AC       1385 RT245 BAL   DEL,R7                      WAIT FOR INTERRUPT
                       1386 *
0031D8 4020 281C 0013  1387       MVWI  X'13',CKPT                  *>*>*> R 2, CP 13
0031DE C825 2880       1388       MVWZ  INTIN,R0                    INTERRUPT OCCUR ? (SHOULD NOT)
0031E2 100D            1389       JZ    RT249                       NO, JUMP
                       1390 *
0031E4 70AE            1391       CPLSR R5                          SAVE COND CODE
0031E6 356A            1392       SRL   13,R5                       *
0031E8 C528 2823       1393       MVB   R5,RIOCC                    *
0031EC 4124 2A6B       1394       MVA   MSG09,R1                    MOVE MESSAGE TO BUFFER
0031F0 4224 282C       1395       MVA   BUFFR,R2                    *
0031F4 4724 0033       1396       MVWI  MSG0A-MSG09,R7              *
0031F8 2944            1397       MVFN  (R1),(R2)                   *
0031FA 6802 3664       1398       B     PRINT                       OUTPUT THE MESSAGE
                       1399 *
                       1401 *
0031FE 4020 281C 0014  1402 RT249 MVWI  X'14',CKPT                  *>*>*> R 2, CP 14
003204 8029 287E 28CB  1403       OB    IBIT,PDATA                  SET 'I-BIT' IN PREP FIELD
00320A 8028 286E 2822  1404       MVB   CC7,XIOCC                   SET 'EXPECTED COND CODE' INDRS
003210 8028 286B 2824  1405       MVB   CC2,XINCC                   *
003216 9028 28C8 281E  1406       MVD   PREPR,IDCB                  SET 'IDCB' INDR
00321C 680C 28C8       1407       IO    PREPR                       PREP, ENABLED
003220 6F04 323E       1408       BCC   7,RT24E                     COND CODE OK, BRANCH
                       1409 *
003224 70AE            1410       CPLSR R5                          SAVE COND CODE
003226 356A            1411       SRL   13,R5                       *
003228 C528 2823       1412       MVB   R5,RIOCC                    *
00322C 4124 2952       1413       MVA   MSG03,R1                    MOVE MESSAGE TO BUFFER
003230 4224 282C       1414       MVA   BUFFR,R2                    *
003234 4724 0025       1415       MVWI  MSG04-MSG03,R7              *
003238 2944            1416       MVFN  (R1),(R2)                   *
00323A 6802 3664       1417       B     PRINT                       OUTPUT THE MESSAGE
                       1418 *
00323E 6F03 36AC       1419 RT24E BAL   DEL,R7                      WAIT FOR INTERRUPT
                       1420 *
003242 4020 281C 0015  1421       MVWI  X'15',CKPT                  *>*>*> R 2, CP 15
003248 C825 2880       1422       MVWZ  INTIN,R0                    INTERRUPT OCCUR ? (SHOULD)
00324C 180D            1423       JNZ   RT25A                       YES, JUMP
                       1424 *
00324E 70AE            1425       CPLSR R5                          SAVE COND CODE
003250 356A            1426       SRL   13,R5                       *
003252 C528 2823       1427       MVB   R5,RIOCC                    *
003256 4124 2A9E       1428       MVA   MSG0A,R1                    MOVE MESSAGE TO BUFFER
00325A 4224 282C       1429       MVA   BUFFR,R2                    *
00325E 4724 002C       1430       MVWI  MSG0B-MSG0A,R7              *
003262 2944            1431       MVFN  (R1),(R2)                   *
003264 6802 3664       1432       B     PRINT                       OUTPUT THE MESSAGE
                       1433 *
003268 680C 28CC       1434 RT25A IO    READ                        CLEAR 'READ' BUFFER
                       1435 *
                       1437 *
00326C 8028 28B1 28CB  1438       MVB   LVL1,PDATA                  DISABLE INTERRUPTS
003272 680C 28C8       1439       IO    PREPR                       *
003276 4020 281C 0018  1440       MVWI  X'18',CKPT                  *>*>*> R 2, CP 18
00327C 8028 286E 2822  1441       MVB   CC7,XIOCC                   SET 'EXPECTED COND CODE' INDRS
003282 8028 286E 2824  1442       MVB   CC7,XINCC                   *
003288 9028 28DC 281E  1443       MVD   WRITE,IDCB                  SET 'IDCB' INDR
00328E 680C 28DC       1444       IO    WRITE                       FORCE INTERRUPT
003292 6F04 32B0       1445       BCC   7,RT25E                     IF COND CODE OK, BRANCH
                       1446 *
003296 70AE            1447       CPLSR R5                          SAVE COND CODE
003298 356A            1448       SRL   13,R5                       *
00329A C528 2823       1449       MVB   R5,RIOCC                    *
00329E 4124 29DD       1450       MVA   MSG06,R1                    MOVE MESSAGE TO BUFFER
0032A2 4224 282C       1451       MVA   BUFFR,R2                    *
0032A6 4724 0023       1452       MVWI  MSG07-MSG06,R7              *
0032AA 2944            1453       MVFN  (R1),(R2)                   *
0032AC 6802 3664       1454       B     PRINT                       OUTPUT THE MESSAGE
                       1455 *
0032B0 6F03 36AC       1456 RT25E BAL   DEL,R7                      TEST DELAYS
                       1457 *                                       **** ******
0032B4 6F03 36AC       1458       BAL   DEL,R7                      **** ******
                       1459 *                                       **** ******
0032B8 6F03 36AC       1460       BAL   DEL,R7                      **** ******
                       1461 *                                       **** ******
0032BC 8029 287E 28CB  1462       OB    IBIT,PDATA                  ENABLE INTERRUPTS
0032C2 680C 28C8       1463       IO    PREPR                       *
0032C6 6F03 36AC       1464       BAL   DEL,R7                      WAIT FOR INTERRUPT
                       1465 *
0032CA 4020 281C 0019  1466       MVWI  X'19',CKPT                  *>*>*> R 2, CP 19
0032D0 C825 2880       1467       MVWZ  INTIN,R0                    INTERRUPT OCCUP ? (SHOULD)
0032D4 1809            1468       JNZ   RT262                       YES, JUMP
                       1469 *
0032D6 4124 2ACA       1470       MVA   MSG0B,R1                    MOVE MESSAGE TO BUFFER
0032DA 4224 282C       1471       MVA   BUFFR,R2                    *
0032DE 4724 002C       1472       MVWI  MSG0C-MSG0B,R7              *
0032E2 2944            1473       MVFN  (R1),(R2)                   *
0032E4 6802 3664       1474       B     PRINT                       OUTPUT THE MESSAGE
                       1475 *
                       1477 *
                       1478 ** TEST PREPARE TO LEVEL 2
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976

                           1479 *
0032E8  4020 281C 001A     1480 RT262 MVWI  X'1A',CKPT                          *>*>*> R 2, CP 1A
0032EE  8028 28B2 28CB     1481       MVB   LVL2,PDATA          SET 'PREP' IDCB TO LVL 2, DISABLED
0032F4  8028 286E 2822     1482       MVB   CC7,XIOCC           SET 'EXPECTED COND CODE' INDRS
0032FA  8028 2870 2824     1483       MVB   CCX,XINCC           *
003300  9028 28C8 281E     1484       MVD   PREPR,IDCB          SET 'IDCB' INDR
003306  680C 28C8          1485       IO    PREPR               PREP TTY ATTACHMENT
00330A  6F04 3328          1486       BCC   7,RT267             CC OKAY, BRANCH
                           1487 *
00330E  70AE               1488       CPLSR R5                  SAVE COND CODE
003310  356A               1489       SRL   13,R5               *
003312  C528 2823          1490       MVB   R5,RIOCC            *
003316  4124 2952          1491       MVA   MSG03,R1            MOVE MESSAGE TO BUFFER
00331A  4224 282C          1492       MVA   BUFFR,R2            *
00331E  4724 0025          1493       MVWI  MSG04-MSG03,R7      *
003322  2944               1494       MVFN  (R1),(R2)           *
003324  6802 3664          1495       B     PRINT               OUTPUT THE MESSAGE
                           1496 *
003328  4020 281C 001B     1497 RT267 MVWI  X'1B',CKPT                          *>*>*> R 2, CP 1B
00332E  8028 286E 2822     1498       MVB   CC7,XIOCC           SET 'EXPECTED COND CODE' INDR
003334  9028 28DC 281E     1499       MVD   WRITE,IDCB          SET 'IDCB' INDR
00333A  680C 28DC          1500       IO    WRITE               ATTEMPT TO CAUSE AN INT TO TEST PREP
00333E  6F04 335C          1501       BCC   7,RT26C             IF ACCEPTED, BRANCH
                           1502 *
003342  70AE               1503       CPLSR R5                  SAVE COND CODE
003344  356A               1504       SRL   13,R5               *
003346  C528 2823          1505       MVB   R5,RIOCC            *
00334A  4124 29DD          1506       MVA   MSG06,R1            MOVE MESSAGE TO BUFFER
00334E  4224 282C          1507       MVA   BUFFR,R2            *
003352  4724 0023          1508       MVWI  MSG07-MSG06,R7      *
003356  2944               1509       MVFN  (R1),(R2)           *
003358  6802 3664          1510       B     PRINT               OUTPUT THE MESSAGE
                           1511 *
                           1513 *
00335C  6F03 36AC          1514 RT26C BAL   DEL,R7              WAIT FOR INTERRUPT
                           1515 *
003360  4020 281C 001C     1516       MVWI  X'1C',CKPT                          *>*>*> R 2, CP 1C
003366  C825 2880          1517       MVWZ  INTIN,R0            INTERRUPT OCCUR ? (SHOULD NOT)
00336A  100D               1518       JZ    RT270               NO, JUMP
                           1519 *
00336C  70AE               1520       CPLSR R5                  SAVE COND CODE
00336E  356A               1521       SRL   13,R5               *
003370  C528 2823          1522       MVB   R5,RIOCC            *
003374  4124 2A00          1523       MVA   MSG07,R1            MOVE MESSAGE TO BUFFER
003378  4224 282C          1524       MVA   BUFFR,R2            *
00337C  4724 002C          1525       MVWI  MSG08-MSG07,R7      *
003380  2944               1526       MVFN  (R1),(R2)           *
003382  6802 3664          1527       B     PRINT               OUTPUT THE MESSAGE
                           1528 *
003386  4020 281C 001D     1529 RT270 MVWI  X'1D',CKPT                          *>*>*> R 2, CP 1D
00338C  8028 286E 2822     1530       MVB   CC7,XIOCC           SET 'EXPECTED COND CODE' INDR
003392  9028 28DC 281E     1531       MVD   WRITE,IDCB          SET 'IDCB' INDR
003398  680C 28DC          1532       IO    WRITE               FORCE 'BUSY'
00339C  6904 33BA          1533       BCC   1,RT275             COND CODE OK, BRANCH
                           1534 *
0033A0  70AE               1535       CPLSR R5                  SAVE COND CODE
0033A2  356A               1536       SRL   13,R5               *
0033A4  C528 2823          1537       MVB   R5,RIOCC            *
0033A8  4124 2A2C          1538       MVA   MSG08,R1            MOVE MESSAGE TO BUFFER
0033AC  4224 282C          1539       MVA   BUFFR,R2            *
0033B0  4724 003F          1540       MVWI  MSG09-MSG08,R7      *
0033B4  2944               1541       MVFN  (R1),(R2)           *
0033B6  6802 3664          1542       B     PRINT               OUTPUT THE MESSAGE
                           1543 *
                           1545 *
0033BA  6F03 36AC          1546 RT275 BAL   DEL,R7              WAIT FOR INTERRUPT
                           1547 *
0033BE  4020 281C 001E     1548       MVWI  X'1E',CKPT                          *>*>*> R 2, CP 1E
0033C4  C825 2880          1549       MVWZ  INTIN,R0            INTERRUPT OCCUR ? (SHOULD NOT)
0033C8  100D               1550       JZ    RT279               NO, JUMP
                           1551 *
0033CA  70AE               1552       CPLSR R5                  SAVE COND CODE
0033CC  356A               1553       SRL   13,R5               *
0033CE  C528 2823          1554       MVB   R5,RIOCC            *
0033D2  4124 2A6B          1555       MVA   MSG09,R1            MOVE MESSAGE TO BUFFER
0033D6  4224 282C          1556       MVA   BUFFR,R2            *
0033DA  4724 0033          1557       MVWI  MSG0A-MSG09,R7      *
0033DE  2944               1558       MVFN  (R1),(R2)           *
0033E0  6802 3664          1559       B     PRINT               OUTPUT THE MESSAGE
                           1560 *
0033E4  4020 281C 001F     1561 RT279 MVWI  X'1F',CKPT                          *>*>*> R 2, CP 1F
0033EA  8029 287E 28CB     1562       OB    IBIT,PDATA          SET 'I-BIT' IN PREP FIELD
0033F0  8028 286E 2822     1563       MVB   CC7,XIOCC           SET 'EXPECTED COND CODE' INDRS
0033F6  8028 286B 2824     1564       MVB   CC2,XINCC           *
0033FC  9028 28C8 281E     1565       MVD   PREPR,IDCB          SET 'IDCB' INDR
003402  680C 28C8          1566       IO    PREPR               PREP, ENABLED
003406  6F04 3424          1567       BCC   7,RT27E             COND CODE OK, BRANCH
                           1568 *
00340A  70AE               1569       CPLSR R5                  SAVE COND CODE
00340C  356A               1570       SRL   13,R5               *
00340E  C528 2823          1571       MVB   R5,RIOCC            *
003412  4124 2952          1572       MVA   MSG03,R1            MOVE MESSAGE TO BUFFER
003416  4224 282C          1573       MVA   BUFFR,R2            *
00341A  4724 0025          1574       MVWI  MSG04-MSG03,R7      *
00341E  2944               1575       MVFN  (R1),(R2)           *
003420  6802 3664          1576       B     PRINT               OUTPUT THE MESSAGE
                           1577 *
003424  6F03 36AC          1578 RT27E BAL   DEL,R7              WAIT FOR INTERRUPT
                           1579 *
003428  4020 281C 0020     1580       MVWI  X'20',CKPT                          *>*>*> R 2, CP 20
00342E  C825 2880          1581       MVWZ  INTIN,R0            INTERRUPT OCCUR ? (SHOULD)
003432  1809               1582       JNZ   RT28A               YES, JUMP
                           1583 *
003434  4124 2A9E          1584 RT280 MVA   MSG0A,R1            MOVE MESSAGE TO BUFFER
003438  4224 282C          1585       MVA   BUFFR,R2            *
00343C  4724 002C          1586       MVWI  MSG0B-MSG0A,R7      *
003440  2944               1587       MVFN  (R1),(R2)           *
003442  6802 3664          1588       B     PRINT               OUTPUT THE MESSAGE
                           1589 *
003446  680C 28CC          1590 RT28A IO    READ                CLEAR 'READ' BUFFER
                           1591 *
                           1593 *
00344A  8028 28B2 28CB     1594       MVB   LVL2,PDATA          DISABLE INTERRUPTS
003450  680C 28C8          1595       IO    PREPR               *
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976

003454  4020 281C 0023     1596       MVWI  X'23',CKPT                          *>*>*> R 2, CP 23
00345A  8028 286E 2822     1597       MVB   CC7,XIOCC           SET 'EXPECTED COND CODE' INDRS
003460  8028 286E 2824     1598       MVB   CC7,XINCC           *
003466  9028 28DC 281E     1599       MVD   WRITE,IDCB          SET 'IDCB' INDR
00346C  680C 28DC          1600       IO    WRITE               FORCE INTERRUPT
003470  6F04 348E          1601       BCC   7,RT28F             IF COND CODE OK, BRANCH
                           1602 *
003474  70AE               1603       CPLSR R5                  SAVE COND CODE
003476  356A               1604       SRL   13,R5               *
003478  C528 2823          1605       MVB   R5,RIOCC            *
00347C  4124 29DD          1606       MVA   MSG06,R1            MOVE MESSAGE TO BUFFER
003480  4224 282C          1607       MVA   BUFFR,R2            *
003484  4724 0023          1608       MVWI  MSG07-MSG06,R7      *
003488  2944               1609       MVFN  (R1),(R2)           *
00348A  6802 3664          1610       B     PRINT               OUTPUT THE MESSAGE
                           1611 *
00348E  6F03 36AC          1612 RT28F BAL   DEL,R7              TEST DELAYS
                           1613 *                               **** ******
003492  6F03 36AC          1614       BAL   DEL,R7              **** ******
                           1615 *                               **** ******
003496  6F03 36AC          1616       BAL   DEL,R7              **** ******
                           1617 *                               **** ******
00349A  8029 287E 28CB     1618       OB    IBIT,PDATA          ENABLE INTERRUPTS
0034A0  680C 28C8          1619       IO    PREPR               *
0034A4  6F03 36AC          1620       BAL   DEL,R7              WAIT FOR INTERRUPT
                           1621 *
0034A8  4020 281C 0024     1622       MVWI  X'24',CKPT                          *>*>*> R 2, CP 24
0034AE  C825 2880          1623       MVWZ  INTIN,R0            INTERRUPT OCCUR ? (SHOULD)
0034B2  1809               1624       JNZ   RT290               YES, JUMP
                           1625 *
0034B4  4124 2ACA          1626       MVA   MSG0B,R1            MOVE MESSAGE TO BUFFER
0034B8  4224 282C          1627       MVA   BUFFR,R2            *
0034BC  4724 002C          1628       MVWI  MSG0C-MSG0B,R7      *
0034C0  2944               1629       MVFN  (R1),(R2)           *
0034C2  6802 3664          1630       B     PRINT               OUTPUT THE MESSAGE
                           1631 *
0034C6  680C 28CC          1632 RT290 IO    READ                CLEAR 'READ' BUFFER
0034CA  5041               1633       J     RT05                JUMP
                           1634 *
                           1636 ********************************************************************
                           1637 *
                           1638 *     NAME: ISS02 (RT02 INTERRUPT SERVICE SUBROUTINE)
                           1639 *
                           1640 *     PURPOSE: TO SERVICE INTERRUPTS FROM 'RT02' AND TO DETERMINE IF:
                           1641 *              THE PROPER LEVEL WAS UTILIZED FOR THE INTERRUPT, THE
                           1642 *              CORRECT DEVICE ADDRESS WAS RETURNED, AND THE PROPER
                           1643 *              CONDITION CODE WAS SET UPON INTERRUPTING.
                           1644 *
                           1645 *     METHOD: THE CONDITION CODE IS TESTED AND ANY ERROR TRAPPED. ALSO,
                           1646 *             ANY DEVICE ADDR OR LEVEL ERROR IS LOGGED.
                           1647 *
                           1648 ********************************************************************
                           1649 *
0034CC  70AE               1650 ISS02 CPLSR R5                  SAVE COND CODE
0034CE  356A               1651       SRL   13,R5               *
0034D0  C528 2825          1652       MVB   R5,RINCC            *
0034D4  C728 2826          1653       MVB   R7,IDRDA            SET 'DVC ADDR' INDR
0034D8  78F9               1654       CPCL  R7                  SET 'LEVEL' INDR
0034DA  C728 2827          1655       MVB   R7,LEVEL            *
0034DE  802B 2824 2825     1656       CB    XINCC,RINCC         GET CORRECT INTERRUPT CC ?
0034E4  100B               1657       JE    S0200               YES, JUMP
                           1658 *
0034E6  4124 2B73          1659       MVA   MSG0F,R1            MOVE MESSAGE TO BUFFER
0034EA  4224 282C          1660       MVA   BUFFR,R2            *
0034EE  4724 001F          1661       MVWI  MSG10-MSG0F,R7      *
0034F2  2944               1662       MVFN  (R1),(R2)           *
0034F4  6F03 356C          1663       BAL   OFF,R7              GET ON LEVEL 3
                           1664 *
0034F8  6802 3664          1665       B     PRINT               OUTPUT THE MESSAGE
                           1666 *
0034FC  C120 28CB          1667 S0200 MVB   PDATA,R1            GET EXPECTED LEVEL
003500  310A               1668       SRL   1,R1                GET RID OF 'I-BIT'
003502  C124 2827          1669       CB    LEVEL,R1            ACTUAL = EXPECTED ?
003506  100B               1670       JE    S0207               YES, JUMP
                           1671 *
003508  4124 2AF6          1672       MVA   MSG0C,R1            MOVE MESSAGE TO BUFFER
00350C  4224 282C          1673       MVA   BUFFR,R2            *
003510  4724 001B          1674       MVWI  MSG0D-MSG0C,R7      *
003514  2944               1675       MVFN  (R1),(R2)           *
003516  6F03 356C          1676       BAL   OFF,R7              GET ON LEVEL 3
                           1677 *
00351A  6802 3664          1678       B     PRINT               OUTPUT THE MESSAGE
                           1679 *
                           1681 *
00351E  802B 19D0 2826     1682 S0207 CB    DEVADD,IDRDA        CHECK FOR CORRECT DEVICE ADDRESS
003524  100B               1683       JE    S0208               OK, JUMP
                           1684 *
003526  4124 2B11          1685       MVA   MSG0D,R1            MOVE MESSAGE TO BUFFER
00352A  4224 282C          1686       MVA   BUFFR,R2            *
00352E  4724 0043          1687       MVWI  MSG0E-MSG0D,R7      *
003532  2944               1688       MVFN  (R1),(R2)           *
003534  6F03 356C          1689       BAL   OFF,R7              GET ON LEVEL 3
                           1690 *
003538  6802 3664          1691       B     PRINT               OUTPUT THE MESSAGE
                           1692 *
00353C  05FE               1693 S0208 ABI   -2,R5               WAS OUR ENTRY CC = 2 ?
00353E  1803               1694       JNZ   S0209               NO, JUMP
                           1695 *
003540  8028 286C 2824     1696       MVB   CC3,XINCC           YES.  EXPECT IMMEDIATE ENTRY, CC 3
003546  4020 2880 0001     1697 S0209 MVWI  1,INTIN             SET 'INT OCCURRED' INDR
00354C  6102               1698       LEX   2                   RETURN
                           1699 *
                           1701 ********************************************************************
                           1702 *
                           1703 *     NAME: RT05 (TERMINATION)
                           1704 *
                           1705 *     PURPOSE: TO TERMINATE TESTING OF THE CURRENT DEVICE.
                           1706 *
                           1707 *     METHOD: THE DEVICE IS RESET, THEN CONTROL IS PASSED TO DCP/MDI.
                           1708 *
                           1709 ********************************************************************
                           1710 *
00354E  4020 281A 0005     1711 RT05  MVWI  5,RTNE                          *>*>*> R 5
003554  4020 281C 0001     1712       MVWI  1,CKPT                          *>*>*>      CP  1
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                           1713         MVWI  0,PDATA-1            UN-PREPARE TTY ATTACHMENT
                           1714         IO    PREPF                *
                           1715         IO    RST                  RESET THE TTY ATTACHMENT
                           1716         B     GDEND                GO END IT
                           1717 *
                           1719 ********************************************************************
                           1720 *
                           1721 *      NAME: EXIT TO LEVEL THREE SUBROUTINE
                           1722 *
                           1723 *      PURPOSE: TO RESET ANY UPPER LEVEL, RESUMING EXECUTION ON LEVEL 3
                           1724 *
                           1725 *      CALLING SEQUENCE: BAL   OFF,R7
                           1726 *
                           1727 *      RETURN: NSI
                           1728 *
                           1729 ********************************************************************
                           1730 *
003560 680C 28C8           1731 OFF   MVW   R7,OFFR+2            SET RETURN LINK
003564 680C 28D8           1732       MVBI  3,R0                SAVE LEVEL 3 STUFF
003568 6802 35E8           1733       CPLB  R0,LSB              *
                           1734       MVA   OFFR,LSB            SET RE-ENTRY ADDRESS FOR LEVEL 3
                           1735       OWI   X'00D0',LSR         FORCE 'SS, IPF & SM' BITS ON
                           1736       SELB  R0,LSB              SET LEVEL 3 PENDING
                           1737       ABI   -1,R0               RESET LEVEL 2 (IF CURRENT, ENTER AT
                           1738       SELB  R0,DLSB             * 'OFFR' ON LEVEL 3)
                           1739       ABI   -1,R0               RESET LEVEL 1 (IF CURRENT, ENTER AT
                           1740       SELB  R0,DLSB             * 'OFFR' ON LEVEL 3)
                           1741       LEX   X'0F'               EXIT (ENTER AT 'OFFR' ON LEVEL 3)
                           1742 *
                           1743 OFFR  B     *-*                 RETURN
                           1744 *
                           1746 ********************************************************************
                           1747 *
                           1748 *      NAME: ENDING SUBROUTINES
                           1749 *
                           1750 *      PURPOSE: END EXECUTION AFTER EITHER GOOD OR ERROR RUN
                           1751 *
                           1752 *      CALLING SEQUENCE: BRANCH TO CORRECT ENTRY POINT
                           1753 *
                           1754 *      RETURN: DCP
                           1755 *
                           1756 ********************************************************************
                           1757 *
                           1758 ** 'ERROR END' ROUTINE
                           1759 *
003598 6301                1760 EREND DIS   1                     DISABLE INTERRUPTS
00359A 4020 181A 0001      1761       MVWI  1,TUWORK            SET ERROR CONDITION FOR MDI
                           1762 *
                           1763 ** 'ERROR STATUS OUTPUT' ROUTINE
                           1764 *
0035A0 4724 28B8           1765       MVA   PARM1,R7            CONVERT THE 'RTNE' NUMBER FROM HEX TO
0035A4 4020 28B8 0002      1766       MVWI  2,PARM1             * EBCDIC AND INSTALL IT IN THE 'RTNE/
0035AA 4020 28BA 281A      1767       MVA   RTNE,PARM2          * CKPT' OUTPUT STRING
0035B0 4020 28BC 2CF0      1768       MVA   IR,PARM3            *
0035B6 601A                1769       SVC   HTOE                *
                           1770 *
0035B8 4020 28B8 0001      1771       MVWI  1,PARM1             CONVERT THE 'CKPT' NUMBER FROM HEX TO
0035BE 4020 28BA 281D      1772       MVA   CKPT+1,PARM2        * EBCDIC AND INSTALL IT IN THE 'RTNE/
0035C4 4020 28BC 2D06      1773       MVA   ICP,PARM3           * CKPT' OUTPUT STRING
0035CA 601A                1774       SVC   HTOE                *
                           1775 *
0035CC 8028 2829 2875      1776       MVB   BPHDR,CTLSW         NO NEED FOR MESSAGE HEADER THIS TIME
0035D2 4424 2CE0           1777       MVA   IRCPM,R4            MOVE MESSAGE STRING TO BUFFER
0035D6 4524 282C           1778       MVA   BUFFR,R5            *
0035DA 4724 002A           1779       MVWI  IRCND-IRCPM,R7      *
0035DE 2CA4                1780       MVFN  (R4),(R5)           *
0035E0 4724 2876           1781       MVA   CTLBK,R7            OUTPUT THE 'PTNE' AND 'CKPT' INDRS
0035E4 6000                1782       SVC   OUT                 *
                           1783 *
0035E6 5004                1784       J     END                 CLEAN UP AND QUIT
                           1785 *
                           1786 ** 'GOOD END' ROUTINE
                           1787 *
0035E8 6301                1788 GDEND DIS   1                     DISABLE INTERRUPTS
0035EA 4020 181A 0000      1789       MVWI  0,TUWORK            SET STATUS WORD TO 0
0035F0 882C 28C2 2878      1790 END   MVW   SDCP,DAPTR*         RESTORE DCP XFER VECTOR
0035F6 C825 28C0           1791       MVWZ  SAVER,R0            RESTORE DCP MCK RTN ADDR AND CLEAR SW
0035FA 680D 000A           1792       MVW   R0,MCK              *
0035FE 6201                1793       EN    1                   ENABLE INTERRUPTS
003600 6802 0000           1794 GOBCK B     *-*                 RETURN TO DCP/MDI
                           1795 *
                           1797 ********************************************************************
                           1798 *
                           1799 *      NAME: MACHINE CHECK SUBROUTINE
                           1800 *
                           1801 *      PURPOSE: TO FIELD MACHINE CHECKS, SHOULD THEY OCCUR, TERMINATE
                           1802 *               THE PROGRAM, PRINT A MESSAGE TO THAT EFFECT, AND RETURN
                           1803 *               TO THE CONTROLLER
                           1804 *
                           1805 *      CALLING SEQUENCE: HARDWARE BRANCH VIA 'MACHINE CHECK' SIA
                           1806 *
                           1807 *      RETURN: DCP
                           1808 *
                           1809 ********************************************************************
                           1810 *
003604 582F 28B6           1811 MACHK CPPSR MCPSW                 SAVE PSW
003608 4724 28B8           1812       MVA   PARM1,R7            SET CONTROL BLOCK ADDRESS
00360C 4020 28B8 0002      1813       MVWI  2,PARM1             CONVERT THE STEP NUMBER FROM HEX TO
003612 4020 28BA 180C      1814       MVA   STEPNUM,PARM2       * EBCDIC AND INSTALL IT IN THE 'MACHK
003618 4020 28BC 2D22      1815       MVA   STEP,PARM3          * STATUS' MESSAGE
00361E 601A                1816       SVC   HTOE                *
                           1817 *
003620 4020 28BA 28B6      1818       MVA   MCPSW,PARM2         CONVERT THE SAVED 'MACHK PSW' FROM
003626 4020 28BC 2D2E      1819       MVA   PSW,PARM3           * HEX TO EBCDIC AND INSTALL IT IN THE
00362C 601A                1820       SVC   HTOE                * 'MACHK STATUS' MESSAGE STRING
                           1821 *
00362E 4020 28BA 2882      1822       MVA   LSB,PARM2           CONVERT THE FAILING ADDRESS FROM HEX
003634 4020 28BC 2D3A      1823       MVA   IAR,PARM3           * TO EBCDIC AND INSTALL IT IN THE
00363A 601A                1824       SVC   HTOE                * 'MACHK STATUS' MESSAGE STRING
                           1825 *
00363C 4020 28B8 0004      1826       MVWI  4,PARM1             CONVERT THE LAST IDCB FROM HEX TO
003642 4020 28BA 281E      1827       MVA   IDCB,PARM2          * EBCDIC AND INSTALL IT IN THE 'MACHK
003648 4020 28BC 2D46      1828       MVA   IDCBX,PARM3         * STATUS' MESSAGE STRING
00364E 601A                1829       SVC   HTOE                *
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 LOCTR  OBJECT TEXT        STMT SOURCE STATEMENT                    COPYRIGHT IBM CORP 1976
                           1830 *
003650 8828 28B3 282A      1831       MVW   MCKCD,PGMID         SET PROGRAM ID TO 'DCP/MDI' (FAKE IT)
003656 4124 2D0C           1832       MVA   MCMSG,R1            MOVE MESSAGE STRING TO BUFFER
00365A 4224 282C           1833       MVA   BUFFR,R2            *
00365E 4724 0044           1834       MVWI  MCMND-MCMSG,R7      *
003662 2944                1835       MVFN  (R1),(R2)           *
                           1836 *
                           1838 ********************************************************************
                           1839 *
                           1840 *      NAME: PRINT SUBROUTINE
                           1841 *
                           1842 *      PURPOSE: TO ISSUE 'SVC OUT' COMMANDS FOR PRINTING/DISPLAYING
                           1843 *
                           1844 *      METHOD: ALL POINTERS ARE SET, THE 'SVC OUT' ISSUED, THEN EXIT TO
                           1845 *              'EREND' SINCE PRINTING/DISPLAYING IS DONE ONLY IN THE
                           1846 *              CASE OF ERRORS.
                           1847 *
                           1848 *      CALLING SEQUENCE: B    PRINT
                           1849 *
                           1850 *      RETURN: B   EREND
                           1851 *
                           1852 ********************************************************************
                           1853 *
003664 6808 180C           1854 PRINT MVW   STEPNUM,R0           SET STEP NUMBER,
003668 C120 19D0           1855       MVB   DEVADD,R1           * DEVICE ADDRESS,
00366C 4224 0000           1856       MVWI  0,R2                * (RESERVED)
003670 4324 2818           1857       MVA   TUID,R3             * 'INDRS' POINTER, AND
003674 4724 2876           1858       MVA   CTLBK,R7            * CONTROL BLOCK POINTER
003678 6000                1859       SVC   OUT                 OUTPUT THE MESSAGE
                           1860 *
00367A 6802 3598           1861       B     EREND               GO END IT
                           1862 *
                           1864 ********************************************************************
                           1865 *
                           1866 * THIS SECTION COMPRISES INITIAL SETUP AND FINAL WRAPUP CODE.
                           1867 *
                           1868 * LABEL: T400E    WILL INITIALIZE AN INTERRUPT CONTROL BLOCK TO HANDLE
                           1869 *                 UNEXPECTED INTERRUPTS DURING THE CABLE/WRAP CONNECTOR
                           1870 *                 INTERCHANGE.
                           1871 *
                           1872 * LABEL: T400F    WILL INSTRUCT THE OPERATOR TO RETURN THE DEVICE(S)
                           1873 *                 TO THE ORIGINAL CONFIGURATION.
                           1874 *
                           1875 ********************************************************************
                           1876 *
00367E 68E2 0000           1877 T400D B     (R7)                DO-NOTHING RETURN
                           1878 *
003682 6F0D 36A0           1879 T400E MVW   R7,RTURN+2          SAVE RETURN LINK
003686 4724 36A2           1880       MVA   ICB,R7              GET ADDRESS OF 'CICB' CONTROL BLOCK
00368A 6014                1881       SVC   CICB                CONNECT TO DCP
00368C 5003                1882       J     EXIT                EXIT
                           1883 *
00368E 6F0D 36A0           1884 T400F MVW   R7,RTURN+2          SAVE RETURN LINK
003692 8828 181A 18C8      1885       MVW   TUWORK,TURESUL      SET TEST RESULT
003698 C720 19D0           1886       MVB   DEVADD,R7           GET DEVICE ADDRESS
00369C 6013                1887       SVC   RICB                RELEASE CONTROL BLOCK
00369E 6802 0000           1888 RTURN B     *-*                 EXIT
                           1889 *
0036A2 19D0                1890 ICB   DC    A(DEVADD)           DEVICE ADDRESS POINTER
0036A4 36AA                1891       DC    A(ALEX)             GOOD ADDRESS
0036A6 36AA                1892       DC    A(ALEX)             ERROR ADDRESS
0036A8 0004                1893       DC    X'0004'             ATTN CC
                           1894 *
0036AA 6100                1895 ALEX  LEX   0                   SERVICE EXTRANEOUS INTERRUPTS
                           1896 *
                           1897 ********************************************************************
                           1898 *
                           1899 *      NAME - DELAY SUBROUTINE.
                           1900 *
                           1901 *      PURPOSE - TO PROVIDE AT LEAST A 288 MILLISEC DELAY BEFORE
                           1902 *                RETURNING TO THE CALLER.
                           1903 *
                           1904 *      CALLING
                           1905 *      SEQUENCE - BAL   DEL,R7
                           1906 *
                           1907 *      RETURN - TO THE ADDRESS CONTAINED IN R7
                           1908 *
                           1909 ********************************************************************
0036AC 0CFF                1910 DEL   MVBI  -1,R4
0036AE BCFF                1911 DEL1  JCT   DEL1,R4
0036B0 0CFF                1912       MVBI  -1,R4
0036B2 BCFF                1913 DEL2  JCT   DEL2,R4
0036B4 68B2 0000           1914       B     (R7)                RETURN
                           1915 *
000000                     1916       END
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CROSS-REFERENCE LISTING

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DECLARED  NAME     ATTRIBUTES AND REFERENCES
      42  @FIXT      ABSOLUTE. HEX VALUE(00000101)
                     399   455   461   464   476   482   488   491
      44  @GOTO      ABSOLUTE. HEX VALUE(00000200)
                     411   434
      49  @NVLD      ABSOLUTE. HEX VALUE(00000600)
                     429
      41  @QUES      ABSOLUTE. HEX VALUE(00000100)
                     396   431   452   458   467   473   479   485
      47  @QUXX      ABSOLUTE. HEX VALUE(00000400)
                     402
      43  @STOP      ABSOLUTE. HEX VALUE(00000102)
                     470
      48  @TUXX      ABSOLUTE. HEX VALUE(00000500)
                     417   440
    1895  ALEX       ADDRESS. HEX LOCATION(000036AA) IN CSECT(I4001   ) LENGTH(2)
                     1891  1892
     742  ATTID      ADDRESS. HEX LOCATION(00002828) IN CSECT(I4001   ) LENGTH(1)
                     1038
     743  BPHDR      ADDRESS. HEX LOCATION(00002829) IN CSECT(I4001   ) LENGTH(1)
                     1776
     747  BUFFR      ADDRESS. HEX LOCATION(0000282C) IN CSECT(I4001   ) LENGTH(2)
                      763  1032  1043  1066  1103  1121  1133  1149  1163
                     1179  1195  1209  1224  1236  1261  1273  1295  1315
                     1336  1351  1363  1380  1395  1414  1429  1451  1471
                     1492  1507  1524  1539  1556  1573  1585  1607  1627
                     1660  1673  1686  1778  1833
      756  CCX        ADDRESS. HEX LOCATION(00002870) IN CSECT(I4001   ) LENGTH(2)
                     1003  1327  1483
      751  CC1        ADDRESS. HEX LOCATION(0000286A) IN CSECT(I4001   ) LENGTH(1)
                     1215  1371
      752  CC2        ADDRESS. HEX LOCATION(0000286B) IN CSECT(I4001   ) LENGTH(1)
                     1405  1564
      753  CC3        ADDRESS. HEX LOCATION(0000286C) IN CSECT(I4001   ) LENGTH(1)
                     1696
      755  CC7        ADDRESS. HEX LOCATION(0000286E) IN CSECT(I4001   ) LENGTH(1)
                     1023  1094  1110  1140  1170  1186  1247  1248  1285
                     1286  1326  1342  1404  1441  1442  1482  1498  1530
                     1563  1597  1598
      637  CICB       ABSOLUTE. HEX VALUE(00000014)
                     1881
      733  CKPT       ADDRESS. HEX LOCATION(0000281C) IN CSECT(I4001   ) LENGTH(2)
                      982  1020  1037  1092  1108  1128  1138  1158  1168
                     1184  1204  1214  1231  1245  1268  1310  1324  1341
                     1358  1370  1387  1402  1421  1440  1466  1480  1497
                     1516  1529  1548  1561  1580  1596  1622  1712  1772
      805  CRTDA      ADDRESS. HEX LOCATION(000028C5) IN CSECT(I4001   ) LENGTH(1)
                      990
      763  CTLBK      ADDRESS. HEX LOCATION(00002876) IN CSECT(I4001   ) LENGTH(2)
                     1781  1858
      762  CTLSW      ADDRESS. HEX LOCATION(00002875) IN CSECT(I4001   ) LENGTH(1)
                     1776
      767  DAPTR      ADDRESS. HEX LOCATION(00002878) IN CSECT(I4001   ) LENGTH(2)
                      999  1790
      768  DDB        ADDRESS. HEX LOCATION(0000287A) IN CSECT(I4001   ) LENGTH(2)
                     1001  1021  1093
     1910  DEL        ADDRESS. HEX LOCATION(000036AC) IN CSECT(I4001   ) LENGTH(2)
                     1126  1156  1202  1229  1266  1300  1302  1304  1308
                     1356  1385  1419  1456  1458  1460  1464  1514  1546
                     1578  1612  1614  1616  1620
     1911  DEL1       ADDRESS. HEX LOCATION(000036AE) IN CSECT(I4001   ) LENGTH(2)
                     1911
     1913  DEL2       ADDRESS. HEX LOCATION(000036B2) IN CSECT(I4001   ) LENGTH(2)
                     1913
      108  DEVADD     ADDRESS. HEX LOCATION(000019D0) IN CSECT(I4001   ) LENGTH(1)
                      988  1682  1855  1886  1890
      774  DLSB       ADDRESS. HEX LOCATION(00002898) IN CSECT(I4001   ) LENGTH(2)
                     1738  1740
       70  DUMMY      ABSOLUTE. HEX VALUE(00000000)
                      387   493   511
      825  DVCID      ADDRESS. HEX LOCATION(000028D7) IN CSECT(I4001   ) LENGTH(1)
                     1038  1041
     1790  END        ADDRESS. HEX LOCATION(000035F0) IN CSECT(I4001   ) LENGTH(6)
                     1784
      494  ENTPT      ADDRESS. HEX LOCATION(000025F2) IN CSECT(I4001   ) LENGTH(1)
                      201
       50  EQ         ABSOLUTE. HEX VALUE(00000000)
                      420   443
     1760  EREND      ADDRESS. HEX LOCATION(00003598) IN CSECT(I4001   ) LENGTH(2)
                     1861
      623  EXIT       ABSOLUTE. HEX VALUE(00000006)
                     1882
      519  F00064     ADDRESS. HEX LOCATION(00002600) IN CSECT(I4001   ) LENGTH(1)
                      400
      523  F00146     ADDRESS. HEX LOCATION(00002612) IN CSECT(I4001   ) LENGTH(1)
                      412
      531  F00164     ADDRESS. HEX LOCATION(00002642) IN CSECT(I4001   ) LENGTH(1)
                      435
      535  F00173     ADDRESS. HEX LOCATION(00002648) IN CSECT(I4001   ) LENGTH(1)
                      456
      539  F00180     ADDRESS. HEX LOCATION(0000265A) IN CSECT(I4001   ) LENGTH(1)
                      462
      543  F00183     ADDRESS. HEX LOCATION(0000266E) IN CSECT(I4001   ) LENGTH(1)
                      465
      547  F00190     ADDRESS. HEX LOCATION(00002692) IN CSECT(I4001   ) LENGTH(1)
                      471
      553  F00218     ADDRESS. HEX LOCATION(000026C8) IN CSECT(I4001   ) LENGTH(1)
                      477
      563  F00260     ADDRESS. HEX LOCATION(0000273E) IN CSECT(I4001   ) LENGTH(1)
                      483
      567  F00274     ADDRESS. HEX LOCATION(00002762) IN CSECT(I4001   ) LENGTH(1)
                      489
      571  F00278     ADDRESS. HEX LOCATION(0000278C) IN CSECT(I4001   ) LENGTH(1)
                      492
     1788  GDEND      ADDRESS. HEX LOCATION(000035E8) IN CSECT(I4001   ) LENGTH(2)
                     1716
     1794  GOBCK      ADDRESS. HEX LOCATION(00003600) IN CSECT(I4001   ) LENGTH(4)
                      980
      643  HTOE       ABSOLUTE. HEX VALUE(0000001A)
                     1769  1774  1816  1820  1824  1829
      939  IAR        ADDRESS. HEX LOCATION(00002D3A) IN CSECT(I4001   ) LENGTH(2)
                     1823
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CROSS-REFERENCE LISTING

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DECLARED  NAME     ATTRIBUTES AND REFERENCES
      770  IBIT       ADDRESS. HEX LOCATION(0000287E) IN CSECT(I4001   ) LENGTH(1)
                     1139  1246  1306  1403  1462  1562  1618
     1890  ICB        ADDRESS. HEX LOCATION(000036A2) IN CSECT(I4001   ) LENGTH(2)
                     1880
      926  ICP        ADDRESS. HEX LOCATION(00002D06) IN CSECT(I4001   ) LENGTH(2)
                     1773
      734  IDCB       ADDRESS. HEX LOCATION(0000281E) IN CSECT(I4001   ) LENGTH(2)
                     1024  1095  1111  1141  1171  1187  1216  1249  1287
                     1328  1343  1372  1406  1443  1484  1499  1531  1565
                     1599  1827
      941  IDCBX      ADDRESS. HEX LOCATION(00002D46) IN CSECT(I4001   ) LENGTH(2)
                     1828
      739  IDRDA      ADDRESS. HEX LOCATION(00002826) IN CSECT(I4001   ) LENGTH(1)
                     1041  1064  1653  1682
      771  INTIN      ADDRESS. HEX LOCATION(00002880) IN CSECT(I4001   ) LENGTH(2)
                     1022  1119  1159  1205  1232  1269  1311  1359  1388
                     1422  1467  1517  1549  1581  1623  1697
       66  INTRNL     ABSOLUTE. HEX VALUE(00000000)
                      415   438
      924  IR         ADDRESS. HEX LOCATION(00002CF0) IN CSECT(I4001   ) LENGTH(2)
                     1768
      929  IRCND      ADDRESS. HEX LOCATION(00002D0A) IN CSECT(I4001   ) LENGTH(2)
                      929  1779
      923  IRCPM      ADDRESS. HEX LOCATION(00002CE0) IN CSECT(I4001   ) LENGTH(16)
                     1777  1779
     1059  ISS01      ADDRESS. HEX LOCATION(00002E1C) IN CSECT(I4001   ) LENGTH(2)
                     1021
     1650  ISS02      ADDRESS. HEX LOCATION(000034CC) IN CSECT(I4001   ) LENGTH(2)
                     1093
       40  I4001      CSECT. START(00002500) LENGTH(4536) ESDID(1)
                       40
      740  LEVEL      ADDRESS. HEX LOCATION(00002827) IN CSECT(I4001   ) LENGTH(1)
                     1063  1655  1669
      773  LSB        ADDRESS. HEX LOCATION(00002882) IN CSECT(I4001   ) LENGTH(2)
                      793  1733  1734  1736  1822
      793  LSR        ADDRESS. HEX LOCATION(00002886) IN CSECT(I4001   ) LENGTH(1)
                     1735
      778  LVL0       ADDRESS. HEX LOCATION(000028B0) IN CSECT(I4001   ) LENGTH(1)
                     1109  1169  1282
      779  LVL1       ADDRESS. HEX LOCATION(000028B1) IN CSECT(I4001   ) LENGTH(1)
                     1325  1438
      780  LVL2       ADDRESS. HEX LOCATION(000028B2) IN CSECT(I4001   ) LENGTH(1)
                     1481  1594
     1811  MACHK      ADDRESS. HEX LOCATION(00003604) IN CSECT(I4001   ) LENGTH(4)
                      987
      795  MCK        ABSOLUTE. HEX VALUE(0000000A)
                      986   987  1792
      782  MCKCD      ADDRESS. HEX LOCATION(000028B3) IN CSECT(I4001   ) LENGTH(2)
                     1831
      944  MCMND      ADDRESS. HEX LOCATION(00002D50) IN CSECT(I4001   ) LENGTH(2)
                      944  1834
      933  MCMSG      ADDRESS. HEX LOCATION(00002D0C) IN CSECT(I4001   ) LENGTH(14)
                     1832  1834
      783  MCPSW      ADDRESS. HEX LOCATION(000028B6) IN CSECT(I4001   ) LENGTH(2)
                     1811  1818
      917  MSGND      ADDRESS. HEX LOCATION(00002CDE) IN CSECT(I4001   ) LENGTH(2)
                      917
      873  MSG0A      ADDRESS. HEX LOCATION(00002A9E) IN CSECT(I4001   ) LENGTH(43)
                     1237  1272  1274  1396  1428  1430  1557  1584  1586
      876  MSG0B      ADDRESS. HEX LOCATION(00002ACA) IN CSECT(I4001   ) LENGTH(43)
                     1274  1314  1316  1430  1470  1472  1586  1626  1628
      881  MSG0C      ADDRESS. HEX LOCATION(00002AF6) IN CSECT(I4001   ) LENGTH(26)
                     1316  1472  1628  1672  1674
      884  MSG0D      ADDRESS. HEX LOCATION(00002B11) IN CSECT(I4001   ) LENGTH(66)
                     1674  1685  1687
      887  MSG0E      ADDRESS. HEX LOCATION(00002B54) IN CSECT(I4001   ) LENGTH(30)
                     1065  1067  1687
      890  MSG0F      ADDRESS. HEX LOCATION(00002B73) IN CSECT(I4001   ) LENGTH(30)
                     1067  1659  1661
      843  MSG00      ADDRESS. HEX LOCATION(000028E0) IN CSECT(I4001   ) LENGTH(36)
                     1031  1033
      846  MSG01      ADDRESS. HEX LOCATION(00002905) IN CSECT(I4001   ) LENGTH(41)
                     1033  1042  1044
      849  MSG02      ADDRESS. HEX LOCATION(0000292F) IN CSECT(I4001   ) LENGTH(34)
                     1044
      852  MSG03      ADDRESS. HEX LOCATION(00002952) IN CSECT(I4001   ) LENGTH(36)
                     1120  1122  1148  1150  1178  1180  1260  1262  1335
                     1337  1413  1415  1491  1493  1572  1574
      855  MSG04      ADDRESS. HEX LOCATION(00002977) IN CSECT(I4001   ) LENGTH(43)
                     1122  1132  1134  1150  1180  1262  1337  1415  1493
                     1574
      858  MSG05      ADDRESS. HEX LOCATION(000029A3) IN CSECT(I4001   ) LENGTH(57)
                     1134  1162  1164
      861  MSG06      ADDRESS. HEX LOCATION(000029DD) IN CSECT(I4001   ) LENGTH(34)
                     1164  1194  1196  1294  1296  1350  1352  1450  1452
                     1506  1508  1606  1608
      864  MSG07      ADDRESS. HEX LOCATION(00002A00) IN CSECT(I4001   ) LENGTH(43)
                     1196  1208  1210  1296  1352  1362  1364  1452  1508
                     1523  1525  1608
      867  MSG08      ADDRESS. HEX LOCATION(00002A2C) IN CSECT(I4001   ) LENGTH(62)
                     1210  1223  1225  1364  1379  1381  1525  1538  1540
      870  MSG09      ADDRESS. HEX LOCATION(00002A6B) IN CSECT(I4001   ) LENGTH(50)
                     1225  1235  1237  1381  1394  1396  1540  1555  1557
      893  MSG10      ADDRESS. HEX LOCATION(00002B92) IN CSECT(I4001   ) LENGTH(54)
                     1661
      911  MSG16      ADDRESS. HEX LOCATION(00002C8C) IN CSECT(I4001   ) LENGTH(47)
                     1102  1104
      914  MSG17      ADDRESS. HEX LOCATION(00002CBC) IN CSECT(I4001   ) LENGTH(33)
                     1104
      396  N00001     ADDRESS. HEX LOCATION(00002560) IN CSECT(I4001   ) LENGTH(2)
                      318   504
      399  N00002     ADDRESS. HEX LOCATION(00002564) IN CSECT(I4001   ) LENGTH(2)
                      321
      402  N00003     ADDRESS. HEX LOCATION(00002568) IN CSECT(I4001   ) LENGTH(2)
                      324   397   507
      411  N00004     ADDRESS. HEX LOCATION(00002576) IN CSECT(I4001   ) LENGTH(2)
                      327
      417  N00005     ADDRESS. HEX LOCATION(00002582) IN CSECT(I4001   ) LENGTH(2)
                      330   403
      429  N00006     ADDRESS. HEX LOCATION(00002594) IN CSECT(I4001   ) LENGTH(2)
                      333
```

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
431	N00007	ADDRESS. HEX LOCATION(00002596) IN CSECT(I4001) LENGTH(2) 336 418 510
434	N00008	ADDRESS. HEX LOCATION(0000259A) IN CSECT(I4001) LENGTH(2) 339
440	N00009	ADDRESS. HEX LOCATION(000025A6) IN CSECT(I4001) LENGTH(2) 342 432
452	N00010	ADDRESS. HEX LOCATION(000025B8) IN CSECT(I4001) LENGTH(2) 345
455	N00011	ADDRESS. HEX LOCATION(000025BC) IN CSECT(I4001) LENGTH(2) 348
458	N00012	ADDRESS. HEX LOCATION(000025C0) IN CSECT(I4001) LENGTH(2) 351 453
461	N00013	ADDRESS. HEX LOCATION(000025C4) IN CSECT(I4001) LENGTH(2) 354
464	N00014	ADDRESS. HEX LOCATION(000025C8) IN CSECT(I4001) LENGTH(2) 357 459
467	N00015	ADDRESS. HEX LOCATION(000025CC) IN CSECT(I4001) LENGTH(2) 360 44*
470	N00016	ADDRESS. HEX LOCATION(000025D0) IN CSECT(I4001) LENGTH(2) 363
473	N00017	ADDRESS. HEX LOCATION(000025D4) IN CSECT(I4001) LENGTH(2) 366 468
476	N00018	ADDRESS. HEX LOCATION(000025D8) IN CSECT(I4001) LENGTH(2) 369
479	N00019	ADDRESS. HEX LOCATION(000025DC) IN CSECT(I4001) LENGTH(2) 372 474
482	N00020	ADDRESS. HEX LOCATION(000025E0) IN CSECT(I4001) LENGTH(2) 375
485	N00021	ADDRESS. HEX LOCATION(000025E4) IN CSECT(I4001) LENGTH(2) 378 480
488	N00022	ADDRESS. HEX LOCATION(000025E8) IN CSECT(I4001) LENGTH(2) 381
491	N00023	ADDRESS. HEX LOCATION(000025EC) IN CSECT(I4001) LENGTH(2) 384 486
1731	OFF	ADDRESS. HEX LOCATION(0000356C) IN CSECT(I4001) LENGTH(4) 1069 1663 1676 1689
1743	OFFR	ADDRESS. HEX LOCATION(00003594) IN CSECT(I4001) LENGTH(4) 1731 1734
617	OUT	ABSOLUTE. HEX VALUE(00000000) 1782 1859
104	PARMARA	ADDRESS. HEX LOCATION(0000196E) IN CSECT(I4001) LENGTH(1) 409 427 450
785	PARM1	ADDRESS. HEX LOCATION(000028B8) IN CSECT(I4001) LENGTH(2) 1765 1766 1771 1812 1813 1826
786	PARM2	ADDRESS. HEX LOCATION(000028BA) IN CSECT(I4001) LENGTH(2) 1767 1772 1814 1818 1822 1827
787	PARM3	ADDRESS. HEX LOCATION(000028BC) IN CSECT(I4001) LENGTH(2) 1768 1773 1815 1819 1823 1828
811	PDATA	ADDRESS. HEX LOCATION(000028CB) IN CSECT(I4001) LENGTH(1) 1109 1139 1169 1246 1282 1306 1325 1403 1438 1462 1481 1562 1594 1618 1667 1713
746	PGMID	ADDRESS. HEX LOCATION(0000282A) IN CSECT(I4001) LENGTH(2) 1831
72	PID	ADDRESS. HEX LOCATION(00001800) IN CSECT(I4001) LENGTH(1) 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115
808	PREPR	ADDRESS. HEX LOCATION(000028C8) IN CSECT(I4001) LENGTH(1) 1111 1112 1141 1142 1171 1172 1249 1250 1283 1307 1328 1329 1406 1407 1439 1463 1484 1485 1565 1566 1595 1619 1714
1854	PRINT	ADDRESS. HEX LOCATION(00003664) IN CSECT(I4001) LENGTH(4) 1035 1046 1071 1106 1124 1136 1152 1166 1182 1198 1212 1227 1239 1264 1276 1298 1318 1339 1354 1366 1383 1398 1417 1432 1454 1474 1495 1510 1527 1542 1559 1576 1588 1610 1630 1665 1678 1691
809	PRPDA	ADDRESS. HEX LOCATION(000028C9) IN CSECT(I4001) LENGTH(1) 991
937	PSW	ADDRESS. HEX LOCATION(00002D2E) IN CSECT(I4001) LENGTH(2) 1819
814	RDDA	ADDRESS. HEX LOCATION(000028CD) IN CSECT(I4001) LENGTH(1) 992
822	RDID	ADDRESS. HEX LOCATION(000028D4) IN CSECT(I4001) LENGTH(1) 1024 1025
819	RDWDA	ADDRESS. HEX LOCATION(000028D1) IN CSECT(I4001) LENGTH(1) 993
813	READ	ADDRESS. HEX LOCATION(000028CC) IN CSECT(I4001) LENGTH(1) 1278 1434 1590 1632
636	RICB	ABSOLUTE. HEX VALUE(00000013) 1887
823	RIDDA	ADDRESS. HEX LOCATION(000028D5) IN CSECT(I4001) LENGTH(1) 994
738	RINCC	ADDRESS. HEX LOCATION(00002825) IN CSECT(I4001) LENGTH(1) 1061 1652 1656
736	RIOCC	ADDRESS. HEX LOCATION(00002823) IN CSECT(I4001) LENGTH(1) 1030 1101 1119 1147 1177 1193 1222 1259 1293 1334 1349 1378 1393 1412 1427 1449 1490 1505 1522 1537 1554 1571 1605
827	RST	ADDRESS. HEX LOCATION(000028D8) IN CSECT(I4001) LENGTH(1) 1095 1096 1715
828	RSTDA	ADDRESS. HEX LOCATION(000028D9) IN CSECT(I4001) LENGTH(1) 995
732	RTNE	ADDRESS. HEX LOCATION(0000281A) IN CSECT(I4001) LENGTH(2) 981 1019 1091 1711 1767
1888	RTURN	ADDRESS. HEX LOCATION(0000369E) IN CSECT(I4001) LENGTH(4) 1879 1884
1019	RT01	ADDRESS. HEX LOCATION(00002DB2) IN CSECT(I4001) LENGTH(6) 984
1091	RT02	ADDRESS. HEX LOCATION(00002E44) IN CSECT(I4001) LENGTH(6) 1039
1711	RT05	ADDRESS. HEX LOCATION(0000354E) IN CSECT(I4001) LENGTH(6) 1633
1037	RT105	ADDRESS. HEX LOCATION(00002DF6) IN CSECT(I4001) LENGTH(6) 1026
1126	RT20A	ADDRESS. HEX LOCATION(00002EBE) IN CSECT(I4001) LENGTH(4) 1113
1138	RT20C	ADDRESS. HEX LOCATION(00002EE0) IN CSECT(I4001) LENGTH(6) 1130

CROSS-REFERENCE LISTING

DECLARED	NAME	ATTRIBUTES AND REFERENCES
1156	RT20H	ADDRESS. HEX LOCATION(00002F1A) IN CSECT(I4001) LENGTH(4) 1143
1168	RT20L	ADDRESS. HEX LOCATION(00002F3C) IN CSECT(I4001) LENGTH(6) 1160
1184	RT20R	ADDRESS. HEX LOCATION(00002F76) IN CSECT(I4001) LENGTH(6) 1173
1202	RT20W	ADDRESS. HEX LOCATION(00002FB0) IN CSECT(I4001) LENGTH(4) 1189
1108	RT205	ADDRESS. HEX LOCATION(00002E84) IN CSECT(I4001) LENGTH(6) 1097
1245	RT21B	ADDRESS. HEX LOCATION(00003028) IN CSECT(I4001) LENGTH(6) 1233
1214	RT211	ADDRESS. HEX LOCATION(00002FD2) IN CSECT(I4001) LENGTH(6) 1206
1229	RT216	ADDRESS. HEX LOCATION(00003006) IN CSECT(I4001) LENGTH(4) 1218
1300	RT22D	ADDRESS. HEX LOCATION(000030D2) IN CSECT(I4001) LENGTH(4) 1289
1266	RT220	ADDRESS. HEX LOCATION(00003068) IN CSECT(I4001) LENGTH(4) 1251
1278	RT228	ADDRESS. HEX LOCATION(0000308A) IN CSECT(I4001) LENGTH(4) 1270
1356	RT23C	ADDRESS. HEX LOCATION(0000317E) IN CSECT(I4001) LENGTH(4) 1345
1324	RT231	ADDRESS. HEX LOCATION(0000310A) IN CSECT(I4001) LENGTH(6) 1312
1341	RT236	ADDRESS. HEX LOCATION(0000314A) IN CSECT(I4001) LENGTH(6) 1330
1419	RT24E	ADDRESS. HEX LOCATION(0000323E) IN CSECT(I4001) LENGTH(4) 1408
1370	RT240	ADDRESS. HEX LOCATION(000031A0) IN CSECT(I4001) LENGTH(6) 1360
1385	RT245	ADDRESS. HEX LOCATION(000031D4) IN CSECT(I4001) LENGTH(4) 1374
1402	RT249	ADDRESS. HEX LOCATION(000031FE) IN CSECT(I4001) LENGTH(6) 1389
1434	RT25A	ADDRESS. HEX LOCATION(00003268) IN CSECT(I4001) LENGTH(4) 1423
1456	RT25E	ADDRESS. HEX LOCATION(000032B0) IN CSECT(I4001) LENGTH(4) 1445
1514	RT26C	ADDRESS. HEX LOCATION(0000335C) IN CSECT(I4001) LENGTH(4) 1501
1480	RT262	ADDRESS. HEX LOCATION(000032E8) IN CSECT(I4001) LENGTH(6) 1468
1497	RT267	ADDRESS. HEX LOCATION(00003328) IN CSECT(I4001) LENGTH(6) 1486
1578	RT27E	ADDRESS. HEX LOCATION(00003424) IN CSECT(I4001) LENGTH(4) 1567
1529	RT270	ADDRESS. HEX LOCATION(00003386) IN CSECT(I4001) LENGTH(6) 1518
1546	RT275	ADDRESS. HEX LOCATION(000033BA) IN CSECT(I4001) LENGTH(4) 1533
1561	RT279	ADDRESS. HEX LOCATION(000033E4) IN CSECT(I4001) LENGTH(6) 1550
1590	RT28A	ADDRESS. HEX LOCATION(00003446) IN CSECT(I4001) LENGTH(4) 1582
1612	RT28F	ADDRESS. HEX LOCATION(0000348E) IN CSECT(I4001) LENGTH(4) 1601
1632	RT290	ADDRESS. HEX LOCATION(000034C6) IN CSECT(I4001) LENGTH(4) 1624
0	R0	REGISTER. HEX VALUE(00000000) 983 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1022 1062 1063 1129 1159 1205 1232 1269 1311 1359 1388 1422 1467 1517 1549 1581 1623 1732 1733 1736 1737 1738 1739 1740 1791 1792 1854
0	R1	REGISTER. HEX VALUE(00000001) 1031 1034 1042 1045 1065 1068 1102 1105 1120 1123 1132 1135 1148 1151 1162 1165 1178 1181 1194 1197 1208 1211 1223 1226 1235 1238 1260 1263 1272 1275 1294 1297 1314 1317 1335 1338 1350 1353 1362 1365 1379 1382 1394 1397 1413 1416 1428 1431 1450 1453 1470 1473 1491 1494 1506 1509 1523 1526 1538 1541 1555 1558 1572 1575 1584 1587 1606 1609 1626 1629 1659 1662 1667 1668 1669 1672 1675 1685 1688 1832 1835 1855
0	R2	REGISTER. HEX VALUE(00000002) 1032 1034 1043 1045 1066 1068 1103 1105 1121 1123 1133 1135 1149 1151 1163 1165 1179 1181 1195 1197 1209 1211 1224 1226 1236 1238 1261 1263 1273 1275 1295 1297 1315 1317 1336 1338 1351 1353 1363 1365 1380 1382 1395 1397 1414 1416 1429 1431 1451 1453 1471 1473 1492 1494 1507 1509 1524 1526 1539 1541 1556 1558 1573 1575 1585 1587 1607 1609 1627 1629 1660 1662 1673 1675 1686 1688 1833 1835 1856
0	R3	REGISTER. HEX VALUE(00000003) 1002 1857
0	R4	REGISTER. HEX VALUE(00000004) 1777 1780 1910 1911 1912 1913
0	R5	REGISTER. HEX VALUE(00000005) 1028 1029 1030 1059 1060 1061 1099 1100 1101 1117 1118 1119 1145 1146 1147 1175 1176 1177 1191 1192 1193 1220 1221 1222 1257 1258 1259 1291 1292 1293 1332 1333 1334 1347 1348 1349 1376 1377 1378 1391 1392 1393 1410 1411 1412 1425 1426 1427 1447 1448 1449 1488 1489 1490 1503 1504 1505 1520 1521 1522 1535 1536 1537 1552 1553 1554 1569 1570 1571 1603 1604 1605 1650 1651 1652 1693 1778 1780
0	R7	REGISTER. HEX VALUE(00000007) 980 1033 1044 1064 10E7 1069 1104 1122 1126 1134 1150 1156 1164 1180 1196 1202 1210 1225 1229 1237 1262 1266 1274 1296 1300 1302 1394 1308 1316 1337 1352 1356 1364 1381 1385 1396 1415 1419 1430 1452 1456 1458 1460 1464 1472 1493 1508 1514 1525 1540 1546 1557 1574 1578 1586 1608 1612 1614 1616 1620 1628 1653 1654 1655 1661 1663 1674 1676 1687 1689 1731 1765 1779 1781 1812 1834 1858 1877 1879 1880 1884 1886 1914

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
790	SAVER	ADDRESS. HEX LOCATION(000028C0) IN CSECT(I4001) LENGTH(2) 983 985 1791
791	SDCP	ADDRESS. HEX LOCATION(000028C2) IN CSECT(I4001) LENGTH(2) 1000 1790
935	STEP	ADDRESS. HEX LOCATION(00002D22) IN CSECT(I4001) LENGTH(2) 1815
74	STEPNUM	ADDRESS. HEX LOCATION(0000180C) IN CSECT(I4001) LENGTH(1) 1814 1854
1667	S0200	ADDRESS. HEX LOCATION(000034FC) IN CSECT(I4001) LENGTH(4) 1657
1682	S0207	ADDRESS. HEX LOCATION(0000351E) IN CSECT(I4001) LENGTH(6) 1670
1693	S0208	ADDRESS. HEX LOCATION(0000353C) IN CSECT(I4001) LENGTH(2) 1683
1697	S0209	ADDRESS. HEX LOCATION(00003546) IN CSECT(I4001) LENGTH(6) 1694
731	TUID	ADDRESS. HEX LOCATION(00002818) IN CSECT(I4001) LENGTH(2) 1002 1857
101	TURESUL	ADDRESS. HEX LOCATION(000018C8) IN CSECT(I4001) LENGTH(1) 1885
78	TUWORK	ADDRESS. HEX LOCATION(0000181A) IN CSECT(I4001) LENGTH(1) 1761 1789 1885
1877	T400D	ADDRESS. HEX LOCATION(0000367E) IN CSECT(I4001) LENGTH(4) 405
1879	T400E	ADDRESS. HEX LOCATION(00003682) IN CSECT(I4001) LENGTH(4) 404
1884	T400F	ADDRESS. HEX LOCATION(0000368E) IN CSECT(I4001) LENGTH(4) 442
979	T4001	ADDRESS. HEX LOCATION(00002D52) IN CSECT(I4001) LENGTH(1) 419
834	WDATA	ADDRESS. HEX LOCATION(000028DF) IN CSECT(I4001) LENGTH(1) 1185 1284
831	WRITE	ADDRESS. HEX LOCATION(000028DC) IN CSECT(I4001) LENGTH(1) 1187 1188 1216 1217 1287 1288 1343 1344 1372 1373 1443 1444 1499 1500 1531 1532 1599 1600
832	WRTDA	ADDRESS. HEX LOCATION(000028DD) IN CSECT(I4001) LENGTH(1) 996
737	XINCC	ADDRESS. HEX LOCATION(00002824) IN CSECT(I4001) LENGTH(1) 1248 1286 1327 1405 1442 1483 1564 1598 1656 1696
735	XIOCC	ADDRESS. HEX LOCATION(00002822) IN CSECT(I4001) LENGTH(1) 1003 1023 1094 1110 1140 1170 1186 1215 1247 1285 1326 1342 1371 1404 1441 1482 1498 1530 1563 1597

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