

SET 777 = 5301 for BINLOADER
(that should be the only corrupted
location after running CPTST1)

IDENTIFICATION

CPTST2

PRODUCT CODE: MAINDEC-12-D9AB-B

PRODUCT NAME: PDP-12 CP TEST 2
(SKIP AND DATA HANDLING)

DATE CREATED: SEPTEMBER 19, 1969

MAINTAINER: DIAGNOSTIC GROUP

AUTHOR: JAMES KELLY

SNS = 77

8MODE

start 20

halt @ 0022 , 8MODE , AC + 0000

CONT

halt @ 0026 , LMODE , AC : 7777

CONT

resetting any SNS switch should

BELL RINGS EVERY 27 SECONDS

- a. Set the teletype reader switch to FREE.
- b. Open the teletype reader and insert the program tape so that the arrows on the tape are visible to, and pointing toward the operator.
- c. Close the reader and set the reader switch to START.
- d. Set the teletype front panel switch to ON LINE.
- e. Set the LEFT switch to 7777.
- f. Set the RIGHT switch to 4000.
- g. Set the MODE switch to 8 mode.
- h. Depress I/O preset.
- i. Depress START LS.
- j. When the program tape has been read in the computer will halt.
- k. The ACCUMULATOR must be = 0000, if it is not, a read in error has occurred and one might try reloading the binary loader.
- l. Remove the program tape from the reader.

NOTE: This program can be started in either LINC or 8 mode. This feature was incorporated to reduce the possibility of error. However, the preferred method and the one listed below is to start the program in the 8-mode.

4. STARTING PROCEDURE

- a. Remove the paper tape from the teletype.
- b. Set the 6 SENSE SWITCHES to all ones.
- c. Set the MODE switch to 8 mode.
- d. Depress I/O preset.
- e. Set IF instruction field switches to all Ø.
- f. Depress START 2Ø.
- g. The computer will halt at address ØØ22, i.e. MEMORY ADDRESS register = ØØ22, in 8 MODE, with the ACCUMULATOR = ØØØØ. If any of these circumstances do not exist it is a hardware error and must be rectified before proceeding.
- h. Depress CONTINUE.
- i. The computer will halt at address ØØ26, in L MODE, with The ACCUMULATOR : 7777. If any of these circumstances do not exist it is a hardware error and must be rectified before proceeding.
- j. Depress CONTINUE.
- k. The program is now running and any further computer halts are errors and must be evaluated by referring to the listing.
- l. The test will ring the teletype bell once every 4Ø96 passes. This should occur every 25 seconds. If the bell does not ring it is a hardware error and must be rectified before proceeding.

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- b. Open the teletype reader and insert the program tape so that the arrows on the tape are visible to, and pointing toward the operator.
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4.1 Switch Settings

The left and right LSW and RSW have no effect on the program what so ever and their settings are of no concern.

The sense switches which under normal condition are set to 77 should be set to zero, one at a time, so be certain that they will cause error halts, i.e. the switch logic isn't tied to "TRUE".

5. ERROR ANALYSIS

In general the program listing is made up of 5 to 10 instruction modules which tests a skip, a bit or a gate and by stoping the coding just prior to the halt and the comments it's possible to determine what failed.

Any subroutine can be caused to scope loop by toggling in a jump to the beginning of the subroutine, and restarting the entire program. Great care must be exercised to remember where the jump was placed and to remove it after the hardware bug is found so that the program can test the entire computer.

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB

PAL10 V141

29-OCT-69

PAGE 1

/PUP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB
/COPYRIGHT 1969, DIGITAL EQUIPMENT CORP., MAYNARD, MASS.
/LINC-8 INSTRUCTION DEFINITIONS
/MISCELLANEOUS

EXPUNGE

HLI=0000
POP=0002
QAC=0005
CLR=0011
ATR=0014
RTA=0015
NOP=0016
COM=0017
SET=0040
XSK=0200

0002
0005
0011
0014
0015
0016
0017
0040
0200

/HALT
/CHANGE TO PDP-8 MODE
/E1 TO A1-J(11 BITS) I EQUALS 1 TO 11
/CLEAR ACCUMULATOR LINK, AND Z REGISTER
/({A6-A11})>REGISTER
/R REGISTER>({A6-A11})
/NO OPERATION
/C(AC)>C(A)
/C(P+1)>BETA REGISTER (OR INDIRECT)
/SKIP ON 1777

SHIFT
ROL=0240
RRR=0300
SCR=0340

0240
0300
0340

/ROTATE LEFT
/ROTATE RIGHT ALSO SHIFT RIGHT INTO MQ REGISTER
/SCALE RIGHT ALSO SHIFT RIGHT INTO MQ REGISTER

SKIP

SXL=0400
KST=0415
SN=0440
SKP=0450
AZ=0450
AP=0451
LZ=0452
IB=0453
FL=0454
QL=0455

0400
0415
0440
0450
0450
0451
0452
0453
0454
0455

/SKIP IF EXTERNAL LEVEL IS #3
/SKIP IF KEY HAS BEEN STRUCK
/SKIP IF SENSE SWITCH IS UP
/SKIP UNCONDITIONALLY
/SKIP IF ACCUMULATOR ZERO
/SKIP IF ACCUMULATOR POSITIVE
/SKIP IF LINK ZERO
/SKIP IF BETWEEN TAPE BLOCKS
/SKIP IF ADD OVERFLOW FLAG IS SET
/SKIP IF BIT 11 OF MQ REGISTER IS 0

0513
10T=0513

/OPERATE
/EXECUTE THE FOLLOWING 10T INSTRUCTION IN PDP-8 MODE

/ARITHMETIC
LDA=1000
STA=1040
ADA=1100
ADM=1140

1000
1040
1100
1140

/LOAD ACCUMULATOR
/STORE CONTENTS OF ACCUMULATOR
/ADD TO CONTENTS OF ACCUMULATOR
/ADD TO CONTENTS OF MEMORY REGISTER

1200 LAM=1200 //ADD CONTENTS OF LINK AND ACCUMULATOR
 1240 MUL=1240 //MULTIPLY
 6141 LINC=6141 //CHANGE TO LINC MODE
 /HALF WORD OPERATIONS

1300 LDH=1300 //TRANSFER HALF WORD FROM MEMORY INTO
 1340 STH=1340 //THE RIGHT HALF OF ACCUMULATOR
 /TRANSFER THE HALF WORD FROM THE RIGHT
 SIDE OF ACCUMULATOR REGISTER INTO THE
 DESIGNATED HALF OF A MEMORY REGISTER
 /SKIP IF THE HALF WORD IN ACCUMULATOR
 REGISTER AND THE MEMORY REGISTER DIFFER

1440 SAE=1440 //MEMORY REFERENCE OPERATIONS
 /SKIP IF THE CONTENTS OF THE ACCUMULATOR
 /EQUAL THE CONTENTS OF THE DESIGNATED
 MEMORY REGISTER

1500 SR0=1500 //SKIP IF THE RIGHTMOST BIT IN THE
 /DESIGNATED MEMORY REGISTER IS 0
 /AFTER TESTING, ROTATE THE CONTENTS
 /ONE PLACE TO THE RIGHT
 1540 BCL=1540 //FOR EACH BIT POSITION OF MEMORY REGISTER
 /WHICH CONTAINS A 1, CLEAR THE
 /CORRESPONDING BIT POSITION OF THE
 /ACCUMULATOR (LOGICAL AND)

1600 BSZ=1600 //FOR EACH BIT POSITION OF MEMORY
 /REGISTER Y THAT CONTAINS A 1, SET THE
 /CORRESPONDING BIT POSITION OF THE ACCUMULATOR (INCLUSIVE OR)

1640 BCD=1640 //FOR EACH BIT POSITION OF MEMORY
 /REGISTER Y THAT CONTAINS A 1, COMPLEMENT
 /THE CORRESPONDING BIT POSITION OF THE
 /ACCUMULATOR (EXCLUSIVE OR)

2000 ADD=2000 //FULL ADDRESS
 4000 STC=4000 //ADD THE CONTENTS OF THE DESIGNATED
 //MEMORY REGISTER TO ACCUMULATOR
 //STORE THE CONTENTS OF ACCUMULATOR
 //IN THE DESIGNATED MEMORY REGISTER
 //THEN CLEAR ACCUMULATOR
 //LINC MODE JUMPS ARE NOT USED IN THIS TEST

7100 CLL=7100
 7020 CML=7020
 7604 LAS=7604
 0000 AND=0000
 1000 TAD=1000
 3000 DCA=3000
 7006 RTL=7006
 7200 CLA=7200
 2000 ISZ=2000
 6046 TLS=6046

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0002    *2          HLT          /G141 FAILED TO LOAD IF @ 2001
0000
0020    *20         /PRIOR TO STARTUP THE OPERATOR MUST SET ALL SENSE
                   /SWITCHES TO ONES AND LEFT AND RIGHT SWITCHES TO ZERO
                   /HALT AND SKIP TEST START IN PDP=8 MODE
                   /MAJOR START
                   START, PDP          /GO TO 8 MODE
                   HLT           /LINC MODE HALT
                   7402          /8 MODE HALT
                   LINC          /GO TO LINC MODE
0002    0002
0021    0000
0022    7402
0023    6141
0024    1020
0025    7777
0026    0000
0027    0011

                   /TEST HALT
                   CLR

                   /SKP TEST
                   SKP          /SKIP FAILED
                   HLT          /SKIP OVERLING
                   SKP          /MAJOR RESTART FROM END OF PASS
                   LINC

0030    0456
0031    0000
0032    2456
0033    6141

0034    0476
0035    0456
0036    0000

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        /SENSE SWITCH TEST CHECK SNS INSTRUCTION, 1#0, 1#1

0037 0440      SNS+0
0040 0000      HLT      /SNS+0 FAILED TO DETECT SENSE SWITCH 0
                               /UNCONDITIONAL SKIP
0041 0460      SNS+20+0
0042 0456      SKP      /SNS 1#0 SKIPPED IN ERROR
0043 0000
0044 0441      SNS+1
0045 0000      HLT      /SNS+1 FAILED TO DETECT SENSE SWITCH 1
0046 0461      SNS+20+1
0047 0456      SKP      /SNS 1#1 SKIPPED IN ERROR
0050 0000      HLT
0051 0442      SNS+2
0052 0000      HLT      /SNS+2 FAILED TO DETECT SENSE SWITCH 2
0053 0462      SNS+20+2
0054 0456      SKP      /SNS 1#2 SKIPPED IN ERROR
0055 0000      HLT
0056 0443      SNS+3
0057 0000      HLT      /SNS+3 FAILED TO DETECT SENSE SWITCH 3
0060 0463      SNS+20+3
0061 0456      SKP      /SNS 1#3 SKIPPED IN ERROR
0062 0000
0063 0444      SNS+4
0064 0000      HLT      /SNS+4 FAILED TO DETECT SENSE SWITCH 4
0065 0464      SNS+20+4
0066 0456      SKP      /SNS 1#4 SKIPPED IN ERROR
0067 0000      HLT
0070 0445      SNS+5
0071 0000      HLT      /SNS+5 FAILED TO DETECT SENSE SWITCH 5
0072 0465      SNS+20+5
0073 0456      SKP      /TEST COMPLETE SKIP TO APO TEST
0074 0000      HLT      /SNS 1#5 SKIPPED IN ERROR

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    /APO TEST
    0075 0011 CLR      /SET AC=0000
    0076 0451 APO      /TEST IT USING APO
    0077 0000 HLT      /APO FAILED TO SKIP AC=0000
    2100 0471 APO+20
    0101 0456 SKP
    0102 0000 HLT      /APO ! SKIPPED IN ERROR AC=0000

    0103 1020 LDA+20
    0104 4000 4000
    0105 0471 APO+20
    0106 0000 HLT      /APO ! FAILED TO SKIP AC=4000

    2107 0451 APO
    0110 0456 SKP
    0111 0000 HLT      /TEST COMPLETE SKIP TO AZE TEST PART 1
    0112 0011 /TEST PART 1 AC=0000 AND FLOAT A SINGLE 1 BIT
    0113 0450 CLR      /AZE FAILED TO SKIP AC=0000
    0114 0000 AZE
    0115 0470 HLT      /AZE ! SKIPPED IN ERROR AC=0000
    0116 0456 AZE+20
    0117 0000 SKP
    0118 0470 HLT      /SET EACH BIT IN THE AC IN TURN, TESTING TO
    2120 1020 LDA+20 /SEE IF (AZE) DETECTS THE FACT THAT THE AC IS
    0121 0001 0001 NON ZERO
    2122 0470 AZE+20
    2123 0000 HLT      /AZE ! FAILED TO SKIP AC=0001
    0124 0450 AZE
    0125 0456 SKP
    0126 0000 HLT      /AZE SKIPPED IN ERROR AC=0001
    2127 1020 LDA+20
    2130 0002 0002
    2131 0470 AZE+20
    2132 0000 HLT      /AZE ! FAILED TO SKIP AC=0002
    0133 0450 AZE
    0134 0456 SKP
    0135 0000 HLT      /AZE SKIPPED IN ERROR AC=0002
    2136 1020 LDA+20
    2137 0004 0004
    2140 0470 AZE+20
    2141 0000 HLT      /AZE ! FAILED TO SKIP AC=0004
    0142 0450 AZE

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2143	0496	SKP	
2144	0000	HLT	/AEE SKIPPED IN ERROR AC=0004
2145	1020	LDA+20	
2146	0010	0010	
2147	0470	AIEE+20	
2148	0000	HLT	/AEE I FAILED TO SKIP AC=0010
2151	0450	AZE	
2152	0456	SKP	
2153	0000	HLT	/AEE SKIPPED IN ERROR AC=0010

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0154	1020	LDA+20					
0155	0020	0020					
0156	0470	AZE+20					
0157	0000	HLT					
		AZE					
0160	0450	SKP					
0161	0456	HLT					
0162	0000						
		AZE I FAILED TO SKIP ACC=0020					
0163	1020	LDA+20					
0164	0040	0040					
0165	0470	AZE+20					
0166	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0020					
0167	0450	LDA+20					
0170	0456	0100					
0171	0000	AZE+20					
		HLT					
		AZE I FAILED TO SKIP ACC=0040					
0172	1020	LDA+20					
0173	0100	0100					
0174	0470	AZE+20					
0175	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0040					
0176	0450	AZE					
0177	0456	SKP					
0200	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					
0201	1020	LDA+20					
0202	0200	0200					
0203	0470	AZE+20					
0204	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					
0205	0450	AZE					
0206	0456	SKP					
0207	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					
0210	1020	LDA+20					
0211	0400	0400					
0212	0470	AZE+20					
0213	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					
0214	0450	AZE					
0215	0456	SKP					
0216	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					
0217	1020	LDA+20					
0220	1000	1000					
0221	0470	AZE+20					
0222	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					
0223	0450	AZE					
0224	0456	SKP					
0225	0000	HLT					
		AZE I SKIPPED IN ERROR ACC=0100					

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0226 1020 LDA+20
0227 2000 2000
0230 0470 AZE+20
0231 0000 HLT
/AZE I FAILED TO SKIP AC=20000

0232 0450 AZE
0233 0456 SKP
0234 0000 HLT
/AZE SKIPPED IN ERROR AC=20000

0235 1020 LDA+20
0236 4000 4000
0237 0470 AZE+20
0240 0000 HLT
/AZE I FAILED TO SKIP AC=40000

0241 0450 AZE
0242 0456 SKP
0243 0000 HLT
/AZE TEST PART 2 AC=7777 AND FLOAT A SINGLE 0 BIT
/AZE COMPLETE SKIP TO PART 2
/AZE SKIPPED IN ERROR AC=40000

0244 1020 LDA+20
0245 7777 7777
0246 0450 AZE
0247 0000 HLT
/AZE TEST PART 2 AC=7777 AND FLOAT A SINGLE 0 BIT
/AZE SET AC=7777 AND FLOAT A SINGLE 0 BIT THRU IT
/AZE DETERMINE IF AC DETECTS THE FACT THAT THE AC
/AZE IS NON ZERO
/AZE FAILED TO SKIP AC=7777

0250 0470 AZE+20
0251 0456 SKP
0252 0000 HLT
/AZE I SKIPPED IN ERROR AC=7777

0253 1020 LDA+20
0254 7776 7776
0255 0470 AZE+20
0256 0000 HLT
/AZE I FAILED TO SKIP AC=7776

0257 0450 AZE
0260 0456 SKP
0261 0000 HLT
/AZE SKIPPED IN ERROR AC=7776

0262 1020 LDA+20
0263 7775 7775
0264 0470 AZE+20
0265 0000 HLT
/AZE I FAILED TO SKIP C=7775

0266 0450 AZE
0267 0456 SKP
0270 0000 HLT
/AZE SKIPPED IN ERROR AC=7775

0271 1020 LDA+20
0272 7773 7773
0273 0470 AZE+20
0274 0000 HLT
/AZE I FAILED TO SKIP AC=7773

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0275	0450	AZE	
0276	0456	SKP	
0277	0000	HLT	/AZE SKIPPED IN ERROR AC=773
0300	1020	LDA+20	
0301	7767	7767	
0302	0470	AZE+20	
0303	0000	HLT	/AZE I FAILED TO SKIP AC=7767
0304	0450	AZE	
0305	0456	SKP	
0306	0000	HLT	/AZE SKIPPED IN ERROR AC=7767
0307	1020	LDA+20	
0310	7737	7737	
0311	0470	AZE+20	
0312	0000	HLT	/AZE I FAILED TO SKIP AC=7757
0313	0450	AZE	
0314	0456	SKP	
0315	0000	HLT	/AZE SKIPPED IN ERROR AC=7757
0316	1020	LDA+20	
0317	7737	7737	
0320	0470	AZE+20	
0321	0000	HLT	/AZE I FAILED TO SKIP AC=7737
0322	0450	AZE	
0323	0456	SKP	
0324	0000	HLT	/AZE SKIPPED IN ERROR AC=7737
0325	1020	LDA+20	
0326	7677	7677	
0327	0470	AZE+20	
0330	0000	HLT	/AZE I FAILED TO SKIP AC=7767
0331	0450	AZE	
0332	0456	SKP	
0333	0000	HLT	/AZE SKIPPED IN DRROR AC=7677
0334	1020	LDA+20	
0335	7577	7577	
0336	0470	AZE+20	
0337	0000	HLT	/AZE I FAILED TO SKIP AC=7577
0340	0450	AZE	
0341	0456	SKP	
0342	0000	HLT	/AZE SKIPPED IN ERROR AC=7577
0343	1020	LDA+20	
0344	7377	7377	
0345	0470	AZE+20	
0346	0000	HLT	/AZE I FAILED TO SKIP AC=7377

0347	0450	AZE	
0350	0456	SKP	
0351	0000	HLT	/AZE SKIPPED IN ERROR AC=7377
0352	1020	LDA+20	
0353	6777	6777	
0354	0470	AZE+20	/AZE I FAILED TO SKIP AC=6777
0355	0000	HLT	
0356	0450	AZE	
0357	0456	SKP	
0360	0000	HLT	/AZE SKIPPED IN ERROR AC=6777
0361	1020	LDA+20	
0362	5777	5777	
0363	0470	AZE+20	/AZE I FAILED TO SKIP AC=5777
0364	0000	HLT	
0365	0450	AZE	
0366	0456	SKP	
0367	0000	HLT	/AZE SKIPPED IN ERROR AC=5777
0370	1020	LDA+20	
0371	3777	3777	
0372	0470	AZE+20	/AZE I FAILED TO SKIP AC=3777
0373	0000	HLT	
0374	0450	AZE	
0375	0456	SKP	
0376	0000	HLT	/AZE SKIPPED IN ERROR AC=3777

```

        / AEE TESTS WITH L=1 SEE IF LINK AFFECTS THE AEE COMMAND

0377 0002          PDP          /ROUTINE IN S MODE TO SET LINK
0400 7320          CLL CML CLA
0401 6141          LINC

0402 1020          LDA#20
0403 7777          AEE
0404 0450          HLT
0405 0000          AEE#20
0406 0470          AEE#20
0407 0456          SKP
0410 0000          HLT
0411 1020          LDA#20
0412 0000          0000
0413 0450          AEE
0414 0000          HLT
0415 0470          AEE#20
0416 0456          SKP
0417 0000          HLT
0420 0011          /LZE TEST L=0 I=0, I=1
0421 0452          CLR
0422 0000          LZE
0423 0472          LZE#20
0424 0456          SKP
0425 0000          HLT
0426 0002          /LZE TEST L=1, I=0, I=1
0427 7120          PDP
0430 6141          CLL CML
0431 0472          LZE#20
0432 0000          HLT
0433 0452          LZE
0434 0456          SKP
0435 0000          HLT
0436 1020          /SAE TEST PART 1 AC#0000 L=1 MEM#00001 FLOAT A SINGLE ONE BIT THRU MEM
0437 2000          /SET EACH AC BIT IN TURN TO A ONE COMPARE
0440 1460          /IT WITH AN ALL ZERO IN THE SAE INSTRUCTION
0441 0000

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0442	0000	HLT			
0443	1460	SAE*20	0001	/SAE FAILED TO SKIP MEM=00000 AC=0000 L=1	
0444	0001	SKP		/LEAVE AC=0000 AND FLOAT A SINGLE 1 BIT THRU MEM	
0445	0456	HLT			
0446	0000			/SAE SKIPPED IN ERROR MEM=00001 AC=00000	
0447	1460	SAE*20	0002		
0450	0002	SKP			
0451	0456	HLT		/SAE SKIPPER IN ERROR MEM=00002 AC=00000	
0452	0000				
0453	1460	SAE*20	0004		
0454	0004	SKP			
0455	0456	HLT		/SAE SKIPPED IN ERROR MEM=00004 AC=00000	
0456	0000				
0457	1460	SAE*20	0010		
0460	0010	SKP			
0461	0456	HLT		/SAE SKIPPED IN ERROR MEM=0010 AC=00000	
0462	0000				
0463	1460	SAE*20	0020		
0464	0020	SKP			
0465	0456	HLT		/SAE SKIPPED IN ERROR MEM=0020 AC=00000	
0466	0000				
0467	1460	SAE*20	0040		
0470	0040	SKP			
0471	0456	HLT		/SAE SKIPPED IN ERROR MEM=0040 AC=00000	
0472	0000				

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```
0473 1460 SAE+20  
0474 0100 0100  
0475 0456 SKP  
0476 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=0100 AC=00000  
  
0477 1460 SAE+20  
0500 0200 0200  
0501 0456 SKP  
0502 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=0200 AC=00000  
  
0503 1460 SAE+20  
0504 0400 0400  
0505 0456 SKP  
0506 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=0400 AC=00000  
  
0507 1460 SAE+20  
0510 1000 1000  
0511 0456 SKP  
0512 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=1000 AC=00000  
  
0513 1460 SAE+20  
0514 2000 2000  
0515 0456 SKP  
0516 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=2000 AC=00000  
  
0517 1460 SAE+20  
0520 4000 4000  
0521 0456 SKP  
0522 0000 HLT  
 /SAE TEST PART 2 MEM=0002 AC=0002 AC=00000  
 /SET EACH AC BIT IN TURN TO A 1 COMPARE  
 /IT WITH AN ALL ZERO COMPARE WORD IN THE SAE  
 /INSTRUCTION  
  
0523 1020 LDA+20  
0524 0001 0001  
0525 1460 SAE+20  
0526 0000 0000  
0527 0456 SKP  
0530 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=0000 AC=0000  
  
0531 1020 LDA+20  
0532 0002 0002  
0533 1460 SAE+20  
0534 0000 0000  
0535 0456 SKP  
0536 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=0000 AC=0000  
  
0537 1020 LDA+20  
0540 0004 0004  
0541 1460 SAE+20  
0542 0000 0000  
0543 0456 SKP  
0544 0000 HLT  
 /SAE SKIPPED IN ERROR MEM=0000 AC=0000  
  
0545 1020 LDA+20
```

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V141

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB

	PAL10
0546	0010
0547	1460
0550	0000
0551	0456
0552	0000

	0010
	SAE+20
	0000
	SKP
	HLT

/SAE SKIPPED IN ERROR MEM=00000 ACC=00010

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAGE 12

```
0553 1020 LDA+20
0554 0020 0020
0555 1460 SAE+20
0556 0000 0000
0557 0056 SKP
0560 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=0010

0561 1020 LDA+20
0562 0040 0040
0563 1460 SAE+20
0564 0000 0000
0565 0456 SKP
0566 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=0040

0567 1020 LDA+20
0570 0100 0100
0571 1460 SAE+20
0572 0000 0000
0573 0496 SKP
0574 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=0100

0575 1020 LDA+20
0576 0200 0200
0577 1460 SAE+20
0600 0000 0000
0601 0496 SKP
0602 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=0200

0603 1020 LDA+20
0604 0400 0400
0605 1460 SAE+20
0606 0000 0000
0607 0496 SKP
0610 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=0400

0611 1020 LDA+20
0612 1000 1400
0613 1460 SAE+20
0614 0000 0000
0615 0496 SKP
0616 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=0400

0617 1020 LDA+20
0620 2000 2000
0621 1460 SAE+20
0622 0000 0000
0623 0496 SKP
0624 0000 HLT
/SAE SKIPPED IN ERROR MEM=0000 AC=2000

0625 1020 4000
0626 4000 4000
0627 1460 SAE+20
0630 0000 0000
```

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DOAH PAL10 V141 29=OCT=69 1110 PAGE 12=1
0631 0496 SKP /TEST COMPLETE SKIP TO SAE TEST PART 3
0632 0000 HLT /SAE SKIPPED IN ERROR MEM=0000 AC=4000

```
/SAE TEST PART 3 MEM=7777 AC=7776 FLOAT A SINGLE 0 BIT THRU AC  
          LDA#20  
          7776  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7776  
  
          LDA#20  
          7775  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7775  
  
          LDA#20  
          7773  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7773  
  
          LDA#20  
          7767  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7767  
  
          LDA#20  
          7757  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7757  
  
          LDA#20  
          7737  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7737  
  
          LDA#20  
          7677  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7677  
  
          LDA#20  
          7677  
          SAE#20  
          7777  
          SKP  
          HLT  
          /SAE SKIPPED IN ERROR MEM=7777 AC=7677
```

```

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB      PAL10    V141    29-OCT-69    1140    PAGE 14

0705 1020      LDA+20
0706 7577      7577
0707 1460      SAE+20
0710 7777      7777
0711 0456      SKP
0712 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7777 AC#7577

0713 1020      LDA+20
0714 7377      7377
0715 1460      SAE+20
0716 7777      7777
0717 0456      SKP
0720 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7777 AC#7377

0721 1020      LDA+20
0722 6777      6777
0723 1460      SAE+20
0724 7777      7777
0725 0456      SKP
0726 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7777 AC#6777

0727 1020      LDA+20
0730 5777      5777
0731 1460      SAE+20
0732 7777      7777
0733 0456      SKP
0734 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7777 AC#5777

0735 1020      LDA+20
0736 3777      3777
0737 1460      SAE+20
0740 7777      7777
0741 0456      SKP
0742 0000      HLT
                                /TEST COMPLETE SKIP TO SAE TEST PART 4
                                /SAE SKIPPED IN ERROR MEM#7777 AC#3777

                                / SAE TEST PART 4 MEM#7776 AC#7777 L=1 FLOAT A SINGLE @ THRU MEM
                                /SET THE AC TO 7777 AND FLOAT A SINGLE
                                /ZERO THRU THE SAE OPERAND

0743 1020      LDA+20
0744 7777      7777
0745 1460      SAE+20
0746 7776      7776
0747 0456      SKP
0750 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7776 AC#7777

0751 1460      SAE+20
0752 7775      7775
0753 0456      SKP
0754 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7775 AC#7777

0755 1460      SAE+20
0756 7773      7773
0757 0456      SKP
0760 0000      HLT
                                /SAE SKIPPED IN ERROR MEM#7773 AC#7777

```

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAGE 14-1

0761	1460	SAE+20	PAL10	V141	29=OCT=69	1110
0762	7767	7767				
0763	0456	SKP				
0764	0000	HLT				
0765	1460	SAE+20				
0766	7757	7757				
0767	0456	SKP				
0770	0000	HLT				
0771	1460	SAE+20				
0772	7737	7737				
0773	0456	SKP				
0774	0000	HLT				

/SAE SKIPPED IN ERROR MEM=7767 AC=7777

/SAE SKIPPED IN ERROR MEM=7757 AC=7777

/SAE SKIPPED IN ERROR MEM=7737 AC=7777

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```

0775    1460      SAE+20
0776    7677      7677
0777    0456      SKP
          0000      HLT
/SAE SKIPPED IN ERROR MEM=7677 AC=7777

1001    1460      SAE+20
1002    7577      7577
1003    0456      SKP
          0000      HLT
/SAE SKIPPED IN ERROR MEM=7577 AC=7777

1005    1460      SAE+20
1006    7377      7377
1007    0456      SKP
          0000      HLT
/SAE SKIPPED IN ERROR MEM=7377 AC=7777

1011    1460      SAE+20
1012    6777      6777
1013    0456      SKP
          0000      HLT
/SAE SKIPPED IN ERROR MEM=6777 AC=7777

1015    1460      SAE+20
1016    5777      5777
1017    0456      SKP
          0000      HLT
/SAE SKIPPED IN ERROR MEM=5777 AC=7777

1021    1460      SAE+20
1022    3777      3777
1023    0456      SKP
          0000      HLT
/SAE SKIPPED IN ERROR MEM=3777 AC=7777

/SAE SOME COMBINATIONS OF EQUALITY

1025    1020      LDA+20
1026    5252      5252
1027    1460      SAE+20
1030    5252      5252
1031    0000      HLT
/SAE FAILED TO SKIP MEM=5252 AC=5252

1032    1020      LDA+20
1033    2525      2525
1034    1460      SAE+20
1035    2525      2525
1036    0000      HLT
/SAE FAILED TO SKIP MEM=2525 AC=2525

1037    1020      LDA+20
1040    7777      7777
1041    1460      SAE+20
1042    7777      7777
1043    0000      HLT
/END OF SAE TESTS SKIP TO ROL TEST PAR
/SAE FAILED TO SKIP MEM=7777 AC=7777

```

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAL10 V141 29eOCT=69 1110 PAGE 16

/ROL TEST PART 1 FLOATS A SINGLE ONE THRU THE AC, THE LINK BIT IS SET TO ONE
/LATER ON WE WILL TEST TO BE SURE WE DIDN'T DISTURB THE LINK
POP
CLL CML
LINC
LDA+20
0001
ROL
SAE+20
0001
HLT
/SET LINK
/SET A SINGLE BIT IN THE AC, ROL ONE PLACE
/AND TEST THE RESULT
1044 0002 1020
1045 7120 0001
1046 6141 0001
1047 1020 0001
1050 0001 0240
1051 0240 1460
1052 1460 0001
1053 0001 0000
1054 0000 0001
1055 1020 LDA+20
1056 0001 0001
1057 0241 ROL+1
1060 1460 SAE+20
1061 0002 0002
1062 0000 HLT
/ROL+1 FAILED AC14 TO AC10 AC#0002 L#0
1063 1020 LDA+20
1064 0002 0002
1065 0241 ROL+1
1066 1460 SAE+20
1067 0004 0004
1070 0000 HLT
/ROL+1 FAILED AC10 TO AC9 AC#0004
1071 1020 LDA+20
1072 0004 0004
1073 0241 ROL+1
1074 1460 SAE+20
1075 0010 0010
1076 0000 HLT
/ROL+1 FAILED AC9 TO AC8 AC#0010
1077 1020 LDA+20
1100 0010 0010
1101 0241 ROL+1
1102 1460 SAE+20
1103 0020 0020
1104 0000 HLT
/ROL+1 FAILED AC8 TO AC7 AC#0020
1105 1020 LDA+20
1106 0020 0020
1107 0241 ROL+1
1110 1460 SAE+20
1111 0040 0040
1112 0000 HLT
/ROL+1 FAILED AC7 TO AC6 AC#0040
1113 1020 LDA+20
1114 0040 0040
1115 0241 ROL+1
1116 1460 SAE+20
1117 0040 0040
1120 0000 HLT
/ROL+1 FAILED AC6 TO AC5 AC#0100

1121	1020	LDA+20
1122	0100	0100
1123	0241	ROL+1
1124	1460	SAE+20
1125	0200	0200
1126	0000	HLT
		/ROL+1 FAILED AC5 TO AC4 AC=0200
1127	1020	LDA+20
1130	0200	0200
1131	0241	ROL+1
1132	1460	SAE+20
1133	0400	0400
1134	0000	HLT
		/ROL+1 FAILED AC4 TO AC3 AC=0400
1135	1020	LDA+20
1136	0400	0400
1137	0241	ROL+1
1140	1460	SAE+20
1141	1000	1000
1142	0000	HLT
		/ROL+1 FAILED AC3 TO AC2 AC=1000
1143	1020	LDA+20
1144	1000	1000
1145	0241	ROL+1
1146	1460	SAE+20
1147	2000	2000
1150	0000	HLT
		/ROL+1 FAILED AC2 TO AC1 AC=2000
1151	1020	LDA+20
1152	2000	2000
1153	0241	ROL+1
1154	1460	SAE+20
1155	4000	4000
1156	0000	HLT
		/ROL+1 FAILED AC1 TO AC0 AC=4000
1157	1020	LDA+20
1160	4000	4000
1161	0241	ROL+1
1162	1460	SAE+20
1163	0001	0001
1164	0000	HLT
		/ROL+1 FAILED AC0 TO AC11 AC=0001
1165	0472	LZE+20
1166	0000	HLT
		/TEST COMPLETE SKIP TO ROL TEST PART 2
		/LINK CLEARED BY ROL+1 IN ERROR AC=0001

```

        /ROL TEST PART 2 COUNTER TEST USING NOISY NUMBER IN THE AC
        /LOAD A TEST NUMBER INTO THE AC
        /PERFORM ROL #2,3,4,,17 AND TEST THE RESULT

1167    1020    LDA#20-
1170    5252    5252
1171    0242    ROL#2
1172    1460    SAE#20-
1173    5252    5252
1174    0000    HLT
        /ROL#2 FAILED AC#5252

1175    1020    LDA#20-
1176    2525    2525
1177    0243    ROL#3
1178    1460    SAE#20-
1179    5252    5252
1180    0000    HLT
        /ROL#3 FAILED AC#5252

1181    1020    LDA#20-
1182    0077    0077
1183    0244    ROL#4
1184    1460    SAE#20-
1185    1760    1760
1186    0000    HLT
        /ROL#4 FAILED AC#1760

1187    1020    LDA#20-
1188    7700    7700
1189    0245    ROL#5
1190    1460    SAE#20-
1191    1760    1760
1192    0000    HLT
        /ROL#5 FAILED AC#1760

1193    1020    LDA#20-
1194    5200    5200
1195    0246    ROL#6
1196    1460    SAE#20-
1197    0052    0052
1198    0000    HLT
        /ROL#6 FAILED AC#0052

1199    1020    LDA#20-
1200    2500    2500
1201    0247    ROL#7
1202    1460    SAE#20-
1203    1460    0052
1204    0052    HLT
        /ROL#7 FAILED AC#0052

1205    1020    LDA#20-
1206    0025    0025
1207    0250    ROL#10
1208    1460    SAE#20-
1209    2401    2401
1210    0000    HLT
        /ROL#10 FAILED AC#2401

```

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DDAH

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PAL10

1241 1020 LDA+20
 1242 0052 0052
 1243 0251 ROL+11
 1244 1460 SAE+20
 1245 2005 2005
 1246 0000 HLT /ROL+11 FAILED AC=2005

1247 1020 LDA+20
 1250 0770 0770
 1251 0252 ROL+12
 1252 1460 SAE+20
 1253 0176 0176
 1254 0000 HLT /ROL+12 FAILED AC=0176

1255 1020 LDA+20
 1256 0707 0707
 1257 0253 ROL+13
 1258 1460 SAE+20
 1260 4343 4343
 1261 0000 HLT /ROL+13 FAILED AC=4343

1263 1020 LDA+20
 1264 7070 7070
 1265 0254 ROL+14
 1266 1460 SAE+20
 1267 7070 7070
 1268 0000 HLT /ROL+14 FAILED AC=7070

1271 1020 LDA+20
 1272 7007 7007
 1273 0255 ROL+15
 1274 1460 SAE+20
 1275 6017 6017
 1276 0000 HLT /ROL+15 FAILED AC=6017

1277 1020 LDA+20
 1300 0520 0520
 1301 0256 ROL+16
 1302 1460 SAE+20
 1303 2500 2500
 1304 0000 HLT /ROL+16 FAILED AC=2500

1305 1020 LDA+20
 1306 0250 0250
 1307 0257 ROL+17
 1310 1460 SAE+20
 1311 2500 2500
 1312 0000 HLT /ROL+17 FAILED AC=1240

1313 0472 LZE+20
 1314 0000 HLT //TEST COMPLETE SKIP TO ROL TEST 3
//LINK CLEARED BY ROL+2 THRU 17 IN ERROR AC=2500

/ROL I TEST PART 3

1315 0002	PDP	/ROUTINE IN 8 MODE TO SET LINK
1316 7120	CLL CML	
1317 6141	LINC	
	LDA+20	/DOES SETTING THE I BIT EFFECT THE LINK
1320 1020	2525	
1321 2525	ROL+20	
1322 0260	SAE+20	
1323 1460	2525	
1324 2525	HLT	/ROL I+0 FAILED AC#5255
1325 0000		
1326 0472	LZE+20	/ROL I+0 FAILED LZE
1327 0000	HLT	
1330 1020	LDA+20	
1331 2525	2525	
1332 0261	ROL+20+1	
1333 1460	SAE+20	
1334 2525	2525	/ROL I+1 FAILED AC#5253
1335 0000	HLT	/IF AC#5252 LINK TO AC11 FAILED
1336 0452	LZE	
1337 0000	HLT	/ROL I+1 FAILED LZE
	CLR	/CLEAR LINK AND AC
1340 0944	LDA+20	
1341 1020	2525	
1342 5252	ROL+20+1	
1343 0261	SAE+20	
1344 1460	2524	/ROL I+1 FAILED AC#2524
1345 2524	HLT	
1346 0000		
1347 0472	LZE+20	
1350 0000	HLT	/ROL I+1 FAILED AC#5251
	CLR	
1351 0041	LDA+20	
1352 1020	2525	
1353 5252	ROL+20+17	
1354 0277	SAE+20	
1355 1460	2525	/ROL I+17 FAILED AC#5251
1356 5251	HLT	
1357 0000		
1360 2452	LZE	/TEST COMPLETE SKIP TO ROL TEST 4
1361 0000	HLT	/ROL I+17 FAILED LZE

```

        /ROR TEST 4 FLOATS A SINGLE ONE THRU THE AC THE LINK BIT IS SET TO A ONE
        /LATER ON WELL WILL TEST TO BE SURE WE DIDN'T DISTURB THE LINK
        PDP
        CLL CML
        LINC

1362    0002    1020    LDA+20
1363    7120    0000    4000
1364    6141    ROR
                  SAE+20
1365    1020    LDA+20
1366    4000    4000
1367    0300    ROR
                  SAE+20
1370    1460    4000
1371    4000    HLT
1372    0000    /ROR @ FAILED AC0 TO AC0 AC=40000

1373    1020    LDA+20
1374    4000    4000
1375    0301    ROR+1
1376    1460    SAE+20
1377    2000    2000
1400    0000    HLT
                  /ROR +1 FAILED AC0 TO AC1 AC=20000

1401    1020    LDA+20
1402    2000    2000
1403    0301    ROR+1
1404    1460    SAE+20
1405    1000    1000
1406    0000    HLT
                  /ROR +1 FAILED AC1 TO AC2 AC=10000

1407    1020    LDA+20
1410    1000    1000
1411    0301    ROR+1
1412    1460    SAE+20
1413    0400    0400
1414    0000    HLT
                  /ROR +1 FAILED AC2 TO AC3 AC=04000

1415    1020    LDA+20
1416    0400    0400
1417    0301    ROR+1
1420    1460    SAE+20
1421    0200    0200
1422    0000    HLT
                  /ROR+1 FAILED AC3 TO AC4 AC=02000

1423    1020    LDA+20
1424    0200    0200
1425    0301    ROR+1
1426    1460    SAE+20
1427    0100    0100
1430    0000    HLT
                  /ROR+1 FAILED AC4 TO AC5 AC=01000

```

```

1431 1020 LDA#20
1432 0100 ROR#1
1433 0301 SAE#20
1434 1460
1435 0040
1436 0000 /ROR#1 FAILED AC5 TO AC6 AC=000000

1437 1020 LDA#20
1440 0040
1441 0301 ROR#1
1442 1460 SAE#20
1443 0020
1444 0000 HLT /ROR#1 FAILED AC6 TO AC7 AC=000000

1445 1020 LDA#20
1446 0020 ROR#1
1447 0301 SAE#20
1450 1460
1451 0010
1452 0000 HLT /ROR#1 FAILED AC7 TO AC8 AC=000000

1453 1020 LDA#20
1454 0010
1455 0301 ROR#1
1456 1460 SAE#20
1457 0004
1460 0000 HLT /ROR#1 FAILED AC8 TO AC9 AC=000000

1461 1020 LDA#20
1462 0004 ROR#1
1463 0301 SAE#20
1464 1460
1465 0002
1466 0000 HLT /ROR#1 FAILED AC9 TO AC10 AC=000000

1467 1020 LDA#20
1470 0002 ROR#1
1471 0301 SAE#20
1472 1460
1473 0001
1474 0000 HLT /ROR#1 FAILED AC10 TO AC11 AC=000000

1475 1020 LDE#20
1476 0001 ROR#1
1477 0301 SAE#20
1480 1460
1481 4000
1482 0000 HLT /TEST COMPLETE SKIP RO ROR TEST 5
/ROR#1 CLEARED LINK IN FBROB AC=000000

```

/ ROR TEST 5 COUNTER TEST WITH NOISY NUMBERS IN THE AC

1505	1020	LDA+20
1506	5252	5252
1507	0302	ROR+2
1510	1460	SAE+20
1511	5252	5252
1512	0000	HLT

1513	1020	LDA+20
1514	2525	2525
1515	0303	ROR+3
1516	1460	SAE+20
1517	5252	5252
1520	0000	HLT

1521	1020	LDA+20
1522	0077	0077
1523	0304	ROR+4
1524	1460	SAE+20
1525	7403	7403
1526	0000	HLT

1527	1020	LDA+20
1530	7700	7700
1531	0305	ROR+5
1532	1460	SAE+20
1533	0176	0176
1534	0000	HLT

1535	1020	LDA+20
1536	5200	5200
1537	0306	ROR+6
1540	1460	SAE+20
1541	0052	0052
1542	0000	HLT

1543	1020	LDA+20
1544	2500	2500
1545	0307	ROR+7
1546	1460	SAE+20
1547	4012	4012
1552	0000	HLT

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAGE 24

	PAL10	V141	29-OCT-69	1110
1551	10220	LDA+20		
1552	0225	0025		
1553	0310	ROR+10		
1554	1460	SAE+20		
1555	0520	0520		
1556	0000	HLT	/ROR+10 FAILED AC ₀₅₂₀	
1557	10220	LDA+20		
1558	0052	0052		
1561	0311	ROR+11		
1562	1460	SAE+20		
1563	0520	0520		
1564	0000	HLT	/ROR+11 FAILED AC ₀₅₂₀	
1565	10220	LDA+20		
1566	0770	0770		
1567	0312	ROR+12		
1568	1460	SAE+20		
1571	3740	3740		
1572	0000	HLT	/ROR+12 FAILED AC ₀₃₇₄	
1573	10220	LDA+20		
1574	0707	0707		
1575	0313	ROR+13		
1576	1460	SAE+20		
1577	1616	1616		
1600	0000	HLT	/ROR+13 FAILED AC ₀₃₁₆	
1601	10220	LDA+20		
1622	7070	7070		
1623	0314	ROR+14		
1624	1460	SAE+20		
1625	7070	7070		
1626	0000	HLT	/ROR+14 FAILED AC ₀₇₀₇	
1607	10220	LDA+20		
1612	7007	7007		
1611	0315	ROR+15		
1612	1460	SAE+20		
1613	7003	7403		
1614	0000	HLT	/ROR+15 FAILED AC ₀₇₄₀₃	
1615	10220	LDA+20		
1616	2520	0220		
1617	2316	ROR+16		
1622	1460	SAE+20		
1624	2124	0124		
1622	0000	HLT	/ROR+16 FAILED AC ₀₁₂₄	
1623	10220	LDA+20		
1624	0250	0250		
1625	0317	ROR+17		
1626	1460	SAE+20		
1627	2025	0025		
1632	2000	HLT	/ROR+17 FAILED AC ₀₀₂₅	

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB PAL10 V141 29 OCT 69 1110 PAGE 24-1
1631 0472 LEE+20 /TEST COMPLETE SKIP TO ROR TEST 2
1632 0000 HT /LINK CLEARED BY HOR2 THRU 17

/ROR I TEST 2

/ROUTINE IN B MODE TO SET LINK

1633 0002	PDP	CLL CML	LINC	
1634 7120				
1635 6141				
1636 1020	LDA#20	5252		
1637 5252	ROR#20	SAE#20		
1640 0320	5252			
1641 1460	ROR#20	SAE#20		
1642 5252	5252			
1643 0000	HLT			
1644 0472	LZE#20			
1645 0000	HLT			
1646 1020	LDA#20	5252		
1647 5252	ROR#20+1	SAE#20		
1650 0321	5252			
1651 1460	ROR#20	SAE#20		
1652 6525	5252			
1653 0000	HLT			
1654 0452	LZE			
1655 0000	HLT			
1656 0011	CLR			
1657 1020	LDA#20	2525		
1660 2525	ROR#20+1	SAE#20		
1661 0321	2525			
1662 1460	ROR#20	SAE#20		
1663 1252	2525			
1664 0000	HLT			
1665 0472	LZE#20			
1666 0000	HLT			
1667 0011	CLR			
1672 1020	LDA#20	2525		
1671 2525	ROR#20+17	SAE#20		
1672 0337	2525			
1673 1460	ROR#20	SAE#20		
1674 4525	2525			
1675 0000	HLT			
1676 0452	LZE			
1677 0000	HLT			

/TEST COMPLETE! SKIP TO ROR TEST 3
/ROR I+17 FAILED L=0

/RUR TEST 3 AC DATA TO THE MQ TEST (QAC) TEST

1700	0011	CLR	/CLEAR AC, L, MQ
1701	1020	LDA+20/-95	
1702	0001	0001	/RUR INTO MQ REGISTER,
1703	0301	ROR+1	/QAC IT INTO AC,
1704	0005	QAC	/AND TEST IT
1705	1460	SAE+20	
1706	2000	2000	
1707	0000	HLT	/MQ DATA FAILED AC=2000 MQ=4000

1710	0011	CLR	
1711	1020	LDA+20	
1712	0001	0001	
1713	0302	ROR+2	
1714	0005	QAC	
1715	1460	SAE+20	
1716	1000	1000	
1717	0000	HLT	/MQ DATA FAILED AC=1000 MQ=2000

1720	0011	CLR	
1721	1020	LDA+20	
1722	0001	0001	
1723	0303	ROR+3	
1724	0005	QAC	
1725	1460	SAE+20	
1726	0400	0400	
1727	0000	HLT	/MQ DATA FAILED AC=0400 MQ=0500

1730	0011	CLR	
1731	1020	LDA+20	
1732	0001	0001	
1733	0304	ROR+4	
1734	0005	QAC	
1735	1460	SAE+20	
1736	0200	0200	
1737	0000	HLT	/MQ DATA FAILED AC=0200 MQ=0400

1740	0011	CLR	
1741	1020	LDA+20	
1742	0001	0001	
1743	0305	ROR+5	
1744	0005	QAC	
1745	1460	SAE+20	
1746	0100	0100	
1747	0000	HLT	

1750	0011	CLR	
1751	1020	LDA+20	
1752	0001	0001	
1753	0306	ROR+6	
1754	0005	QAC	

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB PAL10 V141 29-OCT-69
1755 1460 SAE+20 /TEST PARTIALLY COMPLETE, CHANGE IF
1756 0040 0040
1757 0000 HLT /IMG DATA FAILED AQ=0040 MQ=0010

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/PDP=12 CP TEST

PART 2 SKIP AND DATA HANDLING MAINDEC D0AB

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```
/SUBROUTINE TO CHANGE INSTRUCTION FIELDS:  
/GO TO P MODE, JUMP INDIRECT INTO NEXT  
/2K OF MEMORY, AND SWITCH BACK TO L MODE.  
/THE MA IS LOADED INTO THE IB, THEN THE  
/IB IS TRANSFERRED TO TO THE IF  
/IF THIS FAILS, WE SHOULD LAND @ 0002
```

/PDP=142 CP TEST		PART 2 SKIP AND DATA HANDLING		MAINDEC_D0AB	PAL10	V141	29=OCT=69
1760	0002	PUP		/GO TO 8 MODE			
1761	5762	5000	*1	JMP 1,1+1			
1762	2001	2001		/NEW FIELD			
2001	6141	LINC					
2002	0011	CLR					
2003	0456	SKP					
2004	0000	HLT					
2005	1020	LDA+20					
2006	0001	0001					
2007	0307	ROR+7					
2010	0005	GAC					
2011	1460	SAE+20					
2012	0020	0020					
2013	0000	HLT					
		/MQ DATA FAILED AC=000010 MQ=00040					
2014	0041	CLR					
2015	1020	LDA+20					
2016	0001	0001					
2017	0310	ROR+10					
2020	0005	GAC					
2021	1460	SAE+20					
2022	0010	0010					
2023	0000	HLT					
		/MQ DATA FAILED AC=000010 MQ=00020					
2024	0041	CLR					
2025	1020	LDA+20					
2026	0001	0001					
2027	0311	ROR+11					
2030	0005	GAC					
2031	1460	SAE+20					
2032	0004	0004					
2033	0000	HLT					
		/MQ DATA FAILED AC=000010 MQ=00040					
2034	0041	CLR					
2035	1020	LDA+20					
2036	0001	0001					
2037	0312	ROR+12					
2040	0005	GAC					
2041	1460	SAE+20					
2042	0002	0002					
2043	0000	HLT					
		/MQ DATA FAILED AC=000020 MQ=00024					

```

2044 0011 CLR
2045 1020 LDA+20
2046 0001 0001
2047 0313 RCR+13
2050 0005 QAC
2051 1460 SAE+20
2052 0001 0001
2053 0000 HLT
/QLC TEST

2054 0455 QLZ
2055 0000 HLT /MQ11 NOT ZERO ON QLC FAILED AC=00001 MQ=0002
2056 0475 QLZ+20
2057 0496 SKP
2060 0000 HLT /QLC +20 SKIPPED IN ERROR

2061 1020 LDA+20
2062 0001 0001
2063 0314 ROR+14
2064 0475 QLZ+20
2065 0000 HLT /QLC +20 FAILED MQ=0001

2066 0455 QLZ
2067 0496 SKP
2070 0000 HLT /QLC FAILED MQ=0001
/ ROR TEST 4
/ ROR INTO MQ USING NOISY NUMBERS

2071 1020 LDA+20
2072 5252 5252
2073 0314 ROR+14
2074 0005 QAC
2075 1460 SAE+20
2076 2525 2525
2077 0000 HLT /ROR+14 FAILED AC=2525 MQ=5252
2100 0455 QLZ
2101 0000 HLT /MQ11=0
2102 1020 LDA+20
2103 2525 2525
2104 0314 ROR+14
2105 0005 QAC
2106 1460 SAE+20
2107 1252 1252
2110 0000 HLT /ROR+14 FAILED AC=1252 MQ=2525
2111 0475 QLZ+20
2112 0000 HLT /MQ11=1

```


				PAL10	V141	29 OCT 69	1140	PAGE 31
2166	0475	QLZ+20	HLT					
2167	0000	LDA+20			/MQ11=1			
2170	1020	0052	ROR+14					
2171	0052	0052	QAC					
2172	0314	0314	SAE+20					
2173	0005	0005	0025					
2174	1460	1460	HLT			/ROR+14 FAILED AC=0025 MQ=0052		
2175	0025	0025						
2176	0000	0000						
2177	0455	QLZ						
2200	0000	HLT			/MQ11=0			
2201	1020	1020	LDA+20					
2202	0770	0770	0770					
2203	0314	0314	ROR+14					
2204	0005	0005	QAC					
2205	1460	1460	SAE+20					
2206	0374	0374	0374					
2207	0000	0000	HLT			/ROR+14 FAILED AC=0374 MQ=0770		
2210	0455	QLZ						
2211	0000	HLT			/MQ11=0			
2212	1020	1020	LDA+20					
2213	0707	0707	0707					
2214	0314	0314	ROR+14					
2215	0005	0005	QAC					
2216	1460	1460	SAE+20					
2217	0343	0343	0343					
2220	0000	0000	HLT			/ROR+14 FAILED AC=0343 MQ=0707		
2221	0475	QLZ						
2222	0000	HLT			/MQ11=1			
2223	1020	1020	LDA+20					
2224	0707	0707	7007					
2225	0314	0314	ROR+14					
2226	0005	0005	QAC					
2227	1460	1460	SAE+20					
2230	0343	0343	3434					
2231	0000	0000	HLT			/ROR+14 FAILED AC=0343 MQ=0707		
2232	0455	QLZ						
2233	0000	HLT			/MQ11=0			
2234	1020	1020	LDA+20					
2235	7007	7007	7007					
2236	0314	0314	ROR+14					
2237	0005	0005	QAC					
2240	1460	1460	SAE+20					
2241	3403	3403	3403					
2242	0000	0000	HLT			/ROR+14 FAILED AC=3403 MQ=7007		

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	PAL10	V141	29-OCT-69	1110
2243	0475	QLZ+20		
2244	0000	HLT	/MQ11=1	
2245	1020	LDA+20		
2246	0520	0520		
2247	0314	ROR+14		
2248	0005	QAC		
2251	1460	SAE+20		
2252	0250	0250		
2253	0000	HLT	/ROR+14 FAILED ACE=0250 MQ=0520	
2254	0455	QLZ		
2255	0000	HLT	/MQ11=0	
2256	1020	LDA+20		
2257	0250	0250		
2260	0314	ROR+14		
2261	0005	QAC		
2262	1460	SAE+20		
2263	0124	0124		
2264	0000	HLT	/ROR+14 FAILED ACE=0124 MQ=0250	
2265	0455	QLZ	/END OF TEST SKIP RO BLK TEST 1	
2266	0000	HLT	/MQ11	

```

/
/ BCL TEST 1, BCL WILL CLEAR ONE BIT OUT OF A FIELD OF ZEROS

2267 1020 LDA+20_
2270 0001 0001
2271 1560 BCL+20_
2272 0001 0001
2273 0450 AEE
2274 0000 HLT
/ BCL FAILED TO CLEAR AC11, AC=00000

2275 1020 LDA+20_
2276 0002 0002
2277 1560 BCL+20_
2300 0002 0002
2301 0450 AEE
2302 0000 HLT
/ BCL FAILED TO CLEAR AC 10, AC=00000

2303 1020 LDA+20_
2304 0004 0004
2305 1560 BCL+20_
2306 0004 0004
2307 0450 AEE
2310 0000 HLT
/ BCL FAILED TO CLEAR AC9, AC=00000

2311 1020 LDA+20_
2312 0010 0010
2313 1560 BCL+20_
2314 0010 0010
2315 0450 AEE
2316 0000 HLT
/ BCL FAILED TO CLEAR AC8, AC=00000

2317 1020 LDA+20_
2320 0020 0020
2321 1560 BCL+20_
2322 0020 0020
2323 0450 AEE
2324 0000 HLT
/ BCL FAILED TO CLEAR AC 7, AC=00000

2325 1020 LDA+20_
2326 0040 0040
2327 1560 BCL+20_
2330 0040 0040
2331 0450 AEE
2332 0000 HLT
/ BCL FAILED TO CLEAR AC 6, AC=00000

2333 1020 LDA+20_
2334 0100 0100
2335 1560 BCL+20_
2336 0100 0100
2337 0450 AEE
2340 0000 HLT
/ BCL FAILED TO CLEAR AC 5, AC=00000

```

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DEAB PAGE 34

2341 1020 LDA#20
2342 0200 0200
2343 1560 BCL#20
2344 0200 0200
2345 0450 AEE
2346 0000 HLT

//BCL FAILED TO CLEAR AC 4, AC=0000

2347 1020 LDA#20
2348 0400 0400
2349 1560 BCL#20
2350 0200 0200
2351 1560 AEE
2352 0400 0400
2353 0450 HLT
2354 0000 //BCL FAILED TO CLEAR AC 3, AC=0000

2355 1020 LDA#20
2356 1000 1000
2357 1560 BCL#20
2358 1000 1000
2359 0450 AEE
2360 0000 HLT

//BCL FAILED TO CLEAR AC 2, AC=0000

2361 0450 AEE
2362 0000 HLT

2363 1020 LDA#20
2364 2000 2000
2365 1560 BCL#20
2366 2000 2000
2367 0450 AEE
2368 0000 HLT

//BCL FAILED TO CLEAR AC 1, AC=0000

2371 1020 LDA#20
2372 4000 4000
2373 1560 BCL#20
2374 4000 4000
2375 0450 AEE
2376 0000 HLT

//BCL TEST 2 WILL CLEAR A SINGLE ONE OUT OF A FIELD OF ONES

2377 1020 LDA#20
2378 7777 7777 //SET ALL BITS AND TRY TO CLEAR
2400 1560 1560 //ONE AND ONLY 1 BIT
2401 0001 0001
2402 0001 0001
2403 1460 SAE#20
2404 7776 7776
2405 0000 HLT //BCL CLEARED OR SET A BIT IN ERROR, AC=7776

2406 1020 LDA#20
2407 7777 7777
2410 1560 BCL#20
2411 0002 0002
2412 1460 SAE#20
2413 7775 7775
2414 0000 HLT //BCL CLEARED OR SET A BIT IN ERROR, AC=7775

2415 1020 LDA#20

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB
2416 7777 7777
2417 1560 BCL+20

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/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAGE 36

2476 1020 LDA+20
2477 7777 7777
2500 1560 BCL+20
2501 1000 1000
2502 1460 SAE+20
2503 6777 6777
2504 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=6777

2505 1020 LDA+20
2506 7777 7777
2507 1560 BCL+20
2510 2000 2000
2511 1460 SAE+20
2512 5777 5777
2513 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=5777

2514 1020 LDA+20
2515 7777 7777
2516 1560 BCL+20
2517 4000 4000
2520 1460 SAE+20
2521 3777 3777
2522 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=3777

/BCL WILL CLEAR ALL BITS EXCEPT FOR A SINGLE ONE

2523 1020 LDA+20
2524 7777 7777
2525 1560 BCL+20
2526 7776 7776
2527 1460 SAE+20
2530 0001 0001
2531 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR AC=0001

2532 1020 LDA+20
2533 7777 7777
2534 1560 BCL+20
2535 7775 7775
2536 1460 SAE+20
2537 0002 0002
2540 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR AC=0002

2541 1020 LDA+20
2542 7777 7777
2543 1560 BCL+20
2544 7773 7773
2545 1460 SAE+20
2546 0004 0004
2547 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR AC=0004

2550 1020 LDA+20
2551 7777 7777
2552 1560 BCL+20

C

C

C


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2631 1020 LDA#20
2632 7777 LDA#20
2633 1560 BCL#20
2634 5777 SAE#20
2635 1460 SAE#20
2636 2000 HLT /BCL CLEARED OR SET A BIT IN ERROR AC=2000
2637 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR AC=2000

2640 1020 LDA#20
2641 7777 LDA#20
2642 1560 BCL#20
2643 3777 3777
2644 1460 SAE#20
2645 4000 4000
2646 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR AC=4000

2647 1020 LDA#20
2650 0001 0001
2651 1560 BCL#20
2652 7776 7776
2653 1460 SAE#20
2654 0001 0001
2655 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=0001

2656 1020 LDA#20
2657 0002 0002
2660 1560 BCL#20
2661 7775 7775
2662 1460 SAE#20
2663 0002 0002
2664 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=0002

2665 1020 LDA#20
2666 0004 0004
2667 1560 BCL#20
2670 7773 7773
2671 1460 SAE#20
2672 0004 0004
2673 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=0004

2674 1020 LDA#20
2675 0010 0010
2676 1560 BCL#20
2677 7767 7767
2700 1460 SAE#20
2701 0010 0010
2702 0000 HLT /BCL CLEARED OR SET A BIT IN ERROR, AC=0010

2703 1020 LDA#20
2704 0020 0020
2705 1560 BCL#20
2706 7757 7757

```

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DQAB
2707 1460 SAE-20
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/PDP-12 CP TEST

PART 2 SKIP AND DATA HANDLING MAINDEC DDAB

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2710	0020	0020	LDA+20	V140	29 OCT 69	1110
2711	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=0020			
2712	1020		LDA+20			
2713	0040		0040			
2714	1560		BCL+20			
2715	7737		7737			
2716	1460		SAE+20			
2717	0040		0040			
2720	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=0040			
2721	1020		LDA+20			
2722	0100		0100			
2723	1560		BCL+20			
2724	7677		7677			
2725	1460		SAE+20			
2726	0100		0100			
2727	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=0100			
2730	1020		LDA+20			
2731	0200		0200			
2732	1560		BCL+20			
2733	7577		7577			
2734	1460		SAE+20			
2735	0200		0200			
2736	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=0200			
2737	1020		LDA+20			
2740	0400		0400			
2741	1560		BCL+20			
2742	7377		7377			
2743	1460		SAE+20			
2744	0400		0400			
2745	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=0400			
2746	1020		LDA+20			
2747	1000		1000			
2750	1560		BCL+20			
2751	6777		6777			
2752	1460		SAE+20			
2753	1000		1000			
2754	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=1000			
2755	1020		LDA+20			
2756	2000		2000			
2757	1560		BCL+20			
2760	5777		5777			
2761	1460		SAE+20			
2762	2000		2000			
2763	0000	HLT	/BCL CLEARED OR SET A BIT IN ERROR, AC=2000			

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB PAGE 40

2764 1020 LDA+20
2765 4000 4000
2766 1560 BCL+20
2767 3777 3777
2770 1460 SAE+20
2771 4000 4000
2772 0000 HLT
/BSE TEST1 BSE WILL SET A SINGLE ONE IN A FIELD OF ZEROS

2773 0011 CLR
2774 1620 BSE+20
2775 0001 0001
2776 1460 SAE+20
2777 0001 0001
3000 0000 HLT
*/BSE WILL ATTEMPT TO SET A SINGLE 4 BIT
/IN A FIELD OF ZEROS*

3001 0011 CLR
3002 1620 BSE+20
3003 0002 0002
3004 1460 SAE+20
3005 0002 0002
3006 0000 HLT
/BSE FAILED TO SET AC 11 AC=00001

3007 0011 CLR
3010 1620 BSE+20
3011 0004 0004
3012 1460 SAE+20
3013 0004 0004
3014 0000 HLT
/BSE FAILED TO SET AC 10 AC=00002

3015 0011 CLR
3016 1620 BSE+20
3017 0010 0010
3020 1460 SAE+20
3021 0010 0010
3022 0000 HLT
/BSE FAILED TO SET AC 9 AC=00004

3023 0011 CLR
3024 1620 BSE+20
3025 0020 0020
3026 1460 SAE+20
3027 0020 0020
3030 0000 HLT
/BSE FAILED TO SET AC 8 AC=00010

3031 0011 CLR
3032 1620 BSE+20
3033 0040 0040
3034 1460 SAE+20
3035 0040 0040
3036 0000 HLT
/BSE FAILED TO SET AC 7 AC=00020

3037 0011 CLR
3040 1620 BSE+20

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB

3041	0100	0100
3042	1460	SAE+20
3043	0100	0100

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/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB PAGE 41

3044	0000	HLT	/BSE FAILED TO SET AC 5 AC=0100
3045	0011	CLR	
3046	1620	BSE+20	
3047	0200	0200	
3050	1460	SAE+20	
3051	0200	0200	
3052	0000	HLT	/BSE FAILED TO SET AC 4 AC=0200
3053	0011	CLR	
3054	1620	BSE+20	
3055	0400	0400	
3056	1460	SAE+20	
3057	0400	0400	
3060	0000	HLT	/BSE FAILED TO SET AC 3 AC=0300
3061	0011	CLR	
3062	1620	BSE+20	
3063	1000	1000	
3064	1460	SAE+20	
3065	1000	1000	
3066	0000	HLT	/BSE FAILED TO SET AC 2 AC=0400
3067	0011	CLR	
3070	1620	BSE+20	
3071	2000	2000	
3072	1460	SAE+20	
3073	2000	2000	
3074	0000	HLT	/BSE FAILED TO SET AC 1 AC=0500
3075	0011	CLR	
3076	1620	BSE+20	
3077	4000	4000	
3100	1460	SAE+20	
3101	4000	4000	
3102	0000	HLT	/BSE FAILED TO SET AC 0 AC=0600
			/BSE TEST 2 WILL TRY AND SET ALL BITS
3103	1020	LDA+20	
3104	7776	7776	
3105	1620	BSE+20	
3106	7777	7777	
3107	0450	AEE	
3110	0000	HLT	/BSE FAILED TO SET AC 11 AC=7777
3111	1020	LDA+20	
3112	7775	7775	
3113	1620	BSE+20	
3114	7777	7777	
3115	0450	AEE	
3116	0000	HLT	/BSE FAILED TO SET AC10 AC=7777
3117	1020	LDA+20	
3120	7773	7773	

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB
3121 1620 BSE+20

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/POP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDED D0AB PAL10 V141 29-OCT-69 1110 PAGE 42

Step	Value	Condition	Action																																																
3122	7777			3125	1020	LDA+20		3133	1020	LDA+20		3141	1020	LDA+20		3155	1020	LDA+20		3171	1020	LDA+20		3177	1020	LDA+20		3177	5777	LDA+20																					
3123	0450	AZE	HLT	3126	7767	7767	BSE+20	3134	7757	7757	BSE+20	3142	7737	7737	BSE+20	3150	7677	7677	BSE+20	3164	7377	7377	BSE+20	3172	6777	6777	BSE+20	3172	5777	5777	BSE+20																				
3124	0000			3127	1620			3135	1620			3143	1620			3152	1620			3165	1620			3173	1620			3173	5777																						
3125	1020	LDA+20		3130	7777	7777	AZE	3137	0450	0450	HLT	3140	0000	0000	HLT	3147	1020	1020	LDA+20	3153	0450	0450	HLT	3154	0000	0000	HLT	3161	0450	0450	HLT	3162	0000	0000	HLT	3163	1020	1020	LDA+20	3171	1020	1020	LDA+20	3177	1020	1020	LDA+20	3177	5777	5777	LDA+20
3126	7767	AZE	HLT	3129	7777	7777	BSE+20	3136	7777	7777	AZE	3144	7777	7777	AZE	3151	0450	0450	HLT	3158	0000	0000	HLT	3166	0450	0450	HLT	3174	7777	7777	AZE	3175	0450	0450	HLT	3176	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20				
3127	1620			3131	0450			3138	0450	0450	HLT	3141	0000	0000	HLT	3148	1020	1020	LDA+20	3155	0450	0450	HLT	3162	0000	0000	HLT	3169	1020	1020	LDA+20	3171	1020	1020	LDA+20	3177	1020	1020	LDA+20												
3128	0000			3132	0000			3139	0450	0450	HLT	3146	0000	0000	HLT	3153	0450	0450	HLT	3160	0000	0000	HLT	3167	0450	0450	HLT	3174	7777	7777	AZE	3175	0450	0450	HLT	3176	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20				
3129	0450			3133	0450			3140	0450	0450	HLT	3147	0000	0000	HLT	3154	0450	0450	HLT	3161	0450	0450	HLT	3168	0000	0000	HLT	3175	0450	0450	HLT	3176	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3130	0000			3134	0450			3141	0450	0450	HLT	3148	0000	0000	HLT	3155	0450	0450	HLT	3162	0450	0450	HLT	3169	0000	0000	HLT	3176	0450	0450	HLT	3177	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3131	0450			3135	0450			3142	0450	0450	HLT	3149	0000	0000	HLT	3156	0450	0450	HLT	3163	0450	0450	HLT	3170	0000	0000	HLT	3177	0450	0450	HLT	3178	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3132	0000			3136	0450			3143	0450	0450	HLT	3150	0000	0000	HLT	3157	0450	0450	HLT	3164	0450	0450	HLT	3171	0000	0000	HLT	3178	0450	0450	HLT	3179	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3133	0450			3137	0450			3144	0450	0450	HLT	3151	0000	0000	HLT	3158	0450	0450	HLT	3165	0450	0450	HLT	3172	0000	0000	HLT	3179	0450	0450	HLT	3180	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3134	0000			3138	0450			3145	0450	0450	HLT	3152	0000	0000	HLT	3159	0450	0450	HLT	3166	0450	0450	HLT	3173	0000	0000	HLT	3170	0450	0450	HLT	3177	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3135	0450			3139	0450			3146	0450	0450	HLT	3153	0000	0000	HLT	3160	0450	0450	HLT	3167	0450	0450	HLT	3174	0000	0000	HLT	3171	0450	0450	HLT	3178	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3136	0000			3140	0450			3147	0450	0450	HLT	3154	0000	0000	HLT	3161	0450	0450	HLT	3168	0450	0450	HLT	3175	0000	0000	HLT	3172	0450	0450	HLT	3179	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3137	0450			3141	0450			3148	0450	0450	HLT	3155	0000	0000	HLT	3162	0450	0450	HLT	3169	0450	0450	HLT	3176	0000	0000	HLT	3173	0450	0450	HLT	3170	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3138	0000			3142	0450			3149	0450	0450	HLT	3156	0000	0000	HLT	3163	0450	0450	HLT	3160	0450	0450	HLT	3167	0000	0000	HLT	3174	0450	0450	HLT	3171	0000	0000	HLT	3178	0450	0450	HLT	3179	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20
3139	0450			3143	0450			3150	0450	0450	HLT	3157	0000	0000	HLT	3164	0450	0450	HLT	3161	0450	0450	HLT	3168	0000	0000	HLT	3175	0450	0450	HLT	3172	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3140	0000			3144	0450			3151	0450	0450	HLT	3158	0000	0000	HLT	3165	0450	0450	HLT	3172	0450	0450	HLT	3179	0000	0000	HLT	3176	0450	0450	HLT	3183	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3141	0450			3145	0450			3152	0450	0450	HLT	3159	0000	0000	HLT	3166	0450	0450	HLT	3173	0450	0450	HLT	3180	0000	0000	HLT	3177	0450	0450	HLT	3184	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3142	0000			3146	0450			3153	0450	0450	HLT	3160	0000	0000	HLT	3167	0450	0450	HLT	3174	0450	0450	HLT	3181	0000	0000	HLT	3178	0450	0450	HLT	3185	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3143	0450			3147	0450			3154	0450	0450	HLT	3161	0000	0000	HLT	3168	0450	0450	HLT	3175	0450	0450	HLT	3182	0000	0000	HLT	3179	0450	0450	HLT	3186	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3144	0000			3148	0450			3155	0450	0450	HLT	3162	0000	0000	HLT	3169	0450	0450	HLT	3176	0450	0450	HLT	3183	0000	0000	HLT	3180	0450	0450	HLT	3187	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3145	0450			3149	0450			3156	0450	0450	HLT	3163	0000	0000	HLT	3170	0450	0450	HLT	3177	0450	0450	HLT	3184	0000	0000	HLT	3181	0450	0450	HLT	3188	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3146	0000			3150	0450			3157	0450	0450	HLT	3164	0000	0000	HLT	3171	0450	0450	HLT	3178	0450	0450	HLT	3185	0000	0000	HLT	3192	0450	0450	HLT	3189	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3147	0450			3151	0450			3158	0450	0450	HLT	3165	0000	0000	HLT	3172	0450	0450	HLT	3179	0450	0450	HLT	3186	0000	0000	HLT	3193	0450	0450	HLT	3190	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3148	0000			3152	0450			3159	0450	0450	HLT	3166	0000	0000	HLT	3173	0450	0450	HLT	3180	0450	0450	HLT	3187	0000	0000	HLT	3194	0450	0450	HLT	3191	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3149	0450			3153	0450			3160	0450	0450	HLT	3167	0000	0000	HLT	3174	0450	0450	HLT	3181	0450	0450	HLT	3188	0000	0000	HLT	3195	0450	0450	HLT	3192	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3150	0000			3154	0450			3161	0450	0450	HLT	3168	0000	0000	HLT	3175	0450	0450	HLT	3182	0450	0450	HLT	3189	0000	0000	HLT	3196	0450	0450	HLT	3193	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3151	0450			3155	0450			3162	0450	0450	HLT	3169	0000	0000	HLT	3176	0450	0450	HLT	3183	0450	0450	HLT	3190	0000	0000	HLT	3197	0450	0450	HLT	3194	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3152	0000			3156	0450			3163	0450	0450	HLT	3170	0000	0000	HLT	3177	0450	0450	HLT	3184	0450	0450	HLT	3191	0000	0000	HLT	3198	0450	0450	HLT	3195	0000	0000	HLT	3177	1020	1020	LDA+20	3200	5777	5777	LDA+20								
3153	0450			3157	0450			3164	0450	0450	HLT	3171	0000	0000																																					

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3201 1020 BSE+20
3202 7777 7777
3203 0450 AEE
3204 0000 HALT
/BSE FAILED TO SET AC01 AC=7777

3205 1020 LDA+20
3206 3777 3777
3207 1620 BSE+20
3210 7777 7777
3211 0450 AEE
3212 0000 HALT
/END OF BSE TESTS! SKIP TO BCO TEST 1
/BSE FAILED TO SET AC00 AC=7777

/BCO TEST 1 BCO WILL COMPLEMENT CORRESPONDING BITS OF THE AC

3213 0011 CLR
3214 1660 BCO+20
3215 0001 0001
3216 1460 SAE+20
3217 0001 0001
3220 0000 HALT
/BCO FAILED TO COMPLEMENT AC 11 TO A ONE

3221 0011 CLR
3222 1660 BCO+20
3223 0002 0002
3224 1460 SAE+20
3225 0002 0002
3226 0000 HALT
/BCO FAILED TO COMPLEMENT AC 10 TO A ONE

3227 0011 CLR
3230 1660 BCO+20
3231 0004 0004
3232 1460 SAE+20
3233 0004 0004
3234 0000 HALT
/BCO FAILED TO COMPLEMENT AC 9 TO A ONE

3235 0011 CLR
3236 1660 BCO+20
3237 0010 0010
3240 1460 SAE+20
3241 0010 0010
3242 0000 HALT
/BCO FAILED TO COMPLEMENT AC 8 TO A ONE

3243 0011 CLR
3244 1660 BCO+20
3245 0020 0020
3246 1460 SAE+20
3247 0020 0020
3250 0000 HALT
/BCO FAILED TO COMPLEMENT AC 7 TO A ONE

3251 0011 CLR
3252 1660 BCO+20
3253 0040 0040

/PDP-12 CP TEST		PART 2 SKIP AND DATA HANDLING MAINDEC D0AB		PAL10	V141	29-OCT-69	1110	PAGE 44
3254	1460		SAE+20-					
3255	0040		0040					
3256	0000		HLT					
3257	0011	CLR						
3260	1660	BCO+20-						
3261	0100	0100	SAE+20-					
3262	1460	0200	SAE+20-					
3263	0100	0200	0100					
3264	0000	HLT						
3265	0011	CLR						
3266	1660	BCO+20-						
3267	0200	0200	0200					
3270	1460	0400	SAE+20-					
3271	0200	0200	0200					
3272	0000	HLT						
3273	0011	CLR						
3274	1660	BCO+20-						
3275	0400	0400	0400					
3276	1460	0600	SAE+20-					
3277	0400	0600	0400					
3300	0000	HLT						
3301	0011	CLR						
3302	1660	BCO+20-						
3303	1000	1000	1000					
3304	1460	1400	SAE+20-					
3305	1000	1000	1000					
3306	0000	HLT						
3307	0011	CLR						
3310	1660	BCO+20-						
3311	2000	2000	2000					
3312	1460	2200	SAE+20-					
3313	2000	2200	2000					
3314	0000	HLT						
3315	0011	CLR						
3316	1660	BCO+20-						
3317	4000	4000	4000					
3320	1460	4200	SAE+20-					
3321	4000	4200	4000					
3322	0000	HLT						
3323	1020	LDA+20-						
3324	0001	0001	0001					
3325	1660	BCO+20-						
3326	0001	0001	0001					
3327	0450	A2E	A2E					
3330	0000	HLT						
3331	1020	LDA+20-						

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3332	0002	0002	BCO+20	
3333	1660			
3334	0002	0002	BCO+20	
3335	0450			
3336	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC10 TO A ZERO
3337	1020	LDA+20		
3340	0004	0004	BCO+20	
3341	1660			
3342	0004	0004	BCO+20	
3343	0450	A2E		
3344	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC9 TO A ZERO
3345	1020	LDA+20		
3346	0040	0010	BCO+20	
3347	1660			
3350	0010	0010	BCO+20	
3351	0450	A2E		
3352	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC8 TO A ZERO
3353	1020	LDA+20		
3354	0020	0020	BCO+20	
3355	1660			
3356	0020	0020	BCO+20	
3357	0450	A2E		
3360	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC7 TO A ZERO
3361	1020	LDA+20		
3362	0040	0040	BCO+20	
3363	1660			
3364	0040	0040	BCO+20	
3365	0450	A2E		
3366	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC6 TO A ZERO
3367	1020	LDA+20		
3370	0100	0100	BCO+20	
3371	1660			
3372	0100	0100	BCO+20	
3373	0450	A2E		
3374	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC5 TO A ZERO
3375	1020	LDA+20		
3376	0200	0200	BCO+20	
3377	1660			
3400	0200	0200	BCO+20	
3401	0450	A2E		
3402	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC4 TO A ZERO
3403	1020	LDA+20		
3404	0400	0400	BCO+20	
3405	1660			
3406	0400	0400	BCO+20	
3407	0450	A2E		
3410	0000	HLT		/BCO FAILED TO RECOMPLEMENT AC3 TO A ZERO

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB		PAL10	V141	29 OCT 69
3411	10200	LDA+20		
3412	10000	1000		
3413	10000	BCO+20		
3414	10000	1000		
3415	04500	AEE		
3416	00000	HLT		/BCO FAILED TO RECOMPLEMENT AC2 TO A ZERO
3417	10200	LDA+20		
3420	20000	2000		
3421	10000	BCO+20		
3422	20000	2000		
3423	04500	AEE		
3424	00000	HLT		/BCO FAILED TO RECOMPLEMENT AC1 TO A ZERO
3425	10200	LDA+20		
3426	40000	4000		
3427	10000	BCO+20		
3430	40000	4000		
3431	04500	AEE		
3432	00000	HLT		/BCO FAILED TO RECOMPLEMENT AC0 TO A ZERO
3433	00111	CLR		
3434	10200	LDA+20		
3435	7776	7776		
3436	14400	SAE+20		
3437	7776	7776		
3440	00000	HLT		/BCO FAILED AC#7776
3441	00111	CLR		
3442	15600	BCO+20		
3443	7775	7775		
3444	14400	SAE+20		
3445	7775	7775		
3446	00000	HLT		/BCO FAILED AC#7775
3447	00111	CLR		
3450	16600	BCO+20		
3451	7773	7773		
3452	14400	SAE+20		
3453	7773	7773		
3454	00000	HLT		/BCO FAILED AC#7773
3455	00111	CLR		
3456	16600	BCO+20		
3457	7767	7767		
3458	14400	SAE+20		
3459	7767	7767		
3462	00000	HLT		/BCO FAILED AC#7767
3463	02111	CLR		
3464	16600	BCO+20		
3465	7757	7757		
3466	14400	SAE+20		
3467	7757	7757		

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DATA

		PAL10	V141	29-OCT-69	1110	PAGE 47
3470	0000	HLT				
3471	0011	CLR				
3472	1660	BCO+20				
3473	7737	7737				
3474	1460	SAE+20				
3475	7737	7737				
3476	0000	HLT				
3477	0011	CLR				
3500	1660	BCO+20				
3501	7677	7677				
3502	1460	SAE+20				
3503	7677	7677				
3504	0000	HLT				
3505	0011	CLR				
3506	1660	BCO+20				
3507	7577	7577				
3510	1460	SAE+20				
3511	7577	7577				
3512	0000	HLT				
3513	0011	CLR				
3514	1660	BCO+20				
3515	7377	7377				
3516	1460	SAE+20				
3517	7377	7377				
3520	0000	HLT				
3521	0011	CLR				
3522	1660	BCO+20				
3523	6777	6777				
3524	1460	SAE+20				
3525	6777	6777				
3526	0000	HLT				
3527	0011	CLR				
3530	1660	BCO+20				
3531	5777	5777				
3532	1460	SAE+20				
3533	5777	5777				
3534	0000	HLT				
3535	0011	CLR				
3536	1660	BCO+20				
3537	3777	3777				
3540	1460	SAE+20				
3541	3777	3777				
3542	0000	HLT				
3543	1020	LDA+20				
3544	7777	7777				
3545	1660	BCO+20				
3546	0001	0001				

/PDP=12 CP TEST	PART 2 SKIP AND DATA HANDLING	MAINDEC DBAB	PAL10	V141	29=OCT=69	1110	PAGE 48
3547 1460		SAE ²⁰					
3550 7776		776					
3551 0000		HL ^T					
		/BCD FAILED AC#7776					
3552 1020		LDA ²⁰					
3553 7777		7777					
3554 1600		BCD ²⁰					
3555 0002		0002					
3556 1460		SAE ²⁰					
3557 7775		7775					
3560 0000		HL ^T					
		/BCD FAILED AC#7775					
3561 1020		LDA ²⁰					
3562 7777		7777					
3563 1600		BCD ²⁰					
3564 0004		0004					
3565 1460		SAE ²⁰					
3566 7773		7773					
3567 0000		HL ^T					
		/BCD FAILED AC#7773					
3570 1020		LDA ²⁰					
3571 7777		7777					
3572 1600		BCD ²⁰					
3573 0010		0010					
3574 1460		SAE ²⁰					
3575 7767		7767					
3576 0000		HL ^T					
		/BCD FAILED AC#7767					
3577 1020		LDA ²⁰					
3600 7777		7777					
3601 1600		BCD ²⁰					
3602 0020		0020					
3603 1460		SAE ²⁰					
3604 7757		7757					
3605 0000		HL ^T					
		/BCD FAILED AC#7757					
3606 1020		LDA ²⁰					
3607 7777		7777					
3610 1600		BCD ²⁰					
3611 0040		0040					
3612 1460		SAE ²⁰					
3613 7737		7737					
3614 0000		HL ^T					
		/BCD FAILED AC#7737					
3615 1020		LDA ²⁰					
3616 7777		7777					
3617 1600		BCD ²⁰					
3620 0100		0100					

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3621	1460	SAE ²⁰	PAL10	V141	29-OCT-69	1110
3622	7677	7677	BCO FAILED AC#7677			
3623	0000	HLT				
3624	1020	LDA ²⁰				
3625	7777	7777				
3626	1660	BCO ²⁰				
3627	0200	0200				
3630	1460	SAE ²⁰				
3631	7577	7577	BCO FAILED AC#7577			
3632	0000	HLT				
3633	1020	LDA ²⁰				
3634	7777	7777				
3635	1660	BCO ²⁰				
3636	0400	0400				
3637	1460	SAE ²⁰				
3640	7377	7377	BCO FAILED AC#7377			
3641	0000	HLT				
3642	1020	LDA ²⁰				
3643	7777	7777				
3644	1660	BCO ²⁰				
3645	1000	1000				
3646	1460	SAE ²⁰				
3647	6777	6777	BCO FAILED AC#6777			
3650	0000	HLT				
3651	1020	LDA ²⁰				
3652	7777	7777				
3653	1660	BCO ²⁰				
3654	2000	2000				
3655	1460	SAE ²⁰				
3656	5777	5777	BCO FAILED AC#5777			
3657	0000	HLT				
3660	1020	LDA ²⁰				
3661	7777	7777				
3662	1660	BCO ²⁰				
3663	4000	4000				
3664	1460	SAE ²⁰				
3665	3777	3777	BCO FAILED AC#3777			
3666	0000	HLT				
			/ADA TEST 1 (ADA ARITHMETIC IS 1'S COMPLEMENT)			

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DDAH

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3667 1020 ADATST, LDA+20
3670 0001 0001
3671 1120 ADA+20
3672 0001 0001
3673 1460 SAE+20
3674 0002 0002
3675 0000 HLT /ADA CARRY AC11=10 FAILED AC=0002

3676 1020 LDA+20
3677 0002 0002
3700 1120 ADA+20
3701 0002 0002
3702 1460 SAE+20
3703 0004 0004
3704 0000 HLT /ADA CARRY AC10=9 FAILED AC=0004

3705 1020 LDA+20
3706 0004 0004
3707 1120 ADA+20
3710 0004 0004
3711 1460 SAE+20
3712 0010 0010
3713 0000 HLT /ADA CARRY AC9=8 FAILED AC=0010

3714 1020 LDA+20
3715 0010 0010
3716 1120 ADA+20
3717 0010 0010
3720 1460 SAE+20
3721 0020 0020
3722 0000 HLT /ADA CARRY AC8=7 FAILED AC=0020

3723 1020 LDA+20
3724 0020 0020
3725 1120 ADA+20
3726 0020 0020
3727 1460 SAE+20
3730 0040 0040
3731 0000 HLT /ADA CARRY AC7=6 FAILED AC=0040

3732 1020 LDA+20
3733 0040 0040
3734 1120 ADA+20
3735 0040 0040
3736 1460 SAE+20
3737 0100 0100
3740 0000 HLT /ADA CARRY AC6=5 FAILED AC=0100

3741 1020 LDA+20
3742 0100 0100
3743 1120 ADA+20
3744 0100 0100
3745 1460 SAE+20
3746 0200 0200

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAL10 V141 29-OCT-69 1110 PAGE 50=1
3747 0000 HLT /ADD CARRY AC5=4 FAILED AC=0200

```

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC_ DOAB      PAL10    V141     29 OCT 69      1110    PAGE 51

3750 1020          LDA+20
3751 0200          0200
3752 1120          ADA+20
3753 0200          0200
3754 1460          SAE+20
3755 0400          0400
3756 0000          HLT          /ADA CARRY AC4=3 FAILED AC=0400

3757 1020          LDA+20
3760 0400          0400
3761 1120          ADA+20
3762 0400          0400
3763 1460          SAE+20
3764 1200          1000
3765 0200          HLT          /TEST PARTIALLY COMPLETE; CHANGE IF
                                /ADA CARRY AC3=2 FAILED AC=1000

3766 0202          PDP
3767 5770          5000,+1=2000          /JMP 1 +01
3770 4230          4030
3772 4220          *4020          /MINOR START LINC MODE;
                                PDP
                                5600,+1          /JMP 1 +01
                                0020
                                NOP
                                HLT          /TO HERE IF 6141 FAILS
                                *4030          /ADA TEST 1 CONT;
                                LINC
                                LDA+20
                                1000
                                ADA+20
                                1000
                                SAE+20
                                2000
                                HLT          /ADA CARRY AC2=1 FAILED AC=2000

```

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DBAB

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4040 1020 LDA+20
4041 2000 2000
4042 1120 ADA+20
4043 2000 2000
4044 1460 SAE+20
4045 4000 4000
4046 0000 HLT /ADA CARRY AC1=0 FAILED AC=40000

4047 1020 LDA+20
4050 4000 4000
4051 1120 ADA+20
4052 4000 4000
4053 1460 SAE+20
4054 0001 0001 /END OF ADA TESTS, SKIP TO SET TEST 1
4055 0000 HLT /END AROUND CARRY FAILED AC=0001
/SET TEST SET BETA REGISTER = OPERAND

```
4056 0011 CLR  
4057 0061 SETTST, SET+20*1 /SET B REGISTER 0 TO 0000  
4060 0000 SAE  
4061 1440  
4062 0001  
4063 0000 HLT /SET CAN'T LOAD 0000 INTO B REGISTER AC=0000  
  
4064 0061 SET+20*1  
4065 0001 0001 /SET B REGISTER 0 TO 0000  
4066 1020 LDA+20  
4067 0001 SAE  
4070 1440  
4071 0001  
4072 0000 HLT /SET CAN'T LOAD 0001 INTO B REGISTER AC=0001  
  
4073 0061 SET+20*1  
4074 0002 0002 /SET B REGISTER 0 TO 0000  
4075 1020 LDA+20  
4076 0002 SAE  
4077 1440  
4100 0001 0001 /SET CAN'T LOAD 0002 INTO B REGISTER AC=0002  
4101 0000 HLT /SET CAN'T LOAD 0002 INTO B REGISTER AC=0002  
  
4102 0061 SET+20*1  
4103 0004 0004 /SET B REGISTER 0 TO 0000  
4104 1020 LDA+20  
4105 0004 0004 /SET B REGISTER 0 TO 0000  
4106 1440 SAE  
4107 0001 0001 /SET CAN'T LOAD 0004 INTO B REGISTER AC=0004  
4110 0000 HLT /SET CAN'T LOAD 0004 INTO B REGISTER AC=0004  
  
4111 0061 SET+20*1  
4112 0010 0010 /SET B REGISTER 0 TO 0000  
4113 1020 LDA+20  
4114 0010 0010 /SET B REGISTER 0 TO 0000  
4115 1440 SAE  
4116 0001 0001 /SET CAN'T LOAD 0010 INTO B REGISTER AC=0010  
4117 0000 HLT /SET CAN'T LOAD 0010 INTO B REGISTER AC=0010  
  
4120 0061 SET+20*1  
4121 0020 0020 /SET B REGISTER 0 TO 0000  
4122 1020 LDA+20  
4123 0020 0020 /SET B REGISTER 0 TO 0000  
4124 1440 SAE  
4125 0001 0001 /SET CAN'T LOAD 0020 INTO B REGISTER AC=0020  
4126 0000 HLT /SET CAN'T LOAD 0020 INTO B REGISTER AC=0020  
  
4127 0061 SET+20*1  
4130 0060 0060 /SET B REGISTER 0 TO 0000  
4131 1020 LDA+20  
4132 0000 0000 /SET B REGISTER 0 TO 0000  
4133 1440 SAE  
4134 0001 0001 /SET CAN'T LOAD 0040 INTO B REGISTER AC=0040  
4135 0000 HLT /SET CAN'T LOAD 0040 INTO B REGISTER AC=0040
```

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4136 0061 SET#20+1
4137 0100
4140 1020 LDA#20
4141 0100
4142 1440 SAE
4143 0001
4144 0000 HLT
/SET CAN'T LOAD 0100 INTO B REGISTER AC#0100

4145 0061 SET#20+1
4146 0200
4147 1020 LDA#20
4150 0200
4151 1440 SAE
4152 0001
4153 0000 HLT
/SET CAN'T LOAD 0200 INTO B REGISTER AC#0200

4154 0061 SET#20+1
4155 0400
4156 1020 LDA#20
4157 0400
4160 1440 SAE
4161 0001
4162 0000 HLT
/SET CAN'T LOAD 0400 INTO B REGISTER AC#0400

4163 0061 SET#20+1
4164 1000
4165 1020 LDA#20
4166 1000
4167 1440 SAE
4170 0001
4171 0000 HLT
/SET CAN'T LOAD 1000 INTO B REGISTER AC#1000

4172 0061 SET#20+1
4173 2000
4174 1020 LDA#20
4175 2000
4176 1440 SAE
4177 0001
4200 0000 HLT
/SET CAN'T LOAD 2000 INTO B REGISTER AC#2000

4201 0061 SET#20+1
4202 4000
4203 1020 LDA#20
4204 4000
4205 1440 SAE
4206 0001
4207 0000 HLT
/SET CAN'T LOAD 4000 INTO B REGISTER AC#4000

4210 0061 SET#20+1
4211 7777
4212 1020 LDA#20
4213 7777
4214 1440 SAE
4215 0001

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAL10 V141 29-OCT-69 1110 PAGE 55

```

4216 0000 HLT      /SET CAN'T LOAD 7777 INTO B REGISTER AC=7777
4217 0061 SET+20+1
4220 5252
4221 1020 LOA+20
4222 5252
4223 1440 SAE
4224 0001 0001
4225 0000 HLT      /SET CAN'T LOAD 5252 INTO B REGISTER AC=5252

4226 0061 SET+20+1
4227 2525
4230 1020 LOA+20
4231 2525
4232 1440 SAE
4233 0001 0001
4234 0000 HLT      /SET CAN'T LOAD 2525 INTO B REGISTER AC=2525

4235 0062 SET+20+2
4236 0000 0000
4237 0011 CLR
4240 1440 SAE
4241 0002 0002
4242 0000 HLT      /SET CAN'T LOAD 0000 INTO 2 AC=0000

4243 0062 SET+20+2
4244 7777 7777
4245 1020 LOA+20
4246 7777 7777
4247 1440 SAE
4248 0002 0002
4251 0000 HLT      /SET CAN'T LOAD 7777 INTO 2 AC=7777

```

```

4252 0065 SET*20*5
4253 0000
4254 0011 CLR
4255 1440 SAE
4256 0005
4257 0000 HLT /SET CAN'T LOAD 0000 INTO 5 AC=0000

4260 0065 SET*20*5
4261 7777
4262 1020 LDA*20
4263 7777
4264 1440 SAE
4265 0005
4266 0000 HLT /SET CAN'T LOAD 7777 INTO 5 AC=7777

4267 0066 SET*20*6
4270 0000
4271 0011 CLR
4272 1440 SAE
4273 0006
4274 0000 HLT /SET CAN'T LOAD 0000 INTO 6 AC=0000

4275 0066 SET*20*6
4276 7777
4277 1020 LDA*20
4300 7777
4301 1440 SAE
4302 0006
4303 0000 HLT /SET CAN'T LOAD 7777 INTO 6 AC=7777

4304 0067 SET*20*7
4305 0000
4306 0011 CLR
4307 1440 SAE
4310 0007
4311 0000 HLT /SET CAN'T LOAD 0000 INTO 7 AC=0000

4312 0067 SET*20*7
4313 7777
4314 1020 LDA*20
4315 7777
4316 1440 SAE
4317 0007
4320 0000 HLT /SET CAN'T LOAD 7777 INTO 7 AC=7777

```

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DDAB

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```
4321 0070 SET*20*10
4322 0000 0000
4323 0011 CLR
4324 1440 SAE
4325 0010 0010 /SET CAN'T LOAD 0000 INTO 10 AC=0000
4326 0000 HLT

4327 0070 SET*20*10
4328 7777 7777
4329 1020 LDA*20_
4330 1020
4331 1020
4332 7777 7777
4333 1440 SAE
4334 2010 0010 /SET CAN'T LOAD 7777 INTO 10 AC=7777
4335 0000 HLT

4336 0071 SET*20*11
4337 0000 0000
4338 0011 CLR
4339 1440 SAE
4340 2011 0011 /SET CAN'T LOAD 0000 INTO 11 AC=0000
4341 1440
4342 2011
4343 0000 HLT
```

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4344 0071 SET+20*11
4345 7777 7777
4346 1020 LDA+20
4347 7777 7777
4350 1440 SAE
4351 0011 0011
4352 0000 HLT
/SET CAN'T LOAD 7777 INTO 11 AC=7777

4353 0072 SET+20*12
4354 0000 0000
4355 0011 CLR
4356 1440 SAE
4357 0012 0012
4360 0000 HLT
/SET CAN'T LOAD 0000 INTO 12 AC=0000

4361 0072 SET+20*12
4362 7777 7777
4363 1020 LDA+20
4364 7777 7777
4365 1440 SAE
4366 0012 0012
4367 0000 HLT
/SET CAN'T LOAD 7777 INTO 12 AC=7777

4370 0073 SET+20*13
4371 0000 0000
4372 0011 CLR
4373 1440 SAE
4374 0013 0013
4375 0000 HLT
/SET CAN'T LOAD 0000 INTO 13 AC=0000

4376 0073 SET+20*13
4377 7777 7777
4400 1020 LDA+20
4401 7777 7777
4402 1440 SAE
4403 0013 0013
4404 0000 HLT
/SET CAN'T LOAD 7777 INTO 13 AC=7777

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DATA

	PAL10	V141	29-OCT-69	1110	PAGE 59
4405	0074	SET+20+14			
4406	0000	0000			
4407	0011	CLR			
4410	1440	SAE			
4411	0014	0014			
4412	0000	HLT			
		/SET CAN'T LOAD 0000 INTO 14 AC=0000			
4413	0074	SET+20+14			
4414	7777	7777			
4415	1020	LDA+20			
4416	7777	7777			
4417	1440	SAE			
4420	0014	0014			
4421	0000	HLT			
		/SET CAN'T LOAD 7777 INTO 14 AC=7777			
4422	0075	SET+20+15			
4423	0000	0000			
4424	0011	CLR			
4425	1440	SAE			
4426	0015	0015			
4427	0000	HLT			
		/SET CAN'T LOAD 0000 INTO 15 AC=0000			
4430	0075	SET+20+15			
4431	7777	7777			
4432	1020	LDA+20			
4433	7777	7777			
4434	1440	SAE			
4435	0015	0015			
4436	0000	HLT			
		/SET CAN'T LOAD 7777 INTO 15 AC=7777			

4437 0076 SET+20+16
4440 0000 0000
4441 0011 CLR
4442 1440 SAE
4443 0016 0016 /SET CAN'T LOAD 0000 INTO 16 AC=0000
4444 0000 HLT

4445 0076 SET+20+16
4446 7777 7777 LDA+20
4447 1020 7777 SAE
4450 7777 0017 0016 /SET CAN'T LOAD 7777 INTO 16 AC=7777
4451 1440 HLT
4452 0016 0016 HLT
4453 0000 HLT

4454 0077 SET+20+17
4455 0000 0000 CLR
4456 0011 SAE
4457 1440 0017 /SET CAN'T LOAD 0000 INTO 17 AC=0000
4460 0000 0017 HLT
4461 0000 HLT

4462 0077 SET+20+17
4463 7777 7777 LDA+20
4464 1020 7777 SAE
4465 7777 0017 0017 /SET CAN'T LOAD 7777 INTO 17 AC=7777
4466 1440 HLT
4467 0017 0017 HLT
4470 0000 HLT

/ SCR TEST SCALE RIGHT INTO AC AND MQ

4471 0031 CLR
4472 1020 LDA+20
4473 4000 4000 SCR
4474 0340 SAE+20
4475 1460 4000 /SCR Ⓜ FAILED AC=4000 MQ=0000
4476 4000 4000 HLT
4477 0000 HLT

4500 1020 LDA+20
4501 4000 4000 SCR+1
4502 0341 SAE+20
4503 1460 6000 /SCR Ⓜ FAILED BIT 1 AC=6000 MQ=0000
4504 6000 6000 HLT
4505 0000 HLT

4506 1020 LDA+20
4507 4000 4000 SCR+2
4510 0342 SAE+20
4511 1460 7000 /SCR Ⓜ FAILED BIT 2 AC=7000 MQ=0000
4512 7000 7000 HLT
4513 0000 HLT

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4514	1020	LDA#20	
4515	4000	4000	
4516	0343	SCR#3	
4517	1460	SAE#20	
4520	7400	7400	
4521	0000	HLT	/SCR FAILED BIT 3 AC=7400 MQ=000000
4522	1020	LDA#20	
4523	4000	4000	
4524	0344	SCR#4	
4525	1460	SAE#20	
4526	7600	7600	
4527	0000	HLT	/SCR FAILED BIT 4 AC=7600 MQ=000000
4530	1020	LDA#20	
4531	4000	4000	
4532	0345	SCR#5	
4533	1460	SAE#20	
4534	7700	7700	
4535	0000	HLT	/SCR FAILED BIT 5 AC=7700 MQ=000000
4536	1020	LDA#20	
4537	4000	4000	
4540	0346	SCR#6	
4541	1460	SAE#20	
4542	7740	7740	
4543	0000	HLT	/SCR FAILED BIT 6 AC=7740 MQ=000000
4544	1020	LDA#20	
4545	4000	4000	
4546	0347	SCR#7	
4547	1460	SAE#20	
4550	7760	7760	
4551	0000	HLT	/SCR FAILED BIT 7 AC=7760 MQ=000000
4552	1020	LDA#20	
4553	4000	4000	
4554	0350	SCR#10	
4555	1460	SAE#20	
4556	7770	7770	
4557	0000	HLT	/SCR FAILED BIT 8 AC=7770 MQ=000000

/PCP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DQAB

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4560	1020	LDA+20
4561	4000	4000
4562	0351	SCR+11
4563	1460	SAE+20
4564	7774	7774
4565	0000	HLT
/SCR FAILED BIT 8 AC=7774 MQ=00000		
4566	1020	LDA+20
4567	4000	4000
4570	0352	SCR+12
4571	1460	SAE+20
4572	7776	7776
4573	0000	HLT
/SCR FAILED BIT 9 AC=7776 MQ=00000		
4574	1020	LDA+20
4575	4000	4000
4576	0353	SCR+13
4577	1460	SAE+20
4600	7777	7777
4601	0000	HLT
/SCR FAILED BIT 10 AC=7777 MQ=00000		
4602	1020	LDA+20
4603	4000	4000
4604	0354	SCR+14
4605	0005	GAC
4606	1460	SAE+20
4607	2000	2000
4610	0000	HLT
/SCR FAILED BIT 11 TO Z0 AC=7777 MQ=00000		
4611	0011	CLR
4612	1020	LDA+20
4613	4000	4000
4614	0355	SCR+15
4615	0005	GAC
4616	1460	SAE+20
4617	3000	3000
4620	0000	HLT
/SCR FAILED Z1 AC=7777 MQ=60000		
4621	0011	CLR
4622	1020	LDA+20
4623	4000	4000
4624	0356	SCR+16
4625	0005	GAC
4626	1460	SAE+20
4627	3400	3400
4630	0000	HLT
/SCR FAILED Z2 AC=7777 MQ=70000		
4631	0011	CLR
4632	1020	LDA+20
4633	4000	4000
4634	0357	SCR+17
4635	0005	GAC
4636	1460	SAE+20
4637	3600	3600
4640	0000	HLT
/SCR FAILED Z3 AC=7777 MQ=74000		

4641	00111	CLR	
4642	10200	LDA+20	
4643	60000	60000	
4644	0357	SCR+17	
4645	00005	QAC	
4646	14600	SAE+20	
4647	37000	37000	
4650	00000	HLT	/SCR FAILED Z4 ACE7777 MQ#7600
4651	00111	CLR	
4652	10200	LDA+20	
4653	70000	70000	
4654	0357	SCR+17	
4655	00005	QAC	
4656	14600	SAE+20	
4657	37400	37400	
4660	00000	HLT	/SCR FAILED Z5 ACE7777 MQ#7700
4661	00111	CLR	
4662	10200	LDA+20	
4663	74000	74000	
4664	0357	SCR+17	
4665	00005	QAC	
4666	14600	SAE+20	
4667	37600	37600	
4670	00000	HLT	/SCR FAILED Z6 ACE7777 MQ#7740
4671	00111	CLR	
4672	10200	LDA+20	
4673	76000	76000	
4674	0357	SCR+17	
4675	00005	QAC	
4676	14600	SAE+20	
4677	37700	37700	
4700	00000	HLT	/SCR FAILED Z7 ACE7777 MQ#7760
4701	00111	CLR	
4702	10200	LDA+20	
4703	77000	77000	
4704	0357	SCR+17	
4705	00005	QAC	
4706	14600	SAE+20	
4707	37740	37740	
4710	00000	HLT	/SCR FAILED Z8 ACE7777 MQ#7770
4711	00111	CLR	
4712	10200	LDA+20	
4713	77400	77400	
4714	0357	SCR+17	
4715	00005	QAC	
4716	14600	SAE+20	
4717	37760	37760	

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D2AB PAL10 V141 29 OCT 69 1110 PAGE 62-1
4720 0000 HLT /SCR FAILED BIT 9 AC=7777 MQ=7774


```

5000 0011 CLR
5001 1020 LDA*20
5002 7760 7760
5003 0357 SCR*17
5004 0005 GAC
5005 1460 SAE*20
5006 3777 3777
5007 0000 HLT
      /SCR FAILED BIT 10 AC=7777 MQ=7776

5010 0011 CLR
5011 1020 LDA*20
5012 7770 7770
5013 0357 SCR*17
5014 0005 GAC
5015 1460 SAE*20
5016 3777 3777
5017 0000 HLT
      /SCR FAILED BIT 11 AC=7777 MQ=7776

5020 0011 CLR
5021 1020 LDA*20
5022 0001 0001
5023 0361 SCR*20*1
5024 0005 GAC
5025 1460 SAE*20
5026 2000 2000
5027 0000 HLT
      /SCR *20 FAILED TO SET Z0

5030 0472 LEE*20
5031 0000 HLT
      /SCR *20 FAILED TO SET LINK

5032 0011 CLR
5033 1020 LDA*20
5034 7777 7777
5035 0334 ROR*14*20
5036 1020 LDA*20
5037 7776 7776
5040 0341 SCR*1
5041 1460 SAE*20
5042 7777 7777
5043 0000 HLT
      /SCR FAILED BIT 1

5044 0005 GAC
5045 1460 SAE*20
5046 1777 1777
5047 0000 HLT
      /SCR UPSET Z REGISTER

5050 0011 CLR
5051 1020 LDA*20
5052 1777 1777
5053 0341 SCR*1
5054 1460 SAE*20
5055 0777 0777
5056 0000 HLT
      /SCR FAILED BIT 2 AC=0777

```

5057	1020	LDA#20							
5060	0777	0777							
5061	0341	SCR#1							
5062	1460	SAE#20							
5063	0377	0377							
5064	0000	HLT							
5065	1020	LDA#20							
5066	0377	0377							
5067	0341	SCR#1							
5070	1460	SAE#20							
5071	0177	0177							
5072	0000	HLT							
5073	1020	LDA#20							
5074	0177	0177							
5075	0341	SCR#1							
5076	1460	SAE#20							
5077	0077	0077							
5100	0000	HLT							
5101	1020	LDA#20							
5102	0077	0077							
5103	0341	SCR#1							
5104	1460	SAE#20							
5105	0037	0037							
5106	0000	HLT							
5107	1020	LDA#20							
5110	0037	0037							
5111	0341	SCR#1							
5112	1460	SAE#20							
5113	0017	0017							
5114	0000	HLT							
5115	1020	LDA#20							
5116	0017	0017							
5117	0341	SCR#1							
5120	1460	SAE#20							
5121	0007	0007							
5122	0000	HLT							
5123	1020	LDA#20							
5126	0007	0007							
5125	0341	SCR#1							
5126	1460	SAE#20							
5127	0003	0003							
5130	0000	HLT							

/SCR FAILED BIT 3 AC#0377

/SCR FAILED BIT 4 AC#0177

/SCR FAILED BIT 5 AC#0077

/SCR FAILED BIT 6 AC#0037

/SCR FAILED BIT 7 AC#0017

/SCR FAILED BIT 8 AC#0007

/SCR FAILED BIT 9 AC#0003

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/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB

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5131	1020	LDA+20
5132	0003	0003
5133	0341	SCR+1
5134	1460	SAE+20
5135	0001	0001
5136	0000	HLT
/SCR FAILED BIT 10 AC#0001		
5137	1020	LDA+20
5140	0001	0001
5141	0341	SCR+1
5142	0450	AZE
5143	0000	HLT
/SCR FAILED BIT 11 AC#0000		

/LDH TEST 1, TEST BOTH HALVES USING FIXED NUMBERS
 /TEST LDH RIGHT HALF FLOAT A ONE WITH NOISE NUMBERS IN
 /THE UNUSED HALF A NEW FLOAT A ZERO

```

5144 1300 LDH
5145 5147 1*2
5146 0456 SKP
5147 5200 SAE 20
5150 1460 0000
5151 0000 0000
5152 0000 HLT
      /LDH FAILED AC=0000 MEM=5200

```

```

5153 1300 LDH
5154 5156 1*2
5155 0456 SKP
5156 2501 2501
5157 1460 SAE 20
5160 0001 0001
5161 0000 HLT
      /LDH FAILED AC=0001 MEM=5201

```

```

5162 1300 LDH
5163 5165 1*2
5164 0456 SKP
5165 5202 5202
5166 1460 SAE 20
5167 0002 0002
5170 0000 HLT
      /LDH FAILED BIT 14 AC=0001 MEM=5202

```

```

5171 1300 LDH
5172 5174 1*2
5173 0456 SKP
5174 2504 2504
5175 1460 SAE 20
5176 0004 0004
5177 0000 HLT
      /LDH FAILED BIT 09 AC=0004 MEM=5204

```

```

5200 1300 LDH
5201 5203 1*2
5202 0456 SKP
5203 5210 5210
5204 1460 SAE 20
5205 0010 0010
5206 0000 HLT
      /LDH FAILED BIT 08 AC=0010 MEM=5210

```

```

5207 1300 LDH
5210 5212 1*2
5211 0456 SKP
5212 2520 2520
5213 1460 SAE 20
5214 0020 0020
5215 0000 HLT
      /LDH FAILED BIT 07 AC=0020 MEM=5220

```

5216	1500	LDH
5217	5221	1*2
5220	0456	SKP
5221	5240	5240
5222	1460	SAC
5223	0040	0040
5224	0000	HLT

/LDH FAILED AC=0077 MEM=2577

LDH FAILED AC=0076 MEM=5276
/LDH FAILED AC=0076 MEM=5276

LDH FAILED AC=0075 MEM=2575
/LDH FAILED AC=0075 MEM=2575

/LDH FAILED AC=0073 MEM=5273

5261	1300	LDH
5262	5264	♦2
5263	0456	SKP
5264	2567	2967
5265	1460	SAE 20
5266	0067	0067
5267	0000	HLT

LHD FAILED AC=00057 MEM=5257

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5277 1300 LDH
5300 5302 *2
5301 0496 SKP
5302 2537 2537
5303 1460 SAE 20
5304 0037 0037
5305 0000 HLT

/LDH FAILED AC=0007 MEM=2537

/LDH TEST
/TEST LDH LEFT HALF

5306 1300 LDH
5307 1311 *2=4000
5310 0456 SKP
5311 0000 0000
5312 1460 SAE 20
5313 0000 0000
5314 0000 HLT

/LDH FAILED AC=0000 MEM=0000

5315 1300 LDH
5316 1320 *2=4000
5317 0456 SKP
5320 0152 0152
5321 1460 SAE 20
5322 0001 0001
5323 0000 HLT

/LDH FAILED BIT 05 AC=0001 MEM=0152

5324 1300 LDH
5325 1327 *2=4000
5326 0456 SKP
5327 0225 0225
5330 1460 SAE 20
5331 0002 0002
5332 0000 HLT

/LDH FAILED BIT 04 AC=0002 MEM=0225

5333 1300 LDH
5334 1336 *2=4000
5335 0456 SKP
5336 0452 0452
5337 1460 SAE 20
5340 0004 0004
5341 0000 HLT

/LDH FAILED BIT 03 AC=0004 MEM=0452

5342 1300 LDH
5343 1345 *2=4000
5344 0456 SKP
5345 1025 1025
5346 1460 SAE 20
5347 0010 0010
5350 0000 HLT

/LDH FAILED BIT 02 AC=0010 MEM=1025

5351 1300 LDH
5352 1354 *2=4000

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DATA PAGE 69-1

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5353	0456	SKP	
5354	2052	2052	
5355	1460	SAE 20	
5356	0020	0020	
5357	0000	HLT	/LDH FAILED BIT 01 AC=00020 MEM=2052
5360	1300	LDH	
5361	1363	*2=4000	
5362	0456	SKP	
5363	4025	4025	
5364	1460	SAE 20	
5365	0040	0040	
5366	0000	HLT	/LDH FAILED BIT 00 AC=00040 MEM=4025
5367	1300	LDH	
5370	1372	*2=4000	
5371	0456	SKP	
5372	7752	7752	
5373	1460	SAE 20	
5374	0077	0077	
5375	0000	HLT	/LDH FAILED AC=00077 MEM=7752

5376	1300	LDH
5377	1401	*2=4000
5400	0456	SKP
5401	7625	7625
5402	1460	SAE 20
5403	0076	0076
5404	0000	HLT
		/LDH FAILED AC=0076 MEM#7625
5405	1300	LDH
5406	1410	*2=4000
5407	0456	SKP
5410	7552	7552
5411	1460	SAE 20
5412	0075	0075
5413	0000	HLT
		/LDH FAILED AC=0075 MEM#7552
5414	1300	LDH
5415	1417	*2=4000
5416	0456	SKP
5417	7325	7325
5420	1460	SAE 20
5421	0073	0073
5422	0000	HLT
		/LDH FAILED AC=0073 MEM#7325
5423	1300	LDH
5424	1426	*2=4000
5425	0456	SKP
5426	6792	6792
5427	1460	SAE 20
5430	0067	0067
5431	0000	HLT
		/LDH FAILED AC=0067 MEM#6752
5432	1300	LDH
5433	1435	*2=4000
5434	0456	SKP
5435	5725	5725
5436	1460	SAE 20
5437	0057	0057
5440	0000	HLT
		/LDH FAILED AC=0057 MEM#5725
5441	1300	LDH
5442	1444	*2=4000
5443	0456	SKP
5444	3752	3752
5445	1460	SAE 20
5446	0037	0037
5447	0000	HLT
		/END OF LDH TEST SKIP TO STA TEST
		/LDH FAILED AC=0037 MEM#3752

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DATA

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/STA TEST

5450 0011 CLR
5451 1060 STA+20
5452 0000 0000
5453 1440 SAE
5454 5452 *2
5455 0000 HLT
5456 1460 SAE+20
5457 0000 0000
5458 0000 HLT
5460 0000 /AC CHANGED AC=0000

5461 1020 LDA+20
5462 7777 7777
5463 1060 STA+20
5464 0000 0000
5465 1440 SAE
5466 5464 *2
5467 0000 HLT
5470 1460 SAE+20
5471 7777 7777
5472 0000 HLT
5473 1020 LDA+20
5474 5252 5252
5475 1060 STA+20
5476 0000 0000
5477 1440 SAE
5500 5476 *2
5501 0000 HLT
5502 1460 SAE+20
5503 5252 5252
5504 0000 HLT
5505 1020 LDA+20
5506 2525 2525
5507 1060 STA+20
5510 0000 0000
5511 1440 SAE
5512 5510 *2
5513 0000 HLT
5514 1460 SAE+20
5515 2525 2525
5516 0000 HLT

/STA FAILED AC=0000 MEM=0000
/STA FAILED AC=7777 MEM=7777
/STA FAILED AC=7777 MEM=7777
/AC CHANGED AC=7777
/AC CHANGED AC=5252
/AC CHANGED AC=5252

/END OF STA TEST SKIP ADM TEST
/AC CHANGED AC=2525

/ADM TEST ADM ARITHMETIC IS 1'S COMPLEMENT

5517 0011 CLR
5520 1040 STA
5521 5523 *2
5522 1160 ADM+20
5523 0000 0000
5524 1440 SAE

/PDP-12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAGE 71-1

5525	5523	*52	
5526	0000	HLT	/ADM FAILED AC=0002
5527	1020	LDA#20	
5530	7777	7777	
5531	1040	STA	
5532	5534	*#2	
5533	1160	ADM#20	
5534	0000	0000	
5535	1440	SAE	
5536	5534	*#2	
5537	0000	HLT	/ADM FAILED AC=0024
5540	1020	LDA#20	
5541	5252	5252	
5542	1040	STA	
5543	5545	*#2	
5544	1160	ADM#20	
5545	0004	0004	
5546	1440	SAE	
5547	5545	*#2	
5550	0000	HLT	/ADM FAILED AC=0010
5551	1020	LDA#20	
5552	2525	2525	
5553	1040	STA	
5554	5556	*#2	
5555	1160	ADM#20	
5556	0010	0010	
5557	1440	SAE	
5560	5556	*#2	
5561	0000	HLT	/ADM FAILED AC=0020

/XSK SKIP TEST XSK IS TESTED BY FLOATING A ZERO THRU A FIELD OF 1777
 /XSK SKIPS ON (Y)=1777
 SET+20+1
 0000
 XSK 1
 SKP
 HLT

/XSK SKIPPED ON 0000

5562 0061
 5563 0000
 5564 0201
 5565 0456
 5566 0000

5567 0062 SET+20+2
 5570 1776 1776
 5571 0202 XSK 2
 5572 0456 SKP
 5573 0000 HLT

/XSK SKIPPED ON 0000

5574 0063 SET+20+3
 5575 1775 1775
 5576 0203 XSK 3
 5577 0456 SKP
 5600 0000 HLT

/XSK SKIPPED ON 1775

5601 0064 SET+20+4
 5602 1773 1773
 5603 0204 XSK 4
 5604 0456 SKP
 5605 0000 HLT

/XSK SKIPPED ON 1773

5606 0065 SET+20+5
 5607 1767 1767
 5610 0205 XSK 5
 5611 0456 SKP
 5612 0000 HLT

/XSK SKIPPED ON 1775

5613 0066 SET+20+6
 5614 1757 1757
 5615 0206 XSK 6
 5616 0456 SKP
 5617 0000 HLT

/XSK SKIPPED ON 1757

5620 0067 SET+20+7
 5621 1737 1737
 5622 0207 XSK 7
 5623 0456 SKP
 5624 0000 HLT

/XSK SKIPPED ON 1737

5625 0070 SET+20+10
 5626 1677 1677
 5627 0210 XSK 10
 5630 0456 SKP
 5631 0000 HLT

/XSK SKIPPED ON 1677

5632 0071 SET+20+11
 5633 1577 1577
 5634 0211 XSK 11

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5635 0456 SKP
5636 0000 HLT /XSK SKIPPED ON 1977

5637	0072	SET+20*12
5640	1577	1377
5641	0212	XSK 12
5642	0456	SKP
5643	0000	HLT
		/XSK SKIPPED IN ERROR A#1377
5644	0073	SET+20*13
5645	0777	0777
5646	0213	XSK 13
5647	0456	SKP
5650	0000	HLT
		/XSK SKIPPED IN ERROR A#0777
5651	0074	SET+20*14
5652	1777	1777
5653	0214	XSK 14
5654	0000	HLT
		/XSK FAILED TO SKIP A#1777

```
    /XSK INDEX TEST 2 XSK WILL INDEX THE B REGISTER BY ONE

5655 0061 SET+20+1
5656 0000 0000
5657 0221 XSK+20+1
      5660 1020 LDA+20
      5661 0001 0001
      5662 1460 SAE+20
      5663 0001 0001
      5664 0000 HLT   /XSK INDEX FAILED BIT11 AC=0001 B1=0001

5665 0062 SET+20+2
5666 0001 0001
5667 0222 XSK+20+2
      5670 1020 LDA+20
      5671 0002 0002
      5672 1460 SAE+20
      5673 0002 0002
      5674 0000 HLT   /XSK INDEX FAILED BIT10 AC=0002 B2=0002

5675 0063 SET+20+3
5676 0003 0003
5677 0223 XSK+20+3
      5700 1020 LDA+20
      5701 0004 0004
      5702 1460 SAE+20
      5703 0004 0004
      5704 0000 HLT   /XSK INDEX FAILED BIT10 AC=0002 B2=0002

5705 0064 SET+20+4
5706 0007 0007
5707 0224 XSK+20+4
      5710 1020 LDA+20
      5711 0010 0010
      5712 1460 SAE+20
      5713 0010 0010
      5714 0000 HLT   /XSK INDEX FAILED BIT9 AC=0004 B3=0004

5715 0065 SET+20+5
5716 0017 0017
5717 0225 XSK+20+5
      5720 1020 LDA+20
      5721 0020 0020
      5722 1460 SAE+20
      5723 0020 0020
      5724 0000 HLT   /XSK INDEX FAILED BIT8 AC=0010 B4=0010

5725 0066 SET+20+6
5726 0037 0037
5727 0226 XSK+20+6
      5730 1020 LDA+20
      5731 0040 0040
      5732 1460 SAE+20
```

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC D0AB PAL10 V141 29-OCT-69 1110 PAGE 74-1
5733 2242 0040 HLT /XSK INDEX FAILED BIT6 AC=0040 B6=0040
5734 2200

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5735	0067	SET+20+7	
5736	0077	0077	
5737	0227	XSK+20+7	
5740	1020	LDA+20	
5741	0100	0100	
5742	1460	SAE+20	
5743	0100	0100	
5744	0000	HLT	/XSK INDEX FAILED BITS AC=0100 B7=0100
5745	0077	SET+20+17	
5746	0177	0177	
5747	0237	XSK+20+17	
5750	1020	LDA+20	
5751	0200	0200	
5752	1460	SAE+20	
5753	0200	0200	
5754	0000	HLT	/XSK INDEX FAILED BITS AC=0200 B17=0200
5755	0076	SET+20+16	
5756	0377	0377	
5757	0236	XSK+20+16	
5760	1020	LDA+20	
5761	0400	0400	
5762	1460	SAE+20	
5763	0400	0400	
5764	0000	HLT	/XSK INDEX FAILED BITS AC=0400 B16=0400
5765	0075	SET+20+15	
5766	0777	0777	
5767	0235	XSK+20+15	
5770	1020	LDA+20	
5771	1000	1000	
5772	1460	SAE+20	
5773	1000	1000	
5774	0000	HLT	/XSK INDEX FAILED BITS AC=1000 B15=1000
5775	0002	POP	
5776	5777	5900, *1	/JMP 1 1+1
5777	6001	6001	

6001

*6001
/5TH TEST
/RIGHT HALF

6001

6141
LINC
LDA+20
5201

6002

1020
LDA+20

6003

5201
STH
1340
LDA+20

6004

1340
STH
6005

6007

1*2
SKP
LDA+20

6006

0456
2500
LDA+20

6007

2500
LDA+20

6010

1020
LDA+20
2501
SAE

6011

2501
LDA+20
2501
SAE

6012

1440
1*4
HLT

6013

6007
LDA+20
2502
STH

6014

0000
LDA+20
2502
1*2
SKP
LDA+20

6015

1020
LDA+20
2502
STH
1340
LDA+20

6016

2502
LDA+20
2502
SAE

6017

1340
LDA+20
2502
SAE

6020

6022
LDA+20
2500
LDA+20
2500
SAE

6021

0456
LDA+20
2500
LDA+20
2500
SAE

6022

5200
LDA+20
2500
LDA+20
2500
SAE

6023

1020
LDA+20
2502
STH
1340
LDA+20

6024

5202
LDA+20
2502
SAE

6025

1440
LDA+20
2502
SAE

6026

6022
LDA+20
2502
SAE

6027

0000
LDA+20
2502
1*2
SKP
LDA+20

6030

1020
LDA+20
2504
STH
1340
LDA+20

6031

5204
LDA+20
2504
STH
1340
LDA+20

6032

1340
LDA+20
2504
STH
1340
LDA+20

6033

6035
0456
LDA+20
2500
LDA+20

6034

0456
2500
LDA+20
2500
LDA+20

6035

2500
LDA+20
2500
LDA+20

6036

1020
LDA+20
2504
SAE

6037

2504
LDA+20
2504
SAE

6040

1440
LDA+20
2504
SAE

6041

6035
LDA+20
2504
SAE

6042

0000
LDA+20
2504
1*4
HLT

6043

1020
LDA+20
2510
2510
STH

6044

2510
LDA+20
2510
STH
1340
LDA+20

6045

1340
LDA+20
2510
STH
1340
LDA+20

6046

6050
LDA+20
2510
STH
1340
LDA+20

6047

0456
LDA+20
2510
STH
1340
LDA+20

6050

5200
LDA+20
2510
STH
1340
LDA+20

6051

1020
LDA+20
2510
2510
STH

6052

5210
LDA+20
2510
SAE

6053

1440
LDA+20
2510
SAE

6054

6050
LDA+20
2510
1*4
HLT

6055

0000
LDA+20
2510
1*4
HLT

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6056	1020	LDA+20	
6057	5220	5220	
6060	1340	STH	
6061	6063	*2	
6062	0456	SKP	
6063	2500	2500	
6064	1020	LDA+20	
6065	2520	2520	
6066	1440	SAE	
6067	6063	*4	
6070	0000	HLT	
		/STH FAILED AC#2520	
6071	1020	LDA+20	
6072	2540	2540	
6073	1340	STH	
6074	6076	*2	
6075	0456	SKP	
6076	5200	5200	
6077	1020	LDA+20	
6100	5240	5240	
6101	1440	SAE	
6102	6076	*4	
6103	0000	HLT	
		/STH FAILED AC#5240	
6104	1020	LDA+20	
6105	5276	5276	
6106	1340	STH	
6107	6111	*2	
6110	0456	SKP	
6111	2500	2500	
6112	1020	LDA+20	
6113	2576	2576	
6114	1440	SAE	
6115	6111	*4	
6116	0000	HLT	
		/STH FAILED AC#2576	
6117	1020	LDA+20	
6120	2575	2575	
6121	1340	STH	
6122	6124	*2	
6123	0456	SKP	
6124	5200	5200	
6125	1020	LDA+20	
6126	5275	5275	
6127	1440	SAE	
6130	6124	*4	
6131	0000	HLT	

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6132 1020 LDA+20
6133 5273 STH
6134 1340 *2
6135 6137 SKP
6136 0456 2500
6137 2500 LDA+20
6140 1020 2573
6141 2573 SAE
6142 1440 *4
6143 6137 SAE
6144 0000 HLT
1STH FAILED AC=2573

6145 1020 LDA+20
6146 2567 2567
6147 1340 STH
6150 6152 *2
6151 0456 SKP
6152 5200 5200
6153 1020 LDA+20
6154 5267 5267
6155 1440 SAE
6156 6152 *4
6157 0000 HLT
1STH FAILED AC=5267

6160 1020 LDA+20
6161 5257 5257
6162 1340 STH
6163 6165 *2
6164 0456 SKP
6165 2500 2500
6166 1020 LDA+20
6167 2557 2557
6170 1440 SAE
6171 6165 *4
6172 0000 HLT
1STH FAILED AC=2557

6173 1020 LDA+20
6174 2537 2537
6175 1340 STH
6176 6200 *2
6177 0456 SKP
6200 5200 5200
6201 1020 LDA+20
6202 5237 5237
6203 1440 SAE
6204 6200 *4
6205 0000 HLT
1STH FAILED AC=5237

/LDH TEST
/LEFT HALF
6206 1020 LDA+20
6207 2501 2501
6210 1340 STH
6211 2213 *2=4000
6212 0456 SKP
6213 0052 0052
6214 1020 LDA+20
6215 0152 0152
6216 1440 SAE
6217 6213 *4
6220 0000 HLT

/STH FAILED AC=0004

6221 1020 LDA+20
6222 5202 5202
6223 1340 STH
6224 2226 *2=4000
6225 0496 SKP
6226 0025 0025
6227 1020 LDA+20
6230 0225 0225
6231 1440 SAE
6232 6226 *4
6233 0000 HLT

/STH FAILED AC=0002

6234 1020 LDA+20
6235 2504 2504
6236 1340 STH
6237 2241 *2=4000
6240 0456 SKP
6241 0052 0052
6242 1020 LDA+20
6243 0452 0452
6244 1440 SAE
6245 6241 *4
6246 0000 HLT

/STH FAILED AC=0004

6247 1020 LDA+20
6250 5210 5210
6251 1340 STH
6252 2254 *2=4000
6253 2456 SKP
6254 0025 0025
6255 1020 LDA+20
6256 1025 1025
6257 1440 SAE
6260 6254 *4
6261 0000 HLT

/STH FAILED AC=0010

/PDP=12 CP TEST PART 2 SKIP AND DATA HANDLING MAINDEC DQAB

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6262 1020 LDA+20
6263 2520 STH
6264 1340 *2=4000
6265 2267 SKP
6266 0496 0052
6267 0052 LDA+20
6270 1020 2052
6271 2052 SAE
6272 1440 *4
6273 6267 HLT
6274 0000 /STH FAILED AC#0020

6275 1020 LDA+20
6276 5240 STH
6277 1340 *2=4000
6300 2302 SKP
6301 0496 0025
6302 0025 LDA+20
6303 1020 4025
6304 4025 SAE
6305 1440 *4
6306 6302 HLT
6307 0000 /STH FAILED AC#0040

6310 1020 LDA+20
6311 2577 2577
6312 1340 STH
6313 2315 *2=4000
6314 0456 SKP
6315 0052 0052
6316 1020 LDA+20
6317 7752 7752
6320 1440 SAE
6321 6315 *4
6322 0000 HLT

```

/ SRO TEST 1
    LDA #20
    LDA #20
    0000
    STC 1+2=2000
    SRO #20
    0000
    HLT
    LDA
    LDA
    *3
    SAE #20
    0000
    HLT
    /SRO SKIP FAILED

    LDA #20
    49000
    STC 1+2=2000
    SRO #20
    0000
    HLT
    LDA
    LDA
    *3
    SAE #20
    2000
    HLT
    /SRO ROTATE FAILED AC#20000

    LDA #20
    2000
    STC 1+2=2000
    SRO #20
    0000
    HLT
    LDA
    LDA
    *3
    SAE #20
    1000
    HLT
    /SRO SKIP FAILED

    LDA #20
    1000
    STC 1+2=2000
    SRO #20
    0000
    HLT
    LDA
    LDA
    *3
    SAE #20
    1000
    HLT
    /SRO ROTATE FAILED AC#10000

    LDA #20
    04000
    STC 1+2=2000
    SRO #20
    0000
    HLT
    /SRO SKIP FAILED

    LDA #20
    04000
    STC 1+2=2000
    SRO #20
    0000
    HLT
    /SRO SKIP FAILED

```

```

6405 1000 LDA
6406 6403 *3
6407 1460 SAE+20
6410 0200 SRO+20
6411 0000 HLT /SRO ROTATE FAILED AC=0200

6412 1020 LDA+20
6413 0200 STC *2=2000
6414 4416 SRO+20
6415 1520 *2000
6416 0000 HLT /SRO SKIP FAILED
6417 0000 LDA
6420 1000 *3
6421 6416 SAE+20
6422 1460 *2000
6423 0100 HLT /SRO ROTATE FAILED AC=0100
6424 0000

6425 1020 LDA+20
6426 0100 STC *2=2000
6427 4431 SRO+20
6430 1520 *2000
6431 0000 HLT /SRO SKIP FAILED
6432 0000 LDA
6433 1000 *3
6434 6431 SAE+20
6435 1460 *2000
6436 0040 HLT /SRO ROTATE FAILED AC=0040
6437 0000

6440 1020 LDA+20
6441 0040 STC *2=2000
6442 4444 SRO+20
6443 1520 *2000
6444 2200 HLT /SRO SKIP FAILED
6445 0000 LDA
6446 1000 *3
6447 6444 SAE+20
6450 1460 *2000
6451 0020 HLT /SRO ROTATE FAILED AC=0020
6452 0000

6453 1220 LDA+20
6454 2222 STC *2=2000
6455 4457 SRO+20
6456 1520 *2000
6457 0000 HLT /SRO SKIP FAILED
6460 2222 LDA
6461 1202 *3
6462 0000 SAE+20
6463 1460 *2000
6464 0210

```

6465	0000	HLT	LDA+20	SRO ROTATE FAILED AC=00010
6466	1020	0010	STC 1+2=2000	
6467	0010	0000	SRO+20	
6470	4472	1520	0000	
6471	1520	0000	HLT	SRO SKIP FAILED
6472	0000	0000	LDA	
6473	0000	0000	173	
6474	1200	SAE+20	0004	
6475	6472	0000	HLT	SRO ROTATE FAILED AC=0004
6476	1460	0004	0004	
6477	0004	0004	HLT	SRO ROTATE FAILED AC=0004
6500	0000	0000	0002	
6501	1020	LDA+20	0004	
6502	0004	0004	STC 1+2=2000	
6503	4505	1520	SRO+20	
6504	1520	0000	0000	
6505	0000	0000	HLT	SRO SKIP FAILED
6506	0000	0000	LDA	
6507	1000	173		
6510	6505	SAE+20	0002	
6511	1460	0002	HLT	SRO ROTATE FAILED AC=0002
6512	0002	0002	0002	
6513	0000	0000	0002	
6514	1020	LDA+20	0002	
6515	0002	0002	STC 1+2=2000	
6516	4220	1520	SRO+20	
6517	1520	0000	0000	
6520	0000	0000	HLT	SRO SKIP FAILED
6521	0000	0000	LDA	
6522	1000	173		
6523	6520	SAE+20	0001	
6524	1460	0001	HLT	SRO ROTATE FAILED AC=0001
6525	0001	0000	0000	
6526	0000	0000	0000	
6527	1020	LDA+20	3776	
6530	3776	4533	STC 1+2=2000	
6531	4533	1520	SRO+20	
6532	1520	0000	0000	
6533	0000	0000	HLT	SRO SKIP FAILED
6534	0000	0000	LDA	
6535	1000	173		
6536	6533	SAE+20	1777	
6537	1460	0000	HLT	SRO ROTATE FAILED AC=1777
6540	1777	0000	0000	
6541	0000	0000	0000	

6542	1020	LDA+20
6543	5774	STC *2=20000
6544	4546	SRO+20
6545	1520	0000
6546	0000	HLT
6547	0000	/SRO SKIP FAILED
6550	1000	LDA
6551	6246	*3
6552	1460	SAE+20
6553	2776	2776
6554	0000	HLT
6555	1020	LDA+20
6556	6774	6774
6557	4561	STC *2=20000
6560	1520	SRO+20
6561	0000	0000
6562	0000	HLT
6563	1200	LDA
6564	6561	*5
6565	1460	SAE+20
6566	3376	3376
6567	0000	HLT
6568	0000	/SRO ROTATE FAILED ACB
6570	1020	LDA+20
6571	7374	7374
6572	4574	STC *2=20000
6573	1520	SRO+20
6574	0000	0000
6575	0000	HLT
6576	1000	LDA
6577	6574	*3
6600	1460	SAE+20
6601	3576	3576
6602	0000	HLT
6603	1020	LDA+20
6604	7474	7474
6605	4607	STC *2=20000
6606	1520	SRO+20
6607	0000	0000
6610	0000	HLT
6611	1000	LDA
6612	6607	*3
6613	1460	SAE+20
6614	3636	3636
6615	0000	HLT
6616	0000	/SRO ROTATE FAILED ACB
6617	0000	/SRO SKIP FAILED
6618	0000	/SKIP TO SHD TEST 1
6619	0000	/SRO ROTATE FAILED ACB

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/SHD TEST 1

6616 1020 LDA+20
6617 0010 SHD
6620 1400 *+3 2000
6621 6624 HLT
6622 0000 /SHD FAILED AC=00040 MEM=0000
6623 0456 SKP
6624 0000 0000

LDA+20

6625 0020 SHD
6626 0040 *+3 2000
6627 1400 HLT
6630 6633 /SHD FAILED AC=00020 MEM=0000
6631 0000
6632 0456 SKP
6633 0000 0000

LDA+20

6634 1020 SHD
6635 0040 *+3 2000
6636 1400 HLT
6637 6642 /SHD FAILED AC=00040 MEM=0000
6640 0000 SKP
6641 0456 0000
6642 0000 0000

LDA+20

6643 1020 SHD
6644 0001 *+3 2000
6645 1400 HLT
6646 6651 /SHD FAILED AC=0001 MEM=0000
6647 0000 SKP
6650 0456 0000
6651 0000 0000

LDA+20

6652 1020 SHD
6653 0002 *+3 2000
6654 1400 HLT
6655 6660 /SHD FAILED AC=0002 MEM=0000
6656 2000 SKP
6657 2456 2000
6660 0202 /SHD FAILED AC=0004 MEM=0000
6661 1020 LDA+20
6662 0004 0004
6663 1402 SHD
6664 6567 *+3 2000
6665 0002 HLT
6666 2456 SKP
6667 0202 0000

LDA+20

6670 1400 SHD
6671 6674 *+3 2000
6672 0002 HLT
6673 0456 SKP
6674 1022 1000

/SHD FAILED AC=0204 MEM=1000

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	PAL10	V141	29-OCT-69
6752	1400	SHD	
6753	6756	'*3	
6754	0000	HLT	
6755	0456	SKP	
6756	0020	0020	
		LDA+20	
6757	1020	0020	
6760	0020	SHD	
6761	1400	'*3	
6762	6765	HLT	
6763	0000	SKP	
6764	0456	0000	
6765	0000	LDA+20	
		0040	
6766	1020	SHD	
6767	0040	'*3	
6770	1400	HLT	
6771	6774	SKP	
6772	0000	0000	
6773	0456	LDA+20	
6774	0000	0040	
		SHD	
6775	0011	'*3	
6776	1400	HLT	
6777	7002	SKP	
7000	0000	0000	
7001	0456	LDA+20	
7002	0001	0040	
		SHD	
7003	1020	'*3	
7004	0002	HLT	
7005	1400	SKP	
7006	7011	0000	
7007	0000	LDA+20	
7210	0456	0040	
7211	2000	SHD	
		'*3	
7212	1020	HLT	
7213	0004	SKP	
7214	1400	0000	
7215	7020	LDA+20	
7216	0000	0010	
7217	0456	SHD	
7222	2000	'*3	
		HLT	
7221	1020	SKP	
7222	0010	0000	
7223	1400	LDA+20	
7224	7027	SHD	
7225	0000	'*3	
7226	0456	HLT	
7227	2000	SKP	

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/SHD TEST

7030	1020	LDA+20
7031	5201	5201
7032	1400	SHD
7033	7036	*3
7034	0000	HLT
7035	0456	SKP
7036	0000	0000
7037	1020	LDA+20
7040	2577	2577
7041	1400	SHD
7042	7045	*3
7043	0000	HLT
7044	0456	SKP
7045	0001	0001
7046	1020	LDA+20
7047	5201	5201
7050	1400	SHD
7051	7054	*3
7052	0000	HLT
7053	0456	SKP
7054	5200	5200

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/LAM TEST LAM ARITHMETIC IS 2'S COMPLEMENT

7055	0011	CLR	
7056	5060	STC $\downarrow^2=2000$	
7057	1220	LAM+20	
7060	0000	0000	
7061	1460	SAE+20	
7062	0000	0000	
7063	0000	HLT	
7064	1020	LDA+20	
7065	4000	4000	
7066	0261	ROL+20*1	
7067	5071	STC $\downarrow^2=2000$	
7070	1220	LAM+20	
7071	0000	0000	
7072	1460	SAE+20	
7073	0001	0001	
7074	0000	HLT	
7075	1020	LDA+20	
7076	4000	4000	
7077	0261	ROL+20*1	
7100	5104	STC $\downarrow^4=2000$	
7101	1020	LDA+20	
7102	0001	0001	
7103	1220	LAM+20	
7104	0000	0000	
7105	1460	SAE+20	
7106	0002	0002	
7107	0000	HLT	
7110	1020	LDA+20	
7111	4000	4000	
7112	0261	ROL+20*1	
7113	5117	STC $\downarrow^4=2000$	
7114	1020	LDA+20	
7115	0003	0003	
7116	1220	LAM+20	
7117	0000	2000	
7120	1460	SAE+20	
7121	0004	2004	
7122	0000	HLT	
7123	1020	LDA+20	
7124	4000	4000	
7125	0261	ROL+20*1	
7126	5132	STC $\downarrow^4=2000$	
7127	1020	LDA+20	
7130	0007	0007	
7131	1220	LAM+20	
7132	0000	0000	
7133	1460	SAE+20	
7134	0010	0010	

/LAM FAILED AC=00001 MEM=0001 L=0

/LAM FAILED AC=00021 MEM=0002

LDA+20

ROL+20*1

STC $\downarrow^4=2000$

LDA+20

2007

LAM+20

0000

SAE+20

0010

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7135 00000 HLT /LAM FAILED AC#0010

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7136	1020	LDA+20	
7137	4000	4000	
7140	0261	R0L+20*1	
7141	5145	STC 1*4=2000	
7142	1020	LDA+20	
7143	0017	0017	
7144	1020	LAM+20	
7145	0000	0000	
7146	1460	SAE+20	
7147	0020	0020	
7150	0000	HLT	/LAM FAILED AC=0200
7151	1020	LDA+20	
7152	4000	4000	
7153	0261	R0L+20*1	
7154	5160	STC 1*4=2000	
7155	1020	LDA+20	
7156	0037	0037	
7157	1020	LAM+20	
7160	0000	0000	
7161	1460	SAE+20	
7162	0040	0040	
7163	0000	HLT	/LAM FAILED AC=0200
7164	1020	LDA+20	
7165	4000	4000	
7166	0261	R0L+20*1	
7167	5173	STC 1*4=2000	
7170	1020	LDA+20	
7171	0077	0077	
7172	1020	LAM+20	
7173	0000	0000	
7174	1460	SAE+20	
7175	0100	0100	
7176	0000	HLT	/LAM FAILED AC=0100
7177	1020	LDA+20	
7200	4000	4000	
7201	0261	R0L+20*1	
7202	5206	STC 1*4=2000	
7203	1020	LDA+20	
7204	0177	0177	
7205	1020	LAM+20	
7206	0000	0000	
7207	1460	SAE+20	
7210	0200	0200	
7211	0200	HLT	/LAM FAILED AC=0200

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```

7212 1020 LDA+20
7213 4000 4000
7214 0261 ROL+20*1
7215 5221 STC 1+4-2000
7216 1020 LDA*20-
7217 0377 0377
7220 1220 LAM+20
7221 0000 0000
7222 1460 SAE*20
7223 0400 0400
7224 0000 HLT /LAM FAILED AC=0400

7225 1020 LDA+20
7226 4000 4000
7227 0261 ROL+20*1
7230 5234 STC 1+4-2000
7231 1020 LDA+20-
7232 0777 0777
7233 1220 LAM+20
7234 0000 0000
7235 1460 SAE*20
7236 1000 1000
7237 0000 HLT /LAM FAILED AC=1000

7240 1020 LDA+20
7241 4000 4000
7242 0261 ROL+20*1
7243 5247 STC 1+4-2000
7244 1020 LDA*20-
7245 1777 1777
7246 1220 LAM+20
7247 0000 0000
7250 1460 SAE*20
7251 2000 2000
7252 0000 HLT /LAM FAILED AC=2000

7253 1020 LDA+20
7254 4000 4000
7255 0261 ROL+20*1
7256 5262 STC 1+4-2000
7257 1020 LDA*20-
7260 3777 3777
7261 1220 LAM+20
7262 0000 0000
7263 1460 SAE*20
7264 4000 4000
7265 0000 HLT /LAM FAILED AC=4000

7266 1020 LDA+20
7267 4000 4000
7270 0261 ROL+20*1
7271 5275 STC 1+4-2000
7272 1020 LDA*20-
7273 7777 7777

```

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 7274 1020 LAM+20
 7275 0000 0W00
 7276 1460 SAE+20
 7277 0000 0W00
 7300 0000 HLT
 7301 0472 LZE+20
 7302 0000 HLT
 /COM TEST
 7303 1020 LDA+20
 7304 5252 5252
 7305 0017 COM
 7306 1460 SAE+20
 7307 2525 2225
 7310 0000 HLT
 /COM FAILED AC=0000
 7311 0017 COM
 7312 1460 SAE+20
 7313 5252 5252
 7314 0000 HLT
 /COM FAILED AC=5252
 7315 1020 LDA+20
 7316 7777 7777
 7317 0017 COM
 7320 1460 SAE+20
 7321 0000 0W00
 7322 0000 HLT
 /COM FAILED AC=0000
 7323 0017 COM
 7324 1460 SAE+20
 7325 7777 7777
 7326 0000 HLT
 /STC TEST
 7327 1020 LDA+20
 7330 5252 5252
 7331 4000 STC+0000
 7332 0450 AZE
 7333 0000 HLT
 /STC FAILED TO CLEAR AC=0000
 7334 1020 LDA+20
 7335 5252 5252
 7336 1440 SAE
 7337 0200 0W00
 7340 0000 HLT
 /STC FAILED TO STORE PROPER NUMBER
 7341 1020 LDA+20
 7342 2525 2525
 7343 5777 STC+1777
 7344 0450 AZE
 7345 0000 HLT
 /STC FAILED TO CLEAR AC=0000

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7346 1020 LDA+20

7347 2225 2225

7352 1440 SAE

7351 1777 1777

7352 0000 HLT

/STC FAILED TO STORE PROPER NUMBER

7353 1020 LDA+20

7354 2525 2525

7355 4000 STC+00000

7356 1020 LDA+20

7357 2525 2525

7360 1440 SAE

7361 0000 0000

7362 0000 HLT

/STC FAILED TO STORE PROPER NUMBER

7363 1020 LDA+20

7364 5252 5252

7365 5777 STC+1777

7366 1020 LDA+20

7367 5252 5252

7370 1440 SAE

7371 1777 1777

7372 0000 HLT

/STC FAILED TO STORE PROPER NUMBER

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7373 0211 CLR
7374 3424 ADD K2525=4000
7375 3425 ADD K2526=4000
7376 1460 SAE 20
7377 5253 S253
7400 0000 HLT /ADD FAILED AC=5253

7401 0211 CLR
7402 3425 ADD K2526=4000
7403 3424 ADD K2525=4000
7404 1460 SAL 20
7405 5253 S253
7426 0000 HLT /ADD FAILED AC=5253
7407 3426 ADD K0000=4000
7410 3426 ADD K0000=4000 /TO CLEAR FILE
7411 0002 POP /TO PMODE
7412 2230 ISZ CTR=5400+200 /ISZ CTR (RING BELL 4096 TIMES)
7413 5215 5000,+2=2400+200 /JMP 1*2
7414 5217 5000,BELL=2400+200 /JMP BELL
7415 5616 BACK, 5000,+1=2000+200 /JMP 1*1
7416 2233 0033 /RETURN TO SECOND TEST
7417 7300 BELL, CLL CLA
7420 1231 TAD KBELL=6400+200 /TAD KBELL
7421 6246 TLS
7422 7300 CLL CLA
7423 5215 5000 BACK=2400+200 /JMP BACK
7424 2525 K2525,
7425 2526 K2526,
7426 0000 K0000, 0000
7427 0000 TALLY, 0
7430 0000 CTR, 0
7431 0207 KBELL, 0207
7432 0000 \$

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4000	00000000	00000000	11111000	11111111	11111111	11111111	11111111
4100	11111111	11111111	11111111	11111111	11111111	11111111	11111111
4200	11111111	11111111	11111111	11111111	11111111	11111111	11111111
4300	11111111	11111111	11111111	11111111	11111111	11111111	11111111
4400	11111111	11111111	11111111	11111111	11111111	11111111	11111111
4500	11111111	11111111	11111111	11111111	11111111	11111111	11111111
4600	11111111	11111111	11111111	11111111	11111111	11111111	11111111
4700	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5000	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5100	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5200	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5300	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5400	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5500	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5600	11111111	11111111	11111111	11111111	11111111	11111111	11111111
5700	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6000	01111111	11111111	11111111	11111111	11111111	11111111	11111111
6100	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6200	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6300	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6400	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6500	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6600	11111111	11111111	11111111	11111111	11111111	11111111	11111111
6700	11111111	11111111	11111111	11111111	11111111	11111111	11111111
7000	11111111	11111111	11111111	11111111	11111111	11111111	11111111
7100	11111111	11111111	11111111	11111111	11111111	11111111	11111111
7200	11111111	11111111	11111111	11111111	11111111	11111111	11111111
7300	11111111	11111111	11111111	11111111	11111111	11111111	11111111
7400	11111111	11111111	11111111	11000000	00000000	00000000	00000000
7500	00000000	00000000	00000000	00000000	00000000	00000000	00000000
7600							
7700							

ADA	1100	SRD	1500
ADATST	3067	STA	1040
ADD	2200	START	0020
ADM	1140	STC	4000
AND	0020	STH	1540
APO	0451	SXL	0400
ATR	0014	TAD	1000
AZE	0450	TALLY	7427
BACK	7415	TLS	6046
BCL	1540	XSK	0200
BCO	1042		
BELL	7417		
BSE	1000		
CLA	7200		
CLL	7100		
CLR	0011		
CML	7020		
COM	0017		
CTR	7430		
DCA	3000		
FLO	0454		
HLT	0000		
IBZ	0453		
LOT	0513		
ISZ	2000		
KW0000	7426		
K2525	7424		
K2526	7425		
KBELL	7431		
KST	0415		
LAM	1200		
LAS	7604		
LDA	1000		
LDH	1300		
LINC	6144		
LZE	0452		
MUL	1240		
NOP	0016		
PDP	0002		
QAC	0005		
QLZ	0455		
ROL	0240		
ROR	0320		
RTA	0015		
RTL	7006		
SAE	1440		
SCR	0340		
SET	0040	SETTST	4057
SHD	1400		
SKP	0456		
SNS	0440		

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ERROR

