

The image displays a grid of 60 small tables, organized into 10 rows and 6 columns. Each table contains technical data, likely related to the 'TRAPS TEST' mentioned in the header. The data is presented in a structured format, possibly as a list of parameters or test results. The text within the tables is small and difficult to read, but the overall layout is consistent across all cells. The tables appear to be part of a larger report or test log.

11-11-77

000000

.REPT 0

IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DFKAB-C-D

PRODUCT NAME: 11/34 TRAP TEST

DATE : MAY 1977

MAINTAINER: DIAGNOSTIC GROUP

AUTHOR: GLENN JOHNSON

COPYRIGHT (C) 1975,1977 DIGITAL EQUIPMENT CORP., MAYNARD, MASS.

THIS SOFTWARE IS FURNISHED TO PURCHASER UNDER A LICENSE FOR USE ON A SINGLE COMPUTER SYSTEM AND CAN BE COPIED (WITH INCLUSION OF DEC'S COPYRIGHT NOTICE) ONLY FOR USE IN SUCH SYSTEM, EXCEPT AS MAY OTHERWISE BE PROVIDED IN WRITING BY DEC.

THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT CORPORATION.

DEC ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DEC.

W4W3W2W1W0V9V8V7V6V5V4V3V2V1V0U9U8U7U6U5U4U3U2U1U0T9T8T7T6T5T4T3T2T1T0S9S8S7S6S5S4S3S2S1S0R9R8R7R6R5R4R3R2R1R0Q9Q8Q7Q6Q5Q4Q3Q2Q1Q0P9P8P7P6P5P4P3P2P1P0O9O8O7O6O5O4O3O2O1O0N9N8N7N6N5N4N3N2N1N0M9M8M7M6M5M4M3M2M1M0L9L8L7L6L5L4L3L2L1L0K9K8K7K6K5K4K3K2K1K0J9J8J7J6J5J4J3J2J1J0I9I8I7I6I5I4I3I2I1I0H9H8H7H6H5H4H3H2H1H0G9G8G7G6G5G4G3G2G1G0F9F8F7F6F5F4F3F2F1F0E9E8E7E6E5E4E3E2E1E0D9D8D7D6D5D4D3D2D1D0C9C8C7C6C5C4C3C2C1C0B9B8B7B6B5B4B3B2B1B0A9A8A7A6A5A4A3A2A1A0

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

- 1. ABSTRACT
THIS IS A TEST OF ALL OPERATIONS AND INSTRUCTIONS THAT CAUSE TRAPS. ALSO TESTED ARE TRAP OVERFLOW CONDITIONS, ODDITIES OF REGISTER 6, INTERRUPTS, THE RESET AND WAIT INSTRUCTIONS.
- 2. REQUIREMENTS
 - 2.1 EQUIPMENT
11/04 STANDARD COMPUTER
 - 2.2 STORAGE
 - 2.2.1 PROGRAM STORAGE - THE ROUTINE USES MEMORY FROM 0000 TO 17500.
- 3. LOADING PROCEDURE
 - 3.1 METHOD
PROCEDURE FOR NORMAL ABSOLUTE TAPES SHOULD BE FOLLOWED.
- 4. STARTING PROCEDURE
THE PROGRAM STARTS AT 200.
IF IT IS DESIRED TO RESET THE PASS COUNT BACK TO ZERC ; THEN START THIS PROGRAM AT LOCATION 210
- 4.2 PROGRAM AND/OR OPERATOR ACTION
LOAD PROGRAM INTO MEMORY. (BOTTOM 4K)
LOAD ADDRESS.
START.
THE PROGRAM WILL LOOP.
IT WILL PRINT "END OF DFKAB" AFTER THE FIRST ITERATION AND THEN PRINTS IT EVERY 15 TIMES (APPROXIMATELY A MINUTE)

77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123

5. OPERATION

5.2 SUBROUTINE ABSTRACTS

5.2.1 BEGIN AT 200

5.2.2 SCOPE

IF A SCOPE LOOP IS NEEDED INSERT A BRANCH AS THE
COMMENT TO THE HALT EXPLAINS.

5.2.3 TRAPCATCHER

THIS IS A SERIES OF INSTRUCTIONS DESIGNED TO DETECT AND
ISOLATE UNEXPECTED TRAPS AND INTERRUPTS, THAT OCCUR IN THE
TRAP AND INTERRUPT VECTOR AREA OF MEMORY.

THE PRINCIPLE OF THIS ROUTINE IS: THE VECTOR ENTRANCE
ADDRESS POINTS TO THE NEXT SEQUENTIAL WORD WHICH WILL CON-
TAIN A HALT (00000) (THIS LOCATION IS ALSO THE STATUS
WORD FOR THAT VECTOR ENTRANCE. BUT THIS WILL HAVE NO EFFECT
ON IT ALSO BEING THE NEXT INSTRUCTION).

IF A HALT OCCURS 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
WHERE THE PROGRAM WAS. WHEN THE INTERRUPT OR
TRAP OCCURRED: MEMORY AS SPECIFIED BY R6 CONTAINS THE
PC OF THE INSTRUCTION FOLLOWING THE INSTRUCTION WHERE THE
TRAP OCCURRED.
THE CONTENTS OF LOCATION 'STESTN'(304) CONTAINS
THE TEST NUMBER THAT IT WAS DOING BEFORE IT
TRAPPED.

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.
NOTE: IF A SCOPE LOOP IS NEEDED
THE COMMENT SECTION OF THE HALT EXPLAINS
HOW TO UTILIZE THIS LOOP.

124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169

6. ERRORS

6.1 ALL ERRORS WILL CAUSE A HALT.

6.1.1 THE PROGRAM CHECKS TO SEE THAT THE P.C. DOESN'T JUMP
WITHIN THE TESTS, BY A SEQUENCE COUNT CALLED 'STSTN'
THIS TEST IS A SEQUENTIAL INCREMENT AND COMPARE COUNT.

EXAMPLE

```
TSTA: INC      2*STSTNM      ; INCREMENT THE TEST NUMBER
      CMP      2*STSTNM      ; COMPARE FOR THE RIGHT TEST
      BNE      TSTA+1-12     ; IF NOT CORRECT BRANCH TO A HALT
      -----
      CODE
```

IMPORTANT

IF AN ERROR IS DETECTED ; IT COULD BE BECAUSE OF TWO REASONS.
A) WRONG TEST NUMBER
B) ERROR IN THE PRESENT TEST.

////////////////////////////////////
THE TEST SEQUENCE LOCATION "TESTN" SHOULD BE CHECKED FIRST
TO SEE IF IT MATCHES THE PRESENT TEST.
IF IT DOESN'T MATCH ; THEN THE CONTENTS OF THIS LOCATION
TELL YOU WHICH TEST IT WAS DOING BEFORE IT HALTED.
////////////////////////////////////

6.2 ERROR RECOVERY

ON TRAP ERRORS - RESTART AT STARTING ADDRESS

7. RESTRICTIONS

7.1 STARTING RESTRICTION

NONE

7.2 OPERATIONAL RESTRICTION

NONE

F01

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 5
DFKABC.P11 03-MAY-77 08:42

SE; 0005

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

8. MISCELLANEOUS

8.1 EXECUTION TIME

FOR ONE ITERATION ABOUT 5 SECONDS.
IT TYPES "END OF DFKAB" APPROXIMATELY EVERY MINUTE.

9. PROGRAM DESCRIPTION

THIS PROGRAM CHECKS THAT ON ALL TRAP OPERATIONS REGISTER 6 IS DECREMENTED THE CORRECT AMOUNT, THAT THE CORRECT PC IS SAVED ON THE STACK, THAT THE OLD CONDITION CODES AND PRIORITY ARE PLACED ON THE STACK AND THAT THE NEW STATUS AND CONDITION CODES ARE CORRECT. BOTH THE "TRAP" AND "EMT" TRAP INSTRUCTIONS ARE TESTED TO SEE THAT ALL COMBINATIONS WILL TRAP. CHECKED ALSO IS THAT ALL RESERVED INSTRUCTIONS WILL TRAP. VERIFICATION OF THE "TRT" INSTRUCTION (00003) WHICH IS USED FOR SOFTWARE DEBUG ROUTINES: ODT, DDT, IS DONE. ALSO, THE TRACE BIT IS CHECKED TO SEE IF IT CAUSES A TRAP. THE RTI AND RTT INSTRUCTIONS ARE CHECKED. STACK OVERFLOW IS ALSO CHECKED FOR ALL THE TRAP INSTRUCTIONS. SPECIAL CHECKS ARE MADE TO SEE IF BUS ERROR TRAPS OCCUR ON NON-EXISTENT MEMORY.

.ENDR

GO1

196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234

; ALL INSTRUCTIONS THAT ARE RESERVED
; SHOULD TRAP TO LOCATION 10, AND THE
; PC THAT POINTS TO THE TRAPPING INSTRUCTION
; SHOULD BE PLACED ON THE STACK

; LISTING

000006
000006
000003
000001
000005
000002
000000
000003
000004
000004
000014
000030
000020
000034
177564
177560
177564
177566
000240
000240
177776
000007
000010
004700
000100
177776

.LIST ME
.NLIST MC,MD,CND
.ABS
SP=%6
R6=%6
TAB=%3
LAST=%1
FIRST=%5
R2=%2
HLT=HALT
TRT=3
ITRAPS=4
RTRAPS=4
RTRAP4=14
RTRAP3=30
RTRAP2=20
RTRAP1=34
TTCSR=177564
TRCSR=177560
TPS=177564
TPB=177566
BELL=240
NOP=240
STATUS=177776
TRAPA=7
RTRAP=10
ILLA=004700
ILLB=100
CC=177776

; RESERVED INST AND ILLEGAL ADDRESSES
; FOR TRACE TRAP
; FOR EMULATOR TRAP
; FOR IOT TRAP
; FOR TRAP INST

H01

235
236 000200 000167 000414
237 000210 000210
238 000210 005037 000306
239 000214 000167 000400
240 000300
241
242
243
244
245 000300
246 000046
247 000046 015502
248 000052 000052
249 000052 000000
250 000300
251
252
253
254
255 000300
256 000300 000000
257 000302 000000
258 000304 000000
259 000306 000000
260 000310 000000
261 000312 000000
262 0003 000000
263 0003 000000
264 000320
265 000320 000
266 000321 000
267 000322 000000
268 000324 000000
269 000326 000000
270
271
272
273
274
275
276 000330
277
278
279
280
281
282
283 000330
284 000024 000024
285 000024 000200
286 000044 000044
287 000044 000330
288 000330
289
290

```
.SPTTL ACT11 HOOKS
;*****
;HOOKS REQUIRED BY ACT11
      $SVPC=.          ;SAVE PC
      .=46
      $SENDAD          ;;1)SET LOC.46 TO ADDRESS OF SENDAD IN .SEOP
      .=52
      .WORD 0          ;;2)SET LOC.52 TO ZERO
      .=$SVPC          ;; RESTORE PC
.SPTTL APT MAILBOX-ETABLE
;*****
.EVEN
$MAIL:          ;; APT MAILBOX
$MSGTY: .WORD   AMSGTY ;; MESSAGE TYPE CODE
$FATAL: .WORD   AFATAL ;; FATAL ERROR NUMBER
$TESTN: .WORD   ATESTN ;; TEST NUMBER
$PASS:  .WORD   APASS  ;; PASS COUNT
$DEVCT: .WORD   ADEVCT ;; DEVICE COUNT
$UNIT:  .WORD   AUNIT  ;; I/O UNIT NUMBER
$MSGAD: .WORD   AMSGAD ;; MESSAGE ADDRESS
$MSGLG: .WORD   AMSGLG ;; MESSAGE LENGTH
$ETABLE:          ;; APT ENVIRONMENT TABLE
$ENV:  .BYTE   AENV   ;; ENVIRONMENT BYTE
$ENVM: .BYTE   AENVM  ;; ENVIRONMENT MODE BITS
$SWREG: .WORD  ASWREG ;; APT SWITCH REGISTER
$USWR: .WORD  AUSWR  ;; USER SWITCHES
$CPUOP: .WORD  ACPUOP ;; CPU TYPE, OPTIONS
;*****
;BITS 15-11=CPU TYPE
;          11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
;          11/70=06,PDQ=07,Q=10
;BIT 10=REAL TIME CLOCK
;BIT 9=FLOATING POINT PROCESSOR
;BIT 8=MEMORY MANAGEMENT
$ETEND:
.MEXIT
.SPTTL APT PARAMETER BLOCK
;*****
;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
;*****
      .SX=.          ;; SAVE CURRENT LOCATION
      .=24          ;; SET POWER FAIL TO POINT TO START OF PROGRAM
      200          ;; FOR APT START UP
      .=44          ;; POINT TO APT INDIRECT ADDRESS PNTR.
      $APTHDR      ;; POINT TO APT HEADER BLOCK
      .=.SX        ;; RESET LOCATION COUNTER
;*****
;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
```



```

291 ;INTERFACE SPEC.
292
293 000330 $APTHD:
294 000330 000000 $SHIBTS: .WORD 0
295 000332 000300 $MBAADR: .WORD $MAIL
296 000334 000002 $STSTM: .WORD 2
297 000336 000002 $SPASTM: .WORD 2
298 000340 000000 $SUNITM: .WORD 0
299 000342 000014 .WORD 0
300 000304 $TSTNM=$TSTN
301 000302 $ERROR=$FATAL
302
303 000500 . =500
304 000500 000000 $BUFF: 0
305 000502 177572 $SR0: 177572
306 000504 177573 $SR0H: 177573
307 000506 177574 $SR1: 177574
308 000510 177576 $SR2: 177576
309 000512 000250 $KTVEC: 250
310 000514 000252 $KTSTA: 252
311 000516 $ADRTAB:
312 000516 177600 $UPDR0: 177600 ;USER PAGE DESCRIPTOR REGISTERS
313 000520 177602 $UPDR1: 177602
314 000522 177604 $UPDR2: 177604
315 000524 177606 $UPDR3: 177606
316 000526 177610 $UPDR4: 177610
317 000530 177612 $UPDR5: 177612
318 000532 177614 $UPDR6: 177614
319 000534 177616 $UPDR7: 177616
320
321 000536 177640 $UPAR0: 177640 ;USER PAGE ADDRESS REGISTERS
322 000540 177642 $UPAR1: 177642
323 000542 177644 $UPAR2: 177644
324 000544 177646 $UPAR3: 177646
325 000546 177650 $UPAR4: 177650
326 000550 177652 $UPAR5: 177652
327 000552 177654 $UPAR6: 177654
328 000554 177656 $UPAR7: 177656
329
330 000556 172300 $KPDR0: 172300 ;KERNEL PAGE DESCRIPTOR REGISTERS
331 000560 172302 $KPDR1: 172302
332 000562 172304 $KPDR2: 172304
333 000564 172306 $KPDR3: 172306
334 000566 172310 $KPDR4: 172310
335 000570 172312 $KPDR5: 172312
336 000572 172314 $KPDR6: 172314
337 000574 172316 $KPDR7: 172316
338
339 000576 172340 $KPAR0: 172340 ;KERNEL PAGE ADDRESS REGISTERS
340 000600 172342 $KPAR1: 172342
341 000602 172344 $KPAR2: 172344
342 000604 172346 $KPAR3: 172346
343 000606 172350 $KPAR4: 172350
344 000610 172352 $KPAR5: 172352
345 000612 172354 $KPAR6: 172354
346 000614 172356 $KPAR7: 172356
    
```

```

0 ; TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
$MAIL ; ADDRESS OF APT MAILBOX (BITS 0-15)
2 ; RUN TIM OF LONGEST TEST
2 ; RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
0 ; ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
$ETEND-$MAIL/2 ; ; LENGTH MAILBOX-ETABLE (WORDS)
    
```

J01

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 9
DFKABC.P11 03-MAY-77 08:42 APT PARAMETER BLOCK

SEQ 0009

347 000616 000614
348
349
350

ADREND: .-2

K01

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 10
 DFKABC.P11 03-MAY-77 08:42 APT PARAMETER BLOCK

SEQ 0010

```

351
352 000620 012737 177777 015530 BEGIN: MOV # -1, @#PASSPT ; CLEAR THE ITERATION COUNTER
353 000626 005067 177446 RESTRT: CLR $MSGTY
354 000632 012767 015706 177164 MOV #PWRDWN, 24 ; SET UP THE POWER DOWN VECTOR
355 000640 012767 000340 177160 MOV #340, 26 ; SET UP POWER DOWN PRIORITY
356 000646 005067 177432 CLR $TSTNM
357 000652 005067 177424 CLR $ERROR
358 000656 012702 000300 MOV # $MSGTY, R2
359
360 ; SPECIAL CASE OF ODD; .EVEN .BYTE AND REGISTER 6
361 000000 HERE=0
362
363 000662 000167 000024 JMP TST1
364 000666 000000 K1: 0
365 000670 000000 K2: 0
366 000672 000000 K3: 0
367 000674 000000 K4: 0
368 000676 000000 K5: 0
369 000700 000000 K6: 0
370 000702 052525 K7: 052525
371 000704 052400 K10: 052400
372 000706 000000 K11: 0
373 000710 000000 K12: 0
374 ; *****
375 ; TEST 1 TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES
376 ; *****
377 000712 005237 000304 TST1: INC @#$TESTN ; UPDATE TEST NUMBER
378 000716 022737 000001 000304 CMP #1, @#$TESTN ; SEQUENCE ERROR?
379 000724 001137 BNE TST2-12 ; BR TO ERROR HALT ON SEQ ERROR
380 000726 005006 CLR %6
381 000730 112667 177044 MOVB (6)+, HERE ; SIX SHOULD INCREMENT BY TWO
382 000734 020627 000002 CMP %6, #2
383 000740 001405 BEQ BR1
384 000742 012737 000001 000302 MOV #1, @#$FATAL ; MOVE TO MAILBOX # ***** 1 *****
385 000750 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
386 000752 000000 HALT ; R6 DID NOT AUTO INCREMENT BY TWO
387 ; TO SCOPE REPLACE HALT W/ 240
388 ; AND REPLACE NEXT INST W/ 764
389
390 000754 012706 001000 BR1: MOV #1000, %6
391 000760 114627 000000 MOVB -(6), #HERE ; SHOULD DECREMENT BY TWO
392 000764 020627 000776 CMP %6, #776
393 000770 001405 BEQ BR2
394 000772 012737 000002 000302 MOV #?, @#$FATAL ; MOVE TO MAILBOX # ***** 2 *****
395 001000 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
396 001002 000000 HALT ; R6 DID NOT AUTO DECREMENT BY 2
397 ; TO SCOPE REPLACE HALT W/ 240
398 ; AND REPLACE NEXT INST W/ 750
399
400 001004 005006 BR2: CLR %6
401 001006 112626 MOVB (6)+, (6)+ ; DOUBLES AUTO INCREMENT OF R6
402 001010 020627 000004 CMP %6, #4
403 001014 001405 BEQ BR3
404 001016 012737 000003 000302 MOV #3, @#$FATAL ; MOVE TO MAILBOX # ***** 3 *****
405 001024 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
406 001026 000000 HALT ; WRONG AUTO INCREMENT OF R6
    
```

L01

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 11
 DFKABC.P11 03-MAY-77 08:42 T1

TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES

SEQ 0011

```

407 ; TO SCOPE REPLACE HALT W/ 240
408 ; AND REPLACE NEXT INST W/ 736
409
410 BR3: CLR %6
411 CLR %4
412 CMPB (6)+ (4)+ ; TEST INCREMENT OF R6
413 CMP %6 #2
414 BEQ BR4
415 MOV #4,%6 ; MOVE TO MAILBOX # ***** 4 *****
416 INC (R2) ; SET MSGTYP TO FATAL ERROR
417 HALT ; WRONG INCREMENT OF R6
418 ; TO SCOPE REPLACE HALT W/ 240
419 ; AND REPLACE NEXT INST W/ 723
420
421 BR4: CLR %6
422 CLR %4
423 CMPB (4)+ (6)+ ; TEST INCREMENT OF R6
424 CMP %6 #2
425 BEQ BR5
426 MOV #5,%6 ; MOVE TO MAILBOX # ***** 5 *****
427 INC (R2) ; SET MSGTYP TO FATAL ERROR
428 HALT ; WRONG INCREMENT OF R6
429 ; TO SCOPE REPLACE HALT W/ 240
430 ; AND REPLACE NEXT INST W/ 710
431
432 BR5: CLR %6
433 CLR %4
434 CMPB (6)+ (4)+ ; TEST INCREMENT OF R4
435 CMP %4 #1
436 BEQ BR6
437 MOV #6,%6 ; MOVE TO MAILBOX # ***** 6 *****
438 INC (R2) ; SET MSGTYP TO FATAL ERROR
439 HALT ; WRONG INCREMENT OF R4
440 ; TO SCOPE REPLACE HALT W/ 240
441 ; AND REPLACE NEXT INST W/ 675
442
443 BR6: CLR %6
444 CLR %4
445 CMPB (4)+ (6)+ ; TEST INCREMENT OF R6
446 CMP %6 #2
447 BEQ BR7
448 MOV #7,%6 ; MOVE TO MAILBOX # ***** 7 *****
449 INC (R2) ; SET MSGTYP TO FATAL ERROR
450 HALT ; WRONG INCREMENT OF R6
451 ; TO SCOPE REPLACE HALT W/ 240
452 ; AND REPLACE NEXT INST W/ 662
453
454 BR7: CLR %6
455 CLR %4
456 CMPB (4)+ (6)+ ; TEST INCREMENT OF R4
457 CMP %4 #1
458 BEQ BR10
459 MOV #10,%6 ; MOVE TO MAILBOX # ***** 10 *****
460 INC (R2) ; SET MSGTYP TO FATAL ERROR
461 HALT ; WRONG INCREMENT OF R4
462 ; TO SCOPE REPLACE HALT W/ 240
463 ; AND REPLACE NEXT INST W/ 647

```

MO1

```

463
464 001206 012706 001000 BR10: MOV #1000,%6
465 001212 124627 000000 CMPB -(6),#HERE ;TEST DECREMENT OF R6
466 001216 022706 000776 CMP #776,%6
467 001222 001405 BEQ TST2
468 001224 012737 000011 000302 MOV #11,#SFATAL ;MOVE TO MAILBOX # ***** 11 *****
469 001232 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
470 001234 000000 HALT ;WRONG DECREMENT OF R6 OR WRONG STSTNM
471 ; TO SCOPE REPLACE HALT W/ 240
472 ; AND REPLACE NEXT INST W/ 633
473 ;*****
474 ;TEST 2 TEST TRANSFER OF .BYTE USING R6
475 ;*****
476 001236 005237 000304 TST2: INC #SFTESTN ;UPDATE TEST NUMBER
477 001242 022737 000002 000304 CMP #2,#SFTESTN ;SEQUENCE ERROR?
478 001250 001137 BNE TST3-12 ;BR TO ERROR HALT ON SEQ ERROR
479 001252 012767 123456 177416 MOV #123456,K5
480 001260 012767 050505 177400 MOV #050505,K1
481 001266 012705 000666 MOV #K1,%5 ;%5=(050505)K1
482 001272 012706 00676 MOV #K5,%6 ;%6=(123456)K5
483 001276 112625 MOV#B (6)+,(5)+ ;LOW .BYTE OF R6 TO R5
484 001300 022767 050456 177360 CMP #050456,K1
485 001306 001405 BEQ BR11
486 001310 012737 000012 000302 MOV #12,#SFATAL ;MOVE TO MAILBOX # ***** 12 *****
487 001316 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
488 001320 000000 HALT ;FALSE TRANSFER OF .BYTE
489 ; TO SCOPE REPLACE HALT W/ 240
490 ; AND REPLACE NEXT INST W/ 753
491
492 001322 012767 123456 177346 BR11: MOV #123456,K5
493 001330 012767 050505 177330 MOV #050505,K1
494 001336 012705 000666 MOV #K1,%5 ;%5(050505)K1
495 001342 012706 000700 MOV #K6,%6 ;%6(123456)K5
496 001346 114625 MOV#B -(6),(5)+ ;LOW .BYTE OF R6 TO R5 (DECREMENT)
497 001350 026727 177312 050456 CMP K1,#050456
498 001356 001405 BEQ BR12
499 001360 012737 000013 000302 MOV #13,#SFATAL ;MOVE TO MAILBOX # ***** 13 *****
500 001366 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
501 001370 000000 HALT ;FALSE R6 .BYTE TRANSFER
502 ; TO SCOPE REPLACE HALT W/ 240
503 ; AND REPLACE NEXT INST W/ 727
504
505 001372 012767 123456 177266 BR12: MOV #123456,K1
506 001400 012767 050505 177270 MOV #050505,K5
507 001406 012705 000666 MOV #K1,%5 ;(123456)
508 001412 012706 000676 MOV #K5,%6 ;(050505)
509 001416 112526 MOV#B (5)+,(6)+ ;LOW OF R5 TO LOW OF R6
510 001420 022767 050456 177250 CMP #050456,K5
511 001426 001405 BEQ BR13
512 001430 012737 000014 000302 MOV #14,#SFATAL ;MOVE TO MAILBOX # ***** 14 *****
513 001436 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
514 001440 000000 HALT ;FALSE R6 .BYTE TRANSFER
515 ; TO SCOPE REPLACE HALT W/ 240
516 ; AND REPLACE NEXT INST W/ 703
517
518 001442 012767 123456 177216 BR13: MOV #123456,K1
  
```

NO1

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 13
DFKABC.P11 03-MAY-77 08:42 T2

TEST TRANSFER OF .BYTE USING R6

SEQ 0013

```

519 001450 012767 050505 177220      MOV      #050505,K5
520 001456 012705 000667          MOV      #K1+1,%5      ;123456
521 001462 012706 000676          MOV      #K5,%6       ;050505
522 001466 112526          MOVVB   (5)+(6)+     ;HIGH OF R5 TO LOW OF R6
523 001470 026727 177202 050647      CMP      K5,#050647
524 001476 001405          BEQ     BR14
525 001500 012737 000015 000302      MOV      #15,#SFATAL ;MOVE TO MAILBOX # ***** 15 *****
526 001506 005212          INC      (R2)         ;SET MSGTYP TO FATAL ERROR
527 001510 000000          HALT                    ;FALSE R6 .BYTE TRANSFER
528                                     ; TO SCOPE REPLACE HALT W/ 240
529                                     ; AND REPLACE NEXT INST W/ 657
530
531 001512 012767 123456 177146 BR14:  MOV      #123456,K1
532 001520 012767 050505 177150      MOV      #050505,K5
533 001526 012705 000667          MOV      #K1+1,%5     ;R5-123456-000 ADDRESS
534 001532 012706 000676          MOV      #K5,%6       ;R6-050505-- EVEN ADDRESS
535 001536 112625          MOVVB   (6)+(5)+     ;LOW OF R6 TO HIGH OF R5
536 001540 022767 042456 177120      CMP      #042456,K1
537 001546 001405          BEQ     TST3
538 001550 012737 000016 000302      MOV      #16,#SFATAL ;MOVE TO MAILBOX # ***** 16 *****
539 001556 005212          INC      (R2)         ;SET MSGTYP TO FATAL ERROR
540 001560 000000          HALT                    ;FAILED LOW OF 6 TO HIGH OF 5, OR WRONG STSTNM
541                                     ; TO SCOPE REPLACE HALT W/ 240
542                                     ; AND REPLACE NEXT INST W/ 633
543
544 ;*****
545 ;TEST 3 TEST BYTE OPERATION WITH SEQUENTIAL ODD-EVEN ADDRESS
546 ;*****
546 001562 005237 000304          TST3:  INC      #STESTN ;UPDATE TEST NUMBER
547 001566 022737 000003 000304      CMP      #3,#STESTN  ;SEQUENCE ERROR?
548 001574 001103          BNE     TST4-12 ;BR TO ERROR HALT ON SEQ ERROR
549 001576 126767 177100 177077      CMPB   K7,K7+1      ;SAME .WORD LOW TO HIGH
550 001604 001405          BEQ     BR15
551 001606 012737 000017 000302      MOV      #17,#SFATAL ;MOVE TO MAILBOX # ***** 17 *****
552 001614 005212          INC      (R2)         ;SET MSGTYP TO FATAL ERROR
553 001616 000000          HALT                    ;SHOULD COMPARE LOW TO HIGH
554                                     ; TO SCOPE REPLACE HALT W/ 240
555                                     ; AND REPLACE NEXT INST W/ 766
556
557 001620 126767 177057 177054 BR15:  CMPB   K7+1,K7      ;COMPARE ODD TO EVEN SAME .WORD
558 001626 001405          BEQ     BR16
559 001630 012737 000020 000302      MOV      #20,#SFATAL ;MOVE TO MAILBOX # ***** 20 *****
560 001636 005212          INC      (R2)         ;SET MSGTYP TO FATAL ERROR
561 001640 000000          HALT                    ;ODD TO .EVEN .BYTE FAILURE
562                                     ; TO SCOPE REPLACE HALT W/ 240
563                                     ; AND REPLACE NEXT INST W/ 755
564
565 001642 126767 177037 177032 BR16:  CMPB   K10+1,K7     ;SEQUENTIAL .BYTES
566 001650 001405          BEQ     BR17
567 001652 012737 000021 000302      MOV      #21,#SFATAL ;MOVE TO MAILBOX # ***** 21 *****
568 001660 005212          INC      (R2)         ;SET MSGTYP TO FATAL ERROR
569 001662 000000          HALT                    ;ODD TO .EVEN FAILED
570                                     ; TO SCOPE REPLACE HALT W/ 240
571                                     ; AND REPLACE NEXT INST W/ 744
572
573 001664 126767 177014 177006 BR17:  CMPB   K10,K6
574 001672 001405          BEQ     BR20

```

B02

MAIN MACY11 27(1006) 04-MAY-77 08:13 PAGE 14
DFKABC.P11 03-MAY-77 08:42 T3

TEST BYTE OPERATION WITH SEQUENTIAL ODD-EVEN ADDRESS

SEQ 0014

575	001674	012737	000022	000302		MOV	#22, @SFATAL	;	MOVE TO MAILBOX # ***** 22 *****	
576	001702	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	
577	001704	000000				HALT		;	EVEN TO EVEN FAILED	
578								;	TO SCOPE REPLACE HALT W/ 240	
579								;	AND REPLACE NEXT INST W/ 733	
580	001706	126767	176771	176771	BR20:	CMPB	K7+1, K10+1			
581	001714	001405				BEG	BR21			
582	001716	012737	000023	000302		MOV	#23, @SFATAL	;	MOVE TO MAILBOX # ***** 23 *****	
583	001724	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	
584	001726	000000				HALT		;	ODD TO ODD FAILED	
585								;	TO SCOPE REPLACE HALT W/ 240	
586								;	AND REPLACE NEXT INST W/ 722	
587										
588	001730	126767	176750	176747	BR21:	CMPB	K10, K10+1			
589	001736	001005				BNE	BR22			
590	001740	012737	000024	000302		MOV	#24, @SFATAL	;	MOVE TO MAILBOX # ***** 24 *****	
591	001746	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	
592	001750	000000				HALT		;	LOW TO HIGH IN SAME WORD FAILED	
593								;	TO SCOPE REPLACE HALT W/ 240	
594								;	AND REPLACE NEXT INST W/ 711	
595										
596	001752	126767	176727	176725	BR22:	CMPB	K10+1, K10+1			
597	001760	001405				BEG	BR23			
598	001762	012737	000025	000302		MOV	#25, @SFATAL	;	MOVE TO MAILBOX # ***** 25 *****	
599	001770	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	
600	001772	000000				HALT		;	HIGH TO LOW IN SAME WORD FAILED	
601								;	TO SCOPE REPLACE HALT W/ 240	
602								;	AND REPLACE NEXT INST W/ 700	
603										
604	001774	126767	176704	176701	BR23:	CMPB	K10, K7+1			
605	002002	001005				BNE	TST4			
606	002004	012737	000026	000302		MOV	#26, @SFATAL	;	MOVE TO MAILBOX # ***** 26 *****	
607	002012	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	
608	002014	000000				HALT		;	EVEN TO ODD FAILED, OR WRONG STSTNM	
609								;	TO SCOPE REPLACE HALT W/ 240	
610								;	AND REPLACE NEXT INST W/ 667	
611										
612										
613										
614										
615										
616	002016	005237	000304			TST4:	INC	@STESTN	;	UPDATE TEST NUMBER
617	002022	022737	000004	000304			CMP	#4, @STESTN	;	SEQUENCE ERROR?
618	002030	001062					BNE	TST5-12 ; BR	;	TO ERROR HALT ON SEQ ERROR
619	002032	000277					SCC		;	SET STATUS
620	002034	005067	175736				CLR	STATUS	;	CLEAR STATUS
621	002040	103005					BCC	BR33		
622	002042	012737	000027	000302		MOV	#27, @SFATAL	;	MOVE TO MAILBOX # ***** 27 *****	
623	002050	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	
624	002052	000000				HALT		;	C NOT CLEAR	
625								;	TO SCOPE REPLACE HALT W/ 240	
626								;	AND REPLACE NEXT INST W/ 766	
627	002054				BR33:					
628	002054	102005				BVC	BR34			
629	002056	012737	000030	000302		MOV	#30, @SFATAL	;	MOVE TO MAILBOX # ***** 30 *****	
630	002064	005212				INC	(R2)	;	SET MSGTYP TO FATAL ERROR	

 ; TEST 4 TEST THE CC BITS

```

631 002066 003000          HALT          ; V NOT CLEAR
632                                     ; TO SCOPE REPLACE HALT W/ 240
633                                     ; AND REPLACE NEXT INST W/ 760
634 002070          BR34:          BNE          BR35
635 002070 001005          MOV          #31, @#SFATAL ; MOVE TO MAILBOX # ***** 31 *****
636 002072 012737 000031 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
637 002100 005212          HALT          ; Z NOT CLEAR
638 002102 C00000          ; TO SCOPE REPLACE HALT W/ 240
639                                     ; AND REPLACE NEXT INST W/ 752
640
641 002104          BR35:          BPL          BR36
642 002104 100005          MOV          #32, @#SFATAL ; MOVE TO MAILBOX # ***** 32 *****
643 002106 012737 000032 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
644 002114 005212          HALT          ; N NOT CLEAR
645 002116 000000          ; TO SCOPE REPLACE HALT W/ 240
646                                     ; AND REPLACE NEXT INST W/ 744
647
648 002120 000257          BR36:          CCC          #17, STATUS ; CLEAR CONDITION CODES
649 002122 052767 000017 175646      BIS          ; SET STATUS TO ONES
650
651 002130 103405          BCS          BR37
652 002132 012737 000033 000302      MOV          #33, @#SFATAL ; MOVE TO MAILBOX # ***** 33 *****
653 002140 005212          INC          (R2) ; SET MSGTYP TO FATAL ERROR
654 002142 000000          HALT          ; C NOT SET
655                                     ; TO SCOPE REPLACE HALT W/ 240
656                                     ; AND REPLACE NEXT INST W/ 732
657
658 002144 102405          BR37:          BVS          BR40
659 002146 012737 000034 000302      MOV          #34, @#SFATAL ; MOVE TO MAILBOX # ***** 34 *****
660 002154 005212          INC          (R2) ; SET MSGTYP TO FATAL ERROR
661 002156 000000          HALT          ; V NOT SET
662                                     ; TO SCOPE REPLACE HALT W/ 240
663                                     ; AND REPLACE NEXT INST W/ 724
664
665 002160          BR40:          BEQ          BR41
666 002162 001405          MOV          #35, @#SFATAL ; MOVE TO MAILBOX # ***** 35 *****
667 002162 012737 000035 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
668 002170 005212          HALT          ; Z NOT SET
669                                     ; TO SCOPE REPLACE HALT W/ 240
670                                     ; AND REPLACE NEXT INST W/ 716
671
672 002174          BR41:          BMI          TST5
673 002174 100405          MOV          #36, @#SFATAL ; MOVE TO MAILBOX # ***** 36 *****
674 002176 012737 000036 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
675 002204 005212          HALT          ; N NOT SET, OR WRONG $TSTNM
676                                     ; TO SCOPE REPLACE HALT W/ 240
677                                     ; AND REPLACE NEXT INST W/ 710
678
679 ; *****
680 ; TEST 5 TEST THAT A TRAP OCCURS ON A RESERVED INSTRUCTION
681 ; *****
681 002210 005237 000304          TST5:    INC          @#STESTN ; UPDATE TEST NUMBER
682 002214 022737 000005 000304      CMP          #5, @#STESTN ; SEQUENCE ERROR?
683 002222 001006          BNE          RETA ; BR TO ERROR HALT ON SEQ ERROR
684 002224 012706 000500          MOV          #BUFF, SP ; STACK POINTER SETUP
685 002230 012767 002252 175552      MOV          #RETAH, RTRAP ; RETURN LOCATION
686 002236 000007          TRAPA          ; RESERVED INSTRUCTION, SHOULD TRAP

```


E02

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 17
 DFKABC.P11 03-MAY-77 08:42 T10

TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK

SEQ 0017

```

743
744 002454 012706 000500          1S:  MOV    #BUFF,SP          ; AND REPLACE NEXT INST W/ 755
745 002460 012767 002500 175322  MOV    #RETE,RTRAP        ; SET UP
746 002466 012767 000357 175302  MOV    #357,CC           ; SET UP
747 002474 000277          SCC                ; SET PRIORITY
748 002476 000007          TRAPA              ; SET CC
749 002500 026727 175772 000357 RETE:  CMP    BUFF-2,#357      ; TRAP
750 002506 001405          BEQ    TST11           ; COMPARES STATUS ON STACK
751 002510 012737 000043 000302  MOV    #43,@#SFATAL      ; MOVE TO MAILBOX # ***** 43 *****
752 002516 005212          INC    (R2)           ; SET MSGTYP TO FATAL ERROR
753 002520 000000          HALT                ; INCORRECT STATUS ON STACK, OR WRONG STSTNM
754                                     ; TO SCOPE REPLACE HALT W/ 240
755                                     ; AND REPLACE NEXT INST W/ 732
756 ;*****
757 ;TEST 11          TEST THAT "NEW" STATUS IS CORRECT
758 ;*****
759 002522 005237 000304          TST11: INC    @#STESTN      ; UPDATE TEST NUMBER
760 002526 022737 000011 000304  CMP    #11,@#STESTN      ; SEQUENCE ERROR?
761 002534 001121          BNE   STPP            ; BR TO ERROR HALT ON SEQ ERROR
762 002536 012706 000500          MOV    #BUFF,SP
763 002542 012767 002556 175240  MOV    #RETF,RTRAP
764 002550 005067 175236          CLR   RTRAP+2        ; CLEAR FUTURE PRIORITY AND CC
765 002554 000007          TRAPA
766 002556          RETF:              ; TEST FOR "C" CLEARED
767 002556 100005          BPL   1S
768 002560 012737 000044 000302  MOV    #44,@#SFATAL      ; MOVE TO MAILBOX # ***** 44 *****
769 002566 005212          INC    (R2)           ; SET MSGTYP TO FATAL ERROR
770 002570 000000          HALT                ; N NOT CLEARED
771                                     ; TO SCOPE REPLACE HALT W/ 240
772                                     ; AND REPLACE NEXT INST W/ 761
773 002572          1S:
774 002572 001005          BNE   2S
775 002574 012737 000045 000302  MOV    #45,@#SFATAL      ; MOVE TO MAILBOX # ***** 45 *****
776 002602 005212          INC    (R2)           ; SET MSGTYP TO FATAL ERROR
777 002604 000000          HALT                ; Z NOT CLEARED
778                                     ; TO SCOPE REPLACE HALT W/ 240
779                                     ; AND REPLACE NEXT INST W/ 753
780 002606          2S:
781 002606 102005          BVC   3S
782 002610 012737 000046 000302  MOV    #46,@#SFATAL      ; MOVE TO MAILBOX # ***** 46 *****
783 002616 005212          INC    (R2)           ; SET MSGTYP TO FATAL ERROR
784 002620 000000          HALT                ; V NOT CLEARED
785                                     ; TO SCOPE REPLACE HALT W/ 240
786                                     ; AND REPLACE NEXT INST W/ 745
787 002622          3S:
788 002622 103005          BCC   4S
789 002624 012737 000047 000302  MOV    #47,@#SFATAL      ; MOVE TO MAILBOX # ***** 47 *****
790 002632 005212          INC    (R2)           ; SET MSGTYP TO FATAL ERROR
791 002634 000000          HALT                ; C NOT CLEARED
792                                     ; TO SCOPE REPLACE HALT W/ 240
793                                     ; AND REPLACE NEXT INST W/ 737
794 002636 032767 000340 175132  4S:  BIT    #340,CC
795 002644 001405          BEQ    5S
796 002646 012737 000050 000302  MOV    #50,@#SFATAL      ; MOVE TO MAILBOX # ***** 50 *****
797 002654 005212          INC    (R2)           ; SET MSGTYP TO FATAL ERROR
798 002656 000000          HALT                ; PRIORITY NOT ZERO
  
```



```

855 003064 104400 TRAP ;RESERVED INSTRUCTION, SHOULD TRAP
856 003066 012737 000056 000302 MCV #56,0#SFATAL ;MOVE TO MAILBOX # ***** 56 *****
857 003074 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
858 003076 000000 HALT ;TRAP DIDN'T TRAP, OR WRONG $STSTM
859 ; TO SCOPE REPLACE HALT W/ 240
860 ; AND REPLACE NEXT INST W/ 757
861 003100 RETA1:
862 ;*****
863 ;TEST 13 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
864 ;*****
865 003100 005237 000304 TST13: INC #0,$STESTN ;UPDATE TEST NUMBER
866 003104 022737 000013 000304 CMP #13,0#STESTN ;SEQUENCE ERROR?
867 003112 001011 BNE TST14-12 ;BR TO ERROR HALT ON SEQ ERROR
868 003114 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
869 003120 012767 003130 174706 MOV #RETB1,RTRAP1 ;RETURN POINTER
870 003126 104400 TRAP ;RESERVED INSTRUCTION
871 003130 020627 000474 RETB1: CMP SP,#BUFF-4 ;TEST DECREMENT OF SP
872 003134 001405 BEQ TST14
873 003136 012737 000057 000302 MOV #57,0#SFATAL ;MOVE TO MAILBOX # ***** 57 *****
874 003144 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
875 003146 000000 HALT ;NOT DECREMENTED TWO WORDS, OR WRONG $STSTM
876 ; TO SCOPE REPLACE HALT W/ 240
877 ; AND REPLACE NEXT INST W/ 761
878 ;*****
879 ;TEST 14 TEST THAT PROPER P.C. IS SAVED
880 ;*****
881 003150 005237 000304 TST14: INC #0,$STESTN ;UPDATE TEST NUMBER
882 003154 022737 000014 000304 CMP #14,0#STESTN ;SEQUENCE ERROR?
883 003162 001012 BNE TST15-12 ;BR TO ERROR HALT ON SEQ ERROR
884 003164 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
885 003170 012767 003200 174636 MOV #RETC1,RTRAP1 ;RETURN FROM TRAP POINTER
886 003176 104400 TRAP ;TRAP ON THIS INSTRUCTION
887 003200 022767 003200 175266 RETC1: CMP #,BUFF-4 ;CHECK INCREMENTED P.C.
888 003206 001405 BEQ TST15
889 003210 012737 000060 000302 MOV #60,0#SFATAL ;MOVE TO MAILBOX # ***** 60 *****
890 003216 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
891 003220 000000 HALT ;INCORRECT P.C., OR WRONG $STSTM
892 ; TO SCOPE REPLACE HALT W/ 240
893 ; AND REPLACE NEXT INST W/ 760
894 ;*****
895 ;TEST 15 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
896 ;*****
897 003222 005237 000304 TST15: INC #0,$STESTN ;UPDATE TEST NUMBER
898 003226 022737 000015 000304 CMP #15,0#STESTN ;SEQUENCE ERROR?
899 003234 001037 BNE TST16-12 ;BR TO ERROR HALT ON SEQ ERROR
900 003236 012706 000500 MOV #BUFF,SP ;SET UP
901 003242 012767 003260 174564 MOV #RETD1,RTRAP1 ;SET UP
902 003250 005067 174522 CLR CC ;CLEAR CC AND PRIORITY
903 003254 000257 CCC
904 003256 104400 TRAP ;TRAP
905 003260 026727 175212 000000 RETD1: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
906 003266 001405 BEQ 15
907 003270 012737 000061 000302 MOV #61,0#SFATAL ;MOVE TO MAILBOX # ***** 61 *****
908 003276 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
909 003300 000000 HALT ;INCORRECT STATUS
910 ; TO SCOPE REPLACE HALT W/ 240
    
```

H02

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 20
 DFKABC.P11 03-MAY-77 08:42 T15

TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK

SEQ 0020

```

911          ; AND REPLACE NEXT INST W/ 755
912 003302 012706 000500          1S:  MOV    #BUFF,SP          ; SET UP
913 003306 012767 003324 174520  MOV    #RETE1,RTRAP1      ; SET UP
914 003314 012767 000357 174454  MOV    #357,CC           ; SET PRIORITY
915 003322 104400          TRAP                          ; SET CC
916 003324 026727 175146 000357 RETE1: CMP    BUFF-2,#357      ; COMPARES STATUS ON STACK
917 003332 001405          BEQ    TST16
918 003334 012737 000062 000302  MOV    #62,@#SFATAL      ; MOVE TO MAILBOX # ***** 62 *****
919 003342 005212          INC    (R2)              ; SET MSGTYP TO FATAL ERROR
920 003344 000000          HALT                    ; INCORRECT STATUS ON STACK, OR WRONG STSTNM
921          ; TO SCOPE REPLACE HALT W/ 240
922          ; AND REPLACE NEXT INST W/ 733
923          ;*****
924          ;TEST 16          TEST THAT "NEW" STATUS IS CORRECT
925          ;*****
926 003346 005237 000304          TST16: INC    @#STESTN      ; UPDATE TEST NUMBER
927 003352 022737 000016 000304  CMP    #16,@#STESTN      ; SEQUENCE ERROR?
928 003360 001121          BNE   TST17-12          ; BR TO ERROR HALT ON SEQ ERROR
929 003362 012706 000500          MOV    #BUFF,SP
930 003366 012767 003402 174440  MOV    #RETF1,RTRAP1
931 003374 005067 174436          CLR   RTRAP1+2          ; CLEAR FUTURE PRIORITY AND CC
932 003400 104400          TRAP
933 003402          RETF1:                ; TEST FOR "C" CLEARED
934 003402 100005          BPL   1S
935 003404 012737 000063 000302  MOV    #63,@#SFATAL      ; MOVE TO MAILBOX # ***** 63 *****
936 003412 005212          INC    (R2)              ; SET MSGTYP TO FATAL ERROR
937 003414 000000          HALT                    ; C NOT CLEARED
938          ; TO SCOPE REPLACE HALT W/ 240
939          ; AND REPLACE NEXT INST W/ 761
940          1S:
941 003416 001005          BNE   2S
942 003420 012737 000064 000302  MOV    #64,@#SFATAL      ; MOVE TO MAILBOX # ***** 64 *****
943 003426 005212          INC    (R2)              ; SET MSGTYP TO FATAL ERROR
944 003430 000000          HALT                    ; Z NOT CLEARED
945          ; TO SCOPE REPLACE HALT W/ 240
946          ; AND REPLACE NEXT INST W/ 753
947          2S:
948 003432 102005          BVC   3S
949 003434 012737 000065 000302  MOV    #65,@#SFATAL      ; MOVE TO MAILBOX # ***** 65 *****
950 003442 005212          INC    (R2)              ; SET MSGTYP TO FATAL ERROR
951 003444 000000          HALT                    ; V NOT CLEARED
952          ; TO SCOPE REPLACE HALT W/ 240
953          ; AND REPLACE NEXT INST W/ 745
954          3S:
955 003446 103005          BCC   4S
956 003450 012737 000066 000302  MOV    #66,@#SFATAL      ; MOVE TO MAILBOX # ***** 66 *****
957 003456 005212          INC    (R2)              ; SET MSGTYP TO FATAL ERROR
958 003460 000000          HALT                    ; C NOT CLEARED
959          ; TO SCOPE REPLACE HALT W/ 240
960          ; AND REPLACE NEXT INST W/ 737
961          4S:
961 003462 032767 000340 174306  BIT    #340,CC           ; TEST PRIORITY
962 003470 001405          BEQ   5S
963 003472 012737 000067 000302  MOV    #67,@#SFATAL      ; MOVE TO MAILBOX # ***** 67 *****
964 003500 005212          INC    (R2)              ; SET MSGTYP TO FATAL ERROR
965 003502 000000          HALT                    ; PRIORITY NOT ZERO
966          ; TO SCOPE REPLACE HALT W/ 240
  
```

```

967
968 003504 012706 000500
969 003510 012767 003526 174316
970 003516 012767 000357 174312
971 003524 104400
972 003526
973 003526 100405
974 003530 012737 000070 000302
975 003536 005212
976 003540 000000
977
978
979 003542
980 003542 001405
981 003544 012737 000071 000302
982 003552 005212
983 003554 000000
984
985
986 003556
987 003556 102405
988 003560 012737 000072 000302
989 003566 005212
990 003570 000000
991
992
993 003572
994 003572 103405
995 003574 012737 000073 000302
996 003602 005212
997 003604 000000
998
999
1000 003606 016706 174164
1001 003612 042706 000017
1002 003616 022706 000340
1003 003622 001405
1004 003624 012737 000074 000302
1005 003632 005212
1006 003634 000000
1007
1008
1009
1010
1011
1012 003636 005237 000304
1013 003642 022737 000017 000304
1014 003650 001011
1015 003652 012767 104400 000012
1016 003660 012767 003706 174146
1017 003666 012706 000500
1018 003672 104400
1019 003674
1020 003674 012737 000075 000302
1021 003702 005212
1022 003704 000000

```

55: MOV #BUFF, SP ; AND REPLACE NEXT INST W/ 726
MOV #RETG1, RTRAP1
MOV #357, RTRAP1+2 ; SET NEW "CC" AND PRIORITY
TRAP ; TRAP HERE

RETG1: BMI 15
MOV #70, @#SFATAL ; MOVE TO MAILBOX # ***** 70 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; N NOT SET
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 707

15: BEQ 25
MOV #71, @#SFATAL ; MOVE TO MAILBOX # ***** 71 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; Z NOT SET
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 701

25: BVS 35
MOV #72, @#SFATAL ; MOVE TO MAILBOX # ***** 72 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; V NOT SET
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 673

35: BCS 45
MOV #73, @#SFATAL ; MOVE TO MAILBOX # ***** 73 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; C NOT SET
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 665

45: MOV CC, SP
BIC #17, SP
CMP #340, SP
BEQ TST17
MOV #74, @#SFATAL ; MOVE TO MAILBOX # ***** 74 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; PRIORITY WAS CHANGED, OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 651

; TEST 17 TEST THAT ALL COMBINATION OF "TRAP" WILL CAUSE A TRAP

TST17: INC @#STESTN ; UPDATE TEST NUMBER
CMP #17, @#STESTN ; SEQUENCE ERROR?
BNE BR45 ; BR TO ERROR HALT ON SEQ ERROR
MOV #TRAP, RB1 ; INITIALIZE BASE TRAP INSTRUCTION
MOV #RA1, 34 ; RETURN FROM TRAP TO RA1
MOV #BUFF, SP ; SET UP STACK POINTER
TRAP ; TRAP INST WILL BE MODIFIED TO TRAP+377

RC1:
RB1:
BR45: MOV #75, @#SFATAL ; MOVE TO MAILBOX # ***** 75 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; PREVIOUS INST FAILED TO TRAP, OR WRONG STSTNM

J02

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 22
DFKABC.P11 03-MAY-77 08:42 T17

TEST THAT ALL COMBINATION OF "TRAP" WILL CAUSE A TRAP

SEQ 0022

1023
1024
1025 003706 005267 177760
1026 003712 022767 104777 177752
1027 003720 103362
1028 003722 012767 000036 174104
1029 003730 005067 174102
1030
1031
1032
1033 003734 005237 000304
1034 003740 022737 000020 000304
1035 003746 001006
1036 003750 012706 000500
1037 003754 012767 003776 174036
1038 003762 000004
1039 003764 012737 000076 000302
1040 003772 005212
1041 003774 000000
1042
1043
1044 003776
1045
1046
1047
1048 003776 005237 000304
1049 004002 022737 000021 000304
1050 004010 001011
1051 004012 012706 000500
1052 004016 012767 004026 173774
1053 004024 000004
1054 004026 020627 000474
1055 004032 001405
1056 004034 012737 000077 000302
1057 004042 005212
1058 004044 000000
1059
1060
1061
1062
1063
1064 004046 005237 000304
1065 004052 022737 000022 000304
1066 004060 001012
1067 004062 012706 000500
1068 004066 012767 004076 173724
1069 004074 000004
1070 004076 022767 004076 174370
1071 004104 001405
1072 004106 012737 000100 000302
1073 004114 005212
1074 004116 000000
1075
1076
1077
1078

RA1: INC R01 ; TO SCOPE REPLACE HALT W/ 240
CMP #104777,R01 ; AND REPLACE NEXT INST W/ 761
BHS RC1 ; INCREMENT TRAP INSTRUCTION
MOV #36,34 ; TRAP+377 TO UPPER LIMIT
CLR 36 ; HAVE WE TESTED ALL
;*****
;TEST 20 TEST THAT A TRAP OCCURES ON AN "IOT" INSTRUCTION
;*****
TST20: INC @#STESTN ; UPDATE TEST NUMBER
CMP #20,@#STESTN ; SEQUENCE ERROR?
BNE TST21-12 ; BR TO ERROR HALT ON SEQ ERROR
MOV #BUFF,SP ; STACK POINTER SETUP
MOV #RETA2,RTRAP2 ; RETURN LOCATION
IOT ; RESERVE INSTRUCTION, SHOULD TRAP
MOV #76,@#SFATAL ; MOVE TO MAILBOX # ***** 76 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; IOT DIDN'T TRAP, OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 764
RETA2:
;*****
;TEST 21 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
;*****
TST21: INC @#STESTN ; UPDATE TEST NUMBER
CMP #21,@#STESTN ; SEQUENCE ERROR?
BNE TST22-12 ; BR TO ERROR HALT ON SEQ ERROR
MOV #BUFF,SP ; STACK POINTER SETUP
MOV #RETB2,RTRAP2 ; RETURN POINTER
IOT ; RESERVED INSTRUCTION
RETB2: CMP SP,#BUFF-4 ; TEST DECREMENT OF SP
BEQ TST22
MOV #77,@#SFATAL ; MOVE TO MAILBOX # ***** 77 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; NOT DECREMENTED TWO WORDS, OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 761
;*****
;TEST 22 TEST THAT PROPER P.C. IS SAVED
;*****
TST22: INC @#STESTN ; UPDATE TEST NUMBER
CMP #22,@#STESTN ; SEQUENCE ERROR?
BNE TST23-12 ; BR TO ERROR HALT ON SEQ ERROR
MOV #BUFF,SP ; STACK POINTER SETUP
MOV #RETC2,RTRAP2 ; RETURN FROM TRAP POINTER
IOT ; TRAP ON THIS INSTRUCTION
RETC2: CMP #,BUFF-4 ; CHECK FOR INCREMENTED P.C.
BEQ TST23
MOV #100,@#SFATAL ; MOVE TO MAILBOX # ***** 100 *****
INC (R2) ; SET MSGTYP TO FATAL ERROR
HALT ; INCORRECT P.C. OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 760
;*****
;TEST 23 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK

K02

```

1079
1080 004120 005237 000304
1081 004124 022737 000023 000304
1082 004132 001040
1083 004134 012706 000500
1084 004140 012767 004156 173652
1085 004146 005067 173624
1086 004152 000257
1087 004154 000004
1088 004156 026727 174314 000000 RETD2:
1089 004164 001405
1090 004166 012737 000101 000302
1091 004174 005212
1092 004176 000000
1093
1094
1095 004200 012706 000500 15:
1096 004204 012767 004224 173606
1097 004212 012767 000357 173556
1098 004220 000277
1099 004222 000004
1100 004224 026727 174246 000357 RETE2:
1101 004232 001405
1102 004234 012737 000102 000302
1103 004242 005212
1104 004244 000000
1105
1106
1107
1108
1109
1110 004246 005237 000304
1111 004252 022737 000024 000304
1112 004260 001121
1113 004262 012706 000500
1114 004266 012767 004302 173524
1115 004274 005067 173522
1116 004300 000004
1117 004302 RETF2:
1118 004302 100005
1119 004304 012737 000103 000302
1120 004312 005212
1121 004314 000000
1122
1123
1124 004316 15:
1125 004316 001005
1126 004320 012737 000104 000302
1127 004326 005212
1128 004330 000000
1129
1130
1131 004332 25:
1132 004332 102005
1133 004334 012737 000105 000302
1134 004342 005212

```

```

*****
;TEST23: INC 2#STESTN ;UPDATE TEST NUMBER
;CMP #23,2#STESTN ;SEQUENCE ERROR?
;BNE TST24-12 ;BR TO ERROR HALT ON SEQ ERROR
;MOV #BUFF,SP ;SET UP
;MOV #RETD2,RTRAP2 ;SET UP
;CLR CC ;CLEAR CC AND PRIORITY
;IOT ;TRAP
;CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
;BEQ 15
;MOV #101,2#SFATAL ;MOVE TO MAILBOX # ***** 101 *****
;INC (R2) ;SET MSGTYP TO FATAL ERROR
;HALT ;INCORRECT STATUS
; ; TO SCOPE REPLACE HALT W/ 240
; ; AND REPLACE NEXT INST W/ 755
;MOV #BUFF,SP ;SET UP
;MOV #RETE2,RTRAP2 ;SET UP
;MOV #357,CC ;SET PRIORITY
;SCC ;SET CC
;IOT ;TRAP
;CMP BUFF-2,#357 ;COMPARES STATUS ON STACK
;BEQ TST24
;MOV #102,2#SFATAL ;MOVE TO MAILBOX # ***** 102 *****
;INC (R2) ;SET MSGTYP TO FATAL ERROR
;HALT ;INCORRECT STATUS ON STACK,OR WRONG STSTNM
; ; TO SCOPE REPLACE HALT W/ 240
; ; AND REPLACE NEXT INST W/ 732
*****
;TEST 24 TEST THAT "NEW" STATUS IS CORRECT
*****
;TEST24: INC 2#STESTN ;UPDATE TEST NUMBER
;CMP #24,2#STESTN ;SEQUENCE ERROR?
;BNE BR46 ;BR TO ERROR HALT ON SEQ ERROR
;MOV #BUFF,SP
;MOV #RETF2,RTRAP2
;CLR RTRAP2+2 ;CLEAR FUTURE PRIORITY AND CC
;IOT
;RETF2: ;TEST FOR "C" CLEARED
;BPL 15
;MOV #103,2#SFATAL ;MOVE TO MAILBOX # ***** 103 *****
;INC (R2) ;SET MSGTYP TO FATAL ERROR
;HALT ;N NOT CLEARED
; ; TO SCOPE REPLACE HALT W/ 240
; ; AND REPLACE NEXT INST W/ 761
;BNE 25
;MOV #104,2#SFATAL ;MOVE TO MAILBOX # ***** 104 *****
;INC (R2) ;SET MSGTYP TO FATAL ERROR
;HALT ;Z NOT CLEARED
; ; TO SCOPE REPLACE HALT W/ 240
; ; AND REPLACE NEXT INST W/ 753
;BVC 35
;MOV #105,2#SFATAL ;MOVE TO MAILBOX # ***** 105 *****
;INC (R2) ;SET MSGTYP TO FATAL ERROR

```


L02

MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 24
 DFKABC.P11 03-MAY-77 08:42 T24

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0024

1135	004344	000000			HALT				;V NOT CLEARED
1136									; TO SCOPE REPLACE HALT W/ 240
1137									; AND REPLACE NEXT INST W/ 745
1138	004346			35:					
1139	004346	103005			BCC	45			
1140	004350	012737	000106	000302	MOV	#106,2#SFATAL			; MOVE TO MAILBOX # ***** 106 *****
1141	004356	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR
1142	004360	000000			HALT				; C NOT CLEARED
1143									; TO SCOPE REPLACE HALT W/ 240
1144									; AND REPLACE NEXT INST W/ 737
1145	004362	032767	000340	170406	45:	BIT	#340,CC		; TEST PRIORITY
1146	004370	001405			BEG	55			
1147	004372	012737	000107	000302	MOV	#107,2#SFATAL			; MOVE TO MAILBOX # ***** 107 *****
1148	004400	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR
1149	004402	000000			HALT				; PRIORITY NOT ZERO
1150									; TO SCOPE REPLACE HALT W/ 240
1151									; AND REPLACE NEXT INST W/ 726
1152	004404	012706	000500		55:	MOV	#BUFF,SP		
1153	004410	012767	004426	173402	MOV	#RETG2,RTRAP2			
1154	004416	012767	000357	173376	MOV	#357,RTRAP2+2			; SET NEW "CC" AND PRIORITY
1155	004424	000004			IOT				; TRAP HERE
1156	004426				RETG2:				
1157	004426	100405			BMI	15			
1158	004430	012737	000110	000302	MOV	#110,2#SFATAL			; MOVE TO MAILBOX # ***** 110 *****
1159	004436	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR
1160	004440	000000			HALT				; N NOT SET
1161									; TO SCOPE REPLACE HALT W/ 240
1162									; AND REPLACE NEXT INST W/ 707
1163	004442				15:				
1164	004442	001405			BEG	25			
1165	004444	012737	000111	000302	MOV	#111,2#SFATAL			; MOVE TO MAILBOX # ***** 111 *****
1166	004452	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR
1167	004454	000000			HALT				; Z NOT SET
1168									; TO SCOPE REPLACE HALT W/ 240
1169									; AND REPLACE NEXT INST W/ 701
1170	004456				25:				
1171	004456	102405			BVS	35			
1172	004460	012737	000112	000302	MOV	#112,2#SFATAL			; MOVE TO MAILBOX # ***** 112 *****
1173	004466	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR
1174	004470	000000			HALT				; V NOT SET
1175									; TO SCOPE REPLACE HALT W/ 240
1176									; AND REPLACE NEXT INST W/ 673
1177	004472				35:				
1178	004472	103405			BCC	45			
1179	004474	012737	000113	000302	MOV	#113,2#SFATAL			; MOVE TO MAILBOX # ***** 113 *****
1180	004502	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR
1181	004504	000000			HALT				; C NOT SET
1182									; TO SCOPE REPLACE HALT W/ 240
1183									; AND REPLACE NEXT INST W/ 665
1184	004506	016706	173264		45:	MOV	CC,SP		
1185	004512	042706	000017		BIC	#17,SP			
1186	004516	022706	000340		CMP	#340,SP			
1187	004522	001405			BEG	BR46A			
1188	004524				BR46:				
1189	004524	012737	000114	000302	MOV	#114,2#SFATAL			; MOVE TO MAILBOX # ***** 114 *****
1190	004532	005212			INC	(R2)			; SET MSGTYP TO FATAL ERROR

M02

MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 25
 DFKABC.P11 03-MAY-77 08:42 T24

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0025

```

1191 004534 000000          HALT          ; PRIORITY WAS CHANGED, OR WRONG $STSTM
1192                                     ; TO SCOPE REPLACE HALT W/ 240
1193                                     ; AND REPLACE NEXT INST W/ 651
1194 004536 012767 000022 173254 BR46A: MOV    #22,20          ; +2
1195 004544 005067 173252          CLR    22          ; HALT
1196                                     ; *****
1197 ; TEST 25          TEST THAT A TRAP OCCURS ON AN EMT INSTRUCTION
1198                                     ; *****
1199 004550 005237 000304          TST25: INC    @#$TESTN      ; UPDATE TEST NUMBER
1200 004554 022737 000025 000304      CMP    #25,@#$TESTN      ; SEQUENCE ERROR?
1201 004562 001006          BNE    TST26-12         ; BR TO ERROR HALT ON SEQ ERROR
1202 004564 012706 000500          MOV    #BUFF,SP        ; STACK POINTER SETUP
1203 004570 012767 004612 173232      MOV    #RETA3,RTRAP3   ; RETURN LOCATION
1204 004576 104000          EMT                     ; RESERVE INSTRUCTION, SHOULD TRAP
1205 004600 012737 000115 000302      MOV    #115,@#$FATAL   ; MOVE TO MAILBOX # ***** 115 *****
1206 004606 005212          INC    (R2)            ; SET MSGTYP TO FATAL ERROR
1207 004610 000000          HALT                   ; EMT DIDN'T TRAP, OR WRONG $STSTM
1208                                     ; TO SCOPE REPLACE HALT W/ 240
1209                                     ; AND REPLACE NEXT INST W/ 764
1210 004612          RETA3:
1211                                     ; *****
1212 ; TEST 26          TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1213                                     ; *****
1214 004612 005237 000304          TST26: INC    @#$TESTN      ; UPDATE TEST NUMBER
1215 004616 022737 000026 000304      CMP    #26,@#$TESTN      ; SEQUENCE ERROR?
1216 004624 001011          BNE    TST27-12         ; BR TO ERROR HALT ON SEQ ERROR
1217 004626 012706 000500          MOV    #BUFF,SP        ; STACK POINTER SETUP
1218 004632 012767 004642 173170      MOV    #RETB3,RTRAP3   ; RETURN POINTER
1219 004640 104000          EMT                     ; RESERVED INSTRUCTION
1220 004642 020627 000474          RETB3: CMP    SP,#BUFF-4   ; TEST DECREMENT OF SP
1221 004646 001405          BEQ    TST27
1222 004650 012737 000116 000302      MOV    #116,@#$FATAL   ; MOVE TO MAILBOX # ***** 116 *****
1223 004656 005212          INC    (R2)            ; SET MSGTYP TO FATAL ERR
1224 004660 000000          HALT                   ; NOT DECREMENTED TWO WORDS, OR WRONG $STSTM
1225                                     ; TO SCOPE REPLACE HALT W/ 240
1226                                     ; AND REPLACE NEXT INST W/ 761
1227                                     ; *****
1228 ; TEST 27          TEST THAT PROPER P.C. IS SAVED
1229                                     ; *****
1230 004662 005237 000304          TST27: INC    @#$TESTN      ; UPDATE TEST NUMBER
1231 004666 022737 000027 000304      CMP    #27,@#$TESTN      ; SEQUENCE ERROR?
1232 004674 001012          BNE    TST30-12         ; BR TO ERROR HALT ON SEQ ERROR
1233 004676 012706 000500          MOV    #BUFF,SP        ; STACK POINTER SETUP
1234 004702 012767 004712 173120      MOV    #RETC3,RTRAP3   ; RETURN FROM TRAP POINTER
1235 004710 104000          EMT                     ; TRAP ON THIS INSTRUCTION
1236 004712 022767 004712 173554      RETC3: CMP    #,BUFF-4   ; CHECK FOR INCREMENTED P.C.
1237 004720 001405          BEQ    TST30
1238 004722 012737 000117 000302      MOV    #117,@#$FATAL   ; MOVE TO MAILBOX # ***** 117 *****
1239 004730 005212          INC    (R2)            ; SET MSGTYP TO FATAL ERROR
1240 004732 000000          HALT                   ; INCORRECT P.C. OR WRONG $STSTM
1241                                     ; TO SCOPE REPLACE HALT W/ 240
1242                                     ; AND REPLACE NEXT INST W/ 760
1243                                     ; *****
1244 ; TEST 30          TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1245                                     ; *****
1246 004734 005237 000304          TST30: INC    @#$TESTN      ; UPDATE TEST NUMBER
    
```


B03

TEST THAT "NEW" STATUS IS CORRECT

SE0 0027

```

1303                                     ; AND REPLACE NEXT INST W/ 745
1304 005162                               3$:
1305 005162 103005                       BCC      4$
1306 005164 012737 000125 000302       MOV      @125,@$FATAL ; MOVE TO MAILBOX # ***** 125 *****
1307 005172 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1308 005174 000000                       HALT                    ; C NOT CLEARED
1309                                     ; TO SCOPE REPLACE HALT W/ 240
1310                                     ; AND REPLACE NEXT INST W/ 737
1311 005176 032767 000340 172572 4$:   BIT      @340,CC       ; TEST PRIORITY
1312 005204 001405                       BEQ      5$
1313 005206 012737 000126 000302       MOV      @126,@$FATAL ; MOVE TO MAILBOX # ***** 126 *****
1314 005214 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1315 005216 000000                       HALT                    ; PRIORITY NOT ZERO
1316                                     ; TO SCOPE REPLACE HALT W/ 240
1317                                     ; AND REPLACE NEXT INST W/ 726
1318 005220 012706 000500 172576 5$:   MOV      @BUFF,SP
1319 005224 012767 005242 172576       MOV      @RETG3,RTRAP3
1320 005232 012767 000357 172572       MOV      @357,RTRAP3+2 ; SET NEW "CC" AND PRIORITY
1321 005240 104000                       EMT                    ; TRAP HERE
1322 005242                               RETG3:
1323 005242 100405                       BMI      1$
1324 005244 012737 000127 000302       MOV      @127,@$FATAL ; MOVE TO MAILBOX # ***** 127 *****
1325 005252 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1326 005254 000000                       HALT                    ; N NOT SET
1327                                     ; TO SCOPE REPLACE HALT W/ 240
1328                                     ; AND REPLACE NEXT INST W/ 707
1329 005256                               1$:
1330 005256 001405                       BEQ      2$
1331 005260 012737 000130 000302       MOV      @130,@$FATAL ; MOVE TO MAILBOX # ***** 130 *****
1332 005266 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1333 005270 000000                       HALT                    ; Z NOT SET
1334                                     ; TO SCOPE REPLACE HALT W/ 240
1335                                     ; AND REPLACE NEXT INST W/ 701
1336 005272                               2$:
1337 005272 102405                       BVS     3$
1338 005274 012737 000131 000302       MOV      @131,@$FATAL ; MOVE TO MAILBOX # ***** 131 *****
1339 005302 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1340 005304 000000                       HALT                    ; V NOT SET
1341                                     ; TO SCOPE REPLACE HALT W/ 240
1342                                     ; AND REPLACE NEXT INST W/ 673
1343 005306                               3$:
1344 005306 103405                       BCS     4$
1345 005310 012737 000132 000302       MOV      @132,@$FATAL ; MOVE TO MAILBOX # ***** 132 *****
1346 005316 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1347 005320 000000                       HALT                    ; C NOT SET
1348                                     ; TO SCOPE REPLACE HALT W/ 240
1349                                     ; AND REPLACE NEXT INST W/ 665
1350 005322 000257 000340 172444 4$:   CCC      @340,CC
1351 005324 022767                       CMP      TST32
1352 005332 001405                       BEQ      5$
1353 005334 012737 000133 000302       MOV      @133,@$FATAL ; MOVE TO MAILBOX # ***** 133 *****
1354 005342 005212                       INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1355 005344 000000                       HALT                    ; PRIORITY WAS CHANGED, OR WRONG $STNM
1356                                     ; TO SCOPE REPLACE HALT W/ 240
1357                                     ; AND REPLACE NEXT INST W/ 653
1358 ;*****

```

```

1359 ;TEST 32 TEST THAT ALL COMBINATION OF EMT WILL CAUSE A TRAP
1360 ;*****
1361 005346 005237 000304 000304 TST32: INC 2#STESTN ;UPDATE TEST NUMBER
1362 005352 022737 000032 000304 CMP #32,2#STESTN ;SEQUENCE ERROR?
1363 005360 001011 BNE BR47 ;BR TO ERROR HALT ON SEQ ERROR
1364 005362 012767 104000 000012 MOV #EMT,RB ;INITIALIZE BASE EMT INSTRUCTION
1365 005370 012767 005416 172432 MOV #RA,30 ;RETURN FROM TRAP TO RA
1366 005376 012706 000500 RC: MOV #BUFF,SP ;SET UP STACK POINTER
1367 005402 104000 RB: EMT ;TRAP INST. WILL BE MODIFIED TO EMT+377
1368 005404 BR47:
1369 005404 012737 000134 000302 MOV #134,2#SFATAL ;MOVE TO MAILBOX # ***** 134 *****
1370 005412 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1371 005414 000000 HALT ;PREVIOUS INST FAILED TO TRAP OR WRONG $STNM
1372 ; TO SCOPE REPLACE HALT W/ 240
1373 ; AND REPLACE NEXT INST W/ 761
1374 005416 005267 177760 RA: INC RB ;INCREMENT TRAP INSTRUCTION
1375 005422 022767 104377 177752 CMP #104377,RB ;EMT+377 TO EMT?
1376 005430 103362 BHIS RC ;HAVE WE TESTED ALL
1377 ; YES
1378 005432 012767 000032 172370 MOV #32,30 ;/.+
1379 005440 005067 172366 CLR 32 ;HALT
1380 ;*****
1381 ;TEST 33 TEST THAT A TRAP OCCURES ON AN "TRACE-TRT" INSTRUCTION
1382 ;*****
1383 005444 005237 000304 000304 TST33: INC 2#STESTN ;UPDATE TEST NUMBER
1384 005450 022737 000033 000304 CMP #33,2#STESTN ;SEQUENCE ERROR?
1385 005456 001006 BNE TST34-12 ;BR TO ERROR HALT ON SEQ ERROR
1386 005460 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
1387 005464 012767 005506 172322 MOV #RETA4,RTRAP4 ;RETURN LOCATION
1388 005472 000003 TRT ;RESERVED INSTRUCTION, SHOULD TRAP
1389 005474 012737 000135 000302 MOV #135,2#SFATAL ;MOVE TO MAILBOX # ***** 135 *****
1390 005502 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1391 005504 000000 HALT ;TRT DIDN'T TRAP OR WRONG $STNM
1392 ; TO SCOPE REPLACE HALT W/ 240
1393 ; AND REPLACE NEXT INST W/ 764
1394 005506 RETA4:
1395 ;*****
1396 ;TEST 34 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1397 ;*****
1398 005506 005237 000304 000304 TST34: INC 2#STESTN ;UPDATE TEST NUMBER
1399 005512 022737 000034 000304 CMP #34,2#STESTN ;SEQUENCE ERROR?
1400 005520 001011 BNE TST35-12 ;BR TO ERROR HALT ON SEQ ERROR
1401 005522 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
1402 005526 012767 005536 172260 MOV #RETB4,RTRAP4 ;RETURN POINTER
1403 005534 000003 TRT ;RESERVED INSTRUCTION
1404 005536 020627 000474 RETB4: CMP SP,#BUFF-4 ;TEST DECREMENT OF SP
1405 005542 001405 BEQ TST35
1406 005544 012737 000136 000302 MOV #136,2#SFATAL ;MOVE TO MAILBOX # ***** 136 *****
1407 005552 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1408 005554 000000 HALT ;NOT DECREMENTED TWO WORDS, OR WRONG $STNM
1409 ; TO SCOPE REPLACE HALT W/ 240
1410 ; AND REPLACE NEXT INST W/ 761
1411 ;*****
1412 ;TEST 35 TEST THAT PROPER P.C. IS SAVED
1413 ;*****
1414 005556 005237 000304 000304 TST35: INC 2#STESTN ;UPDATE TEST NUMBER

```

```

1415 005562 022737 000035 000304      CMP      #35, @#STESTN      ; SEQUENCE ERROR?
1416 005570 001012                    BNE      TST36-12        ; BR TO ERROR HALT ON SEQ ERROR
1417 005572 012706 000500                    MOV      #BUFF, SP      ; STACK POINTER SETUP
1418 005576 012767 005606 172210          MOV      #RETC4, RTRAP4 ; RETURN FROM TRAP POINTER
1419 005604 000003                    TRT                        ; TRAP ON THIS INSTRUCTION
1420 005606 022767 005606 172660  RETC4:  CMP      #. BUFF-4      ; CHECK FOR INCREMENTED P.C.
1421 005614 001405                    BEQ      TST36
1422 005616 012737 000137 000302          MOV      #137, @#SFATAL ; MOVE TO MAILBOX # ***** 137 *****
1423 005624 005212                    INC      (R2)            ; SET MSGTYP TO FATAL ERROR
1424 005626 000000                    HALT                    ; INCORRECT P.C. OR WRONG STSTNM

```

```

; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 760

```

```

;*****
;TEST 36      TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
;*****

```

```

1430 005630 005237 000304 000304  TST36:  INC      @#STESTN      ; UPDATE TEST NUMBER
1431 005634 022737 000036 000304      CMP      #36, @#STESTN ; SEQUENCE ERROR?
1432 005642 001040                    BNE      TST37-12        ; BR TO ERROR HALT ON SEQ ERROR
1433 005644 012706 000500                    MOV      #BUFF, SP      ; SET UP
1434 005650 012767 005666 172136          MOV      #RETD4, RTRAP4 ; SET UP
1435 005656 005067 172114                    CLR      CC              ; CLEAR CC AND PRIORITY
1436 005662 000257                    CCC
1437 005664 000003                    TRT                        ; TRAP
1438 005666 026727 172604 000000  RETD4:  CMP      BUFF-2, #0 ; TEST THAT OLD STATUS WENT TO STACK

```

```

; TEST FOR ALL ZEROS

```

```

1440 005674 001405                    BEQ      1$
1441 005676 012737 000140 000302          MOV      #140, @#SFATAL ; MOVE TO MAILBOX # ***** 140 *****
1442 005704 005212                    INC      (R2)            ; SET MSGTYP TO FATAL ERROR
1443 005706 000000                    HALT                    ; INCORRECT STATUS

```

```

; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 755

```

```

1446 005710 012706 000500                    1$:  MOV      #BUFF, SP      ; SET UP
1447 005714 012767 005734 172072          MOV      #RETE4, RTRAP4 ; SET UP
1448 005722 012767 000357 172046          MOV      #357, CC       ; SET PRIORITY
1449 005730 000277                    SCC
1450 005732 000003                    TRT                        ; SET-SET CC
1451 005734 026727 172536 000357  RETE4:  CMP      BUFF-2, #357 ; TRAP
1452 005742 001405                    BEQ      TST37           ; COMPARES STATUS ON STACK
1453 005744 012737 000141 000302          MOV      #141, @#SFATAL ; MOVE TO MAILBOX # ***** 141 *****
1454 005752 005212                    INC      (R2)            ; SET MSGTYP TO FATAL ERROR
1455 005754 000000                    HALT                    ; INCORRECT STATUS ON STACK, OR WRONG STSTNM

```

```

; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 732

```

```

;*****
;TEST 37      TEST THAT "NEW" STATUS IS CORRECT
;*****

```

```

1461 005756 005237 000304 000304  TST37:  INC      @#STESTN      ; UPDATE TEST NUMBER
1462 005762 022737 000037 000304      CMP      #37, @#STESTN ; SEQUENCE ERROR?
1463 005770 001121                    BNE      BR51            ; BR TO ERROR HALT ON SEQ ERROR
1464 005772 012706 000500                    MOV      #BUFF, SP      ; CLEAR FUTURE PRIORITY AND CC
1465 005776 012767 006012 172010          MOV      #RETF4, RTRAP4 ; TEST FOR "C" CLEARED
1466 006004 005067 172006                    CLR      RTRAP4+2
1467 006010 000003                    TRT
1468 006012                    RETF4:
1469 006012 100005                    BPL      1$
1470 006014 012737 000142 000302          MOV      #142, @#SFATAL ; MOVE TO MAILBOX # ***** 142 *****

```

E03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 30
 DFKABC.P11 03-MAY-77 08:42 T37

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0030

1471	006022	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1472	006024	000000				HALT			; C NOT CLEARED
1473									; TO SCOPE REPLACE HALT W/ 240
1474									; AND REPLACE NEXT INST W/ 761
1475	006026				15:				
1476	006026	001005				BNE	25		
1477	006030	012737	000143	000302		MOV	#143,2#SFATAL		; MOVE TO MAILBOX # ***** 143 *****
1478	006036	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1479	006040	000000				HALT			; Z NOT CLEARED
1480									; TO SCOPE REPLACE HALT W/ 240
1481									; AND REPLACE NEXT INST W/ 753
1482	006042				25:				
1483	006042	102005				BVC	35		
1484	006044	012737	000144	000302		MOV	#144,2#SFATAL		; MOVE TO MAILBOX # ***** 144 *****
1485	006052	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1486	006054	000000				HALT			; V NOT CLEARED
1487									; TO SCOPE REPLACE HALT W/ 240
1488									; AND REPLACE NEXT INST W/ 745
1489	006056				35:				
1490	006056	103005				BCC	45		
1491	006060	012737	000145	000302		MOV	#145,2#SFATAL		; MOVE TO MAILBOX # ***** 145 *****
1492	006066	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1493	006070	000000				HALT			; C NOT CLEARED
1494									; TO SCOPE REPLACE HALT W/ 240
1495									; AND REPLACE NEXT INST W/ 737
1496	006072	032767	000340	171676	45:	BIT	#340,CC		; TEST PRIORITY
1497	006100	001405				BEQ	55		
1498	006102	012737	000146	000302		MOV	#146,2#SFATAL		; MOVE TO MAILBOX # ***** 146 *****
1499	006110	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1500	006112	000000				HALT			; PRIORITY NOT ZERO
1501									; TO SCOPE REPLACE HALT W/ 240
1502									; AND REPLACE NEXT INST W/ 726
1503	006114	012706	000500		55:	MOV	#BUFF,SP		
1504	006120	012767	006136	171666		MOV	#RETG4,RTRAP4		
1505	006126	012767	000357	171662		MOV	#357,RTRAP4+2		; SET NEW "CC" AND PRIORITY
1506	006134	000003				TRT			; TRAP HERE
1507	006136				RETG4:				
1508	006136	100405				BMI	15		
1509	006140	012737	000147	000302		MOV	#147,2#SFATAL		; MOVE TO MAILBOX # ***** 147 *****
1510	006146	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1511	006150	000000				HALT			; N NOT SET
1512									; TO SCOPE REPLACE HALT W/ 240
1513									; AND REPLACE NEXT INST W/ 707
1514	006152				15:				
1515	006152	001405				BEQ	25		
1516	006154	012737	000150	000302		MOV	#150,2#SFATAL		; MOVE TO MAILBOX # ***** 150 *****
1517	006162	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1518	006164	000000				HALT			; Z NOT SET
1519									; TO SCOPE REPLACE HALT W/ 240
1520									; AND REPLACE NEXT INST W/ 701
1521	006166				25:				
1522	006166	102405				BVS	35		
1523	006170	012737	000151	000302		MOV	#151,2#SFATAL		; MOVE TO MAILBOX # ***** 151 *****
1524	006176	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1525	006200	000000				HALT			; V NOT SET
1526									; TO SCOPE REPLACE HALT W/ 240

F03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 31
 DFKABC.P11 03-MAY-77 08:42 T37

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0031

```

1527                                     ; AND REPLACE NEXT INST W/ 673
1528 006202 35: BCS 45
1529 006202 103405
1530 006204 012737 000152 000302 MOV #152,2#SFATAL ; MOVE TO MAILBOX # ***** 152 *****
1531 006212 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1532 006214 000000 HALT ; C NOT SET
1533 ; TO SCOPE REPLACE HALT W/ 240
1534 ; AND REPLACE NEXT INST W/ 665
1535 006216 016706 171554 45: MOV CC,SP
1536 006222 042706 000017 BIC #17,SP
1537 006226 022706 000340 CMP #340,SP
1538 006232 001405 BEQ BR51A
1539 006234 BR51:
1540 006234 012737 000153 000302 MOV #153,2#SFATAL ; MOVE TO MAILBOX # ***** 153 *****
1541 006242 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1542 006244 000000 HALT ; PRIORITY WAS CHANGED, OR WRONG $STSTM
1543 ; TO SCOPE REPLACE HALT W/ 240
1544 ; AND REPLACE NEXT INST W/ 651
1545 006246 012767 000016 171540 BR51A: MOV #16,14
1546 006254 005067 171536 CLR 16
1547
1548 ; PDP-11 ILLEGAL AND ADDRESS INSTRUCTION TEST
1549 ; ALL INSTRUCTIONS THAT ARE RESERVED
1550 ; SHOULD TRAP TO LOCATION 4, AND THE
1551 ; PC THAT POINTS TO THE TRAPPING INSTRUCTION
1552 ; SHOULD BE PLACED ON THE STACK
1553
1554 ; *****
1555 ; TEST 40 TEST THAT A TRAP OCCURS ON AN ILLEGAL INSTRUCTION
1556 ; *****
1557 006260 005237 000304 000304 †ST40: INC 2#STESTN ; UPDATE TEST NUMBER
1558 006264 022737 000040 000304 CMP #40,2#STESTN ; SEQUENCE ERROR?
1559 006272 001006 BNE TST41-12 ; BR TO ERROR HALT ON SEQ ERROR
1560 006274 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1561 006300 012767 006322 171476 MOV #RETAS,RTRAPS ; RETURN LOCATION
1562 006306 000100 JMP %0 ; ILLEGAL INSTRUCTION, SHOULD TRAP
1563 006310 012737 000154 000302 MOV #154,2#SFATAL ; MOVE TO MAILBOX # ***** 154 *****
1564 006316 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1565 006320 000000 HALT ; ILLEGAL INSTRUCTION DIDN'T TRAP, OR WRONG $STSTM
1566 ; TO SCOPE REPLACE HALT W/ 240
1567 ; AND REPLACE NEXT INST W/ 764
1568 006322 RETAS:
1569 ; *****
1570 ; TEST 41 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1571 ; *****
1572 006322 005237 000304 000304 †ST41: INC 2#STESTN ; UPDATE TEST NUMBER
1573 006326 022737 000041 000304 CMP #41,2#STESTN ; SEQUENCE ERROR?
1574 006334 001011 BNE TST42-12 ; BR TO ERROR HALT ON SEQ ERROR
1575 006336 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1576 006342 012767 006352 171434 MOV #RETBS,RTRAPS ; RETURN POINTER
1577 006350 000100 JMP %0 ; RESERVED INSTRUCTION
1578 006352 020627 000474 RETBS: CMP SP,#BUFF-4 ; TEST DECREMENT OF SP
1579 006356 001405 BEQ TST42
1580 006360 012737 000155 000302 MOV #155,2#SFATAL ; MOVE TO MAILBOX # ***** 155 *****
1581 006366 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1582 006370 000000 HALT ; NOT DECREMENTED TWO WORDS, OR WRONG $STSTM

```


G03

```

1583                                     ; TO SCOPE REPLACE HALT W/ 240
1584                                     ; AND REPLACE NEXT INST W/ 761
1585                                     ;*****
1586                                     ;TEST 42      TEST THAT PROPER P.C. IS SAVED
1587                                     ;*****
1588 006372 005237 000304 000304  TST42: INC      2*STESTN      ;UPDATE TEST NUMBER
1589 006376 022737 000042 000304  CMP      #42,2*STESTN    ;SEQUENCE ERROR?
1590 006404 001012 000000 000304  BNE     TST43-12        ;BR TO ERROR HALT ON SEQ ERROR
1591 006406 012706 000500 000304  MOV     #BUFF,SP        ;STACK POINTER SETUP
1592 006412 012767 006422 171364  MOV     #RETCS,RTRAPS   ;RETURN FROM TRAP POINTER
1593 006420 000100 000000 000304  JMP     %0              ;TRAP ON THIS INSTRUCTION
1594 006422 022767 006422 172044  RETCS:  CMP     #.BUFF-4  ;CHECK FOR INCREMENTED P.C.
1595 006430 001405 000000 000304  BEQ     TST43
1596 006432 012737 000156 000302  MOV     #156,2*SFATAL   ;MOVE TO MAILBOX # ***** 156 *****
1597 006440 005212 000000 000302  INC     (R2)            ;SET MSGTYP TO FATAL ERROR
1598 006442 000000 000000 000302  HALT                    ;INCORRECT P.C. OR WRONG $STNM
1599                                     ; TO SCOPE REPLACE HALT W/ 240
1600                                     ; AND REPLACE NEXT INST W/ 760
1601                                     ;*****
1602                                     ;TEST 43      TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1603                                     ;*****
1604 006444 005237 000304 000304  TST43: INC      2*STESTN      ;UPDATE TEST NUMBER
1605 006450 022737 000043 000304  CMP     #43,2*STESTN    ;SEQUENCE ERROR?
1606 006456 001040 000000 000304  BNE     TST44-12        ;BR TO ERROR HALT ON SEQ ERROR
1607 006460 012706 000500 000304  MOV     #BUFF,SP        ;SET UP
1608 006464 012767 006502 171312  MOV     #RETDS,RTRAPS   ;SET UP
1609 006472 005067 171300 000304  CLR     CC              ;CLEAR CC AND PRIORITY
1610 006476 000257 000000 000304  CCC
1611 006500 000100 000000 000304  JMP     %0              ;TRAP
1612 006502 026727 171770 000000  RETDS:  CMP     BUFF-2,#0  ;TEST THAT OLD STATUS WENT TO STACK
1613 006510 001405 000000 000302  BEQ     1$
1614 006512 012737 000157 000302  MOV     #157,2*SFATAL   ;MOVE TO MAILBOX # ***** 157 *****
1615 006520 005212 000000 000302  INC     (R2)            ;SET MSGTYP TO FATAL ERROR
1616 006522 000000 000000 000302  HALT                    ;INCORRECT STATUS
1617                                     ; TO SCOPE REPLACE HALT W/ 240
1618                                     ; AND REPLACE NEXT INST W/ 755
1619 006524 012706 000500 000302  1$:    MOV     #BUFF,SP        ;SET UP
1620 006530 012767 006550 171246  MOV     #RETES,RTRAPS   ;SET UP
1621 006536 012767 000357 171232  MOV     #357,CC         ;SET PRIORITY
1622 006544 000277 000000 000302  SCC
1623 006546 000100 000000 000302  JMP     %0              ;SET CC
1624 006550 026727 171722 000357  RETES:  CMP     BUFF-2,#357 ;COMPARES STATUS ON STACK
1625 006556 001405 000000 000302  BEQ     TST44
1626 006560 012737 000160 000302  MOV     #160,2*SFATAL   ;MOVE TO MAILBOX # ***** 160 *****
1627 006566 005212 000000 000302  INC     (R2)            ;SET MSGTYP TO FATAL ERROR
1628 006570 000000 000000 000302  HALT                    ;INCORRECT STATUS ON STACK, OR WRONG $STNM
1629                                     ; TO SCOPE REPLACE HALT W/ 240
1630                                     ; AND REPLACE NEXT INST W/ 732
1631                                     ;*****
1632                                     ;TEST 44      TEST THAT "NEW" STATUS IS CORRECT
1633                                     ;*****
1634 006572 005237 000304 000304  TST44: INC      2*STESTN      ;UPDATE TEST NUMBER
1635 006576 022737 000044 000304  CMP     #44,2*STESTN    ;SEQUENCE ERROR?
1636 006604 001117 000000 000304  BNE     TST45-12        ;BR TO ERROR HALT ON SEQ ERROR
1637 006606 012706 000500 000304  MOV     #BUFF,SP        ;SET UP
1638 006612 012767 006626 171164  MOV     #RETF5,RTRAPS   ;SET UP

```

H03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 33
 DFKABC.P11 03-MAY-77 08:42 T44

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0033

1639	006620	005067	171162		CLR	RTRAP5+2		; CLEAR FUTURE PRIORITY AND CC
1640	006624	000100			JMP	%0		
1641	006626				RETFS:			; TEST FOR "C" CLEARED
1642	006626	100005			BPL	1\$		
1643	006630	012737	000161	000302	MOV	#161, @SFATAL		; MOVE TO MAILBOX # ***** 161 *****
1644	006636	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1645	006640	000000			HALT			; C NOT CLEARED
1646								; TO SCOPE REPLACE HALT W/ 240
1647								; AND REPLACE NEXT INST W/ 761
1648	006642				1\$:			
1649	006642	001005			BNE	2\$		
1650	006644	012737	000162	000302	MOV	#162, @SFATAL		; MOVE TO MAILBOX # ***** 162 *****
1651	006652	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1652	006654	000000			HALT			; Z NOT CLEARED
1653								; TO SCOPE REPLACE HALT W/ 240
1654								; AND REPLACE NEXT INST W/ 753
1655	006656				2\$:			
1656	006656	102005			BVC	3\$		
1657	006660	012737	000163	000302	MOV	#163, @SFATAL		; MOVE TO MAILBOX # ***** 163 *****
1658	006666	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1659	006670	000000			HALT			; V NOT CLEARED
1660								; TO SCOPE REPLACE HALT W/ 240
1661								; AND REPLACE NEXT INST W/ 745
1662	006672				3\$:			
1663	006672	103005			BCC	4\$		
1664	006674	012737	000164	000302	MOV	#164, @SFATAL		; MOVE TO MAILBOX # ***** 164 *****
1665	006702	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1666	006704	000000			HALT			; C NOT CLEARED
1667								; TO SCOPE REPLACE HALT W/ 240
1668								; AND REPLACE NEXT INST W/ 737
1669	006706	032767	000357	171062	4\$:	#357, CC		; TEST PRIORITY
1670	006714	001405			BEQ	5\$		
1671	006716	012737	000165	000302	MOV	#165, @SFATAL		; MOVE TO MAILBOX # ***** 165 *****
1672	006724	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1673	006726	000000			HALT			; PRIORITY NOT ZERO
1674								; TO SCOPE REPLACE HALT W/ 240
1675								; AND REPLACE NEXT INST W/ 726
1676	006730	012706	000500		5\$:	#BUFF, SP		
1677	006734	012767	006752	171042	MOV	#RETGS, RTRAP5		
1678	006742	012767	000357	171036	MOV	#357, RTRAP5+2		; SET NEW "CC" AND PRIORITY
1679	006750	000100			JMP	%0		; TRAP HERE
1680	006752				RETGS:			
1681	006752	100405			BMI	1\$		
1682	006754	012737	000166	000302	MOV	#166, @SFATAL		; MOVE TO MAILBOX # ***** 166 *****
1683	006762	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1684	006764	000000			HALT			; N NOT SET
1685								; TO SCOPE REPLACE HALT W/ 240
1686								; AND REPLACE NEXT INST W/ 707
1687	006766				1\$:			
1688	006766	001405			BEQ	2\$		
1689	006770	012737	000167	000302	MOV	#167, @SFATAL		; MOVE TO MAILBOX # ***** 167 *****
1690	006776	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1691	007000	000000			HALT			; Z NOT SET
1692								; TO SCOPE REPLACE HALT W/ 240
1693								; AND REPLACE NEXT INST W/ 701
1694	007002				2\$:			

```

1695 007002 102405      BVS      3$
1696 007004 012737 000170 000302  MOV      #170,0#$FATAL ; MOVE TO MAILBOX # ***** 170 *****
1697 007012 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
1698 007014 000000      HALT                    ; V NOT SET
1699                                     ; TO SCOPE REPLACE HALT W/ 240
1700                                     ; AND REPLACE NEXT INST W/ 673

```

```

1701 007016                                     3$:
1702 007016 103405      BCS      4$
1703 007020 012737 000171 000302  MOV      #171,0#$FATAL ; MOVE TO MAILBOX # ***** 171 *****
1704 007026 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
1705 007030 000000      HALT                    ; C NOT SET
1706                                     ; TO SCOPE REPLACE HALT W/ 240
1707                                     ; AND REPLACE NEXT INST W/ 665

```

```

1708 007032 016706 170740 4$:  MOV      CC,SP
1709 007036 022706 000357  CMP      #357,SP
1710 007042 001405      BEQ      TST45
1711 007044 012737 000172 000302  MOV      #172,0#$FATAL ; MOVE TO MAILBOX # ***** 172 *****
1712 007052 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
1713 007054 000000      HALT                    ; PRIORITY WAS CHANGED, OR WRONG STSTNM
1714                                     ; TO SCOPE REPLACE HALT W/ 240
1715                                     ; AND REPLACE NEXT INST W/ 653

```

```

1716 ;*****
1717 ;TEST 45      TEST THAT A TRAP OCCURES ON ALL ILLEGAL INSTRUCTION
1718 ;*****

```

```

1719 007056 005237 000304 000304  TST45: INC      0$STESTN ; UPDATE TEST NUMBER
1720 007062 022737 000045 000304  CMP      #45,0$STESTN ; SEQUENCE ERROR?
1721 007070 001006      BNE      TST46-12 ; BR TO ERROR HALT ON SEQ ERROR
1722 007072 012706 000500      MOV      #BUFF,SP ; STACK POINTER SETUP
1723 007076 012767 007120 170700  MOV      #RETH5,RTRAPS ; RETURN LOCATION
1724 007104 004000      JSR      %0,%0 ; RESERVED INSTRUCTION, SHOULD TRAP
1725 007106 012737 000173 000302  MOV      #173,0#$FATAL ; MOVE TO MAILBOX # ***** 173 *****
1726 007114 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
1727 007116 000000      HALT                    ; DIDN'T TRAP, OR WRONG STSTNM
1728                                     ; TO SCOPE REPLACE HALT W/ 240
1729                                     ; AND REPLACE NEXT INST W/ 764

```

```

1730 007120      RETH5:
1731 ;*****
1732 ;TEST 46      TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1733 ;*****

```

```

1734 007120 005237 000304 000304  TST46: INC      0$STESTN ; UPDATE TEST NUMBER
1735 007124 022737 000046 000304  CMP      #46,0$STESTN ; SEQUENCE ERROR?
1736 007132 001011      BNE      TST47-12 ; BR TO ERROR HALT ON SEQ ERROR
1737 007134 012706 000500      MOV      #BUFF,SP ; STACK POINTER SETUP
1738 007140 012767 007150 170636  MOV      #RETJ,RTRAPS ; RETURN POINTER
1739 007146 004000      JSR      %0,%0 ; RESERVED INSTRUCTION
1740 007150 020627 000474      RETJ:  CMP      SP,#BUFF-4 ; TEST DECREMENT OF SP
1741 007154 001405      BEQ      TST47
1742 007156 012737 000174 000302  MOV      #174,0#$FATAL ; MOVE TO MAILBOX # ***** 174 *****
1743 007164 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
1744 007166 000000      HALT                    ; NOT DECREMENTED TWO WORDS, OR WRONG STSTNM
1745                                     ; TO SCOPE REPLACE HALT W/ 240
1746                                     ; AND REPLACE NEXT INST W/ 761

```

```

1747 ;*****
1748 ;TEST 47      TEST THAT PROPER P.C. IS SAVED
1749 ;*****

```

```

1750 007170 005237 000304  TST47: INC      0$STESTN ; UPDATE TEST NUMBER

```

J03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 35
DFKABC.P11 03-MAY-77 08:42 T47

TEST THAT PROPER P.C. IS SAVED

SEQ 0035

```

1751 007174 022737 000047 000304      CMP      #47,0#STESTN      ; SEQUENCE ERROR?
1752 007202 001012                    BNE      TST50-12        ; BR TO ERROR HALT ON SEQ ERROR
1753 007204 012706 000500                    MOV      #BUFF,SP        ; STACK POINTER SETUP
1754 007210 012767 007220 170566      MOV      #RETK,RTRAPS    ; RETURN FROM TRAP POINTER
1755 007216 004000                    JSR      %0,%0           ; TRAP ON THIS INSTRUCTION
1756 007220 022767 007220 171246      RETK:    CMP      #INSTK+2,BUFF-4 ; CHECK FOR INCREMENTED P.C.
1757 007226 001405                    BEQ      TST50
1758 007230 012737 000175 000302      MOV      #175,0#SFATAL   ; MOVE TO MAILBOX # ***** 175 *****
1759 007236 005212                    INC      (R2)            ; SET MSGTYP TO FATAL ERROR
1760 007240 000000                    HALT
                                ; INCORRECT P.C. OR WRONG STSTNM
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 760

```

```

:*****
;TEST 50      TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
:*****

```

```

1767 007242 005237 000304 000304      TST50:  INC      0#STESTN      ; UPDATE TEST NUMBER
1768 007246 022737 000050 000304      CMP      #50,0#STESTN    ; SEQUENCE ERROR?
1769 007254 001040                    BNE      TST51-12        ; BR TO ERROR HALT ON SEQ ERROR
1770 007256 012706 000500                    MOV      #BUFF,SP        ; SET UP
1771 007262 012767 007300 170514      MOV      #RETL,RTRAPS    ; SET UP
1772 007270 005067 170502                    CLR      CC              ; CLEAR CC AND PRIORITY
1773 007274 000257                    CCC
1774 007276 004000                    JSR      %0,%0           ; TRAP
1775 007300 026727 171172 000000      RETL:   CMP      BUFF-2,#0 ; TEST THAT OLD STATUS WENT TO STACK
1776 007306 001405                    BEQ      1$
1777 007310 012737 000176 000302      MOV      #176,0#SFATAL   ; MOVE TO MAILBOX # ***** 176 *****
1778 007316 005212                    INC      (R2)            ; SET MSGTYP TO FATAL ERROR
1779 007320 000000                    HALT                    ; INCORRECT STATUS
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 755

```

```

1782 007322 012706 000500 1$:      MOV      #BUFF,SP        ; SET UP
1783 007326 012767 007346 170450      MOV      #RETM,RTRAPS    ; SET UP
1784 007334 012767 000357 170434      MOV      #357,CC         ; SET PRIORITY
1785 007342 000277                    SCC                      ; SET CC
1786 007344 004000                    JSR      %0,%0           ; TRAP
1787 007346 026727 171124 000357      RETM:   CMP      BUFF-2,#357 ; COMPARES STATUS ON STACK
1788 007354 001405                    BEQ      TST51
1789 007356 012737 000177 000302      MOV      #177,0#SFATAL   ; MOVE TO MAILBOX # ***** 177 *****
1790 007364 005212                    INC      (R2)            ; SET MSGTYP TO FATAL ERROR
1791 007366 000000                    HALT                    ; INCORRECT STATUS ON STACK, OR WRONG STSTNM
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 732

```

```

:*****
;TEST 51      TEST THAT "NEW" STATUS IS CORRECT
:*****

```

```

1797 007370 005237 000304 000304      TST51:  INC      0#STESTN      ; UPDATE TEST NUMBER
1798 007374 022737 000051 000304      CMP      #51,0#STESTN    ; SEQUENCE ERROR?
1799 007402 001116                    BNE      TST52-12        ; BR TO ERROR HALT ON SEQ ERROR
1800 007404 012706 000500                    MOV      #BUFF,SP        ; SET UP
1801 007410 012767 007424 170366      MOV      #RETN,RTRAPS    ; SET UP
1802 007416 005067 170364                    CLR      RTRAPS+2        ; CLEAR FUTURE PRIORITY AND CC
1803 007422 004000                    JSR      %0,%0           ; TRAP
1804 007424                    RETN:   BPL      1$
                                ; TEST FOR "C" CLEARED
1805 007424 100005                    MOV      #200,0#SFATAL   ; MOVE TO MAILBOX # ***** 200 *****
1806 007426 012737 000200 000302

```

K03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 36
 DFKABC.P11 03-MAY-77 08:42 T51

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0036

1807	007434	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1808	007436	000000			HALT					C NOT CLEARED
1809										TO SCOPE REPLACE HALT W/ 240
1810										AND REPLACE NEXT INST W/ 761
1811	007440				1S:					
1812	007440	001005			BNE	2S				
1813	007442	012737	000201	000302	MOV	#201, @#SFATAL				MOVE TO MAILBOX # ***** 201 *****
1814	007450	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1815	007452	000000			HALT					Z NOT CLEARED
1816										TO SCOPE REPLACE HALT W/ 240
1817										AND REPLACE NEXT INST W/ 753
1818	007454				2S:					
1819	007454	102005			BVC	3S				
1820	007456	012737	000202	000302	MOV	#202, @#SFATAL				MOVE TO MAILBOX # ***** 202 *****
1821	007464	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1822	007466	000000			HALT					V NOT CLEARED
1823										TO SCOPE REPLACE HALT W/ 240
1824										AND REPLACE NEXT INST W/ 745
1825	007470				3S:					
1826	007470	103005			BCC	4S				
1827	007472	012737	000203	000302	MOV	#203, @#SFATAL				MOVE TO MAILBOX # ***** 203 *****
1828	007500	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1829	007502	000000			HALT					C NOT CLEARED
1830										TO SCOPE REPLACE HALT W/ 240
1831										AND REPLACE NEXT INST W/ 737
1832	007504	016700	170266		4S:	CC, %0				TEMP STORAGE
1833	007510	001405			MOV	5S				
1834	007512	012737	000204	000302	BEG	#204, @#SFATAL				MOVE TO MAILBOX # ***** 204 *****
1835	007520	005212			MOV	(R2)				SET MSGTYP TO FATAL ERROR
1836	007522	000000			INC					PRIORITY NOT ZERO
1837					HALT					TO SCOPE REPLACE HALT W/ 240
1838										AND REPLACE NEXT INST W/ 727
1839	007524	012706	000500		5S:	#BUFF, SP				
1840	007530	012767	007546	170246	MOV	#RET0, RTRAPS				
1841	007536	012767	000357	170242	MOV	#357, RTRAPS+2				SET NEW "CC" AND PRIORITY
1842	007544	004000			JSR	%0, %0				TRAP HERE
1843	007546				RETO:					
1844	007546	100405			BMI	1S				
1845	007550	012737	000205	000302	MOV	#205, @#SFATAL				MOVE TO MAILBOX # ***** 205 *****
1846	007556	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1847	007560	000000			HALT					N NOT SET
1848										TO SCOPE REPLACE HALT W/ 240
1849										AND REPLACE NEXT INST W/ 710
1850	007562				1S:					
1851	007562	001405			BEG	2S				
1852	007564	012737	000206	000302	MOV	#206, @#SFATAL				MOVE TO MAILBOX # ***** 206 *****
1853	007572	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1854	007574	000000			HALT					Z NOT SET
1855										TO SCOPE REPLACE HALT W/ 240
1856										AND REPLACE NEXT INST W/ 702
1857	007576				2S:					
1858	007576	102405			BVS	3S				
1859	007600	012737	000207	000302	MOV	#207, @#SFATAL				MOVE TO MAILBOX # ***** 207 *****
1860	007606	005212			INC	(R2)				SET MSGTYP TO FATAL ERROR
1861	007610	000000			HALT					V NOT SET
1862										TO SCOPE REPLACE HALT W/ 240

L03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 37
 DFKABC.P11 03-MAY-77 08:42 TS1

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0037

```

1863                                     ; AND REPLACE NEXT INST W/ 674
1864 007612 35:
1865 007612 103405
1866 007614 012737 000210 000302      BCS      45
1867 007622 005212                      MOV      #210, @SFATAL ; MOVE TO MAILBOX # ***** 210 *****
1868 007624 000000                      INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1869                                     ; C NOT SET
1870                                     ; TO SCOPE REPLACE HALT W/ 240
1871 007626 016700 170144                45:      MOV      CC, %0
1872 007632 022700 000357                CMP      #357, %0
1873 007636 001405                        BEQ      TST52
1874 007640 012737 000211 000302      MOV      #211, @SFATAL ; MOVE TO MAILBOX # ***** 211 *****
1875 007646 005212                      INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1876 007650 000000                      HALT
1877                                     ; PRIORITY WAS CHANGED, OR WRONG STSTNM
1878                                     ; TO SCOPE REPLACE HALT W/ 240
1879                                     ; AND REPLACE NEXT INST W/ 654
1880 ;*****
1881 ;TEST 52      TEST THAT A TRAP OCCURES ON AN ILLEGAL ADDRESS
1882 ;*****
1883 007652 005237 000304                †TST52: INC      @STESTN ; UPDATE TEST NUMBER
1884 007656 022737 000052 000304        CMP      #52, @STESTN ; SEQUENCE ERROR?
1885 007664 001007                      BNE      TST53-12     ; BR TO ERROR HALT ON SEQ ERROR
1886 007666 012706 000500                MOV      #BUFF, SP   ; STACK POINTER SETUP
1887 007672 012767 007716 170104        MOV      #RETP, RTRAPS ; RETURN LOCATION
1888 007700 005767 170075                TST 1 ; ILLEGAL ADDRESS INSTRUCTION, SHOULD TRAP
1889 007704 012737 000212 000302      MOV      #212, @SFATAL ; MOVE TO MAILBOX # ***** 212 *****
1890 007712 005212                      INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1891 007714 000000                      HALT
1892                                     ; ILLEGAL ADDRESS DID NOT TRAP, OR WRONG STSTNM
1893                                     ; TO SCOPE REPLACE HALT W/ 240
1894                                     ; AND REPLACE NEXT INST W/ 763
1894 007716      RETP:
1895 ;*****
1896 ;TEST 53      TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1897 ;*****
1898 007716 005237 000304                †TST53: INC      @STESTN ; UPDATE TEST NUMBER
1899 007722 022737 000053 000304        CMP      #53, @STESTN ; SEQUENCE ERROR?
1900 007730 001012                      BNE      TST54-12     ; BR TO ERROR HALT ON SEQ ERROR
1901 007732 012706 000500                MOV      #BUFF, SP   ; STACK POINTER SETUP
1902 007736 012767 007750 170040        MOV      #RETQ, RTRAPS ; RETURN POINTER
1903 007744 005767 170031                TST 1 ; RESERVED INSTRUCTION
1904 007750 020627 000474                RETQ:  CMP      SP, #BUFF-4 ; TEST DECREMENT OF SP
1905 007754 001405                        BEQ      TST54
1906 007756 012737 000213 000302      MOV      #213, @SFATAL ; MOVE TO MAILBOX # ***** 213 *****
1907 007764 005212                      INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1908 007766 000000                      HALT
1909                                     ; NOT DECREMENTED TWO WORDS, OR WRONG STSTNM
1910                                     ; TO SCOPE REPLACE HALT W/ 240
1911                                     ; AND REPLACE NEXT INST W/ 760
1912 ;*****
1913 ;TEST 54      TEST THAT PROPER P.C. IS SAVED
1914 ;*****
1914 007770 005237 000304                †TST54: INC      @STESTN ; UPDATE TEST NUMBER
1915 007774 022737 000054 000304        CMP      #54, @STESTN ; SEQUENCE ERROR?
1916 010002 001013                      BNE      TST55-12     ; BR TO ERROR HALT ON SEQ ERROR
1917 010004 012706 000500                MOV      #BUFF, SP   ; STACK POINTER SETUP
1918 010010 012767 010022 167766        MOV      #RETR, RTRAPS ; RETURN FROM TRAP POINTER
  
```

M03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 38
 DFKABC.P11 03-MAY-77 08:42 T54

TEST THAT PROPER P.C. IS SAVED

SEQ 0038

```

1919 010016 005767 167757          TST 1          ; TRAP ON THIS INSTRUCTION
1920 010022 022767 010022 170444 RETR: CMP          #. BUFF-4      ; CHECK FOR INCREMENTED P.C.
1921 010030 001405          BEQ          TST55
1922 010032 012737 000214 000302 MOV          #214, @#SFATAL ; MOVE TO MAILBOX # ***** 214 *****
1923 010040 005212          INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1924 010042 000000          HALT         ; INCORRECT P.C., OR WRONG STSTNM
1925                                     ; TO SCOPE REPLACE HALT W/ 240
1926                                     ; AND REPLACE NEXT INST W/ 757
1927                                     ; *****
1928 ; TEST 55          TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1929                                     ; *****
1930 010044 005237 000304          TST55: INC          @#STESTN ; UPDATE TEST NUMBER
1931 010050 022737 000055 000304 CMP          #55, @#STESTN ; SEQUENCE ERROR?
1932 010056 001042          BNE          TST56-12 ; BR TO ERROR HALT ON SEQ ERROR
1933 010060 012706 000500          MOV          #BUFF, SP ; SET UP
1934 010064 012767 010104 167712 MOV          #RETS, RTRAPS ; SET UP
1935 010072 005067 167700          CLR          CC      ; CLEAR CC AND PRIORITY /
1936 010076 000257          CCC
1937 010100 005767 167675          TST 1          ; TRAP
1938 010104 026727 170366 000C00 RETS: CMP          BUFF-2, #0 ; TEST THAT OLD STATUS WENT TO STACK
1939 010112 001405          BEQ          IS
1940 010114 012737 000215 000302 MOV          #215, @#SFATAL ; MOVE TO MAILBOX # ***** 215 *****
1941 010122 005212          INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1942 010124 000000          HALT         ; INCORRECT STATUS
1943                                     ; TO SCOPE REPLACE HALT W/ 240
1944                                     ; AND REPLACE NEXT INST W/ 754
1945 010126 012706 000500          IS:  MOV          #BUFF, SP ; SET UP
1946 010132 012767 010154 167644 MOV          #RETT, RTRAPS ; SET UP
1947 010140 012767 000357 167630 MOV          #357, CC   ; SET PRIORITY
1948 010146 000277          SCC
1949 010150 005767 167625          TST 1          ; TRAP
1950 010154 026727 170316 000357 RETT: CMP          BUFF-2, #357 ; COMPARES STATUS ON STACK
1951 010162 001405          BEQ          TST56
1952 010164 012737 000216 000302 MOV          #216, @#SFATAL ; MOVE TO MAILBOX # ***** 216 *****
1953 010172 005212          INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1954 010174 000000          HALT         ; INCORRECT STATUS ON STACK, OR WRONG STSTNM
1955                                     ; TO SCOPE REPLACE HALT W/ 240
1956                                     ; AND REPLACE NEXT INST W/ 730
1957                                     ; *****
1958 ; TEST 56          TEST THAT "NEW" STATUS IS CORRECT
1959                                     ; *****
1960 010176 005237 000304          TST56: INC          @#STESTN ; UPDATE TEST NUMBER
1961 010202 022737 000056 000304 CMP          #56, @#STESTN ; SEQUENCE ERROR?
1962 010210 001121          BNE          TST57-12 ; BR TO ERROR HALT ON SEQ ERROR
1963 010212 012706 000500          MOV          #BUFF, SP ; SET UP
1964 010216 012767 010234 167560 MOV          #RETU, RTRAPS ; SET UP
1965 010224 005067 167556          CLR          RTRAPS+2 ; CLEAR FUTURE PRIORITY AND CC
1966 010230 005767 167545          TST 1          ; TRAP HERE
1967 010234          RETU:          ; TEST FOR "C" CLEARED
1968 010234 100005          BPL          IS
1969 010236 012737 000217 000302 MOV          #217, @#SFATAL ; MOVE TO MAILBOX # ***** 217 *****
1970 010244 005212          INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1971 010246 000000          HALT         ; C NOT CLEARED
1972                                     ; TO SCOPE REPLACE HALT W/ 240
1973                                     ; AND REPLACE NEXT INST W/ 760
1974 010250          IS:

```

N03

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 39
 DFKABC.P11 03-MAY-77 08:42 T56

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0039

1975	010250	001005				BNE	25			
1976	010252	012737	000220	000302		MOV	#220, @#SFATAL	:	MOVE TO MAILBOX # ***** 220 *****	
1977	010260	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
1978	010262	000000				HALT		:	Z NOT CLEARED	
1979								:	TO SCOPE REPLACE HALT W/ 240	
1980								:	AND REPLACE NEXT INST W/ 752	
1981	010264				25:					
1982	010264	102005				BVC	35			
1983	010266	012737	000221	000302		MOV	#221, @#SFATAL	:	MOVE TO MAILBOX # ***** 221 *****	
1984	010274	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
1985	010276	000000				HALT		:	V NOT CLEARED	
1986								:	TO SCOPE REPLACE HALT W/ 240	
1987								:	AND REPLACE NEXT INST W/ 744	
1988	010300				35:					
1989	010300	103005				BCC	45			
1990	010302	012737	000222	000302		MOV	#222, @#SFATAL	:	MOVE TO MAILBOX # ***** 222 *****	
1991	010310	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
1992	010312	000000				HALT		:	C NOT CLEARED	
1993								:	TO SCOPE REPLACE HALT W/ 240	
1994								:	AND REPLACE NEXT INST W/ 736	
1995	010314	032767	000357	167454	45:	BIT	#357, CC	:	TEST PRIORITY FOR ZERO	
1996	010322	001405				BEQ	55			
1997	010324	012737	000223	000302		MOV	#223, @#SFATAL	:	MOVE TO MAILBOX # ***** 223 *****	
1998	010332	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
1999	010334	000000				HALT		:	PRIORITY NOT ZERO	
2000								:	TO SCOPE REPLACE HALT W/ 240	
2001								:	AND REPLACE NEXT INST W/ 725	
2002	010336	012706	000500		55:	MOV	#BUFF, SP			
2003	010342	012767	010362	167434		MOV	#RETV, RTRAPS			
2004	010350	012767	000357	167430		MOV	#357, RTRAPS+2	:	SET NEW "CC" AND PRIORITY	
2005	010356	005767	167417			TST	1	:	TRACE HERE	
2006	010362				RETV:					
2007	010362	100405				BMI	15			
2008	010364	012737	000224	000302		MOV	#224, @#SFATAL	:	MOVE TO MAILBOX # ***** 224 *****	
2009	010372	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
2010	010374	000000				HALT		:	N NOT SET	
2011								:	TO SCOPE REPLACE HALT W/ 240	
2012								:	AND REPLACE NEXT INST W/ 705	
2013	010376				15:					
2014	010376	001405				BEQ	25			
2015	010400	012737	000225	000302		MOV	#225, @#SFATAL	:	MOVE TO MAILBOX # ***** 225 *****	
2016	010406	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
2017	010410	000000				HALT		:	Z NOT SET	
2018								:	TO SCOPE REPLACE HALT W/ 240	
2019								:	AND REPLACE NEXT INST W/ 677	
2020	010412				25:					
2021	010412	102405				BVS	35			
2022	010414	012737	000226	000302		MOV	#226, @#SFATAL	:	MOVE TO MAILBOX # ***** 226 *****	
2023	010422	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	
2024	010424	000000				HALT		:	V NOT SET	
2025								:	TO SCOPE REPLACE HALT W/ 240	
2026								:	AND REPLACE NEXT INST W/ 671	
2027	010426				35:					
2028	010426	103405				BCS	45			
2029	010430	012737	000227	000302		MOV	#227, @#SFATAL	:	MOVE TO MAILBOX # ***** 227 *****	
2030	010436	005212				INC	(R2)	:	SET MSGTYP TO FATAL ERROR	


```

2031 010440 000000          HALT          ;C NOT SET
2032                                     ; TO SCOPE REPLACE HALT W/ 240
2033                                     ; AND REPLACE NEXT INST W/ 663
2034 010442 016700 167330 45:  MOV      CC,%D
2035 010446 022700 000357      CMP      #357,%D
2036 010452 001405          BEQ      TST57
2037 010454 012737 000230 000302  MOV      #230,%#FATAL
2038 010462 005212          INC      (R2)
2039 010464 000000          HALT
                                     ; MOVE TO MAILBOX # ***** 230 *****
                                     ; SET MSGTYP TO FATAL ERROR
                                     ; PRIORITY WAS CHANGED, OR WRONG $STNM
                                     ; TO SCOPE REPLACE HALT W/ 240
                                     ; AND REPLACE NEXT INST W/ 651
2040
2041
2042
2043
2044
2045 010466 005237 000304  TST57: INC      %#STESTN
2046 010472 022737 000057 000304  CMP      #57,%#STESTN
2047 010500 001006          BNE      TST60-12
2048 010502 012706 000150          MOV      #150,%6
2049 010506 012767 010530 167270  MOV      #TDEC1,4
2050 010514 005746          TST      -(6)
2051 010516 012737 000231 000302  MOV      #231,%#FATAL
2052 010524 005212          INC      (R2)
2053 010526 000000          HALT
                                     ; UPDATE TEST NUMBER
                                     ; SEQUENCE ERROR?
                                     ; BR TO ERROR HALT ON SEQ ERROR
                                     ; R6 = 150
                                     ; STACK OVERFLOW TRAP POINTER
                                     ; WITH R6 = 150 SHOULD TRAP
                                     ; MOVE TO MAILBOX # ***** 231 *****
                                     ; SET MSGTYP TO FATAL ERROR
                                     ; SHOULD HAVE TRAPPED, OR WRONG $STNM
                                     ; TO SCOPE REPLACE HALT W/ 240
                                     ; AND REPLACE NEXT INST W/ 764
2054
2055
2056 010530          TDEC1:
2057
2058
2059
2060
2061 010530 005237 000304  TST60: INC      %#STESTN
2062 010534 022737 000060 000304  CMP      #60,%#STESTN
2063 010542 001011          BNE      TST61-12
2064 010544 012706 000150          MOV      #150,%6
2065 010550 012767 010560 167226  MOV      #TDEC2,4
2066 010556 005746          TST      -(6)
2067 010560 020627 000142  TDEC2: CMP      %6,#142
2068 010564 001405          BEQ      TST61
2069 010566 012737 000232 000302  MOV      #232,%#FATAL
2070 010574 005212          INC      (R2)
2071 010576 000000          HALT
                                     ; MOVE TO MAILBOX # ***** 232 *****
                                     ; SET MSGTYP TO FATAL ERROR
                                     ; R6 NOT = 142, OR WRONG $STNM
                                     ; TO SCOPE REPLACE HALT W/ 240
                                     ; AND REPLACE NEXT INST W/ 761
2072
2073
2074

```

```

2075 ;*****
2076 ;TEST 61 TEST DIFFERENT TYPES OF OVERFLOW
2077 ;*****
2078 010600 005237 000304 000304 †ST61: INC @#STESTN ;UPDATE TEST NUMBER
2079 010604 022737 000061 000304 CMP #61,@#STESTN ;SEQUENCE ERROR?
2080 010612 001043 BNE TST62-12 ;BR TO ERROR HALT ON SEQ ERROR
2081 010614 012706 000150 MOV #150,%6 ;STATUS WORD OF LOC 10
2082 010620 005067 167322 CLR 146 ;RETURN TO LOC 4
2083 010624 012767 010634 167152 MOV #TDEC3,4
2084 010632 005246 INC -(6)
2085 010634 005767 167306 TDEC3: TST 146
2086 010640 001005 BNE 1$
2087 010642 012737 000233 000302 MOV #233,@#SFATAL ;MOVE TO MAILBOX # ***** 233 *****
2088 010650 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2089 010652 000000 HALT ;INCREMENT OPERATION NOT INHIBITED
2090 ; TO SCOPE REPLACE HALT W/ 240
2091 ; AND REPLACE NEXT INST W/ 757
2092 010654 012705 001000 1$: MOV #1000,%5
2093 010660 012706 000400 MOV #400,%6
2094 010664 012767 010706 167112 MOV #TDEC4,4
2095 010672 124645 CMPB -(6),-(5)
2096 010674 012737 000234 000302 MOV #234,@#SFATAL ;MOVE TO MAILBOX # ***** 234 *****
2097 010702 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2098 010704 000000 HALT ;STACK = 400 AND DECREMENTED, SHOULD TRAP
2099 ; TO SCOPE REPLACE HALT W/ 240
2100 ; AND REPLACE NEXT INST W/ 742
2101 010706 012706 000400 TDEC4: MOV #400,%6
2102 010712 012767 010734 167064 MOV #TDEC7,4
2103 010720 134546 BITB -(5),-(6)
2104 010722 TDEC6:
2105 010722 012737 000235 000302 MOV #235,@#SFATAL ;MOVE TO MAILBOX # ***** 235 *****
2106 010730 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2107 010732 000000 HALT ;NO STACK OVERFLOW, OR WRONG $STNM
2108 ; TO SCOPE REPLACE HALT W/ 240
2109 ; AND REPLACE NEXT INST W/ 727
2110 010734 TDEC7:
2111 ;*****
2112 ;TEST 62 TEST THAT AN 7 CAUSES AN OVERFLOW TRAP
2113 ;*****
2114 †ST62: INC @#STESTN ;UPDATE TEST NUMBER
2115 010734 005237 000304 000304 CMP #62,@#STESTN ;SEQUENCE ERROR?
2116 010740 022737 000062 000304 BNE VDEC2 ;BR TO ERROR HALT ON SEQ ERROR
2117 010746 001011 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2118 010750 012706 000400 MOV #VDEC2,10 ;SET UP 7 VECTOR
2119 010754 012767 010772 167026 MOV #VDEC1,4 ;SET UP OVERFLOW VECTOR
2120 010762 012767 011004 167014 7 ;THIS TRAP SHOULD CAUSE OVERFLOW
2121 010770 000007 VDEC2:
2122 010772 MOV #236,@#SFATAL ;MOVE TO MAILBOX # ***** 236 *****
2123 010772 012737 000236 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
2124 011000 005212 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR, OR WRONG $STNM
2125 011002 000000 ; TO SCOPE REPLACE HALT W/ 240
2126 ; AND REPLACE NEXT INST W/ 761
2127 011004 012767 000012 166776 VDEC1: MOV #10+2,10
2128 ;*****
2129 ;TEST 63 TEST THAT AN IOI CAUSES AN OVERFLOW TRAP
2130 ;*****

```

```

2131 :*****
2132 011012 005237 000304 000304 1ST63: INC 2#STESTN ;UPDATE TEST NUMBER
2133 011016 022737 000063 000304 CMP #63,2#STESTN ;SEQUENCE ERROR?
2134 011024 001011 BNE VDEC4 ;BR TO ERROR HALT ON SEQ ERROR
2135 011026 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2136 011032 012767 011050 166760 MOV #VDEC4,20 ;SET UP IOT VECTOR
2137 011040 012767 011062 166736 MOV #VDEC3,4 ;SET UP OVERFLOW VECTOR
2138 011046 000004 IOT ;THIS TRAP SHOULD CAUSE OVERFLOW
2139 011050
2140 011050 012737 000237 000302 VDEC4: MOV #237,2#SFATAL ;MOVE TO MAILBOX # ***** 237 *****
2141 011056 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2142 011060 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2143 ; TO SCOPE REPLACE HALT W/ 240
2144 ; AND REPLACE NEXT INST W/ 761
2145 011062 012767 000022 166730 VDEC3: MOV #20+2,20
2146 :*****
2147 ;TEST 64 TEST THAT AN EMT CAUSES AN OVERFLOW TRAP
2148 :*****
2149 011070 005237 000304 000304 1ST64: INC 2#STESTN ;UPDATE TEST NUMBER
2150 011074 022737 000064 000304 CMP #64,2#STESTN ;SEQUENCE ERROR?
2151 011102 001011 BNE VDEC5 ;BR TO ERROR HALT ON SEQ ERROR
2152 011104 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2153 011110 012767 011126 166712 MOV #VDEC6,30 ;SET UP EMT VECTOR
2154 011116 012767 011140 166660 MOV #VDEC5,4 ;SET UP OVERFLOW VECTOR
2155 011124 104000 EMT ;THIS TRAP SHOULD CAUSE OVERFLOW
2156 011126
2157 011126 012737 000240 000302 VDEC6: MOV #240,2#SFATAL ;MOVE TO MAILBOX # ***** 240 *****
2158 011134 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2159 011136 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2160 ; TO SCOPE REPLACE HALT W/ 240
2161 ; AND REPLACE NEXT INST W/ 761
2162 011140 012767 000032 166662 VDEC5: MOV #30+2,30
2163 :*****
2164 ;TEST 65 TEST THAT AN TRAP CAUSES AN OVERFLOW TRAP
2165 :*****
2166 011146 005237 000304 000304 1ST65: INC 2#STESTN ;UPDATE TEST NUMBER
2167 011152 022737 000065 000304 CMP #65,2#STESTN ;SEQUENCE ERROR?
2168 011160 001011 BNE VDEC8 ;BR TO ERROR HALT ON SEQ ERROR
2169 011162 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2170 011166 012767 011204 166640 MOV #VDEC8,34 ;SET UP TRAP VECTOR
2171 011174 012767 011216 166602 MOV #VDEC7,4 ;SET UP OVERFLOW VECTOR
2172 011202 104400 TRAP ;THIS TRAP SHOULD CAUSE OVERFLOW
2173 011204
2174 011204 012737 000241 000302 VDEC8: MOV #241,2#SFATAL ;MOVE TO MAILBOX # ***** 241 *****
2175 011212 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2176 011214 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2177 ; TO SCOPE REPLACE HALT W/ 240
2178 ; AND REPLACE NEXT INST W/ 761
2179 011216 012767 000036 166610 VDEC7: MOV #34+2,34
2180 :*****
2181 ;TEST 66 TEST THAT AN TRT CAUSES AN OVERFLOW TRAP
2182 :*****
2183 011224 005237 000304 000304 1ST66: INC 2#STESTN ;UPDATE TEST NUMBER
2184 011230 022737 000066 000304 CMP #66,2#STESTN ;SEQUENCE ERROR?
2185 011236 001011 BNE VDEC10 ;BR TO ERROR HALT ON SEQ ERROR
2186 011240 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW

```

E04

```

2187 011244 012767 011262 166542      MOV      #VDEC10,14      ;SET UP TRT VECTOR
2188 011252 012767 011274 166524      MOV      #VDEC9,4       ;SET UP OVERFLOW VECTOR
2189 011260 000003                      TRT                               ;THIS TRAP SHOULD CAUSE OVERFLOW
2190 011262                                VDEC10:
2191 011262 012737 000242 000302      MOV      #242,2#SFATAL ;MOVE TO MAILBOX # ***** 242 *****
2192 011270 005212                      INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2193 011272 000000                      HALT                          ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM
2194                                ; TO SCOPE REPLACE HALT W/ 240
2195                                ; AND REPLACE NEXT INST W/ 761
2196 011274 012767 000016 166512      VDEC9:  MOV      #14+2,14
2197                                ;*****
2198                                ;TEST 67      TEST THAT AN ILLA CAUSES AN OVERFLOW TRAP
2199                                ;*****
2200 011302 005237 000304                      †TST67: INC      2#STESTN      ;UPDATE TEST NUMBER
2201 011306 022737 000067 000304      CMP      #67,2#STESTN    ;SEQUENCE ERROR?
2202 011314 001011                      BNE     VDEC11           ;BR TO ERROR HALT ON SEQ ERROR
2203 011316 012706 000400                      MOV      #400,%6         ;SET UP STACK TO OVERFLOW
2204 011322 012767 011340 166454      MOV      #VDEC11,4       ;SET UP ILLA VECTOR
2205 011330 012767 011352 166446      MOV      #VDEC12,4       ;SET UP OVERFLOW VECTOR
2206 011336 004700                      ILLA                          ;THIS TRAP SHOULD CAUSE OVERFLOW
2207 011340                                VDEC11:
2208 011340 012737 000243 000302      MOV      #243,2#SFATAL ;MOVE TO MAILBOX # ***** 243 *****
2209 011346 005212                      INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2210 011350 000000                      HALT                          ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM
2211                                ; TO SCOPE REPLACE HALT W/ 240
2212                                ; AND REPLACE NEXT INST W/ 761
2213 011352 012767 000006 166424      VDEC12: MOV      #4+2,4
2214 011360 020627 000370                      CMP      %6,#370         ;STACK PUSHED FOUR WORDS?
2215 011364 001405                      BEQ     TST70
2216 011366 012737 000244 000302      MOV      #244,2#SFATAL ;MOVE TO MAILBOX # ***** 244 *****
2217 011374 005212                      INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2218 011376 000000                      HALT                          ;TRAP OVERFLOW DID NOT OCCUR
2219                                ; TO SCOPE REPLACE HALT W/ 240
2220                                ; AND REPLACE NEXT INST W/ 746
2221                                ;*****
2222                                ;TEST 70      TEST THAT AN ILLB CAUSES AN OVERFLOW TRAP
2223                                ;*****
2224 011400 005237 000304                      †TST70: INC      2#STESTN      ;UPDATE TEST NUMBER
2225 011404 022737 000070 000304      CMP      #70,2#STESTN    ;SEQUENCE ERROR?
2226 011412 001011                      BNE     VDEC13           ;BR TO ERROR HALT ON SEQ ERROR
2227 011414 012706 000400                      MOV      #400,%6         ;SET UP STACK TO OVERFLOW
2228 011420 012767 011436 166356      MOV      #VDEC13,4       ;SET UP ILLB VECTOR
2229 011426 012767 011450 166350      MOV      #VDEC14,4       ;SET UP OVERFLOW VECTOR
2230 011434 000100                      ILLB                          ;THIS TRAP SHOULD CAUSE OVERFLOW
2231 011436                                VDEC13:
2232 011436 012737 000245 000302      MOV      #245,2#SFATAL ;MOVE TO MAILBOX # ***** 245 *****
2233 011444 005212                      INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2234 011446 000000                      HALT                          ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM
2235                                ; TO SCOPE REPLACE HALT W/ 240
2236                                ; AND REPLACE NEXT INST W/ 761
2237 011450 012767 000006 166326      VDEC14: MOV      #4+2,4
2238                                ;*****
2239                                ;TEST 71      TEST FOR FALSE OVERFLOW TRAP
2240                                ;*****
2241                                ;*****
2242 011456 005237 000304                      †TST71: INC      2#STESTN      ;UPDATE TEST NUMBER

```


; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 757

```

2299
2300
2301 011714 020627 000474 RETBT: CMP SP,#BUFF-4
2302 011720 001405 BEQ TST74
2303 011722 012737 000251 000302 MOV #251,#SFATAL ;MOVE TO MAILBOX # ***** 251 *****
2304 011730 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2305 011732 000000 HALT ;STACK POINTER WAS NOT PUSHED BY TRAP, OR WRONG $TESTN
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 747

```

```

;*****
;TEST 74 TEST FOR PROPER PC ON STACK
;*****

```

```

2310
2311 011734 005237 000304 TST74: INC @#$TESTN ;UPDATE TEST NUMBER
2312 011740 022737 000074 000304 CMP #74,@#$TESTN ;SEQUENCE ERROR?
2313 011746 001016 BNE TST75-12 ;BR TO ERROR HALT ON SEQ ERROR
2314 011750 012706 000500 MOV #BUFF,SP
2315 011754 012767 011774 166032 MOV #RETCT,RTRAP4
2316 011762 012746 000020 MOV #20,-(SP) ;PUSH T BIT
2317 011766 012746 011774 MOV #.+6,-(SP) ;PUSH PC
2318 011772 000002 RTI ;SET T BIT
;TRAP HERE

```

```

2319
2320 011774 022767 011774 166472 RETCT: CMP #. BUFF-4
2321 012002 001405 BEQ TST75
2322 012004 012737 000252 000302 MOV #252,@#$FATAL ;MOVE TO MAILBOX # ***** 252 *****
2323 012012 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2324 012014 000000 HALT ;CORRECT PC WAS NOT SAVED ON STACK, OR WRONG $TESTN
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 754

```

```

;*****
;TEST 75 TEST THAT RTT POPS T- BIT
;*****

```

```

2330
2331
2332 012016 005237 000304 TST75: INC @#$TESTN ;UPDATE TEST NUMBER
2333 012022 022737 000075 000304 CMP #75,@#$TESTN ;SEQUENCE ERROR?
2334 012030 001015 BNE TST76-12 ;BR TO ERROR HALT ON SEQ ERROR
2335
2336 012032 012706 000500 MOV #BUFF,SP
2337 012036 005001 CLR R1 ;CLEAR R1
2338 012040 012746 000020 MOV #20,-(SP)
2339 012044 012746 012060 MOV #RTT1,-(SP)
2340 012050 012767 012076 165736 MOV #RTT2,14
2341 012056 000006 RTT

```

```

RTT1:
2342 012060 000240 NOP
2343 012062 001405 BEQ TST76
2344 012064 012737 000253 000302 MOV #253,@#$FATAL ;MOVE TO MAILBOX # ***** 253 *****
2345 012072 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2346 012074 000000 HALT ;T-BIT DID NOT TRAP, OR WRONG $TESTN
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 755

```

```

RTT2:
;*****
;TEST 76 TEST THAT RTT ALLOWS ONE INST. BEFORE TRAP
;*****

```

```

2350 012076
2351
2352
2353
2354 012076 005237 000304 TST76: INC @#$TESTN ;UPDATE TEST NUMBER

```

```

2355 012102 022737 000076 000304      CMP      #76,#STESTN      ;SEQUENCE ERROR?
2356 012110 001031                    BNE      TST77-12        ;BR TO ERROR HALT ON SEQ ERROR
2357 012112 012705 177777              MOV      #177777,%5
2358 012116 012706 000500      RTT5:   MOV      #BUFF,SP
2359 012122 012746 000020              MOV      #20,-(SP)
2360 012128 012746 012144              MOV      #RTT3,-(SP)
2361 012132 012767 012164 165654      MOV      #RTT4,14
2362 012140 005001                    CLR      R1              ;CLEAR R0
2363 012142 000006                    RTT      ;SET T-BIT
2364 012144 005201      RTT3:   INC      R1
2365 012146 005205                    INC      %5
2366 012150 001762                    BEQ      RTT5            ;DO THIS TEST NO MORE THAN 2 TIMES
2367 012152 012737 000254 000302      MOV      #254,#SFATAL  ;MOVE TO MAILBOX # ***** 254 *****
2368 012160 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
2369 012162 000000                    HALT                    ;DID NOT TRAP
2370                                     ; TO SCOPE REPLACE HALT W/ 240
2371                                     ; AND REPLACE NEXT INST W/ 752
2372 012164 005301      RTT4:   DEC      R1              ;SEE IF RTT ALLOWS 1 INST.
2373 012166 001407                    BEQ      RTT6
2374 012170 005205                    INC      %5            ;DO THIS TEST NO MORE THAN TWO TIMES
2375 012172 001751                    BEQ      RTT5
2376 012174 012737 000255 000302      MOV      #255,#SFATAL  ;MOVE TO MAILBOX # ***** 255 *****
2377 012202 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
2378 012204 000000                    HALT                    ;RTT DID NOT ALLOW 1 INST.,OR WRONG $TESTN
2379                                     ; TO SCOPE REPLACE HALT W/ 240
2380                                     ; AND REPLACE NEXT INST W/ 741
2381 012206      RTT6:
2382 ;*****
2383 ;TEST 77      TEST THAT RTI DOES NOT ALLOW 1 INST.
2384 ;*****
2385 012206 005237 000304      TST77: INC      #STESTN      ;UPDATE TEST NUMBER
2386 012212 022737 000077 000304      CMP      #77,#STESTN  ;SEQUENCE ERROR?
2387 012220 001023                    BNE      TST100-12     ;BR TO ERROR HALT ON SEQ ERROR
2388 012222 012706 000500              MOV      #BUFF,SP
2389 012226 012746 000020              MOV      #20,-(SP)
2390 012232 012746 012250              MOV      #RTI1,-(SP)
2391 012236 012767 012264 165550      MOV      #RTI2,14
2392 012244 005001                    CLR      R1
2393 012246 000002                    RTI
2394 012250 005201      RTI1:  INC      R1              ;SET T-BIT
2395 012252 012737 000256 000302      MOV      #256,#SFATAL  ;RTI SHOULD NOT ALLOW THIS
2396 012260 005212                    INC      (R2)           ;MOVE TO MAILBOX # ***** 256 *****
2397 012262 000000                    HALT                    ;SET MSGTYP TO FATAL ERROR
2398                                     ; T- BIT DID NOT CAUSE TRAP
2399                                     ; TO SCOPE REPLACE HALT W/ 240
2400 012264 005701      RTI2:  TST      R1              ;AND REPLACE NEXT INST W/ 756
2401                                     ;RTI SHOULD NOT ALLOW 1 INST. BEFORE TRAP
2402 012266 001405                    BEQ      TST100
2403 012270 012737 000257 000302      MOV      #257,#SFATAL  ;MOVE TO MAILBOX # ***** 257 *****
2404 012276 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
2405 012300 000000                    HALT                    ;RTI DID ALLOW 1 INST. BEFORE TRAP,OR WRONG $TESTN
2406                                     ; TO SCOPE REPLACE HALT W/ 240
2407                                     ; AND REPLACE NEXT INST W/ 747
2408
2409 ;*****
2410 ;TEST 100     DOES THE PROCESSOR TRAP WHEN %7 IS ODD?

```

```

*****
2411          :*****
2412 012302 005237 000304  †ST100: INC  @#STESTN ;UPDATE TEST NUMBER
2413 012306 022737 000100 000304  CMP  #100,@#STESTN ;SEQUENCE ERROR?
2414 012314 001120          BNE  TST101-12 ;OR TO ERROR HALT ON SEQ ERROR
2415 012316 012706 000500          MOV  #BUFF,%6 ;SET UP STACK POINTER
2416 012322 012767 012346 165454          MOV  #R7TR1,4 ;RETURN FROM TRAP
2417 012330 012707 000001          MOV  #1,%7 ;PC EQUALS ONE
2418 012334 012737 000260 000302          MOV  #260,@#SFATAL ;MOVE TO MAILBOX # ***** 260 *****
2419 012342 005212          INC  (R2) ;SET MSGTYP TO FATAL ERROR
2420 012344 000000          HALT ;ODD ADDRESS SHOULD HAVE TRAPPED
2421          ; TO SCOPE REPLACE HALT W/ 240
2422          ; AND REPLACE NEXT INST W/ 763
2423 012346 022767 000001 166120 R7TR1: CMP  #1,BUFF-4
2424 012354 001405          BEQ  1$
2425 012356 012737 000261 000302          MOV  #261,@#SFATAL ;MOVE TO MAILBOX # ***** 261 *****
2426 012364 005212          INC  (R2) ;SET MSGTYP TO FATAL ERROR
2427 012366 000000          HALT ;CORRECT PC WAS NOT SAVED ON STACK
2428          ; TO SCOPE REPLACE HALT W/ 240
2429          ; AND REPLACE NEXT INST W/ 752
2430
2431 012370 012706 000500          1$: MOV  #BUFF,%6 ;STACK POINTER
2432 012374 012767 012416 165402          MOV  #R7TR2,4
2433 012402 005207          INC  %7 ;PC BECOMES ODD
2434 012404          R7TR2A:
2435 012404 012737 000262 000302          MOV  #262,@#SFATAL ;MOVE TO MAILBOX # ***** 262 *****
2436 012412 005212          INC  (R2) ;SET MSGTYP TO FATAL ERROR
2437 012414 000000          HALT ;
2438          ; TO SCOPE REPLACE HALT W/ 240
2439          ; AND REPLACE NEXT INST W/ 737
2440 012416 022767 012405 166050 R7TR2: CMP  #R7TR2A+1,BUFF-4
2441 012424 001405          BEQ  1$
2442 012426 012737 000263 000302          MOV  #263,@#SFATAL ;MOVE TO MAILBOX # ***** 263 *****
2443 012434 005212          INC  (R2) ;SET MSGTYP TO FATAL ERROR
2444 012436 000000          HALT ;CORRECT PC NOT ON STACK
2445          ; TO SCOPE REPLACE HALT W/ 240
2446          ; AND REPLACE NEXT INST W/ 726
2447 012440 012706 000500          1$: MOV  #BUFF,%6
2448 012444 012767 012466 165332          MOV  #R7TR3,4
2449 012452 005307          BR60: DEC  %7 ;MAKE PC ODD
2450 012454 012737 000264 000302          MOV  #264,@#SFATAL ;MOVE TO MAILBOX # ***** 264 *****
2451 012462 005212          INC  (R2) ;SET MSGTYP TO FATAL ERROR
2452 012464 000000          HALT ;SHOULD TRAP
2453          ; TO SCOPE REPLACE HALT W/ 240
2454          ; AND REPLACE NEXT INST W/ 713
2455 012466 022767 012453 166000 R7TR3: CMP  #BR60+1,BUFF-4 ;CHECK VALUE OF PC ON STACK
2456 012474 001405          BEQ  1$
2457 012476 012737 000265 000302          MOV  #265,@#SFATAL ;MOVE TO MAILBOX # ***** 265 *****
2458 012504 005212          INC  (R2) ;SET MSGTYP TO FATAL ERROR
2459 012506 000000          HALT ;WRONG VALUE ON STACK
2460          ; TO SCOPE REPLACE HALT W/ 240
2461          ; AND REPLACE NEXT INST W/ 702
2462
2463 012510 012706 000500          1$: MOV  #BUFF,%6
2464 012514 012767 012540 165262          MOV  #R7TR4,4
2465 012522 000261          SEC
2466 012524 006107          ROL  %7 ;CARRY EQUALS A 1
          ;PC BECOMES ODD

```



```

2467 012526 TR4A: MOV #266,2#SFATAL ;MOVE TO MAILBOX # ***** 266 *****
2468 012526 012737 000266 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
2469 012534 005212 HALT ;ODD ADDRESS DIDN'T TRAP
2470 012536 000000 ; TO SCOPE REPLACE HALT W/ 240
2471 ; AND REPLACE NEXT INST W/ 666
2472 ; RESET UP A HALT FOR TRAP
2473 012540 012767 000006 165236 R7TR4: MOV #6,4
2474 012546 022767 025255 165720 CMP #(<2*TR4A+1),BUFF-4 ;CHECK FOR VALUE ON STACK
2475 012554 001405 BEQ TST101
2476 012556 012737 000267 000302 MOV #267,2#SFATAL ;MOVE TO MAILBOX # ***** 267 *****
2477 012564 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2478 012566 000000 HALT ;WRONG VALUE ON STACK, OR WRONG $TSTNM
2479 ; TO SCOPE REPLACE HALT W/ 240
2480 ; AND REPLACE NEXT INST W/ 652
2481 ;*****
2482 ;TEST 101 TEST TRAP ON TRAP THAT TRACE BIT TRAPS ARE INHIBITED ON TRAP INST
2483 ;*****
2484 012570 005237 000304 TST101: INC 2#STESTN ;UPDATE TEST NUMBER
2485 012574 022737 000101 000304 CMP #101,2#STESTN ;SEQUENCE ERROR?
2486 012602 001027 BNE BR70 ;BR TO ERROR HALT ON SEQ ERROR
2487
2488 012604 012706 000500 MOV #BUFF,%6
2489 012610 012767 012650 165176 MOV #TRACE,14 ;TRACE TRAP
2490 012616 005027 000016 CLR #16
2491 012622 005027 000022 CLR #22
2492 012626 012767 012674 165164 MOV #TONT1,20 ;IOT TRAP
2493 012634 012746 000020 MOV #20,-(SP) ;PUSH T BIT
2494 012640 012746 012646 MOV #.+6,-(SP) ;PUSH PC
2495 012644 000006 RTT
2496 012646 000004 IOT ;TRAP, NEW CC HAVE TRACE RESET
2497 012650 TRACE:
2498 012650 012737 000270 000302 MOV #270,2#SFATAL ;MOVE TO MAILBOX # ***** 270 *****
2499 012656 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2500 012660 000000 HALT ;TRACE TRAP WAS NOT INHIBITED
2501 ; TO SCOPE REPLACE HALT W/ 240
2502 ; AND REPLACE NEXT INST W/ 750
2503 BR70:
2504 012662 012737 000271 000302 MOV #271,2#SFATAL ;MOVE TO MAILBOX # ***** 271 *****
2505 012670 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2506 012672 000000 HALT ;WRONG TSTNM, OR WRONG $TSTNM
2507 ; TO SCOPE REPLACE HALT W/ 240
2508 ; AND REPLACE NEXT INST W/ 743
2509 012674 012767 000016 165112 TONT1: MOV #16,14
2510 012702 012767 000022 165110 MOV #22,20
2511 ;*****
2512 ;TEST 102 TEST THAT THE TRACE BIT IS SAVED IN THE STACK
2513 ;*****
2514 012710 005237 000304 TST102: INC 2#STESTN ;UPDATE TEST NUMBER
2515 012714 022737 000102 000304 CMP #102,2#STESTN ;SEQUENCE ERROR?
2516 012722 001020 BNE STP3 ;BR TO ERROR HALT ON SEQ ERROR
2517 012724 012706 000500 MOV #BUFF,%6 ;SET UP STACK POINTER
2518 012730 012767 012754 165056 MOV #TRC1,14 ;TRACE TRAP RETURN
2519 012736 005067 165054 CLR 16
2520 012742 012746 000020 MOV #20,-(SP) ;SET THE T BIT
2521 012746 012746 012754 MOV #TRC1,-(SP)
2522 012752 000002 RTI

```

```

2523 012754 036727 165516 000020 TRC1: BIT      BUFF-2, #20      ;CHECK FOR T BIT ON STACK
2524 012762 001005                BNE      STP30
2525 012764                STP3:
2526 012764 012737 000272 000302      MOV      #272, @#SFATAL ;MOVE TO MAILBOX # ***** 272 *****
2527 012772 005212                INC      (R2)           ;SET MSGTYP TO FATAL ERROR
2528 012774 000000                HALT                    ;T BIT NOT SAVED ON THE STACK, OR WRONG STSTMM
2529                                ; TO SCOPE REPLACE HALT W/ 240
2530                                ; AND REPLACE NEXT INST W/ 752
2531 012776 012767 000016 165010 STP30: MOV      #16, 14
2532
2533
2534                                ; THIS ROUTINE TEST THAT NO LEGAL ADDRESS TRAPS.
2535                                ; AND THAT AN ILLEGAL ADDRESS TRAPS TO LOCATION 4
2536                                ; *****
2537                                ; TEST 103 TEST NON-EXISTENT ADDRESS TRAPS
2538                                ; *****
2539 013004 005237 000304                TST103: INC     @#STESTN ;UPDATE TEST NUMBER
2540 013010 022737 000103 000304      CMP      #103, @#STESTN ;SEQUENCE ERROR?
2541 013016 001063                BNE     AUTO1          ;BR TO ERROR HALT ON SEQ ERROR
2542
2543                                ; THIS ROUTINE TESTS MEMORY UNTIL IT DOES A NXM TRAP
2544                                BR      ADALL
2545 013022 000000                TSL:    0
2546 013024 000000                CORH:   0
2547 013026 005000                ADALL:  CLR     %0
2548 013030 005067 164752                CLR     6
2549 013034 012767 013070 164742      MOV     #ATRAP, 4      ;SET UP ADDRESS TRAP ENTRANCE
2550 013042 012706 000500                NOR:   MOV     #BUFF, SP
2551 013046 105720                TSTB   (0)+           ;IF OUTSIDE OF CORE, TRAP TO 4
2552 013050 020027 160000                CMP     %0, #160000   ;IS POINTER IN SIDE CORE
2553 013054 101772                BLOS   NOR           ;TEST THE REST OF CORE
2554 013056
2555 013056 012737 000273 000302      AUTO:  MOV     #273, @#SFATAL ;MOVE TO MAILBOX # ***** 273 *****
2556 013064 005212                INC     (R2)           ;SET MSGTYP TO FATAL ERROR
2557 013066 000000                HALT                    ;SHOULD HAVE TRAPED
2558                                ; TO SCOPE REPLACE HALT W/ 240
2559                                ; AND REPLACE NEXT INST W/ 753
2560
2561 013070 010067 177730                ; RETURN HERE ON AN ADDRESS TRAP
2562                                ATRAP: MOV     RO, CORH    ;MOVE THE FIRST NXM LOCATION IN CORH
2563                                ; THIS ROUTINE DOES NXM TRAPS UNTIL IT FINDS AN EXISTANT MEMORY LOCATION
2564 013074 012700 160001                MOV     #160001, RO   ;SET UP THE HIGHEST MEM LOCATION
2565 013100 012767 013136 164676      CTRAP: MOV     #BTRAP, 4 ;SET UP THE VECTOR
2566 013106 012706 000500                MOV     #BUFF, SP
2567 013112 105740                TSTB   -(RO)         ;DOES IT EXIST?
2568 013114 005200                DTRAP: INC     RO      ;IF YES INCREMENT IT
2569 013116 020067 177702                CMP     RO, CORH     ;IS IT THE SAME LOCATION?
2570 013122 001426                BEQ     TRAPB
2571 013124 012737 000274 000302      MOV     #274, @#SFATAL ;MOVE TO MAILBOX # ***** 274 *****
2572 013132 005212                INC     (R2)           ;SET MSGTYP TO FATAL ERROR
2573 013134 000000                HALT                    ;CONTENTS OF RO AND CORH SHOULD HAVE BEEN EQUAL
2574                                ; TO SCOPE REPLACE HALT W/ 240
2575                                ; AND REPLACE NEXT INST W/ 730
2576                                ; IF THIS COMPARISON FAILS IT MEANS
2577                                ; THAT SOME LEGAL ADDRESS TRAPPED OR
2578                                ; THAT AN ILLEGAL ADDRESS DID NOT TRAP
2578 013136 005767 164634                BTRAP: TST     STATUS

```

```

2579 013142 001405 BEQ 15
2580 013144 012737 000275 000302 MOV #275,2#SFATAL ;MOVE TO MAILBOX # ***** 275 *****
2581 013152 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2582 013154 000000 HALT ;NEW PSW SHOULD HAVE BEEN ZERO
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 720
2583
2584
2585 013156 026727 165312 013114 15: CMP BUFF-4,#DTRAP
2586 013164 001745 BEQ CTRAP
2587 013166
2588 013166 012737 000276 000302 AUTO1: MOV #276,2#SFATAL ;MOVE TO MAILBOX # ***** 276 *****
2589 013174 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2590 013176 000000 HALT ;OLD PC WAS NOT SAVED OR WRONG $TESTN
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 707
2591
2592
2593 013200 012767 000006 164576 TRAPB: MOV #6,4
2594 013206 005067 164574 CLR 6
2595 ;THIS ROUTINE WILL FIGURE OUT IF YOU HAVE A DL11W
2596
2597 013212 005067 000020 CLR PROFTE
2598 013216 012706 000500 MOV #BUFF,SP ;SET UP THE STACK POINTER
2599 013222 012767 013240 164554 MOV #DL11W,4 ;SET UP THE TRAP VECTOR
2600 013230 005767 164330 TST TPS ;TEST THE PUNCH STATUS REGISTER
2601 013234 000403 BR DL11W1 ;BRANCH IF IT EXISTS
2602 013236 000000
2603 013240 005267 177772 PROFTE: 000000
2604 013244 012767 000006 164532 DL11W: INC PROFTE ;INCREMENT IF NO DL11W
DL11W1: MOV #6,4
2605
2606 ;*****
2607 ;TEST '04 TEST THAT A TTY INTERRUPT CAUSES AN OVERFLOW TRAP
2608 ;*****
2609 013252 005237 000304 000304 TST104: INC 2#$TESTN ;UPDATE TEST NUMBER
2610 013256 022737 000104 000304 CMP #104,2#$TESTN ;SEQUENCE ERROR?
2611 013264 001031 BNE TDEC8 ;BR TO ERROR HALT ON SEQ ERROR
2612 013266 005767 177744 TST PROFTE
2613 013272 001042 BNE R7TRX
2614 013274 000005 RESET
2615 013276 012767 000340 164472 MOV #340,STATUS ;LOCK OUT INTERRUPT
2616 013304 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2617 013310 012767 013362 164466 MOV #TDEC77,4 ;SET UP OVERFLOW TRAP
2618 013316 012767 013350 164540 MOV #TDEC8,64 ;SET UP INTERRUPT VECTOR
2619 013324 012767 000100 164232 MOV #100,TICSR ;SET INTERRUPT ENABLE
2620 013332 005067 164440 CLR STATUS ;ALLOW INTERRUPT TO OCCUR
2621 013336 012737 000277 000302 MOV #277,2#SFATAL ;MOVE TO MAILBOX # ***** 277 *****
2622 013344 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2623 013346 000000 HALT ;NO INTERRUPT OCCURRED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 746
2624
2625
2626 013350
2627 013350 012737 000300 000302 TDEC8: MOV #300,2#SFATAL ;MOVE TO MAILBOX # ***** 300 *****
2628 013356 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2629 013360 000000 HALT ;OVERFLOW TRAP DID NOT OCCUR OR WRONG $STNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 741
2630
2631
2632 013362 005067 164176 TDEC77: CLR TICSR
2633 013366 012767 000006 164410 MOV #6,4
2634 013374 005067 164406 CLR 6

```

M04

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 51
DFKABC.P11 03-MAY-77 08:42 T104

TEST THAT A TTY INTERRUPT CAUSES AN OVERFLOW TRAP

SEQ 0051

```

2635 013400
2636
2637
2638
2639 013400 005237 000304
2640 013404 022737 000105 000304
2641 013412 001037
2642 013414 005767 177616
2643 013420 001046
2644 013422 012706 000500
2645 013426 012767 000340 164342
2646 013434 012767 013500 164422
2647 013442 012767 000100 164114
2648 013450 012767 013512 164356
2649 013456 012767 013524 164400
2650 013464 012767 000340 164344
2651 013472 005067 164300
2652 013476 104400
2653 013500
2654 013500 012737 000301 000302
2655 013506 005212
2656 013510 000000
2657
2658
2659 013512
2660 013512 012737 000302 000302
2661 013520 005212
2662 013522 000000
2663
2664
2665 013524 005067 164306
2666 013530 042767 000100 164026
2667 013536
2668
2669
2670
2671 013536 005237 000304
2672 013542 022737 000106 000304
2673 013550 001031
2674 013552 005767 177460
2675 013556 001046
2676 013560 012706 000500
2677 013564 012767 000340 164204
2678 013572 012767 000100 163764
2679 013600 012767 013632 164226
2680 013606 012767 013646 164250
2681 013614 012767 013634 164176
2682 013622 012767 000340 164172
2683 013630 104400
2684 013632 000004
2685 013634
2686 013634 012737 000303 000302
2687 013642 005212
2688 013644 000000
2689
2690

```

```

R7TR:
;*****
;TEST 105 TEST THAT A PENDING INTERRUPT OCCURS BEFORE TRAP
;*****
†ST105: INC @STESTN ;UPDATE TEST NUMBER
CMP #105,@STESTN ;SEQUENCE ERROR?
BNE BR71 ;BR TO ERROR HALT ON SEQ ERROR
TST PROFTE
BNE NOOL
MOV #BUFF,%6
MOV #340,STATUS ;SET TO A HIGH PRIORITY LEVEL
MOV #TR0,64
MOV #100,TTCSR ;INTERRUPT FOR TTY PUNCH/PRINTER
MOV #BR71,34 ;TRAP VECTOR
MOV #TR2,64 ;TTY VECTOR
MOV #340,36 ;IF TRAP TRAPS, MOVE 340 TO PRIORITY
CLR STATUS ;SHOULD INTERRUPT AT END OF CLR INST
TRAP ;TTY INTERRUPT SHOULD OVERRIDE TRAP

TR0: MOV #301,@SFATAL ;MOVE TO MAILBOX # ***** 301 *****
INC (R2) ;SET MSGTYP TO FATAL ERROR
HALT ;TTY SHOULDN'T HAVE INTERRUPTED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 740

BR71: MOV #302,@SFATAL ;MOVE TO MAILBOX # ***** 302 *****
INC (R2) ;SET MSGTYP TO FATAL ERROR
HALT ;TRAP OCCURRED FIRST OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 733

TR2: CLR 36
BIC #100,TTCSR

NOOL:
;*****
;TEST 106 TEST THAT A PENDING INTERRUPT, INTERRUPTS BETWEEN TRAPS
;*****
†ST106: INC @STESTN ;UPDATE TEST NUMBER
CMP #106,@STESTN ;SEQUENCE ERROR?
BNE TR5 ;BR TO ERROR HALT ON SEQ ERROR
TST PROFTE
BNE NOOL1
MOV #BUFF,%6
MOV #340,STATUS
MOV #100,TTCSR
MOV #TR3,34 ;TRAP
MOV #TR4,64 ;TTY OUTPUT
MOV #TR5,20 ;IOT
MOV #340,22 ;IOT PRIORITY
TRAP ;THE ACT OF TRAPPING LOWER PRIORITY
IOT ;INTERRUPT SHOULD OCCUR IN PLACE OF IOT TRAP

TR3:
TR5: MOV #303,@SFATAL ;MOVE TO MAILBOX # ***** 303 *****
INC (R2) ;SET MSGTYP TO FATAL ERROR
HALT ;NO INTERRUPT BETWEEN TRAPS, OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 741

```

2691 013646 005067 164150
 2692 013652 012767 000036 164154
 2693 013660 012767 000066 164176
 2694 013666 012767 000022 164124
 2695 013674
 2696
 2697
 2698
 2699
 2700 013674 005237 000304
 2701 013700 022737 000107 000304
 2702 013706 001027
 2703 013710 005767 177322
 2704 013714 001031
 2705 013716 012767 000100 163640
 2706 013724 012767 000100 163626
 2707 013732 000005
 2708 013734 032767 000100 163622
 2709 013742 001405
 2710 013744 012737 000304 000302
 2711 013752 005212
 2712 013754 000000
 2713
 2714
 2715 013756 032767 000100 163574 15:
 2716 013764 001405
 2717 013766 012737 000305 000302
 2718 013774 005212
 2719 013776 000000
 2720
 2721
 2722 014000
 2723
 2724
 2725
 2726 014000 005237 000304
 2727 014004 022737 000110 000304
 2728 014012 001014
 2729 014014 012706 000500
 2730 014020 012767 014056 163766
 2731 014026 012746 000020
 2732 014032 012746 014040
 2733 014036 000006
 2734 014040 000005
 2735 014042 000005
 2736 014044
 2737 014044 012737 000306 000302
 2738 014052 005212
 2739 014054 000000
 2740
 2741
 2742 014056 005067 163714
 2743 014062 005067 163730
 2744 014066 012767 000016 163720
 2745
 2746

```

TR4: CLR 22 ;CLR IOT PRIORITY
      MOV #36,34
      MOV #66,64
      MOV #22,20
NODL1:
;*****
;TEST 107 TEST THAT "RESET" GOES TO OUTSIDE WORLD
;*****
TST107: INC @%STESTN ;UPDATE TEST NUMBER
        CMP #107,@%STESTN ;SEQUENCE ERROR?
        BNE TST110-12 ;BR TO ERROR HALT ON SEQ ERROR
        TST PROFTE
        BNE NODL2
        MOV #100,TTCSR ;SET INTERRUPT ENABLE
        MOV #100,TRCSR ;SET INTERRUPT ENABLE
        RESET ;SHOULD CLEAR INTERRUPT ENABLE
        BIT #100,TTCSR ;TEST FOR CLEAR
        BEQ 15
        MOV #304,@%SFATAL ;MOVE TO MAILBOX # ***** 304 *****
        INC (R2) ;SET MSGTYP TO FATAL ERROR
        HALT ;RESET FAILED TO CLEAR TTCSR
        ; TO SCOPE REPLACE HALT W/ 240
        ; AND REPLACE NEXT INST W/ 754
        ;TEST FOR CLEAR
15: BIT #100,TRCSR
    BEQ TST110
    MOV #305,@%SFATAL ;MOVE TO MAILBOX # ***** 305 *****
    INC (R2) ;SET MSGTYP TO FATAL ERROR
    HALT ;RESET FAILED TO CLEAR TRCSR,OR WRONG $STNM
        ; TO SCOPE REPLACE HALT W/ 240
        ; AND REPLACE NEXT INST W/ 743
NODL2:
;*****
;TEST 110 TEST THAT RESET HAS NO EFFECT ON THE TRACE TRAP
;*****
TST110: INC @%STESTN ;UPDATE TEST NUMBER
        CMP #110,@%STESTN ;SEQUENCE ERROR?
        BNE RESET3 ;BR TO ERROR HALT ON SEQ ERROR
        MOV #BUFF,%6 ;SET STACK
        MOV #RESET2,14 ;SET UP TRACE VECTOR
        MOV #20,-(R6) ;SET THE T-BIT ON STACK
        MOV #15,-(R6) ;MOVE NEW PC ON STACK
        RTT
15: RESET ;SHOULD HAVE NO EFFECT
    RESET ;NO EFFECT
RESET3: MOV #306,@%SFATAL ;MOVE TO MAILBOX # ***** 306 *****
        INC (R2) ;SET MSGTYP TO FATAL ERROR
        HALT ;TRACE TRAP FAILED,OR WRONG $STNM
        ; TO SCOPE REPLACE HALT W/ 240
        ; AND REPLACE NEXT INST W/ 756
RESET2: CLR STATUS ;CLEAR TRACK
        CLR 16 ;TRACE STATUS
        MOV #16,14
;*****

```

```

2747 ;TEST 111 TEST THAT WHEN TTY INTERRUPTS IT POPS NEW STATUS
2748 ;*****
2749 014074 005237 000304 TST111: INC #STESTN ;UPDATE TEST NUMBER
2750 014100 022737 000111 000304 CMP #111,#STESTN ;SEQUENCE ERROR?
2751 014106 001051 BNE TTY11 ;BR TO ERROR HALT ON SEQ ERROR
2752 014110 005767 177122 TST PROFTE
2753 014114 001055 BNE NODL3
2754 014116 000005 RESET
2755 014120 012706 000500 MOV #BUFF,%6 ;SET UP STACK
2756 014124 012767 014150 163732 MOV #TTY3,%6 ;INTERRUPT VECTOR
2757 014132 005067 163640 CLR STATUS ;DROP PROCESSOR PRIORITY
2758 014136 012767 000357 163722 MOV #357,%6 ;HIGH PRIORITY ON INTERRUPT
2759 014144 005167 163414 COM TTCSR ;SHOULD SET INTERRUPT ENABLE & INTERRUPT
2760 014150 026727 163622 000357 TTY3: CMP STATUS,#357
2761 014156 001405 BEQ IS
2762 014160 012737 000307 000302 MOV #307,#SFATAL ;MOVE TO MAILBOX # ***** 307 *****
2763 014166 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2764 014170 000000 HALT ;INTERRUPT DID NOT POP CORRECT STATUS
2765 ; TO SCOPE REPLACE HALT W/ 240
2766 ; AND REPLACE NEXT INST W/ 746
2767 014172 000005 IS: RESET ;CLR INTERRUPT ENABLE
2768 014174 012706 000500 MOV #BUFF,%6 ;STACK SET UP
2769 014200 012767 014224 163656 MOV #TTY4,%6 ;INTERRUPT VECTOR
2770 014206 005067 163654 CLR %6 ;CLR NEW STATUS
2771 014212 012767 000157 163556 MOV #157,%6 ;PROCESSOR STATUS
2772 014220 005167 163340 COM TTCSR ;SET INTERRUPT ENABLE
2773 014224 005767 163546 TTY4: TST STATUS
2774 014230 001405 BEQ TTT37
2775 014232 TTY11:
2776 014232 012737 000310 000302 MOV #310,#SFATAL ;MOVE TO MAILBOX # ***** 310 *****
2777 014240 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2778 014242 000000 HALT ;INCORRECT STATUS OR WRONG $STNM
2779 ; TO SCOPE REPLACE HALT W/ 240
2780 ; AND REPLACE NEXT INST W/ 721
2781 014244 005067 163314 TTT37: CLR TTCSR
2782 014250 NODL3:
2783 ;*****
2784 ;TEST 112 TEST THE 'WAIT' INSTRUCTION
2785 ;*****
2786 014250 005237 000304 TST112: INC #STESTN ;UPDATE TEST NUMBER
2787 014254 022737 000112 000304 CMP #112,#STESTN ;SEQUENCE ERROR?
2788 014262 001055 BNE STP4 ;BR TO ERROR HALT ON SEQ ERROR
2789 014264 042767 000100 163272 BIC #100,TPS ;CLEAR INTERRUPT ENABLE
2790 014272 012706 000500 MOV #BUFF,SP ;SET UP THE STACK
2791 014276 012767 014366 163560 MOV #WATE,%6 ;SET UP THE INTERRUPT VECTOR
2792 014304 005067 163556 CLR %6
2793 014310 105767 163250 WATE1: TSTB TPS ;WAIT FOR READY
2794 014314 100375 BPL WATE1 ;TO BE UP
2795 014316 012767 000015 163242 MOV #15,TPB ;DO A CARRIAGE RETURN
2796 014324 105767 163234 WATE2: TSTB TPS ;WAIT FOR READY TO COME UP
2797 014330 100375 BPL WATE2
2798 014332 012767 000015 163226 MOV #15,TPB ;DO ANOTHER CARRIAGE RETURN
2799 014340 052767 000100 163216 BIS #100,TPS ;SET THE INTERRUPT ENABLE
2800 014346 005067 163424 CLR STATUS ;CLEAR THE PSW
2801 014352 000001 WATE3: WAIT ;WAIT FOR THE INTERRUPT

```

C05

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 54
 DFKABC.P11 03-MAY-77 08:42 T112

TEST THE 'WAIT' INSTRUCTION

SEQ 0054

2803	014354	012737	000311	000302		MOV	#311, @SFATAL	: MOVE TO MAILBOX # ***** 311 *****
2804	014362	005212				INC	(R2)	: SET MSGTYP TO FATAL ERROR
2805	014364	000000				HALT		: WAIT INSTRUCTION DID NOT LOOP
2806								: TO SCOPE REPLACE HALT W/ 240
2807								: AND REPLACE NEXT INST W/ 736
2808	014366	005767	163404		WATE:	TST	STATUS ; IS THE	: PSW CORRECT?
2809	014372	001405				BEQ	15	
2810	014374	012737	000312	000302		MOV	#312, @SFATAL	: MOVE TO MAILBOX # ***** 312 *****
2811	014402	005212				INC	(R2)	: SET MSGTYP TO FATAL ERROR
2812	014404	000000				HALT		: NEW PSW SHOULD HAVE BEEN ZERO
2813								: TO SCOPE REPLACE HALT W/ 240
2814								: AND REPLACE NEXT INST W/ 726
2815	014406	026727	164062	014354	15:	CMP	BUFF-4, #WATE3+2	: IS THE OLD PC SAVED
2816	014414	001405				BEQ	STP4E	
2817	014416				STP4:			
2818	014416	012737	000313	000302		MOV	#313, @SFATAL	: MOVE TO MAILBOX # ***** 313 *****
2819	014424	005212				INC	(R2)	: SET MSGTYP TO FATAL ERROR
2820	014426	000000				HALT		: OLD PC WAS NOT SAVED OR WRONG \$TESTN
2821								: TO SCOPE REPLACE HALT W/ 240
2822								: AND REPLACE NEXT INST W/ 715
2823	014430	012767	000066	163426	STP4E:	MOV	#66, 64	
2824								
2825	014436	004767	001350			JSR	%7, CLRALL	: CLEAR ALL KT11-D REGISTERS
2826	014442	012777	077406	164106		MOV	#77406, @KPDR0	: MAP KERNEL 0 TO BANK 0, RW, 4K
2827	014450	004767	001424			JSR	PC, KERN7	: MAP KERNEL PAR/PDR 7 TO EXT BANK
2828	014454	012777	014510	164030		MOV	#INT25, @KTVEC	: SETUP RETURN VECTOR
2829	014462	005077	164026			CLR	@KTSTA	
2830	014466	012704	020000			MOV	#20000, R4	: USE R4 TO REFERENCE NR KERNEL 1
2831	014472	005277	164004			INC	@SR0	: TURN ON KT11-D
2832	014476	005724			ADR25:	TST	(R4)+	: REFERENCE NR KERNEL 1
2833	014500	000000			ADR25A:	HALT		: SHOULD HAVE ABORTED ALREADY
2834	014502	005077	163774			CLR	@SR0	: TURN OFF KT11-D
2835	014506	000442				BR	DON25	
2836	014510	017701	163766		INT25:	MOV	@SR0, R1	: SAVE CONTENTS OF SR0
2837	014514	005377	163762			DEC	@SR0	: TURN OFF KT11-D
2838	014520	022701	100003			CMP	#100003, R1	: CHECK SAVED CONTENTS OF SR0
2839	014524	001401				BEQ	.+4	
2840	014526	000000				HLT		: SR0 INCORRECT AFTER NR ABORT
2841								: (SEE SAVED CONTENTS IN R1)
2842	014530	022777	014476	163752		CMP	#ADR25, @SR2	: CK SR2
2843	014536	001401				BEQ	.+4	
2844	014540	000000				HLT		: SR2 INCORRECT-SHOULD CONTAIN ADDRESS
2845								: OF LAST FETCH BEFORE THE ABORT
2846	014542	005077	163742			CLR	@SR2	: TRY TO WRITE INTO SR2
2847	014546	022777	014476	163734		CMP	#ADR25, @SR2	: SR2 SHOULD BE READ ONLY
2848	014554	001401				BEQ	.+4	
2849	014556	000000				HLT		: SR2 NOT READ ONLY
2850	014560	022777	077506	163770		CMP	#77506, @KPDR0	
2851	014566	001401				BEQ	.+4	
2852	014570	000000				HLT		: KERNEL PDR 0 INCORRECT
2853								: W BIT SHOULD HAVE BEEN SET BY THE STACK WRITE
2854	014572	005777	163762			TST	@KPDR1	
2855	014576	001401				BEQ	.+4	
2856	014600	000000				HLT		: KERNEL PDR 1 INCORRECT
2857	014602	021627	014500			CMP	(R6), #ADR25A	: CHECK VALUE PUSHED ON STACK
2858	014606	001401				BEQ	.+4	

E05

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 56
 DFKABC.P11 03-MAY-77 08:42 T112 TEST THE 'WAIT' INSTRUCTION

SEQ 0056

2915	015112	022626				CMP	(R6)+,(R6)+	;RESTORE STACK POINTER
2916	015114	012777	015150	163370		MOV	#INT408,#KTVEC	;CHANGE RETURN ADDRESS
2917	015122	005077	163354			CLR	#SR0	;CLEAR NAM ERROR BIT-SHOULD
2918								; "UNLOCK" ERROR TRACKING
2919	015126	012702	037776			MOV	#37776,R2	;SETUP R2 TO REFERENCE KERNEL 1
2920	015132	005277	163344			INC	#SR0	;TURN ON KT11-0
2921	015136	012242			ADR40B:	MOV	(R2)+,-(R2)	;3RD NAM REFERENCE, ERROR BIT WAS CLEARED
2922	015140	005077	163336		ADR40C:	CLR	#SR0	;TURN OFF KT11-0
2923	015144	000000				HLT		;3RD REFERENCE TO KERNEL 1
2924	015146	000422				BR	DONE40	;DIDN'T ABORT
2925	015150	042777	000001	163324	INT40B:	BIC	#1,#SR0	;TURN OFF KT11-0
2926	015156	022777	020002	163316		CMP	#20002,#SR0	;CHECK SR0
2927	015164	001401				BEQ	.+4	
2928	015166	000000				HLT		;SR0 INCORRECT
2929	015170	022777	015136	163312		CMP	#ADR40B,#SR2	;CHECK SR2
2930	015176	001401				BEQ	.+4	
2931	015200	000000				HLT		;SR2 INCORRECT - SHOULD CONTAIN
2932								;LAST FETCH ADDRESS BEFORE ABORT
2933	015202	022716	015140			CMP	#ADR40C,(SP)	;CHECK STACK
2934	015206	001401				BEQ	.+4	
2935	015210	000000				HLT		;PC ON STACK INCORRECT
2936	015212	022626				CMP	(R6)+,(R6)+	;RESTORE STACK POINTER
2937	015214	005077	163262		DONE40:	CLR	#SR0	;CLEAR ERROR BIT
2938	015220	005077	163270			CLR	#KTSTA	;CHANGE TRAP RETURN TO CAUSE A HALT
2939	015224	016777	163264	163260		MOV	KTSTA,#KTVEC	;ON A FALSE INTERRUPT
2940								
2941								
2942								
2943								
2944	015232	005237	000304			INC	#STESTN	;UPDATE TEST NUMBER
2945	015236	022737	000113	000304		CMP	#113,#STESTN	;SEQUENCE ERROR?
2946	015244	001166				BNE	RET4	;BR TO ERROR HALT ON SEQ ERROR
2947	015246	042767	000100	162310		BIC	#100,TPS	
2948	015254	012737	015302	000244		MOV	#TRAP244,#244	;SET UP TO SEE IF
2949	015262	013767	000010	000024		MOV	#10,TENSAVE	;THIS PROCESSOR HAS THE
2950	015270	012737	015312	000010		MOV	#TRAP10,#10	;FLOATING POINT OPTION
2951	015276	170007				.WORD	170007	;AN ILLEGAL FPP INSTRUCTION
2952	015300	000406				BR	AROUND	;THE FOLLOWING
2953	015302				TRAP244:			;IF FPP IN--
2954	015302	013767	015666	000362		MOV	#FPP,FINISH	;RESET END OF TABLE POINTER
2955	015310	000002				RTI		;AND RETURN
2956	015312				TRAP10:			;LEAVE THE TABLE ALONE
2957	015312	000002				RTI		;AND RETURN
2958	015314	000000			TENSAVE:	.WORD	0	;A PLACE TO STORE CONTENTS OF 10
2959								
2960	015316				AROUND:			;CONTINUATION POINT
2961	015316	012737	000246	000244		MOV	#246,#244	;RESTORE THE TRAP VECTOR
2962	015324	016737	177764	000010		MOV	TENSAVE,#10	;RESTORE THE ILLEGAL INST. VECTOR
2963	015332	012703	015646			MOV	#TABLE,↑TAB	;TABLE POINTER
2964	015336	012305			GIN1:	MOV	(TAB)+,FIRST	;FIRST OR CURRENT INSTRUCTION
2965	015340	012301				MOV	(TAB)+,LAST	;LAST INSTRUCTION OR GROUP
2966	015342	020567	000324			CMP	FIRST,FINISH	;TESTED ALL
2967	015346	001415				BEQ	GIN3	;YES BRANCH
2968	015350	010567	000320			MOV	FIRST,INST	;SET UP INST
2969	015354	005267	000314		GIN2:	INC	INST	
2970	015360	012767	015552	162422		MOV	#RET,10	;SET UP RETURN FROM TRAP

 ;TEST 113 TEST THAT ALL RESERVED INSTRUCTIONS TRAP

F05

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 57
 DFKABC.P11 03-MAY-77 08:42 T113

TEST THAT ALL RESERVED INSTRUCTIONS TRAP

SEQ 0057

2971	015366	012706	000500		MOV	#BUFF, SP	; SET UP STACK POINTER
2972	015372	005067	162400		CLR	CC	; CLEAR PRIORITY
2973	015376	000167	000272		JMP	INST	; EXECUTE RESERVED INSTRUCTION
2974	015402	005237	000306	GIN3:	INC	@#SPASS	
2975	015406	105267	000116		INCB	PASSPT	; SHOULD PRINT THIS PASS?
2976	015412	001027			BNE	ACT	; NO
2977	015414	132767	000040	162677	BITB	#40, #SENVN	; WILL APT ALLOW PRINTING?
2978	015422	001023			BNE	ACT	; NO
2979	015424	023727	000042	015502	CMP	@#42, #SENDAD	
2980	015432	001417			BEQ	ACT	
2981	015434	012700	015532		MOV	#MSG, RO	; GET MSG ADDR.
2982	015440	105737	177564	WAIT:	TSTB	@#TPS	; TTY READY
2983	015444	100375			BPL	WAIT	; NO WAIT
2984	015446	112037	177566		MOVB	(RO)+, @#TPB	; PRINT CHARACTER
2985	015452	001372			BNE	WAIT	; NEXT IF NOT DONE.
2986	015454	105737	177564	WAIT1:	TSTB	@#TPS	
2987	015460	100375			BPL	WAIT1	
2988	015462	000005			RESET		
2989	015464	012767	177761	000036	MOV	#177761, PASSPT	; DO IT ABOUT 15 DECIMAL TIMES
2990	015472	013700	000042	ACT:	MOV	@#42, RO	; CHECK ACT
2991	015476	001405			BEQ	GOAGIN	; KEEP GOING
2992	015500	000005			RESET		
2993	015502	004710		SENDAD:	JSR	PC, (RO)	; ACT HOOKS
2994	015504	000240			NOP		
2995	015506	000240			NOP		
2996	015510	000240			NOP		
2997	015512	012767	000012	162270	GOAGIN:	MOV	#12, 10
2998	015520	005067	162266		CLR	12	
2999	015524	000167	163076		JMP	RESTR	; DO NEXT PASS
3000	015530	177777		PASSPT:	-1		
3001	015532	005015	047105	020104	MSG:	.ASCIZ <15><12>.END OF DFKAB .	
3002	015540	043117	042040	045506			
3003	015546	041101	000040				
3004							
3005							
3006	015552	020627	000474		RET:	CMP	SP, #BUFF-4
3007	015556	001405			BEQ	RET1	; TEST DECREMENT OF SP
3008	015560	012737	000314	000302	MOV	#314, @#SFATAL	; MOVE TO MAILBOX # ***** 314 *****
3009	015566	005212			INC	(R2)	; SET MSGTYP TO FATAL ERROR
3010	015570	000000			HALT		; WRONG DECREMENT
3011							; TO SCOPE REPLACE HALT W/ 240
3012							; AND REPLACE NEXT INST W/ 625
3013	015572	026727	162676	015676	RET1:	CMP	BUFF-4, #INST+2
3014	015600	001405			BEQ	RET2	; LOC OF INST UNINCREMENTED
3015	015602	012737	000315	000302	MOV	#315, @#SFATAL	; MOVE TO MAILBOX # ***** 315 *****
3016	015610	005212			INC	(R2)	; SET MSGTYP TO FATAL ERROR
3017	015612	000000			HALT		; INST INC ON TRAP
3018							; TO SCOPE REPLACE HALT W/ 240
3019							; AND REPLACE NEXT INST W/ 614
3020	015614	005767	162656		RET2:	TST	BUFF-2
3021	015620	001405			BEQ	RET3	
3022	015622				RET4:		
3023	015622	012737	000316	000302	MOV	#316, @#SFATAL	; MOVE TO MAILBOX # ***** 316 *****
3024	015630	005212			INC	(R2)	; SET MSGTYP TO FATAL ERROR
3025	015632	000000			HALT		; CONDITION CODES SET ON TRAP OR WRONG STSTM
3026							; TO SCOPE REPLACE HALT W/ 240

G05

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 58
 DFKABC.P11 03-MAY-77 08:42 T113

TEST THAT ALL RESERVED INSTRUCTIONS TRAP

SEQ 0058

```

3027                                     ; AND REPLACE NEXT INST W/ 604
3028 015634 026701 000034 RET3:  CMP      INST, LAST
3029 015640 001636          BEQ      GIN1
3030 015642 000167 177506          JMP      GIN2
3031                                     ; SET UP NEW GROUP
3032 015646 000006          TABLE: 6
3033 015650 000077          77
3034 015652 000207          207
3035 015654 000227          227
3036 015656 006777          6777
3037 015660 007777          7777
3038 015662 075037          075037
3039 015664 076777          76777
3040 015666 167777          FPP:    167777
3041 015670 177777          177777
3042 015672 015672          FINISH:
3043 015674 000000          INST:  HALT
3044 015676 000000          HALT
3045 015700 000000          HALT
3046 015702 000000          HALT
3047 015704 000000          HALT
3048 015706 012767 015716 162110 PWRDWN: MOV      #PWRUP, 24
3049 015714 000000          HALT
3050
3051 015716 012767 015706 162100 PWRUP:  MOV      #PWRDWN, 24
3052 015724 012706 000500          MOV      #BUFF, SP
3053 015730 132767 000040 162363 BITB    #40, $ENVM
3054 015736 001013          BNE     PFRES
3055 015740 012700 015772          MOV      #MSGPWF, RO
3056 015744 105737 177564          PWAIT:  TSTB   @*TPS
3057 015750 100375          BPL     PWAIT
3058 015752 112037 177566          MOVB    (RO)+, @*TPB
3059 015756 001372          BNE     PWAIT
3060 015760 105737 177564          PWAIT1: TSTB   @*TPS
3061 015764 100375          BPL     PWAIT1
3062 015766 000167 162634          PFRES:  JMP     RESTR
3063 015772 005015 047520 042527 MSGPWF: .ASCIZ <15><12>.POWER FAILED!.
3064 016000 020122 040506 046111
3065 016006 042105 000041
3066 016012 005077 162464          CLRALL: CLR    @SR0
3067 016016 005000          CLR    RO
3068 016020 012701 000040          MOV    #32, R1
3069 016024 005070 000516          CLRLP: CLR   @ADRTAB(R1)
3070 016030 005720          TST   (RO)+
3071 016032 077104          SOB   R1, CLRLP
3072 016034 000207          RTS   %7
3073
3074                                     ; SUBROUTINE TO MAKE ALL PAGES RW, BANK 0, 4K, UP
3075 016036 005077 162440          RWALL: CLR   @SR0
3076 016042 012701 000516          MOV    #ADRTAB, R1
3077 016046 012700 000010          RWL1:  MOV    #10, RO
3078 016052 005071 000020          RWL2:  CLR   @20(R1)
3079 016056 012731 077406          MOV    #77406, @2(R1)+
3080 016062 077005          SOB   RO, RWL2
3081 016064 062701 000020          ADD   #20, R1
3082 016070 020127 000616          CMP   R1, #ADREND

```

; COUNT OF REGISTERS TO BE CLEARED
 ; CLEAR REGISTERS THRU ADDRESS TABLE
 ; MOVE POINTER
 ; LOOP TILL DONE

; R1 POINTS TO ADDRESS TABLE
 ; RO IS COUNTER
 ; CLEAR PAR
 ; SET PDR RW, 4K

; POINTER TO NEXT GROUP

H05

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 59
DFKABC.P11 03-MAY-77 08:42 T113 TEST THAT ALL RESERVED INSTRUCTIONS TRAP

SEQ 0059

3083	016074	002764			BLT	RWL1
3084	016076	000207			RTS	%7
3085					;MAP KERNEL PAR/PDR 7 TO EXTERNAL BANK	
3086	016100	012777	007600	162506	KERN7: MOV	#7600,@KPAR7
3087	016106	012777	077406	162460	MOV	#77406,@KPDR7
3088	016114	000207			RTS	PC
3089		000001			.END	

ABASE =	000000	254			
ACDW1 =	000000	254			
ACDW2 =	000000	254			
ACPUOP =	000000	254	269		
ACT	015472	2976	2978	2980	2990*
ADALL	013026	2544	2547*		
ADWD =	000000	254			
ADW1 =	000000	254			
ADW10 =	000000	254			
ADW11 =	000000	254			
ADW12 =	000000	254			
ADW13 =	000000	254			
ADW14 =	000000	254			
ADW15 =	000000	254			
ADW2 =	000000	254			
ADW3 =	000000	254			
ADW4 =	000000	254			
ADW5 =	000000	254			
ADW6 =	000000	254			
ADW7 =	000000	254			
ADW8 =	000000	254			
ADW9 =	000000	254			
ADEVCT =	000000	254	260		
ADEVN =	000000	254			
ADREN0	000616	347*	3082		
ADRTAB	000516	311*	3069*	3076	
ADR25	014476	2832*	2842	2847	
ADR25A	014500	2833*	2857		
ADR40	014756	2889*	2909		
ADR40A	015040	2902*	2912		
ADR40B	015136	2921*	2929		
ADR40C	015140	2922*	2933		
RENV =	000000	254	265		
RENVN =	000000	254	266		
AFATAL =	000000	254	257		
AMADR1 =	000000	254			
AMADR2 =	000000	254			
AMADR3 =	000000	254			
AMADR4 =	000000	254			
AMAMS1 =	000000	254			
AMAMS2 =	000000	254			
AMAMS3 =	000000	254			
AMAMS4 =	000000	254			
AMSGAD =	000000	254	262		
AMSGLG =	000000	254	263		
AMSGTY =	000000	254	256		
AMTYP1 =	000000	254			
AMTYP2 =	000000	254			
AMTYP3 =	000000	254			
AMTYP4 =	000000	254			
APASS =	000000	254	259		
APRIOR =	000000	254			
AROUND	015316	2952	2960*		
ASWREG =	000000	254	267		
ATESTN =	000000	254	258		
ATRAP	013070	2549	2561*		

TST105	013400	2639#		
TST106	013536	2671#		
TST107	013674	2700#		
TST11	002522	731	750	759#
TST110	014000	2702	2716	2726#
TST111	014074	2749#		
TST112	014250	2787#		
TST113	015232	2944#		
TST12	003024	848#		
TST13	003100	850	865#	
TST14	003150	867	872	881#
TST15	003222	883	888	897#
TST16	003346	899	917	926#
TST17	003636	928	1003	1012#
TST2	001236	379	467	476#
TST20	003734	1033#		
TST21	003776	1035	1048#	
TST22	004046	1050	1055	1064#
TST23	004120	1066	1071	1080#
TST24	004246	1082	1101	1110#
TST25	004550	1199#		
TST26	004612	1201	1214#	
TST27	004662	1216	1221	1230#
TST3	001562	478	537	546#
TST30	004734	1232	1237	1246#
TST31	005062	1248	1267	1276#
TST32	005346	1278	1352	1361#
TST33	005444	1383#		
TST34	005506	1385	1398#	
TST35	005556	1400	1405	1414#
TST36	005630	1416	1421	1430#
TST37	005756	1432	1452	1461#
TST4	002016	548	605	616#
TST40	006260	1557#		
TST41	006322	1559	1572#	
TST42	006372	1574	1579	1588#
TST43	006444	1590	1595	1604#
TST44	006572	1606	1625	1634#
TST45	007056	1636	1710	1719#
TST46	007120	1721	1734#	
TST47	007170	1736	1741	1750#
TST5	002210	618	672	681#
TST50	007242	1752	1757	1767#
TST51	007370	1769	1788	1797#
TST52	007652	1799	1873	1883#
TST53	007716	1885	1898#	
TST54	007770	1900	1905	1914#
TST55	010044	1916	1921	1930#
TST56	010176	1932	1951	1960#
TST57	010466	1962	2036	2045#
TST6	002252	697#		
TST60	010530	2047	2061#	
TST61	010600	2063	2068	2078#
TST62	010734	2080	2115#	
TST63	011012	2132#		
TST64	011070	2149#		

CROSS REFERENCE TABLE -- USER SYMBOLS

SENDAD 015502
 SENV 000320
 SENVM 000321
 SERN = 000317

247	2979	2993*													
265*															
266*	2977	3053													
1*	384	385*	394	395*	404	405*	415	416*	426	427*	437	438*			
447	448*	458	459*	468	469*	486	487*	499	500*	512	513*	525			
526*	538	539*	551	552*	559	560*	567	568*	575	576*	582	583*			
590	591*	598	599*	606	607*	622	623*	629	630*	636	637*	643			
644*	652	653*	659	660*	666	667*	673	674*	688	689*	705	706*			
721	722*	739	740*	751	752*	768	769*	775	776*	782	783*	789			
790*	796	797*	807	808*	814	815*	821	822*	828	829*	838	839*			
856	857*	873	874*	889	890*	907	908*	918	919*	935	936*	942			
943*	949	950*	956	957*	963	964*	974	975*	981	982*	988	989*			
995	996*	1004	1005*	1020	1021*	1039	1040*	1056	1057*	1072	1073*	1090			
1091*	1102	1103*	1119	1120*	1126	1127*	1133	1134*	1140	1141*	1147	1148*			
1158	1159*	1165	1166*	1172	1173*	1179	1180*	1189	1190*	1205	1206*	1222			
1223*	1238	1239*	1256	1257*	1268	1269*	1285	1286*	1292	1293*	1299	1300*			
1306	1307*	1313	1314*	1324	1325*	1331	1332*	1338	1339*	1345	1346*	1353			
1354*	1369	1370*	1389	1390*	1406	1407*	1422	1423*	1441	1442*	1453	1454*			
1470	1471*	1477	1478*	1484	1485*	1491	1492*	1498	1499*	1509	1510*	1516			
1517*	1523	1524*	1530	1531*	1540	1541*	1563	1564*	1580	1581*	1596	1597*			
1614	1615*	1626	1627*	1643	1644*	1650	1651*	1657	1658*	1664	1665*	1671			
1672*	1682	1683*	1689	1690*	1696	1697*	1703	1704*	1711	1712*	1725	1726*			
1742	1743*	1758	1759*	1777	1778*	1789	1790*	1806	1807*	1813	1814*	1820			
1821*	1827	1828*	1834	1835*	1845	1846*	1852	1853*	1859	1866	1867*	1874			
1874	1875*	1889	1890*	1906	1907*	1922	1923*	1940	1941*	1952	1953*	1969			
1970*	1976	1977*	1983	1984*	1990	1991*	1997	1998*	2008	2009*	2015	2016*			
2022	2023*	2029	2030*	2037	2038*	2051	2052*	2069	2070*	2087	2088*	2096			
2097*	2105	2106*	2123	2124*	2140	2141*	2157	2158*	2174	2175*	2191	2192*			
2208	2209*	2216	2217*	2232	2233*	2259	2260*	2278	2279*	2296	2297*	2303			
2304*	2322	2323*	2344	2345*	2367	2368*	2376	2377*	2395	2396*	2403	2404*			
2418	2419*	2425	2426*	2435	2436*	2442	2443*	2450	2451*	2457	2458*	2468			
2469*	2476	2477*	2498	2499*	2504	2505*	2526	2527*	2555	2556*	2570	2571*			
2580	2581*	2588	2589*	2621	2622*	2627	2628*	2654	2655*	2660	2661*	2686			
2687*	2710	2711*	2717	2718*	2737	2738*	2762	2763*	2776	2777*	2803	2804*			
2810	2811*	2818	2819*	3008	3009*	3015	3016*	3023	3024*						
301*	357*														
264*															
276*	299														
257*	301	384*	394*	404*	415*	426*	437*	447*	458*	468*	486*	499*			
512*	525*	538*	551*	559*	567*	575*	582*	590*	598*	606*	622*	629*			
636*	643*	652*	659*	666*	673*	688*	705*	721*	739*	751*	768*	775*			
782*	789*	796*	807*	814*	821*	828*	838*	856*	873*	889*	907*	918*			
935*	942*	949*	956*	963*	974*	981*	988*	995*	1004*	1020*	1039*	1056*			
1072*	1090*	1102*	1119*	1126*	1133*	1140*	1147*	1158*	1165*	1172*	1179*	1189*			
1205*	1222*	1238*	1256*	1268*	1285*	1292*	1299*	1306*	1313*	1324*	1331*	1338*			
1345*	1353*	1369*	1389*	1406*	1422*	1441*	1453*	1470*	1477*	1484*	1491*	1498*			
1509*	1516*	1523*	1530*	1540*	1563*	1580*	1596*	1614*	1626*	1643*	1650*	1657*			
1664*	1671*	1682*	1689*	1696*	1703*	1711*	1725*	1742*	1758*	1777*	1789*	1806*			
1813*	1820*	1827*	1834*	1845*	1852*	1859*	1866*	1874*	1889*	1906*	1922*	1940*			
1952*	1969*	1976*	1983*	1990*	1997*	2008*	2015*	2022*	2029*	2037*	2051*	2069*			
2087*	2096*	2105*	2123*	2140*	2157*	2174*	2191*	2208*	2216*	2232*	2259*	2278*			
2296*	2303*	2322*	2344*	2367*	2376*	2395*	2403*	2418*	2425*	2435*	2442*	2450*			
2457*	2468*	2476*	2498*	2504*	2526*	2555*	2570*	2580*	2588*	2621*	2627*	2654*			
2660*	2686*	2710*	2717*	2737*	2762*	2776*	2803*	2810*	2818*	3008*	3015*	3023*			
294*															
255*	295	299													

SEAROR= 000302
 SETABL 000320
 SETEND 000330
 SFATAL 000302

\$HIBTS 000330
 \$MAIL 000300

F06

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 71
DFKABC.P11 03-MAY-77 08:42

CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0070

2025	2032	2040	2048	2054	2064	2072	2081	2090	2099	2108	2118	2126
2135	2143	2152	2160	2169	2177	2186	2194	2203	2211	2219	2227	2235
2245	2262	2272	2281	2290	2299	2306	2314	2325	2335	2347	2357	2370
2379	2388	2398	2406	2415	2421	2428	2438	2445	2453	2460	2471	2479
2487	2501	2507	2517	2529	2542	2558	2573	2583	2591	2612	2624	2630
2642	2657	2663	2674	2689	2703	2713	2720	2729	2740	2752	2765	2779
2790	2806	2813	2821	2947	3011	3018	3026					
387	397	407	418	429	440	450	461	471	489	502	515	528
541	554	562	570	578	585	593	601	609	625	632	639	646
655	662	669	676	691	708	724	742	754	771	778	785	792
799	810	817	824	831	841	859	876	892	910	921	938	945
952	959	966	977	984	991	998	1007	1023	1042	1059	1075	1093
1105	1122	1129	1136	1143	1150	1161	1168	1175	1182	1192	1208	1225
1241	1259	1271	1288	1295	1302	1309	1316	1327	1334	1341	1348	1356
1372	1392	1409	1425	1444	1456	1473	1480	1487	1494	1501	1512	1519
1526	1533	1543	1566	1583	1599	1617	1629	1646	1653	1660	1667	1674
1685	1692	1699	1706	1714	1728	1745	1761	1780	1792	1809	1816	1823
1830	1837	1848	1855	1862	1869	1877	1892	1909	1925	1943	1955	1972
1979	1986	1993	2000	2011	2018	2025	2032	2040	2054	2072	2090	2099
2108	2126	2143	2160	2177	2194	2211	2219	2235	2262	2281	2299	2306
2325	2347	2370	2379	2398	2406	2421	2428	2438	2445	2453	2460	2471
2479	2501	2507	2529	2558	2573	2583	2591	2624	2630	2657	2663	2689
2713	2720	2740	2765	2779	2806	2813	2821	3011	3018	3026		
387	397	407	418	429	440	450	461	471	489	502	515	528
541	554	562	570	578	585	593	601	609	625	632	639	646
655	662	669	676	691	708	724	742	754	771	778	785	792
799	810	817	824	831	841	859	876	892	910	921	938	945
952	959	966	977	984	991	998	1007	1023	1042	1059	1075	1093
1105	1122	1129	1136	1143	1150	1161	1168	1175	1182	1192	1208	1225
1241	1259	1271	1288	1295	1302	1309	1316	1327	1334	1341	1348	1356
1372	1392	1409	1425	1444	1456	1473	1480	1487	1494	1501	1512	1519
1526	1533	1543	1566	1583	1599	1617	1629	1646	1653	1660	1667	1674
1685	1692	1699	1706	1714	1728	1745	1761	1780	1792	1809	1816	1823
1830	1837	1848	1855	1862	1869	1877	1892	1909	1925	1943	1955	1972
1979	1986	1993	2000	2011	2018	2025	2032	2040	2054	2072	2090	2099
2108	2126	2143	2160	2177	2194	2211	2219	2235	2262	2281	2299	2306
2325	2347	2370	2379	2398	2406	2421	2428	2438	2445	2453	2460	2471
2479	2501	2507	2529	2558	2573	2583	2591	2624	2630	2657	2663	2689
2713	2720	2740	2765	2779	2806	2813	2821	3011	3018	3026		
235	237	240	245	246	248	250	283	284	286	288	303	347
380	387	397	407	418	429	440	450	461	471	479	489	502
515	528	541	549	554	562	570	578	585	593	601	609	619
625	632	639	646	655	662	669	676	684	691	700	708	716
719	724	732	742	754	762	771	778	785	792	799	810	817
824	831	841	851	859	868	876	884	887	892	900	910	921
929	938	945	952	959	966	977	984	991	998	1007	1015	1023
1036	1042	1051	1059	1067	1070	1075	1083	1093	1105	1113	1122	1129
1136	1143	1150	1161	1168	1175	1182	1192	1202	1208	1217	1225	1233
1236	1241	1249	1259	1271	1279	1288	1295	1302	1309	1316	1327	1334
1341	1348	1356	1364	1372	1386	1392	1401	1409	1417	1420	1425	1433
1444	1456	1464	1473	1480	1467	1494	1501	1512	1519	1526	1533	1543
1560	1566	1575	1583	1591	1594	1599	1607	1617	1629	1637	1646	1653
1660	1667	1674	1685	1692	1699	1706	1714	1722	1728	1737	1745	1753
1761	1770	1780	1792	1800	1809	1816	1823	1830	1837	1848	1855	1862
1869	1877	1886	1892	1901	1909	1917	1920	1925	1933	1943	1955	1963
1972	1979	1986	1993	2000	2011	2018	2025	2032	2040	2048	2054	2064

SXX = 177605

SXXX = 000604

= 016116

G06

.MAIN. MACY11 27(1006) 04-MAY-77 08:13 PAGE 72
DFKABC.P11 03-MAY-77 08:42

CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0071

2072	2081	2090	2099	2108	2118	2126	2135	2143	2152	2160	2169	2177
2186	2194	2203	2211	2219	2227	2235	2245	2262	2272	2275	2281	2290
2293	2299	2306	2314	2317	2320	2325	2335	2347	2357	2370	2379	2388
2398	2406	2415	2421	2428	2438	2445	2453	2460	2471	2479	2487	2494
2501	2507	2517	2529	2542	2558	2573	2583	2591	2612	2624	2630	2642
2657	2663	2674	2689	2703	2713	2720	2729	2740	2752	2765	2779	2790
2806	2813	2821	2839	2843	2848	2851	2855	2858	2875	2895	2907	2910
2913	2927	2930	2934	2947	3011	3018	3026	3042				
283*	288											

.SX = 000330

.ABS. 016116 000

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

DFKABC,DFKABC/NL:TOC/SOL/CRF/DS:ERFZ+DFKABC.P11
RUN-TIME: 17 13 1 SECONDS
RUN-TIME RATIO: 93/31=2.9
CORE USED: 10K (20 PAGES)

H06