

IDENTIFICATION

Product Code: MAINDEC-8I-D02B-D
Product Name: Instruction Test 2
Date Created: March 21, 1968
Maintainer: Diagnostic Group
Author: H. Horowitz

1. ABSTRACT

This program is an extensive test of autoindexing, indirect addressing, and the DCA instruction for the PDP-8I. It also offers minimal testing for interrupt and the AND, TAD, ISZ, JMP and JMS instructions.

2. REQUIREMENTS

2.1 Equipment

PDP-8I, 8S equipped with Teletype

2.2 Storage

The program occupies memory locations 0000-4021. The Binary Loader must be stored in the last memory page.

2.3 Preliminary Programs

It is assumed that Maindec 8I-D01(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

201

4.3 Operator Action

- a. Set the SWITCH REGISTER to 201. Press LOAD ADDRESS.
- b. PUSH START. 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 START button will clear their flags and no FLAGS will turn on unless authorized.

8. MISCELLANEOUS

8.1 Execution Time

Five program loops per second.

9. PROGRAM DESCRIPTION

The program is a series of many small individual tests. Each test is performed using previously checked functions 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. 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

5. Check for unauthorized Autoindexing

At the completion of 40 program loops the bell rings to assure the operator that the program is functioning properly.

10. LISTING

/INSTRUCTION TEST 2

0000	0000	*0	0	/LOC 0
0001	5001		JMP 1	/LOC 1
0002	0002		2	/LOC 2
0003	0003		3	/LOC 3
0007	0007	*7	0	
0020	7777	*20	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	5252		K5555,	5252
0064	0004		K4,	4

	0110	0110	*110		
		0000		0	
		0172	*172		
0172	0176		K176,	176	/LOG 172
0173	0172		K172,	176	/173
0174	0173		K173,	173	/174
0175	0174		K174,	174	/175
0176	0175		K175,	175	/176
0177	1234		K1234,	1234	/177

0200 0200
0200 0000

*200
TP0, 0

/DCA TEST 1

0201 7200
0202 1052
0203 3377
0204 7440
0205 7402
0206 1052
0207 7410
0210 0000
0211 7041
0212 1377
0213 7440
0214 7402

CLA
TAD K4400
DCA TP177
SZA
HLT
TAD K4400
SKP
0
CI
TAD TP177
SZA
HLT

/DCA DID NOT CLEAR AC

/AC=-(4400)

/DCA FAILED
/AC SHOULD EQUAL ZERO

/DCA TEST 2

0215 7200
0216 1053
0217 3200
0220 7440
0221 7402
0222 1053
0223 7041
0224 1200
0225 7440
0226 7402

CLA
TAD K4577
DCA TP0
SZA
HLT
TAD K4577
CI
TAD TP0
SZA
HLT

/DCA DID NOT CLEAR AC

/DCA FAILED
/AC SHOULD EQUAL ZERO

/DCA TEST 3

0227 7200
0230 1020
0231 3200
0232 7440
0233 7402
0234 1200
0235 7040
0236 7440
0237 7402

CLA
TAD K7777
DCA TP0
SZA
HLT
TAD TP0
CMA
SZA
HLT

/DCA DID NOT CLEAR AC

/DCA FAILED
/AC SHOULD BE ZERO

/DCA TEST 4

0240 7200
0241 1036
0242 3200
0243 7440
0244 7402
0245 1200

CLA
TAD K0
DCA TP0
SZA
HLT
TAD TP0

/DCA DID NOT CLEAR AC

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0246 7440
0247 7402

SZA
HLT

/UCA FAILED
/AC SHOULD BE ZERO

/DCA TEST 5

0250	7200	CLA	
0251	1054	TAD	K2525
0252	3200	DC	TP0
0253	7440	SZA	
0254	7402	HLI	/DCA DID NOT CLEAR AC
0255	1054	TAU	K2525
0256	7041	CIA	
0257	1200	TAU	TP0
0260	7440	SZA	
0261	7402	HLI	/DCA FAILED
			/AC SHOULD BE ZERO

/DCA TEST 6

0262	7200	CLA	
0263	1055	TAD	K6666
0264	3200	DC	TP0
0265	7440	SZA	
0266	7402	HLI	/DCA DID NOT CLEAR AC
0267	1055	TAD	K6666
0270	7041	CIA	
0271	1200	TAU	TP0
0272	7440	SZA	
0273	7402	HLI	/DCA FAILED
			/AC SHOULD BE ZERO

/DCA TEST 7

0274	7200	CLA	
0275	1056	TAD	K4444
0276	3377	DC	TP177
0277	7440	SZA	
0300	7402	HLI	/DCA DID NOT CLEAR AC
0301	1056	TA	K4444
0302	7041	CIA	
0303	1377	TAU	TP177
0304	7440	SZA	
0305	7402	HLI	/DCA FAILED
			/AC SHOULD BE ZERO

/DCA TEST 8

0306	7200	CLA	
0307	1057	TAU	K7070
0310	3377	DC	TP177
0311	7440	SZA	
0312	7402	HLI	/DCA DID NOT CLEAR AC
0313	1057	TAU	K7070
0314	7041	CIA	
0315	1377	TAU	TP177
0316	7440	SZA	
0317	7402	HLI	/DCA FAILED

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/AC SHOULD BE ZERO

/DCA TEST 9

0320 7200
0321 1060
0322 3000
0323 7440
0324 7402
0325 1060
0326 7041
0327 1000
0330 7440
0331 7402

CLA
TAD K0707
DCA 0
SZ
HLT
TAD K0707
CIA
TA 0
SZA
HLT

/DCA DID NOT CLEAR AC

/DCA FAILED
/AC SHOULD BE ZERO

/DCA TEST 10

0332 7200
0333 1061
0334 3000
0335 7440
0336 7402
0337 1061
0340 7041
0341 1000
0342 7440
0343 7402

CLA
TAD K5252
DCA 0
SZA
HLT
TAD K5252
CIA
TA 0
SZA
HLT

/DCA DID NOT CLEAR AC

/DCA FAILED
/AC SHOULD BE ZERO

/DCA TEST 11

0344 7200
0345 1062
0346 3000
0347 7440
0350 7402
0351 1062
0352 7041
0353 1000
0354 7440
0355 7402

CLA
TAD K1111
DCA 0
SZA
HLT
TAD K1111
CIA
TAD 0
SZA
HLT

/DCA DID NOT CLEAR AC

/DCA FAILED
/AC SHOULD BE ZERO

/DCA TEST 12

0356 7200
0357 1063
0360 3000
0361 7440
0362 7402
0363 1063
0364 7041
0365 1000
0366 7440
0367 7402

CLA
TAD K5555
DCA 0
SZA
HLT
TAD K5555
CIA
TAD 0
SZA
HLT

/DCA DID NOT CLEAR AC

/DCA FAILED
/AC SHOULD BE ZERO

0370 7000
0371 7000
0372 7000
0373 7000
0374 7000
0375 7000
0376 7410
0377 0000

TP177,

NOP
NOP
NOP
NOP
NOP
NOP
SKP
0

0400

*400

/INDIRECT ADDRESSING TEST 1

0400 7200
0401 1442
0402 7041
0403 1177
0404 7440
0405 7402

CLA
TAU I K0177 /OPERAND=1234
CIA
TAU K1234
SZA
HLT /TAD INDIRECT FAILED
/AC SHOULD BE ZERO

/INDIRECT ADDRESSING TEST 2

0406 7200
0407 7410
0410 0000
0411 1020
0412 0442
0413 7041
0414 1177
0415 7440
0416 7402

CL*
SKP
0
TAU K7777
ANW I K0177 /OPERAND=1234
CIA
TAU K1234
SZA
HLT /AND INDIRECT FAILED
/AC SHOULD BE ZERO

/INDIRECT ADDRESSING TEST 3

0417 7200
0420 1020
0421 3000
0422 2436
0423 7402
0424 1000
0425 7440
0426 7402

CLA
TAU K7777
DCA 0
ISZ I K0
HLT /ISZ FAILED, NO SKIP
TAD 0
SZA
HLT /ISZ INDIRECT FAILED
/AC SHOULD BE 0

/INDIRECT ADDRESSING TEST 4

0427 7200
0430 1572
0431 7041
0432 1176
0433 7440
0434 7402

CLA
TAU I K176 /OPERAND=175
CIA
TAU K175
SZA
HLT /TAD INDIRECT FAILED
/AC SHOULD BE ZERO

/INDIRECT ADDRESSING TEST 5

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

/INDIRECT ADDRESSING TEST 6

0444	7200	CLA	
0445	1172	TAU K176	
0446	3000	DCA 0	
0447	2436	ISZ I K0	
0450	7410	SKP	
0451	7402	HLT	/ISZ SKIPPED ILLEGALLY
0452	1000	TAU 0	
0453	7041	CIA	
0454	1172	TAU 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	TAU K176	
0464	7440	SZA	
0465	7402	HLT	/TAD INDIRECT FAILED /AC SHOULD BE ZERO

/INDIRECT ADDRESSING TEST 8

0466	7200	CLA	
0467	1020	TAU K7777	
0470	0573	AND I K172	/OPERAND=176
0471	7041	CIA	
0472	1172	TAU 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	DC 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	/UCA 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	/AND INDIRECT FAILED
0525	7402	HLT	/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	TAU I K174	/OPERAND=173
0544	7041	CIA	
0545	1174	TAU K173	
0546	7440	SZA	
0547	7402	HLT	/TAD INDIRECT FAILED /AC SHOULD BE ZERO

/INDIRECT ADDRESSING TEST 14

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

/INDIRECT ADDRESSING TEST 15

0557	7200	CLA	
0560	1175	TAL K174	
0561	3000	DCA 0	
0562	2436	ISZ I K0	
0563	7410	SKN	
0564	7402	HLT	/ISZ SKIPPED ILLEGALLY
0565	1000	TAU 0	
0566	7041	CIA	
0567	1175	TAU K174	
0570	7040	CM	
0571	7440	SZA	
0572	7402	HLI	/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
0601 1576
0602 7041
0603 1175
0604 7440
0605 7402

CLA
TAD I K175
CIA
TAD K174
SZ#
HLT

/OPERAND=174

/TAD INDIRECT FAILED
/AC SHOULD BE ZERO

/AUTO INDEX TEST 1

0606 7200
0607 1036
0610 3010
0611 0410
0612 1010
0613 1035
0614 7040
0615 7440
0616 7402

CLA
TAD K0
DCA 10
AND I 10
TAD 10
TAD K7776
CMA
SZ#
HLT

/CONSTANT TO BE INDEXED

/DO AUTO INDEX

/AC SHOULD EQUAL 7777

/AC SHOULD BE ZERO
/AUTO INDEX ERROR

/AUTO INDEX TEST 2

0617 7200
0620 1035
0621 3010
0622 0410
0623 1010
0624 1036
0625 7040
0626 7440
0627 7402

CLA
TAD K7776
DCA 10
AND I 10
TAD 10
TAD K0
CMA
SZ#
HLT

/CONSTANT TO BE INDEXED

/DO AUTO INDEX

/AC SHOULD EQUAL 7777

/AC SHOULD BE ZERO
/AUTO INDEX ERROR

/AUTO INDEX TEST 3

0630 7200
0631 1034
0632 3010
0633 3410
0634 1010
0635 1051
0636 7040
0637 7440
0640 7402

CLA
TAD K7775
DCA 10
DCA I 10
TAD 10
TAD K0001
CMA
SZ#
HLT

/CONSTANT TO BE INDEXED

/DO AUTO INDEX

/AC SHOULD EQUAL 7777

/AC SHOULD BE ZERO
/AUTO INDEX ERROR

/AUTO INDEX TEST 4

0641 7200
0642 1033
0643 3010
0644 1410
0645 7200
0646 1010

CLA
TAD K7773
DCA 10
TAD I 10
CLA
TAD 10

/CONSTANT TO BE INDEXED

/DO AUTO INDEX

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0647 1047
0650 7040
0651 7440
0652 7402

TAV K0003
CMA
SEA
HLT

/AC SHOULD EQUAL 7777

/AC SHOULD BE ZERO
/AUTO INDEX ERROR

/AUTO INDEX TEST 5

0653	7200	CLA	
0654	1032	TAW K7767	/CONSTANT TO BE INDEXED
0655	3010	DCA 10	
0656	0410	AND I 10	/DO AUTO INDEX
0657	1010	TA 10	
0660	1046	TAD K0007	/AC SHOULD EQUAL 7777
0661	7040	CMA	
0662	7440	SZA	/AC SHOULD BE ZERO
0663	7402	HLI	/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	TAW 10	
0671	1045	TAW K0017	/AC SHOULD EQUAL 7777
0672	7040	CMA	
0673	7440	SZA	/AC SHOULD BE ZERO
0674	7402	HLI	/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	TAW 10	
0702	1044	TAW K0037	/AC SHOULD EQUAL 7777
0703	7040	CMA	
0704	7440	SZA	/AC SHOULD BE ZERO
0705	7402	HLI	/AUTO INDEX ERROR

/AUTO INDEX TEST 8

0706	7200	CLA	
0707	1026	TAW K7677	/CONSTANT TO BE INDEXED
0710	3010	DCA 10	
0711	0410	AND I 10	/DO AUTO INDEX
0712	1010	TAW 10	
0713	1043	TAD K0077	/AC SHOULD EQUAL 7777
0714	7040	CMA	
0715	7440	SZA	/AC SHOULD BE ZERO
0716	7402	HLI	/AUTO INDEX ERROR

/AUTO INDEX TEST 9

0717	7200	CLA	
0720	1025	TAW K7577	/CONSTANT TO BE INDEXED
0721	3010	DCA 10	
0722	0410	AND I 10	/DO AUTO INDEX
0723	1010	TAW 10	
0724	1042	TAW 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	TAW 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	TAW K5777	/CONSTANT TO BE INDEXED
0754	3010	DCA 10	
0755	2410	ISE I 10	/DO AUTO INDEX
0756	7000	NOM	
0757	1010	TA- 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	CL^	
0765	1021	TAD K3777	/CONSTANT TO BE INDEXED
0766	3010	DC^ 10	
0767	0410	AND I 10	/DO AUTO INDEX
0770	1010	TAD 10	
0771	1021	TAU K3777	/AC SHOULD EQUAL 7777
0772	7040	CMA	
0773	7440	SZ^	/AC SHOULD BE ZERO
0774	7402	HLI	/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	DC 10	
1003	0410	AND I 10	/DO AUTO INDEX
1004	1010	TAU 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	TAU 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	TAU 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

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

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

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

```

```

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

```

```

1102 7200      /AUTO INDEX TEST 21
1103 1027      CLA
1104 3011      TAD K7757      /CONSTANT TO BE INDEXED
1105 0411      DCA 11
1106 1011      AND I 11      /DO AUTO INDEX
1107 1044      TAD 11
1110 7040      TA K0037      /AC SHOULD EQUAL 7777
1111 7440      CMA
1112 7402      SZA      /AC SHOULD BE ZERO
                        HLT      /AUTO INDEX ERROR

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

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

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


/AUTO INDEX TEST 25

1146	7200	CL#	
1147	1023	TAM K6777	/CONSTANT TO BE INDEXED
1150	3011	DC# 11	
1151	0411	AND I 11	/DO AUTO INDEX
1152	1011	TAM 11	
1153	1040	TAM K0777	/AC SHOULD EQUAL 7777
1154	7040	CM#	
1155	7440	SZA	/AC SHOULD BE ZERO
1156	7402	HLI	/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	TA 11	
1165	1037	TAD K1777	/AC SHOULD EQUAL 7777
1166	7040	CMA	
1167	7440	SZ#	/AC SHOULD BE ZERO
1170	7402	HLI	/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	CL	
1201	1021	TA=	K3777 /CONSTANT TO BE INDEXED
1202	3011	DCA	11
1203	0411	AND	I 11 /DO AUTO INDEX
1204	1011	TAU	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	TAU	K7777 /CONSTANT TO BE INDEXED
1213	3011	DCA	11
1214	0411	AND	I 11 /DO AUTO INDEX
1215	1011	TAU	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	TAU	K0 /CONSTANT TO BE INDEXED
1224	3012	DCA	12
1225	0412	AND	I 12 /DO AUTO INDEX
1226	1012	TAD	12
1227	1035	TAU	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	TAU	K7776 /CONSTANT TO BE INDEXED
1235	3012	DCA	12
1236	0412	AND	I 12 /DO AUTO INDEX
1237	1012	TAD	12
1240	1036	TAU	K0 /AC SHOULD EQUAL 7777
1241	7040	CMA	
1242	7440	SZA	/AC SHOULD BE ZERO
1243	7402	HLT	/AUTO INDEX ERROR

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

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

1267 7200      /AUTO INDEX TEST 33
1270 1032      CLA
1271 3012      TAD K7767      /CONSTANT TO BE INDEXED
1272 0412      DCA 12
1273 1012      AND I 12      /DO AUTO INDEX
1274 1046      TAD 12
1275 7040      TAD K0007      /AC SHOULD EQUAL 7777
1276 7440      CMA
1277 7402      SZA      /AC SHOULD BE ZERO
                  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      TAW 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      TAW K7677      /CONSTANT TO BE INDEXED
1324 3012      DCA 12
1325 0412      AND I 12      /DO AUTO INDEX
1326 1012      TAD 12
1327 1043      TAW 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      TAW 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	TAU 12	
1351	1041	TAW 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	TAU K6777	/CONSTANT TO BE INDEXED
1357	3012	DCA 12	
1360	0412	AND I 12	/DO AUTO INDEX
1361	1012	TA 12	
1362	1040	TAW 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	CL	
1367	1022	TAD K5777	/CONSTANT TO BE INDEXED
1370	3012	DCA 12	
1371	2412	IS I 12	/DO AUTO INDEX
1372	7000	NOP	
1373	1012	TAU 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
1400  1400 7200
1401  1401 1021
1402  1402 3012
1403  1403 0412
1404  1404 1012
1405  1405 1021
1406  1406 7040
1407  1407 7440
1410  1410 7402

*1400
/AUTO INDEX TEST 41
      CL*
      TAD K5777          /CONSTANT TO BE INDEXED
      DCA 12
      AND I 12          /DO AUTO INDEX
      TAD 12
      TAD K5777          /AC SHOULD EQUAL 7777
      CMA
      SZA                /AC SHOULD BE ZERO
      HLT                /AUTO INDEX ERROR

/AUTO INDEX TEST 42
1411  1411 7200
1412  1412 1020
1413  1413 3012
1414  1414 0412
1415  1415 1012
1416  1416 1020
1417  1417 7040
1420  1420 7440
1421  1421 7402

      CLA
      TAD K7777          /CONSTANT TO BE INDEXED
      DCA 12
      AND I 12          /DO AUTO INDEX
      TAD 12
      TAD K7777          /AC SHOULD EQUAL 7777
      CMA
      SZA                /AC SHOULD BE ZERO
      HLT                /AUTO INDEX ERROR

/AUTO INDEX TEST 43
1422  1422 7200
1423  1423 1036
1424  1424 3013
1425  1425 0413
1426  1426 1013
1427  1427 1035
1430  1430 7040
1431  1431 7440
1432  1432 7402

      CLA
      TAD K0             /CONSTANT TO BE INDEXED
      DCA 13
      AND I 13          /DO AUTO INDEX
      TAD 13
      TAD K7776          /AC SHOULD EQUAL 7777
      CMA
      SZA                /AC SHOULD BE ZERO
      HLT                /AUTO INDEX ERROR

/AUTO INDEX TEST 44
1433  1433 7200
1434  1434 1035
1435  1435 3013
1436  1436 0413
1437  1437 1013
1440  1440 1036
1441  1441 7040
1442  1442 7440
1443  1443 7402

      CLA
      TAD K7776          /CONSTANT TO BE INDEXED
      DCA 13
      AND I 13          /DO AUTO INDEX
      TAD 13
      TAD K0             /AC SHOULD EQUAL 7777
      CMA
      SZA                /AC SHOULD BE ZERO
      HLT                /AUTO INDEX ERROR

/AUTO INDEX TEST 45
1444  1444 7200
1445  1445 1034
1446  1446 3013
1447  1447 3413
1450  1450 1013
1451  1451 1051
1452  1452 7040
1453  1453 7440

      CLA
      TAD K7775          /CONSTANT TO BE INDEXED
      DCA 13
      DCA I 13          /DO AUTO INDEX
      TAD 13
      TAD K0001          /AC SHOULD EQUAL 7777
      CMA
      SZA                /AC SHOULD BE ZERO

```

1454 7402

HLT

/AUTO INDEX ERROR

/AUTO INDEX TEST 46

1455	7200	CLA	
1456	1033	TAU K7773	/CONSTANT TO BE INDEXED
1457	3013	DCA 13	
1460	1413	TAU I 13	/DO AUTO INDEX
1461	7200	CLA	
1462	1013	TAU 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	TAL 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	TAU K7757	/CONSTANT TO BE INDEXED
1502	3013	DCA 13	
1503	0413	AND I 13	/DO AUTO INDEX
1504	1013	TA 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	TAU 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

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

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

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

```
1555 7200      /AUTO INDEX TEST 53
1556 1023      CLA
1557 3013      TAD K6777      /CONSTANT TO BE INDEXED
1560 0413      DCA 13
1561 1013      AND I 13      /DO AUTO INDEX
1562 1040      TAU 13
1563 7040      TAU K0777      /AC SHOULD EQUAL 7777
1564 7440      CMA
1565 7402      SZA      /AC SHOULD BE ZERO
      HLT      /AUTO INDEX ERROR
```

1566	7200	CLA	
1567	1022	TAU K5777	/CONSTANT TO BE INDEXED
1570	3013	DCA 13	
1571	2413	ISE I 13	/DO AUTO INDEX
1572	7000	NOF	
1573	1013	TAU 13	
1574	1037	TAU K1777	/AC SHOULD EQUAL 7777
1575	7040	CMF	
1576	7440	SZ*	/AC SHOULD BE ZERO
1577	7402	HLI	/AUTO INDEX ERROR

```

1600
1600 7200
1601 1021
1602 3013
1603 0413
1604 1013
1605 1021
1606 7040
1607 7440
1610 7402

*1600
/AUTO INDEX TEST 55
CLA
TAD K3777 /CONSTANT TO BE INDEXED
DCA 13
AND I 13 /DO AUTO INDEX
TA- 13
TAD K3777 /AC SHOULD EQUAL 7777
CMA
SZA /AC SHOULD BE ZERO
HLT /AUTO INDEX ERROR

/AUTO INDEX TEST 56
CLA
TAD K7777 /CONSTANT TO BE INDEXED
DC* 13
AND I 13 /DO AUTO INDEX
TAD 13
TAD K7777 /AC SHOULD EQUAL 7777
CMA
SZA /AC SHOULD BE ZERO
HLT /AUTO INDEX ERROR

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

```

1633 7200      /AUTO INDEX TEST 58
1634 1035      CL#
1635 3014      TAU K7776      /CONSTANT TO BE INDEXED
1636 0414      DCA 14
1637 1014      ANU I 14      /DO AUTO INDEX
1640 1036      TAU 14
1641 7040      TAD K0      /AC SHOULD EQUAL 7777
1642 7440      CM#
1643 7402      SZA      /AC SHOULD BE ZERO
                        /AUTO INDEX ERROR
                        HLT

```

```

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

```

```

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

```

```

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

```

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

```
1711 7200      /AUTO INDEX TEST 63
1712 1027      CLA
1713 3014      TAU K7737      /CONSTANT TO BE INDEXED
1714 0414      DCA 14
1715 1014      AND I 14      /DO AUTO INDEX
1716 1044      TAD 14
1717 7040      TAU K0037      /AC SHOULD EQUAL 7777
1720 7440      CMA
1721 7402      SZA      /AC SHOULD BE ZERO
                        /AUTO INDEX ERROR
                        HLI
```

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

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

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

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

```
1766 7200 /AUTO INDEX TEST 68
1767 1022 CLA
1770 3014 TAD K5777 /CONSTANT TO BE INDEXED
1771 2414 DCA 14
1772 7000 ISB I 14 /DO AUTO INDEX
1773 1014 NO
1774 1037 TAU 14
1775 7040 TAD K1777 /AC SHOULD EQUAL 7777
1776 7440 CMA
1777 7402 SZA /AC SHOULD BE ZERO
HLT /AUTO INDEX ERROR
```

2000	7200	*2000	
2001	1021	/AUTO INDEX TEST 69	
2002	3014	CLA	
2003	0414	TAL K3777	/CONSTANT TO BE INDEXED
2004	1014	DCA 14	
2005	1021	AND I 14	/DO AUTO INDEX
2006	7040	TAD 14	
2007	7410	TAU K3777	/AC SHOULD EQUAL 7777
2010	0000	CMA	
2011	7440	SK	
2012	7402	0	
		SZA	/AC SHOULD BE ZERO
		HLT	/AUTO INDEX ERROR
2013	7200	/AUTO INDEX TEST 70	
2014	1020	CLA	
2015	3014	TAU K7777	/CONSTANT TO BE INDEXED
2016	0414	DC 14	
2017	1014	AND I 14	/DO AUTO INDEX
2020	1020	TAD 14	
2021	7040	TAU K7777	/AC SHOULD EQUAL 7777
2022	7440	CMA	
2023	7402	SZA	/AC SHOULD BE ZERO
		HLT	/AUTO INDEX ERROR
2024	7200	/AUTO INDEX TEST 71	
2025	1036	CLA	
2026	3015	TAL K0	/CONSTANT TO BE INDEXED
2027	0415	DCA 15	
2030	1015	AND I 15	/DO AUTO INDEX
2031	1035	TAD 15	
2032	7040	TA K7776	/AC SHOULD EQUAL 7777
2033	7440	CMA	
2034	7402	SZ	/AC SHOULD BE ZERO
		HLT	/AUTO INDEX ERROR
2035	7200	/AUTO INDEX TEST 72	
2036	1035	CLA	
2037	3015	TAL K7776	/CONSTANT TO BE INDEXED
2040	0415	DCA 15	
2041	1015	AND I 15	/DO AUTO INDEX
2042	1036	TAD 15	
2043	7040	TAL K0	/AC SHOULD EQUAL 7777
2044	7440	CMA	
2045	7402	SZA	/AC SHOULD BE ZERO
		HLT	/AUTO INDEX ERROR
2046	7200	/AUTO INDEX TEST 73	
2047	1034	CLA	
2050	3015	TAU K7775	/CONSTANT TO BE INDEXED
2051	3415	DC 15	
2052	1015	DCA I 15	/DO AUTO INDEX
2053	1051	TAL 15	
		TAU K0001	/AC SHOULD EQUAL 7777

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2054 7040
2055 7440
2056 7402

CMA
SZ
HLT

/AC SHOULD BE ZERO
/AUTO INDEX ERROR

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

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

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

2113	7200	/AUTO INDEX TEST 77	
2114	1027	CLA	
2115	3015	TAU K7737	/CONSTANT TO BE INDEXED
2116	0415	DCA 15	
2117	1015	AND I 15	/DO AUTO INDEX
2120	1044	TAU 15	
2121	7040	TAU K0037	/AC SHOULD EQUAL 7777
2122	7440	CMA	
2123	7402	SZA	/AC SHOULD BE ZERO
		HLT	/AUTO INDEX ERROR

```

2124 7200          /AUTO INDEX TEST 78
2125 1026          CLA
2126 3015          TAD K7677          /CONSTANT TO BE INDEXED
2127 0415          DCA 15
2130 1015          ANW I 15          /DO AUTO INDEX
2131 1043          TAD 15
2132 7040          TAD K0077          /AC SHOULD EQUAL 7777
2133 7440          CMA
2134 7402          SZ                /AC SHOULD BE ZERO
                          /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 SZ* /AC SHOULD BE ZERO
2145 7402 HLT /AUTO INDEX ERROR

```

```

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

```

		/AUTO INDEX TEST 81	
2157	7200	CLA	
2160	1023	TAM K0777	/CONSTANT TO BE INDEXED
2161	3015	DCA 15	
2162	0415	AN- I 15	/OO AUTO INDEX
2163	1015	TAM 15	
2164	1040	TAU K0777	/AC SHOULD EQUAL 7777
2165	7040	CH-	
2166	7440	SZA	/AC SHOULD BE ZERO
2167	7402	HLT	/AUTO INDEX ERROR
2170	7000	NOP	
2171	7000	NO"	
2172	5376	JMW .+4	
2173	7000	NOP	
2174	7000	NOP	
2175	7000	NOP	
2176	7000	NOP	
2177	7000	NOP	

```

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

/AUTO INDEX TEST 83
2212 7200      CLA
2213 1021      TAU K5777      /CONSTANT TO BE INDEXED
2214 3015      DC# 15
2215 0415      AN# I 15      /DO AUTO INDEX
2216 1015      TAU 15
2217 1021      TAU K3777      /AC SHOULD EQUAL 7777
2220 7040      CMA
2221 7440      SZA      /AC SHOULD BE ZERO
2222 7402      HLI      /AUTO INDEX ERROR

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

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

```

```

2245 7200      /AUTO INDEX TEST 86
2246 1035      CLA
2247 3016      TAU K7776      /CONSTANT TO BE INDEXED
2250 0416      DCA 16
2251 1016      AND I 16      /DO AUTO INDEX
2252 1036      TAU 16
2253 7040      TAU K0      /AC SHOULD EQUAL 7777
2254 7440      CMA
2255 7402      SZA      /AC SHOULD BE ZERO
                        /AUTO INDEX ERROR
                        HLT

```

```

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

```

```

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

```

```

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

```

```

2312 7200      /AUTO INDEX TEST 90
2313 1031      CLA
2314 3016      TAU K7757      /CONSTANT TO BE INDEXED
2315 0416      DCA 16
2316 1016      AND I 16      /DO AUTO INDEX
2317 1045      TA 16
2320 7040      TAD K0017      /AC SHOULD EQUAL 7777
                        CMA

```

2321	7440	SEA	/AC SHOULD BE ZERO
2322	7402	HLT	/AUTO INDEX ERROR
/AUTO INDEX TEST 91			
2323	7200	CLA	
2324	1027	TAU K7737	/CONSTANT TO BE INDEXED
2325	3016	DCA 16	
2326	0416	AND I 16	/DO AUTO INDEX
2327	1016	TAU 16	
2330	1044	TAW K0037	/AC SHOULD EQUAL 7777
2331	7040	CMA	
2332	7440	SEA	/AC SHOULD BE ZERO
2333	7402	HLT	/AUTO INDEX ERROR
/AUTO INDEX TEST 92			
2334	7200	CLA	
2335	1026	TAU K7677	/CONSTANT TO BE INDEXED
2336	3016	DCA 16	
2337	0416	AND I 16	/DO AUTO INDEX
2340	1016	TAU 16	
2341	1043	TAU K0077	/AC SHOULD EQUAL 7777
2342	7040	CMA	
2343	7440	SEA	/AC SHOULD BE ZERO
2344	7402	HLT	/AUTO INDEX ERROR
/AUTO INDEX TEST 93			
2345	7200	CLA	
2346	1025	TAU K7577	/CONSTANT TO BE INDEXED
2347	3016	DC 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	SEA	/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	DC# 16	
2361	0416	AND I 16	/DO AUTO INDEX
2362	1016	TAD 16	
2363	1041	TAV K0377	/AC SHOULD EQUAL 7777
2364	7040	CMA	
2365	7440	SE#	/AC SHOULD BE ZERO
2366	7402	HLT	/AUTO INDEX ERROR

/AUTO INDEX TEST 95

2367	7200	CLA	
2370	1023	TAV K6777	/CONSTANT TO BE INDEXED
2371	3016	DCA 16	
2372	0416	AND I 16	/DO AUTO INDEX
2373	1016	TAD 16	
2374	1040	TAV K0777	/AC SHOULD EQUAL 7777
2375	7040	CMA	
2376	7440	SE#	/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	TAC K5777	/CONSTANT TO BE INDEXED
2402	3016	DC# 16	
2403	2416	ISE I 16	/DO AUTO INDEX
2404	7000	NOP	
2405	1016	TAP 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	DC# 16	
2415	0416	ANU I 16	/DO AUTO INDEX
2416	1016	TAP 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

```

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

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

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

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

```
2467 7200
2470 1033
2471 3017
2472 1417
2473 7200
2474 1017
2475 1047
2476 7040
2477 7440
2500 7402

/AUTO INDEX TEST 102
CLA
TAX K7773 /CONSTANT TO BE INDEXED
DCA 17
TAD I 17 /DO AUTO INDEX
CLA
TAD 17
TAX K0003 /AC SHOULD EQUAL 7777
CMA
SZA /AC SHOULD BE ZERO
HLT /AUTO INDEX ERROR
```

```
2501 7200
2502 1032
2503 3017
2504 0417
2505 1017
2506 1046
2507 7040
2510 7440
2511 7402

/AUTO INDEX TEST 103
CLA
TAX K7767 /CONSTANT TO BE INDEXED
DCA 17
AND I 17 /DO AUTO INDEX
TAX 17
TAX K0007 /AC SHOULD EQUAL 7777
CMA
SZA /AC SHOULD BE ZERO
HLT /AUTO INDEX ERROR
```

```
2512 7200
2513 1031
2514 3017
2515 0417
2516 1017
2517 1045
2520 7040
2521 7440
2522 7402

/AUTO INDEX TEST 104
CLA
TAD K7757 /CONSTANT TO BE INDEXED
DCA 17
AND I 17 /DO AUTO INDEX
TAX 17
TAD K0017 /AC SHOULD EQUAL 7777
CMA
SZA /AC SHOULD BE ZERO
HLT /AUTO INDEX ERROR
```

```

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

```

```

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

```

```

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

```

```

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

```

```

2567 7200      /AUTO INDEX TEST 109
2570 1023      CLA
2571 3017      TAD K6777      /CONSTANT TO BE INDEXED
2572 0417      DCA 17
2573 1017      AND I 17      /DO AUTO INDEX
2574 1040      TAD 17
2575 7040      TAD K0777      /AC SHOULD EQUAL 7777
2576 7440      CMA
2577 7402      SZA      /AC SHOULD BE ZERO
                        HLT      /AUTO INDEX ERROR

```

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2600

*2600

/AUTO INDEX TEST 110

2600	7200	CLA	
2601	1022	TAJ K5777	/CONSTANT TO BE INDEXED
2602	3017	JCA 17	
2603	2417	ISZ I 17	/DO AUTO INDEX
2604	7000	VOP	
2605	1017	TAJ 17	
2606	1037	TAJ K1777	/AC SHOULD EQUAL 7777
2607	7040	CMA	
2608	7440	SZA	/AC SHOULD BE ZERO
2611	7402	HLT	/AUTO INDEX ERROR

/AUTO INDEX TEST 111

2612	7200	CLA	
2613	1021	TAJ K3777	/CONSTANT TO BE INDEXED
2614	3017	JCA 17	
2615	2417	AND I 17	/DO AUTO INDEX
2616	1017	TAJ 17	
2617	1021	TAJ 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	TAJ K7777	/CONSTANT TO BE INDEXED
2625	3017	JCA 17	
2626	2417	AND I 17	/DO AUTO INDEX
2627	1017	TAJ 17	
2630	1020	TAJ 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	2544	2644	
2640	1237	TAJ , -1	
2641	3010	JCA 10	
2642	5410	JMP I 10	/TEST INSTRUCTION
2643	7402	HLT	/JMP INDIRECT FAILED
2644	7402	HLT	/LOCATION 2610, NO INDEX
			/IN WTI 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	2640	, -4	
2653	7041	CIA	
2654	1252	TAD , -2	
2655	7440	SZA	
2656	7402	HLT	/WRONG ADDRESS STORED
			/DURING JMS
			/JMS WORKS (I GUESS)
2657	7410	SKP	
2660	2604	, +4	
2661	1260	TAD , -1	
2662	3010	DCA 10	/TEST INSTRUCTION
2663	4410	JMS I 10	
2664	7402	HLT	/JMS FAILED
2665	7402	HLT	/JMS FAILED
2666	1265	TAD , -1	
2667	7410	SKP	
2670	2604	, -4	
2671	7041	CIA	
2672	1270	TAD , -2	
2673	7440	SZA	
2674	7402	HLT	/WRONG ADDRESS STORED DURING JMS

/INTERRUPT TEST 1

2675	4670	JMS I , +1	
2676	4011	STR	/RUBOUT CHARACTER
2677	6041	TSF	
2700	6046	TLS	
2701	6041	TSF	
2702	5301	JMP , -1	
2703	7200	CLA	
2704	1312	TAD BACK1	/FLAG IS ON
2705	3002	DCA 2	
2706	6001	ION	
2707	7000	NOP	/GO TO LOC 0000
2710	7402	HLT	/NO INTERRUPT
2711	2710	OUT1, , -1	
2712	2713	BACK1, , +1	
2713	7440	SZA	/RETURN FROM LOC 1
2714	7402	HLT	/AC SHOULD BE 0
			/CONFIDENCE CHECK
2715	1000	TAD 0	
2716	7041	CIA	
2717	1311	TAD OUT1	
2720	7640	SZA CLA	
2721	7402	HLT	/INTERRUPT ERROR
			/WRONG ADDRESS STORED

2722	1041	/INTERRUPT TEST 2	TAD K0377	/RUBOUT CHARACTER
2723	6041		TSF	
2724	6040		ILS	
2725	6041		TSF	
2726	5320		JMP , -1	
2727	7200		CLA	/FLAG IS ON
2730	1330		TAD BACK3	
2731	3002		DCA 2	
2732	6001		ION	
2733	1020		TAD K7777	
2734	7402		HLT	/NO INTERRUPT
2735	2734	OUT3, , -1		
2736	2737	BACK3, , +1		
2737	7040	CMA		/RETURN FROM LOC1
2740	7440	SZA		
2741	7402	HLT		/CONFIDENCE CHECK
				/AC SHOULD BE 0
2742	1000		TAD 0	
2743	7041		CIA	
2744	1330		TAD OUT3	
2745	7640		SZA CLA	/INTERRUPT ERROR
2746	7402		HLT	/WRONG ADDRESS STORED
		/INTERRUPT TEST 3		
2747	1041		TAD K0377	/RUBOUT CHARACTER
2750	6041		TSF	
2751	6040		ILS	
2752	6041		TSF	
2753	5352		JMP , -1	
2754	7200		CLA	/FLAG IS ON
2755	1364		TAD BACK2	
2756	3002		DCA 2	
2757	1020		TAD K7777	
2760	6001		ION	
2761	0020		AND K7777	
2762	7402		HLT	/NO INTERRUPT
2763	2762	OUT2, , -1		
2764	2765	BACK2, , +1		
2765	7040	CMA		/RETURN FROM LOC1
2766	7440	SZA		
2767	7402	HLT		/CONFIDENCE CHECK
				/AC SHOULD BE 0
2770	1000		TAD 0	
2771	7041		CIA	
2772	1363		TAD OUT2	
2773	7640		SZA CLA	
2774	7402		HLT	/INTERRUPT ERROR
				/WRONG ADDRESS STORED
2775	7000		NOP	
2776	7000		NOP	
2777	7000		NOP	


```

3000
3000 1041      *3000
3001 6041      /INTERRUPT TEST 4
3002 6046      TAD K0377      /RUBOUT CHARACTER
3003 6041      TSF
3004 5203      TLS
3005 7207      TSF
3006 1215      JMP , -1
3007 3002      CLA      /FLAG IS ON
3010 1020      TAD BACK4
3011 6001      DCA 2
3012 3003      TAD K7777
3013 7402      ION
3014 3013      DCA 3
3015 3016      HLT      /NO INTERRUPT
3016 7440      OUT4, , -1
3017 7402      BACK4, , +1
3020 1003      SZA      /RETURN FROM LOC1
3021 7040      HLT      /CONFIDENCE CHECK
3022 7440      /AC SHOULD BE ZERO
3023 7402      TAD 3
3024 3003      CMA
3025 1030      SZA
3026 7041      HLT      /DCA PRIOR TO INTERRUPT
3027 1214      /FAILED
3030 7640      DCA 3
3031 7402      TAD 0
3032 1041      CIA
3033 6041      TAD OUT4
3034 6046      SZA CLA
3035 6041      HLT      /INTERRUPT ERROR
3036 5235      /WRONG ADDRESS STORED
3037 7200      /INTERRUPT TEST 5
3040 1230      TAD K0377      /RUBOUT CHARACTER
3041 3002      TSF
3042 1035      TLS
3043 1035      TSF
3044 1035      JMP , -1
3045 1035      CLA      /FLAG IS ON
3046 1035      TAD BACK5
3047 1035      DCA 2
3048 1035      TAD K7776

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3043	3003	DCA 3	
3044	6001	ION	
3045	2003	ISZ 3	
3046	7402	HLT	/NO INTERRUPT
3047	3046	OUT5, -1	
3050	3051	BACK5, +1	
3051	7440	SZA	/RETURN FROM LOC1
3052	7402	HLT	/CONFIDENCE CHECK
			/AC SHOULD BE ZERO
3053	1003	TAD 3	
3054	7040	CMA	
3055	7440	SZA	
3056	7402	HLT	/ISZ PRIOR TO
			/INTERRUPT FAILED
3057	3003	DCA 3	
3060	1000	TAD 0	
3061	7041	CIA	
3062	1247	TAD OUT5	
3063	7640	SZA CLA	
3064	7402	HLT	/INTERRUPT ERROR
			/WRONG ADDRESS STORED
		/INTERRUPT TEST 6	
3065	1041	TAD K0377	/RUBOUT CHARACTER
3066	6041	ISF	
3067	6046	TLS	
3070	6141	ISF	
3071	5270	JMP -1	
3072	7200	CLA	/FLAG IS ON
3073	1304	TAD BACK6	
3074	3002	DCA 2	
3075	1020	TAD K7777	
3076	3003	DCA 3	
3077	6001	ION	
3100	2003	ISZ 3	
3101	7402	HLT	/NO INTERRUPT
3102	7402	HLT	
3103	3102	OUT6, -1	
3104	3105	BACK6, +1	
3105	7440	SZA	/RETURN FROM LOC 1
3106	7402	HLT	/CONFIDENCE CHECK
			/AC SHOULD BE ZERO
3107	1003	TAD 3	
3110	7440	SZA	
3111	7402	HLT	/ISZ PRIOR TO
			/INTERRUPT FAILED
3112	3003	DCA 3	
3113	1000	TAD 0	
3114	7041	CIA	
3115	1303	TAD OUT6	
3116	7640	SZA CLA	
3117	7402	HLT	/INTERRUPT ERROR
			/WRONG ADDRESS STORED

```

/INTERRUPT TEST 7
3120 1041      TAD K0377      /RUBOUT CHARACTER
3121 6041      TSF
3122 6046      TLS
3123 6041      TSF
3124 5326      JMP , -1
3125 7200      CLA      /FLAG IS ON
3126 1334      TAD BACK7
3127 3002      DCA 2
3130 6001      ION
3131 5331      JMP ,
3132 7402      HLT      /NO INTERRUPT
3133 3131      OUT7, , -2
3134 3135      BACK7, , +1
3135 7440      SZA      /RETURN FROM LOC 1
3136 7402      HLT      /CONFIDENCE CHECK
                          /AC SHOULD BE 0

3137 1000      TAD 0
3140 7041      CIA
3141 1333      TAD OUT7
3142 7640      SZA CLA
3143 7402      HLT      /INTERRUPT ERROR
                          /WRONG ADDRESS STORED

```

```

/INTERRUPT TEST 8
3144 1041      TAD K0377      /RUBOUT CHARACTER
3145 6041      TSF
3146 6046      TLS
3147 6041      TSF
3150 5347      JMP , -1
3151 7200      CLA      /FLAG IS ON
3152 1360      TAD BACK8
3153 3002      DCA 2
3154 6001      ION
3155 4003      JMS 3
3156 7402      HLT      /NO INTERRUPT
3157 3156      OUT8, , -1
3160 3161      BACK8, , +1
3161 7440      SZA      /RETURN FROM LOC 1
3162 7402      HLT      /CONFIDENCE CHECK
                          /AC SHOULD BE ZERO

3163 1003      TAD 3
3164 7041      CIA
3165 1357      TAD OUT8
3166 7440      SZA
3167 7402      HLT      /JMS ERROR PRIOR
                          /TO INTERRUPT WRONG
                          /ADDRESS STORED

```

3170 1000
3171 7041
3172 1064
3173 7540
3174 7402

3175 7000
3176 7000
3177 7000

TAU 2
CIA
TAU K4
SFA CLA
HLT

NOP
NOP
NOP

/INTERRUPT ERROR
/WRONG ADDRESS STORED

```

3200
*3200
/INTERRUPT TEST 9
TAD K0377
/ROUT CHARACTER
TSF
TLS
TSF
JMP , -1
CLA
/FLAG IS ON
TAD BACK9
DCA 2
TAD K7777
ION
CLA
HLT
/NO INTERRUPT
OUT9, , -1
BACK9, , +1
SZA
/RETURN FROM LOC 1
/CLA PRIOR TO INTERRUPT
/FAILED
HLT
TAD 0
CIA
TAD OUT9
SZA CLA
/INTERRUPT FAILED
/WRONG ADDRESS STORED
HLT

```

```

/INTERRUPT TEST 10
TAD K0377
/ROUT CHARACTER
TSF
TLS
TSF
JMP , -1
CLA
/FLAG IS ON
TAD BACK10
DCA 2
ION
TSF
HLT
/NO INTERRUPT
HLT

```

3241	5240	OUT10, ,-1	
3242	5243	BACK10, ,+1	
3243	7440	SZA	/RETURN FROM LOC 1
3244	7402	HLT	/CONFIDENCE CHECK
			/AC SHOULD BE ZERO
3245	1000	TAD 0	
3246	7041	CLA	
3247	1241	TAU OUT10	
3250	7640	SZA CLA	
3251	7402	HLT	/INTERRUPT ERROR
			/WRONG ADDRESS STORED

/INTERRUPT TEST 11

3252	1041	TAU K0377	/RUBOUT CHARACTER
3253	6041	TSF	
3254	6046	TLS	
3255	6041	TSF	
3256	5255	JMP ,-1	
3257	7200	CLA	/FLAG IS ON
3260	1317	TAD BACK11	
3261	3002	DCA 2	
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	6001	ION	
3307	6002	IOF	
3310	6001	ION	
3311	6002	IOF	
3312	6001	ION	
3313	6002	IOF	

```

3314 0041      TSF
3315 7402      HLT          /WHAT HAPPENED TO MY FLAG
3316 7410      SKP
3317 3321      BACK11, .+2
3320 7410      SKP
3321 7402      HLT          /INTERRUPT OCCURRED DURING
                          /ION-IOF SEQUENCE
                          /SEE LOCATION 0000

```

```

3322 6042      /INTERRUPT TEST 12
3323 7200      TCF          /CLEAR FLAG
3324 1334      CLA
3325 3002      TAD BACK12
3326 6001      JCA 2
3327 7000      ION
3330 7000      NOP
3331 7000      NOP
3332 7000      NOP
3333 7410      SKP
3334 3336      BACK12, .+2
3335 7410      SKP
3336 7402      HLT          /INTERRUPT WITH NO
                          /FLAG,
3337 6002      IOF

```

/ILLEGAL AUTO INDEX TEST1

```

3340 7200      CLA
3341 5742      JMP I ,+1
3342 4000      AND1
3343 4010      K4010, 4010
3350 4000      *4000
3351 0610      AND1, AND I 4010          /TEST INSTRUCTION
3352 5002      JMP I ,+1
3353 3350      RET1
3354 1743      *3350
3355 7440      RET1, TAD I K4010
3356 7402      SZA
3357 7402      HLT          /ERROR, AC SHOULD BE ZERO
                          /AND I 4010 ALTERED (4010)
3358 7200      CLA
3359 3743      DCA I K4010

```

/ILLEGAL AUTO INDEX TEST 2

3355 7200
3356 5757
3357 2173
3360 2010

CLA
JMP I ,+1
AND2
K2010, 2010

2173 0610
2174 5775
2175 3370

*2173
AND2, AND I 2010
JMP I ,+1
RET2

/TEST INSTRUCTION

3370 1760
3371 7440
3372 7402

*3370
RET2, TAD I K2010
SZ0
HLI

/ERROR. AC SHOULD BE ZERO
/AND I 2010 ALTERED (2010)

3373 5774
3374 3400

JMP I ,+1
3400

/ILLEGAL AUTO INDEX TEST 3

3400 7200
3401 5602
3402 1173
3403 1010

*3400
CLA
JMP I ,+1
AND3
K1010, 1010

1173 0610
1174 5775
1175 3410

*1173
AND3, AND I 1010
JMP I ,+1
RET3

/TEST INSTRUCTION

3410 1603
3411 7440
3412 7402

*3410
RET3, TAD I K1010
SZ0
HLI

/ERROR. AC SHOULD BE ZERO
/AND I 1010 ALTERED (1010)

3413 7200
3414 3603

CLA
DCA I K1010

/ILLEGAL AUTO INDEX TEST 4

3415 7200
3416 5617
3417 0574
3420 0410

CLA
JMP I ,+1
AND4
K410, 410

0574 0574
0574 0610
0575 5776
0576 3430

*574
AND4, AND I 410
JMP I ,+1
RET4

/TEST INSTRUCTION

3430 1620
3431 7440
3432 7402

*3430
RET4, TAD I K410
SZA
HLT

/ERROR, AC SHOULD BE ZERO
/AND I 410 ALTERED (410)

3433 7200
3434 3620

CLA
DCA I K410

/ILLEGAL AUTO INDEX TEST 5

3435 7200
3436 5637
3437 0371
3440 0210

CLA
JMP I ,+1
AND5
K210, 210

0370 0370
0370 5374
0371 0610
0372 5773
0373 3450

*370
JMP ,+4
AND5, AN I 210
JMP I ,+1
RET5

/TEST INSTRUCTION

3450 1640
3451 7440
3452 7402

*3450
RET5, TAD I K210
SZA
HLT

/ERROR, AC SHOULD BE ZERO
/AND I 210 ALTERED (210)

3453 7200
3454 3640

CLA
DCA I K210

/ILLEGAL AUTO INDEX TEST 6

3455 7200
3456 5657
3457 0130
3460 0110

CLA
JMP I .+1
AND6
K110, 110

0130 0130
0130 0510
0131 5532
0132 3470

*130
AND6, AND I 110
JMP I .+1
RE16

/TEST INSTRUCTION

3470 3470
3470 1660
3471 7440
3472 7402

*3470
RET6, TAW I K110
SZA
HLI

/ERROR, AC SHOULD BE ZERO
/AND I 110 ALTERED (110)

3473 7200
3474 3110

CLA
DCA 110

/ILLEGAL AUTO INDEX TEST 7

3475 7200
3476 5677
3477 0124
3500 0050

CLA
JMP I .+1
AND7
K50, 50

0124 0124
0124 0450
0125 5526
0126 3510

*124
AND7, AND I 50
JMP I .+1
RE17

/TEST INSTRUCTION

3510 3510
3510 1700
3511 7440
3512 7402

*3510
RET7, TAW I K50
SZA
HLI

/ERROR, AC SHOULD BE ZERO
/AND I 50 ALTERED (50)

3513 7200
3514 3050

CLA
DCA 50

/ILLEGAL AUTO INDEX TEST 8

3515 7200
3516 5717
3517 0120
3520 0030

CLA
JMP I ,+1
ANUB
K30, 30

0120 0120
0120 0430
0121 5522
0122 3530

*120
AND8, AND I 30
JMP I ,+1
RE18

/TEST INSTRUCTION

3530 3530
3530 1720
3531 7440
3532 7402

*3530
RETB, TAD I K30
SZA
HLT

/ERROR, AC SHOULD BE ZERO
/AND I 30 ALTERED (30)

3533 7200
3534 3030

CLA
DCA 30

/ILLEGAL AUTO INDEX TEST 9

3535 7200
3536 3000
3537 5740
3540 0074

CLA
DCA 0
JMP I ,+1
AND9

0074 0074
0074 0400
0075 5476
0076 3550

*74
AND9, AND I 0
JMP I ,+1
RET9

/TEST INSTRUCTION

3550 3550
3550 1436
3551 7440
3552 7402

*3550
RET9, TAD I K0
SZA
HLT

/ERROR, AC SHOULD BE ZERO
/AND I 0 ALTERED (0)

3553 7200
3554 3000

CLA
DCA 0

/ILLEGAL AUTO INDEX TEST 10

3555 7200
3556 5757
3557 0070

CLA
JMP I .+1
ANW10

0070 0070
0070 0407
0071 5472
0072 3600

*70
AND10, ANW I 7 /TEST INSTRUCTION
JMP I .+1
RET10

3600 3600
3600 1446
3601 7440
3602 7402

*3600
RET10, TAD I K0007
SZA
HLI /ERROR, AC SHOULD BE ZERO
/AND I 7 ALTERED (7)
CL*
DCA 7

3603 7200
3604 3007

/CHECK FOR TTY BELL

3605 1223
3606 7001
3607 3223
3610 1223
3611 1224
3612 7640
3613 5622
3614 3223
3615 1225
3616 6046
3617 6041
3620 5217
3621 5622
3622 0201
3623 0000
3624 7730
3625 0207

TAD BLCNT
IAN
DCA BLCNT
TAD BLCNT
TAD RNCNT
SZA CLA
JMP I K201
DCA BLCNT
TAD BELCOD
TL*
TSF
JMP .-1
JMP I .+1
K201, 201
BLCNT, 0
RNCNT, -50
BELCOD, 207

4010 4010
4010 0000

*4010
0

4011 0000
4012 1221
4013 3001
4014 3002
4015 3003
4016 1041
4017 2211
4020 5611
4021 5402

STR, 0
TAD JMPIX
DC0 1
DCA 2
DC0 3
TAD K0377
IS0 STR
JMP I STR
JMPIX, 5402

S

THERE ARE NO ERRORS

SYMBOL TABLE

AND1	4000
AND10	0070
AND2	2173
AND3	1173
AND4	0574
AND5	0371
AND6	0130
AND7	0124
AND8	0120
AND9	0074
BACK1	2711
BACK10	3242
BACK11	3317
BACK12	3334
BACK2	2763
BACK3	2735
BACK4	3015
BACK5	3050
BACK6	3104
BACK7	3134
BACK8	3160
BACK9	3215
BELCOD	3625
BLCNT	3623
JMPIX	4021
K0	0036
K0001	0051
K0003	0047
K0007	0046
K0017	0045
K0037	0044
K0077	0043
K0177	0042
K0377	0041
K0707	0060
K0777	0040
K1010	3403
K110	3460
K1111	0062
K1234	0177
K172	0173
K173	0174
K174	0175
K175	0176
K176	0172
K1777	0037
K201	3622
K2010	3360
K210	3440
K2525	0054
K30	3520
K3777	0021
K4	0064

SYMBOL TABLE

K4010	3343
K410	3420
K4400	0052
K4444	0056
K4577	0053
K50	3500
K5252	0061
K5555	0063
K5777	0022
K6666	0055
K6777	0023
K7070	0057
K7377	0024
K7577	0025
K7677	0026
K7737	0027
K7757	0031
K7767	0032
K7773	0033
K7775	0034
K7776	0035
K7777	0020
OUT1	2710
OUT10	3241
OUT2	2762
OUT3	2734
OUT4	3014
OUT5	3047
OUT6	3103
OUT7	3133
OUT8	3157
OUT9	3214
RET1	3350
RET10	3600
RET2	3370
RET3	3410
RET4	3430
RET5	3450
RET6	3470
RET7	3510
RET8	3530
RET9	3550
RNGCNT	3624
STR	4011
TP0	0200
TP177	0377

SYMBOL TABLE

K7777	0020
K3777	0021
K5777	0022
K6777	0023
K7377	0024
K7577	0025
K7677	0026
K7737	0027
K7757	0031
K7767	0032
K7773	0033
K7775	0034
K7776	0035
K0	0036
K1777	0037
K0777	0040
K0377	0041
K0177	0042
K0077	0043
K0037	0044
K0017	0045
K0007	0046
K0003	0047
K0001	0051
K4400	0052
K4577	0053
K2525	0054
K6666	0055
K4444	0056
K7070	0057
K0707	0060
K5252	0061
K1111	0062
K5555	0063
K4	0064
AND10	0070
AND9	0074
AND8	0120
AND7	0124
AND6	0130
K176	0172
K172	0173
K173	0174
K174	0175
K175	0176
K1234	0177
TP0	0200
AND5	0371
TP177	0377
AND4	0574
AND3	1173
AND2	2173
OUT1	2710

SYMBOL TABLE

BACK1	2711
OUT3	2734
BACK3	2735
OUT2	2762
BACK2	2763
OUT4	3014
BACK4	3015
OUT5	3047
BACK5	3050
OUT6	3103
BACK6	3104
OUT7	3133
BACK7	3134
OUT8	3157
BACK8	3160
OUT9	3214
BACK9	3215
OUT10	3241
BACK10	3242
BACK11	3317
BACK12	3334
K4010	3343
RET1	3350
K2010	3360
RET2	3370
K1010	3403
RET3	3410
K410	3420
RET4	3430
K210	3440
RET5	3450
K110	3460
RET6	3470
K50	3500
RET7	3510
K30	3520
RET8	3530
RET9	3550
RET10	3600
K201	3622
BLCNT	3623
RNGCNT	3624
BELCOD	3625
AND1	4000
STR	4011
JMPIX	4021

MAINDEC EVALUATION REQUEST

After sufficient familiarization with the operation and documentation of this MAINDEC, please indicate your assessment of the following areas and return this form to Digital Equipment Corporation.

IDENTIFICATION: MAINDEC NO. _____ Program Title _____

USAGE: Used by: Field Service ☐ Production ☐ Other _____ ☐

Frequency of Usage: Daily ☐ Weekly ☐ Monthly ☐

SUGGESTIONS FOR IMPROVEMENT

1. Are the program loading and operating instructions: clear? ☐, incomplete? ☐, difficult to follow? ☐

2. Do the error reports and program documentation provide sufficient diagnostic information. in all cases? ☐, in most cases? ☐, in very few cases? ☐. Suggestions for improvement:

3. Is the program effective in isolating malfunctions: in all cases? ☐, in most cases? ☐, in very few cases? ☐. Would additional Scope loops or Switch Register control be helpful? _____
Suggestions for improvement:

4. Does the program ever fail to detect malfunctions exposed by other software? _____
Were Margins used? _____ Please describe malfunction in detail:

5. Does the program ever report non-existent malfunctions? _____
Please indicate erroneous report and any pertinent operating conditions:

6. Does this MAINDEC ever expose malfunctions in the Central Processor or other peripheral units not detected by the appropriate MAINDEC? _____
Please describe malfunction and MAINDEC(S) used:

7. Does the document provide a general understanding of the functional programming requirements of the system? Good ☐, Fair ☐, None ☐. Would a general description of programming requirements increase the effectiveness of this MAINDEC? _____

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