

IDENTIFICATION

Product Code: MAINDEC-8/I-D01C-D
Product Name: Instruction Test 1
Date Created: December 10, 1969
Maintainer: Diagnostic Group

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1. ABSTRACT

This is a diagnostic program for testing the AND, TAD, and OPERATE instructions of the PDP-8I ONLY.

2. REQUIREMENTS

2.1 Equipment

A PDP-8I equipped with Teletype.

2.2 Storage

This program uses locations 0000-4421. The Binary Loader must be stored in the last memory page.

2.3 Preliminary Programs

3. LOADING PROCEDURE

3.1 Method

The standard Binary Loader is used.

4. STARTING PROCEDURE

4.1 Control Switch Settings

SR = 7777

4.2 Starting Address

0144

4.3 Operator Action

1. Set SR to 144 and press LOAD ADDRESS.
2. Set SR to 7777 and push START.
3. Program will halt. MA=146
4. If AC = 0000 an error has occurred.
5. Push CONTINUE. Program will run until stopped or until 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

7.1 Starting Restrictions: None

7.2 Operating Restrictions: None

8. MISCELLANEOUS

8.1 Execution Time

256 program loops per second.

9. PROGRAM DESCRIPTION

The program consists of many individual tests. In most cases each test checks only one function and uses previously tested functions as a basis for the test. The program counter action is strictly sequential except for SKIPS. The only JMP instructions used are at the end of the program.

The sequence of testing is as follows:

1. Test all operate functions individually except for rotates.
2. Test TAD instruction.
3. Test ROTATE functions.
4. Group 1 operate instruction test. All possible combinations.

5. Group 2 operate instruction test. All possible combinations.

6. Test AND instruction.

The Teletype bell rings after each 128 program loops.

10. LISTING

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/INSTRUCTION TEST - 1
/TAPE 1

0000	0000	*0	
0001	5001		0
0002	0002		JMP 1
0003	0003		0002
0004	0000		0003
0005	0000		?
0006	7402	HALT,	0000
0007	7000	NOOP,	HLT
0010	0000		NOP
			0

/CONSTANTS AND VARIABLES

0020	0020	*20	
0020	0000	K0000,	0000
0021	0001	K0001,	0001
0022	0002	K0002,	0002
0023	0004	K0004,	0004
0024	0010	K0010,	0010
0025	0020	K0020,	0020
0026	0040	K0040,	0040
0027	0100	K0100,	0100
0030	0200	K0200,	0200
0031	0400	K0400,	0400
0032	1000	K1000,	1000
0033	2000	K2000,	2000
0034	4000	K4000,	4000
0035	7776	K7776,	7776
0036	7775	K7775,	7775
0037	7773	K7773,	7773
0040	7767	K7767,	7767
0041	7757	K7757,	7757
0042	7737	K7737,	7737
0043	7677	K7677,	7677
0044	7577	K7577,	7577
0045	7377	K7377,	7377
0046	6777	K6777,	6777
0047	5777	K5777,	5777
0050	3777	K3777,	3777
0051	7777	K7777,	7777
0052	5252	K5252,	5252
0053	2525	K2525,	2525
0054	6000	K6000,	6000
0055	7000	K7000,	7000
0056	7400	K7400,	7400
0057	7600	K7600,	7600
0060	7740	K7740,	7740
0061	7760	K7760,	7760
0062	7770	K7770,	7770
0063	7774	K7774,	7774
0064	0003	K0003,	0003

0065	0007	K0007,	0007
0066	0067	K0067,	0067
0067	0017	K0017,	0017
0070	0037	K0037,	0037
0071	0077	K0077,	0077
0072	0177	K0177,	0177
0073	0377	K0377,	0377
0074	0777	K0777,	0777
0075	1777	K1777,	1777
0076	7700	K7700,	7700


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      0144      *144
0144  1051    /TAD,CLA,HLT,TEST
0145  7200    START:  TAD K7777
0146  7402    CLA
                        /AC SHOULD=0
                        /SET SR TO 7777, CONTINUE
                        HLT

      /SKIP TEST
0147  7410    SKP
0150  7402    HLT
                        /SKIP FAILED

      /SZA TEST 1
0151  7200    CLA
0152  7440    SZA
0153  7402    HLT
                        /SZA SHOULD HAVE SKIPPED
                        /AC SHOULD EQUAL ZERO

0154  7450    SNA
0155  7410    SKP
0156  7402    HLT
                        /SNA SHOULD NOT HAVE SKIPPED
                        /AC SHOULD EQUAL ZERO

      /SZA TEST 2
0157  7200    CLA
0160  1034    TAD K4000
0161  7440    SZA
0162  7410    SKP
0163  7402    HLT
                        /SZA SHOULD NOT HAVE SKIPPED
                        /AC SHOULD EQUAL 4000

0164  7450    SNA
0165  7402    HLT
                        /SNA SHOULD HAVE SKIPPED
                        /AC SHOULD EQUAL 4000

      /SZA TEST 3
0166  7200    CLA
0167  1033    TAD K2000
0170  7440    SZA
0171  7410    SKP
0172  7402    HLT
                        /SZA SHOULD NOT HAVE SKIPPED
                        /AC SHOULD EQUAL 2000

0173  7450    SNA
0174  7402    HLT
0175  7000    NOP
0176  7000    NOP
0177  7000    NOP
                        /SNA SHOULD HAVE SKIPPED
                        /AC SHOULD EQUAL 2000

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      7220 *200
0220 7220 /SZA TEST 4
0221 1032 CLA
0222 7442 TAD K1000
0223 7412 SZA
0224 7402 SKP
                                /SZA SHOULD NOT HAVE SKIPPED
                                /AC SHOULD EQUAL 1000
0225 7450 SNA
0226 7402 HLT
                                /SNA SHOULD HAVE SKIPPED
                                /AC SHOULD EQUAL 10000

/SZA TEST 5
0207 7200 CLA
0210 1031 TAD K0400
0211 7440 SZA
0212 7410 SKP
0213 7402 HLT
                                /SZA SHOULD NOT HAVE SKIPPED
                                /AC SHOULD EQUAL 0400
0214 7450 SNA
0215 7402 HLT
                                /SNA SHOULD HAVE SKIPPED
                                /AC SHOULD EQUAL 0400

/SZA TEST 6
0216 7200 CLA
0217 1030 TAD K0200
0220 7440 SZA
0221 7410 SKP
0222 7402 HLT
                                /SZA SHOULD NOT HAVE SKIPPED
                                /AC SHOULD EQUAL 0200
0223 7450 SNA
0224 7402 HLT
                                /SNA SHOULD HAVE SKIPPED
                                /AC SHOULD EQUAL 0200

/SZA TEST 7
0225 7200 CLA
0226 1027 TAD K0100
0227 7440 SZA
0230 7410 SKP
0231 7402 HLT
                                /SZA SHOULD NOT HAVE SKIPPED
                                /AC SHOULD EQUAL 0100
0232 7450 SNA
0233 7402 HLT
                                /SNA SHOULD HAVE SKIPPED
                                /AC SHOULD EQUAL 0100
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/SZA TEST 8
0234 7200      CLA
0235 1026      TAD K0040
0236 7440      SZA
0237 7410      SKP
0240 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0040

0241 7450      SNA
0242 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0040

/SZA TEST 9
0243 7200      CLA
0244 1025      TAD K0020
0245 7440      SZA
0246 7410      SKP
0247 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0020

0250 7450      SNA
0251 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0020

/SZA TEST 10
0252 7200      CLA
0253 1024      TAD K0010
0254 7440      SZA
0255 7410      SKP
0256 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0010

0257 7450      SNA
0260 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0010

/SZA TEST 11
0261 7200      CLA
0262 1023      TAD K0004
0263 7440      SZA
0264 7410      SKP
0265 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0004

0266 7450      SNA
0267 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0004
```

/SZA TEST 12

0270	7200	CLA	
0271	1022	TAD	K0002
0272	7440	SZA	
0273	7410	SKP	
0274	7402	HLT	/SZA SHOULD NOT HAVE SKIPPED /AC SHOULD EQUAL 0002
0275	7450	SNA	
0276	7402	HLT	/SNA SHOULD HAVE SKIPPED /AC SHOULD EQUAL 0002

/SZA TEST 13

0277	7200	CLA	
0300	1021	TAD	K0001
0301	7440	SZA	
0302	7410	SKP	
0303	7402	HLT	/SZA SHOULD NOT HAVE SKIPPED /AC SHOULD EQUAL 0001
0304	7450	SNA	
0305	7402	HLT	/SNA SHOULD HAVE SKIPPED /AC SHOULD EQUAL 0001

/SPA TEST 1

0306	7200	CLA	
0307	1050	TAD	K3777
0310	7510	SPA	
0311	7402	HLT	/SPA SHOULD HAVE SKIPPED /AC SHOULD EQUAL 3777

/SPA TEST 2

0312	7200	CLA	
0313	1034	TAD	K4000
0314	7510	SPA	
0315	7410	SKP	
0316	7402	HLT	/SPA SHOULD NOT HAVE SKIPPED /AC SHOULD EQUAL 4000

/SMA TEST 1

0317	7200	CLA	
0320	1050	TAD	K3777
0321	7500	SMA	
0322	7410	SKP	
0323	7402	HLT	/SMA SHOULD NOT HAVE SKIPPED /AC SHOULD EQUAL 3777

```
0324 7200 /SMA TEST 2
0325 1054 CLA
0326 7500 TAD K4000
0327 7402 SMA
                                /SMA SHOULD HAVE SKIPPED
                                /AC SHOULD EQUAL 4000
                                HLT

0330 7200 /CMA TEST 1
0331 1051 CLA
0332 7040 TAD K7777
0333 7440 CMA
0334 7402 SZA
                                /CMA DID NOT COMPLEMENT AC
                                /AC SHOULD EQUAL 0000
                                HLT

/CMA - TAD TEST 1
0335 7200 CLA
0336 1053 TAD K2525
0337 7040 CMA
0340 7450 SNA
0341 7402 HLT
                                /TAD OR CMA ERROR
                                /AC SHOULD EQUAL 5252

0342 1053 TAD K2525
0343 7040 CMA
0344 7440 SZA
0345 7402 HLT
                                /TAD OR CMA ERROR
                                /AC SHOULD EQUAL 0000

/CMA - TAD TEST 2
0346 7200 CLA
0347 1052 TAD K5252
0350 7040 CMA
0351 7450 SNA
0352 7402 HLT
                                /TAD OR CMA ERROR
                                /AC SHOULD EQUAL 2525

0353 1052 TAD K5252
0354 7040 CMA
0355 7440 SZA
0356 7402 HLT
                                /TAD OR CMA ERROR
                                /AC SHOULD EQUAL 0000
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      /SZL TEST 2
0415 7200      CLA
0416 7100      CLL      /CLEAR LINK
0417 7020      CML      /COMPLEMENT LINK
0420 1034      TAD K4000
0421 7004      RAL      /SET LINK SAFETY
0422 7430      SZL
0423 7410      SKP
0424 7402      HLT      /SZL SHOULD NOT HAVE SKIPPED
                          /LINK SHOULD EQUAL ONE

      /SNL TEST 1
0425 7200      CLA
0426 7100      CLL      /CLEAR LINK
0427 7004      RAL      /CLEAR LINK SAFETY
0430 7420      SNL
0431 7410      SKP
0432 7402      HLT      /SNL SHOULD NOT HAVE SKIPPED
                          /LINK SHOULD EQUAL ZERO

      /SNL TEST 2
0433 7200      CLA
0434 7100      CLL      /CLEAR LINK
0435 7020      CML      /COMPLEMENT LINK
0436 1034      TAD K4000
0437 7004      RAL      /SET LINK SAFETY
0440 7420      SNL
0441 7402      HLT      /SNL SHOULD HAVE SKIPPED
                          /LINK SHOULD EQUAL ONE
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/CLL TEST 1
0442 7200      CLA
0443 1034     TAD K4000
0444 7004     RAL          /SET LINK
0445 7420     SNL
0446 5253     JMP CLL11      /CANNOT SET LINK WITH RAL
                                /TRY A CML

0447 7100     CLL1,    CLL
0450 7430     SZL
0451 7402     HLT          /CLL DID NOT CLEAR LINK
                                /LINK SHOULD EQUAL ONE

0452 5257     JMP ,+5
0453 7020     CLL11,   CML      /SET LINK
0454 7420     SNL
0455 7402     HLT          /CANNOT SET LINK WITH
                                /RAL OR CML, CANNOT
                                /PERFORM CLL TEST 1

0456 5247     JMP CLL1

/CML TEST 1
0457 7100     CMLT1,   CLL
0460 7430     SZL
0461 7402     HLT          /CLL DID NOT CLEAR LINK
0462 7020     CML
0463 7420     SNL
0464 7402     HLT          /CML DID NOT SET LINK
0465 7020     CML
0466 7430     SZL
0467 7402     HLT          /CML DID NOT RESET LINK

/CLA TEST 1 (OPERATE GROUP 2)
0470 7200     CLA
0471 1051     TAD K7777
0472 7600     7600
0473 7440     SZA
0474 7402     HLT          /CLA (7600) DID NOT CLEAR AC
                                /AC SHOULD EQUAL 0000

/OSR TEST 1
0475 7200     CLA
0476 7404     OSR
0477 7040     CMA
0500 7440     SZA
0501 7402     HLT          /OSR DID NOT SET AC TO 7777
                                /AC SHOULD=0

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/NOP TEST 1 (OPERATE GROUP 1)

0502	7200	CLA	
0503	7100	CLL	/AC AND LINK EQUAL ZERO
0504	7000	7000	/TEST INSTRUCTION
0505	7450	SVA	
0506	7430	SZL	
0507	7402	HLT	/NOP FAILURE /AC AND LINK SHOULD BE ZERO

/NOP TEST 2 (OPERATE GROUP 2)

0510	7200	CLA	
0511	7100	CLL	/AC AND LINK EQUAL ZERO
0512	7400	7400	/TEST INSTRUCTION
0513	7450	SVA	
0514	7430	SZL	
0515	7402	HLT	/NOP FAILURE /AC AND LINK SHOULD BE ZERO

/TAD TEST 1

0516	7200	CLA	
0517	1050	TAD K3777	/OPERAND 1
0520	1034	TAD K4000	/OPERAND 2
0521	7040	CMA	
0522	7440	SZA	
0523	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

/TAD TEST 2

0524	7200	CLA	
0525	1047	TAD K5777	/OPERAND 1
0526	1033	TAD K2000	/OPERAND 2
0527	7040	CMA	
0530	7440	SZA	
0531	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

/TAD TEST 3

0532	7200	CLA	
0533	1046	TAD K6777	/OPERAND 1
0534	1032	TAD K1000	/OPERAND 2
0535	7040	CMA	
0536	7440	SZA	
0537	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

/TAD TEST 4

0540	7200	CLA	
0541	1045	TAD K7377	/OPERAND 1
0542	1031	TAD K0400	/OPERAND 2
0543	7040	CMA	
0544	7440	SZA	
0545	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

/TAD TEST 5

0546	7200	CLA	
0547	1044	TAD K7277	/OPERAND 1

/INSTRUCTION TEST - 1

PAL10

V141

3-DEC-69

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PAGE 11-1

0550 1030
0551 7040
0552 7440
0553 7402

TAD K0220
CMA
SZA
HLT

/OPERAND 2

/TAD ERROR
/AC SHOULD EQUAL 0000


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      /TAD TEST 14
0637 7200      CLA
0640 7100      CLL
0641 1054      TAD K6000      /OPERAND 1
0642 1033      TAD K2000      /OPERAND 2
0643 7430      SZL
0644 7440      SZA
0645 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE

      /TAD TEST 15
0646 7200      CLA
0647 7100      CLL
0650 1055      TAD K7000      /OPERAND 1
0651 1032      TAD K1000      /OPERAND 2
0652 7430      SZL
0653 7440      SZA
0654 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE

      /TAD TEST 16
0655 7200      CLA
0656 7100      CLL
0657 1056      TAD K7400      /OPERAND 1
0660 1031      TAD K0400      /OPERAND 2
0661 7430      SZL
0662 7440      SZA
0663 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE

      /TAD TEST 17
0664 7200      CLA
0665 7100      CLL
0666 1057      TAD K7600      /OPERAND 1
0667 1030      TAD K0200      /OPERAND 2
0670 7430      SZL
0671 7440      SZA
0672 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE

      /TAD TEST 18
0673 7200      CLA
0674 7100      CLL
0675 1076      TAD K7700      /OPERAND 1
0676 1027      TAD K0100      /OPERAND 2
0677 7430      SZL
0700 7440      SZA
0701 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE

      /TAD TEST 19
0702 7200      CLA
0703 7100      CLL
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0704	1060	TAD K7740	/OPERAND 1
0705	1026	TAD K0040	/OPERAND 2
0706	7430	SZL	
0707	7440	SZA	
0710	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ONE

/TAD TEST 20

0711	7200	CLA	
0712	7100	CLL	
0713	1061	TAD K7760	/OPERAND 1
0714	1025	TAD K0020	/OPERAND 2
0715	7430	SZL	
0716	7440	SZA	
0717	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ONE

/TAD TEST 21

0720	7200	CLA	
0721	7100	CLL	
0722	1062	TAD K7770	/OPERAND 1
0723	1024	TAD K0010	/OPERAND 2
0724	7430	SZL	
0725	7440	SZA	/TAD ERROR AC SHOULD EQUAL 0000
0726	7402	HLT	/LINK SHOULD EQUAL ONE

/TAD TEST 22

0727	7200	CLA	
0730	7100	CLL	
0731	1063	TAD K7774	/OPERAND 1
0732	1023	TAD K0004	/OPERAND 2
0733	7430	SZL	
0734	7440	SZA	
0735	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ONE

/TAD TEST 23

0736	7200	CLA	
0737	7100	CLL	
0740	1035	TAD K7776	/OPERAND 1
0741	1022	TAD K0002	/OPERAND 2
0742	7430	SZL	
0743	7440	SZA	
0744	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ONE

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/TAD TEST 24
0745 7200      CLA
0746 7100      CLL
0747 1051      TAD K1777      /OPERAND 1
0750 1021      TAD K0001      /OPERAND 2
0751 7430      SZL
0752 7440      SZA
0753 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE

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/TAD TEST 25
0754 7200      CLA
0755 7100      CLL
0756 7020      CML
0757 1034      TAD K4000      /OPERAND 1
0760 1034      TAD K4000      /OPERAND 2
0761 7420      SNL
0762 7440      SZA
0763 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

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/TAD TEST 26
0764 7200      CLA
0765 7100      CLL
0766 1050      TAD K3777      /OPERAND 1
0767 1033      TAD K2000      /OPERAND 2
0770 1033      TAD K2000      /OPERAND 3
0771 7040      CMA
0772 7420      SNL
0773 7440      SZA
0774 7402      HLT      /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

0775 7000      NOP
0776 7000      NOP
0777 7000      NOP
1000 1000

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*1000
/TAD TEST 27
1000 7200      CLA
1001 7100      CLL
1002 1047      TAD K5777      /OPERAND 1
1003 1032      TAD K1000      /OPERAND 2
1004 1032      TAD K1000      /OPERAND 3
1005 7040      CMA
1006 7420      SNL
1007 7440      SZA      /TAD ERROR AC SHOULD EQUAL 0000
1010 7402      HLT      /LINK SHOULD EQUAL ZERO

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/TAD TEST 28

1011	7200	CLA	
1012	7100	CLL	
1013	1046	TAD	K6777 /OPERAND 1
1014	1031	TAD	K0400 /OPERAND 2
1015	1031	TAD	K0400 /OPERAND 3
1016	7040	CMA	
1017	7420	SNL	
1020	7440	SZA	
1021	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO

/TAD TEST 29

1022	7200	CLA	
1023	7100	CLL	
1024	1045	TAD	K7377 /OPERAND 1
1025	1030	TAD	K0200 /OPERAND 2
1026	1030	TAD	K0200 /OPERAND 3
1027	7040	CMA	
1030	7420	SNL	
1031	7440	SZA	
1032	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO

/TAD TEST 30

1033	7200	CLA	
1034	7100	CLL	
1035	1044	TAD	K7577 /OPERAND 1
1036	1027	TAD	K0100 /OPERAND 2
1037	1027	TAD	K0100 /OPERAND 3
1040	7040	CMA	
1041	7420	SNL	
1042	7440	SZA	
1043	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO

/TAD TEST 31

1044	7200	CLA	
1045	7100	CLL	
1046	1043	TAD	K7677 /OPERAND 1
1047	1026	TAD	K0040 /OPERAND 2
1050	1026	TAD	K0040 /OPERAND 3
1051	7040	CMA	
1052	7420	SNL	
1053	7440	SZA	
1054	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO


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/TAD TEST 32
1055 7200      CLA
1056 7100      CLL
1057 1042      TAD K7737      /OPERAND 1
1060 1025      TAD K0020      /OPERAND 2
1061 1025      TAD K0020      /OPERAND 3
1062 7040      CMA
1063 7420      SNL
1064 7440      SZA
1065 7402      HLT
                        /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/TAD TEST 33
1066 7200      CLA
1067 7100      CLL
1070 1041      TAD K7757      /OPERAND 1
1071 1024      TAD K0010      /OPERAND 2
1072 1024      TAD K0010      /OPERAND 3
1073 7040      CMA
1074 7420      SNL
1075 7440      SZA
1076 7402      HLT
                        /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/TAD TEST 34
1077 7200      CLA
1100 7100      CLL
1101 1040      TAD K7767      /OPERAND 1
1102 1023      TAD K0004      /OPERAND 2
1103 1023      TAD K0004      /OPERAND 3
1104 7040      CMA
1105 7420      SNL
1106 7440      SZA
1107 7402      HLT
                        /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/TAD TEST 35
1110 7200      CLA
1111 7100      CLL
1112 1037      TAD K7773      /OPERAND 1
1113 1022      TAD K0002      /OPERAND 2
1114 1022      TAD K0002      /OPERAND 3
1115 7040      CMA
1116 7420      SNL
1117 7440      SZA
1120 7402      HLT
                        /TAD ERROR, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

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/TAD TEST 36

1121	7200	CLA	
1122	7100	CLL	
1123	1036	TAD K7775	/OPERAND 1
1124	1021	TAD K0001	/OPERAND 2
1125	1021	TAD K0001	/OPERAND 3
1126	7040	CMA	
1127	7420	SNL	
1130	7430	SZL	
1131	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO

/RAR TEST 1

1132	7200	CLA	
1133	7100	CLL	
1134	1021	TAD K0001	/ROTATE PATTERN
1135	7010	RAR	
1136	7420	SNL	
1137	7402	HLT	/RAR FAILED, LINK DROPPED A BIT /LINK SHOULD EQUAL A ONE

/RAR TEST 2

1140	7200	CLA	
1141	7100	CLL	
1142	1020	TAD K0000	/ROTATE PATTERN
1143	7010	RAR	
1144	7440	SZA	
1145	7402	HLT	/RAR FAILED, AC PICKED UP A BIT /A ONE IN AC EQUALS THE PICKED UP BIT

/RAR TEST 3

1146	7200	CLA	
1147	7100	CLL	
1150	1020	TAD K0000	/ROTATE PATTERN
1151	7010	RAR	
1152	7430	SZL	
1153	7402	HLT	/RAL FAILED, LINK PICKED UP A BIT /LINK SHOULD EQUAL ZERO

```

/RAR TEST 4
1154 7200      CLA
1155 7100      CLL
1156 7020      CML
1157 1020      TAD K0000      /ROTATE PATTERN
1160 7010      RAR
1161 7430      SZL
1162 7402      HLT      /RAR LINK PICKED UP A BIT
                        /LINK SHOULD EQUAL ZERO

/RAR TEST 5
1163 7200      CLA
1164 7100      CLL
1165 7020      CML
1166 1051      TAD K7777      /ROTATE PATTERN
1167 7010      RAR
1170 7040      CMA
1171 7440      SZA
1172 7402      HLT      /RAR FAILED AC DROPPED A BIT
                        /A ONE IN AC EQUALS THE DROPPED BIT

1173 7000      NOP
1174 7000      NOP
1175 7000      NOP
1176 7000      NOP
1177 7400      NOP
      1200      *1200

/RAR TEST 6
1200 7200      CLA
1201 7100      CLL
1202 7020      CML
1203 1020      TAD K0000      /ROTATE PATTERN
1204 7010      RAR
1205 1050      TAD K5777
1206 7040      CMA
1207 7450      SNA
1210 7430      SZL
1211 7402      HLT      /RAR FAILED AC AND LINK
                        /SHOULD EQUAL 0000

/RAR TEST 7
1212 7200      CLA
1213 7100      CLL
1214 1034      TAD K4000      /ROTATE PATTERN
1215 7010      RAR
1216 1047      TAD K5777
1217 7040      CMA
1220 7450      SNA
1221 7430      SZL
1222 7402      HLT      /RAR FAILED AC AND LINK SHOULD
                        /EQUAL 0000

```

```

1223 7200      /RAR TEST 8      CLA
1224 7100      CLL
1225 1033      TAD K2000      /ROTATE PATTERN
1226 7010      RAR
1227 1046      TAD K6777
1230 7040      CMA
1231 7450      SNA
1232 7430      SZL
1233 7402      HLT      /RAR FAILED AC AND LINK SHOULD
                        /EQUAL 0000

```

```

1234 7200      /RAR TEST 9      CLA
1235 7100      CLL
1236 1032      TAD K1000      /ROTATE PATTERN
1237 7010      RAR
1240 1045      TAD K7377
1241 7040      CMA
1242 7450      SNA
1243 7430      SZL
1244 7402      HLT      /RAR FAILED AC AND LINK SHOULD
                        /EQUAL 0000

```

```

1245 7200      /RAR TEST 10     CLA
1246 7100      CLL
1247 1031      TAD K0400      /ROTATE PATTERN
1250 7010      RAR
1251 1044      TAD K7577
1252 7040      CMA
1253 7450      SNA
1254 7430      SZL
1255 7402      HLT      /RAR FAILED AC AND LINK
                        /SHOULD EQUAL 0000

```

```
1256 7200 /RAR TEST 11
1257 7100      CLA
1260 1030      CLL
1261 7010      TAD K0200      /ROTATE PATTERN
1262 1043      RAR
1263 7040      TAD K7677
1264 7450      CMA
1265 7430      SNA
1266 7402      SZL
                        /RAR FAILED AC AND LINK
                        /EQUAL 0000
                        HLT
```

```
1267 7200 /RAR TEST 12
1270 7100      CLA
1271 1027      CLL
1272 7010      TAD K0100      /ROTATE PATTERN
1273 1042      RAR
1274 7040      TAD K7737
1275 7450      CMA
1276 7430      SNA
1277 7402      SZL
                        /RAR FAILED AC AND LINK
                        /SHOULD EQUAL 0000
                        HLT
```

```
1300 7200 /RAR TEST 13
1301 7100      CLA
1302 1026      CLL
1303 7010      TAD K0040      /ROTATE PATTERN
1304 1041      RAR
1305 7040      TAD K7757
1306 7450      CMA
1307 7430      SNA
1310 7402      SZL
                        /RAR FAILED AC AND LINK
                        /SHOULD EQUAL 0000
                        HLT
```

PAUSE

/INSTRUCTION TEST 1

/TAPE 2

/RAR TEST 14

1311	7200	CLA	
1312	7100	CLL	
1313	1025	TAD K0020	/ROTATE PATTERN
1314	7010	RAR	
1315	1040	TAD K7767	
1316	7040	CMA	
1317	7450	SNA	
1320	7430	SZL	
1321	7402	HLT	/RAR FAILED AC AND LINK

/SHOULD EQUAL 0000

/RAR TEST 15

1322	7200	CLA	
1323	7100	CLL	
1324	1024	TAD K0010	/ROTATE PATTERN
1325	7010	RAR	
1326	1037	TAD K7773	
1327	7042	CMA	
1330	7450	SNA	
1331	7430	SZL	
1332	7402	HLT	/RAR FAILED AC AND LINK

/SHOULD EQUAL 0000

/RAR TEST 16

1333	7200	CLA	
1334	7100	CLL	
1335	1023	TAD K0004	/ROTATE PATTERN
1336	7010	RAR	
1337	1036	TAD K7775	
1340	7040	CMA	
1341	7450	SNA	
1342	7430	SZL	
1343	7402	HLT	/RAR FAILED AC AND LINK

/SHOULD EQUAL 0000

/RAR TEST 17

1344	7200	CLA	
1345	7100	CLL	
1346	1022	TAD K0002	/ROTATE PATTERN
1347	7010	RAR	
1350	1035	TAD K7776	
1351	7040	CMA	
1352	7450	SNA	
1353	7430	SZL	
1354	7402	HLT	/RAR FAILED AC AND LINK

/SHOULD EQUAL 0000

```

/RAR TEST 18
1355 7200      CLA
1356 7100      CLL
1357 1021      TAD K0001      /ROTATE PATTERN
1360 7010      RAR
1361 1051      TAD K7777
1362 7040      CMA
1363 7450      SNA
1364 7420      SNL
1365 7402      HLT
/RAR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 1
1366 7200      CLA
1367 7100      CLL
1370 1022      TAD K0002      /ROTATE PATTERN
1371 7012      RTR
1372 7420      SNL
1373 7402      HLT
/RTR FAILED LINK DROPPED
/A BIT LINK SHOULD EQUAL A ONE

1374 7000      NOP
1375 7000      NOP
1376 7000      NOP
1377 7000      NOP
1400 1400      *1400

/RTR TEST 2
1400 7200      CLA
1401 7100      CLL
1402 1020      TAD K0000      /ROTATE PATTERN
1403 7012      RTR
1404 7440      SZA
1405 7402      HLT
/RTR FAILED AC PICKED UP A BIT
/A ONE IN AC EQUALS THE PICKED UP BIT

/RTR TEST 3
1406 7200      CLA
1407 7100      CLL
1410 1020      TAD K0000      /ROTATE PATTERN
1411 7012      RTR
1412 7430      SZL
1413 7402      HLT
/RTR LINK PICKED UP A BIT
/LINK SHOULD EQUAL ZERO

/RTR TEST 4
1414 7200      CLA
1415 7100      CLL
1416 7020      CML
1417 1020      TAD K0000      /ROTATE PATTERN
1420 7012      RTR
1421 7430      SZL
1422 7402      HLT
/RTR LINK PICKED UP A BIT
/LINK SHOULD EQUAL ZERO

```


/RTR TEST 5

1423	7200	CLA
1424	7100	CLL
1425	7020	CML
1426	1051	TAD K7777
1427	7012	RTR
1430	7040	CMA
1431	7440	SZA
1432	7402	HLT

/ROTATE PATTERN

/RTR AC DROPPED A BIT A ONE IN
/AC EQUALS THE DROPPED BIT

/RTR TEST 6

1433	7200	CLA
1434	7100	CLL
1435	7020	CML
1436	1020	TAD K0000
1437	7012	RTR
1440	1047	TAD K5777
1441	7040	CMA
1442	7450	SNA
1443	7430	SZL
1444	7402	HLT

/ROTATE PATTERN

/RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 7

1445	7200	CLA
1446	7100	CLL
1447	1034	TAD K4000
1450	7012	RTR
1451	1046	TAD K0777
1452	7040	CMA
1453	7450	SNA
1454	7430	SZL
1455	7402	HLT

/ROTATE PATTERN

/RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 8

1456	7200	CLA
1457	7100	CLL
1460	1033	TAD K2000
1461	7012	RTR
1462	1045	TAD K7377
1463	7040	CMA
1464	7450	SNA
1465	7430	SZL
1466	7402	HLT

/ROTATE PATTERN

/RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 9

1467	7202	CLA	
1470	7100	CLL	
1471	1032	TAD K1000	/ROTATE PATTERN
1472	7012	RTR	
1473	1044	TAD K7577	
1474	7040	CMA	
1475	7450	SNA	
1476	7430	SZL	
1477	7402	HLT	/RTR FAILED AQ AND LINK /SHOULD EQUAL 0000

/RTR TEST 10

1500	7200	CLA	
1501	7100	CLL	
1502	1031	TAD K0400	/ROTAATE PATTERN
1503	7012	RTR	
1504	1043	TAD K7077	
1505	7040	CMA	
1506	7450	SNA	
1507	7430	SZL	
1510	7402	HLT	/RTR FAILED AQ AND LINK /SHOULD EQUAL 0000

/RTR TEST 11

1511	7200	CLA	
1512	7100	CLL	
1513	1030	TAD K0200	/ROTATE PATTERN
1514	7012	RTR	
1515	1042	TAD K7737	
1516	7040	CMA	
1517	7450	SNA	
1520	7430	SZL	
1521	7402	HLT	/RTR FAILED AQ AND LINK /SHOULD EQUAL 0000

/RTR TEST 12

1522	7200	CLA	
1523	7100	CLL	
1524	1027	TAD K0100	/ROTATE PATTERN
1525	7012	RTR	
1526	1041	TAD K7757	
1527	7040	CMA	
1530	7450	SNA	
1531	7430	SZL	
1532	7402	HLT	/RTR FAILED AQ AND LINK /SHOULD EQUAL 0000

/RTR TEST 13

1533	7200	CLA	
1534	7100	CLL	
1535	1026	TAD K0040	/ROTATE PATTERN
1536	7012	RTR	
1537	1040	TAD K7767	
1540	7040	CMA	
1541	7450	SNA	
1542	7430	SZL	
1543	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

/RTR TEST 14

1544	7200	CLA	
1545	7100	CLL	
1546	1025	TAD K0020	/ROTATE PATTERN
1547	7012	RTR	
1550	1037	TAD K7773	
1551	7040	CMA	
1552	7450	SNA	
1553	7430	SZL	
1554	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

/RTR TEST 15

1555	7200	CLA	
1556	7100	CLL	
1557	1024	TAD K0010	/ROTATE PATTERN
1560	7012	RTR	
1561	1036	TAD K7775	
1562	7040	CMA	
1563	7450	SNA	
1564	7430	SZL	
1565	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

/RTR TEST 16

1566	7300	CLA CLL	
1567	1023	TAD K0004	/ROTATE PATTERN
1570	7012	RTR	
1571	1035	TAD K7776	
1572	7040	CMA	
1573	7450	SNA	
1574	7430	SZL	
1575	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

```

1576 7202      NOP
1577 7202      NOP
      1600      *1600
      /RTR TEST 17
1600 7200      CLA
1601 7100      CLL
1602 1022      TAD K0002      /ROTATE PATTERN
1603 7012      RTR
1604 7450      SNA
1605 7420      SNL
1606 7402      HLT      /RTR FAILED, AC SHOULD EQUAL
                        /0000, LINK SHOULD EQUAL ONE

      /RTR TEST 18
1607 7200      CLA
1610 7100      CLL
1611 1021      TAD K0001      /ROTATE PATTERN
1612 7012      RTR
1613 1050      TAD K3777
1614 7040      CMA
1615 7450      SNA
1616 7432      SZL
1617 7402      HLT      /RTR FAILED, AC AND LINK
                        /SHOULD BE ZERO

      /RAL TEST 1
1620 7200      CLA
1621 7100      CLL
1622 1034      TAD K4000      /ROTATE PATTERN
1623 7004      RAL
1624 7430      SZL
1625 7440      SZA
1626 7402      HLT      /RAL FAILED, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE,

      /RAL TEST 2
1627 7200      CLA
1630 7100      CLL
1631 1020      TAD K0000      /ROTATE PATTERN
1632 7004      RAL
1633 7420      SNL
1634 7440      SZA
1635 7402      HLT      /RAL FAILED, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

```

		/RAL TEST 3	
1636	7200	CLA	
1637	7100	CLL	
1640	7020	CML	
1641	1020	TAD K0000	/ROTATE PATTERN, LINK=1
1642	7004	RAL	
1643	7430	SZL	
1644	7402	HLT	/RAL FAILURE, AC SHOULD EQUAL 0001 /LINK SHOULD EQUAL ZERO
		/RAL TEST 4	
1645	7200	CLA	
1646	7100	CLL	
1647	7020	CML	
1650	1051	TAD K7777	/ROTATE PATTERN, LINK=1
1651	7004	RAL	
1652	7040	CMA	
1653	7440	SZA	
1654	7422	HLT	/RAL FAILURE, LINK SHOULD EQUAL ONE /AC SHOULD EQUAL 0000
		/RAL TEST 5	
1655	7200	CLA	
1656	7100	CLL	
1657	1033	TAD K2000	/ROTATE PATTERN
1660	7004	RAL	
1661	1050	TAD K5777	
1662	7040	CMA	
1663	7450	SNA	
1664	7430	SZL	
1665	7402	HLT	/RAL FAILURE, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ONE
		/RAL TEST 6	
1666	7200	CLA	
1667	7100	CLL	
1670	1032	TAD K1000	/ROTATE PATTERN
1671	7004	RAL	
1672	1047	TAD K5777	
1673	7040	CMA	
1674	7440	SZA	
1675	7402	HLT	/RAL FAILURE, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO

/RAL TEST 7

1676 7200
 1677 7100
 1700 1031
 1701 7004
 1702 1046
 1703 7040
 1704 7450
 1705 7430
 1706 7402

CLA
 CLL
 TAD K0400
 RAL
 TAD K6777
 CMA
 SNA
 SZL
 HLT

/ROTATE PATTERN

/RAL FAILURE, AC SHOULD EQUAL 0000
 /LINK SHOULD EQUAL ZERO

/RAL TEST 8

1707 7200
 1710 7100
 1711 1030
 1712 7004
 1713 1045
 1714 7040
 1715 7450
 1716 7430
 1717 7402

CLA
 CLL
 TAD K0200
 RAL
 TAD K7577
 CMA
 SNA
 SZL
 HLT

/ROTATE PATTERN

/RAL FAILURE AC SHOULD EQUAL 0000
 /LINK SHOULD EQUAL ZERO

/RAL TEST 9

1720 7200
 1721 7100
 1722 1027
 1723 7004
 1724 1044
 1725 7040
 1726 7450
 1727 7430
 1730 7402

CLA
 CLL
 TAD K0100
 RAL
 TAD K7577
 CMA
 SNA
 SZL
 HLT

/ROTATE PATTERN

/RAL FAILURE AC SHOULD EQUAL 0000
 /LINK SHOULD EQUAL ZERO

```
1731 7222 /RAL TEST 10
1732 7132          CLA
1733 1426          CLL
1734 7004          TAD K0040          /ROTATE PATTERN
1735 1843          RAL
1736 7042          TAD K1077
1737 7450          CMA
1740 7432          SNA
1741 7402          SZL          /RAL FAILURE AC SHOULD EQUAL 0000
          HLT          /LINK SHOULD EQUAL A ZERO

1742 7200 /RAL TEST 11
1743 7120          CLA
1744 1025          CLL
1745 7004          TAD K0020          /ROTATE PATTERN
1746 1042          RAL
1747 7042          TAD K7737
1750 7450          CMA
1751 7430          SNA
1752 7402          SZL          /RAL FAILURE AC SHOULD EQUAL 0000
          HLT          /LINK SHOULD EQUAL A ZERO

1753 7200 /RAL TEST 12
1754 7100          CLA
1755 1024          CLL
1756 7004          TAD K0010          /ROTATE PATTERN
1757 1041          RAL
1760 7042          TAD K7757
1761 7450          CMA
1762 7430          SNA
1763 7402          SZL          /RAL FAILURE AC SHOULD EQUAL 0000
          HLT          /LINK SHOULD EQUAL A ZERO
```

```

1764 7200      /RAL TEST 13      CLA
1765 7100      CLL
1766 1023      TAD K0004      /ROTATE PATTERN
1767 7004      RAL
1770 1040      TAD K7767
1771 7040      CMA
1772 7450      SNA
1773 7430      SZL      /RAL FAILED AC SHOULD EQUAL 0000
1774 7402      HLT      /LINK SHOULD EQUAL A ZERO
1775 7000      NOP
1776 7000      NOP
1777 7000      NOP
      *2000
2202 7200      /RAL TEST 14      CLA
2201 7100      CLL
2202 1022      TAD K0002      /ROTATE PATTERN
2203 7004      RAL
2204 1037      TAD K7773
2205 7040      CMA
2206 7450      SNA
2207 7430      SZL      /RAL FAILED AC SHOULD EQUAL 0000
2208 7402      HLT      /LINK SHOULD EQUAL A ZERO
2211 7230      /RAL TEST 15      CLA
2212 7100      CLL
2213 1021      TAD K0001      /ROTATE PATTERN
2214 7004      RAL
2215 1036      TAD K7775
2216 7040      CMA
2217 7450      SNA
2220 7430      SZL      /RAL FAILED AC SHOULD EQUAL 0000
2221 7402      HLT      /LINK SHOULD EQUAL ZERO
2222 7200      /RAL TEST 16      CLA
2223 7100      CLL
2224 7020      CML
2225 7004      RAL
2226 1035      TAD K7776
2227 7040      CMA
2230 7450      SNA
2231 7430      SZL
2232 7402      HLT      /RAL FAILED AC SHOULD EQUAL 0000
      /LINK SHOULD EQUAL ZERO

```



```

/RTL TEST 1
2033 7200      CLA
2034 7100      CLL
2035 1033      TAD K2000
2036 7006      RTL
2037 7420      SNL
2040 7402      HLT
/RTL LINK DROPPED A BIT
/LINK SHOULD EQUAL A ONE

/RTL TEST 2
2041 7200      CLA
2042 7100      CLL
2043 1020      TAD K0000
/ROTATE PATTERN
2044 7006      RTL
2045 7440      SZA
2046 7402      HLT
/RTL AC PICKED UP A BIT
/A ONE IN AC EQUALS THE PICKED UP

/RTL TEST 3
2047 7200      CLA
2050 7100      CLL
2051 1020      TAD K0000
/ROTATE PATTERN
2052 7006      RTL
2053 7430      SZL
2054 7402      HLT
/RTL LINK PICKED UP A BIT
/LINK SHOULD EQUAL ZERO

/RTL TEST 4
2055 7200      CLA
2056 7100      CLL
2057 7020      CML
2060 1020      TAD K0000
/ROTATE PATTERN
2061 7006      RTL
2062 7430      SZL
2063 7402      HLT
/RTL FAILURE, LINK PICKED UP A BIT
/LINK SHOULD EQUAL A ZERO

```

```
/RTL TEST 5
2064 7200      CLA
2065 7100      CLL
2066 7020      CML
2067 1051      TAD K7777      /ROTATE PATTERN
2070 7006      RTL
2071 7040      CMA
2072 7440      SZA
2073 7402      HLT      /RTL FAILURE, DROPPED A BIT

/RTL TEST 6
2074 7200      CLA
2075 7100      CLL
2076 1034      TAD K4000      /ROTATE PATTERN
2077 7006      RTL
2100 1035      TAD K7776
2101 7040      CMA
2102 7450      SNA
2103 7430      SZL
2104 7402      HLT      /RTL FAILED AQ AND LINK SHOULD EQUAL 0000

/RTL TEST 7
2105 7200      CLA
2106 7100      CLL
2107 1033      TAD K2000      /ROTATE PATTERN
2110 7006      RTL
2111 7450      SNA
2112 7420      SNL
2113 7402      HLT      /RTL FAILED AQ AND LINK SHOULD
                        /EQUAL 0000

/RTL TEST 8
2114 7200      CLA
2115 7100      CLL
2116 1032      TAD K1000      /ROTATE PATTERN
2117 7006      RTL
2120 1050      TAD K3777
2121 7040      CMA
2122 7450      SNA
2123 7430      SZL
2124 7402      HLT      /RTL FAILED AQ AND LINK SHOULD
                        /EQUAL 0000
```

		/RTL TEST 9	
2125	7200	CLA	
2126	7100	CLL	
2127	1031	TAD K0400	/ROTATE PATTERN
2130	7006	RTL	
2131	1047	TAD K0777	
2132	7040	CMA	
2133	7450	SNA	
2134	7430	SZL	
2135	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL ZERO
		/RTL TEST 10	
2136	7200	CLA	
2137	7100	CLL	
2140	1030	TAD K0200	/ROTATE PATTERN
2141	7006	RTL	
2142	1046	TAD K0777	
2143	7040	CMA	
2144	7450	SNA	
2145	7430	SZL	
2146	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 11	
2147	7200	CLA	
2150	7100	CLL	
2151	1027	TAD K0100	/ROTATE PATTERN
2152	7006	RTL	
2153	1045	TAD K0777	
2154	7040	CMA	
2155	7450	SNA	
2156	7430	SZL	
2157	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 12	
2160	7200	CLA	
2161	7100	CLL	
2162	1026	TAD K0040	/ROTATE PATTERN
2163	7006	RTL	
2164	1044	TAD K7577	
2165	7040	CMA	
2166	7450	SNA	
2167	7430	SZL	
2170	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000

2171 7000 NOP
2172 7000 NOP
2173 7000 NOP
2174 7000 NOP
2175 7000 NOP
2176 7000 NOP
2177 7000 NOP

*2200

/RTL TEST 13

2200 7200 CLA
2201 7100 CLL
2202 1025 TAD K0020
2203 7006 RTL
2204 1043 TAD K7677
2205 7040 CMA
2206 7450 SNA
2207 7430 SZL
2210 7402 HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK SHOULD
/EQUAL 0000

/RTL TEST 14

2211 7200 CLA
2212 7100 CLL
2213 1024 TAD K0010
2214 7006 RTL
2215 1042 TAD K7737
2216 7040 CMA
2217 7450 SNA
2220 7430 SZL
2221 7402 HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK SHOULD

/RTL TEST 15

2222 7200 CLA
2223 7100 CLL
2224 1023 TAD K0004
2225 7006 RTL
2226 1041 TAD K7757
2227 7040 CMA
2230 7450 SNA
2231 7430 SZL
2232 7402 HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK SHOULD
/EQUAL 0000

/RTL TEST 16

2233 7200 CLA
2234 7100 CLL
2235 1022 TAD K0002
2236 7006 RTL
2237 1040 TAD K7767
2240 7040 CMA
2241 7450 SNA
2242 7432 SZL
2243 7402 HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTL TEST 17

2244 7200
2245 7100
2246 1021
2247 7006
2250 1037
2251 7040
2252 7450
2253 7430
2254 7402

CLA
CLL
TAD K0001
RTL
TAD K7773
CMA
SNA
SZL
HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTL TEST 18

2255 7200
2256 7100
2257 7020
2260 7006
2261 1036
2262 7040
2263 7450
2264 7430
2265 7402

CLA
CLL
CML
RTL
TAD K7775
CMA
SNA
SZL
HLT

/RTL FAILED AC AND LINK
/SHOULD EQUAL 0000

```
/GROUP 1 OPERATE TEST 1
2266 7200      CLA      /CLEAR AC
2267 7100      CLL      /CLEAR LINK
2270 7040      CMA      /AC EQUALS 7777
2271 7020      CML      /LINK EQUALS ONE
2272 7300      CLA CLL  /TEST COMBINATION
2273 7420      SNL
2274 7440      SZA
2275 7402      HLT      /CLA CLL FAILED, LINK SHOULD BE 0
                          /AC SHOULD EQUAL 0000

/GROUP 1 OPERATE TEST 2
2276 7200      CLA      /AC EQUALS 0000
2277 1053      TAD K2525 /AC EQUALS 2525
2300 7240      CLA CMA  /TEST COMBINATION
2301 7040      CMA
2322 7440      SZA
2303 7402      HLT      /CLA CMA ERROR, AC SHOULD
                          /BE 0000

/GROUP 1 OPERATE TEST 3
2304 7200      CLA
2305 7100      CLL
2306 7040      CMA      /AC=7777 LINK=1
2307 7140      CLL CMA  /TEST COMBINATION
2310 7420      SNL
2311 7440      SZA
2312 7402      HLT      /CLL CMA FAILED, AC AND LINK
                          /SHOULD BE ZERO

/GROUP 1 OPERATE TEST 4
2313 7100      CLL
2314 7020      CML      /LINK=1
2315 7200      CLA
2316 7040      CMA      /AC=7777
2317 7340      CLA CMA CLL /TEST COMBINATION
2320 7040      CMA
2321 7420      SNL
2322 7440      SZA
2323 7402      HLT      /CLA CMA CLL FAILED, AC AND
                          /LINK SHOULD BE ZERO
```

```
/GROUP 1 OPERATE TEST 5
2324 7200      CLA
2325 7100      CLL          /LINK=0
2326 7040      CMA          /AC=7777
2327 7220      CLA CML      /TEST COMBINATION
2330 7430      SZL
2331 7440      SZA
2332 7402      HLT          /CLA CML FAILED, AC SHOULD EQUAL
                          /0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 6
2333 7100      CLL
2334 7020      CML          /LINK=1
2335 7120      CLL CML      /TEST COMBINATION
2336 7420      SNL
2337 7402      HLT          /CLL CML FAILED
                          /LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 7
2340 7100      CLL          /LINK=0
2341 7120      CLL CML      /TEST COMBINATION
2342 7420      SNL
2343 7402      HLT          /CLL CML FAILED,
                          /LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 8
2344 7120      CLL CML      /LINK=1
2345 7240      CLA CMA      /AC=7777
2346 7320      CLA CLL CML /TEST COMBINATION
2347 7430      SZL
2350 7440      SZA
2351 7402      HLT          /CLA CLL CML FAILED, LINK SHOULD
                          /BE 1, AC SHOULD BE ZERO

/GROUP 1 OPERATE TEST 9
2352 7340      CLA CLL CMA /LINK=0, AC=7777
2353 7320      CLA CLL CML /TEST COMBINATION
2354 7430      SZL
2355 7440      SZA
2356 7402      HLT          /CLA CLL CML FAILED, LINK SHOULD
                          /BE 1, AC SHOULD BE ZERO
```

```

/GROUP 1 OPERATE TEST 10
2357 7340      CLA CLL CMA      /AC=7777, LINK=0
2360 7060      CMA CML      /TEST COMBINATION
2361 7430      SZL
2362 7440      SZA
2363 7402      HLT      /CMA CML FAILED, AC SHOULD BE
                        /0000 LINK SHOULD EQUAL ONE.

/GROUP 1 OPERATE TEST 11
2364 7300      CLA CLL      /AC AND LINK=0
2365 1053      TAD K2525      /AC=2525
2366 7340      CLA CMA CLL      /TEST COMBINATION
2367 7040      CMA
2370 7420      SNL
2371 7440      SZA
2372 7402      HLT      /CLA CMA CML FAILED, AC SHOULD BE
                        /0000, LINK SHOULD EQUAL ZERO

2373 7000      NOP
2374 7000      NOP
2375 7000      NOP
2376 7000      NOP
2377 7000      NOP
2400 2400      *2400

/GROUP 1 OPERATE TEST 12
2400 7300      CLL CLA      /AC AND LINK=0
2401 1053      TAD K2525      /AC=2525
2402 7160      CLL CMA CML      /TEST COMBINATION
2403 1053      TAD K2525
2404 7040      CMA
2405 7430      SZL
2406 7440      SZA
2407 7402      HLT      /CLL CMA CML FAILED, AC SHOULD BE
                        /0000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 13
2410 7300      CLA CLL
2411 7020      CML      /AC=0000, LINK=1
2412 7160      CLL CMA CML      /TEST COMBINATION
2413 7040      CMA
2414 7430      SZL
2415 7440      SZA
2416 7402      HLT      /CLL CMA CML FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE

```



```
/GROUP 1 OPERATE TEST 14
2417 7300      CLA CLL
2420 1053      TAD K2525      /AC=2525, LINK=0
2421 7360      CLA CLL CMA CML /TEST COMBINATION
2422 7040      CMA
2423 7430      SZL
2424 7440      SZA
2425 7402      HLT      /CLA CLL CMA CML FAILED, AC SHOULD
                        /BE 0000 LINK SHOULD EQUAL ONE,

/GROUP 1 OPERATE TEST 15
2426 7320      CLA CLL CML
2427 1052      TAD K5252      /AC=5252, LINK=1
2430 7360      CLA CLL CMA CML /TEST COMBINATION
2431 7040      CMA
2432 7430      SZL
2433 7440      SZA
2434 7402      HLT      /CLA CLL CMA CML FAILED, AC SHOULD
                        /BE 000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 16
2435 7200      CLA
2436 1053      TAD K2525      /AC=2525
2437 7201      CLA IAC      /TEST COMBINATION
2440 1035      TAD K7776
2441 7040      CMA
2442 7440      SZA
2443 7402      HLT      /CLA IAC FAILED
                        /AC SHOULD EQUAL 0000

/GROUP 1 OPERATE TEST 17
2444 7320      CLL CML CLA
2445 1035      TAD K7776      /AC=7776, LINK=1
2446 7101      CLL IAC      /TEST COMBINATION
2447 7040      CMA
2450 7420      SNL
2451 7440      SZA
2452 7402      HLT      /CLL IAC FAILED, AC AND LINK
                        /SHOULD EQUAL ZERO
```

```

/GROUP 1 OPERATE TEST 18
2455 7320      CLA CLL CML
2454 1053      TAD K2525          /AC=2525 LINK=1
2455 7301      CLA CLL IAC      /TEST COMBINATION
2456 1035      TAD K7776
2457 7040      CMA
2460 7420      SNL
2461 7440      SZA
2462 7402      HLT          /CLA CLL IAC FAILED, AC AND LINK
                          /SHOULD BE ZERO

/GROUP 1 OPERATE TEST 19
2463 7300      CLA CLL          /AC=0 LINK=0
2464 7041      CMA IAC      /TEST COMBINATION
2465 7430      SZL
2466 7440      SZA
2467 7402      HLT          /CMA IAC FAILED, AC SHOULD EQUAL
                          /0000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 20
2470 7300      CLA CLL
2471 1053      TAD K2525          /AC=2525 LINK=0
2472 7241      CLA CMA IAC    /TEST COMBINATION
2473 7430      SZL
2474 7440      SZA
2475 7402      HLT          /CLA CMA IAC FAILED, AC SHOULD
                          /EQUAL 0000, LINK SHOULD BE ONE,

/GROUP 1 OPERATE TEST 21
2476 7320      CLL CLA CML    /AC=0000 LINK=1
2477 1021      TAD K0001      /AC=0001
2500 7141      CLL CMA IAC    /TEST COMBINATION
2501 7040      CMA
2502 7420      SNL
2503 7440      SZA
2504 7402      HLT          /CLL CMA IAC FAILED, AC SHOULD BE
                          /0000 LINK SHOULD BE 0

/GROUP 1 OPERATE TEST 22
2505 7320      CLA CLL CML
2506 1053      TAD K2525          /AC=2525 LINK=1
2507 7341      CLA CLL CMA IAC /TEST COMBINATION
2510 7430      SZL
2511 7440      SZA
2512 7402      HLT          /CLA CLL CMA IAC FAILED, AC SHOULD BE
                          /0000, LINK SHOULD BE ONE

```

/GROUP 1 OPERATE TEST 23

2513	7300	CLA CLL	
2514	1052	TAD K5252	/AC=5252 LINK=0
2515	7341	CLA CLL CMA IAC	/TEST COMBINATION
2516	7430	SZL	
2517	7440	SZA	
2520	7402	HLT	/CLA CLL CMA IAC FAILED AC SHOULD /BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 24

2521	7300	CLA CLL	
2522	1035	TAD K7776	/AC=7776 LINK=0
2523	7021	CML IAC	/TEST COMBINATION
2524	7040	CMA	
2525	7430	SZL	
2526	7440	SZA	
2527	7402	HLT	/CML IAC FAILED AC SHOULD BE /0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 25

2530	7320	CLA CLL CML	
2531	1035	TAD K7776	/AC =7776 LINK=1
2532	7021	CML IAC	/TEST COMBINATION
2533	7040	CMA	
2534	7420	SNL	
2535	7440	SZA	
2536	7402	HLT	/CML IAC FAILED, AC SHOULD BE /0000, LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 26

2537	7300	CLA CLL	
2540	1053	TAD K2225	/AC=2225 LINK=0
2541	7221	CLA CML IAC	/TEST COMBINATION
2542	1035	TAD K7776	
2543	7040	CMA	
2544	7430	SZL	
2545	7440	SZA	
2546	7402	HLT	/CLA CML IAC FAILED, AC SHOULD BE /0000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 27

2547	7320	CLA CLL CML	/AC=0000 LINK=1
2550	1035	TAD K7776	/AC=7776
2551	7121	CLL CML IAC	/TEST COMBINATION
2552	7040	CMA	
2553	7430	SZL	
2554	7440	SZA	
2555	7402	HLT	/CLL CML IAC FAILURE, AC SHOULD BE /0000, LINK SHOULD EQUAL ONE,

/GROUP 1 OPERATE TEST 28

2556	7300	CLA CLL	
2557	1035	TAD K7776	/AC=7776 LINK=0
2560	7121	CLL CML IAC	/TEST COMBINATION
2561	7040	CMA	
2562	7430	SZL	
2563	7440	SZA	
2564	7402	HLT	

/CLL CML IAC FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 29

2565	7300	CLA CLL	
2566	1053	TAD K2225	/AC=2225, LINK=0
2567	7321	CLA CLL CML IAC	/TEST COMBINATION
2570	1035	TAD K7776	
2571	7040	CMA	
2572	7430	SZL	
2573	7440	SZA	
2574	7402	HLT	

/CLA CLL CML IAC FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

2575	7000	NOP	
2576	7000	NOP	
2577	7000	NOP	

*2600

/GROUP 1 OPERATE TEST 30

2600	7320	CLA CLL CML	
2601	1053	TAD K2225	/AC=2225 LINK=1
2602	7321	CLA CLL CML IAC	/TEST COMBINATION
2603	1035	TAD K7776	
2604	7040	CMA	
2605	7430	SZL	
2606	7440	SZA	
2607	7402	HLT	

/CLA CLL CML IAC FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

```
/GROUP 1 OPERATE TEST 31
2610 7300      CLA CLL
2611 1021      TAD K0001      /AC=0001 LINK=0
2612 7061      CMA CML IAC /TEST COMBINATION
2613 7040      CMA
2614 7430      SZL
2615 7440      SZA
2616 7402      HLT      /CMA CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 32
2617 7320      CLA CLL CML
2620 1021      TAD K0001      /AC=0001 LINK=1
2621 7061      CMA CML IAC /TEST COMBINATION
2622 7040      CMA
2623 7420      SNL
2624 7440      SZA
2625 7402      HLT      /CMA CML IAC FAILURE, AC SHOULD BE
                        /0000, LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 33
2626 7300      CLA CLL      /AC=0000 LINK=0
2627 1053      TAD K2525      /AC=2525
2630 7261      CLA CMA CML IAC /TEST COMBINATION
2631 7420      SNL
2632 7430      SZL
2633 7402      HLT      /CLA CMA CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 34
2634 7320      CLA CLL CML
2635 1053      TAD K2525      /AC=2525 LINK=1
2636 7261      CLA CMA CML IAC /TEST COMBINATION
2637 7430      SZL
2640 7440      SZA
2641 7402      HLT      /CLA CMA CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE
```

/GROUP 1 OPERATE TEST 35
2642 7300 CLA CLL
2643 1021 TAD K0001 /AC=2021 LINK=0
2644 7161 CLL CMA CML IAC /TEST COMBINATION
2645 7040 CMA
2646 7430 SZL
2647 7440 SZA
2650 7422 HLT /CLL CMA CML IAC FAILED, AC SHOULD BE
/0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 36
2651 7320 CLA CLL CML
2652 1021 TAD K0001 /AC=0001 LINK=1
2653 7161 CLL CMA CML IAC /TEST COMBINATION
2654 7040 CMA
2655 7430 SZL
2656 7440 SZA
2657 7402 HLT /CLL CMA CML IAC FAILED, AC SHOULD BE
/0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 37
2660 7300 CLA CLL
2661 1053 TAD K2525 /AC=2525 LINK=0
2662 7361 CLA CLL CMA CML IAC /TEST COMBINATION
2663 7420 SNL
2664 7440 SZA
2665 7402 HLT /CLA CLL CMA CML IAC FAILURE AC AND
/LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 38
2666 7360 CLA CMA CLL CML /AC=7777 LINK=1
2667 7210 CLA RAR /TEST COMBINATION
2670 1050 TAD K5777
2671 7040 CMA
2672 7420 SNL
2673 7440 SZA
2674 7402 HLT /CLA RAR FAILED, LINK AND
/AC SHOULD EQUAL ZERO

```
/GROUP 1 OPERATE TEST 39
2675 7360   CLA CMA CLL CML /AC=7777 LINK=1
2676 7204   CLA RAL      /TEST COMBINATION
2677 1035   TAD K7776
2700 7040   CMA
2701 7420   SNL
2702 7440   SZA
2703 7402   HLT      /CLA RAL FAILED LINK AND
                   /AC SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 40
2704 7360   CLA CMA CLL CML /AC=7777 LINK =1
2705 7212   CLA RTR      /TEST COMBINATION
2706 1047   TAD K9777
2707 7040   CMA
2710 7420   SNL
2711 7440   SZA
2712 7402   HLT      /CLA RTR FAILED, AC AND
                   /LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 41
2713 7360   CLA CMA CLL CML /AC=7777, LINK=1
2714 7206   CLA RTL      /TEST COMBINATION
2715 1036   TAD K7775
2716 7040   CMA
2717 7420   SNL
2720 7440   SZA
2721 7402   HLT      /CLA RTL FAILED, AC AND LINK
                   /SHOULDBE ZERO

/GROUP 1 OPERATE TEST 42
2722 7320   CLA CLL CML
2723 1026   TAD K0040      /AC=0040 LINK=1
2724 7110   CLL RAR      /TEST COMBINATION
2725 1041   TAD K7757
2726 7040   CMA
2727 7420   SNL
2730 7440   SZA
2731 7402   HLT      /CLL RAR FAILED, AC AND LINK
                   /SHOULD BE ZERO
```

```
/GROUP 1 OPERATE TEST 43
2732 7320      CLA CLL CML
2733 1026     TAD K0040      /AC=2040 LINK=1
2734 7104     CLL RAL      /TEST COMBINATION
2735 1043     TAD K7077
2736 7040     CMA
2737 7420     SNL
2740 7440     SZA
2741 7402     HLT      /CLL RAL FAILED, AC AND LINK
                        /SHOULD BE ZERO

/GROUP 1 OPERATE TEST 44
2742 7320     CLA CLL CML
2743 1026     TAD K0040      /AC=2040 LINK=1
2744 7112     CLL RTR      /TEST COMBINATION
2745 1040     TAD K7767
2746 7040     CMA
2747 7420     SNL
2750 7440     SZA
2751 7402     HLT      /CLL RTR FAILED, AC AND LINK
                        /SHOULD BE ZERO

/GROUP 1 OPERATE TEST 45
2752 7320     CLA CLL CML
2753 1026     TAD K0040      /AC=2040 LINK=1
2754 7106     CLL RTL      /TEST COMBINATION
2755 1044     TAD K7577
2756 7040     CMA
2757 7420     SNL
2760 7440     SZA
2761 7402     HLT      /CLL RTL FAILED, AC AND LINK
                        /SHOULD BE ZERO

/GROUP 1 OPERATE TEST 46
2762 7360     CLA CLL CML CMA /AC=7777 LINK=1
2763 7310     CLL CLA RAR  /TEST COMBINATION
2764 7420     SNL
2765 7440     SZA
2766 7402     HLT      /CLL CLA RAR FAILED AC AND
                        /LINK SHOULD BE ZERO
```



```
/GROUP 1 OPERATE TEST 47
2767 7360   CLA CMA CLL CML /AC=7777 LINK=1
2770 7304   CLL CLA RAL   /TEST COMBINATION
2771 7422   SNL
2772 7430   SZL
2773 7402   HLT           /CLL CLA RAL FAILED, AC AND
                        /LINK SHOULD BE ZERO
2774 7000   NOP
2775 7000   NOP
2776 7000   NOP
2777 7000   NOP
          3000
*3000
/GROUP 1 OPERATE TEST 48
3000 7360   CLA CMA CLL CML /AC=7777 LINK=1
3001 7312   CLA CLL RTR   /TEST COMBINATION
3002 7420   SNL
3003 7442   SZA
3004 7402   HLT           /CLA CLL RTL FAILED, AC AND
                        /LINK SHOULD BE ZERO
/GROUP 1 OPERATE TEST 49
3005 7360   CLA CMA CLL CML /AC=7777 LINK=1
3006 7306   CLA CLL RTL   /TEST COMBINATION
3007 7420   SNL
3010 7440   SZA
3011 7402   HLT           /CLA CLL RTL FAILED, AC AND
                        /LINK SHOULD EQUAL ZERO
/GROUP 1 OPERATE TEST 50
3012 7300   CLA CLL       /AC=0000 LINK=0
3013 7030   CML RAR       /TEST COMBINATION
3014 1050   TAD K3777
3015 7040   CMA
3016 7420   SNL
3017 7440   SZA
3020 7402   HLT           /CML RAR FAILED, AC AND LINK
                        /SHOULD BE ZERO
```

```
/GROUP 1 OPERATE TEST 51
3021 7300      CLA CLL      /AC=0000 LINK=0
3022 7024      CML RAL      /TEST COMBINATION
3023 1035      TAD K7776
3024 7040      CMA
3025 7420      SNL
3026 7440      SZA
3027 7402      HLT          /CML RAL FAILED, AC AND LINK
                          /SHOULD BE ZERO.

/GROUP 1 OPERATE TEST 52
3030 7300      CLA CLL      /AC=0000 LINK=0
3031 7032      CML RTR      /TEST COMBINATION
3032 1047      TAD K5777
3033 7040      CMA
3034 7420      SNL
3035 7440      SZA
3036 7402      HLT          /CML RTR FAILED, AC AND LINK
                          /SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 53
3037 7300      CLA CLL      /AC=0000 LINK=0
3040 7026      CML RTL      /TEST COMBINATION
3041 1036      TAD K7775
3042 7040      CMA
3043 7420      SNL
3044 7440      SZA
3045 7402      HLT          /CML RTL FAILED, AC AND LINK
                          /SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 54
3046 7300      CLA CLL
3047 1052      TAD K5252      /AC=5252 LINK=0
3050 7230      CLA CML RAR      /TEST COMBINATION
3051 1050      TAD K3777
3052 7040      CMA
3053 7420      SNL
3054 7440      SZA
3055 7402      HLT          /CLA CML RAR FAILED, AC AND
```

PAUSE

/INSTRUCTION TEST - 1
 /GROUP 1 OPERATE TEST 55
 /TAPE 3

3056	7300	CLA CLL	
3057	1052	TAD K5252	/AC=5252 LINK=0
3060	7224	CLA CML RAL	/TEST COMBINATION
3061	1035	TAD K7776	
3062	7040	CMA	
3063	7420	SNL	
3064	7440	SZA	
3065	7402	HLT	/CLA CML RAL FAILED, AC AND /LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 56

3066	7300	CLA CLL	
3067	1052	TAD K5252	/AC=5252 LINK=0
3070	7232	CLA CML RTR	/TEST COMBINATION
3071	1047	TAD K5777	
3072	7040	CMA	
3073	7420	SNL	
3074	7440	SZA	
3075	7402	HLT	/CLA CML RTR FAILED, AC AND /LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 57

3076	7300	CLA CLL	
3077	1052	TAD K5252	/AC=5252 LINK=0
3100	7226	CLA CML RTL	/TEST COMBINATION
3101	1036	TAD K7775	
3102	7040	CMA	
3103	7420	SNL	
3104	7440	SZA	
3105	7402	HLT	/CLA CML RTL FAILED, AC AND /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 58

3106	7300	CLA CLL	/AC=0000 LINK=0
3107	7130	CLL CML RAR	/TEST COMBINATION
3110	7004	RAL	
3111	7430	SZL	
3112	7440	SZA	
3113	7402	HLT	/CLL CML RAR FAILED, AC SHOULD /BE 0000 LINK SHOULD BE 1

```
/GROUP 1 OPERATE TEST 59
3114 7320   CLA CLL CML   /AC=0000 LINK=1
3115 7130   CLL CML RAR  /TEST COMBINATION
3116 7004   RAL
3117 7430   SZL
3120 7440   SZA
3121 7402   HLT           /CLL CML RAR FAILED, AC SHOULD BE
                          /0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 60
3122 7300   CLA CLL           /AC=0000 LINK=0
3123 7124   CLL CML RAL  /TEST COMBINATION
3124 7010   RAR
3125 7430   SZL
3126 7440   SZA
3127 7402   HLT           /CLL CML RAL FAILED, AC SHOULD
                          /EQUAL 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 61
3130 7320   CLA CLL CML   /AC=0000 LINK=1
3131 7124   CLL CML RAL  /TEST COMBINATION
3132 7010   RAR
3133 7430   SZL
3134 7440   SZA
3135 7402   HLT           /CLL CML RAL FAILED, AC SHOULD
                          /EQUAL 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 62
3136 7300   CLA CLL           /AC=0000 LINK=0
3137 7132   CLL CML RTR  /TEST COMBINATION
3140 7006   RTL
3141 7430   SZL
3142 7440   SZA
3143 7402   HLT           /CLL CML RTR FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE ONE
```

```

/GROUP 1 OPERATE TEST 63
3144 7320   CLA CLL CML   /AC=2200 LINK=1
3145 7132   CLL CML RTR  /TEST COMBINATION
3146 7006   RTL
3147 7430   SZL
3150 7440   SZA
3151 7402   HLT           /CLL CML RTR FAILED, AC SHOULD
                        /BE 2020 LINK SHOULD BE ONE,

/GROUP 1 OPERATE TEST 64
3152 7300   CLA CLL   /AC=2200 LINK=0
3153 7126   CLL CML RTL /TEST COMBINATION
3154 7012   RTR
3155 7430   SZL
3156 7440   SZA
3157 7402   HLT           /CLL CML RTL FAILED, AC SHOULD
                        /BE 0020, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 65
3160 7320   CLA CLL CML   /AC=0000 LINK=1
3161 7126   CLL CML RTL  /TEST COMBINATION
3162 7012   RTR
3163 7430   SZL
3164 7440   SZA
3165 7402   HLT           /CLL CML RTL FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE A ONE,

/GROUP 1 OPERATE TEST 66
3166 7300   CLA CLL
3167 1052   TAD K5252      /AC=5252 LINK=0
3170 7330   CLA CLL CML RAR /TEST COMBINATION
3171 7004   RAL
3172 7430   SZL
3173 7440   SZA
3174 7402   HLT           /CLA CLL CML RAR FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE

3175 7000   NOP
3176 7000   NOP
3177 7000   NOP
3200
*3200
/GROUP 1 OPERATE TEST 67
3200 7320   CLA CLL CML
3201 1053   TAD K2525      /AC=2525 LINK=1
3202 7330   CLA CLL CML RAR /TEST COMBINATION
3203 7004   RAL
3204 7430   SZL
3205 7440   SZA
3206 7402   HLT           /CLA CLL CML RAR FAILED, AC SHOULD
                        /BE 2000, LINK SHOULD BE ONE

```

/GROUP 1 OPERATE TEST 68

3217	7300	CLA CLL	
3218	1053	TAD K2525	/AC=2525 LINK=0
3211	7324	CLA CLL CML RAL	/TEST COMBINATION
3212	7010	RAR	
3213	7430	SZL	
3214	7440	SZA	
3215	7402	HLT	/CLA CLL CML RAL FAILED, AC SHOULD /BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 69

3216	7320	CLA CLL CML	
3217	1052	TAD K5252	/AC=5252 LINK=1
3220	7324	CLA CLL CML RAL	/TEST COMBINATION
3221	7010	RAR	
3222	7430	SZL	
3223	7440	SZA	
3224	7402	HLT	/CLA CLL CML RAL FAILED, AC SHOULD /BE 0000 LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 70

3225	7300	CLA CLL	
3226	1053	TAD K2525	/AC=2525 LINK=0
3227	7332	CLA CLL CML RTR	/TEST COMBINATION
3230	7006	RTL	
3231	7430	SZL	
3232	7440	SZA	
3233	7402	HLT	/CLA CLL CML RTR FAILED, AC SHOULD /BE 0000, LINK SHOULD BE A ONE

```

/GROUP 1 OPERATE TEST 71
3234 7320      CLA CLL CML
3235 1052      TAD K5252          /AC=5252 LINK=1
3236 7332      CLA CLL CML RTR /TEST COMBINATION
3237 7006      RTL
3240 7430      SZL
3241 7440      SZA
3242 7402      HLT          /CLA CLL CML RTR FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 72
3243 7300      CLL CLA
3244 1053      TAD K2525          /AC=2525 LINK=0
3245 7326      CLA CLL CML RTL /TEST COMBINATION
3246 7012      RTR
3247 7430      SZL
3250 7440      SZA
3251 7402      HLT          /CLA CLL CML RTL FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE A ZERO

/GROUP 1 OPERATE TEST 73
3252 7320      CLL CLA CML
3253 1052      TAD K5252          /AC=5252 LINK=1
3254 7326      CLA CLL CML RTL /TEST COMBINATION
3255 7012      RTR
3256 7430      SZL
3257 7440      SZA
3260 7402      HLT          /CLA CLL CML RTL FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 74
3261 7300      CLA CLL
3262 1051      TAD K7777          /TEST PATTERN
3263 7041      CIA          /AC EQUALS 0001
3264 1035      TAD K7776
3265 7040      CMA
3266 7420      SNL
3267 7440      SZA          /CIA FAILED AC SHOULD EQUAL 0000
3270 7402      HLT          /LINK SHOULD EQUAL A ZERO

/GROUP 1 OPERATE TEST 75
3271 7300      CLA CLL
3272 1035      TAD K7776          /TEST PATTERN
3273 7041      CIA          /AC EQUALS 0002
3274 1036      TAD K7775
3275 7040      CMA
3276 7420      SNL
3277 7440      SZA          /CIA FAILED AC SHOULD EQUAL 0000
3300 7402      HLT          /LINK SHOULD EQUAL A ZERO

```

```
/GROUP 1 OPERATE TEST 76
3301 7300      CLA CLL
3302 1063      TAD K7774      /TEST PATTERN
3303 7041      CIA      /AC EQUALS 0004
3304 1037      TAD K7773
3305 7040      CMA
3306 7420      SNL
3307 7440      SZA      /CIA FAILED AC SHOULD EQUAL 0000
3310 7402      HLT      /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 77
3311 7300      CLA CLL
3312 1062      TAD K7770      /TEST PATTERN
3313 7041      CIA      /AC EQUALS 0010
3314 1040      TAD K7767
3315 7040      CMA
3316 7420      SNL
3317 7440      SZA
3320 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000

/GROUP 1 OPERATE TEST 78
3321 7300      CLA CLL
3322 1061      TAD K7760      /TEST PATTERN
3323 7041      CIA      /AC EQUALS 0020
3324 1041      TAD K7757
3325 7040      CMA
3326 7420      SNL
3327 7440      SZA
3330 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 79
3331 7300      CLA CLL
3332 1060      TAD K7740      /TEST PATTERN
3333 7041      CIA
3334 1042      TAD K7737      /AC EQUALS 0040
3335 7040      CMA
3336 7420      SNL
3337 7440      SZA
3340 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO
```



```
/GROUP 1 OPERATE TEST 80
3341 7300      CLA CLL
3342 1076      TAD K7700      /TEST PATTERN
3343 7041      CIA      /AC EQUALS 0100
3344 1043      TAD K7677
3345 7040      CMA
3346 7420      SNL
3347 7440      SZA
3350 7402      HLT      /CIA FAILED A SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 81
3351 7300      CLA CLL
3352 1057      TAD K7600      /TEST PATTERN
3353 7041      CIA      /AC EQUALS 0200
3354 1044      TAD K7577
3355 7040      CMA
3356 7420      SNL
3357 7440      SZA
3360 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 82
3361 7300      CLA CLL
3362 1056      TAD K7400      /TEST PATTERN
3363 7041      CIA      /AC EQUALS 0400
3364 1045      TAD K7377
3365 7040      CMA
3366 7420      SNL
3367 7440      SZA
3370 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO
```

```
3371 7000      NOP
3372 7000      NOP
3373 7000      NOP
3374 7000      NOP
3375 7000      NOP
3376 7000      NOP
3377 7000      NOP
      3400
*3400
/GROUP 1 OPERATE TEST 83
3400 7300      CLA CLL
3401 1055      TAD K7000      /TEST PATTERN
3402 7041      CIA      /AC EQUALS 1000
3403 1046      TAD K6777
3404 7040      CMA
3405 7420      SNL
3406 7440      SZA
3407 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO
/GROUP 1 OPERATE TEST 84
3410 7300      CLA CLL
3411 1054      TAD K6000      /TEST PATTERN
3412 7041      CIA      /AC EQUALS 2000
3413 1047      TAD K5777
3414 7040      CMA
3415 7420      SNL
3416 7440      SZA
3417 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO
/GROUP 1 OPERATE TEST 85
3420 7300      CLA CLL
3421 1034      TAD K4000      /TEST PATTERN
3422 7041      CIA      /AC EQUALS 4000
3423 1050      TAD K3777
3424 7040      CMA
3425 7420      SNL
3426 7440      SZA
3427 7402      HLT      /CIA FAILED AC SHOULD EQUUA 000
                        /LINK SHOULD EQUALL ZERO
/GROUP 1 OPERATE TEST 86
3430 7300      CLA CLL
3431 1020      TAD K0000      /TEST PATTERN
3432 7041      CIA      /AC EQUALS 0000, LINK EQUALS A ONE
3433 7450      SNA
3434 7420      SNL
3435 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL A ONE
```

/GROUP OPERATE TEST 87

```
3436 7340      CLA CMA CLL      /AC=7777,L=0
3437 7311      CLA CLL IAC RAR /AC=0,L=1
3440 7430      SZL
3441 7440      SZA
3442 7402      HLT          /ERROR; LINC NOT SET OR
                          /AC NOT 0
```

/GROUP 1 OPERATE TEST 88

```
3443 7360      CLA CMA CLL CML /AC=7777,L=1
3444 7305      CLA CLL IAC RAL /AC=2,L=0
3445 7430      SZL
3446 7402      HLT          /ERROR; LINC NOT 0
3447 7041      CMA IAC
3450 1022      TAD K0002
3451 7440      SZA
3452 7402      HLT          /ERROR AC NOT 2
```

/GROUP 1 OPERATE TEST 89

```
3453 7520      CLA CLL CML      /AC=0,L=1
3454 7313      CLA CLL IAC RTR /AC=4000,L=0
3455 7430      SZL
3456 7402      HLT          /ERROR; LINC NOT 0
3457 7500      SMA
3460 7402      HLT          /ERROR; AC NOT 4000
```

/GROUP 1 OPERATE TEST 90

```
3461 7360      CLA CMA CLL CML      /AC=7777,L=1
3462 7307      CLA CLL IAC RTL      /AC=4,LINC=0
3463 7430      SZL
3464 7402      HLT          /ERROR; LINC NOT 0
3465 7041      CMA IAC
3466 1023      TAD K0004
3467 7440      SZA
3470 7402      HLT          /ERROR; AC NOT 4
```

/GROUP 1 OPERATE TEST 91

```
3471 7300      CLA CLL      /AC=0, L=0
3472 7331      CLA CLL CML IAC RAR /AC=4000, L=1
3473 7520      SMA SNL
3474 7402      HLT          /ERROR; AC NOT 4000 OR
                          /LINC NOT 1
```

```
/GROUP 1 OPERATE TEST 92
3475 7300      CLA CLL      /AC=0,L=2
3476 7345      CLA CMA CLL IAC RAL /AC=0001,L=0
3477 7430      SZL
3500 7402      HLT          /LINC NOT=0
3501 7041      CMA IAC
3502 1021      TAD K0001
3503 7440      SZA
3504 7402      HLT          /AC NOT 0001
```

```
/GROUP 1 OPERATE TEST 93
3505 7360      CLA CMA CLL CML      /AC=7777,L=1
3506 7373      CLA CMA CLL CML IAC RTR /AC=0,L=0
3507 7440      SZA
3510 7402      HLT          /ERROR;
3511 7430      SZL
3512 7402      HLT          /ERROR;
```



```
/GROUP 2 OPERATE TEST 6
3537 7240      CLA CMA      /AC=7777
3540 7740      CLA SMA SZA /TEST COMBINATION
3541 7402      HLT          /CLA SMA SZA SHOULD HAVE SKIPPED
              /AC SHOULD BE 0000

3542 7440      SZA
3543 7402      HLT          /AC WAS NOT CLEARED
              /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 7
3544 7200      CLA          /AC=0000
3545 7740      CLA SMA SZA /TEST COMBINATION
3546 7402      HLT          /CLA SMA SZA SHOULD HAVE SKIPPED
              /AC SHOULD BE 0000

3547 7440      SZA
3550 7402      HLT          /AC WAS NOT CLEARED
              /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 8
3551 7200      CLA
3552 1050      TAD K3777      /AC=3777
3553 7740      CLA SMA SZA /TEST COMBINATION
3554 7440      SZA
3555 7402      HLT          /SMA SZA DID NOT SKIP OR AC
              /NOT CLEARED TO 0000

/GROUP 2 OPERATE TEST 9
3556 7300      CLL CLA      /LINK=0
3557 1052      TAD K5252      /AC=5252
3560 7620      CLA SNL      /TEST COMBINATION
3561 7440      SZA
3562 7402      HLT          /SNL SKIPPED OR AC NOT CLEARED
              /AC AND LINK SHOULD EQUAL ZERO
```

/GROUP 2 OPERATE TEST 10

3563	7320	CLA CLL CML	
3564	1053	TAD K2525	/AC=2525 LINK=1
3565	7620	CLA SNL	/TEST COMBINATION
3566	7402	HLT	/SNL DID NOT SKIP /LINK SHOULD EQUAL ONE
3567	7440	SZA	
3570	7402	HLT	/CLA SNL DID NOT CLEAR AC /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 11

3571	7300	CLA CLL	/AC=0000 LINK=0
3572	7520	SMA SNL	/TEST COMBINATION
3573	7440	SZA	
3574	7402	HLT	/SMA SNL SKIPPED, AC AND LINK /SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 12

3575	7320	CLA CLL CML	/AC=0000 LINK=1
3576	7520	SMA SNL	/TEST COMBINATION
3577	7402	HLT	/SNL SHOULD HAVE SKIPPED, LINK = 1

/GROUP 2 OPERATE TEST 13

3600	7300	CLA CLL	
3601	1034	TAD K4000	/AC=4000 LINK=0
3602	7520	SMA SNL	/TEST COMBINATION
3603	7402	HLT	/SMA SHOULD HAVE SKIPPED /AC=4000

/GROUP 2 OPERATE TEST 14

3604	7320	CLA CLL CML	
3605	1034	TAD K4000	/AC=4000 LINK=1
3606	7520	SMA SNL	/TEST COMBINATION
3607	7402	HLT	/SMA SNL SHOULD HAVE SKIPPED /AC=4000 LINK=1

```

/GROUP 2 OPERATE TEST 15
3610 7300      CLA CLL      /AC=0000 LINK=0
3611 7720      CLA SMA SNL /TEST COMBINATION
3612 7440      SZA
3613 7402      HLT      /SMA SNL SKIPPED, AC AND LINK
                        /SHOULD BE ZERO

/GROUP 2 OPERATE TEST 16
3614 7320      CLA CLL CML /AC=0000 LINK=1
3615 7720      CLA SMA SNL /TEST COMBINATION
3616 7402      HLT      /SNL SHOULD HAVE SKIPPED
                        /LINK=1

3617 7440      SZA
3620 7402      HLT      /CLA SMA SNL DID NOT CLEAR AC
                        /AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 17
3621 7300      CLA CLL
3622 1034      TAD K4000      /AC=4000 LINK=0
3623 7720      CLA SMA SNL /TEST COMBINATION
3624 7402      HLT      /SMA SHOULD HAVE SKIPPED
                        /AC SHOULD EQUAL 0000 LINK=0

3625 7440      SZA
3626 7402      HLT      /CLA SMA SNL DID NOT CLEAR AC
                        /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 18
3627 7320      CLA CLL CML
3630 1034      TAD K4000      /AC=4000 LINK=1
3631 7720      CLA SMA SNL /TEST COMBINATION
3632 7402      HLT      /CLA SMA SNL SHOULD HAVE SKIPPED
                        /AC SHOULD BE 0000 LINK=1

3633 7440      SZA
3634 7402      HLT      /CLA SMA SNL DID NOT CLEAR AC
                        /AC SHOULD BE 0000 LINK=1

/GROUP 2 OPERATE TEST 19
3635 7300      CLA CLL      /AC=0000 LINK=0
3636 7460      SZA SNL     /TEST COMBINATION
3637 7402      HLT      /SZA SNL DID NOT SKIP
                        /AC=0000

/GROUP 2 OPERATE TEST 20
3640 7320      CLL CLA CML /AC=0000 LINK=1
3641 7460      SZA SNL     /TEST COMBINATION
3642 7402      HLT      /SZA SNL DID NOT SKIP
                        /AC=0000 LINK=1

```



```

/GROUP 2 OPERATE TEST 21
3643 7320      CLA CLL
3644 1231      TAD K0400      /AC=0400 LINK=0
3645 7460      SZA SNL      /TEST COMBINATION
3646 7452      SNA
3647 7402      HLT      /SZA SNL SKIPPED
                        /AC=0400 LINK=0

/GROUP 2 OPERATE TEST 22
3650 7320      CLA CLL CML
3651 1226      TAD K0040      /AC=0040 LINK=1
3652 7460      SZA SNL      /TEST COMBINATION
3653 7402      HLT      /SZA SNL SHOULD HAVE SKIPPED
                        /LINK=1

/GROUP 2 OPERATE TEST 23
3654 7300      CLA CLL      /AC=0000 LINK=0
3655 7660      CLA SZA SNL /TEST COMBINATION
3656 7402      HLT      /CLA SZA SNL SHOULD HAVE SKIPPED
                        /AC AND LINK SHOULD EQUAL ZERO

3657 7440      SZA
3660 7402      HLT      /CLA SZA SNL DID NOT CLEAR AC
                        /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 24
3661 7320      CLA CLL CML /AC=0000 LINK=1
3662 7660      CLA SZA SNL /TEST COMBINATION
3663 7402      HLT      /CLA SZA SNL SHOULD HAVE SKIPPED
                        /AC=0000 LINK=1

3664 7440      SZA
3665 7402      HLT      /CLA SZA SNL DID NOT CLEAR AC
                        /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 25
3666 7320      CLA CLL CML
3667 1230      TAD K0200      /AC=0200 LINK=1
3670 7660      CLA SZA SNL /TEST COMBINATION OR
3671 7402      HLT      /CLA SZA SNL SHOULD HAVE SKIPPED
                        /LINK=1

3672 7440      SZA
3673 7402      HLT      /CLA SZA SNL DID NOT CLEAR AC
                        /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 26
3674 7300      CLA CLL
3675 1233      TAD K2000      /AC=2000 LINK=0
3676 7660      CLA SZA SNL /TEST COMBINATION
3677 7440      SZA
3700 7402      HLT      /CLA SZA SNL FAILED, AC AND
                        /LINK SHOULD EQUAL ZERO

```

```
/GROUP 2 OPERATE TEST 27
3721 7300      CLA CLL      /AC=0000 LINK=0
3722 7560      SMA SZA SNL /TEST COMBINATION
3723 7402      -HLT       /SMA SZA SNL SHOULD HAVE SKIPPED
              /AC=0000 LINK=0

/GROUP 2 OPERATE TEST 28
3724 7320      CLA CLL CML
3725 1050      TAD K3777   /AC=3777 LINK=1
3726 7560      SMA SZA SNL /TEST COMBINATION
3727 7402      -HLT       /SMA SZA SNL SHOULD HAVE SKIPPED
              /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 29
3710 7300      CLA CLL
3711 1034      TAD K4000   /AC=4000 LINK=0
3712 7560      SMA SZA SNL /TEST COMBINATION
3713 7402      -HLT       /SMA SZA SNL SHOULD HAVE SKIPPED
              /AC=4000 LINK=0

/GROUP 2 OPERATE TEST 30
3714 7300      CLA CLL
3715 1050      TAD K3777   /AC=3777 LINK=0
3716 7560      SMA SZA SNL /TEST COMBINATION
3717 7450      SNA
3720 7402      -HLT       /SMA SZA SNL SHOULD NOT HAVE
              /SKIPPED, AC=3777 LINK=0
```

```

/GROUP 2 OPERATE TEST 31
3721 7300   CLA CLL           /AC=0000 LINK=0
3722 7760   CLA SMA SZA SNL /TEST COMBINATION
3723 7402   HLT           /CLA SMA SZA SNL SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0000

3724 7440   SZA
3725 7402   HLT           /AC NOT ZERO AFTER CLA SMA SZA SNL
                               /AC SHOULD BE 0000 LINK=0

/GROUP 2 OPERATE TEST 32
3726 7320   CLA CLL CML
3727 1050   TAD K3777           /AC=3777 LINK=1
3730 7760   CLA SMA SZA SNL /TEST COMBINATION
3731 7402   HLT           /CLA SMA SZA SNL DID NOT SKIP
                               /AC SHOULD BE 0000 LINK=1

3732 7440   SZA
3733 7402   HLT           /CLA SMA SZA SNL DID NOT CLEAR AC
                               /AC SHOULD EQUAL 0000 LINK=1

/GROUP 2 OPERATE TEST 33
3734 7300   CLA CLL
3735 1034   TAD K4000           /AC=4000 LINK=0
3736 7760   CLA SMA SZA SNL /TEST COMBINATION
3737 7402   HLT           /CLA SMA SZA SNL SHOULD HAVE SKIPPED
                               /AC SHOULD BE 0000, LINK=0

3740 7440   SZA
3741 7402   HLT           /CLA SMA SZA SNL DID NOT CLEAR AC
                               /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 34
3742 7300   CLA CLL
3743 1050   TAD K3777           /AC=3777 LINK=0
3744 7760   CLA SMA SZA SNL /TEST COMBINATION
3745 7440   SZA
3746 7402   HLT           /CLA SMA SZA SNL FAILED, AC
                               /SHOULD BE ZERO, LINK=0

/GROUP 2 OPERATE TEST 35
3747 7300   CLA CLL           /AC=0000 LINK=0
3750 7410   SKP           /TEST INSTRUCTION
3751 7402   HLT           /SKIP FAILED
                               /AC AND LINK EQUAL ZERO

/GROUP 2 OPERATE TEST 36
3752 7320   CLA CLL CML       /AC=0000 LINK=1
3753 7410   SKP           /TEST INSTRUCTION
3754 7402   HLT           /SKIP FAILED
                               /AC=0000 LINK=1

```

```

/GROUP 2 OPERATE TEST 37
3755 7320      CLA CLL CML
3756 1050      TAD K3777      /AC=3777 LINK=1
3757 7410      SKP              /TEST INSTRUCTION
3760 7402      HLT              /SKIP FAILED
                          /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 38
3761 7300      CLA CLL
3762 1050      TAD K3777      /AC=3777 LINK=0
3763 7410      SKP              /TEST INSTRUCTION
3764 7402      HLT              /SKIP FAILED
                          /AC=3777 LINK=0

/GROUP 2 OPERATE TEST 39
3765 7200      CLA
3766 1050      TAD K3777      /AC=3777
3767 7710      CLA SPA      /TEST COMBINATION
3770 7402      HLT              /CLA SPA DID NOT SKIP, AC
                          /SHOULD BE ZERO

3771 7440      SZA
3772 7402      HLT              /CLA SPA DID NOT CLEAR AC
                          /AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 40
3773 7200      CLA
3774 1034      TAD K4000      /AC=4000
3775 7710      CLA SPA      /TEST COMBINATION
3776 7440      SZA
3777 7402      HLT              /CLA SPA FAILED, AC SHOULD
                          /EQUAL 0000

4000 *4000

/GROUP 2 OPERATE TEST 41
4000 7240      CLA CMA      /AC=7777
4001 7650      CLA SNA      /TEST COMBINATION
4002 7402      HLT              /CLA SNA DID NOT SKIP
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 42
4003 7200      CLA      /AC=0000
4004 7650      CLA SNA      /TEST COMBINATION
4005 7440      SZA
4006 7402      HLT              /CLA SNA FAILED
                          /AC SHOULD EQUAL 0000

```

```

/GROUP 2 OPERATE TEST 43
4217 7200      CLA          /AC=0000
4218 7550      SPA SNA     /TEST COMBINATION (AND)
4211 7440      SZA
4212 7402      HLT          /SPA SNA SKIPPED
                          /AC=0000

/GROUP 2 OPERATE TEST 44
4213 7200      CLA
4214 1050      TAD K3777     /AC=3777
4215 7550      SPA SNA     /TEST COMBINATION (AND)
4216 7402      HLT          /SPA SNA FAILED TO SKIP
                          /AC=3777

/GROUP 2 OPERATE TEST 45
4217 7200      CLA
4220 1034      TAD K4000     /AC=4000
4221 7550      SPA SNA     /TEST COMBINATION (AND)
4222 7450      SNA
4223 7402      HLT          /SPA SNA SKIPPED,
                          /AC=4000

/GROUP 2 OPERATE TEST 46
4224 7200      CLA          /AC=0000
4225 7750      CLA SPA SNA /TEST COMBINATION (AND)
4226 7440      SZA
4227 7402      HLT          /CLA SPA SNA FAILED,
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 47
4230 7200      CLA
4231 1050      TAD K3777     /AC=3777
4232 7750      CLA SPA SNA /TEST COMBINATION (AND)
4233 7402      HLT          /CLA SPA SNA DID NOT SKIP
                          /AC SHOULD BE 0000

4234 7440      SZA
4235 7402      HLT          /CLA SPA SNA DID NOT CLEAR THE AC
                          /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 48
4236 7200      CLA
4237 1034      TAD K4000     /AC=4000
4240 7750      CLA SPA SNA /TEST COMBINATION (AND)
4241 7440      SZA
4242 7402      HLT          /CLA SPA SNA FAILED
                          /AC SHOULD EQUAL ZERO

```

PAUSE

/INSTRUCTION TEST - TAPE 4
 /GROUP 2 OPERATE TEST 49

4243	7322	CLA CLL	
4244	1052	TAD K0252	/AC=5252 LINK=2
4245	7530	CLA SZL	/TEST COMBINATION
4246	7422	HLT	/CLA SZL DID NOT SKIP
			/AC AND LINK SHOULD BE 7
4247	7440	SZA	
4250	7422	HLT	/CLA SZL DID NOT CLEAR AC
			/AC SHOULD BE ZERO, LINK=0

/GROUP 2 OPERATE TEST 50

4251	7360	CLA CLL CML CMA	/AC=7777 LINK=1
4252	7530	CLA SZL	/TEST COMBINATION (AND)
4253	7440	SZA	
4254	7422	HLT	/CLA SZL FAILED, AC SHOULD
			/BE 0000, LINK=1

/GROUP 2 OPERATE TEST 51

4255	7320	CLA CLL	
4256	1050	TAD K3777	/AC=3777 LINK=0
4257	7530	SPA SZL	/TEST COMBINATION (AND)
4260	7422	HLT	/SPA SZL DID NOT SKIP
			/AC=3777 LINK=0

/GROUP 2 OPERATE TEST 52

4261	7320	CLA CLL CML	
4262	1052	TAD K3777	/AC=3777 LINK=1
4263	7530	SPA SZL	/TEST COMBINATION (AND)
4264	7450	SNA	
4265	7422	HLT	/SPA SZL SKIPPED
			/AC=3777 LINK=1

/GROUP 2 OPERATE TEST 53

4266	7320	CLA CLL	
4267	1054	TAD K4000	/AC=4000 LINK=0
4270	7530	SPA SZL	/TEST COMBINATION (AND)
4271	7520	SMA	
4272	7422	HLT	/SPA SZL SKIPPED
			/AC=4000 LINK=0

/GROUP 2 OPERATE TEST 54

4273	7300	CLA CLL	
4274	1050	TAD K3777	/AC=3777 LINK=0
4275	7730	CLA SPA SZL	/TEST COMBINATION (AND)
4276	7422	HLT	/CLA SPA SZL SHOULD HAVE SKIPPED
			/AC SHOULD BE 0000, LINK=0
4277	7440	SZA	
4100	7422	HLT	/CLA SPA SZL DID NOT CLEAR THE AC
			/AC SHOULD BE 0000

```

/GROUP 2 OPERATE TEST 55
4101 7320      CLA CLL CML
4102 1050      TAD K3777          /AC=3777 LINK=1
4103 7730      CLA SPA SZL      /TEST COMBINATION (AND)
4104 7440      SZA
4105 7402      HLT          /CLA SPA SZL FAILED
                               /AC SHOULD EQUAL 0000 LINK=1

/GROUP 2 OPERATE TEST 56
4106 7300      CLA CLL
4107 1034      TAD K4000          /AC=4000 LINK=0
4110 7730      CLA SPA SZL      /TEST COMBINATION (AND)
4111 7440      SZA
4112 7402      HLT          /CLA SPA SZL FAILED
                               /AC SHOULD EQUAL 0000 LINK=0

/GROUP 2 OPERATE TEST 57
4113 7300      CLA CLL
4114 1034      TAD K4000          /AC=4000 LINK=0
4115 7470      SNA SZL      /TEST COMBINATION (AND)
4116 7402      HLT          /SNA SZL DID NOT SKIP
                               /AC = 4000 LINK=0

/GROUP 2 OPERATE TEST 58
4117 7320      CLA CLL CML
4120 1034      TAD K4000          /AC=4000 LINK=1
4121 7470      SNA SZL      /TEST COMBINATION (AND)
4122 7420      SNL
4123 7402      HLT          /SNA SZL SKIPPED
                               /AC=4000 LINK=1

/GROUP 2 OPERATE TEST 59
4124 7300      CLA CLL          /AC=0000 LINK=0
4125 7470      SNA SZL      /TEST COMBINATION (AND)
4126 7430      SZL
4127 7402      HLT          /SNA SZL SKIPPED
                               /AC=0000 LINK=0

/GROUP 2 OPERATE TEST 60
4130 7320      CLA CLL CML
4131 1034      TAD K4000          /AC=4000 LINK=1
4132 7670      CLA SNA SZL      /TEST COMBINATION (AND)
4133 7440      SZA
4134 7402      HLT          /CLA SNA SZL FAILED, AC SHOULD
                               /BE 0000, LINK=1

```

```
/GROUP 2 OPERATE TEST 61
4135 7300      CLA CLL
4136 1034      TAD K4000      /AC=4000 LINK=0
4137 7670      CLA SNA SZL /TEST COMBINATION (AND)
4140 7402      HLT          /CLA SNA SZL DID NOT SKIP
                          /AC SHOULD BE 0000, LINK=0

4141 7440      SZA
4142 7402      HLT          /CLA SNA SZL DID NOT CLEAR AC
                          /AC AND LINK SHOULD BE ZERO

/GROUP 2 OPERATE TEST 62
4143 7300      CLA CLL      /AC=0000 LINK=0
4144 7670      CLA SNA SZL /TEST COMBINATION (AND)
4145 7440      SZA
4146 7402      HLT          /CLA SNA SZL FAILED. AC SHOULD
                          /BE 0000, LINK=0

/GROUP 2 OPERATE TEST 63
4147 7300      CLA CLL
4150 1050      TAD K3777      /AC=3777 LINK=0
4151 7570      SPA SNA SZL /TEST COMBINATION (AND)
4152 7402      HLT          /SPA SNA SZL DID NOT SKIP
                          /AC=3777 LINK=0

/GROUP 2 OPERATE TEST 64
4153 7320      CLA CLL CML
4154 1050      TAD K3777      /AC=3777 LINK=1
4155 7570      SPA SNA SZL      /TEST COMBINATION (AND)
4156 7420      SNL
4157 7402      HLT          /SPA SNA SZL SKIPPED
                          /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 65
4160 7300      CLA CLL      /AC=0000 LINK=0
4161 7570      SPA SNA SZL /TEST COMBINATION (AND)
4162 7430      SZL
4163 7402      HLT          /SPA SNA SZL SKIPPED
                          /AC=0000 LINK=0

/GROUP 2 OPERATE TEST 66
4164 7300      CLA CLL
4165 1034      TAD K4000      /AC=4000 LINK=0
4166 7570      SPA SNA SZL /TEST COMBINATION (AND)
4167 7430      SZL
4170 7402      HLT          /SPA SNA SZL SKIPPED
                          /AC=4000 LINK=0
```


/GROUP 2 OPERATE TEST 67

4171	7300	CLA CLL	
4172	1050	TAD K3777	/AC=3777 LINK=0
4173	7770	CLA SPA SNA SZL	/TEST COMBINATION (AND)
4174	7402	HLT	/CLA SPA SNA SZL DID NOT SKIP /AC AND LINK SHOULD BE ZERO
4175	7440	SZA	
4176	7402	HLT	/CLA SPA SNA SZL DID NOT CLEAR AC /AC AND LINK SHOULD BE ZERO
4177	7000	NOP	
	4200	*4200	

/GROUP 2 OPERATE TEST 68

4200	7320	CLA CLL CML	
4201	1050	TAD K3777	/AC=3777 LINK=1
4202	7770	CLA SPA SNA SZL	/TEST COMBINATION (AND)
4203	7440	SZA	
4204	7402	HLT	/CLA SPA SNA SZL FAILED, AC SHOULD /BE 0000, LINK SHOULD EQUAL ONE

/GROUP 2 OPERATE TEST 69

4205	7300	CLA CLL	
4206	1034	TAD K4000	/AC=4000 LINK=0
4207	7770	CLA SPA SNA SZL	/TEST COMBINATION (AND)
4210	7440	SZA	
4211	7402	HLT	/CLA SPA SNA SZL FAILED, AC SHOULD /BE 0000, LINK SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 70

4212	7300	CLA CLL	/AC=0000 LINK=0
4213	7770	CLA SPA SNA SZL	/TEST COMBINATION (AND)
4214	7440	SZA	
4215	7402	HLT	/CLA SPA SNA SZL FAILED, AC AND /LINK SHOULD BE ZERO,

/GROUP 2 OPERATE TEST 71

4216	7200	CLA	
4217	1052	TAD K5252	/AC=5252
4220	7604	CLA OSR	/TEST COMBINATION
4221	7040	CMA	
4222	7440	SZA	
4223	7402	HLT	/CLA OSR FAILED /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 72

4224	7200	CLA	
4225	1034	TAD K4000	/AC=4000
4226	7504	SMA OSR	/TEST COMBINATION
4227	7402	HLT	/SMA OSR FAILED TO SKIP /AC SHOULD BE 7777
4230	7040	CMA	
4231	7440	SZA	
4232	7402	HLT	/SMA OSR FAILED /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 73

4233	7200	CLA	/AC=0000
4234	7444	SZA OSR	/TEST COMBINATION
4235	7402	HLT	/SZA OSR FAILED TO SKIP /AC SHOULD BE 0000
4236	7040	CMA	
4237	7440	SZA	
4240	7402	HLT	/SZA OSR FAILED, /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 74

4241	7320	CLL CML CLA	/LINK=1
4242	7424	SNL OSR	/TEST COMBINATION
4243	7402	HLT	/SNL OSR FAILED TO SKIP /AC SHOULD BE 7777
4244	7040	CMA	
4245	7440	SZA	
4246	7402	HLT	/SNL OSR FAILED, /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 75

4247	7500	CLA CLL	
4250	1050	TAD K3777	/AC=3777 LINK=0
4251	7764	CLA SMA SZA SNL OSR	/TEST COMBINATION
4252	7450	SVA	
4253	7402	HLT	/CLA SMA SZA SNL OSR FAILED, /AC SHOULD BE 7777, LINK=0
4254	7040	CMA	
4255	7440	SZA	
4256	7402	HLT	/CLA SMA SZA SNL OSR FAILED /AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 76

4257	7200	CLA	/AC=0000
4260	7414	SKP OSR	/TEST COMBINATION
4261	7402	HLT	/SKP OSR DID NOT SKIP /AC SHOULD BE 7777
4262	7040	CMA	
4263	7440	SZA	
4264	7402	HLT	/SKP OSR FAILED /AC SHOULD EQUAL ZERO

```

/GROUP 2 OPERATE TEST 77
4265 7200      CLA          /AC=0000
4266 7514      SPA OSR      /TEST COMBINATION
4267 7402      HLT          /SPA OSR DID NOT SKIP
                          /AC SHOULD EQUAL 7777

4270 7040      CMA
4271 7440      SZA
4272 7402      HLT          /SPA OSR FAILED,
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 78
4273 7200      CLA
4274 1031      TAD K0400      /AC=0400
4275 7454      SNA OSR      /TEST COMBINATION
4276 7402      HLT          /SNA OSR DID NOT SKIP
                          /AC SHOULD BE 7777

4277 7040      CMA
4300 7440      SZA
4301 7402      HLT          /SNA OSR FAILED
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 79
4302 7300      CLA CLL      /LINK=0 AC=0000
4303 7434      SZL OSR      /TEST COMBINATION
4304 7402      HLT          /SZL OSR DID NOT SKIP
                          /AC SHOULD BE 7777

4305 7040      CMA
4306 7440      SZA
4307 7402      HLT          /SZL OSR FAILED
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 80
4310 7300      CLA CLL
4311 1050      TAD K3777      /AC=3777 LINK=0
4312 7174      CLA SPA SNA SZL OSR /TEST COMBINATION (AND)
4313 7402      HLT          /ABOVE MESS DID NOT SKIP
                          /AC SHOULD BE 7777

4314 7040      CMA
4315 7440      SZA
4316 7402      HLT          /CLA SPA SNA SZL OSR FAILED
                          /AC SHOULD BE 0000

```

```
/AND TEST 1
4317 7200      CLA
4320 0051      AND K7777
4321 7440      SZA
4322 7402      HLT          /AND FAILED AC SHOULD
                          /BE 0000

/AND TEST 2
4323 7240      CLA CMA
4324 0020      AND K0000
4325 7440      SZA
4326 7402      HLT          /AND FAILED
                          /AC SHOULD EQUAL 0000

/AND TEST 3
4327 7320      CLA CLL CML
4330 1051      TAD K7777          /AC=7777 LINK=1
4331 0051      AND K7777
4332 7040      CMA
4333 7430      SZL
4334 7440      SZA
4335 7402      HLT          /AND FAILED, AC SHOULD BE
                          /0000, LINK SHOULD EQUAL ONE

/AND TEST 4
4336 7300      CLA CLL
4337 1053      TAD K2525          /AC=2525 LINK=0
4340 0052      AND K5252
4341 7420      SNL
4342 7440      SZA
4343 7402      HLT          /AND FAILED, AC SHOULD BE
                          /0000, LINK SHOULD BE 0

/AND TEST 5
4344 7300      CLA CLL
4345 1052      TAD K5252          /AC=5252 LINK=0
4346 0053      AND K2525
4347 7420      SNL
4350 7440      SZA
4351 7402      HLT          /AND FAILED, AC SHOULD BE
                          /0000, LINK SHOULD BE 0
```

/AND TEST 6

4352	7300	CLA CLL	
4353	1035	TAD K7776	/AC=7776 LINK=0
4354	2052	AND K5252	/TEST INSTRUCTION
4355	7041	CIA	/AC=2526
4356	1052	TAD K5252	/AC=0000 LINK=1
4357	7430	SZL	
4360	7440	SZA	
4361	7402	HLT	/AND FAILURE, AC SHOULD BE

/0000, LINK SHOULD BE ONE

/AND TEST 7

4362	7300	CLA CLL	
4363	1053	TAD K2525	/AC=2525 LINK=0
4364	0053	AND K2525	/TEST INSTRUCTION
4365	7041	CIA	/AC=5253
4366	1053	TAD K2525	/AC=0000 LINK = 1
4367	7430	SZL	
4370	7440	SZA	
4371	7402	HLT	/AND FAILED, AC SHOULD BE

/0000, LINK SHOULD BE ONE,

4372	7000	NOP	
4373	7000	NOP	
4374	7000	NOP	
4375	7000	NOP	
4376	7000	NOP	
4377	7000	NOP	
	4400		

*4400

/CHECK FOR BELL

4400	7200	CLA	
4401	1220	TAD BLCNT	
4402	7001	IAC	
4403	3220	OCA BLCNT	
4404	1220	TAD BLCNT	
4405	7640	SZA CLA	
4406	5147	JMP START+3	
4407	1221	TAD BLCNT	
4410	3220	OCA BLCNT	

/RING BELL

4411	1217	TAD BEL	
4412	6046	TLS	
4413	6041	TSF	
4414	5213	JMP ,=1	
4415	6042	TCF	
4416	5147	JMP START+3	

4417	2207	BLL,	2207
4420	7000	BLCNT,	-220
4421	7000	BLCNT,	-220

\$



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? _____

Remarks:



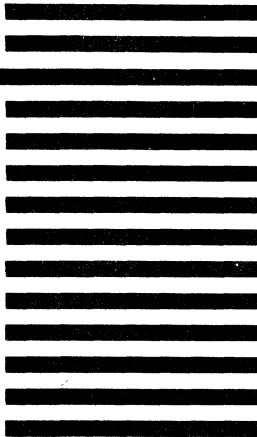
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