

TEST

TEST 3 UNARY & BINARY
MD-11-DOC-A

EP-DOC-A-DL-A
COPYRIGHT © 1978
FICHE 1 OF 1

NOV 1978
digital
MADE IN U.S.A.

1	1	1	1
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
6	1	1	1
7	1	1	1
8	1	1	1
9	1	1	1
10	1	1	1
11	1	1	1
12	1	1	1
13	1	1	1
14	1	1	1
15	1	1	1
16	1	1	1
17	1	1	1
18	1	1	1
19	1	1	1
20	1	1	1
21	1	1	1
22	1	1	1
23	1	1	1
24	1	1	1
25	1	1	1
26	1	1	1
27	1	1	1
28	1	1	1
29	1	1	1
30	1	1	1
31	1	1	1
32	1	1	1
33	1	1	1
34	1	1	1
35	1	1	1
36	1	1	1
37	1	1	1
38	1	1	1
39	1	1	1
40	1	1	1
41	1	1	1
42	1	1	1
43	1	1	1
44	1	1	1
45	1	1	1
46	1	1	1
47	1	1	1
48	1	1	1
49	1	1	1
50	1	1	1
51	1	1	1
52	1	1	1
53	1	1	1
54	1	1	1
55	1	1	1
56	1	1	1
57	1	1	1
58	1	1	1
59	1	1	1
60	1	1	1
61	1	1	1
62	1	1	1
63	1	1	1
64	1	1	1
65	1	1	1
66	1	1	1
67	1	1	1
68	1	1	1
69	1	1	1
70	1	1	1
71	1	1	1
72	1	1	1
73	1	1	1
74	1	1	1
75	1	1	1
76	1	1	1
77	1	1	1
78	1	1	1
79	1	1	1
80	1	1	1
81	1	1	1
82	1	1	1
83	1	1	1
84	1	1	1
85	1	1	1
86	1	1	1
87	1	1	1
88	1	1	1
89	1	1	1
90	1	1	1
91	1	1	1
92	1	1	1
93	1	1	1
94	1	1	1
95	1	1	1
96	1	1	1
97	1	1	1
98	1	1	1
99	1	1	1
100	1	1	1

.REM %

11-DCAA
11-DOBA
11-DOCA
11-DODA
11-DOEA
11-DOFA
11-DOGA
11-DOHA
11-DOIA
11-DOJA
11-DOKA
11-DOLA

IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DOAA TO DOLA-D
PRODUCT NAME: FIRST LEVEL 1-12
DATE CREATED: 17 MARCH 1970
MAINTAINER: DIAGNOSTIC GROUP
AUTHOR: JOHN MITTELL

THIS GROUP OF TESTS CONSIST OF:

PROCESSOR TEST	MAINDEC
TEST 1 BRANCH	11-DCAA
2 CON BRANCH	11-DOBA
3 UNARY	11-DOCA
4 UNARY AND BINARYS	11-DODA
5 ROTATE/SHIFT	11-DOEA
6 COMPARE	11-DOFA
7 COMPARE NOT	11-DOGA
8 MOVE	11-DOHA
9 BIS,BIC AND BIT	11-DOIA
10 ADD	11-DOJA
11 SUBTRACT	11-DOKA
12 JMP	11-DOLA

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

1. ABSTRACT

THIS IS A GROUP OF 12 TESTS THAT INCREMENTALLY TEST AND ISOLATE SIMPLE MALFUNCTIONS OF THE PDP 11. THE TESTS SHOULD BE RUN IN THE INDICATED NUMERICAL SEQUENCE. THE SEQUENCE IS 1. BRANCH 2. CONDITIONAL BRANCH 3. UNARY 4. UNARY AND BINARYS 5. ROTATE/SHIFT 6. COMPARE (EQUALITY) 7. COMPARE (NON EQUALITY) 8. MOVE 9. BIT SET, CLEAR AND TEST 10. ADD 11. SUBTRACT 12. JUMP

THERE IS A SECOND GROUP OF TESTS FOR MORE COMPLEX MALFUNCTIONS.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP-11/20 STANDARD COMPUTER

2.2 STORAGE

2.2.1 PROGRAM STORAGE - THE PROGRAMS USE ALL OF A 4KW MEMORY WITH THE EXCEPTION OF 17500 TO 17776 (WHICH IS RESERVED FOR THE BOOT AND ABSOLUTE LOADER).

3. LOADING PROCEDURE

3.1 METHOD

PROCEDURE FOR NORMAL ABSOLUTE TAPES SHOULD BE FOLLOWED.

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTING

ALL PROGRAMS START AT ADDRESS 200.

4.2 STARTING ADDRESS OR ADDRESSES

(A) 200 = START AND RESTART ADDRESS

4.3 PROGRAM AND/OR OPERATOR ACTION

LOAD PROGRAM INTO MEMORY. (BOTTOM 4K)
SET SWITCH REGISTER TO STARTING ADDRESS. (200)
LOAD ADDRESS.
PRESS START.
THE PROGRAM WILL LOOP, AND RING A BELL AFTER A FIXED NUMBER OF ITERATIONS.

1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160

5. OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

5.1.1 NO SWITCHES ARE USED

5.1.3

5.2 SUBROUTINE ABSTRACTS

5.2.1 BEGIN SA 200

5.2.2 SCOPE

IS A "NOP" THAT IS PLACED BETWEEN EACH SUBTEST
IN THE INSTRUCTION SECTION. IF A SCOPE LOOP IS NEEDED,
INSERT A BRANCH TO THE PREVIOUS SCOPE LOCATION
AT THE CURRENT SCOPE LOCATION. (NOTE NOP=240)

5.2.3 HLT

INDICATES THE UNIQUE ADDRESS THAT TAGS THE
FAILING SUBTEST. THE INCORRECT DATA AT THE
TIME OF THE FAILURE MAY OR MAY NOT BE
DISPLAYED IN REGISTER ZERO, WHICH IS THE DATA
REGISTER ON A HALT.

5.3 PROGRAM AND/OR OPERATOR ACTION

5.3.1 LOADING AND STARTING AT 200 STARTS THE TEST. IF
AN ERROR IS DETECTED, THERE WILL BE A HALT.
WHEN A HALT OCCURS AND IT IS NECESSARY TO SCOPE ON
IT, PLACE INSERT A BRANCH INSTRUCTION IN THE
SCOPE LOCATION FOLLOWING THE HALT. THE BRANCH
INSTRUCTION SHOULD BRANCH YOU TO THE PREVIOUS
SCOPE LOCATION.

6. ERRORS

6.1 ALL ERRORS WILL CAUSE A HALT.

6.2 ERROR RECOVERY

ON TRAP ERRORS - RESTART AT 200.
DEPRESS CONTINUE TO CONTINUE TEST

7. RESTRICTIONS

7.1 STARTING RESTRICTION

NONE

E01

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 5
DOCA.P11

161
152
163

7.2 OPERATIONAL RESTRICTION
NONE

164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219

8. MISCELLANEOUS

IF A HALT OCCURES IN THE TRAP OR INTERRUPT VECTOR AREA, REGISTER SIX SHOULD BE EXAMINED TO DETERMINE ITS CONTENTS, THEN USE REGISTER SIX CONTENTS AS AN ADDRESS TO DETERMINE THE LOCATION THE PROGRAM WAS AT, WHEN THE INTERRUPT OR TRAP OCCURRED. (MEMORY AS SPECIFIED BY R6 CONTAINS THE PC OF THE INSTRUCTION FOLLOWING THE INSTRUCTION WHERE THE TRAP OCCURED)

8.1 EXECUTION TIME

TIME BETWEEN BELLS

FOR TAPE 1	5	MINUTES
FOR TAPE 2	2.5	MINUTES
FOR TAPE 3	3	MINUTES
FOR TAPE 4	6	MINUTES
FOR TAPE 5	5	MINUTES
FOR TAPE 6	6	MINUTES
FOR TAPE 7	5	MINUTES
FOR TAPE 8	6	MINUTES
FOR TAPE 9	3	MINUTES
FOR TAPE 10	4	MINUTES
FOR TAPE 11	2	MINUTES
FOR TAPE 12	4	MINUTES

9. PROGRAM DESCRIPTION

- TEST 1 THIS IS A TEST OF THE UNCONDITIONAL BRANCH INSTRUCTION, IT PROVES THAT A LONG PROGRAM CAN BE LOADED AND THE INSTRUCTIONS CAN BE EXECUTED THROUGHOUT MEMORY.
- TEST 2 THIS IS A CONDITIONAL BRANCH TEST USING ALL OF THE CONDITIONAL BRANCH INSTRUCTIONS. IT TESTS THAT ALL COMBINATIONS OF CONDITION CODES ARE RESPONDED TO CORRECTLY. (THE CONDITION CODES ARE MANIPULATED WITH THE MICRO-PROGRAM OPERATIONS.)
- TEST 3 THIS IS A TEST OF THE UNARY INSTRUCTIONS AND THEIR EFFECTS UPON THE CONDITION CODES ONLY. MOSTLY REGISTER OPERATIONS.
- TEST 4 THIS IS A COMBINED USE OF UNARY AND BINARY INSTRUCTIONS TESTING THE RESULTS AND THE CONDITION CODES.
- TEST 5 THIS TEST ROTATE AND SHIFT INSTRUCTION, BOTH THE REGISTERS AND MEMORY LOCATIONS, WORD AND BYTE, ARE TESTED.
- TEST 6 THIS IS A TEST OF THE COMPARE INSTRUCTIONS FOR

GO1

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 7
DOCA.P11

220
221
222

EQUALITY. ALL CONDITIONAL BRANCHES THAT WILL
BRANCH ON ANY FORM OF EQUALITY ARE ALSO TESTED.
BOTH WORD AND BYTE OPERATIONS ARE USED.

(9 CONT'D)

TEST 7 COMPARE NOT. THIS IS A TEST OF THE COMPARE INSTRUCTIONS WHERE NO VALUES ARE EQUAL. HERE BRANCHES FOR NOT EQUAL, GREATER THAN AND LESS THAN, ETC., ARE TESTED.

TEST 8 CHECKS THE MOVE INSTRUCTION BOTH TO MEMORY AND REGISTERS.

TEST 9 CHECK THE BIS, BIC AND BIT INSTRUCTION BOTH TO MEMORY AND TO REGISTERS.

TEST 10 TESTS THE ADD INSTRUCTION.

TEST 11 TESTS THE SUBTRACT INSTRUCTION.

TEST 12 TEST OF THE JUMP INSTRUCTION IN MOST MODES.

NOTE THAT STACK OPERATION AND INSTRUCTIONS THAT USE THEM ARE NOT TESTED IN THIS GROUP OF TEST.

- 10. LISTING
- 11. FLOW CHART(S)

22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

J01

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 10
DOCA.P11

294

K01

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 11
DOCA.P11

```

295      :START OF TEST
296 000200 BEGIN:
297
298      ;BASIC TEST FOR REGISTER %D
299
300      ;TEST "CLR"
301      SCOPE
302 000200 000240 SCC
303 000202 000277 CLR %D ;SHOULD SET Z
304 000204 005000 BEQ .+4 ;Z NOT SET
305 000206 001401 HLT
306 000210 000000
307      ;TEST "COM"
308      SCOPE
309 000212 000240 SCC
310 000214 000277 CLR %D ;000000
311 000216 005000 COM %D ;17777,N SHOULD BE SET
312 000220 005100 BMI .+4 ;"N" NOT SET
313 000222 100401 HLT
314 000224 000000
315      ;TEST "INC"
316      SCOPE
317 000226 000240 SCC
318 000230 000277 CLR %D ;CLEAR
319 000232 005000 COM %D ;COMPLIMENT
320 000234 005100 INC %D ;ALL ONES TO ZERO, AT Z
321 000236 005200 DEQ .+4 ;BRANCH ON Z
322 000240 001401 HLT ;Z NOT SET
323 000242 000000
324      ;TEST "DEC"
325      SCOPE
326 000244 000240 SCC
327 000246 000277 CLR %D ;CLEAR
328 000250 005000 DEC %D ;ZERO MINUS 1=17777
329 000252 005300 BMI .+4 ;N NOT SET
330 000254 100401 HLT
331      ;TEST "NEG"
332      SCOPE
333 000260 000240 SCC
334 000262 000277 CLR %D ;000000
335 000264 005000 NEG %D ;000000
336 000266 005400 BEQ .+4 ;Z NOT SET
337 000270 001401 HLT ;Z NOT SET
338 000272 000000
339      ;TEST "NEG"
340      SCOPE
341 000274 000240 SCC
342 000276 000277 CLR %D ;000000
343 000300 005000 INC %D ;000001
344 000302 005200 NEG %D ;177777
345 000304 005400 BMI .+4
346 000306 100401 HLT ;N NOT SET
347 000310 000000
348      ;TEST ADC
349      SCOPE
350 000312 000240 CLR %D ;CARRY=1
351 000314 005000 SEC ;000000
352 000316 000261 ADC %D ;SET C
353 000320 005500 BNE .+4 ;000001
354 000322 001001 HLT ;Z NOT CLEARED
355 000324 000000

```

```

351          ;TEST "ADC"
352          SCOPE
353          CCC
354          CLR          %0          ; CARRY=0
355          ADC          %0          ; 000000
356          BEQ          .+4         ; ADD-CARRY=C00000
357          HLT
358          ;TEST "SBC"
359          SCOPE
360
361          CLR          %0          ; CARRY=1
362          SEC          ; 00000
363          SBC          %0          ; SET C
364          BMI          .+4         ; 000000-1=177777
365          HLT
366          ;TEST TST
367          SCOPE
368          CLR          %0          ; 000000
369          SCC          ; SET CODES
370          TST          %0          ; N=0, Z=1
371          BPL          .+4         ;
372          HLT
373          SCOPE
374          ;BASIC TEST FOR REGISTER %0
375
376          ;TEST "CLFB"
377          SCOPE
378          SCC
379          CLRB          %0          ; SHOULD SET Z
380          BEQ          .+4         ; Z NOT SET
381          HLT
382          ;TEST "COMB"
383          SCOPE
384          SCC
385          CLRB          %0          ; 000000
386          COMB          %0          ; 17777 N SHOULD BE SET
387          BMI          .+4         ; "N" NOT SET
388          HLT
389          ;TEST "INCB"
390          SCOPE
391          SCC
392          CLRB          %0          ; CLEAR
393          COMB          %0          ; COMPLIMENT
394          INCB          %0          ; ALL ONES TO ZERO, AT Z
395          BEQ          .+4         ; BRANCH ON Z
396          HLT
397          ;TEST "DECB"
398          SCOPE
399          SCC
400          CLRB          %0          ; CLEAR
401          DECB          %0          ; ZERO MINUS 1=17777
402          BMI          .+4
403          HLT
404          ;TEST "NECB"
405          SCOPE
406          SCC

```

```

407 000460 105000          CLRB      %0          ;000000
408 000462 105400          NEGB      %0          ;000000
409 000464 001401          BEQ       .+4         ;Z NOT SET
410 000466 000000          HLT
411                          ;TEST "NEGB"
412 000470 000240          SCOPE
413 000472 000277          SCC
414 000474 105000          CLRB      %0          ;000000
415 000476 105200          INCB      %0          ;000001
416 000500 105400          NEGB      %0          ;177777
417 000502 100401          BMI      .+4
418 000504 000000          HLT
419                          ;TEST ADCB
420 000506 000240          SCOPE
421                          ;CARRY=1
422 000510 105000          CLRB      %0          ;000000
423 000512 000261          SEC
424 000514 105500          ADCB      %0          ;SET C
425 000516 001001          BNE      .+4         ;000001
426 000520 000000          HLT
427                          ;TEST "ADCB"
428 000522 000240          SCOPE
429 000524 000257          CCC
430 000526 105200          CLRB      %0          ;CARRY=0
431 000530 105500          ADCB      %0          ;000000
432 000532 001401          BEQ       .+4         ;ADD-CARRY=000000
433 000534 000000          HLT
434                          ;TEST "SBCB"
435 000536 000240          SCOPE
436                          ;CARRY=1
437 000540 105000          CLRB      %0          ;000000
438 000542 000261          SEC
439 000544 105600          SBCB      %0          ;SET C
440 000546 100401          BMI      .+4         ;000000-1=177777
441 000550 000000          HLT
442                          ;TEST TSTB
443 000552 000240          SCOPE
444 000554 105000          CLRB      %0          ;000000
445 000556 000277          SCC
446 000560 105700          TSTB     %0          ;SET CODES
447 000562 100001          BPL      .+4         ;N=0, Z=1
448 000564 000000          HLT
449 000566 000240          SCOPE
450
451                          ;BASIC TEST FOR REGISTER %1
452
453                          ;TEST "CLR"
454                          ;SCOPE
455 000570 000240          SCOPE
456 000572 000277          SCC
457 000574 005001          CLR      %1
458 000576 001401          BEQ       .+4         ;SHOULD SET Z
459 000600 000000          HLT
460                          ;TEST "COM"
461 000602 000240          SCOPE
462 000604 000277          SCC

```

463	000606	005001	CLR	%1	:000000
464	000610	005101	COM	%1	:17777 N SHOULD BE SET
465	000612	100401	BMI	.+4	: "N" NOT SET
466	000614	000000	HLT		
467			;TEST "INC"		
468	000616	000240	SCOPE		
469	000620	000277	SCC		
470	000622	005001	CLR	%1	:CLEAR
471	000624	005101	COM	%1	:COMPLIMENT
472	000626	005201	INC	%1	:ALL ONES TO ZERO, AT Z
473	000630	001401	BEQ	.+4	:BRANCH ON Z
474	000632	000000	HLT		:Z NOT SET
475			;TEST "DEC"		
476	000634	000240	SCOPE		
477	000636	000277	SCC		
478	000640	005001	CLR	%1	:CLEAR
479	000642	005301	DEC	%1	:ZERO MINUS 1=17777
480	000644	100401	BMI	.+4	
481	000646	000000	HLT		:N NOT SET
482			;TEST "NEG"		
483	000650	000240	SCOPE		
484	000652	000277	SCC		
485	000654	005001	CLR	%1	:000000
486	000656	005401	NEG	%1	:000000
487	000660	001401	BEQ	.+4	:Z NOT SET
488	000662	000000	HLT		:Z NOT SET
489			;TEST "NEG"		
490	000664	000240	SCOPE		
491	000666	000277	SCC		
492	000670	005001	CLR	%1	:000000
493	000672	005201	INC	%1	:000001
494	000674	005401	NEG	%1	:177777
495	000676	100401	BMI	.+4	
496	000700	000000	HLT		:N NOT SET
497			;TEST ADC		
498	000702	000240	SCOPE		
499					:CARRY=1
500	000704	005001	CLR	%1	:000000
501	000706	000261	SEC		:SET C
502	000710	005501	ADC	%1	:000001
503	000712	001001	BNE	.+4	
504	000714	000000	HLT		:Z NOT CLEARED
505			;TEST "ADC"		
506	000716	000240	SCOPE		
507	000720	000257	CCC		:CARRY=0
508	000722	005001	CLR	%1	:000000
509	000724	005501	ADC	%1	:ADD-CARRY=000000
510	000726	001401	BEQ	.+4	:Z NOT SET
511	000730	000000	HLT		:Z NOT SET
512			;TEST "SBC"		
513	000732	000240	SCOPE		
514					:CARRY=1
515	000734	005001	CLR	%1	:000000
516	000736	000261	SEC		:SET C
517	000740	005601	SBC	%1	:000000-1=177777
518	000742	100401	BMI	.+4	

MAIN MACY11 27(732) 01-OCT-76 09:46 PAGE 15
DOCA.P11

```

519 000744 000000          HLT          ;N NOT SET
520          ;TEST TST
521 000746 000240          SCOPE
522 000750 005001          CLR          %1          ;000000
523 000752 000277          SCC          ;SET CODES
524 000754 005701          TST          %1          ;N=0,Z=1
525 000756 100001          BPL          .+4
526 000760 000000          HLT
527 000762 000240          SCOPE          ;N WAS NOT CLEARED
528          ;BASIC TEST FOR REGISTER %1
529
530          ;TEST "CLRB"
531 000764 000240          SCOPE
532 000766 000277          SCC
533 000770 105401          CLRB          %1          ;SHOULD SET Z
534 000772 001401          BEQ          .+4          ;Z NOT SET
535 000774 000000          HLT
536          ;TEST "COMB"
537 000776 000240          SCOPE
538 001000 000277          SCC
539 001002 105301          CLRB          %1          ;000000
540 001004 105101          COMB          %1          ;17777,N SHOULD BE SET
541 001006 100401          BMI          .+4          ;"N" NOT SET
542 001010 000000          HLT
543          ;TEST "INCB"
544 001012 000240          SCOPE
545 001014 000277          SCC
546 001016 105001          CLRB          %1          ;CLEAR
547 001020 105101          COMB          %1          ;COMPLIMENT
548 001022 105201          INCB          %1          ;ALL ONES TO ZERO, AT Z
549 001024 001401          BEQ          .+4          ;BRANCH ON Z
550 001026 000000          HLT          ;Z NOT SET
551          ;TEST "DECB"
552 001030 000240          SCOPE
553 001032 000277          SCC
554 001034 105001          CLRB          %1          ;CLEAR
555 001036 105301          DECB          %1          ;ZERO MINUS 1=17777
556 001040 100401          BMI          .+4
557 001042 000000          HLT          ;N NOT SET
558          ;TEST "NEGB"
559 001044 000240          SCOPE
560 001046 000277          SCC
561 001050 105001          CLRB          %1          ;000000
562 001052 105401          NEGB          %1          ;000000
563 001054 001401          BEQ          .+4          ;Z NOT SET
564 001056 000000          HLT          ;Z NOT SET
565          ;TEST "NEGB"
566 001060 000240          SCOPE
567 001062 000277          SCC
568 001064 105001          CLRB          %1          ;000000
569 001066 105201          INCB          %1          ;000001
570 001070 105401          NEGB          %1          ;177777
571 001072 100401          BMI          .+4
572 001074 000000          HLT          ;N NOT SET
573          ;TEST AOCB
574 001076 000240          SCOPE

```

```

575                                     ;CARRY=1
576 001108 105001          CLRB      %1          ;000000
577 001108 000261          SEC              ;SET C
578 001108 105501          ADCB      %1          ;000001
579 001106 001001          BNE       .+4
580 001110 000000          HLT              ;Z NOT CLEARED
581                                     ;TEST "ADCB"
582 001112 000240          SCOPE
583 001114 000257          CCC
584 001116 105001          CLRB      %1          ;CARRY=0
585 001120 105501          ADCB      %1          ;000000
586 001122 001401          BEQ       .+4          ;ADD-CARRY=000000
587 001124 000000          HLT              ;Z NOT SET
588                                     ;TEST "SBCB"
589 001126 000240          SCOPE
590
591 001130 105001          CLRB      %1          ;CARRY=1
592 001132 000261          SEC              ;00000
593 001134 105601          SBCB      %1          ;SET C
594 001136 100401          BMI       .+4          ;000000-1=177777
595 001140 000000          HLT              ;N NOT SET
596                                     ;TEST TSTB
597 001142 000240          SCOPE
598 001144 105001          CLRB      %1          ;000000
599 001146 000277          SCC
600 001150 105701          TSTB      %1          ;SET CODES
601 001152 100001          BPL       .+4          ;N=0,Z=1
602 001154 000000          HLT              ;N WAS NOT CLEARED
603 001156 000240          SCOPE
604
605                                     ;BASIC TEST FOR REGISTER %2
606                                     ;TEST "CLR"
607                                     SCOPE
608                                     SCC
609 001160 000240          CLR        %2          ;SHOULD SET Z
610 001162 000277          SCC
611 001164 005002          CLR        %2          ;Z NOT SET
612 001166 001401          BEQ       .+4
613 001170 000000          HLT
614                                     ;TEST "COM"
615 001172 000240          SCOPE
616 001174 000277          SCC
617 001176 005002          CLR        %2          ;000000
618 001200 005102          COM        %2          ;17777,N SHOULD BE SET
619 001202 100401          BMI       .+4          ;"N" NOT SET
620 001204 000000          HLT
621                                     ;TEST "INC"
622 001206 000240          SCOPE
623 001210 000277          SCC
624 001212 005002          CLR        %3          ;CLEAR
625 001214 005102          COM        %1          ;COMPLIMENT
626 001216 005202          INC        %2          ;ALL ONES TO ZERO, AT Z
627 001220 001401          BEQ       .+4          ;BRANCH ON Z
628 001222 000000          HLT              ;Z NOT SET
629 001224 000240          ;TEST "DEC"
630                                     SCOPE

```

```

631 001276 000277      SCC
632 001278 005002      CLR      %2      ;CLEAR
633 001278 005302      DEC      %2      ;ZERO MINUS 1=17777
634 001278 100401      BMI      .+4
635 001278 000000      HLT
;TEST "NEG"
636 001278 000000      HLT      ;N NOT SET
637 001278 000240      SCOPE
638 001278 000277      SCC
639 001278 005002      CLR      %2      ;000000
640 001278 005402      NEG      %2      ;000000
641 001278 001401      BEQ      .+4      ;Z NOT SET
642 001278 000000      HLT      ;Z NOT SET
;TEST "NEG"
643 001278 000000      HLT
644 001278 000240      SCOPE
645 001278 000277      SCC
646 001278 005002      CLR      %2      ;000000
647 001278 005202      INC      %2      ;000001
648 001278 005402      NEG      %2      ;177777
649 001278 100401      BMI      .+4
650 001278 000000      HLT
;TEST ADC
651 001278 000000      HLT      ;N NOT SET
652 001272 000240      SCOPE
653 001272 000240      SCOPE
654 001274 005002      CLR      %2      ;CARRY=1
655 001276 001261      SEC      %2      ;000000
656 001300 005502      RDC      %2      ;SET C
657 001302 001001      BNE      .+4      ;000001
658 001304 000000      HLT
;TEST "ADC"
659 001304 000000      HLT      ;Z NOT CLEARED
660 001306 000240      SCOPE
661 001310 001257      CCC
662 001312 005002      CLR      %2      ;CARRY=0
663 001314 005502      RDC      %2      ;000000
664 001316 001401      BEQ      .+4      ;ADD-CARRY=000000
665 001320 000000      HLT      ;Z NOT SET
666 001320 000000      HLT      ;Z NOT SET
;TEST "SBC"
667 001322 000240      SCOPE
668 001322 000240      SCOPE
669 001324 005002      CLR      %2      ;CARRY=1
670 001326 000261      SEC      %2      ;000000
671 001330 005602      SBC      %2      ;SET C
672 001332 100401      BMI      .+4      ;000000-1=177777
673 001334 000000      HLT
;TEST TST
674 001334 000000      HLT      ;N NOT SET
675 001336 000240      SCOPE
676 001340 005002      CLR      %2      ;000000
677 001342 000277      SCC
678 001344 005702      TST      %2      ;SET CODES
679 001346 100001      BPL      .+4      ;N=0,Z=1
680 001350 000000      HLT
681 001352 000240      SCOPE      ;N WAS NOT CLEARED
682 001352 000240      SCOPE      ;BASIC TEST FOR REGISTER %2
683 001352 000240      SCOPE
684 001354 000240      SCOPE
685 001356 000277      SCC

```

687	001360	105002	CLRB	%2	: SHOULD SET Z
688	001362	001401	BEQ	.+4	: Z NOT SET
689	001364	000000	HLT		
690			; TEST "COMB"		
691	001366	000240	SCOPE		
692	001370	000277	SCC		
693	001372	105002	CLRB	%2	: 000000
694	001374	105102	COMB	%2	: 17777 N SHOULD BE SET
695	001376	100401	BMI	.+4	: "N" NOT SET
696	001400	000000	HLT		
697			; TEST "INCB"		
698	001402	000240	SCOPE		
699	001404	000277	SCC		
700	001406	105002	CLRB	%2	: CLEAR
701	001410	105102	COMB	%2	: COMPLEMENT
702	001412	105202	INCB	%2	: ALL ONES TO ZERO, AT Z
703	001414	001401	BEQ	.+4	: BRANCH ON Z
704	001416	000000	HLT		: Z NOT SET
705			; TEST "DECB"		
706	001420	000240	SCOPE		
707	001422	000277	SCC		
708	001424	105002	CLRB	%2	: CLEAR
709	001426	105302	DECB	%2	: ZERO MINUS 1=17777
710	001430	100401	BMI	.+4	
711	001432	000000	HLT		: N NOT SET
712			; TEST "NEGB"		
713	001434	000240	SCOPE		
714	001436	000277	SCC		
715	001440	105002	CLRB	%2	: 000000
716	001442	105402	NEGB	%2	: 000000
717	001444	001401	BEQ	.+4	: Z NOT SET
718	001446	000000	HLT		: Z NOT SET
719			; TEST "NEGB"		
720	001450	000240	SCOPE		
721	001452	000277	SCC		
722	001454	105002	CLRB	%2	: 000000
723	001456	105202	INCB	%2	: 000001
724	001460	105402	NEGB	%2	: 177777
725	001462	100401	BMI	.+4	
726	001464	000000	HLT		: N NOT SET
727			; TEST ADCB		
728	001466	000240	SCOPE		
729					: CARRY=1
730	001470	105002	CLRB	%2	: 000000
731	001472	000261	SEC		: SET C
732	001474	105502	ADCB	%2	: 000001
733	001476	001001	BNE	.+4	
734	001500	000000	HLT		: Z NOT CLEARED
735			; TEST "ADCB"		
736	001502	000240	SCOPE		
737	001504	000257	CCC		: CARRY=0
738	001506	105002	CLRB	%2	: 000000
739	001510	105502	ADCB	%2	: ADD-CARRY=000000
740	001512	001401	BEQ	.+4	: Z NOT SET
741	001514	000000	HLT		: Z NOT SET
742			; TEST "SBCB"		

```

743 001516 000240          SCOPE
744 001518 105002          CLR8      %2          ;CARRY=1
745 001520 000261          SEC              ;00000
746 001522 105602          SBC8      %2          ;SET C
747 001524 100401          BMI              ;00000-1=17777
748 001526 000000          HLT          ;N NOT SET
749 001528 000000          ;TEST TSTB
750 001530 000240          SCOPE
751 001532 105002          CLR8      %2          ;00000
752 001534 000277          SCC              ;SET CODES
753 001536 105702          TSTB      %2          ;N=0,Z=1
754 001538 100001          BPL              ;N WAS NOT CLEARED
755 001540 000000          HLT
756 001542 000240          SCOPE

;BASIC TEST FOR REGISTER %3
757 001550 000240          ;TEST "CLR"
758 001552 000277          SCOPE
759 001554 005003          SCC              ;SHOULD SET Z
760 001556 001401          CLR      %3          ;Z NOT SET
761 001558 000000          BEQ      .+4
762 001560 000000          HLT
763 001562 000240          ;TEST "COM"
764 001564 000277          SCOPE
765 001566 005003          SCC              ;00000
766 001568 005103          CLR      %3          ;17777,N SHOULD BE SET
767 001570 001401          COM      %3          ;"N" NOT SET
768 001572 100401          BMI      .+4
769 001574 000000          HLT
770 001576 000240          ;TEST "INC"
771 001578 000277          SCOPE
772 001580 005003          SCC              ;CLEAR
773 001582 005103          CLR      %3          ;COMPLIMENT
774 001584 005203          COM      %3          ;ALL ONES TO ZERO, AT Z
775 001586 001401          INC      %3          ;BRANCH ON Z
776 001588 000000          BEQ      .+4          ;Z NOT SET
777 001590 000000          HLT
778 001592 000240          ;TEST "DEC"
779 001594 000277          SCOPE
780 001596 005003          SCC              ;CLEAR
781 001598 005303          CLR      %3          ;ZERO MINUS 1=17777
782 001600 100401          DEC      %3          ;N NOT SET
783 001602 000000          BMI      .+4
784 001604 000000          HLT
785 001606 000240          ;TEST "NEG"
786 001608 000277          SCOPE
787 001610 005003          SCC              ;00000
788 001612 005403          CLR      %3          ;00000
789 001614 001401          NEG      %3          ;Z NOT SET
790 001616 000000          BEQ      .+4          ;Z NOT SET
791 001618 000000          HLT
792 001620 000240          ;TEST "NEG"
793 001622 000277          SCOPE
794 001624 005003          SCC
795 001626 005403          CLR      %3
796 001628 001401          NEG      %3
797 001630 000000          BEQ      .+4
798 001632 000000          HLT
799 001634 000240          ;TEST "NEG"
800 001636 000277          SCOPE
801 001638 005003          SCC
802 001640 005403          CLR      %3
803 001642 001401          NEG      %3
804 001644 000000          BEQ      .+4
805 001646 000000          HLT
806 001648 000240          ;TEST "NEG"
807 001650 000277          SCOPE
808 001652 005003          SCC
809 001654 005403          CLR      %3
810 001656 001401          NEG      %3
811 001658 000000          BEQ      .+4
812 001660 000000          HLT
813 001662 000240          ;TEST "NEG"
814 001664 000277          SCOPE
815 001666 005003          SCC
816 001668 005403          CLR      %3
817 001670 001401          NEG      %3
818 001672 000000          BEQ      .+4
819 001674 000000          HLT
820 001676 000240          ;TEST "NEG"
821 001678 000277          SCOPE
822 001680 005003          SCC
823 001682 005403          CLR      %3
824 001684 001401          NEG      %3
825 001686 000000          BEQ      .+4
826 001688 000000          HLT
827 001690 000240          ;TEST "NEG"
828 001692 000277          SCOPE
829 001694 005003          SCC
830 001696 005403          CLR      %3
831 001698 001401          NEG      %3
832 001700 000000          BEQ      .+4
833 001702 000000          HLT
834 001704 000240          ;TEST "NEG"
835 001706 000277          SCOPE
836 001708 005003          SCC
837 001710 005403          CLR      %3
838 001712 001401          NEG      %3
839 001714 000000          BEQ      .+4
840 001716 000000          HLT
841 001718 000240          ;TEST "NEG"
842 001720 000277          SCOPE
843 001722 005003          SCC
844 001724 005403          CLR      %3
845 001726 001401          NEG      %3
846 001728 000000          BEQ      .+4
847 001730 000000          HLT
848 001732 000240          ;TEST "NEG"
849 001734 000277          SCOPE
850 001736 005003          SCC
851 001738 005403          CLR      %3
852 001740 001401          NEG      %3
853 001742 000000          BEQ      .+4
854 001744 000000          HLT
855 001746 000240          ;TEST "NEG"
856 001748 000277          SCOPE
857 001750 005003          SCC
858 001752 005403          CLR      %3
859 001754 001401          NEG      %3
860 001756 000000          BEQ      .+4
861 001758 000000          HLT
862 001760 000240          ;TEST "NEG"
863 001762 000277          SCOPE
864 001764 005003          SCC
865 001766 005403          CLR      %3
866 001768 001401          NEG      %3
867 001770 000000          BEQ      .+4
868 001772 000000          HLT
869 001774 000240          ;TEST "NEG"
870 001776 000277          SCOPE
871 001778 005003          SCC
872 001780 005403          CLR      %3
873 001782 001401          NEG      %3
874 001784 000000          BEQ      .+4
875 001786 000000          HLT
876 001788 000240          ;TEST "NEG"
877 001790 000277          SCOPE
878 001792 005003          SCC
879 001794 005403          CLR      %3
880 001796 001401          NEG      %3
881 001798 000000          BEQ      .+4
882 001800 000000          HLT
883 001802 000240          ;TEST "NEG"
884 001804 000277          SCOPE
885 001806 005003          SCC
886 001808 005403          CLR      %3
887 001810 001401          NEG      %3
888 001812 000000          BEQ      .+4
889 001814 000000          HLT
890 001816 000240          ;TEST "NEG"
891 001818 000277          SCOPE
892 001820 005003          SCC
893 001822 005403          CLR      %3
894 001824 001401          NEG      %3
895 001826 000000          BEQ      .+4
896 001828 000000          HLT
897 001830 000240          ;TEST "NEG"
898 001832 000277          SCOPE
899 001834 005003          SCC
900 001836 005403          CLR      %3
901 001838 001401          NEG      %3
902 001840 000000          BEQ      .+4
903 001842 000000          HLT
904 001844 000240          ;TEST "NEG"
905 001846 000277          SCOPE
906 001848 005003          SCC
907 001850 005403          CLR      %3
908 001852 001401          NEG      %3
909 001854 000000          BEQ      .+4
910 001856 000000          HLT
911 001858 000240          ;TEST "NEG"
912 001860 000277          SCOPE
913 001862 005003          SCC
914 001864 005403          CLR      %3
915 001866 001401          NEG      %3
916 001868 000000          BEQ      .+4
917 001870 000000          HLT
918 001872 000240          ;TEST "NEG"
919 001874 000277          SCOPE
920 001876 005003          SCC
921 001878 005403          CLR      %3
922 001880 001401          NEG      %3
923 001882 000000          BEQ      .+4
924 001884 000000          HLT
925 001886 000240          ;TEST "NEG"
926 001888 000277          SCOPE
927 001890 005003          SCC
928 001892 005403          CLR      %3
929 001894 001401          NEG      %3
930 001896 000000          BEQ      .+4
931 001898 000000          HLT
932 001900 000240          ;TEST "NEG"
933 001902 000277          SCOPE
934 001904 005003          SCC
935 001906 005403          CLR      %3
936 001908 001401          NEG      %3
937 001910 000000          BEQ      .+4
938 001912 000000          HLT
939 001914 000240          ;TEST "NEG"
940 001916 000277          SCOPE
941 001918 005003          SCC
942 001920 005403          CLR      %3
943 001922 001401          NEG      %3
944 001924 000000          BEQ      .+4
945 001926 000000          HLT
946 001928 000240          ;TEST "NEG"
947 001930 000277          SCOPE
948 001932 005003          SCC
949 001934 005403          CLR      %3
950 001936 001401          NEG      %3
951 001938 000000          BEQ      .+4
952 001940 000000          HLT
953 001942 000240          ;TEST "NEG"
954 001944 000277          SCOPE
955 001946 005003          SCC
956 001948 005403          CLR      %3
957 001950 001401          NEG      %3
958 001952 000000          BEQ      .+4
959 001954 000000          HLT
960 001956 000240          ;TEST "NEG"
961 001958 000277          SCOPE
962 001960 005003          SCC
963 001962 005403          CLR      %3
964 001964 001401          NEG      %3
965 001966 000000          BEQ      .+4
966 001968 000000          HLT
967 001970 000240          ;TEST "NEG"
968 001972 000277          SCOPE
969 001974 005003          SCC
970 001976 005403          CLR      %3
971 001978 001401          NEG      %3
972 001980 000000          BEQ      .+4
973 001982 000000          HLT
974 001984 000240          ;TEST "NEG"
975 001986 000277          SCOPE
976 001988 005003          SCC
977 001990 005403          CLR      %3
978 001992 001401          NEG      %3
979 001994 000000          BEQ      .+4
980 001996 000000          HLT
981 001998 000240          ;TEST "NEG"
982 002000 000277          SCOPE
983 002002 005003          SCC
984 002004 005403          CLR      %3
985 002006 001401          NEG      %3
986 002008 000000          BEQ      .+4
987 002010 000000          HLT
988 002012 000240          ;TEST "NEG"
989 002014 000277          SCOPE
990 002016 005003          SCC
991 002018 005403          CLR      %3
992 002020 001401          NEG      %3
993 002022 000000          BEQ      .+4
994 002024 000000          HLT
995 002026 000240          ;TEST "NEG"
996 002028 000277          SCOPE
997 002030 005003          SCC
998 002032 005403          CLR      %3
999 002034 001401          NEG      %3
1000 002036 000000          BEQ      .+4
1001 002038 000000          HLT
1002 002040 000240          ;TEST "NEG"
1003 002042 000277          SCOPE
1004 002044 005003          SCC
1005 002046 005403          CLR      %3
1006 002048 001401          NEG      %3
1007 002050 000000          BEQ      .+4
1008 002052 000000          HLT
1009 002054 000240          ;TEST "NEG"
1010 002056 000277          SCOPE
1011 002058 005003          SCC
1012 002060 005403          CLR      %3
1013 002062 001401          NEG      %3
1014 002064 000000          BEQ      .+4
1015 002066 000000          HLT
1016 002068 000240          ;TEST "NEG"
1017 002070 000277          SCOPE
1018 002072 005003          SCC
1019 002074 005403          CLR      %3
1020 002076 001401          NEG      %3
1021 002078 000000          BEQ      .+4
1022 002080 000000          HLT
1023 002082 000240          ;TEST "NEG"
1024 002084 000277          SCOPE
1025 002086 005003          SCC
1026 002088 005403          CLR      %3
1027 002090 001401          NEG      %3
1028 002092 000000          BEQ      .+4
1029 002094 000000          HLT
1030 002096 000240          ;TEST "NEG"
1031 002098 000277          SCOPE
1032 002100 005003          SCC
1033 002102 005403          CLR      %3
1034 002104 001401          NEG      %3
1035 002106 000000          BEQ      .+4
1036 002108 000000          HLT
1037 002110 000240          ;TEST "NEG"
1038 002112 000277          SCOPE
1039 002114 005003          SCC
1040 002116 005403          CLR      %3
1041 002118 001401          NEG      %3
1042 002120 000000          BEQ      .+4
1043 002122 000000          HLT
1044 002124 000240          ;TEST "NEG"
1045 002126 000277          SCOPE
1046 002128 005003          SCC
1047 002130 005403          CLR      %3
1048 002132 001401          NEG      %3
1049 002134 000000          BEQ      .+4
1050 002136 000000          HLT
1051 002138 000240          ;TEST "NEG"
1052 002140 000277          SCOPE
1053 002142 005003          SCC
1054 002144 005403          CLR      %3
1055 002146 001401          NEG      %3
1056 002148 000000          BEQ      .+4
1057 002150 000000          HLT
1058 002152 000240          ;TEST "NEG"
1059 002154 000277          SCOPE
1060 002156 005003          SCC
1061 002158 005403          CLR      %3
1062 002160 001401          NEG      %3
1063 002162 000000          BEQ      .+4
1064 002164 000000          HLT
1065 002166 000240          ;TEST "NEG"
1066 002168 000277          SCOPE
1067 002170 005003          SCC
1068 002172 005403          CLR      %3
1069 002174 001401          NEG      %3
1070 002176 000000          BEQ      .+4
1071 002178 000000          HLT
1072 002180 000240          ;TEST "NEG"
1073 002182 000277          SCOPE
1074 002184 005003          SCC
1075 002186 005403          CLR      %3
1076 002188 001401          NEG      %3
1077 002190 000000          BEQ      .+4
1078 002192 000000          HLT
1079 002194 000240          ;TEST "NEG"
1080 002196 000277          SCOPE
1081 002198 005003          SCC
1082 002200 005403          CLR      %3
1083 002202 001401          NEG      %3
1084 002204 000000          BEQ      .+4
1085 002206 000000          HLT
1086 002208 000240          ;TEST "NEG"
1087 002210 000277          SCOPE
1088 002212 005003          SCC
1089 002214 005403          CLR      %3
1090 002216 001401          NEG      %3
1091 002218 000000          BEQ      .+4
1092 002220 000000          HLT
1093 002222 000240          ;TEST "NEG"
1094 002224 000277          SCOPE
1095 002226 005003          SCC
1096 002228 005403          CLR      %3
1097 002230 001401          NEG      %3
1098 002232 000000          BEQ      .+4
1099 002234 000000          HLT
1100 002236 000240          ;TEST "NEG"
1101 002238 000277          SCOPE
1102 002240 005003          SCC
1103 002242 005403          CLR      %3
1104 002244 001401          NEG      %3
1105 002246 000000          BEQ      .+4
1106 002248 000000          HLT
1107 002250 000240          ;TEST "NEG"
1108 002252 000277          SCOPE
1109 002254 005003          SCC
1110 002256 005403          CLR      %3
1111 002258 001401          NEG      %3
1112 002260 000000          BEQ      .+4
1113 002262 000000          HLT
1114 002264 000240          ;TEST "NEG"
1115 002266 000277          SCOPE
1116 002268 005003          SCC
1117 002270 005403          CLR      %3
1118 002272 001401          NEG      %3
1119 002274 000000          BEQ      .+4
1120 002276 000000          HLT
1121 002278 000240          ;TEST "NEG"
1122 002280 000277          SCOPE
1123 002282 005003          SCC
1124 002284 005403          CLR      %3
1125 002286 001401          NEG      %3
1126 002288 000000          BEQ      .+4
1127 002290 000000          HLT
1128 002292 000240          ;TEST "NEG"
1129 002294 000277          SCOPE
1130 002296 005003          SCC
1131 002298 005403          CLR      %3
1132 002300 001401          NEG      %3
1133 002302 000000          BEQ      .+4
1134 002304 000000          HLT
1135 002306 000240          ;TEST "NEG"
1136 002308 000277          SCOPE
1137 002310 005003          SCC
1138 002312 005403          CLR      %3
1139 002314 001401          NEG      %3
1140 002316 000000          BEQ      .+4
1141 002318 000000          HLT
1142 002320 000240          ;TEST "NEG"
1143 002322 000277          SCOPE
1144 002324 005003          SCC
1145 002326 005403          CLR      %3
1146 002328 001401          NEG      %3
1147 002330 000000          BEQ      .+4
1148 002332 000000          HLT
1149 002334 000240          ;TEST "NEG"
1150 002336 000277          SCOPE
1151 002338 005003          SCC
1152 002340 005403          CLR      %3
1153 002342 001401          NEG      %3
1154 002344 000000          BEQ      .+4
1155 002346 000000          HLT
1156 002348 000240          ;TEST "NEG"
1157 002350 000277          SCOPE
1158 002352 005003          SCC
1159 002354 005403          CLR      %3
1160 002356 001401          NEG      %3
1161 002358 000000          BEQ      .+4
1162 002360 000000          HLT
1163 002362 000240          ;TEST "NEG"
1164 002364 000277          SCOPE
1165 002366 005003          SCC
1166 002368 005403          CLR      %3
1167 002370 001401          NEG      %3
1168 002372 000000          BEQ      .+4
1169 002374 000000          HLT
1170 002376 000240          ;TEST "NEG"
1171 002378 000277          SCOPE
1172 002380 005003          SCC
1173 002382 005403          CLR      %3
1174 002384 001401          NEG      %3
1175 002386 000000          BEQ      .+4
1176 002388 000000          HLT
1177 002390 000240          ;TEST "NEG"
1178 002392 000277          SCOPE
1179 002394 005003          SCC
1180 002396 005403          CLR      %3
1181 002398 001401          NEG      %3
1182 002400 000000          BEQ      .+4
1183 002402 000000          HLT
1184 002404 000240          ;TEST "NEG"
1185 002406 000277          SCOPE
1186 002408 005003          SCC
1187 002410 005403          CLR      %3
1188 002412 001401          NEG      %3
1189 002414 000000          BEQ      .+4
1190 002416 000000          HLT
1191 002418 000240          ;TEST "NEG"
1192 002420 000277          SCOPE
1193 002422 005003          SCC
1194 002424 005403          CLR      %3
1195 002426 001401          NEG      %3
1196 002428 000000          BEQ      .+4
1197 002430 000000          HLT
1198 002432 000240          ;TEST "NEG"
1199 002434 000277          SCOPE
1200 002436 005003          SCC
1201 002438 005403          CLR      %3
1202 002440 001401          NEG      %3
1203 002442 000000          BEQ      .+4
1204 002444 000000          HLT
1205 002446 000240          ;TEST "NEG"
1206 002448 000277          SCOPE
1207 002450 005003          SCC
1208 002452 005403          CLR      %3
1209 002454 001401          NEG      %3
1210 002456 000000          BEQ      .+4
1211 002458 000000          HLT
1212 002460 000240          ;TEST "NEG"
1213 002462 000277          SCOPE
1214 002464 005003          SCC
1215 002466 005403          CLR      %3
1216 002468 001401          NEG      %3
1217 002470 000000          BEQ      .+4
1218 002472 000000          HLT
1219 002474 000240          ;TEST "NEG"
1220 002476 000277          SCOPE
1221 002478 005003          SCC
1222 002480 005403          CLR      %3
1223 002482 001401          NEG      %3
1224 002484 000000          BEQ      .+4
1225 002486 000000          HLT
1226 002488 000240          ;TEST "NEG"
1227 002490 000277          SCOPE
1228 002492 005003          SCC
1229 002494 005403          CLR      %3
1230 002496 001401          NEG      %3
1231 002498 000000          BEQ      .+4
1232 002500 000000          HLT
1233 002502 000240          ;TEST "NEG"
1234 002504 000277          SCOPE
1235 002506 005003          SCC
1236 002508 005403          CLR      %3
1237 002510 001401          NEG      %3
1238 002512 000000          BEQ      .+4
1239 002514 000000          HLT
1240 002516 000240          ;TEST "NEG"
1241 002518 000277          SCOPE
1242 002520 005003          SCC
1243 002522 005403          CLR      %3
1244 002524 001401          NEG      %3
1245 002526 000000          BEQ      .+4
1246 002528 000000          HLT
1247 002530 000240          ;TEST "NEG"
1248 002532 000277          SCOPE
1249 002534 005003          SCC
1250 002536 005403          CLR      %3
1251 002538 001401          NEG      %3
1252 002540 000000          BEQ      .+4
1253 002542 000000          HLT
1254 002544 000240          ;TEST "NEG"
1255 002546 000277          SCOPE
1256 002548 005003          SCC
1257 002550 005403          CLR      %3
1258 002552 001401          NEG      %3
1259 002554 000000          BEQ      .+4
1260 002556 000000          HLT
1261 002558 000240          ;TEST "NEG"
1262 002560 000277          SCOPE
1263 002562 005003          SCC
1264 002564 005403          CLR      %3
1265 002566 001401          NEG      %3
1266 002568 000000          BEQ      .+4
1267 002570 000000          HLT
1268 002572 000
```

```

799 001646 000277          SCC
800 001650 005003          CLR      %3          ;000000
801 001652 005203          INC      %3          ;000001
802 001654 005403          NEG      %3          ;177777
803 001656 100401          BMI      .+4
804 001660 000000          HLT
;TEST ADC
805
806 001662 000240          SCOPE
807
;CARRY=1
808 001664 005003          CLR      %3          ;000000
809 001666 000261          SEC
;SET C
810 001670 005503          ADC      %3          ;000001
811 001672 001001          BNE      .+4
812 001674 000000          HLT
;Z NOT CLEARED
813
;TEST "ADC"
814 001676 000240          SCOPE
815 001700 000257          CCC
;CARRY=0
816 001702 005003          CLR      %3          ;000000
817 001704 005503          ADC      %3          ;ADD-CARRY=000000
818 001706 001401          BEQ      .+4
;Z NOT SET
819 001710 000000          HLT
;Z NOT SET
820
;TEST "SBC"
821 001712 000240          SCOPE
822
;CARRY=1
823 001714 005003          CLR      %3          ;000000
824 001716 000261          SEC
;SET C
825 001720 005603          SBC      %3          ;000000-1=177777
826 001722 100401          BMI      .+4
827 001724 000000          HLT
;N NOT SET
828
;TEST TST
829 001726 000240          SCOPE
830 001730 005003          CLR      %3          ;000000
831 001732 000277          SCC
;SET CODES
832 001734 005703          TST      %3          ;N=0,Z=1
833 001736 100001          BPL      .+4
;N WAS NOT CLEARED
834 001740 000000          HLT
835 001742 000240          SCOPE
;BASIC TEST FOR REGISTER %3
836
;TEST "CLRB"
837
838
839 001744 000240          SCOPE
840 001746 000277          SCC
841 001750 105003          CLRB      %3          ;SHOULD SET Z
842 001752 001401          BEQ      .+4          ;Z NOT SET
843 001754 000000          HLT
;TEST "COMB"
844
845 001756 000240          SCOPE
846 001760 000277          SCC
847 001762 105003          CLRB      %3          ;000000
848 001764 105103          COMB      %3          ;17777,N SHOULD BE SET
849 001766 100401          BMI      .+4          ;"N" NOT SET
850 001770 000000          HLT
;TEST "INCB"
851
852 001772 000240          SCOPE
853 001774 000277          SCC
854 001776 105003          CLRB      %3          ;CLEAR
  
```

855	002000	105103	COMB	%3	: COMPLIMENT
856	002002	105203	INCB	%3	: ALL ONES TO ZERO, AT Z
857	002004	001401	BEQ	+.4	: BRANCH ON Z
858	002006	000000	HLT		: Z NOT SET
859			; TEST "DECB"		
860	002010	000240	SCOPE		
861	002012	000277	SCC		
862	002014	105003	CLRB	%3	: CLEAR
863	002016	105303	DECB	%3	: ZERO MINUS 1=17777
864	002020	100401	BMI	+.4	
865	002022	000000	HLT		: N NOT SET
866			; TEST "NEGB"		
867	002024	000240	SCOPE		
868	002026	000277	SCC		
869	002030	105003	CLRB	%3	: 000000
870	002032	105403	NEGB	%3	: 000000
871	002034	001401	BEQ	+.4	: Z NOT SET
872	002036	000000	HLT		: Z NOT SET
873			; TEST "NEGB"		
874	002040	000240	SCOPE		
875	002042	000277	SCC		
876	002044	105003	CLRB	%3	: 000000
877	002046	105203	INCB	%3	: 000001
878	002050	105403	NEGB	%3	: 177777
879	002052	100401	BMI	+.4	
880	002054	000000	HLT		: N NOT SET
881			; TEST ADCB		
882	002056	000240	SCOPE		
883					: CARRY=1
884	002060	105003	CLRB	%3	: 000000
885	002062	000261	SEC		: SET C
886	002064	105503	ADCB	%3	: 000001
887	002066	001001	BNE	+.4	
888	002070	000000	HLT		: Z NOT CLEARED
889			; TEST "ADCB"		
890	002072	000240	SCOPE		
891	002074	000257	CCC		: CARRY=0
892	002076	105003	CLRB	%3	: 000000
893	002100	105503	ADCB	%3	: ADD-CARRY=000000
894	002102	001401	BEQ	+.4	: Z NOT SET
895	002104	000000	HLT		: Z NOT SET
896			; TEST "SBCB"		
897	002106	000240	SCOPE		
898					: CARRY=1
899	002110	105003	CLRB	%3	: 000000
900	002112	000261	SEC		: SET C
901	002114	105603	SBCB	%3	: 000000-1=177777
902	002116	100401	BMI	+.4	
903	002120	000000	HLT		: N NOT SET
904			; TEST TSTB		
905	002122	000240	SCOPE		
906	002124	105003	CLRB	%3	: 000000
907	002126	000277	SCC		: SET CODES
908	002130	105703	TSTB	%3	: N=0, Z=1
909	002132	100001	BPL	+.4	
910	002134	000000	HLT		: N WAS NOT CLEARED

```

911 002136 000240          SCOPE
912
913
914
915          ;BASIC TEST FOR REGISTER X4
916
917          ;TEST "CLR"
918          SCOPE
919          SCC
920          CLR          %4          ;SHOULD SET Z
921          BEQ          .+4        ;Z NOT SET
922          HLT
923
924          ;TEST "COM"
925          SCOPE
926          SCC
927          CLR          %4          ;000000
928          COM          %4          ;17777 N SHOULD BE SET
929          BMI          .+4        ;"N" NOT SET
930          HLT
931
932          ;TEST "INC"
933          SCOPE
934          SCC
935          CLR          %4          ;CLEAR
936          COM          %4          ;COMPLIMENT
937          INC          %4          ;ALL ONES TO ZERO, AT Z
938          BEQ          .+4        ;BRANCH ON Z
939          HLT
940          ;Z NOT SET
941
942          ;TEST "DEC"
943          SCOPE
944          SCC
945          CLR          %4          ;CLEAR
946          DEC          %4          ;ZERO MINUS 1=17777
947          BMI          .+4
948          HLT
949          ;N NOT SET
950
951          ;TEST "NEG"
952          SCOPE
953          SCC
954          CLR          %4          ;000000
955          NEG          %4          ;000000
956          BEQ          .+4        ;Z NOT SET
957          HLT
958          ;Z NOT SET
959
960          ;TEST "NEG"
961          SCOPE
962          SCC
963          CLR          %4          ;000000
964          INC          %4          ;000001
965          NEG          %4          ;177777
966          BMI          .+4
967          HLT
968          ;N NOT SET
969
970          ;TEST AOC
971          SCOPE
972
973          CLR          %4          ;CARRY=1
974          SEC          %4          ;000000
975          AOC          %4          ;SET C
976          BNE          .+4        ;000001
977          HLT
978          ;Z NOT CLEARED

```

967			;TEST "ADC"		
968	002266	000240	SCOPE		
969	002270	000257	CCC		:CARRY=0
970	002272	005004	CLR	%4	:000000
971	002274	005504	ADC	%4	:ADD-CARRY=000000
972	002276	001401	BEQ	.+4	:Z NOT SET
973	002300	000000	HLT		:Z NOT SET
974			;TEST "SBC"		
975	002302	000240	SCOPE		
976					:CARRY=1
977	002304	005004	CLR	%4	:000000
978	002306	000261	SEC		:SET C
979	002310	005604	SBC	%4	:000000-1=177777
980	002312	100401	BMI	.+4	
981	002314	000000	HLT		:N NOT SET
982			;TEST TST		
983	002316	000240	SCOPE		
984	002320	005004	CLR	%4	:000000
985	002322	000277	SCC		:SET CODES
986	002324	005704	TST	%4	:N=0,Z=1
987	002326	100001	BPL	.+4	
988	002330	000000	HLT		:N WAS NOT CLEARED
989	002332	000240	SCOPE		
990			;BASIC TEST FOR REGISTER X4		
991					
992			;TEST "CLRB"		
993	002334	000240	SCOPE		
994	002336	000277	SCC		
995	002340	105004	CLRB	%4	:SHOULD SET Z
996	002342	001401	BEQ	.+4	:Z NOT SET
997	002344	000000	HLT		
998			;TEST "COMB"		
999	002346	000240	SCOPE		
1000	002350	000277	SCC		
1001	002352	105004	CLRB	%4	:000000
1002	002354	105104	COMB	%4	:17777,N SHOULD BE SET
1003	002356	100401	BMI	.+4	: "N" NOT SET
1004	002360	000000	HLT		
1005			;TEST "INCB"		
1006	002362	000240	SCOPE		
1007	002364	000277	SCC		
1008	002366	105004	CLRB	%4	:CLEAR
1009	002370	105104	COMB	%4	:COMPLIMENT
1010	002372	105204	INCB	%4	:ALL ONES TO ZERO, AT Z
1011	002374	001401	BEQ	.+4	:BRANCH ON Z
1012	002376	000000	HLT		:Z NOT SET
1013			;TEST "DECB"		
1014	002400	000240	SCOPE		
1015	002402	000277	SCC		
1016	002404	105004	CLRB	%4	:CLEAR
1017	002406	105304	DECB	%4	:ZERO MINUS 1=17777
1018	002410	100401	BMI	.+4	
1019	002412	000000	HLT		:N NOT SET
1020			;TEST "NEGB"		
1021	002414	000240	SCOPE		
1022	002416	000277	SCC		

K02

1023	002420	105004	CLRB	%4	:000000
1024	002422	105404	NEGB	%4	:000000
1025	002424	001401	BEQ	+.4	:Z NOT SET
1026	002426	000000	HLT		:Z NOT SET
1027			;TEST "NEGB"		
1028	002430	000240	SCOPE		
1029	002432	000277	SCC		
1030	002434	105004	CLRB	%4	:000000
1031	002436	105204	INCB	%4	:000001
1032	002440	105404	NEGB	%4	:177777
1033	002442	100401	BMT	+.4	
1034	002444	000000	HLT		:N NOT SET
1035			;TEST ADCB		
1036	002446	000240	SCOPE		
1037					:CARRY=1
1038	002450	105004	CLRB	%4	:000000
1039	002452	000261	SEC		:SET C
1040	002454	105504	ADCB	%4	:000001
1041	002456	001001	BNE	+.4	
1042	002460	000000	HLT		:Z NOT CLEARED
1043			;TEST "ADCB"		
1044	002462	000240	SCOPE		
1045	002464	000257	CCC		:CARRY=0
1046	002466	105004	CLRB	%4	:000000
1047	002470	105504	ADCB	%4	:ADD-CARRY=000000
1048	002472	001401	BEQ	+.4	:Z NOT SET
1049	002474	000000	HLT		:Z NOT SET
1050			;TEST "SBCB"		
1051	002476	000240	SCOPE		
1052					:CARRY=1
1053	002500	105004	CLRB	%4	:000000
1054	002502	000261	SEC		:SET C
1055	002504	105604	SBCB	%4	:000000-1=177777
1056	002506	100401	BMT	+.4	
1057	002510	000000	HLT		:N NOT SET
1058			;TEST TSTB		
1059	002512	000240	SCOPE		
1060	002514	105004	CLRB	%4	:000000
1061	002516	000277	SCC		:SET CODES
1062	002520	105704	TSTB	%4	:N=0,Z=1
1063	002522	100001	BPL	+.4	
1064	002524	000000	HLT		:N WAS NOT CLEARED
1065	002526	000240	SCOPE		
1066					
1067					
1068			;BASIC TEST FOR REGISTER %5		
1069					
1070			;TEST "CLR"		
1071	002530	000240	SCOPE		
1072	002532	000277	SCC		
1073	002534	005005	CLR	%5	:SHOULD SET Z
1074	002536	001401	BEQ	+.4	:Z NOT SET
1075	002540	000000	HLT		
1076			;TEST "COM"		
1077	002542	000240	SCOPE		
1078	002544	000277	SCC		

1079	002546	005005	CLR	%5	;000000
1080	002550	005105	COM	%5	;17777 N SHOULD BE SET
1081	002552	100401	BMI	.+4	;N NOT SET
1082	002554	000000	HLT		
1083			;TEST "INC"		
1084	002556	000240	SCOPE		
1085	002560	000277	SCC		
1086	002562	005005	CLR	%5	;CLEAR
1087	002564	005105	COM	%5	;COMPLIMENT
1088	002566	005205	INC	%5	;ALL ONES TO ZERO, AT Z
1089	002570	001401	BEQ	.+4	;BRANCH ON Z
1090	002572	000000	HLT		;Z NOT SET
1091			;TEST "DEC"		
1092	002574	000240	SCOPE		
1093	002576	000277	SCC		
1094	002600	005005	CLR	%5	;CLEAR
1095	002602	005305	DEC	%5	;ZERO MINUS 1=17777
1096	002604	100401	BMI	.+4	
1097	002606	000000	HLT		;N NOT SET
1098			;TEST "NEG"		
1099	002610	000240	SCOPE		
1100	002612	000277	SCC		
1101	002614	005005	CLR	%5	;000000
1102	002616	005405	NEG	%5	;000000
1103	002620	001401	BEQ	.+4	;Z NOT SET
1104	002622	000000	HLT		;Z NOT SET
1105			;TEST "NEG"		
1106	002624	000240	SCOPE		
1107	002626	000277	SCC		
1108	002630	005005	CLR	%5	;000000
1109	002632	005205	INC	%5	;000001
1110	002634	005405	NEG	%5	;177777
1111	002636	100401	BMI	.+4	
1112	002640	000000	HLT		;N NOT SET
1113			;TEST ADC		
1114	002642	000240	SCOPE		
1115					;CARRY=1
1116	002644	005005	CLR	%5	;000000
1117	002646	000261	SEC		;SET C
1118	002650	005505	ADC	%5	;000001
1119	002652	001001	BNE	.+4	
1120	002654	000000	HLT		;Z NOT CLEARED
1121			;TEST "ADC"		
1122	002656	000240	SCOPE		
1123	002660	000257	CCC		;CARRY=0
1124	002662	005005	CLR	%5	;000000
1125	002664	005505	ADC	%5	;ADD-CARRY=000000
1126	002666	001401	BEQ	.+4	;Z NOT SET
1127	002670	000000	HLT		;Z NOT SET
1128			;TEST "SBC"		
1129	002672	000240	SCOPE		
1130					;CARRY=1
1131	002674	005005	CLR	%5	;00000
1132	002676	000261	SEC		;SET C
1133	002700	005605	SBC	%5	;000000-1=177777
1134	002702	100401	BMI	.+4	

M02

MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 26
 DOCA.P11

```

1135 002704 000000 HLT ;N NOT SET
1136 ;TEST TST
1137 002706 000240 SCOPE
1138 002710 005005 CLR %5 ;000000
1139 002712 000277 SCC ;SET CODES
1140 002714 005705 TST %5 ;N=0,Z=1
1141 002716 100001 BPL .+4 ;
1142 002720 000000 HLT ;N WAS NOT CLEARED
1143 002722 000240 SCOPE
1144 ;BASIC TEST FOR REGISTER %5
1145
1146 ;TEST "CLRB"
1147 002724 000240 SCOPE
1148 002726 000277 SCC
1149 002730 105005 CLRB %5 ;SHOULD SET Z
1150 002732 001401 BEQ .+4 ;Z NOT SET
1151 002734 000000 HLT
1152 ;TEST "COMB"
1153 002736 000240 SCOPE
1154 002740 000277 SCC
1155 002742 105005 CLRB %5 ;000000
1156 002744 105105 COMB %5 ;17777,N SHOULD BE SET
1157 002746 100401 BMI .+4 ;"N" NOT SET
1158 002750 000000 HLT
1159 ;TEST "INCB"
1160 002752 000240 SCOPE
1161 002754 000277 SCC
1162 002756 105005 CLRB %5 ;CLEAR
1163 002760 105105 COMB %5 ;COMPLIMENT
1164 002762 105205 INCB %5 ;ALL ONES TO ZERO, AT Z
1165 002764 001401 BEQ .+4 ;BRANCH ON Z
1166 002766 000000 HLT ;Z NOT SET
1167 ;TEST "DECB"
1168 002770 000240 SCOPE
1169 002772 000277 SCC
1170 002774 105005 CLRB %5 ;CLEAR
1171 002776 105305 DECB %5 ;ZERO MINUS 1=17777
1172 003000 100401 BMI .+4
1173 003002 000000 HLT ;N NOT SET
1174 ;TEST "NEGB"
1175 003004 000240 SCOPE
1176 003006 000277 SCC
1177 003010 105005 CLRB %5 ;000000
1178 003012 105405 NEGB %5 ;000000
1179 003014 001401 BEQ .+4 ;Z NOT SET
1180 003016 000000 HLT ;Z NOT SET
1181 ;TEST "NEGB"
1182 003020 000240 SCOPE
1183 003022 000277 SCC
1184 003024 105005 CLRB %5 ;000000
1185 003026 105205 INCB %5 ;000001
1186 003030 105405 NEGB %5 ;177777
1187 003032 100401 BMI .+4
1188 003034 000000 HLT ;N NOT SET
1189 ;TEST ADCB
1190 003036 000240 SCOPE
  
```

```

1191                                     ;CARRY=1
1192 003040 105005                      CLRB    %5      ;000000
1193 003042 000261                      SEC     ;SET C
1194 003044 105505                      ADCB    %5      ;000001
1195 003046 001001                      BNE    .+4
1196 003050 000000                      HLT
1197                                     ;Z NOT CLEARED
1198                                     ;TEST "ADCB"
1198 003052 000240                      SCOPE
1199 003054 000257                      CCC
1199                                     ;CARRY=0
1200 003056 105005                      CLRB    %5      ;000000
1201 003060 105505                      ADCB    %5      ;ADD-CARRY=000000
1202 003062 001401                      BEQ    .+4      ;Z NOT SET
1203 003064 000000                      HLT           ;Z NOT SET
1204                                     ;TEST "SBCB"
1205 003066 000240                      SCOPE
1206                                     ;CARRY=1
1207 003070 105005                      CLRB    %5      ;000000
1208 003072 000261                      SEC     ;SET C
1209 003074 105605                      SBCB    %5      ;000000-1=177777
1210 003076 100401                      BMI    .+4
1211 003100 000000                      HLT
1212                                     ;N NOT SET
1212                                     ;TEST TSTB
1213 003102 000240                      SCOPE
1214 003104 105005                      CLRB    %5      ;000000
1215 003106 000277                      SCC
1215                                     ;SET COMES
1216 003110 105705                      TSTB    %5      ;N=0, Z=1
1217 003112 100001                      BPL    .+4
1218 003114 000000                      HLT
1219 003116 000240                      SCOPE
1220                                     ;N WAS NOT CLEARED
1221
1222                                     ;BASIC TEST FOR REGISTER %6
1223
1224                                     ;TEST "CLR"
1225 003120 000240                      SCOPE
1226 003122 000277                      SCC
1227 003124 005006                      CLR     %6      ;SHOULD SET Z
1228 003126 001401                      BEQ    .+4      ;Z NOT SET
1229 003130 000000                      HLT
1230                                     ;TEST "COM"
1231 003132 000240                      SCOPE
1232 003134 000277                      SCC
1233 003136 005006                      CLR     %6      ;000000
1234 003140 005106                      COM     %5      ;17777 N SHOULD BE SET
1235 003142 100401                      BMI    .+4      ;"N" NOT SET
1236 003144 000000                      HLT
1237                                     ;TEST "INC"
1238 003146 000240                      SCOPE
1239 003150 000277                      SCC
1240 003152 005006                      CLR     %6      ;CLEAR
1241 003154 005106                      COM     %6      ;COMPLIMENT
1242 003156 005206                      INC     %6      ;ALL ONES TO ZERO, AT Z
1243 003160 001401                      BEQ    .+4      ;BRANCH ON Z
1244 003162 000000                      HLT           ;Z NOT SET
1245                                     ;TEST "DEC"
1246 003164 000240                      SCOPE

```

1247	003166	000277	SCC		
1248	003170	005006	CLR	%6	; CLEAR
1249	003172	005306	DEC	%6	; ZERO MINUS 1=17777
1250	003174	100401	BMI	.+4	
1251	003176	000000	HLT		; N NOT SET
1252			; TEST "NEG"		
1253	003200	000240	SCOPE		
1254	003202	000277	SCC		
1255	003204	005006	CLR	%6	; 000000
1256	003206	005406	NEG	%6	; 000000
1257	003210	001401	BEQ	.+4	; Z NOT SET
1258	003212	000000	HLT		; Z NOT SET
1259			; TEST "NEG"		
1260	003214	000240	SCOPE		
1261	003216	000277	SCC		
1262	003220	005006	CLR	%6	; 000000
1263	003222	005206	INC	%6	; 000001
1264	003224	005406	NEG	%6	; 177777
1265	003226	100401	BMI	.+4	
1266	003230	000000	HLT		; N NOT SET
1267			; TEST ADC		
1268	003232	000240	SCOPE		
1269					; CARRY=1
1270	003234	005006	CLR	%6	; 000000
1271	003236	000261	SEC		; SET C
1272	003240	005506	ADC	%6	; 000001
1273	003242	001001	BNE	.+4	
1274	003244	000000	HLT		; Z NOT CLEARED
1275			; TEST "ADC"		
1276	003246	000240	SCOPE		
1277	003250	000257	CCC		; CARRY=0
1278	003252	005006	CLR	%6	; 000000
1279	003254	005506	ADC	%6	; ADD-CARRY=000000
1280	003256	001401	BEQ	.+4	; Z NOT SET
1281	003260	000000	HLT		; Z NOT SET
1282			; TEST "SBC"		
1283	003262	000240	SCOPE		
1284					; CARRY=1
1285	003264	005006	CLR	%6	; 000000
1286	003266	000261	SEC		; SET C
1287	003270	005606	SBC	%6	; 000000-1=177777
1288	003272	100401	BMI	.+4	
1289	003274	000000	HLT		; N NOT SET
1290			; TEST TST		
1291	003276	000240	SCOPE		
1292	003300	005306	CLR	%6	; 000000
1293	003302	000277	SCC		; SET CODES
1294	003304	005706	TST	%6	; N=0, Z=1
1295	003306	100001	BPL	.+4	
1296	003310	000000	HLT		; N WAS NOT CLEARED
1297	003312	000240	SCOPE		
1298			; BASIC TEST FOR REGISTER %6		
1299					
1300			; TEST "CLRB"		
1301	003314	000240	SCOPE		
1302	003316	000277	SCC		

1303	003320	105006	CLRB	%6	; SHOULD SET Z
1304	003322	001401	BEQ	.+4	; Z NOT SET
1305	003324	000000	HLT		
1306			; TEST "COMB"		
1307	003326	000240	SCOPE		
1308	003330	000277	SCC		
1309	003332	105006	CLRB	%6	; 000000
1310	003334	105106	COMB	%6	; 17777, N SHOULD BE SET
1311	003336	100401	BMI	.+4	; "N" NOT SET
1312	003340	000000	HLT		
1313			; TEST "INCB"		
1314	003342	000240	SCOPE		
1315	003344	000277	SCC		
1316	003346	105006	CLRB	%6	; CLEAR
1317	003350	105106	COMB	%6	; COMPLIMENT
1318	003352	105206	INCB	%6	; ALL ONES TO ZERO, AT Z
1319	003354	001401	BEQ	.+4	; BRANCH ON Z
1320	003356	000000	HLT		; Z NOT SET
1321			; TEST "DECB"		
1322	003360	000240	SCOPE		
1323	003362	000277	SCC		
1324	003364	105006	CLRB	%6	; CLEAR
1325	003366	105306	DECB	%6	; ZERO MINUS 1=17777
1326	003370	100401	BMI	.+4	
1327	003372	000000	HLT		; N NOT SET
1328			; TEST "NEGB"		
1329	003374	000240	SCOPE		
1330	003376	000277	SCC		
1331	003400	105006	CLRB	%6	; 000000
1332	003402	105406	NEGB	%6	; 000000
1333	003404	001401	BEQ	.+4	; Z NOT SET
1334	003406	000000	HLT		; Z NOT SET
1335			; TEST "NEGB"		
1336	003410	000240	SCOPE		
1337	003412	000277	SCC		
1338	003414	105006	CLRB	%6	; 000000
1339	003416	105206	INCB	%6	; 000001
1340	003420	105406	NEGB	%6	; 177777
1341	003422	100401	BMI	.+4	
1342	003424	000000	HLT		; N NOT SET
1343			; TEST ADCB		
1344	003426	000240	SCOPE		
1345					; CARRY=1
1346	003430	105006	CLRB	%6	; 000000
1347	003432	000261	SEC		; SET C
1348	003434	105506	ADCB	%6	; 000001
1349	003436	001001	BNE	.+4	
1350	003440	000000	HLT		; Z NOT CLEARED
1351			; TEST "ADCB"		
1352	003442	000240	SCOPE		
1353	003444	000257	CCC		; CARRY=0
1354	003446	105006	CLRB	%6	; 000000
1355	003450	105506	ADCB	%6	; ADD-CARRY=000000
1356	003452	001401	BEQ	.+4	; Z NOT SET
1357	003454	000000	HLT		; Z NOT SET
1358			; TEST "SBCB"		


```

1415 003632 000277          SCC
1416 003634 005067 001704  CLR      TEMP      ;000000
1417 003640 005267 001700  INC      TEMP      ;000001
1418 003644 005467 001674  NEG      TEMP      ;177777
1419 003650 100401          BMI
1420 003652 000000          HLT      .+4      ;N NOT SET
1421          ;TEST ADC
1422 003654 000240          SCOPE
1423          ;CARRY=1
1424 003656 005067 001662  CLR      TEMP      ;000000
1425 003662 000261          SEC      ;SET C
1426 003664 005567 001654  ADC      TEMP      ;000001
1427 003670 001001          BNE      .+4
1428 003672 000000          HLT
1429          ;Z NOT CLEARED
1430          ;TEST "ADC"
1431 003674 000240          SCOPE
1432 003676 000257          CCC
1433 003700 005067 001640  CLR      TEMP      ;CARRY=0
1434 003704 005567 001634  ADC      TEMP      ;000000
1435 003710 001401          BEQ      .+4      ;Z NOT SET
1436 003712 000000          HLT      ;Z NOT SET
1437          ;TEST "SBC"
1438 003714 000240          SCOPE
1439          ;CARRY=1
1440 003716 005067 001622  CLR      TEMP      ;000000
1441 003722 000261          SEC      ;SET C
1442 003724 005667 001614  SBC      TEMP      ;000000-1=177777
1443 003730 100401          BMI      .+4
1444 003732 000000          HLT
1445          ;N NOT SET
1446          ;TEST TST
1447 003734 000240          SCOPE
1448 003736 005067 001602  CLR      TEMP      ;000000
1449 003742 000277          SCC
1450 003744 005767 001574  TST      TEMP      ;SET CODES
1451 003750 100001          BPL      .+4      ;N=0,Z=1
1452 003752 000000          HLT
1453 003754 000240          SCOPE      ;N WAS NOT CLEARED
1454          ;BASIC TEST FOR REGISTER TEMP
1455          ;TEST "CLRB"
1456 003756 000240          SCOPE
1457 003760 000277          SCC
1458 003762 105067 001556  CLRB     TEMP      ;SHOULD SET Z
1459 003766 001401          BEQ      .+4      ;Z NOT SET
1460          ;TEST "COMB"
1461 003772 000240          SCOPE
1462 003774 000277          SCC
1463 003776 105067 001542  CLRB     TEMP      ;000000
1464 004002 105167 001536  COMB     TEMP      ;17777,N SHOULD BE SET
1465 004006 100401          BMI      .+4      ;"N" NOT SET
1466 004010 000000          HLT
1467          ;TEST "INCB"
1468 004012 000240          SCOPE
1469 004014 000277          SCC
1470 004016 105067 001522  CLRB     TEMP      ;CLEAR

```

1471	004022	105167	001516	COMB	TEMP		
1472	004026	105267	001512	INCB	TEMP		:COMPLIMENT
1473	004032	001401		BEQ	.+4		:ALL ONES TO ZERO, AT Z
1474	004034	000000		HLT			:BRANCH ON Z
1475				;TEST "DECB"			:Z NOT SET
1476	004036	000240		SCOPE			
1477	004040	000277		SCC			
1478	004042	105067	001476	CLRB	TEMP		:CLEAR
1479	004046	105367	001472	DECB	TEMP		:ZERO MINUS 1=17777
1480	004052	100401		BMI	.+4		
1481	004054	000000		HLT			:N NOT SET
1482				;TEST "NEGB"			
1483	004056	000240		SCOPE			
1484	004050	000277		SCC			
1485	004052	105067	001456	CLRB	TEMP		:000000
1486	004056	105467	001452	NEGB	TEMP		:000000
1487	004072	001401		BEQ	.+4		:Z NOT SET
1488	004074	000000		HLT			:Z NOT SET
1489				;TEST "NEGB"			
1490	004076	000240		SCOPE			
1491	004100	000277		SCC			
1492	004102	105067	001436	CLRB	TEMP		:000000
1493	004106	105267	001432	INCB	TEMP		:000001
1494	004112	105467	001426	NEGB	TEMP		:177777
1495	004116	100401		BMI	.+4		
1496	004120	000000		HLT			:N NOT SET
1497				;TEST ADCB			
1498	004122	000240		SCOPE			
1499							:CARRY=1
1500	004124	105067	001414	CLRB	TEMP		:000000
1501	004130	000261		SEC			:SET C
1502	004132	105567	001406	ADCB	TEMP		:000001
1503	004136	001001		BNE	.+4		
1504	004140	000000		HLT			:Z NOT CLEARED
1505				;TEST "ADCB"			
1506	004142	000240		SCOPE			
1507	004144	000257		CCC			:CARRY=0
1508	004146	105067	001372	CLRB	TEMP		:000000
1509	004152	105567	001366	ADCB	TEMP		:ADD-CARRY=000000
1510	004156	001401		BEQ	.+4		:Z NOT SET
1511	004160	000000		HLT			:Z NOT SET
1512				;TEST "SBCB"			
1513	004162	000240		SCOPE			
1514							:CARRY=1
1515	004164	105067	001354	CLRB	TEMP		:000000
1516	004170	000261		SEC			:SET C
1517	004172	105667	001346	SBCB	TEMP		:000000-1=177777
1518	004176	100401		BMI	.+4		
1519	004200	000000		HLT			:N NOT SET
1520				;TEST TSTB			
1521	004202	000240		SCOPE			
1522	004204	105767	001334	CLRB	TEMP		:000000
1523	004210	000277		SCC			:SET CODES
1524	004212	105767	001326	TSTB	TEMP		:N=0,Z=1
1525	004216	100001		BPL	.+4		
1526	004220	000000		HLT			:N WAS NOT CLEARED

```

1527 004222 000240          SCOPE
1528
1529          ;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS
1530 004224 005000          CLR          %0          ;DATA=000000
1531 004226 005100          COM          %0          ;DATA=177777, CLR .EVEN
1532 004230 105000          CLRB         %0          ;DATA=177400
1533 004232 005700          TST          %0          ;TEST .WORD, SHOULD BE NEGATIVE
1534 004234 100401          BMI          .+4
1535 004236 000000          HLT
1536 004240 105700          TSTB         %0          ;.WORD NOT NEGATIVE
1537 004242 100001          BPL          .+4          ;TEST LSB, SHOULD BE ZERO
1538 004244 000000          HLT
1539 004246 000240          SCOPE          ;N SET, NOT ZERO
1540 004250 005000          CLR          %0          ;DATA=000000
1541 004252 005100          COM          %0          ;DATA=177777
1542 004254 105000          CLRB         %0          ;DATA=177400
1543 004256 005100          COM          %0          ;DATA=000377
1544 004260 100001          BPL          .+4
1545 004262 000000          HLT
1546 004264 105200          INCB
1547 004266 001401          BEQ          .+4          ;N NOT CLEARED
1548 004270 000000          HLT          ;DATA=000000
1549 004272 000240          SCOPE          ;Z NOT SET, INCB FAILED
1550 004274 005000          CLR          %0          ;DATA=000000
1551 004276 005100          COM          %0          ;DATA=177777
1552 004300 105000          CLRB         %0          ;DATA=177400
1553 004302 005100          COM          %0          ;DATA 000377
1554 004304 005200          INC          %0          ;DATA 000400
1555 004306 001001          BNE          .+4          ;Z SHOULD NOT BE SET
1556 004310 000000          HLT          ;Z WAS SET
1557 004312 105700          TSTB         %0          ;LSB IS ZERO
1558 004314 001401          BEQ          .+4          ;SHOULD BRANCH
1559 004316 000000          HLT          ;LS.BYTE NOT ZERO
1560 004320 000240          SCOPE
1561
1562          ;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS
1563 004322 005001          CLR          %1          ;DATA=000000
1564 004324 005101          COM          %1          ;DATA=177777, CLR .EVEN
1565 004326 105001          CLRB         %1          ;DATA=177400
1566 004330 005701          TST          %1          ;TEST .WORD, SHOULD BE NEGATIVE
1567 004332 100401          BMI          .+4
1568 004334 000000          HLT
1569 004336 105701          TSTB         %1          ;.WORD NOT NEGATIVE
1570 004340 100001          BPL          .+4          ;TEST LSB, SHOULD BE ZERO
1571 004342 000000          HLT
1572 004344 000240          SCOPE          ;N SET, NOT ZERO
1573 004346 005001          CLR          %1          ;DATA=000000
1574 004350 005101          COM          %1          ;DATA=177777
1575 004352 105001          CLRB         %1          ;DATA=177400
1576 004354 005101          COM          %1          ;DATA=000377
1577 004356 100001          BPL          .+4
1578 004360 000000          HLT
1579 004362 105201          INCB         %1          ;N NOT CLEARED
1580 004364 001401          BEQ          .+4          ;DATA=000000
1581 004366 000000          HLT
1582 004370 000240          SCOPE          ;Z NOT SET, INCB FAILED

```

```

1583 004372 005001 CLR %1 ;DATA=000000
1584 004374 005101 COM %1 ;DATA=177777
1585 004376 105001 CLR8 %1 ;DATA=177400
1586 004400 005101 COM %1 ;DATA 000377
1587 004402 005201 INC %1 ;DATA 000400
1588 004404 001001 BNE .+4 ;Z SHOULD NOT BE SET
1589 004406 000000 HLT ;Z WAS SET
1590 004410 105701 TSTB %1 ;LSB IS ZERO
1591 004412 001401 BEQ .+4 ;SHOULD BRANCH
1592 004414 000000 HLT ;LS.BYTE NOT ZERO
1593 004416 000240 SCOPE
1594
1595 ;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS
1596 004420 005002 CLR %2 ;DATA=000000
1597 004422 005102 COM %2 ;DATA=177777, CLR .EVEN
1598 004424 105002 CLR8 %2 ;DATA=177400
1599 004426 005702 TST %2 ;TEST .WORD, SHOULD BE NEGATIVE
1600 004430 100401 BMI .+4
1601 004432 000000 HLT ;.WORD NOT NEGATIVE
1602 004434 105702 TSTB %2 ;TEST LSB, SHOULD BE ZERO
1603 004436 100001 BPL .+4
1604 004440 000000 HLT ;N SET, NOT ZERO
1605 004442 000240 SCOPE
1606 004444 005002 CLR %2 ;DATA=000000
1607 004446 005102 COM %2 ;DATA=177777
1608 004450 105002 CLR8 %2 ;DATA=177400
1609 004452 005102 COM %2 ;DATA=000377
1610 004454 100001 BPL .+4
1611 004456 000000 HLT ;N NOT CLEARED
1612 004460 105202 INCB %2 ;DATA=000000
1613 004462 001401 BEQ .+4
1614 004464 000000 HLT ;Z NOT SET, INCB FAILED
1615 004466 000240 SCOPE
1616 004470 005002 CLR %2 ;DATA=000000
1617 004472 005102 COM %2 ;DATA=177777
1618 004474 105002 CLR8 %2 ;DATA=177400
1619 004476 005102 COM %2 ;DATA 000377
1620 004500 005202 INC %2 ;DATA 000400
1621 004502 001001 BNE .+4 ;Z SHOULD NOT BE SET
1622 004504 000000 HLT ;Z WAS SET
1623 004506 105702 TSTB %2 ;LSB IS ZERO
1624 004510 001401 BEQ .+4 ;SHOULD BRANCH
1625 004512 000000 HLT ;LS.BYTE NOT ZERO
1626 004514 000240 SCOPE
1627
1628 ;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS
1629 004516 005003 CLR %3 ;DATA=000000
1630 004520 005103 COM %3 ;DATA=177777, CLR .EVEN
1631 004522 105003 CLR8 %3 ;DATA=177400
1632 004524 005703 TST %3 ;TEST .WORD, SHOULD BE NEGATIVE
1633 004526 100401 BMI .+4
1634 004530 000000 HLT ;.WORD NOT NEGATIVE
1635 004532 105703 TSTB %3 ;TEST LSB, SHOULD BE ZERO
1636 004534 100001 BPL .+4
1637 004536 000000 HLT ;N SET, NOT ZERO
1638 004540 000240 SCOPE

```

1639	004542	005003	CLR	%3	; DATA=000000
1640	004544	005103	COM	%3	; DATA=177777
1641	004546	105003	CLRB	%3	; DATA=177400
1642	004550	005103	COM	%3	; DATA=000377
1643	004552	100001	BPL	.+4	
1644	004554	000000	HLT		; N NOT CLEARED
1645	004556	105203	INCB	%3	; DATA=000000
1646	004560	001401	BEQ	.+4	
1647	004562	000000	HLT		; Z NOT SET, INCB FAILED
1648	004564	000240	SCOPE		
1649	004566	005003	CLR	%3	; DATA=000000
1650	004570	005103	COM	%3	; DATA=177777
1651	004572	105003	CLRB	%3	; DATA=177400
1652	004574	005103	COM	%3	; DATA 000377
1653	004576	005203	INC	%3	; DATA 000400
1654	004600	001001	BNE	.+4	; Z SHOULD NOT BE SET
1655	004602	000000	HLT		; Z WAS SET
1656	004604	105703	TSTB	%3	; LSB IS ZERO
1657	004606	001401	BEQ	.+4	; SHOULD BRANCH
1658	004610	000000	HLT		; LS.BYTE NOT ZERO
1659	004612	000240	SCOPE		

;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS

1662	004614	005004	CLR	%4	; DATA=000000
1663	004616	005104	COM	%4	; DATA=177777, CLR .EVEN
1664	004620	105004	CLRB	%4	; DATA=177400
1665	004622	005704	TST	%4	; TEST .WORD, SHOULD BE NEGATIVE
1666	004624	100401	BMI	.+4	
1667	004626	000000	HLT		; .WORD NOT NEGATIVE
1668	004630	105704	TSTB	%4	; TEST LSB, SHOULD BE ZERO
1669	004632	100001	BPL	.+4	
1670	004634	000000	HLT		; N SET, NOT ZERO
1671	004636	000240	SCOPE		
1672	004640	005004	CLR	%4	; DATA=000000
1673	004642	005104	COM	%4	; DATA=177777
1674	004644	105004	CLRB	%4	; DATA=177400
1675	004646	005104	COM	%4	; DATA=000377
1676	004650	100001	BPL	.+4	
1677	004652	000000	HLT		; N NOT CLEARED
1678	004654	105204	INCB	%4	; DATA=000000
1679	004656	001401	BEQ	.+4	
1680	004660	000000	HLT		; Z NOT SET, INCB FAILED
1681	004662	000240	SCOPE		
1682	004664	005004	CLR	%4	; DATA=000000
1683	004666	005104	COM	%4	; DATA=177777
1684	004670	105004	CLRB	%4	; DATA=177400
1685	004672	005104	COM	%4	; DATA 000377
1686	004674	005204	INC	%4	; DATA 000400
1687	004676	001001	BNE	.+4	; Z SHOULD NOT BE SET
1688	004700	000000	HLT		; Z WAS SET
1689	004702	105704	TSTB	%4	; LSB IS ZERO
1690	004704	001401	BEQ	.+4	; SHOULD BRANCH
1691	004706	000000	HLT		; LS.BYTE NOT ZERO
1692	004710	000240	SCOPE		

;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS

1693
1694

1695	004712	005005	CLR	%5	; DATA=000000
1696	004714	005105	COM	%5	; DATA=177777, CLR .EVEN
1697	004716	105005	CLRB	%5	; DATA=177400
1698	004720	005705	TST	%5	; TEST .WORD, SHOULD BE NEGATIVE
1699	004722	100401	BMI	.+4	
1700	004724	000000	HLT		; .WORD NOT NEGATIVE
1701	004726	105705	TSTB	%5	; TEST LSB, SHOULD BE ZERO
1702	004730	100001	BPL	.+4	
1703	004732	000000	HLT		; N SET, NOT ZERO
1704	004734	000240	SCOPE		
1705	004736	005005	CLR	%5	; DATA=000000
1706	004740	005105	COM	%5	; DATA=177777
1707	004742	105005	CLRB	%5	; DATA=177400
1708	004744	005105	COM	%5	; DATA=000377
1709	004746	100001	BPL	.+4	
1710	004750	000000	HLT		; N NOT CLEARED
1711	004752	105205	INCB	%5	; DATA=000000
1712	004754	001401	BEQ	.+4	
1713	004756	000000	HLT		; Z NOT SET, INCB FAILED
1714	004760	000240	SCOPE		
1715	004762	005005	CLR	%5	; DATA=000000
1716	004764	005105	COM	%5	; DATA=177777
1717	004766	105005	CLRB	%5	; DATA=177400
1718	004770	005105	COM	%5	; DATA 000377
1719	004772	005205	INC	%5	; DATA 000400
1720	004774	001001	BNE	.+4	; Z SHOULD NOT BE SET
1721	004776	000000	HLT		; Z WAS SET
1722	005000	105705	TSTB	%5	; LSB IS ZERO
1723	005002	001401	BEQ	.+4	; SHOULD BRANCH
1724	005004	000000	HLT		; LS.BYTE NOT ZERO
1725	005006	000240	SCOPE		
1726					
1727					
1728	005010	005006	CLR	%6	; DATA=000000
1729	005012	005106	COM	%6	; DATA=177777, CLR .EVEN
1730	005014	105006	CLRB	%6	; DATA=177400
1731	005016	005706	TST	%6	; TEST .WORD, SHOULD BE NEGATIVE
1732	005020	100401	BMI	.+4	
1733	005022	000000	HLT		; .WORD NOT NEGATIVE
1734	005024	105706	TSTB	%6	; TEST LSB, SHOULD BE ZERO
1735	005026	100001	BPL	.+4	
1736	005030	000000	HLT		; N SET, NOT ZERO
1737	005032	000240	SCOPE		
1738	005034	005006	CLR	%6	; DATA=000000
1739	005036	005106	COM	%6	; DATA=177777
1740	005040	105006	CLRB	%6	; DATA=177400
1741	005042	005106	COM	%6	; DATA=000377
1742	005044	100001	BPL	.+4	
1743	005046	000000	HLT		; N NOT CLEARED
1744	005050	105206	INCB	%6	; DATA=000000
1745	005052	001401	BEQ	.+4	
1746	005054	000000	HLT		; Z NOT SET, INCB FAILED
1747	005056	000240	SCOPE		
1748	005060	005006	CLR	%6	; DATA=000000
1749	005062	005106	COM	%6	; DATA=177777
1750	005064	105006	CLRB	%6	; DATA=177400

;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS

K03

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 37
DOCA.P11

```

1751 005066 005106          COM      %6          ;DATA 000377
1752 005070 005206          INC      %6          ;DATA 000400
1753 005072 001001          BNE     .+4         ;Z SHOULD NOT BE SET
1754 005074 000000          HLT
1755 005076 105706          TSTB   %6          ;Z WAS SET
1756 005100 001401          BEQ     .+4         ;LSB IS ZERO
1757 005102 000000          HLT     ;SHOULD BRANCH
1758 005104 000240          SCOPE ;LS.BYTE NOT ZERO
1759
1760          ;TEST MIX OF .WORD AND .BYTE INSTRUCTIONS
1761 005106 005067 000432          CLR     TEMP        ;DATA=000000
1762 005112 005167 000426          COM     TEMP        ;DATA=177777, CLR .EVEN
1763 005116 105067 000422          CLRB   TEMP        ;DATA=177400
1764 005122 005767 000416          TST    TEMP        ;TEST .WORD, SHOULD BE NEGATIVE
1765 005126 100401          BMI     .+4
1766 005130 000000          HLT     ;.WORD NOT NEGATIVE
1767 005132 105767 000406          TSTB   TEMP        ;TEST LSB, SHOULD BE ZERO
1768 005136 100001          BPL     .+4
1769 005140 000000          HLT     ;N SET, NOT ZERO
1770 005142 000240          SCOPE
1771 005144 005067 000374          CLR     TEMP        ;DATA=000000
1772 005150 005167 000370          COM     TEMP        ;DATA=177777
1773 005154 105067 000364          CLRB   TEMP        ;DATA=177400
1774 005160 005167 000360          COM     TEMP        ;DATA=000377
1775 005164 100001          BPL     .+4
1776 005166 000000          HLT     ;N NOT CLEARED
1777 005170 105267 000350          INCB   TEMP        ;DATA=000000
1778 005174 001401          BEQ     .+4
1779 005176 000000          HLT     ;Z NOT SET, INCA FAILED
1780 005200 000240          SCOPE
1781 005202 005067 000336          CLR     TEMP        ;DATA=000000
1782 005206 005167 000332          COM     TEMP        ;DATA=177777
1783 005212 105067 000326          CLRB   TEMP        ;DATA=177400
1784 005216 005167 000322          COM     TEMP        ;DATA 000377
1785 005222 005267 000316          INC     TEMP        ;DATA 000400
1786 005226 001001          BNE     .+4         ;Z SHOULD NOT BE SET
1787 005230 000000          HLT     ;Z WAS SET
1788 005232 105767 000306          TSTB   TEMP        ;LSB IS ZERO
1789 005236 001401          BEQ     .+4         ;SHOULD BRANCH
1790 005240 000000          HLT     ;LS.BYTE NOT ZERO
1791 005242 000240          SCOPE
1792
1793          ;BASIC TEST FOR REGISTER TEMP+1
1794
1795          ;TEST "CLRB"
1796 005244 000240          SCOPE
1797 005246 000277          SCC
1798 005250 105067 000271          CLRB   TEMP+1      ;SHOULD SET Z
1799 005254 001401          BEQ     .+4         ;Z NOT SET
1800 005256 000000          HLT
1801          ;TEST "COMB"
1802 005260 000240          SCOPE
1803 005262 000277          SCC
1804 005264 105067 000255          CLRB   TEMP+1      ;000000
1805 005270 105167 000251          COMB   TEMP+1      ;17777 N SHOULD BE SET
1806 005274 100401          BMI     .+4         ;"N" NOT SET

```

1807	005276	000000		HLT			
1808				;TEST "INCB"			
1809	005300	000240		SCOPE			
1810	005302	000277		SCC			
1811	005304	105067	000235	CLRB	TEMP+1		;CLEAR
1812	005310	105167	000231	COMB	TEMP+1		;COMPLIMENT
1813	005314	105267	000225	INCB	TEMP+1		;ALL ONES TO ZERO, AT Z
1814	005320	001401		BEQ	.+4		;BRANCH ON Z
1815	005322	000000		HLT			;Z NOT SET
1816				;TEST "DECB"			
1817	005324	000240		SCOPE			
1818	005326	000277		SCC			
1819	005330	105067	000211	CLRB	TEMP+1		;CLEAR
1820	005334	105367	000205	DECB	TEMP+1		;ZERO MINUS 1=17777
1821	005340	100401		BMI	.+4		
1822	005342	000000		HLT			;N NOT SET
1823				;TEST "NEGB"			
1824	005344	000240		SCOPE			
1825	005346	000277		SCC			
1826	005350	105067	000171	CLRB	TEMP+1		;000000
1827	005354	105467	000165	NEGB	TEMP+1		;000000
1828	005360	001401		BEQ	.+4		;Z NOT SET
1829	005362	000000		HLT			;Z NOT SET
1830				;TEST "NEGB"			
1831	005364	000240		SCOPE			
1832	005366	000277		SCC			
1833	005370	105067	000151	CLRB	TEMP+1		;000000
1834	005374	105267	000145	INCB	TEMP+1		;000001
1835	005400	105467	000141	NEGB	TEMP+1		;177777
1836	005404	100401		BMI	.+4		
1837	005406	000000		HLT			;N NOT SET
1838				;TEST ADCB			
1839	005410	000240		SCOPE			
1840							;CARRY=1
1841	005412	105067	000127	CLRB	TEMP+1		;000000
1842	005416	000261		SEC			;SET C
1843	005420	105567	000121	ADCB	TEMP+1		;000001
1844	005424	001001		BNE	.+4		
1845	005426	000000		HLT			;Z NOT CLEARED
1846				;TEST "ADCB"			
1847	005430	000240		SCOPE			
1848	005432	000257		CCC			;CARRY=0
1849	005434	105067	000105	CLRB	TEMP+1		;000000
1850	005440	105567	000101	ADCB	TEMP+1		;ADD-CARRY=000000
1851	005444	001401		BEQ	.+4		;Z NOT SET
1852	005446	000000		HLT			;Z NOT SET
1853				;TEST "SBCB"			
1854	005450	000240		SCOPE			
1855							;CARRY=1
1856	005452	105067	000067	CLRB	TEMP+1		;000000
1857	005456	000261		SEC			;SET C
1858	005460	105667	000061	SBCB	TEMP+1		;000000-1=177777
1859	005464	100401		BMI	.+4		
1860	005466	000000		HLT			;N NOT SET
1861				;TEST TSTB			
1862	005470	000240		SCOPE			

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 39
 DOCA.P11

1863	005472	105067	000047		CLRB	TEMP+1		;000000
1864	005476	000277			SCC			;SET CODES
1865	005500	105767	000041		TSTB	TEMP+1		;N=0,Z=1
1866	005504	100001			BPL	.+4		
1867	005506	000000			HLT			;N WAS NOT CLEARED
1868	005510	000240			SCOPE			
1869								
1870	005512	005267	000032		INC	TEMP+4		
1871	005516	001402			BEG	.+6		
1872	005520	000167	172454		JMP	BEGIN		
1873	005524	012737	000207	177566	MOV	#207, @#177566		
1874	005532	105737	177564		TSTB	@#177564		
1875	005536	100375			BPL	.-4		
1876	005540	000167	172434		JMP	BEGIN		
1877	005544	000000			TEMP	:0		
1878	005546	000000				0		
1879	005550	000000				0		
1880		000001			.END			

BEGIN 000200
HLT = 000000

295#	1872	1876											
289#	305	312	320	327	334	342	350	357	365	372	381	388	
396	403	410	418	426	433	441	448	459	466	474	481	488	
496	504	511	519	526	535	542	550	557	564	572	580	587	
595	602	613	620	628	635	642	650	658	665	673	680	689	
696	704	711	718	726	734	741	749	756	767	774	782	789	
796	804	812	819	827	834	843	850	858	865	872	880	888	
895	903	910	921	928	936	943	950	958	966	973	981	988	
997	1004	1012	1019	1026	1034	1042	1049	1057	1064	1075	1082	1090	
1097	1104	1112	1120	1127	1135	1142	1151	1158	1166	1173	1180	1188	
1196	1203	1211	1218	1229	1236	1244	1251	1258	1266	1274	1281	1289	
1296	1305	1312	1320	1327	1334	1342	1350	1357	1365	1372	1383	1390	
1398	1405	1412	1420	1428	1435	1443	1450	1459	1466	1474	1481	1488	
1496	1504	1511	1519	1526	1535	1538	1545	1548	1556	1559	1568	1571	
1578	1581	1589	1592	1601	1604	1611	1614	1622	1625	1634	1637	1644	
1647	1655	1658	1667	1670	1677	1680	1688	1691	1700	1703	1710	1713	
1721	1724	1733	1736	1743	1746	1754	1757	1766	1769	1776	1779	1787	
1790	1800	1807	1815	1822	1829	1837	1845	1852	1860	1867			

SCOPE = 000240

290#	301	307	314	322	329	336	344	352	359	367	373	377	
383	390	398	405	412	420	428	435	443	449	455	461	468	
476	483	490	498	506	513	521	527	531	537	544	552	559	
566	574	582	589	597	603	609	615	622	630	637	644	652	
660	667	675	681	685	691	698	706	713	720	728	736	743	
751	757	763	769	776	784	791	798	806	814	821	829	835	
839	845	852	860	867	874	882	890	897	905	911	917	923	
930	938	945	952	960	968	975	983	989	993	999	1006	1014	
1021	1028	1036	1044	1051	1059	1065	1071	1077	1084	1092	1099	1106	
1114	1122	1129	1137	1143	1147	1153	1160	1168	1175	1182	1190	1198	
1205	1213	1219	1225	1231	1239	1246	1253	1260	1268	1276	1283	1291	
1297	1301	1307	1314	1322	1329	1336	1344	1352	1359	1367	1373	1379	
1385	1392	1400	1407	1414	1422	1430	1437	1445	1451	1455	1461	1468	
1476	1483	1490	1498	1506	1513	1521	1527	1539	1549	1560	1572	1582	
1593	1605	1615	1626	1638	1648	1659	1671	1681	1692	1704	1714	1725	
1737	1747	1758	1770	1780	1791	1796	1802	1809	1817	1824	1831	1839	
1847	1854	1862	1868										

SR = 177570
TEMP = 005544

291#	1381*	1387*	1388*	1394*	1395*	1396*	1402*	1403*	1409*	1410*	1416*	1417*	1418*
1424*	1426*	1432*	1433*	1439*	1441*	1446*	1448	1457*	1463*	1464*	1470*	1471*	
1472*	1478*	1479*	1485*	1486*	1492*	1493*	1494*	1500*	1502*	1508*	1509*	1515*	
1517*	1522*	1524	1761*	1762*	1763*	1764	1767	1771*	1772*	1773*	1774*	1777*	
1781*	1782*	1783*	1784*	1785*	1788	1798*	1804*	1805*	1811*	1812*	1813*	1819*	
1820*	1826*	1827*	1833*	1834*	1835*	1841*	1843*	1849*	1850*	1856*	1858*	1863*	
1855	1870*	1877#											

= 005552

256#	257	259	261	263	265	267	269	271	273	275	277	279	
281	283	285	287	292#	304	311	319	326	333	341	349	356	
364	371	380	387	395	402	409	417	425	432	440	447	458	
465	473	480	487	495	503	510	518	525	534	541	549	556	
563	571	579	586	594	601	612	619	627	634	641	649	657	
664	672	679	688	695	703	710	717	725	733	740	748	755	
766	773	781	788	795	803	811	818	826	833	842	849	857	
864	871	879	887	894	902	909	920	927	935	942	949	957	
965	972	980	96	996	1003	1011	1018	1025	1033	1041	1048	1056	
1063	1074	1081	1089	1096	1103	1111	1119	1126	1134	1141	1150	1157	
1165	1172	1179	1187	1195	1202	1210	1217	1228	1235	1243	1250	1257	
1265	1273	1280	1288	1295	1304	1311	1319	1326	1333	1341	1349	1356	
1364	1371	1382	1389	1397	1404	1411	1419	1427	1434	1442	1449	1458	

.MAIN. MACY11 27(732) 01-OCT-76 09:46 PAGE 45
DOCA.P11 CROSS REFERENCE TABLE -- MACRO NAMES

.SS320	18
.SSCOP	18
.SSIZE	18
.SSUPR	18
.STRAP	18
.STYP8	18
.STYPD	18
.STYPE	18
.STYPO	18
.S4OCA	18
.1170	18

NEGB	408	416	562	570	716	724	870	878	1024	1032	1178	1186	1332	1340	1486
	1494	1827	1835												
SBC	363	517	671	825	979	1133	1287	1441							
SBCB	439	593	747	901	1055	1209	1363	1517	1858						
SCC	302	308	315	323	330	337	369	378	384	391	399	406	413	445	456
	462	469	477	484	491	523	532	538	545	553	560	567	599	610	616
	623	631	638	645	677	686	692	699	707	714	721	753	764	770	777
	785	792	799	831	840	846	853	861	868	875	907	918	924	931	939
	946	953	985	994	1000	1007	1015	1022	1029	1061	1072	1078	1085	1093	1100
	1107	1139	1148	1154	1161	1169	1176	1183	1215	1226	1232	1239	1247	1254	1261
	1293	1302	1308	1315	1323	1330	1337	1369	1380	1386	1393	1401	1408	1415	1447
	1456	1462	1469	1477	1484	1491	1523	1797	1803	1810	1818	1825	1832	1864	
SEC	347	362	423	438	501	516	577	592	655	670	731	746	809	824	885
	900	963	978	1039	1054	1117	1132	1193	1208	1271	1286	1347	1362	1425	1440
TST	1501	1516	1842	1857											
	370	524	678	832	986	1140	1294	1448	1533	1566	1599	1632	1665	1698	1731
TSTB	1764														
	446	600	754	908	1062	1216	1370	1524	1536	1557	1569	1590	1602	1623	1635
	1656	1668	1689	1701	1722	1734	1755	1767	1788	1865	1874				
.ENABL	1														
.END	1880														
.LIST	1														
.MACR	294	295	1529												
.MACRO	1														
.NLIST	1														
.REF	1														
.REPT	257														

ERRORS DETECTED: 0
 DEFAULT GLOBALS GENERATED: 0

* DOCA.SEG/SOL/CRF/PAGNUM/NL:TOC=SYSMAC.CO,DOCA.P11
 RUN-TIME: 26 32 1 SECONDS
 RUN-TIME RATIO: 244/60=4.0
 CORE USED: 34K (67 PAGES)

