

IDENTIFICATION  
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PRODUCT CODE: AC-8045D=MC  
 PRODUCT NAME: CFKABD0 11/34 TRAPS TST  
 PRODUCT DATE: 03-APR-77  
 MAINTAINER: DIAGNOSTIC ENGINEERING

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 DEC DECUS DECTAPE

48	ACT11 HOOKS
58	APT MAILBOX=ETABLE
88	APT PARAMETER BLOCK
192	T1 TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES
292	T2 TEST TRANSFER OF .BYTE USING R6
363	T3 TEST BYTE OPERATION WITH SEQUENTIAL ODD-EVEN ADDRESS
434	T4 TEST THE CC BITS
500	T5 TEST THAT A TRAP OCCURS ON A RESERVED INSTRUCTION
517	T6 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
534	T7 TEST THAT PROPER P.C. IS SAVED
551	T10 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
582	T11 TEST THAT "NEW" STATUS IS CORRECT
672	T12 TEST THAT A TRAP OCCURS FOR A "TRAP" INSTRUCTION
690	T13 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
707	T14 TEST THAT PROPER P.C. IS SAVED
724	T15 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
754	T16 TEST THAT "NEW" STATUS IS CORRECT
841	T17 TEST THAT ALL COMBINATIONS OF "TRAP" WILL CAUSE A TRAP
863	T20 TEST THAT A TRAP OCCURS ON AN "IOT" INSTRUCTION
879	T21 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
896	T22 TEST THAT PROPER P.C. IS SAVED
913	T23 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
944	T24 TEST THAT "NEW" STATUS IS CORRECT
1034	T25 TEST THAT A TRAP OCCURS ON AN EMT INSTRUCTION
1050	T26 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1067	T27 TEST THAT PROPER P.C. IS SAVED
1084	T30 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1115	T31 TEST THAT "NEW" STATUS IS CORRECT
1201	T32 TEST THAT ALL COMBINATIONS OF EMT WILL CAUSE A TRAP
1224	T33 TEST THAT A TRAP OCCURS ON AN "TRACE-TRT" INSTRUCTION
1240	T34 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1257	T35 TEST THAT PROPER P.C. IS SAVED
1274	T36 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1306	T37 TEST THAT "NEW" STATUS IS CORRECT
1403	T40 TEST THAT A TRAP OCCURS ON AN ILLEGAL INSTRUCTION
1419	T41 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1436	T42 TEST THAT PROPER P.C. IS SAVED
1453	T43 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1484	T44 TEST THAT "NEW" STATUS IS CORRECT
1570	T45 TEST THAT A TRAP OCCURS ON ALL ILLEGAL INSTRUCTIONS
1586	T46 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1603	T47 TEST THAT PROPER P.C. IS SAVED
1621	T50 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1652	T51 TEST THAT "NEW" STATUS IS CORRECT
1739	T52 TEST THAT A TRAP OCCURS ON AN ILLEGAL ADDRESS
1755	T53 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1772	T54 TEST THAT PROPER P.C. IS SAVED
1789	T55 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1820	T56 TEST THAT "NEW" STATUS IS CORRECT
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2290	T100	DOES THE PROCESSOR TRAP WHEN %7 IS ODD?
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2585	T107	TEST THAT "RESET" GOES TO OUTSIDE WORLD
2612	T110	TEST THAT RESET HAS NO EFFECT ON THE TRACE TRAP
2636	T111	TEST THAT WHEN TTY INTERRUPTS IT POPS NEW STATUS
2675	T112	TEST THE 'WAIT' INSTRUCTION
2833	T113	TEST THAT ALL RESERVED INSTRUCTIONS TRAP

1 ;ALL INSTRUCTIONS THAT ARE RESERVED  
 2 ;SHOULD TRAP TO LOCATION 10, AND THE  
 3 ;PC THAT POINTS TO THE TRAPPING INSTRUCTION  
 4 ;SHOULD BE PLACED ON THE STACK  
 5  
 6  
 7 ;LISTING  
 8  
 9  
 10

```

11          .LIST ME
12          .NLIST MC,MD,CND
13          .ABS
14          SP=%6
15          R6=%6
16          TAB=%3
17          LAST=%1
18          FIRST=%5
19          R2=%2
20          HLT=HALT
21          TRT=3
22          ITRAP5=4
23          RTRAP5=4          ;RESERVED INST AND ILLEGAL ADDRESSES
24          RTRAP4=14        ;FOR TRACE TRAP
25          RTRAP3=30        ;FOR EMULATOR TRAP
26          RTRAP2=20        ;FOR IOT TRAP
27          RTRAP1=34        ;FOR TRAP INST
28          TTCSR=177564
29          TRCSR=177560
30          TPS=177564
31          TPB=177566
32          BELL=240
33          NOP=240
34          STATUS=177776
35          TRAPA=7
36          RTRAP=10
37          ILLA=004700
38          ILLB=100
39          CC=177776
    
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40          .=200
41          000200 000167 000414      JMP      BEGIN
42          .=210
43          000210 005037 000306      CLR      @#SPASS
44          000214 000167 000400      JMP      BEGIN
45          000300
46          ;*****
47
48          .SBTTL ACT11 HOOKS
49          ;HOOKS REQUIRED BY ACT11
50          000300          SSVPC=,          ;SAVE PC
51          000046 000046          .=46
52          000046 015530          $ENDAD          ;1)SET LOC,46 TO ADDRESS OF $ENDAD IN ,SEOP
53          000052 000052          .=52
54          000052 000000          .WORD 0          ;2)SET LOC,52 TO ZERO
55          000300          .=$SVPC          ; RESTORE PC
56          ;*****
57
58          .SBTTL APT MAILBOX-ETABLE
59
60
61
62          .EVEN
63          000300          $MAIL:          ;;APT MAILBOX
64          000300 000000          $MSGTY: .WORD ANSGTY ;;MESSAGE TYPE CODE
65          000302 000000          $FATAL: .WORD AFATAL ;;FATAL ERROR NUMBER
66          000304 000000          $TESTN: .WORD ATESTN ;;TEST NUMBER
67          000306 000000          $PASS: .WORD APASS ;;PASS COUNT
68          000310 000000          $DEVCT: .WORD ADEVCT ;;DEVICE COUNT
69          000312 000000          $UNIT: .WORD AUNIT ;;I/O UNIT NUMBER
70          000314 000000          $MSGAD: .WORD AMSGAD ;;MESSAGE ADDRESS
71          000316 000000          $MSGLG: .WORD AMSGLG ;;MESSAGE LENGTH
72          000320          $ETABLE:          ;;APT ENVIRONMENT TABLE
73          000320 000          $ENV: .BYTE AENV ;;ENVIRONMENT BYTE
74          000321 000          $ENVM: .BYTE AENVM ;;ENVIRONMENT MODE BITS
75          000322 000000          $SWREG: .WORD ASWREG ;;APT SWITCH REGISTER
76          000324 000000          $USWR: .WORD AUSWR ;;USER SWITCHES
77          000326 000000          $CPUOP: .WORD ACPUOP ;;CPU TYPE,OPTIONS
78          ;*
79          ;*          BITS 15-11=CPU TYPE
80          ;*          11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
81          ;*          11/70=06,PDQ=07,0=10
82          ;*          BIT 10=REAL TIME CLOCK
83          ;*          BIT 9=FLOATING POINT PROCESSOR
84          ;*          BIT 8=MEMORY MANAGEMENT
84          000330          $ETEND:
85          .MEXIT
86          ;*****
87
88          .SBTTL APT PARAMETER BLOCK
89          ;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
90          ;*****
91          000330          .$X=,          ;;SAVE CURRENT LOCATION
92          000024          .=24          ;;SET POWER FAIL TO POINT TO START OF PROGRAM
93          000024 000200          200          ;;FOR APT START UP
94          000044          .=44          ;;POINT TO APT INDIRECT ADDRESS PNTR,
95          000044 000330          $APTHDR ;;POINT TO APT HEADER BLOCK
    
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96          000330          ,=,0X  ;;RESET LOCATION COUNTER
97          ;*****
98          ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
99          ;INTERFACE SPEC.
100
101 000330          $APTHD:
102 000330 000000          $HIBTS: .WORD 0          ;;TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
103 000332 000300          $MBADR: .WORD $MAIL  ;;ADDRESS OF APT MAILBOX (BITS 0-15)
104 000334 000002          $TSTM: .WORD 2          ;;RUN TIM OF LONGEST TEST
105 000336 000002          $PASTM: .WORD 2          ;;RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
106 000340 000000          $UNITM: .WORD 0          ;;ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
107 000342 000014          $ETEND=$MAIL/2 ;;LENGTH MAILBOX=$TABLE(WORDS)
108          000304          $TSTNM=$TSTN
109          000302          $ERROR=$FATAL
110
111          000500          ,=500
112 000500 000000          BUFF: 0
113 000502 177572          SR0: 177572
114 000504 177573          SR0H: 177573
115 000506 177574          SR1: 177574
116 000510 177576          SR2: 177576
117 000512 000250          KTVEC: 250
118 000514 000252          KTSTA: 252
119 000516          ADRTAB:
120 000516 177600          UPDR0: 177600          ;USER PAGE DESCRIPTOR REGISTERS
121 000520 177602          UPDR1: 177602
122 000522 177604          UPDR2: 177604
123 000524 177606          UPDR3: 177606
124 000526 177610          UPDR4: 177610
125 000530 177612          UPDR5: 177612
126 000532 177614          UPDR6: 177614
127 000534 177616          UPDR7: 177616
128          ;
129 000536 177640          UPAR0: 177640          ;USER PAGE ADDRESS REGISTERS
130 000540 177642          UPAR1: 177642
131 000542 177644          UPAR2: 177644
132 000544 177646          UPAR3: 177646
133 000546 177650          UPAR4: 177650
134 000550 177652          UPAR5: 177652
135 000552 177654          UPAR6: 177654
136 000554 177656          UPAR7: 177656
137          ;
138 000556 172300          KPDR0: 172300          ;KERNEL PAGE DESCRIPTOR REGISTERS
139 000560 172302          KPDR1: 172302
140 000562 172304          KPDR2: 172304
141 000564 172306          KPDR3: 172306
142 000566 172310          KPDR4: 172310
143 000570 172312          KPDR5: 172312
144 000572 172314          KPDR6: 172314
145 000574 172316          KPDR7: 172316
146          ;
147 000576 172340          KPAR0: 172340          ;KERNEL PAGE ADDRESS REGISTERS
148 000600 172342          KPAR1: 172342
149 000602 172344          KPAR2: 172344
150 000604 172346          KPAR3: 172346
151 000606 172350          KPAR4: 172350
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152 000610 172352          KPAR5: 172352
153 000612 172354          KPAR6: 172354
154 000614 172356          KPAR7: 172356
155 000616 000614          ADREND: ,-2
156
157
158
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159
160 000620 012737 177777 015556 BEGIN; MOV #1,0#PASSPT ;CLEAR THE ITERATION COUNTER
161 000626 012700 016061 MOV #MSG1,R0 ;GET TITLE ADRS
162 000632 105767 176726 1#: TSTB TPS ;TTY READY
163 000636 100375 BPL 1# ;NO WAIT
164 000640 112067 176722 MOV# (R0)+,TPB ;PRINT CHARACTER
165 000644 001372 BNE 1# ;NEXT IF NOT DONE
166 000646 105767 176712 2#: TSTB TPS ;
167 000652 100375 BPL 2# ;
168 000654 005067 177420 RESTR1: CLR #MSGTY ;
169 000660 012767 015714 177136 MOV #PWRDWN,24 ;SET UP THE POWER DOWN VECTOR
170 000666 012767 000340 177132 MOV #340,26 ;SET UP POWER DOWN PRIORITY
171 000674 005067 177404 CLR #TSTNM ;
172 000700 005067 177376 CLR #ERROR ;
173 000704 012702 000300 MOV #MSGTY,R2 ;
174
175 ;SPECIAL CASE OF ODD, EVEN ,BYTE AND REGISTER 6
176 000000 HERE=0
177
178 000710 000167 000024 JMP TST1
179 000714 000000 K1: 0
180 000716 000000 K2: 0
181 000720 000000 K3: 0
182 000722 000000 K4: 0
183 000724 000000 K5: 0
184 000726 000000 K6: 0
185 000730 052525 K7: 052525
186 000732 052400 K10: 052400
187 000734 000000 K11: 0
188 000736 000000 K12: 0
189
190 ;*****
191 ;TEST 1 TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES
192 000740 005237 000304 TST1: INC #1#TESTN ;UPDATE TEST NUMBER
193 000744 022737 000001 000304 CMP #1,0#TESTN ;SEQUENCE ERROR?
194 000752 001137 BNE TST2-12 ;BR TO ERROR HALT ON SEQ ERROR
195 000754 005006 CLR #6
196 000756 112667 177016 MOV# (6)+,HERE ;SIX SHOULD INCREMENT BY TWO
197 000762 020627 000002 CMP #6,#2
198 000766 001405 BEQ BR1
199 000770 012737 000001 000302 MOV #1,0#SFATAL ;MOVE TO MAILBOX # ***** 1 *****
200 000776 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
201 001000 000000 HALT ;R6 DID NOT AUTO INCREMENT BY TWO
202 ; TO SCOPE REPLACE HALT W/ 240
203 ; AND REPLACE NEXT INST W/ 764
204
205 001002 012706 001000 BR1: MOV #1000,#6
206 001006 114627 000000 MOV# -(6),#HERE ;SHOULD DECREMENT BY TWO
207 001012 020627 000776 CMP #6,#776
208 001016 001405 BEQ BR2
209 001020 012737 000002 000302 MOV #2,0#SFATAL ;MOVE TO MAILBOX # ***** 2 *****
210 001026 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
211 001030 000000 HALT ;R6 DID NOT AUTO DECREMENT BY 2
212 ; TO SCOPE REPLACE HALT W/ 240
213 ; AND REPLACE NEXT INST W/ 750
214

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215 001032 005006 BR2: CLR #6
216 001034 112626 MOV# (6)+,(6)+ ;DOUBLES AUTO INCREMENT OF R6
217 001036 020627 000004 CMP #6,#4
218 001042 001405 RFQ BR3
219 001044 012737 000003 000302 MOV #3,0#SFATAL ;MOVE TO MAILBOX # ***** 3 *****
220 001052 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
221 001054 000000 HALT ;WRONG AUTO INCREMENT OF R6
222 ; TO SCOPE REPLACE HALT W/ 240
223 ; AND REPLACE NEXT INST W/ 736
224
225 001056 005006 BR3: CLR #6
226 001060 005004 CLR #4
227 001062 122624 CMPB (6)+,(4)+ ;TEST INCREMENT OF R6
228 001064 020627 000002 CMP #6,#2
229 001070 001405 BEQ BR4
230 001072 012737 000004 000302 MOV #4,0#SFATAL ;MOVE TO MAILBOX # ***** 4 *****
231 001100 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
232 001102 000000 HALT ;WRONG INCREMENT OF R6
233 ; TO SCOPE REPLACE HALT W/ 240
234 ; AND REPLACE NEXT INST W/ 723
235
236 001104 005006 BR4: CLR #6
237 001106 005004 CLR #4
238 001110 122426 CMPB (4)+,(6)+ ;TEST INCREMENT OF R6
239 001112 020627 000002 CMP #6,#2
240 001116 001405 BEQ BR5
241 001120 012737 000005 000302 MOV #5,0#SFATAL ;MOVE TO MAILBOX # ***** 5 *****
242 001126 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
243 001130 000000 HALT ;WRONG INCREMENT OF R6
244 ; TO SCOPE REPLACE HALT W/ 240
245 ; AND REPLACE NEXT INST W/ 710
246
247 001132 005006 BR5: CLR #6
248 001134 005004 CLR #4
249 001136 122624 CMPB (6)+,(4)+ ;TEST INCREMENT OF R4
250 001140 020427 000001 CMP #4,#1
251 001144 001405 BEQ BR6
252 001146 012737 000006 000302 MOV #6,0#SFATAL ;MOVE TO MAILBOX # ***** 6 *****
253 001154 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
254 001156 000000 HALT ;WRONG INCREMENT OF R4
255 ; TO SCOPE REPLACE HALT W/ 240
256 ; AND REPLACE NEXT INST W/ 675
257
258 001160 005006 BR6: CLR #6
259 001162 005004 CLR #4
260 001164 122426 CMPB (4)+,(6)+ ;TEST INCREMENT OF R6
261 001166 020627 000002 CMP #6,#2
262 001172 001405 BEQ BR7
263 001174 012737 000007 000302 MOV #7,0#SFATAL ;MOVE TO MAILBOX # ***** 7 *****
264 001202 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
265 001204 000000 HALT ;WRONG INCREMENT OF R6
266 ; TO SCOPE REPLACE HALT W/ 240
267 ; AND REPLACE NEXT INST W/ 662
268
268 001206 005006 BR7: CLR #6
269 001210 005004 CLR #4
270 001212 122426 CMPB (4)+,(6)+ ;TEST INCREMENT OF R4

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271 001214 020427 000001      CMP    %4,#1
272 001220 001405              BEQ    BR10
273 001222 012737 000010 000302  MOV    #10,0##FATAL ;MOVE TO MAILBOX # ***** 10 *****
274 001230 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
275 001232 000000              HALT   ;WRONG INCREMENT OF R4
276                                     ; TO SCOPE REPLACE HALT W/ 240
277                                     ; AND REPLACE NEXT INST W/ 647
278
279 001234 012706 001000      BR10: MOV    #1000,%6
280 001240 124627 000000      CMPB   -(6),#HERE ;TEST DECREMENT OF R6
281 001244 022706 000776      CMP    #776,%6
282 001250 001405              BEQ    TST2
283 001252 012737 000011 000302  MOV    #11,0##FATAL ;MOVE TO MAILBOX # ***** 11 *****
284 001260 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
285 001262 000000              HALT   ;WRONG DECREMENT OF R6,OR WRONG $TSTNM
286                                     ; TO SCOPE REPLACE HALT W/ 240
287                                     ; AND REPLACE NEXT INST W/ 633
288 ;*****
289 ;TEST 2 TEST TRANSFER OF ,BYTE USING R6
290 ;*****
291 001264 005237 000304      TST2: INC    0##TESTN ;UPDATE TEST NUMBER
292 001270 022737 000002 000304  CMP    #2,0##TESTN ;SEQUENCE ERROR?
293 001276 001137              BNE   TST3-12 ;BR TO ERROR HALT ON SEQ ERROR
294 001300 012767 123456 177416  MOV    #123456,K5
295 001306 012767 050505 177400  MOV    #050505,K1
296 001314 012705 000714      MOV    #K1,%5 ;%5=(050505)K1
297 001320 012706 000724      MOV    #K5,%6 ;%6=(123456)K5
298 001324 112625              MOVB   (6)+,(5)+ ;LOW ,BYTE OF R6 TO R5
299 001326 022767 050456 177360  CMP    #050456,K1
300 001334 001405              BEQ    BR11
301 001336 012737 000012 000302  MOV    #12,0##FATAL ;MOVE TO MAILBOX # ***** 12 *****
302 001344 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
303 001346 000000              HALT   ;FALSE TRANSFER OF ,BYTE
304                                     ; TO SCOPE REPLACE HALT W/ 240
305                                     ; AND REPLACE NEXT INST W/ 753
306
307 001350 012767 123456 177346  BR11: MOV    #123456,K5
308 001356 012767 050505 177330  MOV    #050505,K1
309 001364 012705 000714      MOV    #K1,%5 ;%5(050505)K1
310 001370 012706 000726      MOV    #K6,%6 ;%6(123456)K5
311 001374 114625              MOVB   -(6),(5)+ ;LOW ,BYTE OF R6 TO R5 (DECREMENT)
312 001376 026727 177312 050456  CMP    K1,#050456
313 001404 001405              BEQ    BR12
314 001406 012737 000013 000302  MOV    #13,0##FATAL ;MOVE TO MAILBOX # ***** 13 *****
315 001414 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
316 001416 000000              HALT   ;FALSE R6 ,BYTE TRANSFER
317                                     ; TO SCOPE REPLACE HALT W/ 240
318                                     ; AND REPLACE NEXT INST W/ 727
319
320 001420 012767 123456 177266  BR12: MOV    #123456,K1
321 001426 012767 050505 177270  MOV    #050505,K5
322 001434 012705 000714      MOV    #K1,%5 ;(123456)
323 001440 012706 000724      MOV    #K5,%6 ;(050505)
324 001444 112526              MOVB   (5)+,(6)+ ;LOW OF R5 TO LOW OF R6
325 001446 022767 050456 177250  CMP    #050456,K5
326 001454 001405              BEQ    BR13
    
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327 001456 012737 000014 000302  MOV    #14,0##FATAL ;MOVE TO MAILBOX # ***** 14 *****
328 001464 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
329 001466 000000              HALT   ;FALSE R6 ,BYTE TRANSFER
330                                     ; TO SCOPE REPLACE HALT W/ 240
331                                     ; AND REPLACE NEXT INST W/ 703
332
333 001470 012767 123456 177216  BR13: MOV    #123456,K1
334 001476 012767 050505 177220  MOV    #050505,K5
335 001504 012705 000715      MOV    #K1+1,%5 ;123456
336 001510 012706 000724      MOV    #K5,%6 ;050505
337 001514 112526              MOVB   (5)+,(6)+ ;HIGH OF R5 TO LOW OF R6
338 001516 026727 177202 050647  CMP    K5,#050647
339 001524 001405              BEQ    BR14
340 001526 012737 000015 000302  MOV    #15,0##FATAL ;MOVE TO MAILBOX # ***** 15 *****
341 001534 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
342 001536 000000              HALT   ;FALSE R6 ,BYTE TRANSFER
343                                     ; TO SCOPE REPLACE HALT W/ 240
344                                     ; AND REPLACE NEXT INST W/ 657
345
346 001540 012767 123456 177146  BR14: MOV    #123456,K1
347 001546 012767 050505 177150  MOV    #050505,K5
348 001554 012705 000715      MOV    #K1+1,%5 ;R5=123456-ODD ADDRESS
349 001560 012706 000724      MOV    #K5,%6 ;R6=050505--,EVEN ADDRESS
350 001564 112625              MOVB   (6)+,(5)+ ;LOW OF R6 TO HIGH OF R5
351 001566 022767 042456 177120  CMP    #042456,K1
352 001574 001405              BEQ    TST3
353 001576 012737 000016 000302  MOV    #16,0##FATAL ;MOVE TO MAILBOX # ***** 16 *****
354 001604 005212              INC    (R2) ;SET MSGTYP TO FATAL EROR
355 001606 000000              HALT   ;FAILED LOW OF 6 TO HIGH OF 5,OR WRONG $TSTNM
356                                     ; TO SCOPE REPLACE HALT W/ 240
357                                     ; AND REPLACE NEXT INST W/ 633
358 ;*****
359 ;TEST 3 TEST BYTE OPEATION WITH SEQUENTIAL ODD-EVEN ADDRESS
360 ;*****
361 001610 005237 000304      TST3: INC    0##TESTN ;UPDATE TEST NUMBER
362 001614 022737 000003 000304  CMP    #3,0##TESTN ;SEQUENCE ERROR?
363 001622 001103              BNE   TST4-12 ;BR TO ERROR HALT ON SEQ ERROR
364 001624 126767 177100 177077  CMPB   K7,K7+1 ;SAME ,WORD LOW TO HIGH
365 001632 001405              BEQ    BR15
366 001634 012737 000017 000302  MOV    #17,0##FATAL ;MOVE TO MAILBOX # ***** 17 *****
367 001642 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
368 001644 000000              HALT   ;SHOULD COMPARE LOW TO HIGH
369                                     ; TO SCOPE REPLACE HALT W/ 240
370                                     ; AND REPLACE NEXT INST W/ 766
371
372 001646 126767 177057 177054  BR15: CMPB   K7+1,K7 ;COMPARE ODD TO ,EVEN SAME ,WORD
373 001654 001405              BEQ    BR16
374 001656 012737 000020 000302  MOV    #20,0##FATAL ;MOVE TO MAILBOX # ***** 20 *****
375 001664 005212              INC    (R2) ;SET MSGTYP TO FATAL ERROR
376 001666 000000              HALT   ;ODD TO ,EVEN ,BYTE FAILURE
377                                     ; TO SCOPE REPLACE HALT W/ 240
378                                     ; AND REPLACE NEXT INST W/ 755
379
380 001670 126767 177037 177032  BR16: CMPB   K10+1,K7 ;SEQUENTIAL ,BYTES
381 001676 001405              BEQ    BR17
382 001700 012737 000021 000302  MOV    #21,0##FATAL ;MOVE TO MAILBOX # ***** 21 *****
    
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383 001706 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
384 001710 000000          HALT                    ;ODD TO ,EVEN FAILED
385                                     ; TO SCOPE REPLACE HALT W/ 240
386                                     ; AND REPLACE NEXT INST W/ 744
387
388 001712 126767 177014 177006 BR17:  CMPB    K10,K6
389 001720 001405          BEQ     BR20
390 001722 012737 000022 000302      MOV     #22,0##FATAL ;MOVE TO MAILBOX # ***** 22 *****
391 001730 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
392 001732 000000          HALT                    ;,EVEN TO EVEN FAILED
393                                     ; TO SCOPE REPLACE HALT W/ 240
394                                     ; AND REPLACE NEXT INST W/ 733
395 001734 126767 176771 176771 BR20:  CMPB    K7+1,K10+1
396 001742 001405          BEQ     BR21
397 001744 012737 000023 000302      MOV     #23,0##FATAL ;MOVE TO MAILBOX # ***** 23 *****
398 001752 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
399 001754 000000          HALT                    ;ODD TO ODD FAILED
400                                     ; TO SCOPE REPLACE HALT W/ 240
401                                     ; AND REPLACE NEXT INST W/ 722
402
403 001756 126767 176750 176747 BR21:  CMPB    K10,K10+1
404 001764 001005          BNE    BR22
405 001766 012737 000024 000302      MOV     #24,0##FATAL ;MOVE TO MAILBOX # ***** 24 *****
406 001774 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
407 001776 000000          HALT                    ;LOW TO HIGH IN SAME ,WORD FAILED
408                                     ; TO SCOPE REPLACE HALT W/ 240
409                                     ; AND REPLACE NEXT INST W/ 711
410
411 002000 126767 176727 176725 BR22:  CMPB    K10+1,K10+1
412 002006 001405          BEQ     BR23
413 002010 012737 000025 000302      MOV     #25,0##FATAL ;MOVE TO MAILBOX # ***** 25 *****
414 002016 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
415 002020 000000          HALT                    ;HIGH TO LOW IN SAME ,WORD FAILED
416                                     ; TO SCOPE REPLACE HALT W/ 240
417                                     ; AND REPLACE NEXT INST W/ 700
418
419 002022 126767 176704 176701 BR23:  CMPB    K10,K7+1
420 002030 001005          BNE    TST4
421 002032 012737 000026 000302      MOV     #26,0##FATAL ;MOVE TO MAILBOX # ***** 26 *****
422 002040 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
423 002042 000000          HALT                    ;,EVEN TO ODD FAILED,OR WRONG $TSTNM
424                                     ; TO SCOPE REPLACE HALT W/ 240
425                                     ; AND REPLACE NEXT INST W/ 667
426
427
428                                     ;*****
429                                     ;TEST 4 TEST THE CC BITS
430                                     ;*****
431 002044 005237 000304          TST4:  INC     0##TSTN ;UPDATE TEST NUMBER
432 002050 022737 000004 000304      CMP     #4,0##TSTN ;SEQUENCE ERROR?
433 002056 001062          BNE    TST5-12 ;BR TO ERROR HALT ON SEQ ERROR
434 002060 000277          SCC     ;SET STATUS
435 002062 005067 175710          CLR    STATUS ;CLEAR STATUS
436 002066 103005          BCC    BR33
437 002070 012737 000027 000302      MOV     #27,0##FATAL ;MOVE TO MAILBOX # ***** 27 *****
438 002076 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
    
```

```

439 002100 000000          HALT                    ;C NOT CLEAR
440                                     ; TO SCOPE REPLACE HALT W/ 240
441                                     ; AND REPLACE NEXT INST W/ 766
442
443 002102 102005          BR33:  RVC     BR34
444 002104 012737 000030 000302      MOV     #30,0##FATAL ;MOVE TO MAILBOX # ***** 30 *****
445 002112 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
446 002114 000000          HALT                    ;V NOT CLEAR
447                                     ; TO SCOPE REPLACE HALT W/ 240
448                                     ; AND REPLACE NEXT INST W/ 760
449
450 002116 001005          BR34:  BNE    BR35
451 002120 012737 000031 000302      MOV     #31,0##FATAL ;MOVE TO MAILBOX # ***** 31 *****
452 002126 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
453 002130 000000          HALT                    ;Z NOT CLEAR
454                                     ; TO SCOPE REPLACE HALT W/ 240
455                                     ; AND REPLACE NEXT INST W/ 752
456
457 002132 100005          BR35:  BPL    BR36
458 002134 012737 000032 000302      MOV     #32,0##FATAL ;MOVE TO MAILBOX # ***** 32 *****
459 002142 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
460 002144 000000          HALT                    ;N NOT CLEAR
461                                     ; TO SCOPE REPLACE HALT W/ 240
462                                     ; AND REPLACE NEXT INST W/ 744
463
464 002146 000257          BR36:  CCC     #17,STATUS ;CLEAR CONDITION CODES
465 002150 052767 000017 175620      BIS     #17,STATUS ;SET STATUS TO ONES
466
467 002156 103405          BR37:  BCS     BR37
468 002160 012737 000033 000302      MOV     #33,0##FATAL ;MOVE TO MAILBOX # ***** 33 *****
469 002166 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
470 002170 000000          HALT                    ;C NOT SET
471                                     ; TO SCOPE REPLACE HALT W/ 240
472                                     ; AND REPLACE NEXT INST W/ 732
473
474 002172 102405          BR37:  BVS     BR40
475 002174 012737 000034 000302      MOV     #34,0##FATAL ;MOVE TO MAILBOX # ***** 34 *****
476 002202 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
477 002204 000000          HALT                    ;V NOT SET
478                                     ; TO SCOPE REPLACE HALT W/ 240
479                                     ; AND REPLACE NEXT INST W/ 724
480
481 002206 001405          BR40:  BEQ     BR41
482 002210 012737 000035 000302      MOV     #35,0##FATAL ;MOVE TO MAILBOX # ***** 35 *****
483 002216 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
484 002220 000000          HALT                    ;Z NOT SET
485                                     ; TO SCOPE REPLACE HALT W/ 240
486                                     ; AND REPLACE NEXT INST W/ 716
487
488 002222 100405          BR41:  BMI     TST5
489 002224 012737 000036 000302      MOV     #36,0##FATAL ;MOVE TO MAILBOX # ***** 36 *****
490 002232 005212          INC     (R2)          ;SET MSGTYP TO FATAL ERROR
491 002234 000000          HALT                    ;N NOT SET,OR WRONG $TSTNM
492                                     ; TO SCOPE REPLACE HALT W/ 240
493                                     ; AND REPLACE NEXT INST W/ 710
494
495                                     ;*****
496                                     ;TEST 5 TEST THAT A TRAP OCCURS ON A RESERVED INSTRUCTION
    
```

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495 ;*****
496 002236 005237 000304 TST5: INC 00$TESTN ;UPDATE TEST NUMBER
497 002242 022737 000005 000304 CMP #5,00$TESTN ;SEQUENCE ERROR?
498 002250 001006 BNE RETA ;BR TO ERROR HALT ON SEQ ERROR
499 002252 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
500 002256 012767 002300 175524 MOV #RETA,RTRAP ;RETURN LOCATION
501 002264 000007 TRAPA ;RESERVED INSTRUCTION, SHOULD TRAP
502 002266 RETA:
503 002266 012737 000037 000302 MOV #37,00$FATAL ;MOVE TO MAILBOX # ***** 37 *****
504 002274 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
505 002276 000000 HALT ;RESERVE INSTRUCTION DIDN'T TRAP,OR WRONG $TSTNM
506 ; TO SCOPE REPLACE HALT W/ 240
507 ; AND REPLACE NEXT INST W/ 764
508 002300 RETAH;
509 ;*****
510 ;TEST 6 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
511 ;*****
512 002300 005237 000304 TST6: INC 00$TESTN ;UPDATE TEST NUMBER
513 002304 022737 000006 000304 CMP #6,00$TESTN ;SEQUENCE ERROR?
514 002312 001011 BNE TST7-12 ;BR TO ERROR HALT ON SEQ ERROR
515 002314 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
516 002320 012767 002330 175462 MOV #RETB,RTRAP ;RETURN POINTER
517 002326 000007 TRAPA ;RESERVED INSTRUCTION
518 002330 020627 000474 RETB: CMP SP,#BUFF-4 ;TEST DECREMENT OF SP
519 002334 001405 BEQ TST7
520 002336 012737 000040 000302 MOV #40,00$FATAL ;MOVE TO MAILBOX # ***** 40 *****
521 002344 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
522 002346 000000 HALT ;NOT DECREMENTED TWO WORDS,OR WRONG $TSTNM
523 ; TO SCOPE REPLACE HALT W/ 240
524 ; AND REPLACE NEXT INST W/ 761
525 ;*****
526 ;TEST 7 TEST THAT PROPER P,C. IS SAVED
527 ;*****
528 002350 005237 000304 TST7: INC 00$TESTN ;UPDATE TEST NUMBER
529 002354 022737 000007 000304 CMP #7,00$TESTN ;SEQUENCE ERROR?
530 002362 001012 BNE TST10-12 ;BR TO ERROR HALT ON SEQ ERROR
531 002364 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
532 002370 012767 002400 175412 MOV #PETC,RTRAP ;RETURN FROM TRAP POINTER
533 002376 000007 TRAPA ;TRAP ON THIS INSTRUCTION
534 002400 022767 002400 176066 RETC: CMP #,,BUFF-4 ;CHECK FOR INCREMENTED P.C.
535 002406 001405 BEQ TST10
536 002410 012737 000041 000302 MOV #41,00$FATAL ;MOVE TO MAILBOX # ***** 41 *****
537 002416 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
538 002420 000000 HALT ;INCORRECT P.C.,OR WRONG $TSTNM
539 ; TO SCOPE REPLACE HALT W/ 240
540 ; AND REPLACE NEXT INST W/ 760
541 ;*****
542 ;TEST 10 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
543 ;*****
544 002422 005237 000304 TST10: INC 00$TESTN ;UPDATE TEST NUMBER
545 002426 022737 000010 000304 CMP #10,00$TESTN ;SEQUENCE ERROR?
546 002434 001040 BNE TST11-12 ;BR TO ERROR HALT ON SEQ ERROR
547 002436 012706 000500 MOV #BUFF,SP ;SET UP
548 002442 012767 002460 175340 MOV #RETD,RTRAP ;SET UP
549 002450 005067 175322 CLR CC ;CLEAR CC AND PRIORITY
550 002454 000257 CCC
    
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551 002456 000007 TRAPA ;TRAP
552 002460 026727 176012 000000 RETD: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
553 002466 001405 BEQ 18
554 002470 012737 000042 000302 MOV #42,00$FATAL ;MOVE TO MAILBOX # ***** 42 *****
555 002476 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
556 002500 000000 HALT ;INCORRECT STATUS
557 ; TO SCOPE REPLACE HALT W/ 240
558 ; AND REPLACE NEXT INST W/ 755
559 002502 012706 000500 18: MOV #BUFF,SP ;SET UP
560 002506 012767 002526 175274 MOV #RETE,RTRAP ;SET UP
561 002514 012767 000357 175254 MOV #357,CC ;SET PRIORITY
562 002522 000277 SCC ;SET CC
563 002524 000007 TRAPA ;TRAP
564 002526 026727 175744 000357 RETE: CMP BUFF-2,#357 ;COMPARES STATUS ON STACK
565 002534 001405 BEQ TST11
566 002536 012737 000043 000302 MOV #43,00$FATAL ;MOVE TO MAILBOX # ***** 43 *****
567 002544 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
568 002546 000000 HALT ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
569 ; TO SCOPE REPLACE HALT W/ 240
570 ; AND REPLACE NEXT INST W/ 732
571 ;*****
572 ;TEST 11 TEST THAT "NEW" STATUS IS CORRECT
573 ;*****
574 002550 005237 000304 TST11: INC 00$TESTN ;UPDATE TEST NUMBER
575 002554 022737 000011 000304 CMP #11,00$TESTN ;SEQUENCE ERROR?
576 002562 001121 BNE STPP ;BR TO ERROR HALT ON SEQ ERROR
577 002564 012706 000500 MOV #BUFF,SP ;SET UP
578 002570 012767 002604 175212 MOV #RETF,RTRAP ;SET UP
579 002576 005067 175210 CLR RTRAP+2 ;CLEAR FUTURE PRIORITY AND CC
580 002602 000007 TRAPA ;TEST FOR "C" CLEARED
581 002604 RETF:
582 002604 100005 BPL 18
583 002606 012737 000044 000302 MOV #44,00$FATAL ;MOVE TO MAILBOX # ***** 44 *****
584 002614 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
585 002616 000000 HALT ;N NOT CLEARED
586 ; TO SCOPE REPLACE HALT W/ 240
587 ; AND REPLACE NEXT INST W/ 761
588 002620 18:
589 002620 001005 BNE 25
590 002622 012737 000045 000302 MOV #45,00$FATAL ;MOVE TO MAILBOX # ***** 45 *****
591 002630 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
592 002632 000000 HALT ;Z NOT CLEARED
593 ; TO SCOPE REPLACE HALT W/ 240
594 ; AND REPLACE NEXT INST W/ 753
595 002634 28:
596 002634 102005 BVC 38
597 002636 012737 000046 000302 MOV #46,00$FATAL ;MOVE TO MAILBOX # ***** 46 *****
598 002644 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
599 002646 000000 HALT ;V NOT CLEARED
600 ; TO SCOPE REPLACE HALT W/ 240
601 ; AND REPLACE NEXT INST W/ 745
602 002650 38:
603 002650 103005 BCC 48
604 002652 012737 000047 000302 MOV #47,00$FATAL ;MOVE TO MAILBOX # ***** 47 *****
605 002660 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
606 002662 000000 HALT ;C NOT CLEARED
    
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607 ; TO SCOPE REPLACE HALT W/ 240
608 ; AND REPLACE NEXT INST W/ 737
609 002664 032767 000340 175104 46: BIT #340,CC ;TEST PRIORITY
610 002672 001405 BEQ 58
611 002674 012737 000050 000302 MOV #50,0##FATAL ;MOVE TO MAILBOX # ***** 50 *****
612 002702 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
613 002704 000000 HALT ;PRIORITY NOT ZERO
614 ; TO SCOPE REPLACE HALT W/ 240
615 ; AND REPLACE NEXT INST W/ 726
616 002706 012706 000500 58: MOV #BUFF,SP
617 002712 012767 002730 175070 MOV #RETG,RTRAP
618 002720 012767 000357 175064 MOV #357,RTRAP+2 ;SET NEW "CC" AND PRIORITY
619 002726 000007 TRAPA ;TRAP HERE
620 002730 RETG:
621 002730 100405 PMI 18
622 002732 012737 000051 000302 MOV #51,0##FATAL ;MOVE TO MAILBOX # ***** 51 *****
623 002740 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
624 002742 000000 HALT ;N NOT SET
625 ; TO SCOPE REPLACE HALT W/ 240
626 ; AND REPLACE NEXT INST W/ 707
627 002744 16:
628 002744 001405 BEQ 28
629 002746 012737 000052 000302 MOV #52,0##FATAL ;MOVE TO MAILBOX # ***** 52 *****
630 002754 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
631 002756 000000 HALT ;Z NOT SET
632 ; TO SCOPE REPLACE HALT W/ 240
633 ; AND REPLACE NEXT INST W/ 701
634 002760 26:
635 002760 102405 BVS 38
636 002762 012737 000053 000302 MOV #53,0##FATAL ;MOVE TO MAILBOX # ***** 53 *****
637 002770 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
638 002772 000000 HALT ;V NOT SET
639 ; TO SCOPE REPLACE HALT W/ 240
640 ; AND REPLACE NEXT INST W/ 673
641 002774 36:
642 002774 103405 BCS 48
643 002776 012737 000054 000302 MOV #54,0##FATAL ;MOVE TO MAILBOX # ***** 54 *****
644 003004 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
645 003006 000000 HALT ;C NOT SET
646 ; TO SCOPE REPLACE HALT W/ 240
647 ; AND REPLACE NEXT INST W/ 665
648 003010 016706 174762 48: MOV CC,SP
649 003014 042706 000017 BIC #17,SP
650 003020 022706 000340 CMP #340,SP
651 003024 001405 BEQ STPPA
652 003026 STPP:
653 003026 012737 000055 000302 MOV #55,0##FATAL ;MOVE TO MAILBOX # ***** 55 *****
654 003034 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
655 003036 000000 HALT ;PRIORITY WAS CHANGED,OR WRONG $STNM
656 ; TO SCOPE REPLACE HALT W/ 240
657 ; AND REPLACE NEXT INST W/ 651
658 003040 012767 000012 174742 STPPA: MOV #12,10
659 003046 005067 174740 CLR 12
660 ;*****
661 ;TEST 12 TEST THAT A TRAP OCCURS FOR A "TRAP" INSTRUCTION
662 ;*****
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663 003052 005237 000304 TST12: INC 0##TESTN ;UPDATE TEST NUMBER
664 003056 022737 000012 000304 CMP #12,0##TESTN ;SEQUENCE ERROR?
665 003064 001013 BNE TST13-12 ;BR TO ERROR HALT ON SEQ ERROR
666 003066 012767 000012 174714 MOV #12,10
667 003074 005067 174712 CLR 12
668 003100 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
669 003104 012767 003126 174722 MOV #RET1,RTRAP1 ;RETURN LOCATION
670 003112 104400 TRAP ;RESERVED INSTRUCTION, SHOULD TRAP
671 003114 012737 000056 000302 MOV #56,0##FATAL ;MOVE TO MAILBOX # ***** 56 *****
672 003122 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
673 003124 000000 HALT ;TRAP DIDN'T TRAP,OR WRONG $STNM
674 ; TO SCOPE REPLACE HALT W/ 240
675 ; AND REPLACE NEXT INST W/ 757
676 003126 PETA1:
677 ;*****
678 ;TEST 13 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
679 ;*****
680 003126 005237 000304 TST13: INC 0##TESTN ;UPDATE TEST NUMBER
681 003132 022737 000013 000304 CMP #13,0##TESTN ;SEQUENCE ERROR?
682 003140 001011 BNE TST14-12 ;BR TO ERROR HALT ON SEQ ERROR
683 003142 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
684 003146 012767 003156 174660 MOV #RET1,RTRAP1 ;RETURN POINTER
685 003154 104400 TRAP ;RESERVED INSTRUCTION
686 003156 020627 000474 RETR1: SP,#BUFF-4 ;TEST DECREMENT OF SP
687 003162 001405 BEQ TST14
688 003164 012737 000057 000302 MOV #57,0##FATAL ;MOVE TO MAILBOX # ***** 57 *****
689 003172 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
690 003174 000000 HALT ;NOT DECREMENTED TWO WORDS,OR WRONG $STNM
691 ; TO SCOPE REPLACE HALT W/ 240
692 ; AND REPLACE NEXT INST W/ 761
693 ;*****
694 ;TEST 14 TEST THAT PROPER P.C. IS SAVED
695 ;*****
696 003176 005237 000304 TST14: INC 0##TESTN ;UPDATE TEST NUMBER
697 003202 022737 000014 000304 CMP #14,0##TESTN ;SEQUENCE ERROR?
698 003210 001012 BNE TST15-12 ;BR TO ERROR HALT ON SEQ ERROR
699 003212 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
700 003216 012767 003226 174610 MOV #RET1,RTRAP1 ;RETURN FROM TRAP POINTER
701 003224 104400 TRAP ;TRAP ON THIS INSTRUCTION
702 003226 022767 003226 175240 RETC1: CMP #,BUFF-4 ;CHECK INCREMENTED P.C.
703 003234 001405 BEQ TST15
704 003236 012737 000060 000302 MOV #60,0##FATAL ;MOVE TO MAILBOX # ***** 60 *****
705 003244 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
706 003246 000000 HALT ;INCORRECT P.C.,OR WRONG $STNM
707 ; TO SCOPE REPLACE HALT W/ 240
708 ; AND REPLACE NEXT INST W/ 760
709 ;*****
710 ;TEST 15 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
711 ;*****
712 003250 005237 000304 TST15: INC 0##TESTN ;UPDATE TEST NUMBER
713 003254 022737 000015 000304 CMP #15,0##TESTN ;SEQUENCE ERROR?
714 003262 001037 BNE TST16-12 ;BR TO ERROR HALT ON SEQ ERROR
715 003264 012706 000500 MOV #BUFF,SP ;SET UP
716 003270 012767 003306 174536 MOV #RET1,RTRAP1 ;SET UP
717 003276 005067 174474 CLR CC ;CLEAR CC AND PRIORITY
718 003302 000257 CCC
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719 003304 104400          TRAP          ;TRAP
720 003306 026727 175164 000000 RETD1:  CMP      #BUFF-2,#0      ;TEST THAT OLD STATUS WENT TO STACK
721 003314 001405          BEQ      1$
722 003316 012737 000061 000302  MOV      #61,0##$FATAL ;MOVE TO MAILBOX # ***** 61 *****
723 003324 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
724 003326 000000          HALT                    ;INCORRECT STATUS
725                                     ; TO SCOPE REPLACE HALT W/ 240
726                                     ; AND REPLACE NEXT INST W/ 755
727 003330 012706 000500          18:  MOV      #BUFF,SP      ;SET UP
728 003334 012767 003352 174472  MOV      #PETE1,RTRAP1 ;SET UP
729 003342 012767 000357 174426  MOV      #357,CC        ;SET PRIORITY
730 003350 104400          TRAP                    ;SET CC
731 003352 026727 175120 000357 RETE1:  CMP      BUFF-2,#357    ;COMPARES STATUS ON STACK
732 003360 001405          BEQ      TST16
733 003362 012737 000062 000302  MOV      #62,0##$FATAL ;MOVE TO MAILBOX # ***** 62 *****
734 003370 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
735 003372 000000          HALT                    ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
736                                     ; TO SCOPE REPLACE HALT W/ 240
737                                     ; AND REPLACE NEXT INST W/ 733
738 ;*****
739 ;TEST 16 TEST THAT "NEW" STATUS IS CORRECT
740 ;*****
741 003374 005237 000304          TST16: INC      0##$TESTN ;UPDATE TEST NUMBER
742 003400 022737 000016 000304  CMP      #16,0##$TESTN ;SEQUENCE ERROR?
743 003406 001121          BNE     TST17-12      ;BR TO ERROR HALT ON SEQ ERROR
744 003410 012706 000500          MOV      #BUFF,SP
745 003414 012767 003430 174412  MOV      #PETF1,RTRAP1
746 003422 005067 174410          CLR     RTRAP1+2      ;CLEAR FUTURE PRIORITY AND CC
747 003426 104400          TRAP
748 003430          RETF1:  BPL      1$          ;TEST FOR "C" CLEARED
749 003430 100005          BPL      1$
750 003432 012737 000063 000302  MOV      #63,0##$FATAL ;MOVE TO MAILBOX # ***** 63 *****
751 003440 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
752 003442 000000          HALT                    ;C NOT CLEARED
753                                     ; TO SCOPE REPLACE HALT W/ 240
754                                     ; AND REPLACE NEXT INST W/ 761
755 003444          18:  BNE     2$
756 003444 001005          BNE     2$
757 003446 012737 000064 000302  MOV      #64,0##$FATAL ;MOVE TO MAILBOX # ***** 64 *****
758 003454 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
759 003456 000000          HALT                    ;Z NOT CLEARED
760                                     ; TO SCOPE REPLACE HALT W/ 240
761                                     ; AND REPLACE NEXT INST W/ 753
762 003460          28:  BVC     3$
763 003460 102005          BVC     3$
764 003462 012737 000065 000302  MOV      #65,0##$FATAL ;MOVE TO MAILBOX # ***** 65 *****
765 003470 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
766 003472 000000          HALT                    ;V NOT CLEARED
767                                     ; TO SCOPE REPLACE HALT W/ 240
768                                     ; AND REPLACE NEXT INST W/ 745
769 003474          38:  BCC     4$
770 003474 103005          BCC     4$
771 003476 012737 000066 000302  MOV      #66,0##$FATAL ;MOVE TO MAILBOX # ***** 66 *****
772 003504 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
773 003506 000000          HALT                    ;C NOT CLEARED
774                                     ; TO SCOPE REPLACE HALT W/ 240
    
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775                                     ; AND REPLACE NEXT INST W/ 737
776 003510 032767 000340 174260 48:  BIT      #340,CC        ;TEST PRIORITY
777 003516 001405          BEQ      5$
778 003520 012737 000067 000302  MOV      #67,0##$FATAL ;MOVE TO MAILBOX # ***** 67 *****
779 003526 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
780 003530 000000          HALT                    ;PRIORITY NOT ZERO
781                                     ; TO SCOPE REPLACE HALT W/ 240
782                                     ; AND REPLACE NEXT INST W/ 726
783 003532 012706 000500          58:  MOV      #BUFF,SP
784 003536 012767 003554 174270  MOV      #RETG1,RTRAP1
785 003544 012767 000357 174264  MOV      #357,RTRAP1+2 ;SET NEW "CC" AND PRIORITY
786 003552 104400          TRAP                    ;TRAP HERE
787 003554          RETG1:  BMI      1$
788 003554 100405          BMI      1$
789 003556 012737 000070 000302  MOV      #70,0##$FATAL ;MOVE TO MAILBOX # ***** 70 *****
790 003564 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
791 003566 000000          HALT                    ;N NOT SET
792                                     ; TO SCOPE REPLACE HALT W/ 240
793                                     ; AND REPLACE NEXT INST W/ 707
794 003570          18:  BEQ      2$
795 003570 001405          BEQ      2$
796 003572 012737 000071 000302  MOV      #71,0##$FATAL ;MOVE TO MAILBOX # ***** 71 *****
797 003600 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
798 003602 000000          HALT                    ;Z NOT SET
799                                     ; TO SCOPE REPLACE HALT W/ 240
800                                     ; AND REPLACE NEXT INST W/ 701
801 003604          28:  BVS     3$
802 003604 102405          BVS     3$
803 003606 012737 000072 000302  MOV      #72,0##$FATAL ;MOVE TO MAILBOX # ***** 72 *****
804 003614 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
805 003616 000000          HALT                    ;V NOT SET
806                                     ; TO SCOPE REPLACE HALT W/ 240
807                                     ; AND REPLACE NEXT INST W/ 673
808 003620          38:  BCS     4$
809 003620 103405          BCS     4$
810 003622 012737 000073 000302  MOV      #73,0##$FATAL ;MOVE TO MAILBOX # ***** 73 *****
811 003630 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
812 003632 000000          HALT                    ;C NOT SET
813                                     ; TO SCOPE REPLACE HALT W/ 240
814                                     ; AND REPLACE NEXT INST W/ 665
815 003634 016706 174136          48:  MOV      CC,SP
816 003640 042706 000017          BIC     #17,SP
817 003644 022706 000340          CMP     #340,SP
818 003650 001405          BEQ     TST17
819 003652 012737 000074 000302  MOV      #74,0##$FATAL ;MOVE TO MAILBOX # ***** 74 *****
820 003660 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
821 003662 000000          HALT                    ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
822                                     ; TO SCOPE REPLACE HALT W/ 240
823                                     ; AND REPLACE NEXT INST W/ 651
824 ;*****
825 ;TEST 17 TEST THAT ALL COMBINATION OF "TRAP" WILL CAUSE A TRAP
826 ;*****
827 003664 005237 000304          TST17: INC      0##$TESTN ;UPDATE TEST NUMBER
828 003670 022737 000017 000304  CMP     #17,0##$TESTN ;SEQUENCE ERROR?
829 003676 001011          BNE     BR45          ;BR TO ERROR HALT ON SEQ ERROR
830 003700 012767 104400 000012  MOV     #TRAP,RB1      ;INITIALIZE BASE TRAP INSTRUCTION
    
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831 003706 012767 003734 174120      MOV      #RA1,34      ;RETURN FROM TRAP TO RA1
832 003714 012706 000500      MOV      #BUFF,SP    ;SET UP STACK POINTER
833 003720 104400      RB1:    TRAP        ;TRAP INST WILL BE MODIFIED TO TRAP+377
834 003722
835 003722 012737 000075 000302      BR45:   MOV      #75,0##FATAL ;MOVE TO MAILBOX # ***** 75 *****
836 003730 005212      INC      (R2)        ;SET MSGTYP TO FATAL ERROR
837 003732 000000      HALT
838
839
840 003734 005267 177760      RA1:    INC      R61      ;AND REPLACE NEXT INST W/ 761
841 003740 022767 104777 177752      CMP      #104777,RB1 ;INCREMENT TRAP INSTRUCTION
842 003746 103362      BHS     RC1          ;TRAP+377 TO UPPER LIMIT
843 003750 012767 000036 174056      MOV      #36,34     ;HAVE WE TESTED ALL
844 003756 005067 174054      CLR     36
845
846
847
848
849 003762 005237 000304      ;*****
850 003774 001006      TST20: INC     ##$TESTN ;UPDATE TEST NUMBER
851 003776 012706 000500      CMP     #20,##$TESTN ;SEQUENCE ERROR?
852 004002 012767 004024 174010      BNE     TST21-12    ;BR TO ERROR HALT ON SEQ ERROR
853 004010 009004      MOV     #BUFF,SP    ;STACK POINTER SETUP
854 004012 012737 000076 000302      MOV     #RETA2,RTRAP2 ;RETURN LOCATION
855 004020 005212      IOT
856 004022 000000      MOV     #76,0##FATAL ;RESERVE INSTRUCTION, SHOULD TRAP
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858
859 004024      INC     (R2)        ;MOVE TO MAILBOX # ***** 76 *****
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887 004134 012737 000100 000302      MOV     #100,0##FATAL ;MOVE TO MAILBOX # ***** 100 *****
888 004142 005212      INC     (R2)        ;SET MSGTYP TO FATAL ERROR
889 004144 000000      HALT              ;INCORRECT P.C.,OR WRONG STSNM
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943 004356 000000          HALT          ;Z NOT CLEARED
944                                     ; TO SCOPE REPLACE HALT W/ 240
945                                     ; AND REPLACE NEXT INST W/ 753
946 004360          28:          BVC          38
947 004360 102005          MOV          #105,0##FATAL ;MOVE TO MAILBOX # ***** 105 *****
948 004362 012737 000105 000302 INC          (R2)          ;SET MSGTYP TO FATAL ERROR
949 004370 005212          HALT          ;V NOT CLEARED
950 004372 000000          ; TO SCOPE REPLACE HALT W/ 240
951                                     ; AND REPLACE NEXT INST W/ 745
952
953 004374          38:          BCC          48
954 004374 103005          MOV          #106,0##FATAL ;MOVE TO MAILBOX # ***** 106 *****
955 004376 012737 000106 000302 INC          (R2)          ;SET MSGTYP TO FATAL ERROR
956 004404 005212          HALT          ;C NOT CLEARED
957 004406 000000          ; TO SCOPE REPLACE HALT W/ 240
958                                     ; AND REPLACE NEXT INST W/ 745
959
960 004410 032767 000340 173360 48: BIT          #340,CC
961 004416 001405          BEQ          58
962 004420 012737 000107 000302 MOV          #107,0##FATAL ;MOVE TO MAILBOX # ***** 107 *****
963 004426 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
964 004430 000000          HALT          ;PRIORITY NOT ZERO
965                                     ; TO SCOPE REPLACE HALT W/ 240
966                                     ; AND REPLACE NEXT INST W/ 726
967 004432 012706 000500          56: MOV          #BUFF,SP
968 004436 012767 004454 173354 MOV          #RETG2,RTRAP2
969 004444 012767 000357 173350 MOV          #357,RTRAP2+2 ;SET NEW "CC" AND PRIORITY
970 004452 000004          IOT          ;TRAP HERE
971
972 004454          RETG2:      BMI          18
973 004456 012737 000110 000302 MOV          #110,0##FATAL ;MOVE TO MAILBOX # ***** 110 *****
974 004464 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
975 004466 000000          HALT          ;N NOT SET
976                                     ; TO SCOPE REPLACE HALT W/ 240
977                                     ; AND REPLACE NEXT INST W/ 707
978
979 004470          18:          BEQ          28
980 004472 012737 000111 000302 MOV          #111,0##FATAL ;MOVE TO MAILBOX # ***** 111 *****
981 004500 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
982 004502 000000          HALT          ;Z NOT SET
983                                     ; TO SCOPE REPLACE HALT W/ 240
984                                     ; AND REPLACE NEXT INST W/ 701
985
986 004504          28:          BVS          38
987 004506 012737 000112 000302 MOV          #112,0##FATAL ;MOVE TO MAILBOX # ***** 112 *****
988 004514 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
989 004516 000000          HALT          ;V NOT SET
990                                     ; TO SCOPE REPLACE HALT W/ 240
991                                     ; AND REPLACE NEXT INST W/ 673
992
993 004520          38:          BCS          48
994 004522 103405          MOV          #113,0##FATAL ;MOVE TO MAILBOX # ***** 113 *****
995 004524 012737 000113 000302 MOV          (R2)          ;SET MSGTYP TO FATAL ERROR
996 004530 005212          INC          (R2)          ;C NOT SET
997 004532 000000          HALT          ; TO SCOPE REPLACE HALT W/ 240
998                                     ; AND REPLACE NEXT INST W/ 665
999
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999 004534 016706 173236          48: MOV          CC,SP
1000 004540 042706 000017          BIC          #17,SP
1001 004544 022706 000340          CMP          #340,SP
1002 004550 001405          REQ          BR46A
1003 004552          BR46:
1004 004552 012737 000114 000302 MOV          #114,0##FATAL ;MOVE TO MAILBOX # ***** 114 *****
1005 004556 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
1006 004562 000000          HALT          ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1007                                     ; TO SCOPE REPLACE HALT W/ 240
1008                                     ; AND REPLACE NEXT INST W/ 651
1009 004564 012767 000022 173226 BR46A: MOV          #22,20
1010 004572 005067 173224          CLR          22          ;HALT
1011
1012 ;*****
1013 ;TEST 25 TEST THAT A TRAP OCCURS ON AN EMT INSTRUCTION
1014 ;*****
1015 004576 005237 000304          TST25: INC          #,$TESTN ;UPDATE TEST NUMBER
1016 004602 022737 000025 000304 CMP          #25,0##TESTN ;SEQUENCE ERROR?
1017 004610 001006          BNE          TST26-12 ;BR TO ERROR HALT ON SEQ ERROR
1018 004612 012706 000500          MOV          #BUFF,SP ;STACK POINTER SETUP
1019 004616 012767 004640 173204 MOV          #RETA3,RTRAP3 ;RETURN LOCATION
1020 004624 104000          EMT          ;RESERVE INSTRUCTION, SHOULD TRAP
1021 004626 012737 000115 000302 MOV          #115,0##FATAL ;MOVE TO MAILBOX # ***** 115 *****
1022 004634 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
1023 004636 000000          HALT          ;EMT DIDN'T TRAP,OR WRONG $TSTNM
1024                                     ; TO SCOPE REPLACE HALT W/ 240
1025                                     ; AND REPLACE NEXT INST W/ 764
1026
1027 RETA3:
1028 ;*****
1029 ;TEST 26 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1030 ;*****
1031 004640 005237 000304          TST26: INC          #,$TESTN ;UPDATE TEST NUMBER
1032 004644 022737 000026 000304 CMP          #26,0##TESTN ;SEQUENCE ERROR?
1033 004652 001011          BNE          TST27-12 ;BR TO ERROR HALT ON SEQ ERROR
1034 004654 012706 000500          MOV          #BUFF,SP ;STACK POINTER SETUP
1035 004660 012767 004670 173142 MOV          #RETB3,RTRAP3 ;RETURN POINTER
1036 004666 104000          EMT          ;RESERVED INSTRUCTION
1037 004670 020627 000474          RETB3: CMP          SP,#BUFF-4 ;TEST DECREMENT OF SP
1038 004674 001405          BEQ          TST27
1039 004676 012737 000116 000302 MOV          #116,0##FATAL ;MOVE TO MAILBOX # ***** 116 *****
1040 004704 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
1041 004706 000000          HALT          ;NOT DECREMENTED TWO WORDS,OR WRONG $TSTNM
1042                                     ; TO SCOPE REPLACE HALT W/ 240
1043                                     ; AND REPLACE NEXT INST W/ 761
1044
1045 ;*****
1046 ;TEST 27 TEST THAT PROPER P.C. IS SAVED
1047 ;*****
1048 004710 005237 000304          TST27: INC          #,$TESTN ;UPDATE TEST NUMBER
1049 004714 022737 000027 000304 CMP          #27,0##TESTN ;SEQUENCE ERROR?
1050 004722 001012          BNE          TST30-12 ;BR TO ERROR HALT ON SEQ ERROR
1051 004724 012706 000500          MOV          #BUFF,SP ;STACK POINTER SETUP
1052 004730 012767 004740 173072 MOV          #RETC3,RTRAP3 ;RETURN FROM TRAP POINTER
1053 004736 104000          EMT          ;TRAP ON THIS INSTRUCTION
1054 004740 022767 004740 173526 RETC3: CMP          #,#BUFF-4 ;CHECK FOR INCREMENTED P.C.
1055 004746 001405          BEQ          TST30
1056 004750 012737 000117 000302 MOV          #117,0##FATAL ;MOVE TO MAILBOX # ***** 117 *****
1057 004756 005212          INC          (R2)          ;SET MSGTYP TO FATAL ERROR
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1055 004760 000000          HALT          ;INCORRECT P.C.,OR WRONG $STNM
1056                          ; TO SCOPE REPLACE HALT W/ 240
1057                          ; AND REPLACE NEXT INST W/ 760
1058 ;*****
1059 ;TEST 30 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1060 ;*****
1061 004762 005237 000304          TST30:  INC  #0,$TESTN  ;UPDATE TEST NUMBER
1062 004766 022737 000030 000304  CMP      #30,$TESTN ;SEQUENCE ERROR?
1063 004774 001040          BNE     TST31-12 ;BR TO ERROR HALT ON SEQ ERROR
1064 004776 012706 000500          MOV     #BUFF,SP  ;SET UP
1065 005002 012767 005020 173020  MOV     #RETD3,RTRAP3 ;SET UP
1066 005010 005067 172762          CLR     CC        ;CLEAR CC AND PRIORITY
1067 005014 000257          CCC
1068 005016 104000          EMT          ;TRAP
1069 005020 026727 173452 000000  RETD3:  CMP     BUFF-2,#0  ;TEST THAT OLD STATUS WENT TO STACK
1070 005026 001405          BEQ     1$
1071 005030 012737 000120 000302  MOV     #120,#$FATAL ;MOVE TO MAILBOX # ***** 120 *****
1072 005036 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1073 005040 000000          HALT          ;INCORRECT STATUS
1074                          ; TO SCOPE REPLACE HALT W/ 240
1075                          ; AND REPLACE NEXT INST W/ 755
1076 005042 012706 000500          1$:  MOV     #BUFF,SP  ;SET UP
1077 005046 012767 005066 172754  MOV     #RETE3,RTRAP3 ;SET UP
1078 005054 012767 000357 172714  MOV     #357,CC     ;SET PRIORITY
1079 005062 000277          SCC
1080 005064 104000          EMT          ;SET CC
1081 005066 026727 173404 000357  RETE3:  CMP     BUFF-2,#357 ;TRAP
1082 005074 001405          BEQ     TST31     ;COMPARES STATUS ON STACK
1083 005076 012737 000121 000302  MOV     #121,$$FATAL ;MOVE TO MAILBOX # ***** 121 *****
1084 005104 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1085 005106 000000          HALT          ;INCORRECT STATUS ON STACK,OR WRONG $STNM
1086                          ; TO SCOPE REPLACE HALT W/ 240
1087                          ; AND REPLACE NEXT INST W/ 732
1088 ;*****
1089 ;TEST 31 TEST THAT "NEW" STATUS IS CORRECT
1090 ;*****
1091 005110 005237 000304          TST31:  INC  #0,$TESTN  ;UPDATE TEST NUMBER
1092 005114 022737 000031 000304  CMP      #31,$TESTN ;SEQUENCE ERROR?
1093 005122 001117          BNE     TST32-12 ;BR TO ERROR HALT ON SEQ ERROR
1094 005124 012706 000500          MOV     #BUFF,SP  ;SET UP
1095 005130 012767 005144 172672  MOV     #RETF3,RTRAP3 ;SET UP
1096 005136 005067 172670          CLR     RTRAP3+2  ;CLEAR FUTURE PRIORITY AND CC
1097 005142 104000          EMT
1098 005144          RETF3:  EMT          ;TEST FOR "C" CLEARED
1099 005144 100005          BPL     1$
1100 005146 012737 000122 000302  MOV     #122,$$FATAL ;MOVE TO MAILBOX # ***** 122 *****
1101 005154 005212          JNC     (R2)       ;SET MSGTYP TO FATAL ERROR
1102 005156 000000          HALT          ;C NOT CLEARED
1103                          ; TO SCOPE REPLACE HALT W/ 240
1104                          ; AND REPLACE NEXT INST W/ 761
1105 005160          1$:  BNE     2$
1106 005160 001005          MOV     #123,$$FATAL ;MOVE TO MAILBOX # ***** 123 *****
1107 005162 012737 000123 000302  MOV     #123,$$FATAL ;SET MSGTYP TO FATAL ERROR
1108 005170 005212          INC     (R2)       ;Z NOT CLEARED
1109 005172 000000          HALT          ; TO SCOPE REPLACE HALT W/ 240
1110                          ; AND REPLACE NEXT INST W/ 740
    
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1111                          ; AND REPLACE NEXT INST W/ 753
1112 005174          2$:  BVC     3$
1113 005174 102005          BVC     3$
1114 005176 012737 000124 000302  MOV     #124,$$FATAL ;MOVE TO MAILBOX # ***** 124 *****
1115 005204 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1116 005206 000000          HALT          ;V NOT CLEARED
1117                          ; TO SCOPE REPLACE HALT W/ 240
1118                          ; AND REPLACE NEXT INST W/ 745
1119 005210          3$:  BCC     4$
1120 005210 103005          BCC     4$
1121 005212 012737 000125 000302  MOV     #125,$$FATAL ;MOVE TO MAILBOX # ***** 125 *****
1122 005220 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1123 005222 000000          HALT          ;C NOT CLEARED
1124                          ; TO SCOPE REPLACE HALT W/ 240
1125                          ; AND REPLACE NEXT INST W/ 737
1126 005224 032767 000340 172544 4$:  BIT     #340,CC   ;TEST PRIORITY
1127 005232 001405          BEQ     5$
1128 005234 012737 000126 000302  MOV     #126,$$FATAL ;MOVE TO MAILBOX # ***** 126 *****
1129 005242 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1130 005244 000000          HALT          ;PRIORITY NOT ZERO
1131                          ; TO SCOPE REPLACE HALT W/ 240
1132                          ; AND REPLACE NEXT INST W/ 726
1133 005246 012706 000500          5$:  MOV     #BUFF,SP  ;SET NEW "CC" AND PRIORITY
1134 005252 012767 005270 172550  MOV     #RETG3,RTRAP3+2 ;TRAP HFRE
1135 005260 012767 000357 172544  MOV     #357,RTRAP3+2 ;SET NEW "CC" AND PRIORITY
1136 005266 104000          EMT          ;TRAP HFRE
1137 005270          RETG3:  EMT
1138 005270 100405          BMI     1$
1139 005272 012737 000127 000302  MOV     #127,$$FATAL ;MOVE TO MAILBOX # ***** 127 *****
1140 005300 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1141 005302 000000          HALT          ;N NOT SET
1142                          ; TO SCOPE REPLACE HALT W/ 240
1143                          ; AND REPLACE NEXT INST W/ 707
1144 005304          1$:  BEQ     2$
1145 005304 001405          BEQ     2$
1146 005306 012737 000130 000302  MOV     #130,$$FATAL ;MOVE TO MAILBOX # ***** 130 *****
1147 005314 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1148 005316 000000          HALT          ;Z NOT SET
1149                          ; TO SCOPE REPLACE HALT W/ 240
1150                          ; AND REPLACE NEXT INST W/ 701
1151 005320          2$:  BVS     3$
1152 005320 102405          BVS     3$
1153 005322 012737 000131 000302  MOV     #131,$$FATAL ;MOVE TO MAILBOX # ***** 131 *****
1154 005330 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1155 005332 000000          HALT          ;V NOT SET
1156                          ; TO SCOPE REPLACE HALT W/ 240
1157                          ; AND REPLACE NEXT INST W/ 673
1158 005334          3$:  BCS     4$
1159 005334 103405          BCS     4$
1160 005336 012737 000132 000302  MOV     #132,$$FATAL ;MOVE TO MAILBOX # ***** 132 *****
1161 005344 005212          INC     (R2)       ;SET MSGTYP TO FATAL ERROR
1162 005346 000000          HALT          ;C NOT SET
1163                          ; TO SCOPE REPLACE HALT W/ 240
1164                          ; AND REPLACE NEXT INST W/ 665
1165 005350 000257          CCC
1166 005352 022767 000340 172416 4$:  CMP     #340,CC
    
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1167 005360 001405      BEQ     TST32
1168 005362 012737 000133 000302    MOV     #133,0##FATAL ;MOVE TO MAILBOX # ***** 133 *****
1169 005370 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
1170 005372 000000      HALT                    ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1171                                     ; TO SCOPE REPLACE HALT W/ 240
1172                                     ; AND REPLACE NEXT INST W/ 653
1173
1174                                     ;*****
1175 ;TEST 32 TEST THAT ALL COMBINATION OF EMT WILL CAUSE A TRAP
1176 005374 005237 000304    TST32: INC     0##TESTN ;UPDATE TEST NUMBER
1177 005400 022737 000032 000304    CMP     #32,0##TESTN ;SEQUENCE ERROR?
1178 005406 001011      BNE     BR47           ;BR TO ERROR HALT ON SEQ ERROR
1179 005410 012767 104000 000012    MOV     #EMT,RB       ;INITIALIZE BASE EMT INSTRUCTION
1180 005416 012767 005444 172404    MOV     #RA,30        ;RETURN FROM TRAP TO RA
1181 005424 012706 000500      RC:    MOV     #RUFF,SP ;SET UP STACK POINTER
1182 005430 104000      RB:    EMT           ;TRAP INST, WILL BE MODIFIED TO EMT+377
1183 005432
1184 005432 012737 000134 000302    MOV     #134,0##FATAL ;MOVE TO MAILBOX # ***** 134 *****
1185 005440 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
1186 005442 000000      HALT                    ;PREVIOUS INST FAILED TO TRAP,OR WRONG $TSTNM
1187                                     ; TO SCOPE REPLACE HALT W/ 240
1188                                     ; AND REPLACE NEXT INST W/ 761
1189 005444 005267 177760      RA:    INC     RB       ;INCREMENT TRAP INSTRUCTION
1190 005450 022767 104377 177752    CMP     #104377,RB    ;EMT+377 TO EMT?
1191 005456 103362      BHS     RC           ;HAVE WE TESTED ALL
1192                                     ;YES
1193 005460 012767 000032 172342    MOV     #32,30        ;/+
1194 005466 005067 172340      CLR     32           ;HALT
1195
1196                                     ;*****
1197 ;TEST 33 TEST THAT A TRAP OCCURES ON AN "TRACE-TPT" INSTRUCTION
1198 005472 005237 000304    TST33: INC     0##TESTN ;UPDATE TEST NUMBER
1199 005476 022737 000033 000304    CMP     #33,0##TESTN ;SEQUENCE ERROR?
1200 005504 001006      BNE     TST34-12      ;BR TO ERROR HALT ON SEQ ERROR
1201 005506 012706 000500      MOV     #BUFF,SP     ;STACK POINTER SETUP
1202 005512 012767 005534 172274    MOV     #RETA4,RTRAP4 ;RETURN LOCATION
1203 005520 000003      TRT                    ;RESERVED INSTRUCTION, SHOULD TRAP
1204 005522 012737 000135 000302    MOV     #135,0##FATAL ;MOVE TO MAILBOX # ***** 135 *****
1205 005530 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
1206 005532 000000      HALT                    ;TRT DIDN'T TRAP,OR WRONG $TSTNM
1207                                     ; TO SCOPE REPLACE HALT W/ 240
1208                                     ; AND REPLACE NEXT INST W/ 764
1209
1210 RETA4:
1211 ;TEST 34 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1212                                     ;*****
1213 005534 005237 000304    TST34: INC     0##TESTN ;UPDATE TEST NUMBER
1214 005540 022737 000034 000304    CMP     #34,0##TESTN ;SEQUENCE ERROR?
1215 005546 001011      BNE     TST35-12      ;BR TO ERROR HALT ON SEQ ERROR
1216 005550 012706 000500      MOV     #BUFF,SP     ;STACK POINTER SETUP
1217 005554 012767 005564 172232    MOV     #RETB4,RTRAP4 ;RETURN POINTER
1218 005562 000003      TRT                    ;RESERVED INSTRUCTION
1219 005564 020627 000474      RETB4: CMP     SP,#BUFF-4 ;TEST DECREMENT OF SP
1220 005570 001405      BEQ     TST35
1221 005572 012737 000136 000302    MOV     #136,0##FATAL ;MOVE TO MAILBOX # ***** 136 *****
1222 005600 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
    
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1223 005602 000000      HALT                    ;NOT DECREMENTED TWO WORDS,OR WRONG $TSTNM
1224                                     ; TO SCOPE REPLACE HALT W/ 240
1225                                     ; AND REPLACE NEXT INST W/ 761
1226
1227                                     ;*****
1228 ;TEST 35 TEST THAT PROPER P.C. IS SAVED
1229 005604 005237 000304    TST35: INC     0##TESTN ;UPDATE TEST NUMBER
1230 005610 022737 000035 000304    CMP     #35,0##TESTN ;SEQUENCE ERROR?
1231 005616 001012      BNE     TST36-12      ;BR TO ERROR HALT ON SEQ ERROR
1232 005620 012706 000500      MOV     #BUFF,SP     ;STACK POINTER SETUP
1233 005624 012767 005634 172162    MOV     #RETC4,RTRAP4 ;RETURN FROM TRAP POINTER
1234 005632 000003      TPT                    ;TRAP ON THIS INSTRUCTION
1235 005634 022767 005634 172632    RETC4: CMP     #, #BUFF-4 ;CHECK FOR INCREMENTED P.C.
1236 005642 001405      REQ     TST36
1237 005644 012737 000137 000302    MOV     #137,0##FATAL ;MOVE TO MAILBOX # ***** 137 *****
1238 005652 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
1239 005654 000000      HALT                    ;INCORRECT P.C.,OR WRONG $TSTNM
1240                                     ; TO SCOPE REPLACE HALT W/ 240
1241                                     ; AND REPLACE NEXT INST W/ 760
1242
1243                                     ;*****
1244 ;TEST 36 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1245 005656 005237 000304    TST36: INC     0##TESTN ;UPDATE TEST NUMBER
1246 005662 022737 000036 000304    CMP     #36,0##TESTN ;SEQUENCE ERROR?
1247 005670 001040      BNE     TST37-12      ;BR TO ERROR HALT ON SEQ ERROR
1248 005672 012706 000500      MOV     #BUFF,SP     ;SET UP
1249 005676 012767 005714 172110    MOV     #RETD4,RTRAP4 ;SET UP
1250 005704 005067 172066      CLR     CC           ;CLEAR CC AND PRIORITY
1251 005710 000257      CCC
1252 005712 000003      TRT                    ;TRAP
1253 005714 026727 172556 000000    RETD4: CMP     BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
1254                                     ;TEST FOR ALL ZEROS
1255
1256 005722 001405      BEQ     1$
1257 005724 012737 000140 000302    MOV     #140,0##FATAL ;MOVE TO MAILBOX # ***** 140 *****
1258 005732 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
1259 005734 000000      HALT                    ;INCORRECT STATUS
1260                                     ; TO SCOPE REPLACE HALT W/ 240
1261                                     ; AND REPLACE NEXT INST W/ 755
1262
1263 18:    MOV     #BUFF,SP     ;SET UP
1264 005736 012706 000500      MOV     #RETE4,RTRAP4 ;SET UP
1265 005742 012767 005762 172044    MOV     #357,CC      ;SET PRIORITY
1266 005750 012767 000357 172020    SCC     ;SET-SET CC
1267 005756 000277      TRT                    ;TRAP
1268 005760 000003      TRT                    ;COMPARES STATUS ON STACK
1269 005762 026727 172510 000357    RETE4: CMP     BUFF-2,#357
1270 005770 001405      BEQ     TST37
1271 005772 012737 000141 000302    MOV     #141,0##FATAL ;MOVE TO MAILBOX # ***** 141 *****
1272 006000 005212      INC     (R2)           ;SET MSGTYP TO FATAL ERROR
1273 006002 000000      HALT                    ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
1274                                     ; TO SCOPE REPLACE HALT W/ 240
1275                                     ; AND REPLACE NEXT INST W/ 732
1276
1277                                     ;*****
1278 ;TEST 37 TEST THAT "NEW" STATUS IS CORRECT
1279 006004 005237 000304    TST37: INC     0##TESTN ;UPDATE TEST NUMBER
1280 006010 022737 000037 000304    CMP     #37,0##TESTN ;SEQUENCE ERROR?
1281 006016 001121      BNE     BR51           ;BR TO ERROR HALT ON SEQ ERROR
    
```

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1279 006020 012706 000500          MOV      #RUFF,SP
1280 006024 012767 006040 171762    MOV      #RET4,RTRAP4
1281 006032 005067 171760          CLR      RTRAP4+2          ;CLEAR FUTURE PRIORITY AND CC
1282 006036 000003          TRT
1283 006040          RETF4:          ;TEST FOR "C" CLEARED
1284 006040 100005          BPL      1$
1285 006042 012737 000142 000302    MOV      #142,0##FATAL    ;MOVE TO MAILBOX # ***** 142 *****
1286 006050 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1287 006052 000000          HALT                    ;C NOT CLEARED
1288          ; TO SCOPE REPLACE HALT W/ 240
1289          ; AND REPLACE NEXT INST W/ 761
1290 006054          1$:
1291 006054 001005          BNE      2$
1292 006056 012737 000143 000302    MOV      #143,0##FATAL    ;MOVE TO MAILBOX # ***** 143 *****
1293 006064 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1294 006066 000000          HALT                    ;Z NOT CLEARED
1295          ; TO SCOPE REPLACE HALT W/ 240
1296          ; AND REPLACE NEXT INST W/ 753
1297 006070          2$:
1298 006070 102005          BVC      3$
1299 006072 012737 000144 000302    MOV      #144,0##FATAL    ;MOVE TO MAILBOX # ***** 144 *****
1300 006100 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1301 006102 000000          HALT                    ;V NOT CLEARED
1302          ; TO SCOPE REPLACE HALT W/ 240
1303          ; AND REPLACE NEXT INST W/ 745
1304 006104          3$:
1305 006104 103005          BCC      4$
1306 006106 012737 000145 000302    MOV      #145,0##FATAL    ;MOVE TO MAILBOX # ***** 145 *****
1307 006114 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1308 006116 000000          HALT                    ;C NOT CLEARED
1309          ; TO SCOPE REPLACE HALT W/ 240
1310          ; AND REPLACE NEXT INST W/ 737
1311 006120 032767 000340 171650 4$:  BIT      #340,CC
1312 006126 001405          BEQ      5$
1313 006130 012737 000146 000302    MOV      #146,0##FATAL    ;MOVE TO MAILBOX # ***** 146 *****
1314 006136 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1315 006140 000000          HALT                    ;PRIORITY NOT ZERO
1316          ; TO SCOPE REPLACE HALT W/ 240
1317          ; AND REPLACE NEXT INST W/ 726
1318 006142 012706 000500          MOV      #RUFF,SP
1319 006146 012767 006164 171640    MOV      #RET4,RTRAP4
1320 006154 012767 000357 171634    MOV      #357,RTRAP4+2    ;SET NEW "CC" AND PRIORITY
1321 006162 000003          TRT                    ;TRAP HERE
1322 006164          RETG4:
1323 006164 100405          BMI      1$
1324 006166 012737 000147 000302    MOV      #147,0##FATAL    ;MOVE TO MAILBOX # ***** 147 *****
1325 006174 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1326 006176 000000          HALT                    ;N NOT SET
1327          ; TO SCOPE REPLACE HALT W/ 240
1328          ; AND REPLACE NEXT INST W/ 707
1329 006200          1$:
1330 006200 001405          BEQ      2$
1331 006202 012737 000150 000302    MOV      #150,0##FATAL    ;MOVE TO MAILBOX # ***** 150 *****
1332 006210 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1333 006212 000000          HALT                    ;Z NOT SET
1334          ; TO SCOPE REPLACE HALT W/ 240
    
```

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1335          ; AND REPLACE NEXT INST W/ 701
1336 006214          2$:
1337 006214 102405          BVS      3$
1338 006216 012737 000151 000302    MOV      #151,0##FATAL    ;MOVE TO MAILBOX # ***** 151 *****
1339 006224 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1340 006226 000000          HALT                    ;V NOT SET
1341          ; TO SCOPE REPLACE HALT W/ 240
1342          ; AND REPLACE NEXT INST W/ 673
1343 006230          3$:
1344 006230 103405          BCS      4$
1345 006232 012737 000152 000302    MOV      #152,0##FATAL    ;MOVE TO MAILBOX # ***** 152 *****
1346 006240 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1347 006242 000000          HALT                    ;C NOT SET
1348          ; TO SCOPE REPLACE HALT W/ 240
1349          ; AND REPLACE NEXT INST W/ 665
1350 006244 016706 171526          MOV      CC,SP
1351 006250 042706 000017          BIC      #17,SP
1352 006254 022706 000340          CMP      #340,SP
1353 006260 001405          BEQ      BR51A
1354 006262          BR51:
1355 006262 012737 000153 000302    MOV      #153,0##FATAL    ;MOVE TO MAILBOX # ***** 153 *****
1356 006270 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1357 006272 000000          HALT                    ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1358          ; TO SCOPE REPLACE HALT W/ 240
1359          ; AND REPLACE NEXT INST W/ 651
1360 006274 012767 000016 171512 BR51A: MOV      #16,14
1361 006302 005067 171510          CLR      16
1362
1363          ;PDP-11 ILLEGAL AND ADDRESS INSTRUCTION TEST
1364          ;ALL INSTRUCTIONS THAT ARE RESERVED
1365          ;SHOULD TRAP TO LOCATION 4, AND THE
1366          ;PC THAT POINTS TO THE TRAPPING INSTRUCTION
1367          ;SHOULD BE PLACED ON THE STACK
1368
1369          ;*****
1370          ;TEST 40 TEST THAT A TRAP OCCURS ON AN ILLEGAL INSTRUCTION
1371          ;*****
1372 006306 005237 000304          TST40: INC      ##$TESTN    ;UPDATE TEST NUMBER
1373 006312 022737 000040 000304    CMP      #40,##$TESTN    ;SEQUENCE ERROR?
1374 006320 001006          BNE      TST41-12        ;BR TO ERROR HALT ON SEQ ERROR
1375 006322 012706 000500          MOV      #RUFF,SP        ;STACK POINTER SETUP
1376 006326 012767 006350 171450    MOV      #RETA5,RTRAP5    ;RETURN LOCATION
1377 006334 000100          JMP      %0              ;ILLEGAL INSTRUCTION, SHOULD TRAP
1378 006336 012737 000154 000302    MOV      #154,0##FATAL    ;MOVE TO MAILBOX # ***** 154 *****
1379 006344 005212          INC      (R2)             ;SET MSGTYP TO FATAL ERROR
1380 006346 000000          HALT                    ;ILLEGAL INSTRUCTION DIDN'T TRAP,OR WRONG $TSTNM
1381          ; TO SCOPE REPLACE HALT W/ 240
1382          ; AND REPLACE NEXT INST W/ 764
1383 006350          RETA5:
1384          ;*****
1385          ;TEST 41 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1386          ;*****
1387 006350 005237 000304          TST41: INC      ##$TESTN    ;UPDATE TEST NUMBER
1388 006354 022737 000041 000304    CMP      #41,##$TESTN    ;SEQUENCE ERROR?
1389 006362 001011          BNE      TST42-12        ;BR TO ERROR HALT ON SEQ ERROR
1390 006364 012706 000500          MOV      #RUFF,SP        ;STACK POINTER SETUP
    
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CFKABD.P11 22-MAY-79 11132 T41 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION SEQ 0030

1391 006370 012767 006400 171406 MOV #RET5,RTRAP5 ;RETURN POINTER
1392 006376 000100 JMP #0 ;RESERVED INSTRUCTION
1393 006400 020627 000474 RETB5: CMP #BUFF-4 ;TEST DECREMENT OF SP
1394 006404 001405 BEQ TST42
1395 006406 012737 000155 000302 MOV #155,0##SFATAL ;MOVE TO MAILBOX # ***** 155 *****
1396 006414 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1397 006416 000000 HALT ;NOT DECREMENTED TWO WORDS,OR WRONG $TSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 761
1400 ;*****
1401 ;TEST 42 TEST THAT PROPER P,C, IS SAVED
1402 ;*****
1403 006420 005237 000304 TST42: INC #0 ;UPDATE TEST NUMBER
1404 006424 022737 000042 000304 CMP #42,0##$TESTN ;SEQUENCE ERROR?
1405 006432 001012 BNE TST43-12 ;BR TO ERROR HALT ON SEQ ERROR
1406 006434 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
1407 006440 012767 006450 171336 MOV #RET5,RTRAP5 ;RETURN FROM TRAP POINTER
1408 006446 000100 JMP #0 ;TRAP ON THIS INSTRUCTION
1409 006450 022767 006450 172016 RETC5: CMP #,,BUFF-4 ;CHECK FOR INCREMENTED P,C,
1410 006456 001405 BEQ TST43
1411 006460 012737 000156 000302 MOV #156,0##SFATAL ;MOVE TO MAILBOX # ***** 156 *****
1412 006466 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1413 006470 000000 HALT ;INCORRECT P,C,,OR WRONG $TSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 760
1414 ;*****
1415 ;TEST 43 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1416 ;*****
1417 ;*****
1418 ;*****
1419 006472 005237 000304 TST43: INC #0 ;UPDATE TEST NUMBER
1420 006476 022737 000043 000304 CMP #43,0##$TESTN ;SEQUENCE ERROR?
1421 006504 001040 BNE TST44-12 ;BR TO ERROR HALT ON SEQ ERROR
1422 006506 012706 000500 MOV #BUFF,SP ;SET UP
1423 006512 012767 006530 171264 MOV #PETD5,RTRAP5 ;SET UP
1424 006520 005067 171252 CLR CC ;CLEAR CC AND PRIORITY
1425 006524 000257 CCC
1426 006526 000100 JMP #0 ;TRAP
1427 006530 026727 171742 000000 RETD5: CMP #BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
1428 006536 001405 BEQ 15 ;
1429 006540 012737 000157 000302 MOV #157,0##SFATAL ;MOVE TO MAILBOX # ***** 157 *****
1430 006546 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1431 006550 000000 HALT ;INCORRECT STATUS
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 755
1432 ;*****
1433 ;*****
1434 006552 012706 000500 18: MOV #RUFF,SP ;SET UP
1435 006556 012767 006576 171220 MOV #RET5,RTRAP5 ;SET UP
1436 006564 012767 000357 171204 MOV #357,CC ;SET PRIORITY
1437 006572 000277 SCC ;SET CC
1438 006574 000100 JMP #0 ;TRAP
1439 006576 026727 171674 000357 RETE5: CMP #BUFF-2,#357 ;COMPARES STATUS ON STACK
1440 006604 001405 BEQ TST44
1441 006606 012737 000160 000302 MOV #160,0##SFATAL ;MOVE TO MAILBOX # ***** 160 *****
1442 006614 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1443 006616 000000 HALT ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 732
1444 ;*****
1445 ;*****
1446 ;*****

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CFKABD.P11 22-MAY-79 11132 T43 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK SEQ 0031

1447 ;TEST 44 TEST THAT "NEW" STATUS IS CORRECT
1448 ;*****
1449 006620 005237 000304 TST44: INC #0 ;UPDATE TEST NUMBER
1450 006624 022737 000044 000304 CMP #44,0##$TESTN ;SEQUENCE ERROR?
1451 006632 001117 BNE TST45-12 ;BR TO ERROR HALT ON SEQ ERROR
1452 006634 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
1453 006640 012767 006654 171136 MOV #RET5,RTRAP5 ;RETURN FROM TRAP POINTER
1454 006646 005067 171134 CLR RTRAP5+2 ;CLEAR FUTURE PRIORITY AND CC
1455 006652 000100 JMP #0 ;TRAP
1456 006654 RETF5: ;TEST FOR "C" CLEARED
1457 006654 100005 BPL 18 ;
1458 006656 012737 000161 000302 MOV #161,0##SFATAL ;MOVE TO MAILBOX # ***** 161 *****
1459 006664 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1460 006666 000000 HALT ;C NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 761
1461 ;*****
1462 ;*****
1463 006670 18: BNE 28 ;
1464 006670 001005 MOV #162,0##SFATAL ;MOVE TO MAILBOX # ***** 162 *****
1465 006672 012737 000162 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1466 006700 005212 HALT ;Z NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 753
1467 006702 000000 ;*****
1468 ;*****
1469 ;*****
1470 006704 28: BVC 38 ;
1471 006704 102005 MOV #163,0##SFATAL ;MOVE TO MAILBOX # ***** 163 *****
1472 006706 012737 000163 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1473 006714 005212 HALT ;V NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 745
1474 006716 000000 ;*****
1475 ;*****
1476 ;*****
1477 006720 38: BCC 48 ;
1478 006720 103005 MOV #164,0##SFATAL ;MOVE TO MAILBOX # ***** 164 *****
1479 006722 012737 000164 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1480 006730 005212 HALT ;C NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 737
1481 006732 000000 ;TEST PRIORITY
1482 ;*****
1483 ;*****
1484 006734 032767 000357 171034 48: BIT #357,CC ;
1485 006742 001405 BEQ 58 ;
1486 006744 012737 000165 000302 MOV #165,0##SFATAL ;MOVE TO MAILBOX # ***** 165 *****
1487 006752 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1488 006754 000000 HALT ;PRIORITY NOT ZERO
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 726
1489 ;*****
1490 ;*****
1491 006756 012706 000500 58: MOV #RUFF,SP ;SET NEW "CC" AND PRIORITY
1492 006762 012767 007000 171014 MOV #RET5,RTRAP5 ;TRAP HERE
1493 006770 012767 000357 171010 MOV #357,RTRAP5+2
1494 006776 000100 JMP #0
1495 007000 RETG5: ;
1496 007000 100405 BMI 18 ;
1497 007002 012737 000166 000302 MOV #166,0##SFATAL ;MOVE TO MAILBOX # ***** 166 *****
1498 007010 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1499 007012 000000 HALT ;N NOT SET
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 707
1500 ;*****
1501 ;*****
1502 007014 18: ;*****

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1503 007014 001405          REQ      28
1504 007016 012737 000167 000302  MOV      #167,##SFATAL ;MOVE TO MAILBOX # ***** 167 *****
1505 007024 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1506 007026 000000          HALT
1507
1508
1509 007030          28:
1510 007030 102405          BVS      38
1511 007032 012737 000170 000302  MOV      #170,##SFATAL ;MOVE TO MAILBOX # ***** 170 *****
1512 007040 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1513 007042 000000          HALT          ;V NOT SET
1514
1515
1516 007044          38:
1517 007044 103405          BCS      48
1518 007046 012737 000171 000302  MOV      #171,##SFATAL ;MOVE TO MAILBOX # ***** 171 *****
1519 007054 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1520 007056 000000          HALT          ;C NOT SET
1521
1522
1523 007060 016706 170712 48:  MOV      CC,SP          ; TO SCOPE REPLACE HALT W/ 240
1524 007064 022706 000357  CMP      #357,SP        ; AND REPLACE NEXT INST W/ 673
1525 007070 001405          BEQ      TST45
1526 007072 012737 000172 000302  MOV      #172,##SFATAL ;MOVE TO MAILBOX # ***** 172 *****
1527 007100 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1528 007102 000000          HALT          ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1529
1530
1531
1532
1533 ;*****
1534 007104 005237 000304          TST45: INC      @#$TESTN ;UPDATE TEST NUMBER
1535 007110 022737 000045 000304  CMP      #45,##$TESTN ;SEQUENCE ERROR?
1536 007116 001096          BNE      TST46-12      ;BR TO ERROR HALT ON SEQ ERROR
1537 007120 012706 000500          MOV      #BUFF,SP      ;STACK POINTER SETUP
1538 007124 012767 007146 170652  MOV      #RETH5,RTRAP5 ;RETURN LOCATION
1539 007132 004000          JSR      %,0           ;RESERVED INSTRUCTION, SHOULD TRAP
1540 007134 012737 000173 000302  MOV      #173,##SFATAL ;MOVE TO MAILBOX # ***** 173 *****
1541 007142 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1542 007144 000000          HALT          ;DIDN'T TRAP,OR WRONG $TSTNM
1543
1544
1545 007146          RETH5:
1546
1547 ;*****
1548 ;TEST 46 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1549 007146 005237 000304          TST46: INC      @#$TESTN ;UPDATE TEST NUMBER
1550 007152 022737 000046 000304  CMP      #46,##$TESTN ;SEQUENCE ERROR?
1551 007160 001011          BNE      TST47-12      ;BR TO ERROR HALT ON SEQ ERROR
1552 007162 012706 000500          MOV      #BUFF,SP      ;STACK POINTER SETUP
1553 007166 012767 007176 170610  MOV      #RETJ,RTRAP5 ;RETURN POINTER
1554 007174 004000          JSR      %,0           ;RESERVED INSTRUCTION
1555 007176 020627 000474          RETJ:  CMP      SP,#BUFF-4 ;TEST DECREMENT OF SP
1556 007202 001405          BEQ      TST47
1557 007204 012737 000174 000302  MOV      #174,##SFATAL ;MOVE TO MAILBOX # ***** 174 *****
1558 007212 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
```

```
1559 007214 000000          HALT          ;NOT DECREMENTED TWO WORDS,OR WRONG $TSTNM
1560
1561
1562
1563 ;*****
1564 ;TEST 47 TEST THAT PROPER P.C. IS SAVED
1565 007216 005237 000304          TST47: INC      @#$TESTN ;UPDATE TEST NUMBER
1566 007222 022737 000047 000304  CMP      #47,##$TESTN ;SEQUENCE ERROR?
1567 007230 001012          BNE      TST50-12      ;BR TO ERROR HALT ON SEQ ERROR
1568 007232 012706 000500          MOV      #BUFF,SP      ;STACK POINTER SETUP
1569 007236 012767 007246 170540  MOV      #RETK,RTRAP5 ;RETURN FROM TRAP POINTER
1570 007244 004000          JSR      %,0           ;TRAP ON THIS INSTRUCTION
1571 007246 022767 007246 171220  RETK:  CMP      #INSTK+2,BUFF-4 ;CHECK FOR INCREMENTED P.C.
1572 007254 001405          BEQ      TST50
1573 007256 012737 000175 000302  MOV      #175,##SFATAL ;MOVE TO MAILBOX # ***** 175 *****
1574 007264 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1575 007266 000000          HALT          ;INCORRECT P.C.,OR WRONG $TSTNM
1576
1577
1578
1579 ;*****
1580 ;TEST 50 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1581
1582 007270 005237 000304          TST50: INC      @#$TESTN ;UPDATE TEST NUMBER
1583 007274 022737 000050 000304  CMP      #50,##$TESTN ;SEQUENCE ERROR?
1584 007302 001090          BNE      TST51-12      ;BR TO ERROR HALT ON SEQ ERROR
1585 007304 012706 000500          MOV      #BUFF,SP      ;SET UP
1586 007310 012767 007326 170466  MOV      #RETL,RTRAP5 ;SET UP
1587 007316 005067 170454          CLR      CC            ;CLEAR CC AND PRIORITY
1588 007322 000257          CCC
1589 007324 004000          JSR      %,0           ;TRAP
1590 007326 026727 171144 000000  RETL:  CMP      BUFF-2,#0    ;TEST THAT OLD STATUS WENT TO STACK
1591 007334 001405          BEQ      18
1592 007336 012737 000176 000302  MOV      #176,##SFATAL ;MOVE TO MAILBOX # ***** 176 *****
1593 007344 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1594 007346 000000          HALT          ;INCORRECT STATUS
1595
1596
1597 007350 012706 000500          18:  MOV      #BUFF,SP      ;SET UP
1598 007354 012767 007374 170422  MOV      #RETM,RTRAP5 ;SET UP
1599 007362 012767 000357 170406  MOV      #357,CC        ;SET PRIORITY
1600 007370 000277          SCC
1601 007372 004000          JSR      %,0           ;SET CC
1602 007374 026727 171076 000357  RETM:  CMP      BUFF-2,#357  ;TRAP
1603 007402 001405          BEQ      TST51         ;COMPARES STATUS ON STACK
1604 007404 012737 000177 000302  MOV      #177,##SFATAL ;MOVE TO MAILBOX # ***** 177 *****
1605 007412 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1606 007414 000000          HALT          ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
1607
1608
1609
1610 ;*****
1611 ;TEST 51 TEST THAT "NEW" STATUS IS CORRECT
1612 007416 005237 000304          TST51: INC      @#$TESTN ;UPDATE TEST NUMBER
1613 007422 022737 000051 000304  CMP      #51,##$TESTN ;SEQUENCE ERROR?
1614 007430 001116          BNE      TST52-12      ;BR TO ERROR HALT ON SEQ ERROR
```

```
1615 007432 012706 000500      MOV    #BUFF,SP
1616 007436 012767 007452 170340  MOV    #RETN,RTRAPS
1617 007444 005067 170336      CLR    RTRAPS+2          ;CLEAR FUTURE PRIORITY AND CC
1618 007450 004000      JSR    %0,%0
1619 007452      RETN:
1620 007452 100005      BPL    1$
1621 007454 012737 000200 000302  MOV    #200,0##FATAL    ;MOVE TO MAILBOX # ***** 200 *****
1622 007462 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1623 007464 000000      HALT                    ;C NOT CLEARED
1624
1625
1626 007466      18:
1627 007466 001005      BNE    2$
1628 007470 012737 000201 000302  MOV    #201,0##FATAL    ;MOVE TO MAILBOX # ***** 201 *****
1629 007476 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1630 007500 000000      HALT                    ;Z NOT CLEARED
1631
1632
1633 007502      28:
1634 007502 102005      BYC    3$
1635 007504 012737 000202 000302  MOV    #202,0##FATAL    ;MOVE TO MAILBOX # ***** 202 *****
1636 007512 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1637 007514 000000      HALT                    ;V NOT CLEARED
1638
1639
1640 007516      38:
1641 007516 103005      BCC    4$
1642 007520 012737 000203 000302  MOV    #203,0##FATAL    ;MOVE TO MAILBOX # ***** 203 *****
1643 007526 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1644 007530 000000      HALT                    ;C NOT CLEARED
1645
1646
1647 007532 016700 170240      48:  MOV    CC,%0
1648 007536 001405      BEQ    5$
1649 007540 012737 000204 000302  MOV    #204,0##FATAL    ;MOVE TO MAILBOX # ***** 204 *****
1650 007546 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1651 007550 000000      HALT                    ;PRIORITY NOT ZERO
1652
1653
1654 007552 012706 000500      58:  MOV    #BUFF,SP
1655 007556 012767 007574 170220  MOV    #RETO,RTRAP5
1656 007564 012767 000357 170214  MOV    #357,RTRAP5+2    ;SET NEW "CC" AND PRIORITY
1657 007572 004000      JSR    %0,%0            ;TRAP HERE
1658 007574      RETO:
1659 007574 100405      BMI    1$
1660 007576 012737 000205 000302  MOV    #205,0##FATAL    ;MOVE TO MAILBOX # ***** 205 *****
1661 007604 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1662 007606 000000      HALT                    ;N NOT SET
1663
1664
1665 007610      18:
1666 007610 001405      BEQ    2$
1667 007612 012737 000206 000302  MOV    #206,0##FATAL    ;MOVE TO MAILBOX # ***** 206 *****
1668 007620 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1669 007622 000000      HALT                    ;Z NOT SET
1670
1671
1672
1673
1674
1675
1676
1677
1678
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1680
1681
1682
1683
1684
1685
1686 007654 016700 170116      46:  MOV    CC,%0
1687 007660 022700 000357      CMP    #357,%0
1688 007664 001405      BEQ    TST52
1689 007666 012737 000211 000302  MOV    #211,0##FATAL    ;MOVE TO MAILBOX # ***** 211 *****
1690 007674 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1691 007676 000000      HALT                    ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1692
1693
1694
1695
1696
1697
1698
1699 007744      RETP:
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713 007744 005237 000304      TST52: INC    0##TSTN      ;UPDATE TEST NUMBER
1714 007750 022737 000052 000304  CMP    #52,0##TSTN     ;SEQUENCE ERROR?
1715 007756 001007      BNE    TST53-12        ;BR TO ERROR HALT ON SEQ ERROR
1716 007760 012706 000500      MOV    #BUFF,SP        ;STACK POINTER SETUP
1717 007764 012767 007776 170012  MOV    #RETP,RTRAP5    ;RETURN LOCATION
1718 007772 005767 170003      TST 1
1719 007776 020627 000474      RETQ: CMP    SP,#BUFF-4  ;RESERVED INSTRUCTION
1720 010002 001405      BEQ    TST54            ;TEST DECREMENT OF SP
1721 010004 012737 000213 000302  MOV    #213,0##FATAL    ;MOVE TO MAILBOX # ***** 213 *****
1722 010012 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1723 010014 000000      HALT                    ;NOT DECREMENTED TWO WORDS,OR WRONG $TSTNM
1724
1725
1726
```

```
1671
1672 007624      28:
1673 007624 102405      BVS    3$
1674 007626 012737 000207 000302  MOV    #207,0##FATAL    ;MOVE TO MAILBOX # ***** 207 *****
1675 007634 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1676 007636 000000      HALT                    ;V NOT SET
1677
1678
1679 007640      36:
1680 007640 103405      BCS    4$
1681 007642 012737 000210 000302  MOV    #210,0##FATAL    ;MOVE TO MAILBOX # ***** 210 *****
1682 007650 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1683 007652 000000      HALT                    ;C NOT SET
1684
1685
1686 007654 016700 170116      46:  MOV    CC,%0
1687 007660 022700 000357      CMP    #357,%0
1688 007664 001405      BEQ    TST52
1689 007666 012737 000211 000302  MOV    #211,0##FATAL    ;MOVE TO MAILBOX # ***** 211 *****
1690 007674 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1691 007676 000000      HALT                    ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1692
1693
1694
1695
1696
1697
1698
1699 007700 005237 000304      TST52: INC    0##TSTN      ;UPDATE TEST NUMBER
1700 007704 022737 000052 000304  CMP    #52,0##TSTN     ;SEQUENCE ERROR?
1701 007712 001007      BNE    TST53-12        ;BR TO ERROR HALT ON SEQ ERROR
1702 007714 012706 000500      MOV    #BUFF,SP        ;STACK POINTER SETUP
1703 007720 012767 007744 170056  MOV    #RETP,RTRAP5    ;RETURN LOCATION
1704 007726 005767 170047      TST 1
1705 007732 012737 000212 000302  MOV    #212,0##FATAL    ;MOVE TO MAILBOX # ***** 212 *****
1706 007740 005212      INC    (R2)             ;SET MSGTYP TO FATAL ERROR
1707 007742 000000      HALT                    ;ILLEGAL ADDRESS DID NOT TRAP,OR WRONG $TSTNM
1708
1709
1710
1711
1712
1713 007744      RETP:
1714
1715
1716
1717
1718
1719
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1724
1725
1726
```

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1727 ;TEST 54 TEST THAT PROPER P.C. IS SAVED
1728 ;*****
1729 010016 005237 000304 TST54: INC #0#TESTN ;UPDATE TEST NUMBER
1730 010022 022737 000054 000304 CMP #54,#0#TESTN ;SEQUENCE ERROR?
1731 010030 001013 BNE TST55-12 ;BR TO ERROR HALT ON SEQ ERROR
1732 010032 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
1733 010036 012767 010050 167740 MOV #RETR,RTRAP5 ;RETURN FROM TRAP POINTER
1734 010044 005767 167731 TST 1 ;TRAP ON THIS INSTRUCTION
1735 010050 022767 010050 170416 RETR: CMP #,,BUFF-4 ;CHECK FOR INCREMENTED P.C.
1736 010056 001405 BEQ TST55
1737 010060 012737 000214 000302 MOV #214,#0#FATAL ;MOVE TO MAILBOX # ***** 214 *****
1738 010066 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1739 010070 000000 HALT ;INCORRECT P.C.,OR WRONG $TSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 757
1740
1741
1742 ;*****
1743 ;TEST 55 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1744 ;*****
1745 010072 005237 000304 TST55: INC #0#TESTN ;UPDATE TEST NUMBER
1746 010076 022737 000055 000304 CMP #55,#0#TESTN ;SEQUENCE ERROR?
1747 010104 001042 BNE TST56-12 ;BR TO ERROR HALT ON SEQ ERROR
1748 010106 012706 000500 MOV #BUFF,SP ;SET UP
1749 010112 012767 010132 167664 MOV #RETS,RTRAP5 ;SET UP
1750 010120 005067 167652 CLR CC ;CLEAR CC AND PRIORITY
1751 010124 000257 CCC
1752 010126 005767 167647 TST 1 ;TRAP
1753 010132 026727 170340 000000 RETS: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
1754 010140 001405 BEQ 18
1755 010142 012737 000215 000302 MOV #215,#0#FATAL ;MOVE TO MAILBOX # ***** 215 *****
1756 010150 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1757 010152 000000 HALT ;INCORRECT STATUS
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 754
1758
1759
1760 010154 012706 000500 18: MOV #BUFF,SP ;SET UP
1761 010160 012767 010202 167616 MOV #RETR,RTRAP5 ;SET UP
1762 010166 012767 000357 167602 MOV #357,CC ;SET PRIORITY
1763 010174 000277 SCC ;SET CC
1764 010176 005767 167577 TST 1 ;TRAP
1765 010202 026727 170270 000357 RETT: CMP BUFF-2,#357 ;COMPARES STATUS ON STACK
1766 010210 001405 BEQ TST56
1767 010212 012737 000216 000302 MOV #216,#0#FATAL ;MOVE TO MAILBOX # ***** 216 *****
1768 010220 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1769 010222 000000 HALT ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 730
1770
1771
1772 ;*****
1773 ;TEST 56 TEST THAT "NEW" STATUS IS CORRECT
1774 ;*****
1775 010224 005237 000304 TST56: INC #0#TESTN ;UPDATE TEST NUMBER
1776 010230 022737 000056 000304 CMP #56,#0#TESTN ;SEQUENCE ERROR?
1777 010236 001121 BNE TST57-12 ;BR TO ERROR HALT ON SEQ ERROR
1778 010240 012706 000500 MOV #BUFF,SP ;SET UP
1779 010244 012767 010262 167532 MOV #RETR,RTRAP5 ;SET UP
1780 010252 005067 167530 CLR RTRAP5+2 ;CLEAR FUTURE PRIORITY AND CC
1781 010256 005767 167517 TST 1 ;TRAP HERE
1782 010262 RETU: ;TEST FOR "C" CLEARED
    
```

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1783 010262 100005 BPL 18 ;MOVE TO MAILBOX # ***** 217 *****
1784 010264 012737 000217 000302 MOV #217,#0#FATAL ;SET MSGTYP TO FATAL ERROR
1785 010272 005212 INC (R2) ;C NOT CLEARED
1786 010274 000000 HALT ; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 760
1787
1788
1789 010276 18: BNE 28
1790 010276 001005 MOV #220,#0#FATAL ;MOVE TO MAILBOX # ***** 220 *****
1791 010300 012737 000220 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1792 010306 005212 HALT ;Z NOT CLEARED
1793 010310 000000 ; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 752
1794
1795
1796 010312 28: BVC 38
1797 010312 102005 MOV #221,#0#FATAL ;MOVE TO MAILBOX # ***** 221 *****
1798 010314 012737 000221 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1799 010322 005212 HALT ;V NOT CLEARED
1800 010324 000000 ; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 744
1801
1802
1803 010326 38: BCC 48
1804 010326 103005 MOV #222,#0#FATAL ;MOVE TO MAILBOX # ***** 222 *****
1805 010330 012737 000222 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1806 010336 005212 HALT ;C NOT CLEARED
1807 010340 000000 ; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 736
1808
1809
1810 010342 48: BIT #357,CC ;TEST PRIORITY FOR ZERO
1811 010350 001405 BEQ 58
1812 010352 012737 000223 000302 MOV #223,#0#FATAL ;MOVE TO MAILBOX # ***** 223 *****
1813 010360 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1814 010362 000000 HALT ;PRIORITY NOT ZERO
1815 ; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 725
1816
1817 010364 58: MOV #BUFF,SP
1818 010370 012767 010410 167406 MOV #RETR,RTRAP5
1819 010376 012767 000357 167402 MOV #357,RTRAP5+2 ;SET NEW "CC" AND PRIORITY
1820 010404 005767 167371 TST 1 ;TRACE HERE
1821 010410 RETV:
1822 010410 100405 BMI 18
1823 010412 012737 000224 000302 MOV #224,#0#FATAL ;MOVE TO MAILBOX # ***** 224 *****
1824 010420 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1825 010422 000000 HALT ;N NOT SET
1826 ; TO SCOPE REPLACE HALT W/ 240
1827 ; AND REPLACE NEXT INST W/ 705
1828
1829 010424 18: BEQ 28
1830 010426 012737 000225 000302 MOV #225,#0#FATAL ;MOVE TO MAILBOX # ***** 225 *****
1831 010434 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1832 010436 000000 HALT ;Z NOT SET
1833 ; TO SCOPE REPLACE HALT W/ 240
1834 ; AND REPLACE NEXT INST W/ 677
1835 010440 28: BVS 38
1836 010440 102405 MOV #226,#0#FATAL ;MOVE TO MAILBOX # ***** 226 *****
1837 010442 012737 000226 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1838 010450 005212
    
```

```
1839 010452 000000          HALT          ;V NOT SET
1840                                ; TO SCOPE REPLACE HALT W/ 240
1841                                ; AND REPLACE NEXT INST W/ 671
1842 010454          38:
1843 010454 103405          BCS 48
1844 010456 012737 000227 000302  MOV #227,0##FATAL ;MOVE TO MAILBOX # ***** 227 *****
1845 010464 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1846 010466 000000          HALT          ;C NOT SET
1847                                ; TO SCOPE REPLACE HALT W/ 240
1848                                ; AND REPLACE NEXT INST W/ 663
1849 010470 016700 167302 48:  MOV CC,%0
1850 010474 022700 000357      CMP #357,%0
1851 010500 001405          BEQ TST57
1852 010502 012737 000230 000302  MOV #230,0##FATAL ;MOVE TO MAILBOX # ***** 230 *****
1853 010510 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1854 010512 000000          HALT          ;PRIORITY WAS CHANGED,OR WRONG $TSTNM
1855                                ; TO SCOPE REPLACE HALT W/ 240
1856                                ; AND REPLACE NEXT INST W/ 651
1857 ;*****
1858 ;TEST 57 TEST THAT DECREMENT R6 TO A VALUE LESS THAN 400 TRAPS
1859 ;*****
1860 010514 005237 000304  TST57: INC 0##TESTN ;UPDATE TEST NUMBER
1861 010520 022737 000057 000304  CMP #57,0##TESTN ;SEQUENCE ERROR?
1862 010526 001006          BNE TST60-12 ;BR TO ERROR HALT ON SEQ ERROR
1863 010530 012706 000150          MOV #150,%6 ;R6 = 150
1864 010534 012767 010556 167242  MOV #TDEC1,4 ;STACK OVERFLOW TRAP POINTER
1865 010542 005746          TST -(6) ;WITH R6 = 150 SHOULD TRAP
1866 010544 012737 000231 000302  MOV #231,0##FATAL ;MOVE TO MAILBOX # ***** 231 *****
1867 010552 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1868 010554 000000          HALT          ;SHOULD HAVE TRAPPED,OR WRONG $TSTNM
1869                                ; TO SCOPE REPLACE HALT W/ 240
1870                                ; AND REPLACE NEXT INST W/ 764
1871 010556          TDEC1:
1872
1873 ;*****
1874 ;TEST 60 TEST FOR DECREMENT OF R6 ON OVERFLOW TRAP
1875 ;*****
1876 010556 005237 000304  TST60: INC 0##TESTN ;UPDATE TEST NUMBER
1877 010562 022737 000060 000304  CMP #60,0##TESTN ;SEQUENCE ERROR?
1878 010570 001011          BNE TST61-12 ;BR TO ERROR HALT ON SEQ ERROR
1879 010572 012706 000150          MOV #150,%6 ;R6 = 150
1880 010576 012767 010606 167200  MOV #TDEC2,4 ;TRAP POINTER
1881 010604 005746          TST -(6) ;WITH R6 = 150 SHOULD TRAP
1882 010606 020627 000142          TDEC2: CMP #6,142 ;DID R6 DECREMENT
1883 010612 001405          BEQ TST61
1884 010614 012737 000232 000302  MOV #232,0##FATAL ;MOVE TO MAILBOX # ***** 232 *****
1885 010622 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1886 010624 000000          HALT          ;R6 NOT = 142,OR WRONG $TSTNM
1887                                ; TO SCOPE REPLACE HALT W/ 240
1888                                ; AND REPLACE NEXT INST W/ 761
1889
```

```
1890 ;*****
1891 ;TEST 61 TEST DIFFERENT TYPES OF OVERFLOW
1892 ;*****
1893 010626 005237 000304  TST61: INC 0##TESTN ;UPDATE TEST NUMBER
1894 010632 022737 000061 000304  CMP #61,0##TESTN ;SEQUENCE ERROR?
1895 010640 001043          BNE TST62-12 ;BR TO ERROR HALT ON SEQ ERROR
1896 010642 012706 000150          MOV #150,%6
1897 010646 005067 167274          CLR 146 ;STATUS WORD OF LOC 10
1898 010652 012767 010662 167124  MOV #TDEC3,4 ;RETURN TO LOC 4
1899 010660 005246          INC -(6)
1900 010662 005767 167260          TDEC3: TST 146
1901 010666 001005          BNE 18
1902 010670 012737 000233 000302  MOV #233,0##FATAL ;MOVE TO MAILBOX # ***** 233 *****
1903 010676 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1904 010700 000000          HALT          ;INCREMENT OPERATION NOT INHIBITED
1905                                ; TO SCOPE REPLACE HALT W/ 240
1906                                ; AND REPLACE NEXT INST W/ 757
1907 010702 012705 001000 18:  MOV #1000,%5
1908 010706 012706 000400          MOV #400,%6
1909 010712 012767 010734 167064  MOV #TDEC4,4
1910 010720 124645          CMPB -(6),=(5)
1911 010722 012737 000234 000302  MOV #234,0##FATAL ;MOVE TO MAILBOX # ***** 234 *****
1912 010730 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1913 010732 000000          HALT          ;STACK = 400 AND DECREMENTED, SHOULD TRAP
1914                                ; TO SCOPE REPLACE HALT W/ 240
1915                                ; AND REPLACE NEXT INST W/ 742
1916 010734 012706 000400          TDEC4: MOV #400,%6
1917 010740 012767 010762 167036  MOV #TDEC7,4
1918 010746 134546          BITB -(5),=(6)
1919 010750          TDEC6:
1920 010750 012737 000235 000302  MOV #235,0##FATAL ;MOVE TO MAILBOX # ***** 235 *****
1921 010756 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1922 010760 000000          HALT          ;NO STACK OVERFLOW,OR WRONG $TSTNM
1923                                ; TO SCOPE REPLACE HALT W/ 240
1924                                ; AND REPLACE NEXT INST W/ 727
1925 010762          TDEC7:
1926
1927 ;*****
1928 ;TEST 62 TEST THAT AN 7 CAUSES AN OVERFLOW TRAP
1929 ;*****
1930 010762 005237 000304  TST62: INC 0##TESTN ;UPDATE TEST NUMBER
1931 010766 022737 000062 000304  CMP #62,0##TESTN ;SEQUENCE ERROR?
1932 010774 001011          BNE VDEC2 ;BR TO ERROR HALT ON SEQ ERROR
1933 010776 012706 000400          MOV #400,%6 ;SET UP STACK TO OVERFLOW
1934 011002 012767 011020 167000  MOV #VDEC2,10 ;SET UP 7 VECTOR
1935 011010 012767 011032 166766  MOV #VDEC1,4 ;SET UP OVERFLOW VECTOR
1936 011016 000007          7 ;THIS TRAP SHOULD CAUSE OVERFLOW
1937 011020          VDEC2:
1938 011020 012737 000236 000302  MOV #236,0##FATAL ;MOVE TO MAILBOX # ***** 236 *****
1939 011026 005212          INC (R2)          ;SET MSGTYP TO FATAL ERROR
1940 011030 000000          HALT          ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM
1941                                ; TO SCOPE REPLACE HALT W/ 240
1942                                ; AND REPLACE NEXT INST W/ 761
1943 011032 012767 000012 166750  VDEC1: MOV #10*2,10
1944 ;*****
1945 ;TEST 63 TEST THAT AN IOT CAUSES AN OVERFLOW TRAP
```

```
1946 ;*****  
1947 011040 005237 000304 ;TST63: INC R#STESTN ;UPDATE TEST NUMBER  
1948 011044 022737 000063 000304 CMP #63,#STESTN ;SEQUENCE ERROR?  
1949 011052 001011 BNE VDEC4 ;BR TO ERROR HALT ON SEQ ERROR  
1950 011054 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW  
1951 011060 012767 011076 166732 MOV #VDEC4,20 ;SET UP IOT VECTOR  
1952 011066 012767 011110 166710 MOV #VDEC3,4 ;SET UP OVERFLOW VECTOR  
1953 011074 000004 IOT ;THIS TRAP SHOULD CAUSE OVERFLOW  
1954 011076 VDEC4: ;  
1955 011076 012737 000237 000302 MOV #237,#SFATAL ;MOVE TO MAILBOX # ***** 237 *****  
1956 011104 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
1957 011106 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM  
1958 ; TO SCOPE REPLACE HALT W/ 240  
1959 ; AND REPLACE NEXT INST W/ 761  
1960 011110 012767 000022 166702 VDEC3: MOV #20+2,20  
1961 ;*****  
1962 ;TEST 64 TEST THAT AN EMT CAUSES AN OVERFLOW TRAP  
1963 ;*****  
1964 011116 005237 000304 ;TST64: INC R#STESTN ;UPDATE TEST NUMBER  
1965 011122 022737 000064 000304 CMP #64,#STESTN ;SEQUENCE ERROR?  
1966 011130 001011 BNE VDEC6 ;BR TO ERROR HALT ON SEQ ERROR  
1967 011132 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW  
1968 011136 012767 011154 166664 MOV #VDEC6,30 ;SET UP EMT VECTOR  
1969 011144 012767 011166 166632 MOV #VDEC5,4 ;SET UP OVERFLOW VECTOR  
1970 011152 104000 EMT ;THIS TRAP SHOULD CAUSE OVERFLOW  
1971 011154 VDEC6: ;  
1972 011154 012737 000240 000302 MOV #240,#SFATAL ;MOVE TO MAILBOX # ***** 240 *****  
1973 011162 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
1974 011164 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM  
1975 ; TO SCOPE REPLACE HALT W/ 240  
1976 ; AND REPLACE NEXT INST W/ 761  
1977 011166 012767 000032 166634 VDEC5: MOV #30+2,30  
1978 ;*****  
1979 ;TEST 65 TEST THAT AN TRAP CAUSES AN OVERFLOW TRAP  
1980 ;*****  
1981 011174 005237 000304 ;TST65: INC R#STESTN ;UPDATE TEST NUMBER  
1982 011200 022737 000065 000304 CMP #65,#STESTN ;SEQUENCE ERROR?  
1983 011206 001011 BNE VDEC8 ;BR TO ERROR HALT ON SEQ ERROR  
1984 011210 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW  
1985 011214 012767 011232 166612 MOV #VDEC8,34 ;SET UP TRAP VECTOR  
1986 011222 012767 011244 166554 MOV #VDEC7,4 ;SET UP OVERFLOW VECTOR  
1987 011230 104000 TRAP ;THIS TRAP SHOULD CAUSE OVERFLOW  
1988 011232 VDEC8: ;  
1989 011232 012737 000241 000302 MOV #241,#SFATAL ;MOVE TO MAILBOX # ***** 241 *****  
1990 011240 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
1991 011242 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM  
1992 ; TO SCOPE REPLACE HALT W/ 240  
1993 ; AND REPLACE NEXT INST W/ 761  
1994 011244 012767 000036 166562 VDEC7: MOV #34+2,34  
1995 ;*****  
1996 ;TEST 66 TEST THAT AN TRT CAUSES AN OVERFLOW TRAP  
1997 ;*****  
1998 011252 005237 000304 ;TST66: INC R#STESTN ;UPDATE TEST NUMBER  
1999 011256 022737 000066 000304 CMP #66,#STESTN ;SEQUENCE ERROR?  
2000 011264 001011 BNE VDEC10 ;BR TO ERROR HALT ON SEQ ERROR  
2001 011266 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
```

```
2002 011272 012767 011310 166514 MOV #VDEC10,14 ;SET UP TRT VECTOR  
2003 011300 012767 011322 166476 MOV #VDEC9,4 ;SET UP OVERFLOW VECTOR  
2004 011306 000003 TRT ;THIS TRAP SHOULD CAUSE OVERFLOW  
2005 011310 VDEC10: ;  
2006 011310 012737 000242 000302 MOV #242,#SFATAL ;MOVE TO MAILBOX # ***** 242 *****  
2007 011316 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
2008 011320 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM  
2009 ; TO SCOPE REPLACE HALT W/ 240  
2010 ; AND REPLACE NEXT INST W/ 761  
2011 011322 012767 000016 166464 VDEC9: MOV #14+2,14  
2012 ;*****  
2013 ;TEST 67 TEST THAT AN ILLA CAUSES AN OVERFLOW TRAP  
2014 ;*****  
2015 011330 005237 000304 ;TST67: INC R#STESTN ;UPDATE TEST NUMBER  
2016 011334 022737 000067 000304 CMP #67,#STESTN ;SEQUENCE ERROR?  
2017 011342 001011 BNE VDEC11 ;BR TO ERROR HALT ON SEQ ERROR  
2018 011344 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW  
2019 011350 012767 011366 166426 MOV #VDEC11,4 ;SET UP ILLA VECTOR  
2020 011356 012767 011400 166420 MOV #VDEC12,4 ;SET UP OVERFLOW VECTOR  
2021 011364 004700 ILLA ;THIS TRAP SHOULD CAUSE OVERFLOW  
2022 011366 VDEC11: ;  
2023 011366 012737 000243 000302 MOV #243,#SFATAL ;MOVE TO MAILBOX # ***** 243 *****  
2024 011374 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
2025 011376 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM  
2026 ; TO SCOPE REPLACE HALT W/ 240  
2027 ; AND REPLACE NEXT INST W/ 761  
2028 011400 012767 000006 166376 VDEC12: MOV #4+2,4  
2029 011406 020627 000370 CMP #6,370 ;STACK PUSHED FOUR WORDS?  
2030 011412 001405 BEQ TST70  
2031 011414 012737 000244 000302 MOV #244,#SFATAL ;MOVE TO MAILBOX # ***** 244 *****  
2032 011422 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
2033 011424 000000 HALT ;TRAP OVERFLOW DID NOT OCCUR  
2034 ; TO SCOPE REPLACE HALT W/ 240  
2035 ; AND REPLACE NEXT INST W/ 746  
2036 ;*****  
2037 ;TEST 70 TEST THAT AN ILLB CAUSES AN OVERFLOW TRAP  
2038 ;*****  
2039 011426 005237 000304 ;TST70: INC R#STESTN ;UPDATE TEST NUMBER  
2040 011432 022737 000070 000304 CMP #70,#STESTN ;SEQUENCE ERROR?  
2041 011440 001011 BNE VDEC13 ;BR TO ERROR HALT ON SEQ ERROR  
2042 011442 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW  
2043 011446 012767 011464 166330 MOV #VDEC13,4 ;SET UP ILLB VECTOR  
2044 011454 012767 011476 166322 MOV #VDEC14,4 ;SET UP OVERFLOW VECTOR  
2045 011462 000100 ILLB ;THIS TRAP SHOULD CAUSE OVERFLOW  
2046 011464 VDEC13: ;  
2047 011464 012737 000245 000302 MOV #245,#SFATAL ;MOVE TO MAILBOX # ***** 245 *****  
2048 011472 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR  
2049 011474 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG $TSTNM  
2050 ; TO SCOPE REPLACE HALT W/ 240  
2051 ; AND REPLACE NEXT INST W/ 761  
2052 011476 012767 000006 166300 VDEC14: MOV #4+2,4  
2053 ;*****  
2054 ;TEST 71 TEST FOR FALSE OVERFLOW TRAP  
2055 ;*****  
2056 ;*****  
2057 011504 005237 000304 ;TST71: INC R#STESTN ;UPDATE TEST NUMBER
```

```
2058 011510 022737 000071 000304 CMP #71,0##$TESTN ;SEQUENCE ERROR?
2059 011516 001023 BNE FOVER ;BR TO ERROR HALT ON SEQ ERROR
2060
2061 011520 012767 011566 166256 MOV #FOVER,4 ;SET UP OVERFLOW POINTER
2062 011526 012706 001002 MOV #1002,%6
2063 011532 005746 TST -(6) ;SHOULD NOT OVERFLOW
2064 011534 012706 002002 MOV #2002,%6
2065 011540 005746 TST -(6) ;SHOULD NOT OVERFLOW
2066 011542 012706 004002 MOV #4002,%6
2067 011546 005746 TST -(6) ;SHOULD NOT OVERFLOW
2068 011550 012706 010002 MOV #10002,%6
2069 011554 005746 TST -(6)
2070 011556 012706 020000 MOV #20000,%6 ;SHOULD NOT OVERFLOW
2071 011562 005746 TST -(6)
2072 011564 000405 BR STP
2073 011566
2074 011566 012737 000246 000302 MOV #246,0##$FATAL ;MOVE TO MAILBOX # ***** 246 *****
2075 011574 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2076 011576 000000 HALT ;IT OVERFLOWED,OR WRONG $TESTN
2077 ; TO SCOPE REPLACE HALT W/ 240
2078 ; AND REPLACE NEXT INST W/ 747
2079 011600 012767 000006 166176 STP: MOV #6,4
2080 011606 005067 166174 CLR 6
2081
2082 ;*****
2083 ;TEST 72 TEST THAT BIT 4 PSW WILL CAUSE A TRAP TO 14
2084 011612 005237 000304 TST72: INC 0##$TESTN ;UPDATE TEST NUMBER
2085 011616 022737 000072 000304 CMP #72,0##$TESTN ;SEQUENCE ERROR?
2086 011624 001013 BNE TST73-12 ;BR TO ERROR HALT ON SEQ ERROR
2087 011626 012706 000500 MOV #BUFF,SP
2088 011632 012767 011666 166154 MOV #RETAT,RTRAP4 ;SET UP TO TRAP TO 14
2089 011640 012746 000020 MOV #20,-(SP) ;PUSH T BIT
2090 011644 012746 011652 MOV #,+6,-(SP) ;PUSH PC
2091 011650 000002 RTI ;SET T BIT
2092 011652 000240 NOP ;TRAP HERE
2093 011654 012737 000247 000302 MOV #247,0##$FATAL ;MOVE TO MAILBOX # ***** 247 *****
2094 011662 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2095 011664 000000 HALT ;TRACE BIT DID NOT TRAP,OR WRONG $TESTN
2096 ; TO SCOPE REPLACE HALT W/ 240
2097 ; AND REPLACE NEXT INST W/ 757
2098 011666 RETAT:
2099 ;*****
2100 ;TEST 73 TEST STACK POINTER DECREMENTS
2101 ;*****
2102 011666 005237 000304 TST73: INC 0##$TESTN ;UPDATE TEST NUMBER
2103 011672 022737 000073 000304 CMP #73,0##$TESTN ;SEQUENCE ERROR?
2104 011700 001023 BNE TST74-12 ;BR TO ERROR HALT ON SEQ ERROR
2105 011702 012706 000500 MOV #RUFF,SP
2106 011706 012767 011742 166100 MOV #RETAT,RTRAP4 ;PUSH T BIT
2107 011714 012746 000020 MOV #20,-(SP) ;PUSH PC
2108 011720 012746 011726 MOV #,+6,-(SP) ;SET T BIT
2109 011724 000002 RTI ;TRAP HERE
2110 011726 000240 NOP
2111 011730 012737 000250 000302 MOV #250,0##$FATAL ;MOVE TO MAILBOX # ***** 250 *****
2112 011736 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2113 011740 000000 HALT ;TRACE BIT DID NOT TRAP
```

```
2114 ; TO SCOPE REPLACE HALT W/ 240
2115 ; AND REPLACE NEXT INST W/ 757
2116 011742 020627 000474 RETBT: CMP SP,#RUFF-4
2117 011746 001405 BEQ TST74
2118 011750 012737 000251 000302 MOV #251,0##$FATAL ;MOVE TO MAILBOX # ***** 251 *****
2119 011756 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2120 011760 000000 HALT ;STACK POINTER WAS NOT PUSHED BY TRAP,OR WRONG $TESTN
2121 ; TO SCOPE REPLACE HALT W/ 240
2122 ; AND REPLACE NEXT INST W/ 747
2123 ;*****
2124 ;TEST 74 TEST FOR PROPER PC ON STACK
2125 ;*****
2126 011762 005237 000304 TST74: INC 0##$TESTN ;UPDATE TEST NUMBER
2127 011766 022737 000074 000304 CMP #74,0##$TESTN ;SEQUENCE ERROR?
2128 011774 001016 BNE TST75-12 ;BR TO ERROR HALT ON SEQ ERROR
2129 011776 012706 000500 MOV #BUFF,SP
2130 012002 012767 012022 166004 MOV #RETCT,RTRAP4 ;PUSH T BIT
2131 012010 012746 000020 MOV #20,-(SP) ;PUSH PC
2132 012014 012746 012022 MOV #,+6,-(SP) ;SET T BIT
2133 012020 000002 RTI ;TRAP HERE
2134
2135 012022 022767 012022 166444 RETCT: CMP #, ,BUFF-4
2136 012030 001405 BEQ TST75
2137 012032 012737 000252 000302 MOV #252,0##$FATAL ;MOVE TO MAILBOX # ***** 252 *****
2138 012040 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2139 012042 000000 HALT ;CORRECT PC WAS NOT SAVED ON STACK,OR WRONG $TESTN
2140 ; TO SCOPE REPLACE HALT W/ 240
2141 ; AND REPLACE NEXT INST W/ 754
2142
2143 ;*****
2144 ;TEST 75 TEST THAT RTT POPS T- BIT
2145 ;*****
2146 ;*****
2147 012044 005237 000304 TST75: INC 0##$TESTN ;UPDATE TEST NUMBER
2148 012050 022737 000075 000304 CMP #75,0##$TESTN ;SEQUENCE ERROR?
2149 012056 001015 BNE TST76-12 ;BR TO ERROR HALT ON SEQ ERROR
2150
2151 012060 012706 000500 MOV #BUFF,SP
2152 012064 005001 CLR R1 ;CLEAR R1
2153 012066 012746 000020 MOV #20,-(SP)
2154 012072 012746 012106 MOV #RTT1,-(SP)
2155 012076 012767 012124 165710 MOV #RTT2,14
2156 012104 000006 RTT
2157 012106 000240 RTT1: NOP
2158 012110 001405 BEQ TST76
2159 012112 012737 000253 000302 MOV #253,0##$FATAL ;MOVE TO MAILBOX # ***** 253 *****
2160 012120 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2161 012122 000000 HALT ;T-BIT DID NOT TRAP,OR WRONG $TESTN
2162 ; TO SCOPE REPLACE HALT W/ 240
2163 ; AND REPLACE NEXT INST W/ 750
2164
2165 012124 RTT2:
2166 ;*****
2167 ;TEST 76 TEST THAT RTT ALLOWS ONE INST, BEFORE TRAP
2168 ;*****
2169 012124 005237 000304 TST76: INC 0##$TESTN ;UPDATE TEST NUMBER
```

```
2170 012130 022737 000076 000304 CMP #76,0##TESTN ;SEQUENCE ERROR?
2171 012136 001031 BNE TST77-12 ;BR TO ERROR HALT ON SEQ ERROR
2172 012140 012705 177777 MOV #177777,#5
2173 012144 012706 000500 RTT5: MOV #BUFF,SP
2174 012150 012746 000020 MOV #20,-(SP)
2175 012154 012746 012172 MOV #RTT3,-(SP)
2176 012160 012767 012212 165626 MOV #RTT4,14
2177 012166 005001 CLR R1 ;CLEAR R0
2178 012170 000006 RTT RTT ;SET T-BIT
2179 012172 005201 RTT3: INC R1
2180 012174 005205 INC #5
2181 012176 001762 BEQ RTT5 ;DO THIS TEST NO MORE THAN 2 TIMES
2182 012200 012737 000254 000302 MOV #254,0##FATAL ;MOVE TO MAILBOX # ***** 254 *****
2183 012206 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2184 012210 000000 HALT ;DID NOT TRAP
2185 ; TO SCOPE REPLACE HALT W/ 240
2186 ; AND REPLACE NEXT INST W/ 752
2187 ;SEE IF RTT ALLOWS 1 INST.
2188 012212 005301 RTT4: DEC R1
2189 012214 001407 BEQ RTT6
2190 012216 005205 INC #5 ;DO THIS TEST NO MORE THAN TWO TIMES
2191 012220 001751 BEQ RTT5
2192 012222 012737 000255 000302 MOV #255,0##FATAL ;MOVE TO MAILBOX # ***** 255 *****
2193 012230 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2194 012232 000000 HALT ;RTT DID NOT ALLOW 1 INST.,OR WRONG $TESTN
2195 ; TO SCOPE REPLACE HALT W/ 240
2196 ; AND REPLACE NEXT INST W/ 741
2197 RTT6:
2198 ;*****
2199 ;TEST 77 TEST THAT RTI DOES NOT ALLOW 1 INST.
2200 ;*****
2201 012234 005237 000304 TST77: INC 0##TESTN ;UPDATE TEST NUMBER
2202 012240 022737 000077 000304 CMP #77,0##TESTN ;SEQUENCE ERROR?
2203 012246 001023 BNE TST100-12 ;BR TO ERROR HALT ON SEQ ERROR
2204 012250 012706 000500 MOV #BUFF,SP
2205 012254 012746 000020 MOV #20,-(SP)
2206 012260 012746 012276 MOV #RTI1,-(SP)
2207 012264 012767 012312 165522 MOV #RTI2,14
2208 012272 005001 CLR R1
2209 012274 000002 RTI RTI ;SET T-BIT
2210 012276 005201 INC R1 ;RTI SHOULD NOT ALLOW THIS
2211 012300 012737 000256 000302 MOV #256,0##FATAL ;MOVE TO MAILBOX # ***** 256 *****
2212 012306 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2213 012310 000000 HALT ;T- BIT DID NOT CAUSE TRAP
2214 ; TO SCOPE REPLACE HALT W/ 240
2215 ; AND REPLACE NEXT INST W/ 756
2216 RTI2: TST R1
2217 ;RTI SHOULD NOT ALLOW 1 INST, BEFORE TRAP
2218 012314 001405 BEQ TST100
2219 012316 012737 000257 000302 MOV #257,0##FATAL ;MOVE TO MAILBOX # ***** 257 *****
2220 012324 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2221 012326 000000 HALT ;RTI DID ALLOW 1 INST, BEFORE TRAP,OR WRONG $TESTN
2222 ; TO SCOPE REPLACE HALT W/ 240
2223 ; AND REPLACE NEXT INST W/ 747
2224 ;*****
2225 ;TEST 100 DOES THE PROCESSOR TRAP WHEN $7 IS ODD?
```

```
2226 ;*****
2227 012330 005237 000304 TST100: INC 0##TESTN ;UPDATE TEST NUMBER
2228 012334 022737 000100 000304 CMP #100,0##TESTN ;SEQUENCE ERROR?
2229 012342 001120 BNE TST101-12 ;BR TO ERROR HALT ON SEQ ERROR
2230 012344 012706 000500 MOV #BUFF,#6 ;SET UP STACK POINTER
2231 012350 012767 012374 165426 MOV #R7TR1,4 ;RETURN FROM TRAP
2232 012356 012707 000001 MOV #1,$7 ;PC EQUALS ONE
2233 012362 012737 000260 000302 MOV #260,0##FATAL ;MOVE TO MAILBOX # ***** 260 *****
2234 012370 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2235 012372 000000 HALT ;ODD ADDRESS SHOULD HAVE TRAPPED
2236 ; TO SCOPE REPLACE HALT W/ 240
2237 ; AND REPLACE NEXT INST W/ 763
2238 012374 022767 000001 166072 R7TR1: CMP #1,BUFF-4
2239 012402 001405 BEQ 10
2240 012404 012737 000261 000302 MOV #261,0##FATAL ;MOVE TO MAILBOX # ***** 261 *****
2241 012412 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2242 012414 000000 HALT ;CORRECT PC WAS NOT SAVED ON STACK
2243 ; TO SCOPE REPLACE HALT W/ 240
2244 ; AND REPLACE NEXT INST W/ 752
2245
2246 012416 012706 000500 10: MOV #BUFF,#6 ;STACK POINTER
2247 012422 012767 012444 165354 MOV #R7TR2,4
2248 012430 005207 INC #7 ;PC BECOMES ODD
2249 012432
2250 012432 012737 000262 000302 R7TR2A: MOV #262,0##FATAL ;MOVE TO MAILBOX # ***** 262 *****
2251 012440 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2252 012442 000000 HALT ;
2253 ; TO SCOPE REPLACE HALT W/ 240
2254 ; AND REPLACE NEXT INST W/ 737
2255 012444 022767 012433 166022 R7TR2: CMP #R7TR2A+1,BUFF-4
2256 012452 001405 BEQ 10
2257 012454 012737 000263 000302 MOV #263,0##FATAL ;MOVE TO MAILBOX # ***** 263 *****
2258 012462 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2259 012464 000000 HALT ;CORRECT PC NOT ON STACK
2260 ; TO SCOPE REPLACE HALT W/ 240
2261 ; AND REPLACE NEXT INST W/ 726
2262 012466 012706 000500 10: MOV #BUFF,#6
2263 012472 012767 012514 165304 MOV #R7TR3,4
2264 012500 005307 BR60: DEC #7 ;MAKE PC ODD
2265 012502 012737 000264 000302 MOV #264,0##FATAL ;MOVE TO MAILBOX # ***** 264 *****
2266 012510 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2267 012512 000000 HALT ;SHOULD TRAP
2268 ; TO SCOPE REPLACE HALT W/ 240
2269 ; AND REPLACE NEXT INST W/ 713
2270 012514 022767 012501 165752 R7TR3: CMP #BR60+1,BUFF-4
2271 012522 001405 BEQ 10 ;CHECK VALUE OF PC ON STACK
2272 012524 012737 000265 000302 MOV #265,0##FATAL ;MOVE TO MAILBOX # ***** 265 *****
2273 012532 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2274 012534 000000 HALT ;WRONG VALUE ON STACK
2275 ; TO SCOPE REPLACE HALT W/ 240
2276 ; AND REPLACE NEXT INST W/ 702
2277
2278 012536 012706 000500 10: MOV #BUFF,#6
2279 012542 012767 012566 165234 MOV #R7TR4,4
2280 012550 000261 SEC
2281 012552 006107 ROL #7 ;CARRY EQUALS A 1
;PC BECOMES ODD
```

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2282 012554          TR4A:
2283 012554 012737 000266 000302      MOV    #266,0##FATAL ;MOVE TO MAILBOX # ***** 266 *****
2284 012562 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2285 012564 000000          HALT                   ;ODD ADDRESS DIDN'T TRAP
2286                                     ; TO SCOPE REPLACE HALT W/ 240
2287                                     ; AND REPLACE NEXT INST W/ 666
2288 012566 012767 000006 165210 R7TR4: MOV    #6,4          ;RESET UP A HALT FOR TRAP
2289 012574 022767 025331 165672      CMP    #C2*TR4A+1>,BUFF-4 ;CHECK FOR VALUE ON STACK
2290 012602 001405          BEQ    TST101
2291 012604 012737 000267 000302      MOV    #267,0##FATAL ;MOVE TO MAILBOX # ***** 267 *****
2292 012612 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2293 012614 000000          HALT                   ;WRONG VALUE ON STACK,OR WRONG $TSTNM
2294                                     ; TO SCOPE REPLACE HALT W/ 240
2295                                     ; AND REPLACE NEXT INST W/ 652
2296
2297 ;*****
2298 ;TEST 101 TEST TRAP ON TRAP THAT TRACE BIT TRAPS ARE INHIBITED ON TRAP INST
2299 ;*****
2299 012616 005237 000304          TST101: INC    0##TSTN ;UPDATE TEST NUMBER
2300 012622 022737 000101 000304      CMP    #101,0##TSTN ;SEQUENCE ERROR?
2301 012630 001027          BNE    BR70          ;BR TO ERROR HALT ON SEQ ERROR
2302
2303 012632 012706 000500          MOV    #BUFF,%6
2304 012636 012767 012676 165150      MOV    #TRACE,14 ;TRACE TRAP
2305 012644 005027 000016          CLR    #16
2306 012650 005027 000022          CLR    #22
2307 012654 012767 012722 165136      MOV    #TONT1,20 ;IOT TRAP
2308 012662 012746 000020          MOV    #20,-(SP) ;PUSH T BIT
2309 012666 012746 012674          MOV    #,+6,-(SP) ;PUSH PC
2310 012672 000006          RTT
2311 012674 000004          IOT
2312 012676          TRACE: ;TRAP, NEW CC HAVE TRACE RESET
2313 012676 012737 000270 000302      MOV    #270,0##FATAL ;MOVE TO MAILBOX # ***** 270 *****
2314 012704 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2315 012706 000000          HALT                   ;TRACE TRAP WAS NOT INHIBITED
2316                                     ; TO SCOPE REPLACE HALT W/ 240
2317                                     ; AND REPLACE NEXT INST W/ 750
2318 012710          BR70:
2319 012710 012737 000271 000302      MOV    #271,0##FATAL ;MOVE TO MAILBOX # ***** 271 *****
2320 012716 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2321 012720 000000          HALT                   ;WRONG TSTNM,OR WRONG $TSTNM
2322                                     ; TO SCOPE REPLACE HALT W/ 240
2323                                     ; AND REPLACE NEXT INST W/ 743
2324 012722 012767 000016 165064 TONT1: MOV    #16,14
2325 012730 012767 000022 165062      MOV    #22,20
2326
2327 ;*****
2328 ;TEST 102 TEST THAT THE TRACE BIT IS SAVED IN THE STACK
2329 ;*****
2329 012736 005237 000304          TST102: INC    0##TSTN ;UPDATE TEST NUMBER
2330 012742 022737 000102 000304      CMP    #102,0##TSTN ;SEQUENCE ERROR?
2331 012750 001020          BNE    STP3          ;BR TO ERROR HALT ON SEQ ERROR
2332 012752 012706 000500          MOV    #BUFF,%6 ;SET UP STACK POINTER
2333 012756 012767 013002 165030      MOV    #TRC1,14 ;TRACE TRAP RETURN
2334 012764 005067 165026          CLR    16
2335 012770 012746 000020          MOV    #20,-(SP) ;SET THE T BIT
2336 012774 012746 013002          MOV    #TRC1,-(SP)
2337 013000 000002          RTI
    
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2338 013002 036727 165470 000020 TRC1: BIT    BUFF-2,#20 ;CHECK FOR T BIT ON STACK
2339 013010 001005          BNE    STP3D
2340 013012          STP3:
2341 013012 012737 000272 000302      MOV    #272,0##FATAL ;MOVE TO MAILBOX # ***** 272 *****
2342 013020 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2343 013022 000000          HALT                   ;T BIT NOT SAVED ON THE STACK,OR WRONG $TSTNM
2344                                     ; TO SCOPE REPLACE HALT W/ 240
2345                                     ; AND REPLACE NEXT INST W/ 752
2346 013024 012767 000016 164762 STP3D: MOV    #16,14
2347
2348
2349 ;THIS ROUTINE TEST THAT NO LEGAL ADDRESS TRAPS,
2350 ;AND THAT AN ILLEGAL ADDRESS TRAPS TO LOCATION 4
2351 ;*****
2352 ;TEST 103 TEST NON-EXISTENT ADDRESS TRAPS
2353 ;*****
2354 013032 005237 000304          TST103: INC    0##TSTN ;UPDATE TEST NUMBER
2355 013036 022737 000103 000304      CMP    #103,0##TSTN ;SEQUENCE ERROR?
2356 013044 001063          BNE    AUTO1        ;BR TO ERROR HALT ON SEQ ERROR
2357
2358 ;THIS ROUTINE TESTS MEMORY UNTIL IT DOES A NXM TRAP
2359          BR    ADALL
2360 013050 000000          TSL: 0
2361 013052 000000          CORH: 0
2362 013054 005000          ADALL: CLR    %0
2363 013056 005067 164724          CLR    6
2364 013062 012767 013116 164714      MOV    #ATRAP,4 ;SET UP ADDRESS TRAP ENTRANCE
2365 013070 012706 000500          NOR:  MOV    #BUFF,6P
2366 013074 105720          TSTB  (0)+          ;IF OUTSIDE OF CORE, TRAP TO 4
2367 013076 020027 160000          CMP    %0,#160000 ;IS POINTER IN SIDE CORE
2368 013102 101772          BLOS  NOR           ;TEST THE REST OF CORE
2369 013104          AUTO1:
2370 013104 012737 000273 000302      MOV    #273,0##FATAL ;MOVE TO MAILBOX # ***** 273 *****
2371 013112 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2372 013114 000000          HALT                   ;SHOULD HAVE TRAPED
2373                                     ; TO SCOPE REPLACE HALT W/ 240
2374                                     ; AND REPLACE NEXT INST W/ 753
2375
2376 ;RETURN HERE ON AN ADDRESS TRAP
2377          ATRAP: MOV    R0,CORH ;MOVE THE FIRST NXM LOCATION IN CORH
2378 013122 012700 160001          MOV    #160001,R0 ;SET UP THE HIGHEST MEM LOCATION
2379 013126 012767 013164 164650      CTRAP: MOV    #BTRAP,4 ;SET UP THE VECTOR
2380 013134 012706 000500          MOV    #BUFF,6P
2381 013140 105740          TSTB  -(R0)
2382 013142 005200          DTRAP: INC    R0 ;DOES IT EXIST?
2383 013144 020067 177702          CMP    R0,CORH ;IF YES INCREMENT IT
2384 013150 001426          BEQ    TRAPB ;IS IT THE SAME LOCATION?
2385 013152 012737 000274 000302      MOV    #274,0##FATAL ;MOVE TO MAILBOX # ***** 274 *****
2386 013160 005212          INC    (R2)          ;SET MSGTYP TO FATAL ERROR
2387 013162 000000          HALT                   ;CONTENTS OF R0 AND CORH SHOULD HAVE BEEN EQUAL
2388                                     ; TO SCOPE REPLACE HALT W/ 240
2389                                     ; AND REPLACE NEXT INST W/ 730
2390                                     ;IF THIS COMPARISON FAILS IT MEANS
2391                                     ;THAT SOME LEGAL ADDRESS TRAPPED OR
2392                                     ;THAT AN ILLEGAL ADDRESS DID NOT TRAP
2393 013164 005767 164606          BTRAP: TST    STATUS
    
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2506 013674 005067 164122 TR4: CLR 22 ;CLR IOT PRIORITY
2507 013700 012767 000036 164126 MOV #36,34
2508 013706 012767 000066 164150 MOV #66,64
2509 013714 012767 000022 164076 MOV #22,20
2510 013722
2511
2512
2513 ;*****
2514 ;TEST 107 TEST THAT "RESET" GOES TO OUTSIDE WORLD
2515 013722 005237 000304 TST107: INC #*STESTN ;UPDATE TEST NUMBER
2516 013726 022737 000107 000304 CMP #107,*STESTN ;SEQUENCE ERROR?
2517 013734 001027 BNE TST110-12 ;BR TO ERROR HALT ON SEQ ERROR
2518 013736 005767 177322 TST PROFFTE
2519 013742 001031 BNE NODL2
2520 013744 012767 000100 163612 MOV #100,TTCSR ;SET INTERRUPT ENABLE
2521 013752 012767 000100 163600 MOV #100,TRCSR ;SET INTERRUPT ENABLE
2522 013760 000005 RESET ;SHOULD CLEAR INTERRUPT ENABLE
2523 013762 032767 000100 163574 BIT #100,TTCSR ;TEST FOR CLEAR
2524 013770 001405 BEQ 16 ;
2525 013772 012737 000304 000302 MOV #304,*$FATAL ;MOVE TO MAILBOX # ***** 304 *****
2526 014000 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2527 014002 000000 HALT ;RESET FAILED TO CLEAR TTCSR
2528 ; TO SCOPE REPLACE HALT W/ 240
2529 ; AND REPLACE NEXT INST W/ 754
2530 014004 032767 000100 163546 16: HIT #100,TRCSR ;TEST FOR CLEAR
2531 014012 001405 BFO TST110
2532 014014 012737 000305 000302 MOV #305,*$FATAL ;MOVE TO MAILBOX # ***** 305 *****
2533 014022 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2534 014024 000000 HALT ;RESET FAILED TO CLEAR TRCSR,OR WRONG $STSNH
2535 ; TO SCOPE REPLACE HALT W/ 240
2536 ; AND REPLACE NEXT INST W/ 743
2537 014026
2538 NODL2:
2539 ;*****
2540 ;TEST 110 TEST THAT RESET HAS NO EFFECT ON THE TRACE TRAP
2541 014026 005237 000304 TST110: INC #*STESTN ;UPDATE TEST NUMBER
2542 014032 022737 000110 000304 CMP #110,*$STESTN ;SEQUENCE ERROR?
2543 014040 001014 BNE RESE3 ;BR TO ERROR HALT ON SEQ ERROR
2544 014042 012706 000500 MOV #BUFF,*6 ;SET STACK
2545 014046 012767 014104 163740 MOV #RESE2,14 ;SET UP TRACE VECTOR
2546 014054 012746 000020 MOV #20,-(R6) ;SET THE T-BIT ON STACK
2547 014060 012746 014066 MOV #18,-(R6) ;MOVE NEW PC ON STACK
2548 014064 000006 RTT
2549 014066 000005 16: RESE1 ;SHOULD HAVE NO EFFECT
2550 014070 000005 RESE2 ;NO EFFECT
2551 014072
2552 014072 012737 000306 000302 RESE3: MOV #306,*$FATAL ;MOVE TO MAILBOX # ***** 306 *****
2553 014100 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2554 014102 000000 HALT ;TRACE TRAP FAILED,OR WRONG $STSNH
2555 ; TO SCOPE REPLACE HALT W/ 240
2556 ; AND REPLACE NEXT INST W/ 756
2557 014104 005067 163666 RESE2: CLR STATUS ;CLEAR TRACK
2558 014110 005067 163702 CLR 16 ;TRACE STATUS
2559 014114 012767 000016 163672 MOV #16,14
2560
2561 ;*****
    
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2562
2563 ;TEST 111 TEST THAT WHEN TTY INTERRUPTS IT POPS NEW STATUS
2564 014122 005237 000304 TST111: INC #*STESTN ;UPDATE TEST NUMBER
2565 014126 022737 000111 000304 CMP #111,*$STESTN ;SEQUENCE ERROR?
2566 014134 001051 BNE TTY11 ;BR TO ERROR HALT ON SEQ ERROR
2567 014136 005767 177122 TST PROFFTE
2568 014142 001055 BNE NODL3
2569 014144 000005 RESET
2570 014146 012706 000500 MOV #BUFF,*6 ;SET UP STACK
2571 014152 012767 014176 163704 MOV #TTY3,64 ;INTERRUPT VECTOR
2572 014160 005067 163612 CLR STATUS ;DROP PROCESSOR PRIORITY
2573 014164 012767 000357 163674 MOV #357,66 ;HIGH PRIORITY ON INTERRUPT
2574 014172 005167 163366 COM TTCSR ;SHOULD SET INTERRUPT ENABLE & INTERRUPT
2575 014176 026727 163574 TTY3: CMP STATUS,*357
2576 014204 001405 BEQ 16
2577 014206 012737 000307 000302 MOV #307,*$FATAL ;MOVE TO MAILBOX # ***** 307 *****
2578 014214 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2579 014216 000000 HALT ;INTERRUPT DID NOT POP CORRECT STATUS
2580 ; TO SCOPE REPLACE HALT W/ 240
2581 ; AND REPLACE NEXT INST W/ 746
2582 014220 000005 16: RESE1 ;CLR INTERRUPT ENABLE
2583 014222 012706 000500 MOV #BUFF,*6 ;STACK SET UP
2584 014226 012767 014252 163630 MOV #TTY4,64 ;INTERRUPT VECTOR
2585 014234 005067 163626 CLR 66 ;CLR NEW STATUS
2586 014240 012767 000357 163530 MOV #157,STATUS ;PROCESSOR STATUS
2587 014246 005167 163312 COM TTCSR ;SET INTERRUPT ENABLE
2588 014252 005767 163520 TTY4: TST STATUS
2589 014256 001405 BEQ TTY37
2590 014260
2591 014260 012737 000310 000302 TTY11: MOV #310,*$FATAL ;MOVE TO MAILBOX # ***** 310 *****
2592 014266 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2593 014270 000000 HALT ;INCORRECT STATUS,OR WRONG $STSNH
2594 ; TO SCOPE REPLACE HALT W/ 240
2595 ; AND REPLACE NEXT INST W/ 721
2596 014272 005067 163266 TTY37: CLR TTCSR
2597 014276
2598 NODL3:
2599 ;*****
2600 ;TEST 112 TEST THE "WAIT" INSTRUCTION
2601 014276 005237 000304 TST112: INC #*STESTN ;UPDATE TEST NUMBER
2602 014302 022737 000112 000304 CMP #112,*$STESTN ;SEQUENCE ERROR?
2603 014310 001055 BNE STP4 ;BR TO ERROR HALT ON SEQ ERROR
2604 014312 042767 000100 163244 BIC #100,TPS ;CLEAR INTERRUPT ENABLE
2605 014320 012706 000500 MOV #BUFF,SP ;SET UP THE STACK
2606 014324 012767 014414 163532 MOV #WATE,64 ;SET UP THE INTERRUPT VECTOR
2607 014332 005067 163530 CLR 66
2608 014336 105767 163222 WATE1: TSTB TPS ;WAIT FOR READY
2609 014342 000375 BPL WATE1 ;TO BE UP
2610 014344 012767 000015 163214 MOV #15,TPB ;DO A CARRIAGE RETURN
2611 014352 105767 163206 WATE2: TSTB TPB ;WAIT FOR READY TO COME UP
2612 014356 100375 BPL WATE2
2613 014360 012767 000015 163200 MOV #15,TPB ;DO ANOTHER CARRIAGE RETURN
2614 014366 052767 000100 163170 BIS #100,TPS ;SET THE INTERRUPT ENABLE
2615 014374 005067 163376 CLR STATUS ;CLEAR THE PSW
2616 014400 000001 WATE3: WAIT ;WAIT FOR THE INTERRUPT
    
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2618	014402	012737	000311	000302		MOV	#311,##FATAL	;MOVE TO MAILBOX # ***** 311 *****
2619	014410	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2620	014412	000000				HALT		;WAIT INSTRUCTION DID NOT LOOP
2621								; TO SCOPE REPLACE HALT W/ 240
2622								; AND REPLACE NEXT INST W/ 736
2623	014414	005767	163356		WATE1	TST	STATUS	;IS THE PSW CORRECT?
2624	014420	001405				BEQ	16	
2625	014422	012737	000312	000302		MOV	#312,##FATAL	;MOVE TO MAILBOX # ***** 312 *****
2626	014430	005212				INC	(R2)	;SET MSGTYP TO FATAL ERPOP
2627	014432	000000				HALT		;NEW PSW SHOULD HAVE BEEN ZERO
2628								; TO SCOPE REPLACE HALT W/ 240
2629								; AND REPLACE NEXT INST W/ 726
2630	014434	026727	164034	014402	161	CMP	BUFF=4,#WATE3+2	;IS THE OLD PC SAVED
2631	014442	001405				BEQ	STP4E	
2632	014444				STP41			
2633	014444	012737	000313	000302		MOV	#313,##FATAL	;MOVE TO MAILBOX # ***** 313 *****
2634	014452	005212				INC	(R2)	;SET MSGTYP TO FATAL ERPOP
2635	014454	000000				HALT		;OLD PC WAS NOT SAVED OR WRONG \$TESTN
2636								; TO SCOPE REPLACE HALT W/ 240
2637								; AND REPLACE NEXT INST W/ 715
2638	014456	012767	000066	163400	STP4E1	MOV	#66,64	
2639								
2640	014464	004767	001424			JSR	\$7,CLRALL	;CLEAR ALL KT11-D REGISTERS
2641	014470	012777	077406	164060		MOV	#77406,@KPDPR0	;MAP KERNEL 0 TO BANK 0, RW, 4K
2642	014476	004767	001500			JSR	PC,KERN7	;MAP KERNEL PAR/PDR 7 TO EXT BANK
2643	014502	012777	014536	164002		MOV	#INT25,@KTVEC	;SETUP RETURN VECTOR
2644	014510	005077	164000			CLR	@KTSTA	
2645	014514	012704	020000			MOV	#20000,R4	;USE R4 TO REFERENCE NR KERNEL 1
2646	014520	005277	163756			INC	@SR0	;TURN ON KT11-D
2647	014524	005724			ADP251	TST	(R4)+	;REFERENCE NR KERNEL 1
2648	014526	000000			ADR25A1	HALT		;SHOULD HAVE ABORTED ALREADY
2649	014530	005077	163746			CLR	@SR0	;TURN OFF KT11-D
2650	014534	000442				RR	DON25	
2651	014536	017701	163740		INT251	MOV	@SR0,R1	;SAVE CONTENTS OF SR0
2652	014542	005377	163734			DEC	@SR0	;TURN OFF KT11-D
2653	014546	022701	100003			CMP	#100003,R1	;CHECK SAVED CONTENTS OF SR0
2654	014552	001401				BEQ	,+4	
2655	014554	000000				HLT		;SR0 INCORRECT AFTER NR ABORT
2656								; (SEE SAVED CONTENTS IN R1)
2657	014556	022777	014524	163724		CMP	#ADR25,@SR2	;ICK SR2
2658	014564	001401				BEQ	,+4	
2659	014566	000000				HLT		;SR2 INCORRECT-SHOULD CONTAIN ADDRESS
2660								;OF LAST FETCH BEFORE THE ABORT
2661	014570	005077	163714			CLR	@SR2	;TRY TO WRITE INTO SR2
2662	014574	022777	014524	163706		CMP	#ADR25,@SR2	;SR2 SHOULD BE READ ONLY
2663	014602	001401				BEQ	,+4	
2664	014604	000000				HLT		;SR2 NOT READ ONLY
2665	014606	022777	077506	163742		CMP	#77506,@KPDPR0	
2666	014614	001401				BEQ	,+4	
2667	014616	000000				HLT		;KERNEL PDR 0 INCORRECT
2668								;W BIT SHOULD HAVE BEEN SET BY THE STACK WRITE
2669	014620	005777	163734			TST	@KPDPR1	
2670	014624	001401				BEQ	,+4	
2671	014626	000000				HLT		;KERNEL PDR 1 INCORRECT
2672	014630	021627	014526			CMP	(R6),#ADR25A	;CHECK VALUE PUSHED ON STACK
2673	014634	001401				BEQ	,+4	

2674	014636	000000				HLT		;INCORRECT VALUE ON STACK
2675	014640	022626				CMP	(P6)+,(R6)+	;RESTORE STACK
2676	014642	005077	163646		DON251	CLR	@KTSTA	;CHANGE TRAP VECTOR TO CAUSE A
2677	014646	016777	163642	163636		MOV	KTSTA,@KTVEC	;HALT ON A FALSE TRAP
2678								
2679								
2680								
2681	014654	004767	001260			JSR	\$7,RWALL	;MAP ALL PAGES RW,4K,BANK 0
2682	014660	012777	000004	163672		MOV	#4,@KPDPR1	;MAP KERNEL 1 NR, 1 PAGE
2683	014666	004767	001310			JSR	PC,KERN7	;MAP KERNEL PAR/PDR 7 TO EXT BANK
2684	014672	012777	014716	163612		MOV	#RET33,@KTVEC	;SETUP ABORT RETURN
2685	014700	005077	163610			CLR	@KTSTA	
2686	014704	005277	163572			INC	@SR0	;TURN ON KT11-D
2687	014710	005737	030000			TST	@30000	;REFERENCE NR KERNEL 1 - SHOULD ABORT
2688	014714	000000				HALT		;NO NR ABORT
2689	014716	022777	140003	163556	RET331	CMP	#140003,@SR0	;CHECK SR0
2690	014724	001401				BEQ	,+4	
2691	014726	000000				HLT		;SR0 INCORRECT - SHOULD SHOW KERNEL
2692								;PAGE 1, AND BOTH NR + PL ERRORS SET
2693	014730	005077	163546			CLP	@SR0	
2694	014734	016777	163554	163550		MOV	KTSTA,@KTVEC	;RESTORE TRAP CATCHER
2695								
2696								
2697	014742	004767	001146			JSR	\$7,CLRALL	;CLEAR ALL KT11-D REGISTERS
2698	014746	004767	001230			JSR	PC,KERN7	;MAP KERNEL PAR/PDR 7 TO EXT BANK
2699	014752	012777	077406	163576		MOV	#77406,@KPDPR0	;MAP KERNEL 0 RW,4K,BANK 0
2700	014760	012777	077402	163572		MOV	#77402,@KPDPR1	;MAP KERNEL 1 NAM,KSZ K,BANK 0
2701	014766	012777	015022	163516		MOV	#INT40,@KTVEC	;SETUP RETURN VECTOR
2702	014774	005077	163514			CLR	@KTSTA	
2703	015000	005277	163476			INC	@SR0	;TURN ON KT11-D
2704	015004	013737	037776	037776	ADR401	MOV	#37776,#37776	;REFERENCE KERNEL 1 - 1ST ABORT
2705	015012	005077	163464			CLR	@SR0	;TURN OFF KT11-D
2706	015016	000000				HLT		;REFERENCE TO KERNEL 1
2707	015020	000510				RR	DONE40	;DIDN'T ABORT
2708	015022	042777	000001	163452	INT401	BIC	#1,@SR0	;TURN OFF KT11-D
2709	015030	022777	020002	163444		CMP	#20002,@SR0	;CHECK SR0
2710	015036	001401				BEQ	,+4	
2711	015040	000000				HLT		;SR0 INCORRECT AFTER NAM ABORT
2712	015042	012777	015076	163442		MOV	#INT40A,@KTVEC	;SETUP NEW RETURN VECTOR
2713	015050	022626				CMP	(R6)+,(R6)+	;RESTORE STACK POINTER
2714	015052	012702	037776			MOV	#37776,R2	;SETUP R2 TO REFERENCE KERNEL 1
2715	015056	052777	000001	163416		BIS	#1,@SR0	;TURN ON KT11-D
2716	015064	012242				MOV	(R2)+,(R2)	;REFERENCE KERNEL 1 -2ND ABORT
2717	015066	005077	163410		ADR40A1	CLR	@SR0	;TURN OFF KT11-D
2718	015072	000000				HLT		;2ND REFERENCE TO KERNEL 1
2719	015074	000462				BR	DONE40	;DIDN'T ABORT
2720	015076	042777	000001	163376	INT40A1	BIC	#1,@SR0	;TURN OFF KT11-D
2721	015104	022777	020002	163370		CMP	#20002,@SR0	;CHECK SR0
2722	015112	001401				BEQ	,+4	
2723	015114	000000				HLT		;SR0 INCORRECT AFTER 2ND NAM ABORT
2724	015116	022777	015004	163364		CMP	#ADR40,@SR2	;CHECK SR2
2725	015124	001401				BEQ	,+4	
2726	015126	000000				HLT		;SR2 DOESN'T CONTAIN VALUE FROM 1ST ABORT
2727	015130	021627	015066			CMP	(R6),#ADR40A	;CHECK ADDRESS PUSHED ON STACK
2728	015134	001401				BEQ	,+4	
2729	015136	000000				HLT		;INCORRECT ADDRESS ON STACK

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2730 015140 022626          CMP      (R6)+,(R6)+      ;RESTORE STACK POINTER
2731 015142 012777 015176 163342 MOV      #INT40B,#KTVEC  ;CHANGE RETURN ADDRESS
2732 015150 005077 163326 CLR      #SR0             ;CLEAR NAM ERROR BIT-SHOULD
2733                                     ;"UNLOCK" ERROR TRACKING
2734 015154 012702 037776          MOV      #37776,R2       ;SETUP R2 TO REFERENCE KERNEL 1
2735 015160 005277 163316          INC      #SR0           ;TURN ON KT11=D
2736 015164 012242          ADR40B: MOV      (R2)+,(R2)  ;3RD NAM REFERENCE, ERROR BIT WAS CLEARED
2737 015166 005077 163310          ADR40C: CLR      #SR0     ;TURN OFF KT11=D
2738 015172 000000          HLT                                     ;3RD REFERENCE TO KERNEL 1
2739 015174 000422          RR      DONE40          ;DIDN'T ABORT
2740 015176 042777 000001 163276 INT40B: BIC      #1,#SR0  ;TURN OFF KT11=D
2741 015204 022777 020002 163270 CMP      #20002,#SR0    ;CHECK SR0
2742 015212 001401          BEQ      ,+4
2743 015214 000000          HLT                                     ;SR0 INCORRECT
2744 015216 022777 015164 163264 CMP      #ADR40B,#SR2   ;CHECK SR2
2745 015224 001401          BEQ      ,+4
2746 015226 000000          HLT                                     ;SR2 INCORRECT - SHOULD CONTAIN
2747                                     ;LAST FETCH ADDRESS BEFORE ABORT
2748 015230 022716 015166          CMP      #ADR40C,(SP)  ;CHECK STACK
2749 015234 001401          BEQ      ,+4
2750 015236 000000          HLT
2751 015240 022626          CMP      (R6)+,(R6)+  ;PC ON STACK INCORRECT
2752 015242 005077 163234          DONE40: CLR      #SR0   ;RESTORE STACK POINTER
2753 015246 005077 163242          CLR      #KTSTA       ;CLEAR ERROR BIT
2754 015252 016777 163236 163232 MOV      #KTSTA,#KTVEC  ;CHANGE TRAP RETURN TO CAUSE A HALT
2755                                     ;ON A FALSE INTERRUPT
2756
2757 ;*****
2758 ;TEST 113 TEST THAT ALL RESERVED INSTRUCTIONS TRAP
2759 ;*****
2759 015260 005237 000304          TST113: INC      #TESTN  ;UPDATE TEST NUMBER
2760 015264 022737 000113 000304 CMP      #113,#TESTN   ;SEQUENCE ERROR?
2761 015272 001156          BNE      RET4         ;BR TO ERROR HALT ON SEQ ERROR
2762 015274 042767 000100 162262 BIC      #100,TPS      ;
2763 015302 012737 015330 000244 MOV      #TRAP244,#244 ; SET UP TO SEE IF
2764 015310 013767 000010 000024 MOV      #10,TENSAVE   ; THIS PROCESSOR HAS THE
2765 015316 012737 015340 000010 MOV      #TRAP10,#10  ; FLOATING POINT OPTION
2766 015324 170007          WORD    ,WORD        ; AN ILLEGAL FPP INSTRUCTION
2767 015326 000406          BR      AROUND        ; THE FOLLOWING
2768 015330          TRAP244: MOV      #R#FPP,FINISH ; IF FPP IN--
2769 015330 013767 015674 000342 RTI      ; RESET END OF TABLE POINTER
2770 015336 000000          TRAP10: RTI      ; AND RETURN
2771 015340          TENSAVE: RTI      ; LEAVE THE TABLE ALONE
2772 015340 000000          TENSAVE: WORD    0    ; AND RETURN
2773 015342 000000          ; A PLACE TO STORE CONTENTS OF 10
2774
2775 015344          AROUND: ; CONTINUATION POINT
2776 015344 012737 000246 000244 MOV      #246,#244     ; RESTORE THE TRAP VECTOR
2777 015352 016737 177764 000010 MOV      TENSAVE,#10  ; RESTORE THE ILLEGAL INST, VECTOR
2778 015360 012703 015654          GIN1:  MOV      #TABLE,TAB ;TABLE POINTER
2779 015364 012305          MOV      (TAB)+,FIRST ;FIRST OR CURRENT INSTRUCTION
2780 015366 012301          MOV      (TAB)+,LAST  ;LAST INSTRUCTION OR GROUP
2781 015370 020567 000304          CMP      FIRST,FINISH ;TESTED ALL
2782 015374 001415          BEQ      GIN3         ;YES BRANCH
2783 015376 010567 000300          MOV      FIRST,INST  ;SET UP INST
2784 015402 005267 000274          GIN2:  INC      INST
2785 015406 012767 015560 162374          MOV      #RET,10     ;SET UP RETURN FROM TRAP
    
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2786 015414 012706 000500          MOV      #PUFF,SP     ;SET UP STACK POINTER
2787 015420 005067 162352          CLR      CC           ;CLEAR PRIORITY
2788 015424 000167 000252          JMP      INST         ;EXECUTE RESERVED INSTRUCTION
2789 015430 005237 000306          GIN3:  INC      #PASS   ;
2790 015434 105267 000116          INCB    PASSPT       ;SHOULD PRINT THIS PASS?
2791 015440 001027          BNE      ACT         ;NO
2792 015442 132767 000040 162651 BITR    #40,$ENVM    ;WILL APT ALLOW PRINTING?
2793 015450 001023          BME      ACT         ;NO
2794 015452 023727 000042 015530 CMP      #42,$ENDAD  ;
2795 015460 001417          BFQ      ACT         ;
2796 015462 012700 016000          MOV      #MSG,R0     ;GET MSG ADDR,
2797 015466 105737 177564          WAIT:  TSTR    #TPS   ;TTY READY
2798 015472 100375          EPL     WAIT        ;NO WAIT
2799 015474 112037 177566          MOVB   (R0)+,#TPB   ;PRINT CHARACTER
2800 015500 001372          BNE      WAIT        ;NEXT IF NOT DONE,
2801 015502 105737 177564          WAIT1: TSTB   #TPS   ;
2802 015506 100375          BPL     WAIT1       ;
2803 015510 000005          RESET
2804 015512 012767 177761 000036 MOV      #177761,PASSPT ;DO IT ABOUT 15 DECIMAL TIMES
2805 015520 013700 000042          ACT:   MOV      #42,R0 ;CHECK ACT
2806 015524 001405          BEQ     GOAGIN      ;KEEP GOING
2807 015526 000005          RESET
2808 015530 004710          $ENDAD: JSR    PC,(R0) ;ACT HOOKS
2809 015532 000240          NOP
2810 015534 000240          NOP
2811 015536 000240          NOP
2812 015540 012767 000012 162242 GOAGIN: MOV      #12,10
2813 015546 005067 162240          CLR     RESTRT      ;
2814 015552 000167 163076          JMP     RESTRT      ;DO NEXT PASS
2815 015556 177777          PASSPT: -1
2816
2817 ;TRAPPING SHOULD SEND YOU HERE
2818 015560 020627 000474          RET:   CMP      SP,#BUFF-4 ;TEST DECREMENT OF SP
2819 015564 001405          BEQ     RET1        ;
2820 015566 012737 000314 000302 MOV      #314,#$FATAL ;MOVE TO MAILBOX # ***** 314 *****
2821 015574 005212          INC     (P2)        ;SET MSGTYP TO FATAL ERROR
2822 015576 000000          HALT   ;WRONG DECREMENT
2823                                     ; TO SCOPE REPLACE HALT W/ 240
2824                                     ; AND REPLACE NEXT INST W/ 635
2825 015600 026727 162670 015704 RET1:  CMP      #BUFF-4,#INST+2 ;LOC OF INST UNINCREMENTED
2826 015606 001405          BEQ     RET2        ;
2827 015610 012737 000315 000302 MOV      #315,#$FATAL ;MOVE TO MAILBOX # ***** 315 *****
2828 015616 005212          INC     (R2)        ;SET MSGTYP TO FATAL ERROR
2829 015620 000000          HALT   ;INST INC ON TRAP
2830                                     ; TO SCOPE REPLACE HALT W/ 240
2831                                     ; AND REPLACE NEXT INST W/ 624
2832 015622 005767 162650          RET2:  TST     BUFF-2 ;
2833 015626 001405          BEQ     RET3        ;
2834 015630          RET4:  TST     FET3      ;
2835 015630 012737 000316 000302 MOV      #316,#$FATAL ;MOVE TO MAILBOX # ***** 316 *****
2836 015636 005212          INC     (R2)        ;SET MSGTYP TO FATAL ERROR
2837 015640 000000          HALT   ;CONDITION CODES SET ON TRAP OR WRONG STSNM
2838                                     ; TO SCOPE REPLACE HALT W/ 240
2839                                     ; AND REPLACE NEXT INST W/ 614
2840 015642 026701 000034          RET3:  CMP      INST,LAST ;
2841 015646 001646          BEQ     GIN1        ;SET UP NEW GROUP
    
```

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2842 015650 000167 177526          JMP      GIN2          ;FINISH OLD GROUP
2843                                     ;END OF INSTRUCTION GROUP
2844 015654 000006          TABLE: 6            ;END OF OPERATE
2845 015656 000077          77
2846 015660 000207          207
2847 015662 000227          227
2848 015664 006777          6777          ;RTS,RT1,JMP
2849 015666 007777          7777
2850 015670 075037          075037
2851 015672 076777          76777
2852 015674 167777          FPP: 167777        ; START OF THE FPP INSTRUCTIONS
2853 015676 177777          177777
2854 015700 013700          FINISH: .           ;END FLAG
2855 015702 000000          INST: HALT          ;WILL CONTINUE RESERVED INST
2856 015704 000000          HALT              ;SHOULD TRAP TO LOC 10
2857 015706 000000          HALT              ;LOC 10 SHOULD SEND YOU TO
2858 015710 000000          HALT              ;RET
2859 015712 000000          HALT
2860 015714 012767 015724 162102 PWRDWN: MOV      #PWRUP,24
2861 015722 000000          HALT
2862
2863 015724 012767 015714 162072 PWRUP: MOV      #PWRDWN,24
2864 015732 012706 000500          MOV      #BUFF,SP
2865 015736 132767 000040 162355          BITB     #40,#ENVM
2866 015744 001013          BNE     PFRES          ;WILL APT ALLOW PRINTING?
2867 015746 012700 016041          MOV      #MSGPWF,R0   ;NO
2868 015752 105737 177564          PWAIT: TSTB    #*TPS  ;GET MSG ADDR.
2869 015756 100375          BPL     PWAIT         ;TTY READY
2870 015760 112037 177566          MOV     (R0)+,#*TPB  ;NO WAIT
2871 015764 001372          BNE     PWAIT         ;PRINT CHARACTER
2872 015766 105737 177564          PWAIT1: TSTB   #*TPS  ;NEXT IF NOT DONE.
2873 015772 100375          BPL     PWAIT1
2874 015774 000167 162654          PFRES: JMP     RESTR
2875 016000 005015 043103 040513          MSG1: .ASCIZ <15><12>,CFKABD0 11/34 TRAPS TST DONE .
2876 016006 042102 020060 030461
2877 016014 031457 020064 051124
2878 016022 050101 020123 051524
2879 016030 020124 047504 042516
2880 016036 020040 000
2881 016041 015 050012 053517          MSGPWF: .ASCIZ <15><12>,POWER FAILED!
2882 016046 051105 043040 044501
2883 016054 042514 020504 000
2884 016061 015 041412 045506          MSG1: .ASCIZ <15><12>,CFKABD0 11/34 TRAPS TST .
2885 016066 041101 030104 030440
2886 016074 027461 032063 052040
2887 016102 040522 051520 052040
2888 016110 052123 000040
2889 016114 005077 162362          CLRALL: CLP     @SR0
2890 016120 005000          CLR      R0
2891 016122 012701 000040          MOV     #32,,R1
2892 016126 005070 000516          CLRLP: CLR    @DRTAB(R0) ;COUNT OF REGISTERS TO BE CLEARED
2893 016132 005720          TST     (R0)+         ;CLEAR REGISTERS THRU ADDRESS TABLE
2894 016134 077104          SOB     R1,CLRLP    ;MOVE POINTER
2895 016136 000207          RTS     R1,CLRLP    ;LOOP TILL DONE
2896
2897                                     ;SUBROUTINE TO MAKE ALL PAGES RW, BANK 0, 4K, UP
    
```

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2898 016140 005077 162336          RWALL: CLR     @SR0
2899 016144 012701 000516          MOV     #ADRTAB,R1   ;R1 POINTS TO ADDRESS TABLE
2900 016150 012700 000010          RWL1: MOV     #10,R0  ;R0 IS COUNTER
2901 016154 005071 000020          RWL2: CLR     @20(R1) ;CLEAR PAR
2902 016160 012731 077406          MOV     #77406,@(R1)+ ;SET PDR RW, 4K
2903 016164 077005          SOB     R0,RWL2
2904 016166 062701 000020          SOB     R0,RWL2
2905 016172 020127 000616          ADD     #20,R1
2906 016176 002764          CMP     R1,#ADREND   ;POINTER TO NEXT GROUP
2907 016200 000207          BLT     RWL1
2908          RTS     #7
2909 016202 012777 007600 162404          ;MAP KERNEL PAR/PDR 7 TO EXTERNAL BANK
2910 016210 012777 077406 162356          KEPN7: MOV     #7600,@KPAR7
2911 016216 000207          MOV     #77406,@KPTR7
2912          RTS     PC
                ,END
    
```



CLRALL	016114	1599*	1647	1686	1750*	1762*	1810	1849	2787*											
CLRLP	016126	2840	2697	2889#																
CORH	013052	2892#	2894																	
CTRAP	013126	2361#	2376*	2383																
DL11W	013266	2379#	2401																	
DL11W1	013272	2414	2418#																	
DONE40	015242	2416	2419#																	
DON25	014642	2707	2719	2739	2752#															
DTRAP	013142	2650	2676#																	
FINISH	015700	2382#	2400																	
FOVER	011566	2769*	2781	2854#																
FPP	015674	2059	2061	2073#																
GIN1	015364	2769	2852#																	
GIN2	015402	2779#	2841																	
GIN3	015430	2784#	2842																	
GOAGIN	015540	2782	2789#																	
HERE	= 000000	2806	2812#																	
HLT	= 000000	176#	196*	206*	280															
		20#	2655	2659	2664	2667	2671	2674	2691	2706	2711	2718	2723	2726						
		2729	2730	2743	2746	2750														
ILLA	= 004700	37#	2021																	
ILLB	= 000100	38#	2045																	
INST	015702	2783#	2784*	2788	2825	2840	2855#													
INSTC	002376	533#																		
INSTK	007244	1570#	1571																	
INT25	014536	2643	2651#																	
INT40	015022	2701	2708#																	
INT40A	015076	2712	2720#																	
INT40B	015176	2731	2740#																	
ITRAP5	= 000004	22#																		
KERN7	016202	2642	2683	2690	2909#															
KPAR0	000576	147#																		
KPAR1	000600	148#																		
KPAR2	000602	149#																		
KPAR3	000604	150#																		
KPAR4	000606	151#																		
KPAR5	000610	152#																		
KPAR6	000612	153#																		
KPAR7	000614	154#	2909*																	
KPDR0	000556	138#	2641*	2665	2699*															
KPDR1	000560	139#	2669	2682*	2700*															
KPDR2	000562	140#																		
KPDR3	000564	141#																		
KPDR4	000566	142#																		
KPDR5	000570	143#																		
KPDR6	000572	144#																		
KPDR7	000574	145#	2910*																	
KTSTA	000514	118#	2644*	2676*	2677	2685*	2694	2702*	2753*	2754										
KTEVC	000512	117#	2643*	2677*	2684*	2694*	2701*	2712*	2731*	2754*										
K1	000714	179#	295*	296	299	308*	309	312	320*	322	333*	335	346*	348						
		351																		
K10	000732	186#	380	388	395	403	411	419												
K11	000734	187#																		
K12	000736	188#																		
K2	000716	180#																		
K3	000720	181#																		

K4	000722	182#																		
K5	000724	183#	294*	297	307*	321*	323	325	334*	336	338	347*	349							
K6	000726	184#	310	388																
K7	000730	185#	364	372	380	395	419													
HSG	016000	2796	2875#																	
HSGPWF	016041	2867	2881#																	
HSG1	016061	161	2884#																	
NODL	013564	2458	2482#																	
NODL1	013722	2490	2510#																	
NODL2	014026	2519	2537#																	
NODL3	014276	2568	2597#																	
NOP	= 000240	33#																		
NOR	013070	2365#	2368																	
PASSPT	015556	160*	2790*	2804*	2815#															
PFRES	015774	2866	2874#																	
PROFTE	013264	2412*	2417#	2418*	2427	2457	2489	2518	2567											
PWAIT	015752	2868#	2869	2871																
PWAIT1	015766	2872#	2873																	
PWRDWN	015714	169	2860#	2863																
PWRUP	015724	2860	2863#																	
RA	005444	1180	1189#																	
RA1	003734	831	840#																	
RB	005430	1179*	1182#	1189*	1190															
RB1	003720	830*	833#	840*	841															
RC	005424	1181#	1191																	
RC1	003714	832#	842																	
RESET2	014104	2545	2557#																	
RESET3	014072	2543	2551#																	
RESTRT	000654	168#	2814	2874																
RET	015560	2785	2818#																	
RETA	002266	498	502#																	
RETAH	002300	500	508#																	
RETA1	011666	2088	2098#																	
RETA2	003126	669	676#																	
RETA3	004024	852	859#																	
RETA4	004640	1018	1025#																	
RETA5	005534	1202	1209#																	
RETB	006350	1376	1383#																	
RETB1	002330	516	518#																	
RETB2	011742	2106	2116#																	
RETB3	003156	684	686#																	
RETB4	004054	867	869#																	
RETB5	004670	1033	1035#																	
RETB6	005564	1217	1219#																	
RETB7	006400	1391	1393#																	
RETC	002400	532	534#																	
RETC1	012022	2130	2135#																	
RETC2	003226	700	702#																	
RETC3	004124	883	885#																	
RETC4	004740	1049	1051#																	
RETC5	005634	1233	1235#																	









COMMEN	1#	198	208	218	229	240	251	261	272	282	300	313	326	339	352
ENDCOM	1#	365	373	381	389	396	404	412	420	436	442	449	456	466	472
ERROR	1#	486	502	519	535	553	565	582	588	595	602	610	621	627	634
		651	671	687	703	721	732	749	755	762	769	777	788	794	801
		818	834	854	870	886	904	916	933	939	946	953	961	972	978
		992	1002	1020	1036	1052	1070	1082	1099	1105	1112	1119	1127	1130	1144
		1158	1167	1183	1204	1220	1236	1255	1267	1284	1290	1297	1304	1312	1323
		1336	1343	1353	1378	1394	1410	1428	1440	1457	1463	1470	1477	1485	1496
		1509	1516	1525	1540	1556	1572	1591	1603	1620	1626	1633	1640	1648	1659
		1672	1679	1688	1704	1720	1736	1754	1766	1783	1789	1796	1803	1811	1822
		1835	1842	1851	1866	1883	1901	1911	1919	1937	1954	1971	1988	2005	2022
		2046	2072	2093	2111	2117	2136	2158	2182	2190	2210	2217	2233	2239	2249
		2265	2271	2282	2290	2312	2318	2339	2369	2384	2394	2401	2436	2441	2468
		2500	2524	2531	2551	2576	2589	2618	2624	2631	2820	2827	2833		
ESCAPE	1#														
GETPRI	1#														
LOOP	1#	202	212	222	233	244	255	265	276	286	304	317	330	343	356
		369	377	385	393	400	408	416	424	440	447	454	461	470	477
		491	506	523	539	557	569	586	593	600	607	614	625	632	639
		656	674	691	707	725	736	753	760	767	774	781	792	799	806
		822	838	857	874	890	908	920	937	944	951	958	965	976	983
		997	1007	1023	1040	1056	1074	1086	1103	1110	1117	1124	1131	1142	1149
		1163	1171	1187	1207	1224	1240	1259	1271	1288	1295	1302	1309	1316	1327
		1341	1348	1358	1381	1398	1414	1432	1444	1461	1468	1475	1482	1489	1500
		1514	1521	1529	1543	1560	1576	1595	1607	1624	1631	1638	1645	1652	1663
		1677	1684	1692	1707	1724	1740	1758	1770	1787	1794	1801	1808	1815	1826
		1840	1847	1855	1869	1887	1905	1914	1923	1941	1958	1975	1992	2009	2026
		2050	2077	2096	2114	2121	2140	2162	2185	2194	2213	2221	2236	2243	2253
		2268	2275	2286	2294	2316	2322	2344	2373	2388	2398	2406	2439	2445	2472
		2504	2528	2535	2555	2580	2594	2621	2628	2636	2823	2830	2838		
MULT	1#														
NEWTST	1#	189	208	358	428	493	509	525	541	571	660	677	693	709	738
		824	845	860	876	892	922	1011	1026	1042	1058	1088	1173	1195	1210
		1242	1273	1369	1384	1400	1416	1446	1531	1546	1562	1579	1609	1695	1710
		1742	1772	1857	1873	1890	1927	1944	1961	1978	1995	2012	2036	2054	2081
		2123	2144	2166	2197	2224	2296	2326	2351	2421	2451	2483	2512	2538	2561
		2756													
POP	1#	46	56	86	90	97	189	191	288	290	358	360	428	430	493
PUSH	1#	495	509	511	525	527	541	543	571	573	660	662	677	679	695
REPORT	1#	709	711	738	740	824	826	845	847	860	862	876	878	892	894
SETPRI	1#	924	1011	1013	1026	1028	1042	1044	1058	1060	1088	1090	1173	1175	1195
SETUP	1#	1210	1212	1226	1228	1242	1244	1273	1275	1369	1371	1384	1386	1400	1402
SKIP	1#	1418	1446	1448	1531	1533	1546	1548	1562	1564	1579	1581	1609	1611	1695
SLASH	1#	1710	1712	1726	1728	1742	1744	1772	1774	1857	1859	1873	1875	1890	1892
STARS	1#	1929	1944	1946	1961	1963	1978	1980	1995	1997	2012	2014	2036	2038	2054
		2081	2083	2099	2101	2123	2125	2144	2146	2166	2168	2197	2199	2224	2226
		2298	2326	2328	2351	2353	2421	2423	2451	2453	2483	2485	2512	2514	2538

	2561	2563	2599	2601	2756	2758									
SWRSU	1#	1926	1927	1944	1961	1978	1995	2012	2036						
TYPBIN	1#	199	209	219	230	241	252	262	273	283	301	314	327	340	353
TYPDEC	1#	366	374	382	390	397	405	413	421	437	444	451	458	467	474
TYPNAM	1#	488	503	520	536	554	566	583	590	597	604	611	622	629	636
TYPNUM	1#	653	671	688	704	722	733	750	757	764	771	778	789	796	803
TYPOCS	1#	819	835	854	871	887	905	917	934	941	948	955	962	973	980
TYPOCT	1#	994	1004	1020	1037	1053	1071	1083	1100	1107	1114	1121	1128	1139	1146
TYPTXT	1#	1160	1168	1184	1204	1221	1237	1256	1268	1285	1292	1299	1306	1313	1324
VTRP	1#	1338	1345	1355	1378	1395	1411	1429	1441	1458	1465	1472	1479	1486	1497
\$\$ERCD	1#	1511	1518	1526	1540	1557	1573	1592	1604	1621	1628	1635	1642	1649	1660
		1674	1681	1689	1704	1721	1737	1755	1767	1784	1791	1798	1805	1812	1823
		1837	1844	1852	1866	1884	1902	1911	1920	1938	1955	1972	1989	2006	2023
		2047	2074	2093	2111	2118	2137	2159	2182	2191	2210	2218	2233	2240	2253
		2265	2272	2283	2291	2313	2319	2341	2370	2385	2395	2403	2436	2442	2469
		2501	2525	2532	2552	2577	2591	2618	2625	2633	2820	2827	2835		
\$\$ERNU	1#	199	209	219	230	241	252	262	273	283	301	314	327	340	353
		366	374	382	390	397	405	413	421	437	444	451	458	467	474
		488	503	520	536	554	566	583	590	597	604	611	622	629	636
		653	671	688	704	722	733	750	757	764	771	778	789	796	803
		819	835	854	871	887	905	917	934	941	948	955	962	973	980
		994	1004	1020	1037	1053	1071	1083	1100	1107	1114	1121	1128	1139	1146
		1160	1168	1184	1204	1221	1237	1256	1268	1285	1292	1299	1306	1313	1324
		1338	1345	1355	1378	1395	1411	1429	1441	1458	1465	1472	1479	1486	1497
		1511	1518	1526	1540	1557	1573	1592	1604	1621	1628	1635	1642	1649	1660
		1674	1681	1689	1704	1721	1737	1755	1767	1784	1791	1798	1805	1812	1823
		1837	1844	1852	1866	1884	1902	1911	1920	1938	1955	1972	1989	2006	2023
		2047	2074	2093	2111	2118	2137	2159	2182	2191	2210	2218	2233	2240	2253
		2265	2272	2283	2291	2313	2319	2341	2370	2385	2395	2403	2436	2442	2469
		2501	2525	2532	2552	2577	2591	2618	2625	2633	2820	2827	2835		
\$\$ERRO	1#	282	352	420	487	519	535	565	687	703	732	818	870	886	916
		1036	1052	1082	1167	1220	1236	1267	1394	1410	1440	1525	1556	1572	1603
		1720	1736	1766	1851	1883	2030	2117	2136	2158	2217	2290	2531		

\$\$NEW	1#	189	288	358	428	493	509	525	541	571	660	677	693	709	738
	824	845	860	876	892	922	1011	1026	1042	1058	1088	1173	1195	1210	1226
	1242	1273	1369	1384	1400	1416	1446	1531	1546	1562	1579	1609	1695	1710	1726
	1742	1772	1857	1873	1890	1927	1944	1961	1978	1995	2012	2036	2054	2081	2099
	2123	2144	2166	2197	2224	2296	2326	2351	2421	2451	2483	2512	2538	2561	2599
	2756														
\$\$SKIP	1#														
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\$.HEADE	1#														
\$.KT11	1#														
\$.SETUP	1#														
\$.SWRHI	1#														
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\$.APT8	1#	40#	56												
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\$.ASTA	1#														
\$.CATC	1#														
\$.CMTA	1#														
\$.DB2D	1#														
\$.DB2O	1#														
\$.DIV	1#														
\$.EOP	1#														
\$.ERRO	1#														
\$.ERRT	1#														
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\$.POWE	1#														
\$.RAND	1#														
\$.RDDE	1#														
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\$.R2AZ	1#														
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\$.SB2D	1#														
\$.SB2O	1#														
\$.SCOP	1#														
\$.SIZE	1#														
\$.SUPR	1#														
\$.TRAP	1#														
\$.TYPB	1#														
\$.TYPD	1#														
\$.TYPE	1#														
\$.TYPO	1#														
\$.40CA	1#														

. ABS, 016220 000

ERRORS DETECTED: 0

CFKABD,BIN,CFKABD,LST/CRF/SOL=CFKABD,SML,CFKABD,P11  
 RUN-TIME: 47 56 5 SECONDS  
 RUN-TIME RATIO: 212/109=1.9  
 CORE USED: 29K (57 PAGES)