IDENTIFICATION

PRODUCT CODE:	MAINDEC-8E-D0BB
PRODUCT NAME:	PDP-8/E INSTRUCTION TEST 2
DATE CREATED:	JUNE 10, 1971
MAINTAINER:	DIAGNOSTIC GROUP
AUTHOR:	ED FORTMILLER

1. ABSTRACT

THIS PROGRAM IS AN EXTENSIVE TEST OF AUTOINDEXING, INDIRECT
ADDRESSING, AND THE DCA INSTRUCTION FOR THE PDP-8/E.
IT ALSO OFFERS MINIMAL TESTING FOR INTERRUPT AND THE
AND, TAD, ISZ, JMS, JMP, AND PROCESSOR IOT INSTRUCTIONS.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP-8/E EQUIPPED WITH TELETYPE

2.2 STORAGE

THE PROGRAM OCCUPIES MEMORY LOCATIONS 0000-4416.
THE BINARY LOADER MUST BE STORED IN THE LAST MEMORY PAGE.

2.3 PRELIMINARY PROGRAMS

IT IS ASSUMED THAT MAINDEC-8E-D0A(N) HAS BEEN RUN
SUCCESSFULLY.

3. LOADING PROCEDURE

3.1 METHOD

THE STANDARD BINARY LOADER IS USED.

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTINGS (NONE)

4.2 STARTING ADDRESS

200

4.3 OPERATOR ACTION

A. SET THE SWITCH REGISTER TO 200. PRESS LOAD ADDRESS.

B. PUSH CLEAR AND THEN CONTINUE. A PROGRAMMED HALT OCCURS
WHEN AN ERROR IS ENCOUNTERED.

5.   OPERATING PROCEDURE

      SAME AS SECTION 4.

6.   ERRORS

6.1   ERROR HALTS AND DESCRIPTION

      SEE LISTING.

6.2   ERROR RECOVERY

      IF IT IS DESIRED TO LOOP ON THE TEST CAUSING THE ERROR,
      REPLACE THE OPERATE INSTRUCTION PRECEDING THE HLT WITH A
      JMP TO THE BEGINNING OF THE TEST.

7.   RESTRICTIONS

      ALL PERIPHERAL DEVICES MUST BE FUNCTIONING TO A DEGREE THAT
      THE PROCESSOR CLEAR BUTTON WILL CLEAR THEIR FLAGS AND NO
      FLAGS WILL TURN ON UNLESS AUTHORIZED.

8.   MISCELLANEOUS

8.1   EXECUTION TIME

      THE TELETYPE BELL RINGS AT THE END OF 1550 PROGRAM PASSES
      WHICH IS APPROXIMATELY EVERY 5 SECONDS.

9.   PROGRAM DESCRIPTION

THE PROGRAM IS A SERIES OF MANY SMALL INDIVIDUAL TEST. EACH
TEST IS PERFORMED USING PREVIOUSLY CHECK FUNCTINS TO VALIDATE
THE TEST. WHEN AN ERROR IS ENCOUNTERED, THE OPERATOR SHOULD
INSERT A JUMP INSTRUCTION INTO MEMORY TO CAUSE THE PROGRAM TO
LOOP ON THE FAILING TEST. THE PROBLEM CAN THEN BE FOUND
BY USING THE OSCILLOSCOPE.

THE INDIVIDUAL PROGRAM TESTS ARE GROUPED INTO THE FOLLOWING
CLASSIFICATIONS AND ARE PERFORMED IN THE ORDER SHOWN:

    1. DCA TEST

    2. INDIRECT ADDRESSING TEST

        A. USING TAD
        B. USING AND

    3. AUTOINDEX TEST

        A. USING AND
        B. USING DCA
        C. USING TAD

    4. PROCESSOR IOT TEST

        A. USING CAF
        B. USING SRQ
        C. USING SPF
        D. USING KIE
        E. USING SKON
        F. USING ION
        G. USING IOF
        H. USING GTF
        I. USING RTF

    5. INTERRUPT TEST

        A. FOLLOWING NOP
        B. FOLLOWING TAD
        C. FOLLOWING AND
        D. FOLLOWING DCA
        E. FOLLOWING ISZ
        F. FOLLOWING JMP
        G. FOLLOWING JMS
        H. FOLLOWING CLA
        I. FOLLOWING TSF
        J. FOLLOWING SKP
        K. FOLLOWING JMP I

    6. CHECK FOR UNAUTHORIZED AUTOINDEXING

THE TELETYPE BELL RINGS APPROXIMATELY EVERY 5 SECONDS
TO ASSURE THE OPERATOR THAT THE PROGRAM IS FUNCTIONING PROPERLY.

10.   LISTING

```
                        /PDP-8/E INSTRUCTION TEST 2  MAINDEC-8E-D0BB
                        /COPYRIGHT 1970, 1971, DIGITAL EQUIPMENT CORP., MAYNARD, MASS. 01754


            6000        SKON=6000               /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
            6003        SRQ=6003                /SKIP IF INTERRUPT REQUEST
            6004        GTF=6004                /GET INTERRUPT FLAGS
            6005        RTF=6005                /RESTORE INTERRUPT FLAGS AND TURN INTERRUPT ON
            6007        CAF=6007                /CLEAR ALL FLAGS, AC, LINK, AND ENABLE TTY INTERRUPT F.F.
            6040        SPF=6040                /SET PRINTER FLAG
            6035        KIE=6035                /ENABLE TTY INTERRUPT F.F. WHEN AC 11 EQUALS A 1
            7002        BSW=7002                /SWAP BYTES IN AC


            0000        *0
  0000      0000                0               /LOC 0
  0001      5001                JMP 1           /LOC 1
  0002      0002                2               /LOC 2
  0003      0003                3               /LOC 3

            0007        *7
  0007      0000                0
                                                /CONSTANTS AND VARIABLES

            0020        *20
  0020      7777        K7777,  7777
  0021      3777        K3777,  3777
  0022      5777        K5777,  5777
  0023      6777        K6777,  6777
  0024      7377        K7377,  7377
  0025      7577        K7577,  7577
  0026      7677        K7677,  7677
  0027      7737        K7737,  7737
  0030      0000                0
  0031      7757        K7757,  7757
  0032      7767        K7767,  7767
  0033      7773        K7773,  7773
  0034      7775        K7775,  7775
  0035      7776        K7776,  7776
  0036      0000        K0,     0
  0037      1777        K1777,  1777
  0040      0777        K0777,  0777
  0041      0377        K0377,  0377
  0042      0177        K0177,  0177
  0043      0077        K0077,  0077
  0044      0037        K0037,  0037
  0045      0017        K0017,  0017
  0046      0007        K0007,  0007
  0047      0003        K0003,  0003
  0050      0000                0
  0051      0001        K0001,  0001
  0052      4400        K4400,  4400
  0053      4577        K4577,  4577
  0054      2525        K2525,  2525
```

```
        0055   6666      K6666,   6666
        0056   4444      K4444,   4444
        0057   7070      K7070,   7070
        0060   0707      K0707,   0707
        0061   5252      K5252,   5252
        0062   1111      K1111,   1111
        0063   5555      K5555,   5555
        0064   5200      K5200,   5200
        0065   0004      K4,      4



        0110      *110
 0110   0000            0

        0172      *172

 0172   0176      K176,    176          /LOC 172
 0173   0172      K172,    172          /173
 0174   0173      K173,    173          /174
 0175   0174      K174,    174          /175
 0176   0175      K175,    175          /176
 0177   1234      K1234,   1234         /177


        0200      *200
                  /DCA TEST 1
 0200   7200            CLA
 0201   7410            SKP
 0202   0000      TP0,   0
 0203   1052            TAD K4400
 0204   3377            DCA TP177
 0205   7440            SZA
 0206   7402            HLT               /DCA DID NOT CLEAR AC
 0207   7410            SKP
 0210   0000            0
 0211   1052            TAD K4400
 0212   7041            CIA               /AC=-(4400)
 0213   1377            TAD TP177
 0214   7440            SZA
 0215   7402            HLT               /DCA FAILED
                                          /AC SHOULD EQUAL ZERO

                  /DCA TEST 2

 0216   7200            CLA
 0217   1053            TAD K4577
 0220   3202            DCA TP0
 0221   7440            SZA
 0222   7402            HLT               /DCA DID NOT CLEAR AC
 0223   1053            TAD K4577
 0224   7041            CIA
 0225   1202            TAD TP0
 0226   7440            SZA
 0227   7402            HLT               /DCA FAILED
```

                                                    /AC SHOULD EQUAL ZERO

                        /DCA TEST 3

        0230 7200   CLA
        0231 1020   TAD K7777
        0232 3202   DCA TP0
        0233 7440   SZA
        0234 7402   HLT   /DCA DID NOT CLEAR AC
        0235 1202   TAD TP0
        0236 7040   CMA
        0237 7440   SZA
        0240 7402   HLT   /DCA FAILED
                                         /AC SHOULD BE ZERO

                        /DCA TEST 4

        0241 7200   CLA
        0242 1036   TAD K0
        0243 3202   DCA TP0
        0244 7440   SZA   /DCA DID NOT CLEAR AC
        0245 7402   HLT
        0246 1202   TAD TP0
        0247 7440   SZA   /DCA FAILED
        0250 7402   HLT   /AC SHOULD BE ZERO

                        /DCA TEST 5

        0251 7200   CLA
        0252 1054   TAD K2525
        0253 3202   DCA TP0
        0254 7440   SZA
        0255 7402   HLT   /DCA DID NOT CLEAR AC
        0256 1054   TAD K2525
        0257 7041   CIA
        0260 1202   TAD TP0
        0261 7440   SZA
        0262 7402   HLT   /DCA FAILED
                                         /AC SHOULD BE ZERO

                        /DCA TEST 6

        0263 7200   CLA
        0264 1055   TAD K6666
        0265 3202   DCA TP0
        0266 7440   SZA
        0267 7402   HLT   /DCA DID NOT CLEAR AC
        0270 1055   TAD K6666
        0271 7041   CIA
        0272 1202   TAD TP0
        0273 7440   SZA
        0274 7402   HLT   /DCA FAILED
                                         /AC SHOULD BE ZERO

/DCA TEST 7

```
0275  7200        CLA
0276  1056        TAD K4444
0277  3377        DCA TP177
0300  7440        SZA
0301  7402        HLT          /DCA DID NOT CLEAR AC
0302  1056        TAD K4444
0303  7041        CIA
0304  1377        TAD TP177
0305  7440        SZA
0306  7402        HLT          /DCA FAILED
                               /AC SHOULD BE ZERO
```

/DCA TEST 8

```
0307  7200        CLA
0310  1057        TAD K7070
0311  3377        DCA TP177
0312  7440        SZA
0313  7402        HLT          /DCA DID NOT CLEAR AC
0314  1057        TAD K7070
0315  7041        CIA
0316  1377        TAD TP177
0317  7440        SZA
0320  7402        HLT          /DCA FAILED
                               /AC SHOULD BE ZERO
```

/DCA TEST 9

```
0321  7200        CLA
0322  1060        TAD K0707
0323  3000        DCA 0
0324  7440        SZA
0325  7402        HLT          /DCA DID NOT CLEAR AC
0326  1060        TAD K0707
0327  7041        CIA
0330  1000        TAD 0
0331  7440        SZA
0332  7402        HLT          /DCA FAILED
                               /AC SHOULD BE ZERO
```

/DCA TEST 10

```
0333  7200        CLA
0334  1061        TAD K5252
0335  3000        DCA 0
0336  7440        SZA
0337  7402        HLT          /DCA DID NOT CLEAR AC
0340  1061        TAD K5252
0341  7041        CIA
0342  1000        TAD 0
0343  7440        SZA
0344  7402        HLT          /DCA FAILED
                               /AC SHOULD BE ZERO
```

```
                      /DCA TEST 11

      0345  7200            CLA
      0346  1062            TAD K1111
      0347  3000            DCA 0
      0350  7440            SZA
      0351  7402            HLT              /DCA DID NOT CLEAR AC
      0352  1062            TAD K1111
      0353  7041            CIA
      0354  1000            TAD 0
      0355  7440            SZA
      0356  7402            HLT              /DCA FAILED
                                            /AC SHOULD BE ZERO

                      /DCA TEST 12

      0357  7200            CLA
      0360  1063            TAD K5555
      0361  3000            DCA 0
      0362  7440            SZA
      0363  7402            HLT              /DCA DID NOT CLEAR AC
      0364  1063            TAD K5555
      0365  7041            CIA
      0366  1000            TAD 0
      0367  7440            SZA
      0370  7402            HLT              /DCA FAILED
                                            /AC SHOULD BE ZERO


      0371  7000            NOP
      0372  7000            NOP
      0373  7000            NOP
      0374  7000            NOP
      0375  7000            NOP
      0376  7410            SKP
      0377  0000     TP177,  0


      0400       *400

                      /INDIRECT ADDRESSING TEST 1

      0400  7200            CLA
      0401  1442            TAD I K0177      /OPERAND=1234
      0402  7041            CIA
      0403  1177            TAD K1234
      0404  7440            SZA
      0405  7402            HLT              /TAD INDIRECT FAILED
                                            /AC SHOULD BE ZERO

                      /INDIRECT ADDRESSING TEST 2

      0406  7200            CLA
      0407  7410            SKP
      0410  0000            0
```

```
      0411   1020           TAD K7777
      0412   0442           AND I K0177      /OPERAND=1234
      0413   7041           CIA
      0414   1177           TAD K1234
      0415   7440           SZA
      0416   7402           HLT              /AND INDIRECT FAILED
                                             /AC SHOULD BE ZERO

                     /INDIRECT ADDRESSING TEST 3

      0417   7200           CLA
      0420   1020           TAD K7777
      0421   3000           DCA 0
      0422   2436           ISZ I K0
      0423   7402           HLT              /ISZ FAILED. NO SKIP
      0424   1000           TAD 0
      0425   7440           SZA
      0426   7402           HLT              /ISZ INDIRECT FAILED
                                             /AC SHOULD BE 0

                     /INDIRECT ADDRESSING TEST 4

      0427   7200           CLA
      0430   1572           TAD I K176       /OPERAND=175
      0431   7041           CIA
      0432   1176           TAD K175
      0433   7440           SZA
      0434   7402           HLT              /TAD INDIRECT FAILED
                                             /AC SHOULD BE ZERO


                     /INDIRECT ADDRESSING TEST 5

      0435   7200           CLA
      0436   1020           TAD K7777
      0437   0572           AND I K176       /OPERAND=175
      0440   7041           CIA
      0441   1176           TAD K175
      0442   7440           SZA              /AND INDIRECT FAILED
      0443   7402           HLT              /AC SHOULD BE ZERO

                     /INDIRECT ADDRESSING TEST 6

      0444   7200           CLA
      0445   1172           TAD K176
      0446   3000           DCA 0
      0447   2436           ISZ I K0
      0450   7410           SKP
      0451   7402           HLT              /ISZ SKIPPED ILLEGALLY
      0452   1000           TAD 0
      0453   7041           CIA
      0454   1172           TAD K176
      0455   7040           CMA
      0456   7440           SZA
      0457   7402           HLT              /DCA INDIRECT FAILED
```

                                              /AC SHOULD BE ZERO

              /INDIRECT ADDRESSING TEST 7

        0460 7200   CLA
        0461 1573   TAD I K172   /OPERAND=176
        0462 7041   CIA
        0463 1172   TAD K176
        0464 7440   SZA
        0465 7402   HLT   /TAD INDIRECT FAILED
                                                    /AC SHOULD BE ZERO

              /INDIRECT ADDRESSING TEST 8

        0466 7200   CLA
        0467 1020   TAD K7777
        0470 0573   AND I K172   /OPERAND=176
        0471 7041   CIA
        0472 1172   TAD K176
        0473 7440   SZA   /AND INDIRECT FAILED
        0474 7402   HLT   /AC SHOULD BE ZERO

              /INDIRECT ADDRESSING TEST 9

        0475 7200   CLA
        0476 1173   TAD K172
        0477 3000   DCA 0
        0500 2436   ISZ I K0
        0501 7410   SKP
        0502 7402   HLT   /ISZ SKIPPED ILLEGALLY
        0503 1000   TAD 0
        0504 7041   CIA
        0505 1173   TAD K172
        0506 7040   CMA
        0507 7440   SZA
        0510 7402   HLT   /DCA INDIRECT FAILED
                                                    /AC SHOULD BE ZERO

              /INDIRECT ADDRESSING TEST 10

        0511 7200   CLA
        0512 1574   TAD I K173   /OPERAND=172
        0513 7041   CIA
        0514 1173   TAD K172
        0515 7440   SZA
        0516 7402   HLT   /TAD INDIRECT FAILED
                                                    /AC SHOULD BE ZERO

              /INDIRECT ADDRESSING TEST 11

        0517 7200   CLA
        0520 1020   TAD K7777
        0521 0574   AND I K173   /OPERAND=172
        0522 7041   CIA

```
            0523  1173              TAD K172
            0524  7440              SZA
            0525  7402              HLT              /AND INDIRECT FAILED
                                                     /AC SHOULD BE ZERO

                       /INDIRECT ADDRESSING TEST 12

            0526  7200              CLA
            0527  1174              TAD K173
            0530  3000              DCA 0
            0531  2436              ISZ I K0
            0532  7410              SKP
            0533  7402              HLT              /ISZ SKIPPED ILLEGALLY
            0534  1000              TAD 0
            0535  7041              CIA
            0536  1174              TAD K173
            0537  7040              CMA
            0540  7440              SZA
            0541  7402              HLT              /DCA INDIRECT FAILED
                                                     /AC SHOULD BE ZERO

                       /INDIRECT ADDRESSING TEST 13

            0542  7200              CLA
            0543  1575              TAD I K174       /OPERAND=173
            0544  7041              CIA
            0545  1174              TAD K173
            0546  7440              SZA
            0547  7402              HLT              /TAD INDIRECT FAILED
                                                     /AC SHOULD BE ZERO

                       /INDIRECT ADDRESSING TEST 14

            0550  7200              CLA
            0551  1020              TAD K7777
            0552  0575              AND I K174       /OPERAND=173
            0553  7041              CIA
            0554  1174              TAD K173
            0555  7440              SZA              /AND INDIRECT FAILED
            0556  7402              HLT              /AC SHOULD BE ZERO

                       /INDIRECT ADDRESSING TEST 15

            0557  7200              CLA
            0560  1175              TAD K174
            0561  3000              DCA 0
            0562  2436              ISZ I K0
            0563  7410              SKP
            0564  7402              HLT              /ISZ SKIPPED ILLEGALLY
            0565  1000              TAD 0
            0566  7041              CIA
            0567  1175              TAD K174
            0570  7040              CMA
            0571  7440              SZA
            0572  7402              HLT              /DCA INDIRECT  FAILED
```

```
                                                              /AC SHOULD BE ZERO

        0573  5377              JMP .+4
        0574  7000              NOP
        0575  7000              NOP
        0576  7000              NOP
        0577  7000              NOP


        0600         *600
                     /INDIRECT ADDRESSING TEST 16

        0600  7200              CLA
        0601  1576              TAD I K175              /OPERAND=174
        0602  7041              CIA
        0603  1175              TAD K174
        0604  7440              SZA
        0605  7402              HLT                     /TAD INDIRECT FAILED
                                                        /AC SHOULD BE ZERO


                     /AUTO INDEX TEST 1

        0606  7200              CLA
        0607  1036              TAD K0                  /CONSTANT TO BE INDEXED
        0610  3010              DCA 10
        0611  0410              AND I 10                        /DO AUTO INDEX
        0612  1010              TAD 10
        0613  1035              TAD K7776                       /AC SHOULD EQUAL 7777
        0614  7040              CMA
        0615  7440              SZA                     /AC SHOULD BE ZERO
        0616  7402              HLT                     /AUTO INDEX ERROR

                     /AUTO INDEX TEST 2

        0617  7200              CLA
        0620  1035              TAD K7776                       /CONSTANT TO BE INDEXED
        0621  3010              DCA 10
        0622  0410              AND I 10                        /DO AUTO INDEX
        0623  1010              TAD 10
        0624  1036              TAD K0                  /AC SHOULD EQUAL 7777
        0625  7040              CMA
        0626  7440              SZA                     /AC SHOULD BE ZERO
        0627  7402              HLT                     /AUTO INDEX ERROR

                     /AUTO INDEX TEST 3

        0630  7200              CLA
        0631  1034              TAD K7775                       /CONSTANT TO BE INDEXED
        0632  3010              DCA 10
        0633  3410              DCA I 10                        /DO AUTO INDEX
        0634  1010              TAD 10
        0635  1051              TAD K0001                       /AC SHOULD EQUAL 7777
        0636  7040              CMA
        0637  7440              SZA                     /AC SHOULD BE ZERO
        0640  7402              HLT                     /AUTO INDEX ERROR
```

```
                        /AUTO INDEX TEST 4
0641  7200              CLA
0642  1033              TAD K7773           /CONSTANT TO BE INDEXED
0643  3010              DCA 10
0644  1410              TAD I 10            /DO AUTO INDEX
0645  7200              CLA
0646  1010              TAD 10
0647  1047              TAD K0003           /AC SHOULD EQUAL 7777
0650  7040              CMA
0651  7440              SZA        /AC SHOULD BE ZERO
0652  7402              HLT        /AUTO INDEX ERROR


                        /AUTO INDEX TEST 5

0653  7200              CLA
0654  1032              TAD K7767           /CONSTANT TO BE INDEXED
0655  3010              DCA 10
0656  0410              AND I 10            /DO AUTO INDEX
0657  1010              TAD 10
0660  1046              TAD K0007           /AC SHOULD EQUAL 7777
0661  7040              CMA
0662  7440              SZA        /AC SHOULD BE ZERO
0663  7402              HLT        /AUTO INDEX ERROR

                        /AUTO INDEX TEST 6

0664  7200              CLA
0665  1031              TAD K7757           /CONSTANT TO BE INDEXED
0666  3010              DCA 10
0667  0410              AND I 10            /DO AUTO INDEX
0670  1010              TAD 10
0671  1045              TAD K0017           /AC SHOULD EQUAL 7777
0672  7040              CMA
0673  7440              SZA        /AC SHOULD BE ZERO
0674  7402              HLT        /AUTO INDEX ERROR

                        /AUTO INDEX TEST  7

0675  7200              CLA
0676  1027              TAD K7737           /CONSTANT TO BE INDEXED
0677  3010              DCA 10
0700  0410              AND I 10            /DO AUTO INDEX
0701  1010              TAD 10
0702  1044              TAD K0037           /AC SHOULD EQUAL 7777
0703  7040              CMA
0704  7440              SZA        /AC SHOULD BE ZERO
0705  7402              HLT        /AUTO INDEX ERROR

                        /AUTO INDEX TEST 8

0706  7200              CLA
0707  1026              TAD K7677           /CONSTANT TO BE INDEXED
0710  3010              DCA 10
0711  0410              AND I 10            /DO AUTO INDEX
```

```
0712  1010        TAD 10
0713  1043        TAD K0077              /AC  SHOULD EQUAL 7777
0714  7040        CMA
0715  7440        SZA          /AC SHOULD BE ZERO
0716  7402        HLT          /AUTO INDEX ERROR
```

                    /AUTO INDEX TEST 9

```
0717  7200        CLA
0720  1025        TAD K7577              /CONSTANT TO BE INDEXED
0721  3010        DCA 10
0722  0410        AND I 10              /DO AUTO INDEX
0723  1010        TAD 10
0724  1042        TAD K0177              /AC SHOULD EQUAL 7777
0725  7040        CMA
0726  7440        SZA          /AC SHOULD BE ZERO
0727  7402        HLT          /AUTO INDEX ERROR
```

                    /AUTO INDEX TEST 10

```
0730  7200        CLA
0731  1024        TAD K7377              /CONSTANT TO BE INDEXED
0732  3010        DCA 10
0733  0410        AND I 10              /DO AUTO INDEX
0734  1010        TAD 10
0735  1041        TAD K0377              /AC SHOULD EQUAL 7777
0736  7040        CMA
0737  7440        SZA          /AC SHOULD BE ZERO
0740  7402        HLT          /AUTO INDEX ERROR
```

                    /AUTO INDEX TEST 11

```
0741  7200        CLA
0742  1023        TAD K6777              /CONSTANT TO BE INDEXED
0743  3010        DCA 10
0744  0410        AND I 10              /DO AUTO INDEX
0745  1010        TAD 10
0746  1040        TAD K0777              /AC SHOULD EQUAL 7777
0747  7040        CMA
0750  7440        SZA          /AC SHOULD BE ZERO
0751  7402        HLT          /AUTO INDEX ERROR
```

                    /AUTO INDEX TEST 12

```
0752  7200        CLA
0753  1022        TAD K5777              /CONSTANT TO BE INDEXED
0754  3010        DCA 10
0755  2410        ISZ I 10              /DO AUTO INDEX
0756  7000        NOP
0757  1010        TAD 10
0760  1037        TAD K1777              /AC SHOULD EQUAL 7777
0761  7040        CMA
0762  7440        SZA          /AC SHOULD BE ZERO
0763  7402        HLT          /AUTO INDEX ERROR
```

/AUTO INDEX TEST 13

```
0764  7200          CLA
0765  1021          TAD K3777              /CONSTANT TO BE INDEXED
0766  3010          DCA 10
0767  0410          AND I 10               /DO AUTO INDEX
0770  1010          TAD 10
0771  1021          TAD K3777              /AC SHOULD EQUAL 7777
0772  7040          CMA
0773  7440          SZA            /AC SHOULD BE ZERO
0774  7402          HLT            /AUTO INDEX ERROR
0775  7000          NOP
0776  7000          NOP
0777  7000          NOP
```

```
      1000     *1000
```

/AUTO INDEX TEST 14

```
1000  7200          CLA
1001  1020          TAD K7777              /CONSTANT TO BE INDEXED
1002  3010          DCA 10
1003  0410          AND I 10               /DO AUTO INDEX
1004  1010          TAD 10
1005  1020          TAD K7777              /AC SHOULD EQUAL 7777
1006  7040          CMA
1007  7410          SKP
1010  0000          0
1011  7440          SZA            /AC SHOULD BE ZERO
1012  7402          HLT            /AUTO INDEX ERROR
```

/AUTO INDEX TEST 15

```
1013  7200          CLA
1014  1036          TAD K0                 /CONSTANT TO BE INDEXED
1015  3011          DCA 11
1016  0411          AND I 11               /DO AUTO INDEX
1017  1011          TAD 11
1020  1035          TAD K7776              /AC SHOULD EQUAL 7777
1021  7040          CMA
1022  7440          SZA            /AC SHOULD BE ZERO
1023  7402          HLT            /AUTO INDEX ERROR
```

/AUTO INDEX TEST 16

```
1024  7200          CLA
1025  1035          TAD K7776              /CONSTANT TO BE INDEXED
1026  3011          DCA 11
1027  0411          AND I 11               /DO AUTO INDEX
1030  1011          TAD 11
1031  1036          TAD K0         /AC SHOULD EQUAL 7777
1032  7040          CMA
```

```
                    1033  7440              SZA                 /AC SHOULD BE ZERO
                    1034  7402              HLT                 /AUTO INDEX ERROR


                                    /AUTO INDEX TEST 17
                    1035  7200              CLA
                    1036  1034              TAD K7775                  /CONSTANT TO BE INDEXED
                    1037  3011              DCA 11
                    1040  3411              DCA I 11            /DO AUTO  INDEX
                    1041  1011              TAD 11
                    1042  1051              TAD K0001                  /AC SHOULD EQUAL 7777
                    1043  7040              CMA
                    1044  7440              SZA                 /AC SHOULD BE ZERO
                    1045  7402              HLT                 /AUTO INDEX ERROR

                                    /AUTO INDEX TEST 18
                    1046  7200              CLA
                    1047  1033              TAD K7773                  /CONSTANT TO BE INDEXED
                    1050  3011              DCA 11
                    1051  1411              TAD I 11            /DO AUTO INDEX
                    1052  7200              CLA
                    1053  1011              TAD 11
                    1054  1047              TAD K0003                  /AC SHOULD EQUAL 7777
                    1055  7040              CMA
                    1056  7440              SZA                 /AC SHOULD BE ZERO
                    1057  7402              HLT                 /AUTO INDEX ERROR

                                    /AUTO INDEX TEST 19
                    1060  7200              CLA
                    1061  1032              TAD K7767                  /CONSTANT TO BE INDEXED
                    1062  3011              DCA 11
                    1063  0411              AND I 11            /DO AUTO INDEX
                    1064  1011              TAD 11
                    1065  1046              TAD K0007
                    1066  7040              CMA
                    1067  7440              SZA                 /AC SHOULD BE ZERO
                    1070  7402              HLT                 /AUTO INDEX ERROR

                                    /AUTO INDEX TEST 20
                    1071  7200              CLA
                    1072  1031              TAD K7757                  /CONSTANT TO BE INDEXED
                    1073  3011              DCA 11
                    1074  0411              AND I 11            /DO AUTO INDEX
                    1075  1011              TAD 11
                    1076  1045              TAD K0017                  /AC SHOULD EQUAL 7777
                    1077  7040              CMA
                    1100  7440              SZA                 /AC SHOULD BE ZERO
                    1101  7402              HLT                 /AUTO INDEX ERROR


                                    /AUTO INDEX TEST 21
                    1102  7200              CLA
                    1103  1027              TAD K7737                  /CONSTANT TO BE INDEXED
                    1104  3011              DCA 11
```

```
          1185  0411              AND I 11              /DO AUTO INDEX
          1186  1011              TAD 11
          1187  1044              TAD K0037                    /AC SHOULD EQUAL 7777
          1110  7040              CMA
          1111  7440              SZA          /AC SHOULD BE ZERO
          1112  7402              HLT          /AUTO INDEX ERROR

                        /AUTO INDEX TEST 22
          1113  7200              CLA
          1114  1026              TAD K7677                    /CONSTANT TO BE INDEXED
          1115  3011              DCA 11
          1116  0411              AND I 11              /DO AUTO INDEX
          1117  1011              TAD 11
          1120  1043              TAD K0077                    /AC SHOULD EQUAL 7777
          1121  7040              CMA
          1122  7440              SZA          /AC SHOULD BE ZERO
          1123  7402              HLT          /AUTO IDEX ERROR

                        /AUTO INDEX TEST 23
          1124  7200              CLA
          1125  1025              TAD K7577                    /CONSTANT TO BE INDEXED
          1126  3011              DCA 11
          1127  0411              AND I 11              /DO AUTO INDEX
          1130  1011              TAD 11
          1131  1042              TAD K0177                    /AC SHOULD EQUAL 7777
          1132  7040              CMA
          1133  7440              SZA          /AC SHOULD BE ZERO
          1134  7402              HLT          /AUTO INDEX ERROR

                        /AUTO INDEX TEST 24
          1135  7200              CLA
          1136  1024              TAD K7377                    /CONSTANT TO BE INDEXED
          1137  3011              DCA 11
          1140  0411              AND I 11              /DO AUTO INDEX
          1141  1011              TAD 11
          1142  1041              TAD K0377                    /AC SHOULD EQUAL 7777
          1143  7040              CMA
          1144  7440              SZA          /AC SHOULD BE ZERO
          1145  7402              HLT          /AUTO INDEX ERROR


                        /AUTO INDEX TEST 23
          1146  7200              CLA
          1147  1023              TAD K6777                    /CONSTANT TO BE INDEXED
          1150  3011              DCA 11
          1151  0411              AND I 11              /DO AUTO INDEX
          1152  1011              TAD 11
          1153  1040              TAD K0777                    /AC SHOULD EQUAL 7777
          1154  7040              CMA
          1155  7440              SZA          /AC SHOULD BE ZERO
          1156  7402              HLT          /AUTO INDEX ERROR

                        /AUTO INDEX TEST 26
          1157  7200              CLA
          1160  1022              TAD K5777                    /CONSTANT TO BE INDEXED
```

```
        1161  3011          DCA 11
        1162  2411          ISZ I 11                        /DO AUTO INDEX
        1163  7000          NOP
        1164  1011          TAD 11
        1165  1037          TAD K1777                       /AC SHOULD EQUAL 7777
        1166  7040          CMA
        1167  7440          SZA                 /AC SHOULD BE ZERO
        1170  7402          HLT                 /AUTO INDEX ERROR
        1171  7000          NOP
        1172  5376          JMP .+4
        1173  7000          NOP
        1174  7000          NOP
        1175  7000          NOP
        1176  7000          NOP
        1177  7000          NOP


               PAUSE


               /TEST 2  -  TAPE 2

        1200    *1200

               /AUTO INDEX TEST 27
        1200  7200          CLA
        1201  1021          TAD K3777                       /CONSTANT TO BE INDEXED
        1202  3011          DCA 11
        1203  0411          AND I 11                        /DO AUTO INDEX
        1204  1011          TAD 11
        1205  1021          TAD K3777                       /AC SHOULD EQUAL 7777
        1206  7040          CMA
        1207  7440          SZA                 /AC SHOULD BE ZERO
        1210  7402          HLT                 /AUTO INDEX ERROR

               /AUTO INDEX TEST 28
        1211  7200          CLA
        1212  1020          TAD K7777                       /CONSTANT TO BE INDEXED
        1213  3011          DCA 11
        1214  0411          AND I 11                        /DO AUTO INDEX
        1215  1011          TAD 11
        1216  1020          TAD K7777                       /AC SHOULD EQUAL 7777
        1217  7040          CMA
        1220  7440          SZA                 /AC SHOULD BE ZERO
        1221  7402          HLT                 /AUTO INDEX ERROR

               /AUTO INDEX TEST 29
        1222  7200          CLA
        1223  1036          TAD K0                          /CONSTANT TO BE INDEXED
        1224  3012          DCA 12
        1225  0412          AND I 12                        /DO AUTO INDEX
        1226  1012          TAD 12
        1227  1035          TAD K7776                       /AC SHOULD EQUAL 7777
        1230  7040          CMA
```

```
        1231  7440          SZA                      /AC SHOULD BE ZERO
        1232  7402          HLT                      /AUTO INDEX ERROR


                     /AUTO INDEX TEST 30
        1233  7200          CLA
        1234  1035          TAD K7776                         /CONSTANT TO BE INDEXED
        1235  3012          DCA 12
        1236  0412          AND I 12                 /DO AUTO INDEX
        1237  1012          TAD 12
        1240  1036          TAD K0           /AC SHOULD EQUAL 7777
        1241  7040          CMA
        1242  7440          SZA                      /AC SHOULD BE ZERO
        1243  7402          HLT                      /AUTO INDEX ERROR


                     /AUTO INDEX TEST 31
        1244  7200          CLA
        1245  1034          TAD K7775                         /CONSTANT TO BE INDEXED
        1246  3012          DCA 12
        1247  3412          DCA I 12                 /DO AUTO INDEX
        1250  1012          TAD 12
        1251  1051          TAD K0001                         /AC SHOULD EQUAL 7777
        1252  7040          CMA
        1253  7440          SZA                      /AC SHOULD BE ZERO
        1254  7402          HLT                      /AUTO INDEX ERROR

                     /AUTO INDEX TEST 32
        1255  7200          CLA
        1256  1033          TAD K7773                         /CONSTANT TO BE INDEXED
        1257  3012          DCA 12
        1260  1412          TAD I 12                 /DO AUTO INDEX
        1261  7200          CLA
        1262  1012          TAD 12
        1263  1047          TAD K0003                         /AC SHOULD EQUAL 7777
        1264  7040          CMA
        1265  7440          SZA                      /AC SHOULD BE ZERO
        1266  7402          HLT                      /AUTO INDEX ERROR

                     /AUTO INDEX TEST 33
        1267  7200          CLA
        1270  1032          TAD K7767                         /CONSTANT TO BE INDEXED
        1271  3012          DCA 12
        1272  0412          AND I 12                 /DO AUTO INDEX
        1273  1012          TAD 12
        1274  1046          TAD K0007                         /AC SHOULD EQUAL 7777
        1275  7040          CMA
        1276  7440          SZA                      /AC SHOULD BE ZERO
        1277  7402          HLT                      /AUTO INDEX ERROR


                     /AUTO INDEX TEST 34
        1300  7200          CLA
        1301  1031          TAD K7757                         /CONSTANT TO BE INDEXED
        1302  3012          DCA 12
        1303  0412          AND I 12                 /DO  AUTO INDEX
```

```
        1304  1012            TAD 12
        1305  1045            TAD K0017                    /AC SHOULD EQUAL 7777
        1306  7040            CMA
        1307  7440            SZA                  /AC SHOULD BE ZERO
        1310  7402            HLT                  /AUTO INDEX ERROR

                      /AUTO INDEX TEST 35
        1311  7200            CLA
        1312  1027            TAD K7737                    /CONSTANT TO BE INDEXED
        1313  3012            DCA 12
        1314  0412            AND I 12             /DO AUTO INDEX
        1315  1012            TAD 12
        1316  1044            TAD K0037                    /AC SHOULD EQUAL 7777
        1317  7040            CMA
        1320  7440            SZA                  /AC SHOULD BE ZERO
        1321  7402            HLT                  /AUTO  INDEX ERROR

                      /AUTO INDEX TEST 36
        1322  7200            CLA
        1323  1026            TAD K7677                    /CONSTANT TO BE INDEXED
        1324  3012            DCA 12
        1325  0412            AND I 12             /DO AUTO INDEX
        1326  1012            TAD 12
        1327  1043            TAD K0077                    /AC SHOULD EQUAL 7777
        1330  7040            CMA
        1331  7440            SZA                  /AC SHOULD BE ZERO
        1332  7402            HLT                  /AUTO INDEX ERROR

                      /AUTO INDEX TEST 37
        1333  7200            CLA
        1334  1025            TAD K7577                    /CONSTANT TO BE INDEXED
        1335  3012            DCA 12
        1336  0412            AND I 12             /DO AUTO INDEX
        1337  1012            TAD 12
        1340  1042            TAD K0177                    /AC SHOULD EQUAL 7777
        1341  7040            CMA
        1342  7440            SZA                  /AC SHOULD BE ZERO
        1343  7402            HLT                  /AUTO INDEX ERROR

                      /AUTO INDEX TEST 38
        1344  7200            CLA
        1345  1024            TAD K7377                    /CONSTANT TO BE INDEXED
        1346  3012            DCA 12
        1347  0412            AND I 12             /DO AUTO INDEX
        1350  1012            TAD 12
        1351  1041            TAD K0377                    /AC SHOULD EQUAL 7777
        1352  7040            CMA
        1353  7440            SZA                  /AC SHOULD BE ZERO
        1354  7402            HLT                  /AUTO INDEX ERROR

                      /AUTO INDEX TEST 39
        1355  7200            CLA
        1356  1023            TAD K6777                    /CONSTANT TO BE INDEXED
        1357  3012            DCA 12
```

```
1360  0412              AND I 12              /DO AUTO INDEX
1361  1012              TAD 12
1362  1040              TAD K0777                /AC SHOULD EQUAL 7777
1363  7040              CMA
1364  7440              SZA              /AC SHOULD BE ZERO
1365  7402              HLT              /AUTO INDEX ERROR

                /AUTO INDEX TEST 40
1366  7200              CLA
1367  1022              TAD K5777                /CONSTANT TO BE INDEXED
1370  3012              DCA 12
1371  2412              ISZ I 12                 /DO AUTO INDEX
1372  7000              NOP
1373  1012              TAD 12
1374  1037              TAD K1777                /AC SHOULD EQUAL 7777
1375  7040              CMA
1376  7440              SZA              /AC SHOULD BE ZERO
1377  7402              HLT              /AUTO INDEX ERROR


      1400      *1400
                /AUTO INDEX TEST 41
1400  7200              CLA
1401  1021              TAD K3777                /CONSTANT TO  BE INDEXED
1402  3012              DCA 12
1403  0412              AND I 12                 /DO AUTO INDEX
1404  1012              TAD 12
1405  1021              TAD K3777                /AC SHOULD EQUAL 7777
1406  7040              CMA
1407  7440              SZA              /AC SHOULD BE ZERO
1410  7402              HLT              /AUTO INDEX ERROR

                /AUTO INDEX TEST 42
1411  7200              CLA
1412  1020              TAD K7777                /CONSTANT TO BE INDEXED
1413  3012              DCA 12
1414  0412              AND I 12                 /DO AUTO INDEX
1415  1012              TAD 12
1416  1020              TAD K7777                /AC SHOULD EQUAL 7777
1417  7040              CMA
1420  7440              SZA              /AC SHOULD BE ZERO
1421  7402              HLT              /AUTO INDEX ERROR

                /AUTO INDEX TEST  43
1422  7200              CLA
1423  1036              TAD K0
1424  3013              DCA 13           /CONSTANT TO BE INDEXED
1425  0413              AND I 13                 /DO AUTO INDEX
1426  1013              TAD 13
1427  1035              TAD K7776                /AC SHOULD EQUAL 7777
1430  7040              CMA
1431  7440              SZA              /AC  SHOULD BE ZERO
1432  7402              HLT              /AUTO INDEX ERROR

                /AUTO INDEX TEST 44
```

```
              1433  7200           CLA
              1434  1035           TAD K7776               /CONSTANT TO BE INDEXED
              1435  3013           DCA 13
              1436  0413           AND I 13                /DO AUTO INDEX
              1437  1013           TAD 13
              1440  1036           TAD K0          /AC SHOULD EQUAL 7777
              1441  7040           CMA
              1442  7440           SZA             /AC SHOULD BE ZERO
              1443  7402           HLT             /AUTO INDEX ERROR

                      /AUTO INDEX TEST 45
              1444  7200           CLA
              1445  1034           TAD K7775               /CONSTANT TO BE INDEXED
              1446  3013           DCA 13
              1447  3413           DCA I 13                /DO AUTO INDEX
              1450  1013           TAD 13
              1451  1051           TAD K0001               /AC SHOULD EQUAL 7777
              1452  7040           CMA
              1453  7440           SZA             /AC SHOULD BE ZERO
              1454  7402           HLT             /AUTO INDEX ERROR


                      /AUTO INDEX TEST 46
              1455  7200           CLA
              1456  1033           TAD K7773               /CONSTANT TO BE INDEXED
              1457  3013           DCA 13
              1460  1413           TAD I 13                /DO AUTO INDEX
              1461  7200           CLA
              1462  1013           TAD 13
              1463  1047           TAD K0003               /AC SHOULD EQUAL 7777
              1464  7040           CMA
              1465  7440           SZA             /AC SHOULD BE ZERO
              1466  7402           HLT             /AUTO INDEX ERROR

                      /AUTO INDEX TEST 47
              1467  7200           CLA
              1470  1032           TAD K7767               /CONSTANT TO BE INDEXED
              1471  3013           DCA 13
              1472  0413           AND I 13                /DO AUTO INDEX
              1473  1013           TAD 13
              1474  1046           TAD K0007               /AC SHOULD EQUAL 7777
              1475  7040           CMA
              1476  7440           SZA             /AC SHOULD BE ZERO
              1477  7402           HLT             /AUTO INDEX ERROR

                      /AUTO   INDEX TEST 48
              1500  7200           CLA
              1501  1031           TAD K7757               /CONSTANT TO BE INDEXED
              1502  3013           DCA 13
              1503  0413           AND I 13                /DO AUTO INDEX
              1504  1013           TAD 13
              1505  1045           TAD K0017               /AC SHOULD EQUAL 7777
              1506  7040           CMA
              1507  7440           SZA             /AC SHOULD BE ZERO
              1510  7402           HLT             /AUTO INDEX ERROR
```

```
                    /AUTO INDEX TEST 49
    1511  7200          CLA
    1512  1027          TAD K7737              /CONSTANT TO BE INDEXED
    1513  3013          DCA 13
    1514  0413          AND I 13              /DO AUTO INDEX
    1515  1013          TAD 13
    1516  1044          TAD K0037             /AC SHOULD EQUAL 7777
    1517  7040          CMA
    1520  7440          SZA          /AC SHOULD BE ZERO
    1521  7402          HLT          /AUTO INDEX ERROR


                    /AUTO INDEX TEST 50
    1522  7200          CLA
    1523  1026          TAD K7677             /CONSTANT TO BE INDEXED
    1524  3013          DCA 13
    1525  0413          AND I 13              /DO AUTO INDEX
    1526  1013          TAD 13
    1527  1043          TAD K0077             /AC SHOULD EQUAL 7777
    1530  7040          CMA
    1531  7440          SZA          /AC SHOULD BE ZERO
    1532  7402          HLT          /AUTO INDEX ERROR


                    /AUTO INDEX TEST 51
    1533  7200              CLA
    1534  1025          TAD K7577             /CONSTANT TO BE INDEXED
    1535  3013          DCA 13
    1536  0413          AND I 13              /DO AUTO INDEX
    1537  1013          TAD 13
    1540  1042          TAD K0177             /AC SHOULD EQUAL 7777
    1541  7040          CMA
    1542  7440          SZA          /AC SHOULD BE ZERO
    1543  7402          HLT          /AUTO INDEX ERROR


                    /AUTO INDEX TEST 52
    1544  7200          CLA
    1545  1024          TAD K7377             /CONSTANT TO BE INDEXED
    1546  3013          DCA 13
    1547  0413          AND I 13              /DO AUTO INDEX
    1550  1013          TAD 13
    1551  1041          TAD K0377             /AC SHOULD EQUAL 7777
    1552  7040          CMA
    1553  7440          SZA          /AC SHOULD BE ZERO
    1554  7402          HLT          /AUTO INDEX ERROR


                    /AUTO INDEX TEST 53
    1555  7200          CLA
    1556  1023          TAD K6777             /CONSTANT TO BE INDEXED
    1557  3013          DCA 13
    1560  0413          AND I 13              /DO AUTO INDEX
    1561  1013          TAD 13
    1562  1040          TAD K0777             /AC SHOULD EQUAL 7777
    1563  7040          CMA
    1564  7440          SZA          /AC SHOULD BE ZERO
```

```
         1565  7402           HLT              /AUTO INDEX ERROR


                       /AUTO INDEX TEST 54
         1566  7200           CLA
         1567  1022           TAD K5777                /CONSTANT TO BE INDEXED
         1570  3013           DCA 13
         1571  2413           ISZ I 13                 /DO AUTO INDEX
         1572  7000           NOP
         1573  1013           TAD 13
         1574  1037           TAD K1777                /AC SHOULD EQUAL 7777
         1575  7040           CMA
         1576  7440           SZA              /AC SHOULD BE ZERO
         1577  7402           HLT              /AUTO INDEX ERROR


               1600   *1600
                       /AUTO INDEX TEST 55
         1600  7200           CLA
         1601  1021           TAD K3777                /CONSTANT TO BE INDEXED
         1602  3013           DCA 13
         1603  0413           AND I 13                 /DO AUTO INDEX
         1604  1013           TAD 13
         1605  1021           TAD K3777                /AC SHOULD EQUAL 7777
         1606  7040           CMA
         1607  7440           SZA              /AC SHOULD BE ZERO
         1610  7402           HLT              /AUTO INDEX ERROR

                       /AUTO INDEX TEST 56
         1611  7200           CLA
         1612  1020           TAD K7777                /CONSTANT TO BE INDEXED
         1613  3013           DCA 13
         1614  0413           AND I 13                 /DO AUTO INDEX
         1615  1013           TAD 13
         1616  1020           TAD K7777                /AC SHOULD EQUAL 7777
         1617  7040           CMA
         1620  7440           SZA              /AC SHOULD BE ZERO
         1621  7402           HLT              /AUTO INDEX ERROR

                       /AUTO INDEX TEST 57
         1622  7200           CLA
         1623  1036           TAD K0                   /CONSTANT TO BE INDEXED
         1624  3014           DCA 14
         1625  0414           AND I 14                 /DO AUTO INDEX
         1626  1014           TAD 14
         1627  1035           TAD K7776                /AC SHOULD EQUAL 7777
         1630  7040           CMA
         1631  7440           SZA              /AC SHOULD BE ZERO
         1632  7402           HLT              /AUTO INDEX ERROR


                       /AUTO INDEX TEST 58
         1633  7200           CLA
         1634  1035           TAD K7776                /CONSTANT TO BE INDEXED
         1635  3014           DCA 14
```

```
          1636  0414              AND I 14                    /DO AUTO INDEX
          1637  1014              TAD 14
          1640  1036              TAD K0          /AC SHOULD EQUAL 7777
          1641  7040              CMA
          1642  7440              SZA             /AC SHOULD BE ZERO
          1643  7402              HLT             /AUTO INDEX ERROR

                        /AUTO INDEX TEST 59
          1644  7200              CLA
          1645  1034              TAD K7775                   /CONSTANT TO BE INDEXED
          1646  3014              DCA 14
          1647  3414              DCA I 14                    /DO AUTO INDEX
          1650  1014              TAD 14
          1651  1051              TAD K0001                   /AC SHOULD EQUAL 7777
          1652  7040              CMA
          1653  7440              SZA             /AC SHOULD BE ZERO
          1654  7402              HLT             /AUTO INDEX ERROR

                        /AUTO INDEX TEST 60
          1655  7200              CLA
          1656  1033              TAD K7773                   /CONSTANT TO BE INDEXED
          1657  3014              DCA 14
          1660  1414              TAD I 14                    /DO AUTO INDEX
          1661  7200              CLA
          1662  1014              TAD 14
          1663  1047              TAD K0003                   /AC SHOULD EQUAL 7777
          1664  7040              CMA
          1665  7440              SZA             /AC SHOULD BE  ZERO
          1666  7402              HLT             /AUTO INDEX ERROR

                        /AUTO INDEX TEST 61
          1667  7200              CLA
          1670  1032              TAD K7767                   /CONSTANT TO BE INDEXED
          1671  3014              DCA 14
          1672  0414              AND I 14                    /DO AUTO INDEX
          1673  1014              TAD 14
          1674  1046              TAD K0007                   /AC SHOULD EQUAL 7777
          1675  7040              CMA
          1676  7440              SZA             /AC SHOULD BE ZERO
          1677  7402              HLT             /AUTO INDEX ERROR


                        /AUTO INDEX TEST 62
          1700  7200              CLA
          1701  1031              TAD K7757                   /CONSTANT TO  BE INDEXED
          1702  3014              DCA 14
          1703  0414              AND I 14                    /DO AUTO INDEX
          1704  1014              TAD 14
          1705  1045              TAD K0017                   /AC SHOULD EQUAL 7777
          1706  7040              CMA
          1707  7440              SZA             /AC SHOULD BE ZERO
          1710  7402              HLT             /AUTO INDEX ERROR

                        /AUTO INDEX TEST 63
          1711  7200              CLA
```

```
        1712  1027            TAD K7737               /CONSTANT TO BE INDEXED
        1713  3014            DCA 14
        1714  0414            AND I 14                /DO AUTO INDEX
        1715  1014            TAD 14
        1716  1044            TAD K0037               /AC SHOULD EQUAL 7777
        1717  7040            CMA
        1720  7440            SZA                     /AC SHOULD BE ZERO
        1721  7402            HLT                     /AUTO INDEX ERROR

                      /AUTO INDEX TEST 64
        1722  7200            CLA
        1723  1026            TAD K7677               /CONSTANT TO BE INDEXED
        1724  3014            DCA 14
        1725  0414            AND I 14                /DO AUTO INDEX
        1726  1014            TAD 14
        1727  1043            TAD K0077               /AC SHOULD EQUAL 7777
        1730  7040            CMA
        1731  7440            SZA                     /AC  SHOULD BE ZERO
        1732  7402            HLT                     /AUTO INDEX ERROR

                      /AUTO INDEX TEST 65
        1733  7200            CLA
        1734  1025            TAD K7577               /CONSTANT TO BE INDEXED
        1735  3014            DCA 14
        1736  0414            AND I 14                /DO AUTO INDEX
        1737  1014            TAD 14
        1740  1042            TAD K0177               /AC SHOULD EQUAL 7777
        1741  7040            CMA
        1742  7440            SZA                     /AC SHOULD BE ZERO
        1743  7402            HLT                     /AUTO INDEX ERROR

                      /AUTO INDEX TEST 66
        1744  7200            CLA
        1745  1024            TAD K7377               /CONSTANT TO BE INDEXED
        1746  3014            DCA 14
        1747  0414            AND I 14                /DO AUTO INDEX
        1750  1014            TAD 14
        1751  1041            TAD K0377               /AC SHOULD EQUAL 7777
        1752  7040            CMA
        1753  7440            SZA                     /AC SHOULD BE ZERO
        1754  7402            HLT                     /AUTO INDEX ERROR

                      /AUTO INDEX TEST 67
        1755  7200            CLA
        1756  1023            TAD K6777               /CONSTANT TO BE INDEXED
        1757  3014            DCA 14
        1760  0414            AND I 14                /DO AUTO INDEX
        1761  1014            TAD 14
        1762  1040            TAD K0777               /AC SHOULD EQUAL 7777
        1763  7040            CMA
        1764  7440            SZA                     /AC SHOULD BE ZERO
        1765  7402            HLT                     /AUTO INDEX ERROR

                      /AUTO   INDEX TEST 68
```

```
            1766    7200              CLA
            1767    1022              TAD K5777              /CONSTANT TO BE INDEXED
            1770    3014              DCA 14
            1771    2414              ISZ I 14               /DO AUTO INDEX
            1772    7000              NOP
            1773    1014              TAD 14
            1774    1037              TAD K1777              /AC SHOULD EQUAL 7777
            1775    7040              CMA
            1776    7440              SZA          /AC SHOULD BE ZERO
            1777    7402              HLT          /AUTO INDEX ERROR


            2000          *2000
                          /AUTO INDEX TEST 69
            2000    7200              CLA
            2001    1021              TAD K3777              /CONSTANT TO BE INDEXED
            2002    3014              DCA 14
            2003    0414              AND I 14               /DO AUTO INDEX
            2004    1014              TAD 14
            2005    1021              TAD K3777              /AC SHOULD EQUAL 7777
            2006    7040              CMA
            2007    7410              SKP
            2010    0000              0
            2011    7440              SZA          /AC SHOULD BE ZERO
            2012    7402              HLT          /AUTO INDEX ERROR

                          /AUTO INDEX TEST 70
            2013    7200              CLA
            2014    1020              TAD K7777              /CONSTANT TO BE INDEXED
            2015    3014              DCA 14
            2016    0414              AND I 14               /DO AUTO INDEX
            2017    1014              TAD 14
            2020    1020              TAD K7777              /AC SHOULD EQUAL 7777
            2021    7040              CMA
            2022    7440              SZA          /AC SHOULD BE ZERO
            2023    7402              HLT          /AUTO INDEX ERROR

                          /AUTO INDEX TEST 71
            2024    7200              CLA
            2025    1036              TAD K0                 /CONSTANT TO BE INDEXED
            2026    3015              DCA 15
            2027    0415              AND I 15               /DO AUTO INDEX
            2030    1015              TAD 15
            2031    1035              TAD K7776              /AC SHOULD EQUAL 7777
            2032    7040              CMA
            2033    7440              SZA          /AC SHOULD BE ZERO
            2034    7402              HLT          /AUTO INDEX ERROR

                          /AUTO INDEX TEST 72
            2035    7200              CLA
            2036    1035              TAD K7776              /CONSTANT TO BE INDEXED
            2037    3015              DCA 15
            2040    0415              AND I 15               /DO AUTO INDEX
            2041    1015              TAD 15
            2042    1036              TAD K0        /AC SHOULD EQUAL 7777
```

```
        2043  7040        CMA
        2044  7440        SZA           /AC SHOULD BE ZERO
        2045  7402        HLT           /AUTO INDEX ERROR

                     /AUTO INDEX TEST 73
        2046  7200        CLA
        2047  1034        TAD K7775              /CONSTANT TO BE INDEXED
        2050  3015        DCA 15
        2051  3415        DCA I 15               /DO AUTO INDEX
        2052  1015        TAD 15
        2053  1051        TAD K0001              /AC SHOULD EQUAL  7777
        2054  7040        CMA
        2055  7440        SZA           /AC SHOULD BE ZERO
        2056  7402        HLT           /AUTO INDEX ERROR


                     /AUTO INDEX TEST 74
        2057  7200        CLA
        2060  1033        TAD K7773              /CONSTANT TO BE INDEXED
        2061  3015        DCA 15
        2062  1415        TAD I 15               /DO AUTO INDEX
        2063  7200        CLA
        2064  1015        TAD 15
        2065  1047        TAD K0003              /AC SHOULD EQUAL 7777
        2066  7040        CMA
        2067  7440        SZA           /AC SHOULD BE ZERO
        2070  7402        HLT           /AUTO INDEX ERROR

                     /AUTO INDEX TEST 75
        2071  7200        CLA
        2072  1032        TAD K7767              /CONSTANT TO BE INDEXED
        2073  3015        DCA 15
        2074  0415        AND I 15               /DO AUTO INDEX
        2075  1015        TAD 15
        2076  1046        TAD K0007              /AC SHOULD EQUAL 7777
        2077  7040        CMA
        2100  7440        SZA           /AC SHOULD BE ZERO
        2101  7402        HLT           /AUTO INDEX ERROR

                     /AUTO INDEX TEST 76
        2102  7200        CLA
        2103  1031        TAD K7757              /CONSTANT TO BE INDEXED
        2104  3015        DCA 15
        2105  0415        AND I 15               /DO AUTO INDEX
        2106  1015        TAD 15
        2107  1045        TAD K0017              /AC SHOULD EQUAL 7777
        2110  7040        CMA
        2111  7440        SZA           /AC SHOULD BE ZERO
        2112  7402        HLT           /AUTO INDEX ERROR

                     /AUTO INDEX TEST 77
        2113  7200        CLA
        2114  1027        TAD K7737              /CONSTANT TO BE INDEXED
        2115  3015        DCA 15
        2116  0415        AND I 15               /DO AUTO INDEX
```

```
        2117  1015              TAD 15
        2120  1044              TAD K0037                    /AC SHOULD EQUAL 7777
        2121  7040              CMA
        2122  7440              SZA                /AC SHOULD BE ZERO
        2123  7402              HLT                /AUTO INDEX ERROR


                        /AUTO INDEX TEST 78
        2124  7200              CLA
        2125  1026              TAD K7677                    /CONSTANT TO BE INDEXED
        2126  3015              DCA 15
        2127  0415              AND I 15                     /DO AUTO INDEX
        2130  1015              TAD 15
        2131  1043              TAD K0077                    /AC SHOULD EQUAL 7777
        2132  7040              CMA
        2133  7440              SZA                /AC SHOULD BE ZERO
        2134  7402              HLT                /AUTO INDEX ERROR


                        /AUTO INDEX TEST 79
        2135  7200              CLA
        2136  1025              TAD K7577                    /CONSTANT TO BE INDEXED
        2137  3015              DCA 15
        2140  0415              AND I 15                          /DO AUTO INDEX
        2141  1015              TAD 15
        2142  1042              TAD K0177                    /AC SHOULD EQUAL 7777
        2143  7040              CMA
        2144  7440              SZA                /AC SHOULD BE ZERO
        2145  7402              HLT                /AUTO INDEX ERROR


                        /AUTO INDEX TEST 80
        2146  7200              CLA
        2147  1024              TAD K7377                    /CONSTANT TO BE INDEXED
        2150  3015              DCA 15
        2151  0415              AND I 15                     /DO AUTO INDEX
        2152  1015              TAD 15
        2153  1041              TAD K0377                    /AC SHOULD EQUAL 7777
        2154  7040              CMA
        2155  7440              SZA                /AC SHOULD BE ZERO
        2156  7402              HLT                /AUTO INDEX ERROR


                        /AUTO INDEX TEST 81
        2157  7200              CLA
        2160  1023              TAD K6777                    /CONSTANT TO BE INDEXED
        2161  3015              DCA 15
        2162  0415              AND I 15                     /DO AUTO INDEX
        2163  1015              TAD 15
        2164  1040              TAD K0777                    /AC SHOULD EQUAL 7777
        2165  7040              CMA
        2166  7440              SZA                /AC SHOULD BE ZERO
        2167  7402              HLT                /AUTO INDEX ERROR
        2170  7000              NOP
        2171  7000              NOP
        2172  5376              JMP .+4
        2173  7000              NOP
        2174  7000              NOP
```

```
          2175   7000              NOP
          2176   7000              NOP
          2177   7000              NOP


          2200              *2200
                            /AUTO INDEX TEST 82
          2200   7200              CLA
          2201   1022              TAD K5777              /CONSTANT TO BE INDEXED
          2202   3015              DCA 15
          2203   2415              ISZ I 15               /DO AUTO INDEX
          2204   7000              NOP
          2205   1015              TAD 15
          2206   1037              TAD K1777              /AC SHOULD EQUAL 7777
          2207   7040              CMA
          2210   7440              SZA           /AC SHOULD BE ZERO
          2211   7402              HLT           /AUTO INDEX ERROR

                            /AUTO INDEX TEST 83
          2212   7200              CLA
          2213   1021              TAD K3777              /CONSTANT TO BE INDEXED
          2214   3015              DCA 15
          2215   0415              AND I 15               /DO AUTO INDEX
          2216   1015              TAD 15
          2217   1021              TAD K3777              /AC SHOULD EQUAL 7777
          2220   7040              CMA
          2221   7440              SZA           /AC SHOULD BE ZERO
          2222   7402              HLT           /AUTO INDEX ERROR

                            /AUTO INDEX TEST 84
          2223   7200              CLA
          2224   1020              TAD K7777              /CONSTANT TO BE INDEXED
          2225   3015              DCA 15
          2226   0415              AND I 15               /DO AUTO INDEX
          2227   1015              TAD 15
          2230   1020              TAD K7777              /AC SHOULD EQUAL 7777
          2231   7040              CMA
          2232   7440              SZA           /AC SHOULD BE ZERO
          2233   7402              HLT           /AUTO INDEX ERROR

                            /AUTO INDEX TEST 85
          2234   7200              CLA
          2235   1036              TAD K0        /CONSTANT TO BE INDEXED
          2236   3016              DCA 16
          2237   0416              AND I 16               /DO AUTO INDEX
          2240   1016              TAD 16
          2241   1035              TAD K7776              /AC SHOULD EQUAL 7777
          2242   7040              CMA
          2243   7440              SZA           /AC SHOULD BE ZERO
          2244   7402              HLT           /AUTO INDEX ERROR


                            /AUTO INDEX TEST 86
          2245   7200              CLA
          2246   1035              TAD K7776              /CONSTANT TO BE INDEXED
```

```
2247  3016          DCA 16
2250  0416          AND I 16              /DO AUTO INDEX
2251  1016          TAD 16
2252  1036          TAD K0            /AC SHOULD EQUAL 7777
2253  7040          CMA
2254  7440          SZA               /AC SHOULD BE ZERO
2255  7402          HLT               /AUTO INDEX ERROR

          /AUTO INDEX TEST 87
2256  7200          CLA
2257  1034          TAD K7775             /CONSTANT TO BE INDEXED
2260  3016          DCA 16
2261  3416          DCA I 16              /DO  AUTO INDEX
2262  1016          TAD 16
2263  1051          TAD K0001             /AC SHOULD EQUAL 7777
2264  7040          CMA
2265  7440          SZA               /AC SHOULD BE ZERO
2266  7402          HLT               /AUTO INDEX ERROR

          /AUTO INDEX TEST 88
2267  7200          CLA
2270  1033          TAD K7773             /CONSTANT TO BE INDEXED
2271  3016          DCA 16
2272  1416          TAD I 16              /DO AUTO INDEX
2273  7200          CLA
2274  1016          TAD 16
2275  1047          TAD K0003             /AC SHOULD EQUAL 7777
2276  7040          CMA
2277  7440          SZA               /AC SHOULD BE ZERO
2300  7402          HLT               /AUTO INDEX ERROR

          /AUTO INDEX TEST 89
2301  7200          CLA
2302  1032          TAD K7767             /CONSTANT TO BE INDEXED
2303  3016          DCA 16
2304  0416          AND I 16              /DO AUTO INDEX
2305  1016          TAD 16
2306  1046          TAD K0007             /AC SHOULD EQUAL 7777
2307  7040          CMA           /AC SHOULD BE ZERO
2310  7440          SZA           /AUTO INDEX ERROR
2311  7402          HLT

          /AUTO INDEX TEST 90
2312  7200          CLA
2313  1031          TAD K7757             /CONSTANT TO BE INDEXED
2314  3016          DCA 16
2315  0416          AND I 16              /DO AUTO INDEX
2316  1016          TAD 16
2317  1045          TAD K0017             /AC SHOULD EQUAL 7777
2320  7040          CMA
2321  7440          SZA               /AC SHOULD BE ZERO
2322  7402          HLT               /AUTO INDEX ERROR

          /AUTO INDEX TEST 91
```

```
            2323   7200         CLA
            2324   1027         TAD K7737              /CONSTANT TO BE INDEXED
            2325   3016         DCA 16
            2326   0416         AND I 16               /DO AUTO INDEX
            2327   1016         TAD 16
            2330   1044         TAD K0037              /AC SHOULD EQUAL 7777
            2331   7040         CMA
            2332   7440         SZA                    /AC SHOULD BE ZERO
            2333   7402         HLT                    /AUTO INDEX ERROR

                         /AUTO INDEX TEST 92
            2334   7200         CLA
            2335   1026         TAD K7677              /CONSTANT TO BE INDEXED
            2336   3016         DCA 16
            2337   0416         AND I 16               /DO AUTO INDEX
            2340   1016         TAD 16
            2341   1043         TAD K0077              /AC  SHOULD EQUAL 7777
            2342   7040         CMA
            2343   7440         SZA                    /AC SHOULD BE ZERO
            2344   7402         HLT                    /AUTO INDEX ERROR

                         /AUTO INDEX TEST 93
            2345   7200         CLA
            2346   1025         TAD K7377              /CONSTANT TO BE INDEXED
            2347   3016         DCA 16
            2350   0416         AND I 16               /DO AUTO INDEX
            2351   1016         TAD 16
            2352   1042         TAD K0177              /AC SHOULD EQUAL 7777
            2353   7040         CMA
            2354   7440         SZA                    /AC SHOULD BE ZERO
            2355   7402         HLT                    /AUTO INDEX ERROR

                         /AUTO INDEX TEST 94
            2356   7200         CLA
            2357   1024         TAD K7377              /CONSTANT TO BE INDEXED
            2360   3016         DCA 16
            2361   0416         AND I 16               /DO AUTO INDEX
            2362   1016         TAD 16
            2363   1041         TAD K0377              /AC SHOULD EQUAL 7777
            2364   7040         CMA
            2365   7440         SZA                    /AC SHOULD BE ZERO
            2366   7402         HLT                    /AUTO INDEX ERROR

                         /AUTO INDEX  TEST 95
            2367   7200         CLA
            2370   1023         TAD K6777              /CONSTANT TO BE INDEXED
            2371   3016         DCA 16
            2372   0416         AND I 16               /DO AUTO INDEX
            2373   1016         TAD 16
            2374   1040         TAD K0777              /AC SHOULD EQUAL  7777
            2375   7040         CMA
            2376   7440         SZA                    /AC  SHOULD BE ZERO
            2377   7402         HLT                    /AUTO INDEX ERROR
```

```
                        PAUSE


                        /TEST 2 - TAPE 3

        2400            *2400

                        /AUTO INDEX TEST 96
 2400   7200                CLA
 2401   1022                TAD K5777                /CONSTANT TO BE INDEXED
 2402   3016                DCA 16
 2403   2416                ISZ I 16                 /DO AUTO INDEX
 2404   7000                NOP
 2405   1016                TAD 16
 2406   1037                TAD K1777                       /AC SHOULD EQUAL 7777
 2407   7040                CMA
 2410   7440                SZA             /AC SHOULD BE ZERO
 2411   7402                HLT             /AUTO INDEX ERROR

                        /AUTO INDEX TEST 97
 2412   7200                CLA
 2413   1021                TAD K3777                /CONSTANT TO BE INDEXED
 2414   3016                DCA 16
 2415   0416                AND I 16                 /DO AUTO INDEX
 2416   1016                TAD 16
 2417   1021                TAD K3777                /AC  SHOULD EQUAL 7777
 2420   7040                CMA
 2421   7440                SZA             /AC SHOULD BE ZERO
 2422   7402                HLT             /AUTO INDEX ERROR


                        /AUTO INDEX TEST 98
 2423   7200                CLA
 2424   1020                TAD K7777                /CONSTANT TO BE INDEXED
 2425   3016                DCA 16
 2426   0416                AND I 16                 /DO AUTO INDEX
 2427   1016                TAD 16
 2430   1020                TAD K7777                /AC SHOULD EQUAL 7777
 2431   7040                CMA
 2432   7440                SZA             /AC SHOULD BE ZERO
 2433   7402                HLT             /AUTO INDEX ERROR

                        /AUTO INDEX TEST 99
 2434   7200                CLA
 2435   1036                TAD K0          /CONSTANT TO BE INDEXED
 2436   3017                DCA 17
 2437   0417                AND I 17                 /DO AUTO INDEX
 2440   1017                TAD 17
 2441   1035                TAD K7776                /AC SHOULD EQUAL 7777
 2442   7040                CMA
 2443   7440                SZA             /AC SHOULD BE ZERO
 2444   7402                HLT             /AUTO INDEX ERROR
```

```
                              /AUTO INDEX TEST 100
        2445   7200              CLA
        2446   1035              TAD K7776                      /CONSTANT TO BE INDEXED
        2447   3017              DCA 17
        2450   0417              AND I 17                        /DO AUTO INDEX
        2451   1017              TAD 17
        2452   1036              TAD K0               /AC SHOULD EQUAL 7777
        2453   7040              CMA
        2454   7440              SZA                  /AC  SHOULD BE ZERO
        2455   7402              HLT                  /AUTO INDEX ERROR

                              /AUTO INDEX TEST 101
        2456   7200              CLA
        2457   1034              TAD K7775                      /CONSTANT TO BE INDEXED
        2460   3017              DCA 17
        2461   3417              DCA I 17                        /DO AUTO INDEX
        2462   1017              TAD 17
        2463   1051              TAD K0001                      /AC SHOULD EQUAL 7777
        2464   7040              CMA
        2465   7440              SZA                  /AC SHOULD BE  ZERO
        2466   7402              HLT                  /AUTO INDEX ERROR


                              /AUTO INDEX TEST 102
        2467   7200              CLA
        2470   1033              TAD K7773                      /CONSTANT TO BE INDEXED
        2471   3017              DCA 17
        2472   1417              TAD I 17                        /DO   AUTO INDEX
        2473   7200              CLA
        2474   1017              TAD 17
        2475   1047              TAD K0003                      /AC SHOULD EQUAL 7777
        2476   7040              CMA
        2477   7440              SZA                  /AC SHOULD BE ZERO
        2500   7402              HLT                  /AUTO INDEX ERROR

                              /AUTO INDEX TEST 103
        2501   7200              CLA
        2502   1032              TAD K7767                      /CONSTANT TO BE INDEXED
        2503   3017              DCA 17
        2504   0417              AND I 17                        /DO AUTO INDEX
        2505   1017              TAD 17
        2506   1046              TAD K0007                      /AC SHOULD EQUAL 7777
        2507   7040              CMA
        2510   7440              SZA                  /AC SHOULD BE ZERO
        2511   7402              HLT                  /AUTO INDEX ERROR

                              /AUTO INDEX TEST 104
        2512   7200              CLA
        2513   1031              TAD K7757                              /CONSTANT TO BE INDEXED
        2514   3017              DCA 17
        2515   0417              AND I 17                        /DO AUTO INDEX
        2516   1017              TAD 17
        2517   1045              TAD K0017                      /AC SHOULD EQUAL 7777
        2520   7040              CMA
        2521   7440              SZA                  /AC SHOULD BE ZERO
```

```
         2522  7402            HLT               /AUTO INDEX ERROR


                        /AUTO INDEX TEST 105
         2523  7200            CLA
         2524  1027            TAD K7737                /CONSTANT TO BE INDEXED
         2525  3017            DCA 17
         2526  0417            AND I 17                 /DO AUTO INDEX
         2527  1017            TAD 17
         2530  1044            TAD K0037                /AC SHOULD EQUAL 7777
         2531  7040            CMA
         2532  7440            SZA               /AC SHOULD BE ZERO
         2533  7402            HLT               /AUTO INDEX ERROR

                        /AUTO INDEX TEST 106
         2534  7200            CLA
         2535  1026            TAD K7677                /CONSTANT TO BE INDEXED
         2536  3017            DCA 17
         2537  0417            AND I 17                 /DO AUTO INDEX
         2540  1017            TAD 17
         2541  1043            TAD K0077                /AC SHOULD EQUAL 7777
         2542  7040            CMA
         2543  7440            SZA               /AC SHOULD BE ZERO
         2544  7402            HLT               /AUTO INDEX ERROR

                        /AUTO INDEX TEST 107
         2545  7200            CLA
         2546  1025            TAD K7577                /CONSTANT TO BE INDEXED
         2547  3017            DCA 17
         2550  0417            AND I 17                 /DO AUTO INDEX
         2551  1017            TAD 17
         2552  1042            TAD K0177                /AC SHOULD EQUAL 7777
         2553  7040            CMA
         2554  7440            SZA               /AC SHOULD BE ZERO
         2555  7402            HLT               /AUTO INDEX ERROR

                        /AUTO INDEX TEST 108
         2556  7200            CLA
         2557  1024            TAD K7377                /CONSTANT TO BE INDEXED
         2560  3017            DCA 17
         2561  0417            AND I 17                 /DO AUTO INDEX
         2562  1017            TAD 17
         2563  1041            TAD K0377                /AC SHOULD EQUAL 7777
         2564  7040            CMA
         2565  7440            SZA               /AC SHOULD BE ZERO
         2566  7402            HLT               /AUTO INDEX ERROR

                        /AUTO INDEX TEST 109
         2567  7200            CLA
         2570  1023            TAD K6777                /CONSTANT TO BE INDEXED
         2571  3017            DCA 17
         2572  0417            AND I 17                 /DO AUTO INNEX
         2573  1017            TAD 17
         2574  1040            TAD K0777                /AC SHOULD EQUAL 7777
```

```
              2575  7040              CMA
              2576  7440              SZA              /AC SHOULD BE ZERO
              2577  7402              HLT              /AUTO INDEX ERROR


              2600              *2600
                                /AUTO INDEX TEST 110

              2600  7200              CLA
              2601  1022              TAD K5777                    /CONSTANT TO BE INDEXED
              2602  3017              DCA 17
              2603  2417              ISZ I 17                     /DO AUTO INDEX
              2604  7000              NOP
              2605  1017              TAD 17
              2606  1037              TAD K1777                    /AC SHOULD EQUAL 7777
              2607  7040              CMA
              2610  7440              SZA              /AC SHOULD BE ZERO
              2611  7402              HLT              /AUTO INDEX ERROR


                                /AUTO INDEX TEST 111
              2612  7200              CLA
              2613  1021              TAD K3777                    /CONSTANT TO BE INDEXED
              2614  3017              DCA 17
              2615  0417              AND I 17                     /DO AUTO INDEX
              2616  1017              TAD 17
              2617  1021              TAD K3777                    /AC SHOULD EQUAL 7777
              2620  7040              CMA
              2621  7440              SZA              /AC SHOULD BE ZERO
              2622  7402              HLT              /AUTO INDEX ERROR

                                /AUTO INDEX TEST 112
              2623  7200              CLA
              2624  1020              TAD K7777                    /CONSTANT TO BE INDEXED
              2625  3017              DCA 17
              2626  0417              AND I 17                     /DO AUTO INDEX
              2627  1017              TAD 17
              2630  1020              TAD K7777                    /AC SHOULD EQUAL 7777
              2631  7040              CMA
              2632  7440              SZA              /AC SHOULD BE ZERO
              2633  7402              HLT              /AUTO INDEX ERROR

                                /AUTO INDEX TEST 113

              2634  5236              JMP .+2
              2635  7402              HLT              /JMP FAILED
              2636  7410              SKP              /JMP WORKED (A LITTLE)
              2637  2644              2644
              2640  1237              TAD .-1
              2641  3010              DCA 10
              2642  5410              JMP I 10                     /TEST INSTRUCTION
              2643  7402              HLT              /JMP INDIRECT FAILED
              2644  7402              HLT              /LOCATION 2610.  NO INDEX
                                                      /IN DEFER STATE.
```

```
                          /AUTO INDEX TEST 114
          2645  4247              JMS .+2
          2646  7402              HLT                /JMS FAILED
          2647  7402              HLT                /JMS FAILED
          2650  1247              TAD .-1
          2651  7410              SKP
          2652  2646              .-4
          2653  7041              CIA
          2654  1252              TAD .-2
          2655  7440              SZA
          2656  7402              HLT                /WRONG ADDRESS STORED
                                                     /DURING JMS
          2657  7410              SKP                /JMS WORKS (I GUESS)
          2660  2664              .+4
          2661  1260              TAD .-1
          2662  3010              DCA 10
          2663  4410              JMS I 10              /TEST INSTRUCTION
          2664  7402              HLT                /JMS FAILED
          2665  7402              HLT                /JMS FAILED
          2666  1265              TAD .-1
          2667  7410              SKP
          2670  2664              .-4
          2671  7041              CIA
          2672  1270              TAD .-2
          2673  7440              SZA
          2674  7402              HLT                /WRONG ADDRESS STORED DURING JMS
          2675  5676              JMP I .+1          /GO TO PROCESSOR IOT TESTS
          2676  4200              PIOTST
                          /INTERRUPT TEST 1

          2677  4700      INTEST, JMS I .+1
          2700  4011              STR
          2701  6040              SPF                    /SET PRINTER FLAG
          2702  6041              TSF
          2703  7402              HLT                    /SPF OR TSF FAILED
          2704  7200              CLA
          2705  1313              TAD BACK1              /FLAG IS ON
          2706  3002              DCA 2
          2707  6001              ION
          2710  7000              NOP                    /GO TO LOC 0000
          2711  7402              HLT                /NO INTERRUPT
          2712  2711      OUT1,   .-1
          2713  2714      BACK1,  .+1
          2714  7440              SZA                /RETURN FROM LOC 1
          2715  7402              HLT                /AC SHOULD BE 0
                                                     /CONFIDENCE CHECK
          2716  1000              TAD 0
          2717  7041              CIA
          2720  1312              TAD OUT1
          2721  7640              SZA CLA
          2722  7402              HLT                /INTERRUPT ERROR
                                                     /WRONG ADDRESS STORED
```

```
                          /INTERRUPT TEST 2
    2723  6040              SPF            /SET PRINTER FLAG
    2724  6041              TSF
    2725  7402              HLT            /SPF FAILED TO SET PRINTER FLAG
    2726  7200              CLA            /FLAG IS ON
    2727  1335              TAD BACK3
    2730  3002              DCA 2
    2731  6001              ION
    2732  1020              TAD K7777
    2733  7402              HLT            /NO INTERRUPT
    2734  2733      OUT3,   .-1
    2735  2736      BACK3,  .+1
    2736  7040              CMA            /RETURN FROM LOC1
    2737  7440              SZA
    2740  7402              HLT            /CONFIDENCE CHECK
                                          /AC SHOULD BE 0
    2741  1000              TAD 0
    2742  7041              CIA
    2743  1334              TAD OUT3
    2744  7640              SZA CLA        /INTERRUPT ERROR
    2745  7402              HLT            /WRONG ADDRESS STORED

                          /INTERRUPT TEST 3
    2746  6040              SPF            /SET PRINTER FLAG
    2747  6041              TSF
    2750  7402              HLT            /SPF FAILED TO SET PRINTER FLAG
    2751  7200              CLA            /FLAG IS ON
    2752  1361              TAD BACK2
    2753  3002              DCA 2
    2754  1020              TAD K7777
    2755  6001              ION
    2756  0020              AND K7777
    2757  7402              HLT            /NO INTERRUPT
    2760  2757      OUT2,   .-1
    2761  2762      BACK2,  .+1
    2762  7040              CMA            /RETURN FROM LOC1
    2763  7440              SZA
    2764  7402              HLT            /CONFIDENCE CHECK
                                          /AC SHOULD BE 0
    2765  1000              TAD 0
    2766  7041              CIA
    2767  1360              TAD OUT2
    2770  7640              SZA CLA
    2771  7402              HLT            /INTERRUPT ERROR
                                          /WRONG ADDRESS STORED
    2772  5773              JMP I .+1
    2773  3000              3000


    3000              *3000
                          /INTERRUPT TEST 4
    3000  6040              SPF            /SET PRINTER FLAG
    3001  6041              TSF
```

```
        3002    7402                HLT              /SPF FAILED TO SET PRINTER FLAG
        3003    7200                CLA              /FLAG IS ON
        3004    1213                TAD BACK4
        3005    3002                DCA 2
        3006    1020                TAD K7777
        3007    6001                ION
        3010    3003                DCA 3
        3011    7402                HLT              /NO INTERRUPT
        3012    3011       OUT4,    .-1
        3013    3014       BACK4,   .+1
        3014    7440                SZA              /RETURN FROM LOC1
        3015    7402                HLT              /CONFIDENCE CHECK
                                                     /AC SHOULD BE ZERO

        3016    1023                TAD 3
        3017    7040                CMA
        3020    7440                SZA
        3021    7402                HLT              /DCA PRIOR TO INTERRUPT
                                                     /FAILED

        3022    3003                DCA 3
        3023    1000                TAD 0
        3024    7041                CIA
        3025    1212                TAD OUT4
        3026    7640                SZA CLA
        3027    7402                HLT              /INTERRUPT ERROR
                                                     /WRONG ADDRESS STORED
                           /INTERRUPT TEST 5
        3030    6040                SPF              /SET PRINTER FLAG
        3031    6041                TSF
        3032    7402                HLT              /SPF FAILED TO SET PRINTER FLAG
        3033    7200                CLA              /FLAG  IS ON
        3034    1244                TAD BACK5
        3035    3002                DCA 2
        3036    1035                TAD K7776


        3037    3003                DCA 3
        3040    6001                ION
        3041    2003                ISZ 3
        3042    7402                HLT              /NO INTERRUPT
        3043    3042       OUT5,    .-1
        3044    3045       BACK5,   .+1
        3045    7440                SZA              /RETURN FROM LOC1
        3046    7402                HLT              /CONFIDENCE CHECK
                                                     /AC SHOULD BE ZERO
        3047    1003                TAD 3
        3050    7040                CMA
        3051    7440                SZA
        3052    7402                HLT              /ISZ PRIOR TO
                                                     /INTERRUPT FAILED
        3053    3003                DCA 3
        3054    1000                TAD 0
        3055    7041                CIA
        3056    1243                TAD OUT5
        3057    7640                SZA CLA
        3060    7402                HLT              /INTERRUPT ERROR
```

                                                    /WRONG ADDRESS STORED

                              /INTERRUPT TEST 6
        3061   6040   SPF   /SET PRINTER FLAG
        3062   6041   TSF
        3063   7402   HLT   /SPF FAILED TO SET PRINTER FLAG
        3064   7200   CLA   /FLAG IS ON
        3065   1276   TAD BACK6
        3066   3002   DCA 2
        3067   1020   TAD K7777
        3070   3003   DCA 3
        3071   6001   ION
        3072   2003   ISZ 3
        3073   7402   HLT   /NO INTERRUPT
        3074   7402   HLT
        3075   3074   OUT6,   .-1
        3076   3077   BACK6, .+1
        3077   7440   SZA   /RETURN FROM LOC 1
        3100   7402   HLT   /CONFIDENCE CHECK
                                                  /AC SHOULD BE ZERO
        3101   1003   TAD 3
        3102   7440   SZA
        3103   7402   HLT   /ISZ PRIOR TO
                                                  /INTERRUPT FAILED
        3104   3003   DCA 3
        3105   1000   TAD 0
        3106   7041   CIA
        3107   1275   TAD OUT6
        3110   7640   SZA CLA
        3111   7402   HLT   /INTERRUPT ERROR
                                                  /WRONG ADDRESS STORED

                              /INTERRUPT TEST 7
        3112   6040   SPF   /SET PRINTER FLAG
        3113   6041   TSF
        3114   7402   HLT   /SPF FAILED TO SET PRINTER FLAG
        3115   7200   CLA   /FLAG IS ON
        3116   1324   TAD BACK7
        3117   3002   DCA 2
        3120   6001   ION
        3121   5321   JMP .
        3122   7402   HLT   /NO INTERRUPT
        3123   3121   OUT7,   .-2
        3124   3125   BACK7, .+1
        3125   7440   SZA   /RETURN FROM LOC 1
        3126   7402   HLT   /CONFIDENCE CHECK
                                                  /AC SHOULD BE 0
        3127   1000   TAD 0
        3130   7041   CIA
        3131   1323   TAD OUT7
        3132   7640   SZA CLA
        3133   7402   HLT   /INTERRUPT ERROR
                                                  /WRONG ADDRESS STORED

```
                        /INTERRUPT TEST 8
      3134  6040            SPF                 /SET PRINTER FLAG
      3135  6041            TSF
      3136  7402            HLT                 /SPF FAILED TO SET PRINTER FLAG
      3137  7200            CLA                 /FLAG IS ON
      3140  1346            TAD BACK8
      3141  3002            DCA 2
      3142  6001            ION
      3143  4003            JMS 3
      3144  7402            HLT                 /NO INTERRUPT
      3145  3144    OUT8,   .-1
      3146  3147    BACK8,  .+1
      3147  7440            SZA                 /RETURN FROM LOC 1
      3150  7402            HLT                 /CONFIDENCE CHECK
                                                /AC SHOULD BE ZERO

      3151  1003            TAD 3
      3152  7041            CIA
      3153  1345            TAD OUT8
      3154  7440            SZA
      3155  7402            HLT                 /JMS ERROR  PRIOR
                                                /TO INTERRUPT WRONG
                                                /ADDRESS STORED


      3156  1000            TAD 0
      3157  7041            CIA
      3160  1065            TAD K4
      3161  7640            SZA CLA
      3162  7402            HLT                 /INTERRUPT ERROR
                                                /WRONG ADDRESS STORED

      3163  5764            JMP I .+1
      3164  3200            3200


      3200          *3200
                        /INTERRUPT TEST  9
      3200  6040            SPF                 /SET PRINTER FLAG
      3201  6041            TSF
      3202  7402            HLT                 /SPF FAILED TO SET PRINTER FLAG
      3203  7200            CLA                 /FLAG IS ON
      3204  1213            TAD BACK9
      3205  3002            DCA 2
      3206  1020            TAD K7777
      3207  6001            ION
      3210  7200            CLA
      3211  7402            HLT                 /NO INTERRUPT
      3212  3211    OUT9,   .-1
      3213  3214    BACK9,  .+1
      3214  7440            SZA                 /RETURN FROM LOC 1
      3215  7402            HLT                 /CLA PRIOR TO INTERRUPT
                                                /FAILED
      3216  1000            TAD 0
      3217  7041            CIA
      3220  1212            TAD OUT9
      3221  7640            SZA CLA
```

```
          3222   7402              HLT              /INTERRUPT FAILED
                                                    /WRONG ADDRESS STORED

                          /INTERRUPT TEST 10
          3223   6040              SPF              /SET PRINTER FLAG
          3224   6041              TSF
          3225   7402              HLT              /SPF FAILED TO SET PRINTER FLAG
          3226   7200              CLA              /FLAG IS ON
          3227   1236              TAD BACK10
          3230   3002              DCA 2
          3231   6001              ION
          3232   6041              TSF
          3233   7402              HLT              /NO INTERRUPT
          3234   7402              HLT


          3235   3234       OUT10,  .-1
          3236   3237       BACK10, .+1
          3237   7440              SZA              /RETURN FROM LOC 1
          3240   7402              HLT              /CONFIDENCE CHECK
                                                    /AC SHOULD BE ZERO
          3241   1000              TAD 0
          3242   7041              CIA
          3243   1235              TAD OUT10
          3244   7640              SZA CLA
          3245   7402              HLT              /INTERRUPT ERROR
                                                    /WRONG ADDRESS STORED

                          /INTERRUPT TEST 11
          3246   6040              SPF              /SET PRINTER FLAG
          3247   6041              TSF
          3250   7402              HLT              /SPF FAILED TO SET PRINTER FLAG
          3251   7200              CLA              /FLAG IS ON
          3252   1311              TAD BACK11
          3253   3002              DCA 2
          3254   6001              ION
          3255   6002              IOF
          3256   6001              ION
          3257   6002              IOF
          3260   6001              ION
          3261   6002              IOF
          3262   6001              ION
          3263   6002              IOF
          3264   6001              ION
          3265   6002              IOF
          3266   6001              ION
          3267   6002              IOF
          3270   6001              ION
          3271   6002              IOF
          3272   6001              ION
          3273   6002              IOF
          3274   6001              ION
          3275   6002              IOF
          3276   6001              ION
          3277   6002              IOF
```

```
                3300   6001              ION
                3301   6002              IOF
                3302   6001              ION
                3303   6002              IOF
                3304   6001              ION
                3305   6002              IOF


                3306   6041              TSF
                3307   7402              HLT              /WHAT HAPPENED TO MY FLAG
                3310   7410              SKP
                3311   3313     BACK11,   .+2
                3312   7410              SKP
                3313   7402              HLT              /INTERRUPT OCCURRED DURING
                                                         /ION-IOF SEQUENCE
                                                         /SEE LOCATION 0000

                         /INTERRUPT TEST 12
                3314   6042              TCF              /CLEAR FLAG
                3315   7200              CLA
                3316   1326              TAD BACK12
                3317   3002              DCA 2
                3320   6001              ION
                3321   7000              NOP
                3322   7000              NOP
                3323   7000              NOP
                3324   7000              NOP
                3325   7410              SKP
                3326   3330     BACK12,   .+2
                3327   7410              SKP
                3330   7402              HLT              /INTERRUPT WITH NO
                                                         /FLAG.
                3331   6002              IOF

                         /INTERRUPT TEST 13
                3332   6040              SPF
                3333   6041              TSF
                3334   7402              HLT              /SPF FAILED TO SET PRINTER FLAG.
                3335   7200              CLA
                3336   1345              TAD BAC13
                3337   3002              DCA 2
                3340   6001              ION
                3341   7410              SKP
                3342   7402              HLT
                3343   7402              HLT              /NO INTERRUPT
                3344   3343     OUTT13,   .-1
                3345   3346     BAC13,    .+1
                3346   7440              SZA
                3347   7402              HLT
                3350   1000              TAD 0
                3351   7041              CIA
                3352   1344              TAD OUTT13
                3353   7640              SZA CLA
                3354   7402              HLT              /INTERRUPT ERROR
                                                         /WRONG ADDRESS STORED
```

```
                              /INTERRUPT TEST 14
       3355  6040              SPF
       3356  6041              TSF
       3357  7402              HLT              /SPF FAILED TO SET PRINTER FLAG
       3360  7200              CLA
       3361  1370              TAD BAC14
       3362  3002              DCA 2
       3363  6001              ION
       3364  5765              JMP I .+1
       3365  3366              .+1
       3366  7402              HLT              /NO INTERRUPT
       3367  3366     OUTT14,  .-1
       3370  3371     BAC14,   .+1
       3371  7440              SZA
       3372  7402              HLT
       3373  1000              TAD 0
       3374  7041              CIA
       3375  1367              TAD OUTT14
       3376  7640              SZA CLA
       3377  7402              HLT              /INTERRUPT ERROR
                                               /WRONG ADDRESS STORED
                              /INTERRUPT TEST 15.
       3400  6007              CAF              /CLEAR THE WORLD
       3401  1212              TAD BAC15        /GET RETURN INTERRUPT ADDRESS
       3402  3002              DCA 2            /STORE IT IN ADDRESS 2
       3403  6001              ION              /INTERRUPT ON
       3404  7000              NOP              /
       3405  6007              CAF              /CLEAR THE WORLD
       3406  6040              SPF              /SET PAINTER FLAG.
       3407  6080              SKON
       3410  5213              JMP .+3          /
       3411  7402              HLT              /CAF FAILED TO CLEAR ION
       3412  3411     BAC15,   .-1
       3413  6007              CAF              /CLEAR FOR EXIT.
       3414  5615              JMP I     .+1
       3415  3600              IAIT1

       3600              PAGE

                              /ILLEGAL AUTO INDEX TEST1

       3600  7200     IAIT1,   CLA
       3601  5602              JMP I .+1
       3602  4000              AND1
       3603  4010     K4010,   4010

       4000              *4000
       4000  0610     AND1,    AND I 4010       /TEST INSTRUCTION
       4001  5602              JMP I .+1
       4002  3604              RET1

       3604              *K4010+1
       3604  1623     RET1,    TAD I K4010
       3605  7440              SZA
```

```
3606   7402                HLT                /ERROR.  AC SHOULD BE ZERO
                                              /AND I 4010 ALTERED (4010)
3607   7200                CLA
3610   3603                DCA I K4010


                   /ILLEGAL AUTO INDEX TEST 2

3611   7200                CLA
3612   5613                JMP I .+1
3613   2173                AND2
3614   2010        K2010,  2010

       2173        *2173
2173   0610        AND2,   AND I 2010            /TEST INSTRUCTION
2174   5775                JMP I .+1
2175   3615                RET2

       3615        *K2010+1
3615   1614        RET2,   TAD I K2010
3616   7440                SZA
3617   7402                HLT                /ERROR. AC SHOULD BE ZERO
                                              /AND I 2010 ALTERED (2010)
3620   5621                JMP I .+1
3621   3622                AITST3


                   /ILLEGAL AUTO INDEX TEST 3
3622   7200        AITST3, CLA
3623   5624                JMP I .+1
3624   1173                AND3
3625   1010        K1010,  1010

       1173        *1173
1173   0610        AND3,   AND I 1010            /TEST INSTRUCTION
1174   5775                JMP I .+1
1175   3626                RET3

       3626        *K1010+1
3626   1625        RET3,   TAD I K1010
3627   7440                SZA
3630   7402                HLT                /ERROR.  AC SHOULD BE ZERO
                                              /AND I 1010 ALTERED (1010)
3631   7200                CLA
3632   3625                DCA I K1010


                   /ILLEGAL AUTO INDEX TEST 4

3633   7200                CLA
3634   5635                JMP I .+1
3635   0574                AND4
3636   0410        K410,   410

       0574        *574
```

```
0574   0610    AND4,    AND I 410              /TEST INSTRUCTION
0575   5776             JMP I .+1
0576   3637             RET4

       3637    *K410+1
3637   1636    RET4,    TAD I K410
3640   7440             SZA
3641   7402             HLT                    /ERROR.  AC SHOULD BE ZERO
                                               /AND I 410 ALTERED (410)
3642   7200             CLA
3643   3636             DCA I K410
```

/ILLEGAL AUTO INDEX TEST 5

```
3644   7200             CLA
3645   5646             JMP I .+1
3646   0372             AND5
3647   0210    K210,    210

       0371    *371
0371   5375             JMP .+4
0372   0610    AND5,    AND I 210              /TEST INSTRUCTION
0373   5774             JMP I .+1
0374   3650             RET5

       3650    *K210+1
3650   1647    RET5,    TAD I K210
3651   7440             SZA
3652   7402             HLT                    /ERROR.  AC SHOULD BE ZERO
                                               /AND I 210 ALTERED (210)
3653   7200             CLA
3654   3647             DCA I K210
```

/ILLEGAL AUTO INDEX TEST 6

```
3655   7200             CLA
3656   3657             JMP I .+1
3657   0130             AND6
3660   0110    K110,    110

       0130    *130
0130   0510    AND6,    AND I 110              /TEST INSTRUCTION
0131   5532             JMP I .+1
0132   3661             RET6

       3661    *K110+1
3661   1660    RET6,    TAD I K110
3662   7440             SZA
3663   7402             HLT                    /ERROR.  AC SHOULD BE ZERO
                                               /AND I 110 ALTERED (110)
3664   7200             CLA
3665   3110             DCA 110
```

/ILLEGAL AUTO INDEX TEST 7

```
        3666  7200          CLA
        3667  5670          JMP I .+1
        3670  0124          AND7
        3671  0050   K50,    50

              0124   *124
        0124  0450   AND7,   AND I 50          /TEST INSTRUCTION
        0125  5526          JMP I .+1
        0126  3672          RET7

              3672   *K50+1
        3672  1671   RET7,   TAD I K50
        3673  7440          SZA
        3674  7402          HLT               /ERROR.  AC SHOULD BE ZERO
                                              /AND I 50 ALTERED (50)
        3675  7200          CLA
        3676  3050          DCA 50
```

/ILLEGAL AUTO INDEX TEST 8

```
        3677  7200          CLA
        3700  5701          JMP I .+1
        3701  0120          AND8
        3702  0030   K30,    30

              0120   *120
        0120  0430   AND8,   AND I 30          /TEST INSTRUCTION
        0121  5522          JMP I .+1
        0122  3703          RET8

              3703   *K30+1
        3703  1702   RET8,   TAD I K30
        3704  7440          SZA
        3705  7402          HLT               /ERROR.  AC SHOULD BE ZERO
                                              /AND I 30 ALTERED (30)
        3706  7200          CLA
        3707  3030          DCA 30
```

/ILLEGAL AUTO INDEX TEST 9

```
        3710  7200          CLA
        3711  3000          DCA 0
        3712  5713          JMP I .+1
        3713  0074   IAITS9,  AND9

              0074   *74
        0074  0400   AND9,   AND I 0          /TEST INSTRUCTION
        0075  5476          JMP I .+1
        0076  3714          RET9
```

```
              3714          *IAITS9+1
       3714   1436    RET9,   TAD I K0
       3715   7440            SZA
       3716   7402            HLT                /ERROR, AC SHOULD BE ZERO
                                                 /AND I 0 ALTERED (0)
       3717   7200            CLA
       3720   3000            DCA 0


                     /ILLEGAL AUTO INDEX TEST 10

       3721   7200            CLA
       3722   5723            JMP I .+1
       3723   0070    IAIT10, AND10

              0070          *70
       0070   0407    AND10,  AND I 7            /TEST INSTRUCTION
       0071   5472            JMP I .+1
       0072   3724            RET10

              3724          *IAIT10+1

       3724   1446    RET10,  TAD I K0007
       3725   7440            SZA
       3726   7402            HLT                /ERROR.  AC SHOULD BE ZERO
                                                 /AND I 7 ALTERED (7)
       3727   7200            CLA
       3730   3007            DCA 7

                     /CHECK FOR TTY BELL

       3731   1347            TAD BLCNT
       3732   7001            IAC
       3733   3347            DCA BLCNT
       3734   1347            TAD BLCNT
       3735   1350            TAD RNGCNT
       3736   7640            SZA CLA
       3737   5746            JMP I K200
       3740   3347            DCA BLCNT
       3741   1351            TAD BELCOD
       3742   6046            TLS
       3743   6041            TSF
       3744   5343            JMP .-1
       3745   5746            JMP I .+1
       3746   0200    K200,   200
       3747   0000    BLCNT,  0
       3750   4762    RNGCNT, -3016
       3751   0207    BELCOD, 207

              4010          *4010
       4010   0000            0

       4011   0000    STR,    0
       4012   1220            TAD JMPIX
       4013   3001            DCA 1
```

```
              4014   3002              DCA 2
              4015   3003              DCA 3
              4016   2211              ISZ STR
              4017   5611              JMP I STR
              4020   5402    JMPIX,    5402


                             /PROCESSOR IOT TEST
                     4200              PAGE
              4200   7300    PIOTST,   CLA CLL
              4201   4602              JMS I     .+1
              4202   4011              STR

                             /PROCESSOR IOT TEST 1
              4203   7360              CLA CMA CLL CML
              4204   6007              CAF              /CLEAR ALL FLAGS, AC, AND LINK
              4205   7410              SKP
              4206   7402              HLT              /CAF SHOULD NOT SKIP
              4207   7420              SNL
              4210   7440              SZA
              4211   7402  —5203       HLT              /CAF FAILED, AC AND LINK SHOULD BE ZERO
                            JMP
                             /PROCESSOR IOT TEST 2
              4212   6040              SPF              /SET PRINTER FLAG
              4213   7410              SKP
              4214   7402              HLT              /SPF SHOULD NOT SKIP
              4215   6041              TSF
              4216   7402              HLT              /SPF OR TSF FAILED
              4217   6007              CAF              /CLEAR ALL FLAGS, AC, AND LINK
              4220   6041              TSF
              4221   7410              SKP
              4222   7402              HLT              /CAF FAILED, TTY FLAG SHOULD BE CLEAR
              4223   6003              SRQ              /SKIP IF INTERRUPT REQUEST
              4224   7410              SKP
              4225   7402              HLT              /SRQ FAILED OR SPURIOUS INTERRUPT OCCURED

                             /PROCESSOR IOT TEST 3
              4226   6007              CAF              /CLEAR ALL FLAGS, AC, LINK, AND ENABLE TTY INTERRUPT
              4227   6040              SPF              /SET PRINTER FLAG
              4230   6003              SRQ              /SKIP IF INTERRUPT REQUEST
              4231   7402              HLT              /SRQ FAILED OR CAF FAILED TO ENABLE TTY INTERRUPT

                             /PROCESSOR IOT TEST 4
              4232   6007              CAF              /CLEAR ALL FLAGS, AC, AND LINK
              4233   6035              KIE              /DISABLE TTY INTERRUPT, (AC 11 EQUALS ZERO)
              4234   7410              SKP
              4235   7402              HLT              /KIE SHOULD NOT SKIP
              4236   6040              SPF              /SET PRINTER FLAG
              4237   6041              TSF
              4240   7402              HLT              /SPF OR TSF FAILED
              4241   6003              SRQ              /SKIP IF INTERRUPT REQUEST
              4242   7410              SKP
              4243   7402              HLT              /KIE FAILED TO DISABLE TTY INTERRUPT OR SRQ FAILED
```

```
                          /PROCESSOR IOT TEST 5
        4244   7201              CLA IAC
        4245   6035              KIE                   /ENABLE TTY INTERRUPT (AC11 IS SET)
        4246   6040              SPF                   /SET PRINTER FLAG
        4247   6041              TSF
        4250   7402              HLT                   /SPF OR TSF FAILED
        4251   6003              SRQ                   /SKIP IF INTERRUPT REQUEST
        4252   7402              HLT                   /KIE FAILED TO ENABLE TTY INTERRUPT OR SRQ FAILED

                          /PROCESSOR IOT TEST 6
        4253   6007              CAF                   /CLEAR ALL FLAGS, AC, AND LINK
        4254   1267              TAD      BACK13
        4255   3002              DCA      2
        4256   6001              ION                   /TURN INTERRUPT ON
        4257   7410              SKP
        4260   7402              HLT                   /ION SHOULD NOT SKIP
        4261   6000              SKON                  /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
        4262   7402              HLT                   /SKON FAILED TO SKIP OR ION FAILED
        4263   6000              SKON                  /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
        4264   7410              SKP
        4265   7402              HLT                   /SKON FAILED
        4266   5271              JMP      .+3
        4267   4270      BACK13, .+1
        4270   7402              HLT                   /ILLEGAL INTERRUPT OCCURRED

                          /PROCESSOR IOT TEST 7
        4271   6007              CAF                   /CLEAR ALL FLAGS, AC, AND LINK
        4272   1304              TAD BACK14
        4273   3002              DCA 2
        4274   6001              ION                   /TURN INTERRUPT ON
        4275   6002              IOF                   /TURN INTERRUPT OFF
        4276   7410              SKP
        4277   7402              HLT                   /IOF SHOULD NOT SKIP
        4300   6000              SKON                  /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
        4301   7410              SKP
        4302   7402              HLT                   /IOF FAILED
        4303   5306              JMP      .+3
        4304   4305      BACK14, .+1
        4305   7402              HLT                   /ILLEGAL INTERRUPT OCCURED

                          /PROCESSOR IOT TEST 8
        4306   6007              CAF                   /CLEAR ALL FLAGS, AC, AND LINK
        4307   7040              CMA
        4310   6004              GTF                   /GET INTERRUPT FLAGS
        4311   7410              SKP
        4312   7402              HLT                   /GTF SHOULD NOT SKIP
        4313   0064              AND K5200             /MASK
        4314   7440              SZA
        4315   7402              HLT                   /GTF FAILED, (AC SHOULD EQUAL 0000)

                          /PROCESSOR IOT TEST 9
        4316   7360              CLA CMA CLL CML       /SET LINK AND AC
        4317   6004              GTF                   /GET INTERRUPT FLAGS, (AC SHOULD EQUAL 4000)
```

```
        4320  7420              SNL
        4321  7402              HLT                      /LINK SHOULD BE 1
        4322  0064              AND   K5200              /MASK
        4323  7104              CLL RAL                  /AC SHOULD EQUAL ZERO
        4324  7430              SZL
        4325  7440              SZA
        4326  7402              HLT                      /GTF FAILED

                      /PROCESSOR IOT TEST 10

        4327  6007              CAF                      /CLEAR ALL FLAGS, (AC, LINK, AND ENABLE TTY INTERRUPT
        4330  6040              SPF                      /SET PRINTER FLAG
        4331  6004              GTF                      /GET INTERRUPT FLAGS, (AC SHOULD EQUAL 1000)
        4332  0064              AND   K5200              /MASK
        4333  7006              RTL                      /PUT INTERRUPT BUS-   (AC SHOULD EQUAL 4000)
        4334  7004              RAL                      /FLAG INTO LINK, (AC SHOULD EQUAL ZERO)
        4335  7430              SZL
        4336  7440              SZA
        4337  7402              HLT                      /GTF FAILED TO GET INTERRUPT BUS FLAG

                      /PROCESSOR IOT TEST 11

        4340  6007              CAF                      /CLEAR ALL FLAGS
        4341  1356              TAD       BACK15
        4342  3002              DCA       2
        4343  6001              ION                      /TURN INTERRUPT ON
        4344  6004              GTF                      /GET INTERRUPT FLAGS, (AC SHOULD EQUAL 0200)
        4345  0064              AND   K5200              /MASK
        4346  6000              SKON                     /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
        4347  7402              HLT                      /GTF CLEARED INTERRUPT (ION)
        4350  7102              CLL BSW                  /PUT INTERRUPT BUS-   (AC SHOULD EQUAL 0002)
        4351  7012              RTR                      /FLAG INTO LINK, (AC SHOULD EQUAL ZERO)
        4352  7430              SZL
        4353  7440              SZA
        4354  7402              HLT                      /GTF FAILED TO GET INTERRUPT FLAG
        4355  5360              JMP       .+3
        4356  4357   BACK15,   .+1
        4357  7402              HLT                      /ILLEGAL INTERRUPT OCCURED

                      /PROCESSOR IOT TEST 12
        4360  7320              CLA CLL CML
        4361  1375              TAD       BACK16
        4362  3002              DCA       2
        4363  6005              RTF                      /RESTORE ALL FLAGS
        4364  7410              SKP
        4365  7402              HLT                      /RTF SHOULD NOT SKIP
        4366  7420              SNL                      /LINK SHOULD BE ZERO
        4367  7440              SZA                      /AC EQUALS ZERO
        4370  7402              HLT                      /RTF FAILED, LINK AND AC SHOULD BE ZERO
        4371  6000              SKON                     /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
        4372  7402              HLT                      /RTF FAILED TO TURN INTERRUPT ON
        4373  5774              JMP I     .+1
        4374  4400              PTST14
        4375  4376   BACK16,   .+1
        4376  7402              HLT                      /ILLEGAL INTERRUPT OCCURED

        4400              PAGE
```

```
                        /PROCESSOR IOT TEST 13
        4400  6007      PTST14, CAF
        4401  1215              TAD     BACK17
        4402  3002              DCA     2
        4403  7330              CLA CLL CML RAR         /AC EQUALS 4000
        4404  6005              RTF                    /RESTORE ALL FLAGS
        4405  7420              SNL
        4406  7402              HLT                    /RTF FAILED TO RESTORE LINK
        4407  6000              SKON                   /SKIP IF INTERRUPT ON AND TURN INTERRUPT OFF
        4410  7402              HLT                    /RTF FAILED TO TURN INTERRUPT ON
        4411  6007              CAF                    /CLEAR ALL FLAGS, AC, LINK, AND ENABLE TTY INTERRUPT
        4412  7300              CLA CLL
        4413  5614              JMP I .+1              /GO TO INTERRUPT TESTS
        4414  2677              INTEST
        4415  4416      BACK17, .+1
        4416  7402              HLT                    /ILLEGAL INTERRUPT OCCURED

                            S
```

```
0000   11110001  00000000  11111111  11111111  11111111  11111111  11111100  11101110
0100   00000000  10000000  11101110  11100000  00000000  00000000  00000000  00111111

0200   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
0300   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

0400   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
0500   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

0600   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
0700   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1000   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1100   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1200   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1300   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1400   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1500   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

1600   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
1700   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

2000   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2100   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

2200   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2300   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

2400   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2500   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

2600   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
2700   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11110000

3000   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3100   11111111  11111111  11111111  11111111  11111111  11111111  11111000  00000000

3200   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3300   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111

3400   11111111  11111100  00000000  00000000  00000000  00000000  00000000  00000000
3500   00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000

3600   11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
3700   11111111  11111111  11111111  11111111  11111111  11000000  00000000  00000000
```

```
4000  11100000  11111111  10000000  00000000  00000000  00000000  00000000  00000000
4100  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000

4200  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111111
4300  11111111  11111111  11111111  11111111  11111111  11111111  11111111  11111110

4400  11111111  11111110  00000000  00000000  00000000  00000000  00000000  00000000
4500  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000

4600
4700


5000
5100

5200
5300

5400
5500

5600
5700


6000
6100

6200
6300

6400
6500

6600
6700


7000
7100

7200
7300

7400
7500

7600
7700
```

AITST3	3622	K1010	3625	OUTT14	3367
AND1	4000	K110	3660	PIOTST	4200
AND10	0070	K1111	0062	PTST14	4400
AND2	2173	K1234	0177	RET1	3604
AND3	1173	K172	0173	RET10	3724
AND4	0574	K173	0174	RET2	3615
AND5	0372	K174	0175	RET3	3626
AND6	0130	K175	0176	RET4	3637
AND7	0124	K176	0172	RET5	3650
AND8	0120	K1777	0037	RET6	3661
AND9	0074	K200	3746	RET7	3672
BAC13	3345	K2010	3614	RET8	3703
BAC14	3370	K210	3647	RET9	3714
BAC15	3412	K2525	0054	RNGCNT	3750
BACK1	2713	K30	3702	RTF	6005
BACK10	3236	K3777	0021	SKON	6000
BACK11	3311	K4	0065	SPF	6040
BACK12	3326	K4010	3603	SRQ	6003
BACK13	4267	K410	3636	STR	4011
BACK14	4304	K4400	0052	TP0	0202
BACK15	4356	K4444	0056	TP177	0377
BACK16	4375	K4577	0053		
BACK17	4415	K50	3671		
BACK2	2761	K5200	0064		
BACK3	2735	K5252	0061		
BACK4	3013	K5555	0063		
BACK5	3044	K5777	0022		
BACK6	3076	K6666	0055		
BACK7	3124	K6777	0023		
BACK8	3146	K7070	0057		
BACK9	3213	K7377	0024		
BELCOD	3751	K7577	0025		
BLCNT	3747	K7677	0026		
BSW	7002	K7737	0027		
CAF	6007	K7757	0031		
GTF	6004	K7767	0032		
IAIT1	3600	K7773	0033		
IAIT10	3723	K7775	0034		
IAITS9	3713	K7776	0035		
INTEST	2677	K7777	0020		
JMPIX	4020	KIE	6035		
K0	0036	OUT1	2712		
K0001	0051	OUT10	3235		
K0003	0047	OUT2	2760		
K0007	0046	OUT3	2734		
K0017	0045	OUT4	3012		
K0037	0044	OUT5	3043		
K0077	0043	OUT6	3075		
K0177	0042	OUT7	3123		
K0377	0041	OUT8	3145		
K0707	0060	OUT9	3212		
K0777	0040	OUTT13	3344		

ERRORS DETECTED: 0

LINKS GENERATED: 0

RUN-TIME: 20 SECCNDS

2K CORE USED