

PDP11/34

TRAPS TEST
MD-11-DFKAB-B

EP-DFKAB-B-DL-B
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FICHE 1 OF 1

DEC 1976
digital
MADE IN USA

This microfiche card contains a grid of frames on the left side, with a large blank area on the right. The frames are arranged in 10 rows and 6 columns. Each frame contains a different image or data set, likely related to the PDP11/34 system. The images are small and difficult to discern, but they appear to be technical diagrams or data plots. The right side of the card is a large, solid black area, which is typical for microfiche cards to provide a uniform background for the frames.

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.REPT 0

IDENTIFICATION

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

PRODUCT NAME: 11/34 TRAP TEST

DATE : DECEMBER 1976

MAINTAINER: DIAGNOSTIC GROUP

AUTHOR: GLENN JOHNSON/ODES CHOATE

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1. ABSTRACT

THIS IS A TEST OF ALL OPERATIONS AND INSTRUCTIONS THAT CAUSE TRAPS. ALSO TESTED ARE TRAP OVERFLOW CONDITIONS, ODDITIES OF REGISTER 6, INTERRUPTS, THE RESET AND WAIT INSTRUCTIONS.

2. REQUIREMENTS

2.1 EQUIPMENT

11/04 STANDARD COMPUTER

2.2 STORAGE

2.2.1 PROGRAM STORAGE - THE ROUTINE USES MEMORY FROM 0000 TO 17500.

3. LOADING PROCEDURE

3.1 METHOD

PROCEDURE FOR NORMAL ABSOLUTE TAPES SHOULD BE FOLLOWED.

4. STARTING PROCEDURE

THE PROGRAM STARTS AT 200.

IF IT IS DESIRED TO RESET THE PASS COUNT BACK TO ZERO ; THEN START THIS PROGRAM AT LOCATION 210

4.2 PROGRAM AND/OR OPERATOR ACTION

LOAD PROGRAM INTO MEMORY. (BOTTOM 4K)

LOAD ADDRESS.

START.

THE PROGRAM WILL LOOP.

IT WILL PRINT "END OF DFKAB" AFTER THE FIRST ITERATION AND THEN PRINTS IT EVERY 15 TIMES (APPROXIMATELY A MINUTE)

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5. OPERATION

5.2 SUBROUTINE ABSTRACTS

5.2.1 BEGIN AT 200

5.2.2 SCOPE

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

5.2.3 TRAPCATCHER

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

THE PRINCIPLE OF THIS ROUTINE IS: THE VECTOR ENTRANCE ADDRESS POINTS TO THE NEXT SEQUENTIAL WORD WHICH WILL CONTAIN A HALT (000000) (THIS LOCATION IS ALSO THE STATUS WORD FOR THAT VECTOR ENTRANCE, BUT THIS WILL HAVE NO EFFECT ON IT ALSO BEING THE NEXT INSTRUCTION).

IF A HALT OCCURS IN THE TRAP OR INTERRUPT VECTOR AREA, REGISTER SIX SHOULD BE EXAMINED TO DETERMINE ITS CONTENTS, THEN USE REGISTER SIX CONTENTS AS AN ADDRESS TO DETERMINE WHERE THE PROGRAM WAS. WHEN THE INTERRUPT OR TRAP OCCURRED, MEMORY AS SPECIFIED BY R6 CONTAINS THE PC OF THE INSTRUCTION FOLLOWING THE INSTRUCTION WHERE THE TRAP OCCURRED. THE CONTENTS OF LOCATION 'STESTN'(304) CONTAINS THE TEST NUMBER THAT IT WAS DOING BEFORE IT TRAPPED.

5.3 PROGRAM AND/OR OPERATOR ACTION

- 5.3.1 LOADING AND STARTING AT 200 STARTS THE TEST. IF AN ERROR IS DETECTED, THERE WILL BE A HALT.
 NOTE: IF A SCOPE LOOP IS NEEDED
 THE COMMENT SECTION OF THE HALT EXPLAINS
 HOW TO UTILIZE THIS LOOP.

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6. ERRORS

6.1 ALL ERRORS WILL CAUSE A HALT.

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

EXAMPLE

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

IMPORTANT

IF AN ERROR IS DETECTED ;IT COULD BE BECAUSE OF TWO REASONS.

- A) WRONG TEST NUMBER
- B) ERROR IN THE PRESENT TEST.

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

6.2 ERROR RECOVERY

ON TRAP ERRORS - RESTART AT STARTING ADDRESS

7. RESTRICTIONS

7.1 STARTING RESTRICTION

NONE

7.2 OPERATIONAL RESTRICTION

NONE

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8. MISCELLANEOUS

8.1 EXECUTION TIME

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

9. PROGRAM DESCRIPTION

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

.ENDR

GO1

MAIN. MACY11 27.1006) 22-007-76 12:41 PAGE 6
DFA88.P11 19-NOV-75 07:55

SEG 0008

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

: LISTING

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

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

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199
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201
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203
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209 000006
210 000006
211 000003
212 000001
213 000005
214 000002
215 000000
216 000003
217 000004
218 000004
219 000014
220 000030
221 000020
222 000034
223 177564
224 177560
225 177564
226 177566
227 000240
228 000240
229 177776
230 000007
231 000010
232 004700
233 000100
234 177776

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DEFABE.P11 19-NOV-75 07:55

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235      000200      000167      000414      .JMP      BEGIN
236      000210      000210      .CLR      2*SPASS
237      000214      000167      000400      .JMP      BEGIN
238      000214      000300      .SBTTL    ACT11 HOOKS
239
240      ;*****
241      ;HOOKS REQUIRED BY ACT11
242      $SVPC=.      ;SAVE PC
243      .=46
244      $ENDAD      ;;1)SET LOC.46 TO ADDRESS OF $ENDAD IN .SEOP
245      .=52
246      .WORD      0      ;;2)SET LOC.52 TO ZERO
247      .=$SVPC      ;; RESTORE PC
248
249      .SBTTL    APT MAILBOX-ETABLE
250
251      ;*****
252      .EVEN
253      $MAIL:      ;;APT MAILBOX
254      $MSGTY: .WORD    AMSGTY      ;;MESSAGE TYPE CODE
255      $FATAL: .WORD    AFATAL      ;;FATAL ERROR NUMBER
256      $TESTN: .WORD    ATESTN     ;;TEST NUMBER
257      $PASS:  .WORD    APASS      ;;PASS COUNT
258      $DEVCT: .WORD    ADEVCT     ;;DEVICE COUNT
259      $UNIT:  .WORD    AUNIT      ;;I/O UNIT NUMBER
260      $MSGAD: .WORD    AMSGAD     ;;MESSAGE ADDRESS
261      $MSGLG: .WORD    AMSGLG     ;;MESSAGE LENGTH
262      $ETABLE:      ;;APT ENVIRONMENT TABLE
263      $ENV:    .BYTE    AENV      ;;ENVIRONMENT BYTE
264      $ENVN:   .BYTE    AENVN     ;;ENVIRONMENT MODE BITS
265      $SWREG:  .WORD    ASWREG     ;;APT SWITCH REGISTER
266      $USWR:   .WORD    AUSWR     ;;USER SWITCHES
267      $CPUOP:  .WORD    ACPUOP    ;;CPU TYPE,OPTIONS
268      ;*      BITS 15-11=CPU TYPE
269      ;*      11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
270      ;*      11/70=06,PDQ=07,Q=10
271      ;*      BIT 10=REAL TIME CLOCK
272      ;*      BIT 9=FLOATING POINT PROCESSOR
273      ;*      BIT 8=MEMORY MANAGEMENT
274
275      $ETEND:
276      .MEXIT
277      .SBTTL    APT PARAMETER BLOCK
278
279      ;*****
280      ;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
281      ;*****
282      .$X=.      ;;SAVE CURRENT LOCATION
283      .=24      ;;SET POWER FAIL TO POINT TO START OF PROGRAM
284      200      ;;FOR APT START UP
285      .=44      ;;POINT TO APT INDIRECT ADDRESS PNTR.
286      $APTHDR    ;;POINT TO APT HEADER BLOCK
287      .=$X      ;;RESET LOCATION COUNTER
288
289      ;*****
290      ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC

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.MAIN. MACY11 27(1006) 22-OCT-76 12:41 PAGE 8
 DFKABB.P11 19-NOV-75 07:55 APT PARAMETER BLOCK

SEG 0010

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291 ;INTERFACE SPEC.
292
293 $APTHD:
294 $HIPTS: .WORD 0 ::TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
295 $MBADR: .WORD $MAIL ::ADDRESS OF APT MAILBOX (BITS 0-15)
296 $TSTM: .WORD 2 ::RUN TIM OF LONGEST TEST
297 $PASTM: .WORD 2 ::RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
298 $JNITM: .WORD 0 ::ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
299 000342 000014 $ETEND-$MAIL/2 ::LENGTH MAILBOX-ETABLE(WORDS)
300 000304
301 000302
302
303 000500
304 000500 000000
305 000502 177572
306 000504 177573
307 000506 177574
308 000510 177576
309 000512 000250
310 000514 000252
311 000516
312 000516 177600
313 000520 177602
314 000522 177604
315 000524 177606
316 000526 177610
317 000530 177612
318 000532 177614
319 000534 177616
320
321 000536 177640
322 000540 177642
323 000542 177644
324 000544 177646
325 000546 177650
326 000550 177652
327 000552 177654
328 000554 177656
329
330 000556 172300
331 000560 172302
332 000562 172304
333 000564 172306
334 000566 172310
335 000570 172312
336 000572 172314
337 000574 172316
338
339 000576 172340
340 000600 172342
341 000602 172344
342 000604 172346
343 000606 172350
344 000610 172352
345 000612 172354
346 000614 172356

$STSTM=$TESTN
$ERROR=$FATAL

BUFF: 0
SR0: 177572
SR0H: 177573
SR1: 177574
SR2: 177576
KTVEC: 250
KTSTA: 252
ADRTAB:
UPDR0: 177600
UPDR1: 177602
UPDR2: 177604
UPDR3: 177606
UPDR4: 177610
UPDR5: 177612
UPDR6: 177614
UPDR7: 177616

;USER PAGE DESCRIPTOR REGISTERS

UPAR0: 177640
UPAR1: 177642
UPAR2: 177644
UPAR3: 177646
UPAR4: 177650
UPAR5: 177652
UPAR6: 177654
UPAR7: 177656

;USER PAGE ADDRESS REGISTERS

KPDR0: 172300
KPDR1: 172302
KPDR2: 172304
KPDR3: 172306
KPDR4: 172310
KPDR5: 172312
KPDR6: 172314
KPDR7: 172316

;KERNEL PAGE DESCRIPTOR REGISTERS

KPAR0: 172340
KPAR1: 172342
KPAR2: 172344
KPAR3: 172346
KPAR4: 172350
KPAR5: 172352
KPAR6: 172354
KPAR7: 172356

;KERNEL PAGE ADDRESS REGISTERS

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J01

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SEQ 0011

347 000616 000614
348
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ADREND: .-2

K01

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 DFKABB.P11 19-NOV-75 07:55 APT PARAMETER BLOCK

SEQ 0012

```

351
352 000620 012737 177777 015452 BEGIN: MOV #1,2#PASSPT ;CLEAR THE ITERATION COUNTER
353 000626 005067 177446 RESTRT: CLR $MSGTY
354 000632 012767 015630 177164 MOV #PWRDN,24 ;SET UP THE POWER DOWN VECTOR
355 000640 012767 000340 177160 MOV #340,26 ;SET UP POWER DOWN PRIORITY
356 000646 005067 177432 CLR $TSTNM
357 000652 005067 177424 CLR $ERROR
358 000656 012702 000300 MOV #MSGTY,R2
359
360 ;SPECIAL CASE OF ODD;.EVEN .BYTE AND REGISTER 6
361 000000 HERE=0
362
363 000662 000167 000024 JMP TEST1
364 000666 000000 K1: 0
365 000670 000000 K2: 0
366 000672 000000 K3: 0
367 000674 000000 K4: 0
368 000676 000000 K5: 0
369 000700 000000 K6: 0
370 000702 052525 K7: 052525
371 000704 052400 K10: 052400
372 000706 000000 K11: 0
373 000710 000000 K12: 0
374
375 ;*****
376 ;TEST 1 TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES
377 ;*****
377 000712 005237 000304 000304 TEST1: INC 2#$TESTN ;UPDATE TEST NUMBER
378 000716 022737 000001 000304 CMP #1,2#$TESTN ;SEQUENCE ERROR?
379 000724 001137 BNE TEST2-12 ;BR TO ERROR HALT ON SEQ ERROR
380 000726 005006 CLR %6
381 000730 112667 177044 MOVB (6)+,HERE ;SIX SHOULD INCREMENT BY TWO
382 000734 020627 000002 CMP %6,#2
383 000740 001405 BEQ BR1
384 000742 012737 000001 000302 MOV #1,2#$FATAL ;MOVE TO MAILBOX # ***** 1 *****
385 000750 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
386 000752 000000 HALT ;R6 DID NOT AUTO INCREMENT BY TWO
387 ; TO SCOPE REPLACE HALT W/ 240
388 ; AND REPLACE NEXT INST W/ 764
389
390 000754 012706 001000 BR1: MOV #1000,%6
391 000760 114627 000000 MOVB -(6),#HERE ;SHOULD DECREMENT BY TWO
392 000764 020627 000776 CMP %6,#776
393 000770 001405 BEQ BR2
394 000772 012737 000002 000302 MOV #2,2#$FATAL ;MOVE TO MAILBOX # ***** 2 *****
395 001000 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
396 001002 000000 HALT ;R6 DID NOT AUTO DECREMENT BY 2
397 ; TO SCOPE REPLACE HALT W/ 240
398 ; AND REPLACE NEXT INST W/ 750
399
400 001004 005006 BR2: CLR %6
401 001006 112626 MOVB (6)+,(6)+ ;DOUBLES AUTO INCREMENT OF R6
402 001010 020627 000004 CMP %6,#4
403 001014 001405 BEQ BR3
404 001016 012737 000003 000302 MOV #3,2#$FATAL ;MOVE TO MAILBOX # ***** 3 *****
405 001024 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
406 001026 000000 HALT ;WRONG AUTO INCREMENT OF R6

```

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TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES

SEQ 0013

; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 736

;TEST INCREMENT OF R6

;MOVE TO MAILBOX # ***** 4 *****
;SET MSGTYP TO FATAL ERROR
;WRONG INCREMENT OF R6
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 723

;TEST INCREMENT OF R6

;MOVE TO MAILBOX # ***** 5 *****
;SET MSGTYP TO FATAL ERROR
;WRONG INCREMENT OF R6
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 710

;TEST INCREMENT OF R4

;MOVE TO MAILBOX # ***** 6 *****
;SET MSGTYP TO FATAL ERROR
;WRONG INCREMENT OF R4
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 675

;TEST INCREMENT OF R6

;MOVE TO MAILBOX # ***** 7 *****
;SET MSGTYP TO FATAL ERROR
;WRONG INCREMENT OF R6
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 662

;TEST INCREMENT OF R4

;MOVE TO MAILBOX # ***** 10 *****
;SET MSGTYP TO FATAL ERROR
;WRONG INCREMENT OF R4
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 647

BR3: CLR %6
CLR %4
CMPB (6)+(4)+
CMP %6,%2
BEQ BR4
MOV #4,%5FATAL
INC (R2)
HALT

BR4: CLR %6
CLR %4
CMPB (4)+(6)+
CMP %6,%2
BEQ BR5
MOV #5,%5FATAL
INC (R2)
HALT

BR5: CLR %6
CLR %4
CMPB (6)+(4)+
CMP %4,%1
BEQ BR6
MOV #6,%6FATAL
INC (R2)
HALT

BR6: CLR %6
CLR %4
CMPB (4)+(6)+
CMP %6,%2
BEQ BR7
MOV #7,%7FATAL
INC (R2)
HALT

BR7: CLR %6
CLR %4
CMPB (4)+(6)+
CMP %4,%1
BEQ BR10
MOV #10,%10FATAL
INC (R2)
HALT

407
408
409
410 001030 005006
411 001030 005004
412 001034 122624
413 001036 020627 000002
414 001042 001405
415 001044 012737 000004 000302
416 001052 005212
417 001054 000000
418
419
420
421 001056 005006
422 001060 005004
423 001062 122426
424 001064 020627 000002
425 001070 001405
426 001072 012737 000005 000302
427 001100 005212
428 001102 000000
429
430
431
432 001104 005006
433 001106 005004
434 001110 122624
435 001112 020427 000001
436 001116 001405
437 001120 012737 000006 000302
438 001126 005212
439 001130 000000
440
441
442 001132 005006
443 001134 005004
444 001136 122426
445 001140 020627 000002
446 001144 001405
447 001146 012737 000007 000302
448 001154 005212
449 001156 000000
450
451
452
453 001160 005006
454 001162 005004
455 001164 122426
456 001166 020427 000001
457 001172 001405
458 001174 012737 000010 000302
459 001202 005212
460 001204 000000
461
462

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SEQ 0014

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463
464 001206 012706 001000 BR10: MOV #1000,%6
465 001212 124627 000000 CMPB -(6),%HERE ;TEST DECREMENT OF R6
466 001216 022706 000776 CMP #776,%6
467 001222 001405 BEQ TST2
468 001224 012737 000011 000302 MOV #1,%$FATAL ;MOVE TO MAILBOX # ***** 11 *****
469 001232 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
470 001234 000000 HALT ;WRONG DECREMENT OF R6 OR WRONG STSTNM
471 ; TO SCOPE REPLACE HALT W/ 240
472 ; AND REPLACE NEXT INST W/ 633
473
474 ;*****
475 ;TEST 2 TEST TRANSFER OF .BYTE USING R6
476 001236 005237 000304 TST2: INC %$TESTN ;UPDATE TEST NUMBER
477 001242 022737 000002 000304 CMP #2,%$TESTN ;SEQUENCE ERROR?
478 001250 001137 BNE TST3-12 ;BR TO ERROR HALT ON SEQ ERROR
479 001252 012767 123456 177416 MOV #123456,K5
480 001260 012767 050505 177400 MOV #050505,K1
481 001266 012705 000666 MOV #K1,%5 ;%5=(050505)K1
482 001272 012706 000676 MOV #K5,%6 ;%6=(123456)K5
483 001276 112625 MOVB (6)+,(5)+ ;LOW .BYTE OF R6 TO R5
484 001300 022767 050456 177360 CMP #050456,K1
485 001306 001405 BEQ BR11
486 001310 012737 000012 000302 MOV #12,%$FATAL ;MOVE TO MAILBOX # ***** 12 *****
487 001316 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
488 001320 000000 HALT ;FALSE TRANSFER OF .BYTE
489 ; TO SCOPE REPLACE HALT W/ 240
490 ; AND REPLACE NEXT INST W/ 753
491
492 001322 012767 123456 177346 BR11: MOV #123456,K5
493 001330 012767 050505 177330 MOV #050505,K1
494 001336 012705 000666 MOV #K1,%5 ;%5(050505)K1
495 001342 012706 000700 MOV #K6,%6 ;%6(123456)K5
496 001346 114625 MOVB -(6),(5)+ ;LOW .BYTE OF R6 TO R5 (DECREMENT)
497 001350 026727 177312 050456 CMP K1,%050456
498 001356 001405 BEQ BR12
499 001360 012737 000013 000302 MOV #13,%$FATAL ;MOVE TO MAILBOX # ***** 13 *****
500 001366 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
501 001370 000000 HALT ;FALSE R6 .BYTE TRANSFER
502 ; TO SCOPE REPLACE HALT W/ 240
503 ; AND REPLACE NEXT INST W/ 727
504
505 001372 012767 123456 177266 BR12: MOV #123456,K1
506 001400 012767 050505 177270 MOV #050505,K5
507 001406 012705 000666 MOV #K1,%5 ;(123456)
508 001412 012706 000676 MOV #K5,%6 ;(050505)
509 001416 112526 MOVB (5)+,(6)+ ;LOW OF R5 TO LOW OF R6
510 001420 022767 050456 177250 CMP #050456,K5
511 001426 001405 BEQ BR13
512 001430 012737 000014 000302 MOV #14,%$FATAL ;MOVE TO MAILBOX # ***** 14 *****
513 001436 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
514 001440 000000 HALT ;FALSE R6 .BYTE TRANSFER
515 ; TO SCOPE REPLACE HALT W/ 240
516 ; AND REPLACE NEXT INST W/ 703
517
518 001442 012767 123456 177216 BR13: MOV #123456,K1

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SEQ 0015

```

519 001450 012767 050505 177220      MOV      #050505,K5
520 001456 012705 000667             MOV      #K1+1,%5      ;123456
521 001462 012706 000676             MOV      #K5,%6        ;050505
522 001466 112526             MOV      (5)+,(6)+      ;HIGH OF R5 TO LOW OF R6
523 001470 026727 177202 050647      CMP      K5,#050647
524 001476 001405             BEQ      BR14
525 001500 012737 000015 000302      MOV      #15,#$FATAL      ;MOVE TO MAILBOX # ***** 15 *****
526 001506 005212             INC      (R2)      ;SET MSGTYP TO FATAL ERROR
527 001510 000000             HALT      ;FALSE R6 .BYTE TRANSFER
528                                     ; TO SCOPE REPLACE HALT W/ 240
529                                     ; AND REPLACE NEXT INST W/ 657
530
531 001512 012767 123456 177146 BR14:  MOV      #123456,K1
532 001520 012767 050505 177150      MOV      #050505,K5
533 001526 012705 000667             MOV      #K1+1,%5      ;R5-123456-ODD ADDRESS
534 001532 012706 000676             MOV      #K5,%6        ;R6-050505--.EVEN ADDRESS
535 001536 112625             MOV      (6)+,(5)+      ;LOW OF R6 TO HIGH OF R5
536 001540 022767 042456 177120      CMP      #042456,K1
537 001546 001405             BEQ      TST3
538 001550 012737 000016 000302      MOV      #16,#$FATAL      ;MOVE TO MAILBOX # ***** 16 *****
539 001556 005212             INC      (R2)      ;SET MSGTYP TO FATAL ERROR
540 001560 000000             HALT      ;FAILED LOW OF 6 TO HIGH OF 5 OR WRONG STSTNM
541                                     ; TO SCOPE REPLACE HALT W/ 240
542                                     ; AND REPLACE NEXT INST W/ 633
543
544 ;*****
545 ;TEST 3 TEST BYTE OPERATION WITH SEQUENTIAL ODD-EVEN ADDRESS
546 ;*****
547 001562 005237 000304             TST3:  INC      #3,$TESTN      ;UPDATE TEST NUMBER
548 001566 022737 000003 000304      CMP      #3,$TESTN      ;SEQUENCE ERROR?
549 001574 001103             BNE      TST4-12 ;BR TO ERROR HALT ON SEQ ERROR
550 001576 126767 177100 177077      CMPB     K7,K7+1      ;SAME .WORD LOW TO HIGH
551 001604 001405             BEQ      BR15
552 001606 012737 000017 000302      MOV      #17,$$FATAL      ;MOVE TO MAILBOX # ***** 17 *****
553 001614 005212             INC      (R2)      ;SET MSGTYP TO FATAL ERROR
554 001616 000000             HALT      ;SHOULD COMPARE LOW TO HIGH
555                                     ; TO SCOPE REPLACE HALT W/ 240
556                                     ; AND REPLACE NEXT INST W/ 766
557
558 001620 126767 177057 177054 BR15:  CMPB     K7+1,K7      ;COMPARE ODD TO .EVEN SAME .WORD
559 001626 001405             BEQ      BR16
560 001630 012737 000020 000302      MOV      #20,$$FATAL      ;MOVE TO MAILBOX # ***** 20 *****
561 001636 005212             INC      (R2)      ;SET MSGTYP TO FATAL ERROR
562 001640 000000             HALT      ;ODD TO .EVEN .BYTE FAILURE
563                                     ; TO SCOPE REPLACE HALT W/ 240
564                                     ; AND REPLACE NEXT INST W/ 755
565
566 001642 126767 177037 177032 BR16:  CMPB     K10+1,K7      ;SEQUENTIAL .BYTES
567 001650 001405             BEQ      BR17
568 001652 012737 000021 000302      MOV      #21,$$FATAL      ;MOVE TO MAILBOX # ***** 21 *****
569 001660 005212             INC      (R2)      ;SET MSGTYP TO FATAL ERROR
570 001662 000000             HALT      ;ODD TO .EVEN FAILED
571                                     ; TO SCOPE REPLACE HALT W/ 240
572                                     ; AND REPLACE NEXT INST W/ 744
573
574 001664 126767 177014 177006 BR17:  CMPB     K10,K6
575 001672 001405             BEQ      BR20

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TEST BYTE OPERATION WITH SEQUENTIAL ODD-EVEN ADDRESS

SEQ 0016

600	001674	012737	000022	000302	MOV	#22, 0#SFATAL	: MOVE TO MAILBOX # ***** 22 *****
601	001702	005212			INC	(R2)	: SET MSGTYP TO FATAL ERROR
602	001704	000000			HALT		: EVEN TO EVEN FAILED
603							: TO SCOPE REPLACE HALT W/ 240
604							: AND REPLACE NEXT INST W/ 733
605	001706	126767	176771	176771	BR20:	CMPB	
606	001714	001405			BEQ	K7+1, K10+1	
607	001716	012737	000023	000302	MOV	BR21	
608	001724	005212			INC	#23, 0#SFATAL	: MOVE TO MAILBOX # ***** 23 *****
609	001726	000000			HALT	(R2)	: SET MSGTYP TO FATAL ERROR
610							: ODD TO ODD FAILED
611							: TO SCOPE REPLACE HALT W/ 240
612							: AND REPLACE NEXT INST W/ 722
613	001730	126767	176750	176747	BR21:	CMPB	
614	001736	001005			BNE	K10, K10+1	
615	001740	012737	000024	000302	MOV	BR22	
616	001746	005212			INC	#24, 0#SFATAL	: MOVE TO MAILBOX # ***** 24 *****
617	001750	000000			HALT	(R2)	: SET MSGTYP TO FATAL ERROR
618							: LOW TO HIGH IN SAME WORD FAILED
619							: TO SCOPE REPLACE HALT W/ 240
620							: AND REPLACE NEXT INST W/ 711
621	001752	126767	176727	176725	BR22:	CMPB	
622	001760	001405			BEQ	K10+1, K10+1	
623	001762	012737	000025	000302	MOV	BR23	
624	001770	005212			INC	#25, 0#SFATAL	: MOVE TO MAILBOX # ***** 25 *****
625	001772	000000			HALT	(R2)	: SET MSGTYP TO FATAL ERROR
626							: HIGH TO LOW IN SAME WORD FAILED
627							: TO SCOPE REPLACE HALT W/ 240
628							: AND REPLACE NEXT INST W/ 700
629	001774	126767	176704	176701	BR23:	CMPB	
630	002002	001005			BNE	K10, K7+1	
631	002004	012737	000026	000302	MOV	TST4	
632	002012	005212			INC	#26, 0#SFATAL	: MOVE TO MAILBOX # ***** 26 *****
633	002014	000000			HALT	(R2)	: SET MSGTYP TO FATAL ERROR
634							: EVEN TO ODD FAILED, OR WRONG STSTNM
635							: TO SCOPE REPLACE HALT W/ 240
636							: AND REPLACE NEXT INST W/ 667
637							
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SEG 0017

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631 002066 000000      HALT      :V NOT CLEAR
632                                     : TO SCOPE REPLACE HALT W/ 240
633                                     : AND REPLACE NEXT INST W/ 760
634 002070                                     BR34:
635 002070 001005      SNE      BR35
636 002072 012737 000031 000302  MOV      #31,0$FATAL
637 002100 005212      INC      (R2)
638 002102 000000      HALT      :MOVE TO MAILBOX # ***** 31 *****
639                                     :SET MSGTYP TO FATAL ERROR
640                                     :Z NOT CLEAR
641                                     : TO SCOPE REPLACE HALT W/ 240
642                                     : AND REPLACE NEXT INST W/ 752
643 002104 100005      BPL      BR35
644 002106 012737 000032 000302  MOV      #32,0$FATAL
645 002114 005212      INC      (R2)
646 002116 000000      HALT      :MOVE TO MAILBOX # ***** 32 *****
647                                     :SET MSGTYP TO FATAL ERROR
648                                     :N NOT CLEAR
649 002120 000257      CCC      BR36
650 002122 052767 000017 175646  BIS      #17,STATUS
651                                     :CLEAR CONDITION CODES
652                                     :SET STATUS TO ONES
653 002130 103405      BCS      BR37
654 002132 012737 000033 000302  MOV      #33,0$FATAL
655 002140 005212      INC      (R2)
656 002142 000000      HALT      :MOVE TO MAILBOX # ***** 33 *****
657                                     :SET MSGTYP TO FATAL ERROR
658                                     :C NOT SET
659 002144 102405      BVS      BR40
660 002146 012737 000034 000302  MOV      #34,0$FATAL
661 002154 005212      INC      (R2)
662 002156 000000      HALT      :MOVE TO MAILBOX # ***** 34 *****
663                                     :SET MSGTYP TO FATAL ERROR
664                                     :V NOT SET
665 002160 001405      BEQ      BR41
666 002162 012737 000035 000302  MOV      #35,0$FATAL
667 002170 005212      INC      (R2)
668 002172 000000      HALT      :MOVE TO MAILBOX # ***** 35 *****
669                                     :SET MSGTYP TO FATAL ERROR
670                                     :Z NOT SET
671 002174 100405      BMI      TST5
672 002176 012737 000036 000302  MOV      #36,0$FATAL
673 002204 005212      INC      (R2)
674 002206 000000      HALT      :MOVE TO MAILBOX # ***** 36 *****
675                                     :SET MSGTYP TO FATAL ERROR
676                                     :N NOT SET, OR WRONG STSTNM
677                                     : TO SCOPE REPLACE HALT W/ 240
678                                     : AND REPLACE NEXT INST W/ 710
679                                     :*****
680                                     :TEST 5 TEST THAT A TRAP OCCURS ON A RESERVED INSTRUCTION
681                                     :*****
682 002210 005237 000304      TST5: INC      0$STESTN
683 002214 022737 000005 000304  CMP      #5,0$STESTN
684 002222 001006      BNE      RETA
685 002224 012706 000500      MOV      #BUFF,SP
686 002230 012767 002252 175552  MOV      #RETA,RTRAP
687 002236 000007      TRAPA
  
```

:RESERVED INSTRUCTION, SHOULD TRAP

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TEST THAT A TRAP OCCURS ON A RESERVED INSTRUCTION

SEQ 0018

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687 002240 RETA: MOV #37,0#SFATAL ;MOVE TO MAILBOX # ***** 37 *****
688 002240 012737 000037 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
689 002246 005212 ;RESERVE INSTRUCTION DIDN'T TRAP,OR WRONG STSTNM
690 002250 000000 HALT ; TO SCOPE REPLACE HALT W/ 240
691 ; AND REPLACE NEXT INST W/ 764
692
693 002252 RETAH:
694 ;*****
695 ;TEST 6 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
696 ;*****
697 002252 005237 000304 TST6: INC 0#STESTN ;UPDATE TEST NUMBER
698 002256 022737 000006 000304 CMP #6,0#STESTN ;SEQUENCE ERROR?
699 002264 001011 BNE TST7-12 ;BR TO ERROR HALT ON SEQ ERROR
700 002266 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
701 002272 012767 002302 175510 MOV #RETB,RTRAP ;RETURN POINTER
702 002300 000007 TRAPA ;RESERVED INSTRUCTION
703 002302 020627 000474 RETB: CMP SP,#BUFF-4 ;TEST DECREMENT OF SP
704 002306 001405 BEQ TST7
705 002310 012737 000040 000302 MOV #40,0#SFATAL ;MOVE TO MAILBOX # ***** 40 *****
706 002316 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
707 002320 000000 HALT ;NOT DECREMENTED TWO WORDS,OR WRONG STSTNM
708 ; TO SCOPE REPLACE HALT W/ 240
709 ; AND REPLACE NEXT INST W/ 764
710 ;*****
711 ;TEST 7 TEST THAT PROPER P.C. IS SAVE
712 ;*****
713 002322 005237 000304 TST7: INC 0#STESTN ;UPDATE TEST NUMBER
714 002326 022737 000007 000304 CMP #7,0#STESTN ;SEQUENCE ERROR?
715 002334 001012 BNE TST10-12 ;BR TO ERROR HALT ON SEQ ERROR
716 002336 012706 000500 MOV #BUFF,SP ;STACK POINTER SETUP
717 002342 012767 002352 175440 MOV #RETC,RTRAP ;RETURN FROM TRAP POINTER
718 002350 000007 INSTC: TRAPA ;TRAP ON THIS INSTRUCTION
719 002352 022767 002352 176114 RETC: CMP #,BUFF-4 ;CHECK FOR INCREMENTED P.C.
720 002360 001405 BEQ TST10
721 002362 012737 000341 000302 MOV #41,0#SFATAL ;MOVE TO MAILBOX # ***** 41 *****
722 002370 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
723 002372 000000 HALT ;INCORRECT P.C.,OR WRONG STSTNM
724 ; TO SCOPE REPLACE HALT W/ 240
725 ; AND REPLACE NEXT INST W/ 760
726 ;*****
727 ;TEST 10 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
728 ;*****
729 002374 005237 000304 TST10: INC 0#STESTN ;UPDATE TEST NUMBER
730 002400 022737 000010 000304 CMP #10,0#STESTN ;SEQUENCE ERROR?
731 002406 001040 BNE TST11-12 ;BR TO ERROR HALT ON SEQ ERROR
732 002410 012706 000500 MOV #BUFF,SP ;SET UP
733 002414 012767 002432 175366 MOV #RETD,RTRAP ;SET UP
734 002422 005067 175350 CLR CC ;CLEAR CC AND PRIORITY
735 002426 000257 CCC
736 002430 000007 TRAPA ;TRAP
737 002432 026727 176040 000000 RETC: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
738 002440 001405 BEQ IS
739 002442 012737 000042 000302 MOV #42,0#SFATAL ;MOVE TO MAILBOX # ***** 42 *****
740 002450 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
741 002452 000000 HALT ;INCORRECT STATUS
742 ; TO SCOPE REPLACE HALT W/ 240

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E02

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

SEQ 0019

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743      002454 012706 000500      15:  MOV      #BUFF,SP      ; AND REPLACE NEXT INST W/ 755
744      002460 012767 002500 175322  MOV      #RETE,RTRAP    ; SET JP
745      002466 012767 000357 175302  MOV      #357,CC      ; SET UP
746      002474 000277      SCC      ; SET PRIORITY
747      002476 000007      TRAPA   ; SET CC
748      002500 026727 175772 000357 RETE:  CMP      BUFF-2,#357    ; TRAP
749      002506 001405      BEQ      TS*11      ; COMPARES STATUS ON STACK
750      002510 012737 000043 000302  MOV      #43,#SFATAL    ; MOVE TO MAILBOX # ***** 43 *****
751      002516 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
752      002520 000000      HALT      ; INCORRECT STATUS ON STACK, OR WRONG STSTNM
753      ; AND REPLACE NEXT INST W/ 732
754      ;*****
755      ;TEST 11      TEST THAT "NEW" STATUS IS CORRECT
756      ;*****
757      002522 005237 000304      15:  INC      #STESTN      ; UPDATE TEST NUMBER
758      002526 022737 000011 000304  CMP      #11,#STESTN    ; SEQUENCE ERROR?
759      002534 001121      BNE      STP      ; BR TO ERROR HALT ON SEQ ERROR
760      002536 012706 000500      MOV      #BUFF,SP
761      002542 012767 002556 175240  MOV      #RETE,RTRAP
762      002550 005067 175236      CLR      RTRAP+2      ; CLEAR FUTURE PRIORITY AND CC
763      002554 000007      TRAPA   ; TEST FOR "C" CLEARED
764      002556 100005      RETF:   BPL      15
765      002560 012737 000044 000302  MOV      #44,#SFATAL    ; MOVE TO MAILBOX # ***** 44 *****
766      002566 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
767      002570 000000      HALT      ; N NOT CLEARED
768      ; TO SCOPE REPLACE HALT W/ 240
769      ; AND REPLACE NEXT INST W/ 761
770      002572 001005      15:      BNE      25
771      002574 012737 000045 000302  MOV      #45,#SFATAL    ; MOVE TO MAILBOX # ***** 45 *****
772      002602 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
773      002604 000000      HALT      ; Z NOT CLEARED
774      ; TO SCOPE REPLACE HALT W/ 240
775      ; AND REPLACE NEXT INST W/ 753
776      002606 102005      25:      BVC      35
777      002610 012737 000046 000302  MOV      #46,#SFATAL    ; MOVE TO MAILBOX # ***** 46 *****
778      002616 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
779      002620 000000      HALT      ; V NOT CLEARED
780      ; TO SCOPE REPLACE HALT W/ 240
781      ; AND REPLACE NEXT INST W/ 745
782      002622 103005      35:      BCC      45
783      002624 012737 000047 000302  MOV      #47,#SFATAL    ; MOVE TO MAILBOX # ***** 47 *****
784      002632 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
785      002634 000000      HALT      ; C NOT CLEARED
786      ; TO SCOPE REPLACE HALT W/ 240
787      ; AND REPLACE NEXT INST W/ 737
788      002636 032767 000340 175132 45:  BIT      #340,CC      ; TEST PRIORITY
789      002644 001405      BEQ      55
790      002646 012737 000050 000302  MOV      #50,#SFATAL    ; MOVE TO MAILBOX # ***** 50 *****
791      002654 005212      INC      (R2)      ; SET MSGTYP TO FATAL ERROR
792      002656 000000      HALT      ; PRIORITY NOT ZERO

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F02

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0020

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799      : TO SCOPE REPLACE HALT W/ 240
800      : AND REPLACE NEXT INST W/ 726
801 002660 012706 000500 55: MOV #BUFF,SP
802 002664 012767 002702 175116 MOV #RETG, RTRAP
803 002672 012767 000357 175112 MOV #357, RTRAP+2
804 002700 000007 TRAPA ;SET NEW "CC" AND PRIORITY
805 002702 RETG: ;TRAP HERE
806 002702 100405 BMI 1$
807 002704 012737 000051 000302 MOV #51, @#$FATAL ;MOVE TO MAILBOX # ***** 51 *****
808 002712 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
809 002714 000000 HALT ;N NOT SET
810      : TO SCOPE REPLACE HALT W/ 240
811      : AND REPLACE NEXT INST W/ 707
812 002716 1$:
813 002716 001405 BEQ 2$
814 002720 012737 000052 000302 MOV #52, @#$FATAL ;MOVE TO MAILBOX # ***** 52 *****
815 002726 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
816 002730 000000 HALT ;Z NOT SET
817      : TO SCOPE REPLACE HALT W/ 240
818      : AND REPLACE NEXT INST W/ 701
819 002732 2$:
820 002732 102405 BVS 3$
821 002734 012737 000053 000302 MOV #53, @#$FATAL ;MOVE TO MAILBOX # ***** 53 *****
822 002742 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
823 002744 000000 HALT ;V NOT SET
824      : TO SCOPE REPLACE HALT W/ 240
825      : AND REPLACE NEXT INST W/ 673
826 002746 3$:
827 002746 103405 BCS 4$
828 002750 012737 000054 000302 MOV #54, @#$FATAL ;MOVE TO MAILBOX # ***** 54 *****
829 002756 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
830 002760 000000 HALT ;C NOT SET
831      : TO SCOPE REPLACE HALT W/ 240
832      : AND REPLACE NEXT INST W/ 665
833 002762 016706 175010 4$: MOV CC, SP
834 002766 042706 000017 BIC #17, SP
835 002772 022706 000340 CMP #340, SP
836 002776 001405 BEQ STPPA
837 003000 STPP:
838 003000 012737 000055 000302 MOV #55, @#$FATAL ;MOVE TO MAILBOX # ***** 55 *****
839 003006 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
840 003010 000000 HALT ;PRIORITY WAS CHANGED, OR WRONG STSTNM
841      : TO SCOPE REPLACE HALT W/ 240
842      : AND REPLACE NEXT INST W/ 651
843 003012 012767 000012 174770 STPPA: MOV #12, 10
844 003020 005067 174766 CLR 12
845      :*****
846      :TEST 12 TEST THAT A TRAP OCCURS FOR A "TRAP" INSTRUCTION
847      :*****
848 003024 005237 000304 ST12: INC @#$TESTN ;UPDATE TEST NUMBER
849 003030 022737 000012 000304 CMP #12, @#$TESTN ;SEQUENCE ERROR?
850 003036 001013 BNE TST13-12 ;BR TO ERROR HALT ON SEQ ERROR
851 003040 012767 000012 174742 MOV #12, 10
852 003046 005067 174740 CLR 12
853 003052 012706 000500 MOV #BUFF, SP ;STACK POINTER SETUP
854 003056 012767 003100 174750 MOV #RETAL, RTRAP1 ;RETURN LOCATION

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TEST THAT A TRAP OCCURS FOR A "TRAP" INSTRUCTION

SEQ 0021

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855 003064 104400          TRAP          ;RESERVED INSTRUCTION, SHOULD TRAP
856 003066 012737 000056 000302  MOV      #56,2#SFATAL ;MOVE TO MAILBOX # ***** 56 *****
857 003074 005212          INC      (R2)  ;SET MSGTYP TO FATAL ERROR
858 003076 000000          HALT          ;TRAP DIDN'T TRAP, OR WRONG $TSTNM
859                                     ; TO SCOPE REPLACE HALT W/ 240
860                                     ; AND REPLACE NEXT INST W/ 757
861 003100
862
863 RETA1:
864 ;*****
865 ;TEST 13      TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
866 ;*****
867 TST13: INC      2#TESTN      ;UPDATE TEST NUMBER
868      CMP      #13,2#TESTN  ;SEQUENCE ERROR?
869      BNE      TST14-12     ;BR TO ERROR HALT ON SEQ ERROR
870      MOV      #BUFF,SP     ;STACK POINTER SETUP
871      MOV      #RETB1,RTRAP1 ;RETURN POINTER
872      TRAP          ;RESERVED INSTRUCTION
873      CMP      SP,#BUFF-4    ;TEST DECREMENT OF SP
874      BEQ      TST14
875      MOV      #57,2#SFATAL ;MOVE TO MAILBOX # ***** 57 *****
876      INC      (R2)         ;SET MSGTYP TO FATAL ERROR
877      HALT          ;NOT DECREMENTED TWO WORDS, OR WRONG $TSTNM
878                                     ; TO SCOPE REPLACE HALT W/ 240
879                                     ; AND REPLACE NEXT INST W/ 761
880 ;*****
881 ;TEST 14      TEST THAT PROPER P.C. IS SAVED
882 ;*****
883 TST14: INC      2#TESTN      ;UPDATE TEST NUMBER
884      CMP      #14,2#TESTN  ;SEQUENCE ERROR?
885      BNE      TST15-12     ;BR TO ERROR HALT ON SEQ ERROR
886      MOV      #BUFF,SP     ;STACK POINTER SETUP
887      MOV      #RETC1,RTRAP1 ;RETURN FROM TRAP POINTER
888      TRAP          ;TRAP ON THIS INSTRUCTION
889      CMP      #,BUFF-4     ;CHECK INCREMENTED P.C.
890      BEQ      TST15
891      MOV      #60,2#SFATAL ;MOVE TO MAILBOX # ***** 60 *****
892      INC      (R2)         ;SET MSGTYP TO FATAL ERROR
893      HALT          ;INCORRECT P.C. OR WRONG $TSTNM
894                                     ; TO SCOPE REPLACE HALT W/ 240
895                                     ; AND REPLACE NEXT INST W/ 760
896 ;*****
897 ;TEST 15      TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
898 ;*****
899 TST15: INC      2#TESTN      ;UPDATE TEST NUMBER
900      CMP      #15,2#TESTN  ;SEQUENCE ERROR?
901      BNE      TST16-12     ;BR TO ERROR HALT ON SEQ ERROR
902      MOV      #BUFF,SP     ;SET UP
903      MOV      #RETD1,RTRAP1 ;SET UP
904      CLR      CC           ;CLEAR CC AND PRIORITY
905      CCC          ;TRAP
906      TRAP          ;TEST THAT OLD STATUS WENT TO STACK
907      CMP      BUFF-2,#0
908      BEQ      15
909      MOV      #61,2#SFATAL ;MOVE TO MAILBOX # ***** 61 *****
910      INC      (R2)         ;SET MSGTYP TO FATAL ERROR
911      HALT          ;INCORRECT STATUS
912                                     ; TO SCOPE REPLACE HALT W/ 240

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

SEQ 0022

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

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0023

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967      ; AND REPLACE NEXT INST W/ 726
968 003504 012706 000500 55: MOV #BUFF, SP
969 003510 012767 003526 174316 MOV #RETG1, RTRAP1
970 003516 012767 000357 174312 MOV #357, RTRAP1+2
971 003524 104400 TRAP ; SET NEW "CC" AND PRIORITY
972 003526 RETG1: ; TRAP HERE
973 003526 100405 BMI 15
974 003530 012737 000070 000302 MOV #70, @#SFATAL ; MOVE TO MAILBOX # ***** 70 *****
975 003536 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
976 003540 000000 HALT ; N NOT SET
977 ; TO SCOPE REPLACE HALT W/ 240
978 ; AND REPLACE NEXT INST W/ 707
979 003542 15:
980 003542 001405 BEQ 25
981 003544 012737 000071 000302 MOV #71, @#SFATAL ; MOVE TO MAILBOX # ***** 71 *****
982 003552 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
983 003554 000000 HALT ; Z NOT SET
984 ; TO SCOPE REPLACE HALT W/ 240
985 ; AND REPLACE NEXT INST W/ 701
986 003556 25:
987 003556 102405 BVS 35
988 003560 012737 000072 000302 MOV #72, @#SFATAL ; MOVE TO MAILBOX # ***** 72 *****
989 003566 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
990 003570 000000 HALT ; V NOT SET
991 ; TO SCOPE REPLACE HALT W/ 240
992 ; AND REPLACE NEXT INST W/ 673
993 003572 35:
994 003572 103405 BCS 45
995 003574 012737 000073 000302 MOV #73, @#SFATAL ; MOVE TO MAILBOX # ***** 73 *****
996 003602 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
997 003604 000000 HALT ; C NOT SET
998 ; TO SCOPE REPLACE HALT W/ 240
999 ; AND REPLACE NEXT INST W/ 665
1000 003606 016706 174164 45: MOV CC, SP
1001 003612 042706 000017 BIC #17, SP
1002 003616 022706 000340 CMP #340, SP
1003 003622 001405 BEQ TST17
1004 003624 012737 000074 000302 MOV #74, @#SFATAL ; MOVE TO MAILBOX # ***** 74 *****
1005 003632 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1006 003634 000000 HALT ; PRIORITY WAS CHANGED, OR WRONG $STNM
1007 ; TO SCOPE REPLACE HALT W/ 240
1008 ; AND REPLACE NEXT INST W/ 651
1009 ; *****
1010 ; TEST 17 TEST THAT ALL COMBINATION OF "TRAP" WILL CAUSE A TRAP
1011 ; *****
1012 003636 005237 000304 TST17: INC @#STESTN ; UPDATE TEST NUMBER
1013 003642 022737 000017 000304 CMP #17, @#STESTN ; SEQUENCE ERROR?
1014 003650 001011 BNE BR45 ; BR TO ERROR HALT ON SEQ ERROR
1015 003652 012767 104400 000012 MOV #TRAP, RB1 ; INITIALIZE BASE TRAP INSTRUCTION
1016 003660 012767 003706 174146 MOV #RA1, 34 ; RETURN FROM TRAP TO RA1
1017 003666 012706 000500 RC1: MOV #BUFF, SP ; SET UP STACK POINTER
1018 003672 104400 RB1: TRAP ; TRAP INST WILL BE MODIFIED TO TRAP+377
1019 003674 BR45:
1020 003674 012737 000075 000302 MOV #75, @#SFATAL ; MOVE TO MAILBOX # ***** 75 *****
1021 003702 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1022 003704 000000 HALT ; PREVIOUS INST FAILED TO TRAP, OR WRONG $STNM

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

SEQ 0024

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1023                                     : TO SCOPE REPLACE HALT W/ 240
1024                                     : AND REPLACE NEXT INST W/ 761
1025 003706 005267 177760 RA1: INC RB1 ; INCREMENT TRAP INSTRUCTION
1026 003712 022767 104777 177752    CMP #104777,RB1 ; TRAP+377 TO UPPER LIMIT
1027 003720 103362          BHIS R01 ; HAVE WE TESTED ALL
1028 003722 012767 000036 174104    MOV #36,34
1029 003730 005067 174102          CLR 36
1030 ;*****
1031 ;TEST 20 TEST THAT A TRAP OCCURES ON AN "IOT" INSTRUCTION
1032 ;*****
1033 003734 005237 000304 TST20: INC @#STESTN ; UPDATE TEST NUMBER
1034 003740 022737 000020 000304    CMP #20,@#STESTN ; SEQUENCE ERROR?
1035 003746 001006          BNE TST21-12 ; BR TO ERROR HALT ON SEQ ERROR
1036 003750 012706 000500    MOV #BUFF,SP ; STACK POINTER SETUP
1037 003754 012767 003776 174036    MOV #RETA2,RTRAP2 ; RETURN LOCATION
1038 003762 000004          IOT ; RESERVE INSTRUCTION, SHOULD TRAP
1039 003764 012737 000076 000302    MOV #76,@#SFATAL ; MOVE TO MAILBOX # ***** 76 *****
1040 003772 005212          INC (R2) ; SET MSGTYP TO FATAL ERROR
1041 003774 000000          HALT ; IOT DIDN'T TRAP, OR WRONG $STNM
1042                                     : TO SCOPE REPLACE HALT W/ 240
1043                                     : AND REPLACE NEXT INST W/ 764
1044 003776 RETA2:
1045 ;*****
1046 ;TEST 21 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1047 ;*****
1048 003776 005237 000304 TST21: INC @#STESTN ; UPDATE TEST NUMBER
1049 004002 022737 000021 000304    CMP #21,@#STESTN ; SEQUENCE ERROR?
1050 004010 001011          BNE TST22-12 ; BR TO ERROR HALT ON SEQ ERROR
1051 004012 012706 000500    MOV #BUFF,SP ; STACK POINTER SETUP
1052 004016 012767 004026 173774    MOV #RETB2,RTRAP2 ; RETURN POINTER
1053 004024 000004          IOT ; RESERVED INSTRUCTION
1054 004026 020627 000474 RETB2: CMP SP,#BUFF-4 ; TEST DECREMENT OF SP
1055 004032 001405          BEQ TST22
1056 004034 012737 000077 000302    MOV #77,@#SFATAL ; MOVE TO MAILBOX # ***** 77 *****
1057 004042 005212          INC (R2) ; SET MSGTYP TO FATAL ERROR
1058 004044 000000          HALT ; NOT DECREMENTED TWO WORDS, OR WRONG $STNM
1059                                     : TO SCOPE REPLACE HALT W/ 240
1060                                     : AND REPLACE NEXT INST W/ 761
1061 ;*****
1062 ;TEST 22 TEST THAT PROPER P.C. IS SAVED
1063 ;*****
1064 004046 005237 000304 TST22: INC @#STESTN ; UPDATE TEST NUMBER
1065 004052 022737 000022 000304    CMP #22,@#STESTN ; SEQUENCE ERROR?
1066 004060 001012          BNE TST23-12 ; BR TO ERROR HALT ON SEQ ERROR
1067 004062 012706 000500    MOV #BUFF,SP ; STACK POINTER SETUP
1068 004066 012767 004076 173724    MOV #RETC2,RTRAP2 ; RETURN FROM TRAP POINTER
1069 004074 000004          IOT ; TRAP ON THIS INSTRUCTION
1070 004076 022767 004076 174370 RETC2: CMP #,BUFF-4 ; CHECK FOR INCREMENTED P.C.
1071 004104 001405          BEQ TST23
1072 004106 012737 000100 000302    MOV #100,@#SFATAL ; MOVE TO MAILBOX # ***** 100 *****
1073 004114 005212          INC (R2) ; SET MSGTYP TO FATAL ERROR
1074 004116 000000          HALT ; INCORRECT P.C. OR WRONG $STNM
1075                                     : TO SCOPE REPLACE HALT W/ 240
1076                                     : AND REPLACE NEXT INST W/ 760
1077 ;*****
1078 ;TEST 23 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK

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SEQ 0025

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

*****
TST23: INC 2*STESTN ;UPDATE TEST NUMBER
      CMP 23,2*STESTN ;SEQUENCE ERROR?
      BNE TST24-12 ;BR TO ERROR HALT ON SEQ ERROR
      MOV #BUFF,SP ;SET UP
      MOV #RETD2,RTRAP2 ;SET UP
      CLR CC ;CLEAR CC AND PRIORITY
      IOT ;TRAP
      RETD2: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
      BEQ 15
      MOV #101,2*SFATAL ;MOVE TO MAILBOX # ***** 101 *****
      INC (R2) ;SET MSGTYP TO FATAL ERROR
      HALT ;INCORRECT STATUS
      ; TO SCOPE REPLACE HALT W/ 240
      ; AND REPLACE NEXT INST W/ 755
15: MOV #BUFF,SP ;SET UP
      MOV #RETE2,RTRAP2 ;SET UP
      MOV #357,CC ;SET PRIORITY
      SCC ;SET CC
      IOT ;TRAP
      RETE2: CMP BUFF-2,#357 ;COMPARES STATUS ON STACK
      BEQ TST24
      MOV #102,2*SFATAL ;MOVE TO MAILBOX # ***** 102 *****
      INC (R2) ;SET MSGTYP TO FATAL ERROR
      HALT ;INCORRECT STATUS ON STACK, OR WRONG $STNM
      ; TO SCOPE REPLACE HALT W/ 240
      ; AND REPLACE NEXT INST W/ 732
*****
;TEST 24 TEST THAT "NEW" STATUS IS CORRECT
*****
TST24: INC 2*STESTN ;UPDATE TEST NUMBER
      CMP 24,2*STESTN ;SEQUENCE ERROR?
      BNE BR46 ;BR TO ERROR HALT ON SEQ ERROR
      MOV #BUFF,SP
      MOV #RETF2,RTRAP2
      CLR RTRAP2+2 ;CLEAR FUTURE PRIORITY AND CC
      IOT ;TEST FOR "C" CLEARED
      RETF2: BPL 15
      MOV #103,2*SFATAL ;MOVE TO MAILBOX # ***** 103 *****
      INC (R2) ;SET MSGTYP TO FATAL ERROR
      HALT ;N NOT CLEARED
      ; TO SCOPE REPLACE HALT W/ 240
      ; AND REPLACE NEXT INST W/ 761
15: BNE 25
      MOV #104,2*SFATAL ;MOVE TO MAILBOX # ***** 104 *****
      INC (R2) ;SET MSGTYP TO FATAL ERROR
      HALT ;Z NOT CLEARED
      ; TO SCOPE REPLACE HALT W/ 240
      ; AND REPLACE NEXT INST W/ 753
25: BVC 35
      MOV #105,2*SFATAL ;MOVE TO MAILBOX # ***** 105 *****
      INC (R2) ;SET MSGTYP TO FATAL ERROR
  
```

L02

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 DFkABB.P11 19-NOV-75 07:55 T24 TEST THAT "NEW" STATUS IS CORRECT

SEQ 0026

1135	004344	000000			HALT				;V NOT CLEARED
1136									; TO SCOPE REPLACE HALT W/ 240
1137									; AND REPLACE NEXT INST W/ 745
1138	004346				3\$: BCC	4\$			
1139	004346	103005			MOV	#106,2#\$FATAL			;MOVE TO MAILBOX # ***** 106 *****
1140	004350	012737	000106	000302	INC	(R2)			;SET MSGTYP TO FATAL ERROR
1141	004356	005212			HALT				;C NOT CLEARED
1142	004360	000000							; TO SCOPE REPLACE HALT W/ 240
1143									; AND REPLACE NEXT INST W/ 737
1144									;TEST PRIORITY
1145	004362	032767	000340	173406	4\$: BIT	#340,CC			
1146	004370	001405			BEG	5\$			
1147	004372	012737	000107	000302	MOV	#107,2#\$FATAL			;MOVE TO MAILBOX # ***** 107 *****
1148	004400	005212			INC	(R2)			;SET MSGTYP TO FATAL ERROR
1149	004402	000000			HALT				;PRIORITY NOT ZERO
1150									; TO SCOPE REPLACE HALT W/ 240
1151									; AND REPLACE NEXT INST W/ 726
1152	004404	012706	000500		5\$: MOV	#BUFF,SP			
1153	004410	012767	004426	173402	MOV	#RETG2,RTRAP2			
1154	004416	012767	000357	173376	MOV	#357,RTRAP2+2			;SET NEW "CC" AND PRIORITY
1155	004424	000004			IOI				;TRAP HERE
1156	004426				RETG2:				
1157	004426	100405			BMI	1\$			
1158	004430	012737	000110	000302	MOV	#110,2#\$FATAL			;MOVE TO MAILBOX # ***** 110 *****
1159	004436	005212			INC	(R2)			;SET MSGTYP TO FATAL ERROR
1160	004440	000000			HALT				;N NOT SET
1161									; TO SCOPE REPLACE HALT W/ 240
1162									; AND REPLACE NEXT INST W/ 707
1163	004442				1\$: BEQ	2\$			
1164	004442	001405			MOV	#111,2#\$FATAL			;MOVE TO MAILBOX # ***** 111 *****
1165	004444	012737	000111	000302	INC	(R2)			;SET MSGTYP TO FATAL ERROR
1166	004452	005212			HALT				;Z NOT SET
1167	004454	000000							; TO SCOPE REPLACE HALT W/ 240
1168									; AND REPLACE NEXT INST W/ 701
1169									
1170	004456				2\$: BVS	3\$			
1171	004456	102405			MOV	#112,2#\$FATAL			;MOVE TO MAILBOX # ***** 112 *****
1172	004460	012737	000112	000302	INC	(R2)			;SET MSGTYP TO FATAL ERROR
1173	004466	005212			HALT				;V NOT SET
1174	004470	000000							; TO SCOPE REPLACE HALT W/ 240
1175									; AND REPLACE NEXT INST W/ 673
1176									
1177	004472				3\$: BCS	4\$			
1178	004472	103405			MOV	#113,2#\$FATAL			;MOVE TO MAILBOX # ***** 113 *****
1179	004474	012737	000113	000302	INC	(R2)			;SET MSGTYP TO FATAL ERROR
1180	004502	005212			HALT				;C NOT SET
1181	004504	000000							; TO SCOPE REPLACE HALT W/ 240
1182									; AND REPLACE NEXT INST W/ 665
1183									
1184	004506	016706	173264		4\$: MOV	CC,SP			
1185	004512	042706	000017		BIC	#17,SP			
1186	004516	022706	000340		CMP	#340,SP			
1187	004522	001405			BEG	BR46A			
1188	004524				BR46:				
1189	004524	012737	000114	000302	MOV	#114,2#\$FATAL			;MOVE TO MAILBOX # ***** 114 *****
1190	004532	005212			INC	(R2)			;SET MSGTYP TO FATAL ERROR

MO2

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SEQ 0027

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

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

SEQ 0028

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1247 004740 022737 000030 000304 CMP #20,0#STESTN ;SEQUENCE ERROR?
1248 004746 001040 BNE TST31-12 ;BR TO ERROR HALT ON SEQ ERROR
1249 004750 012706 000500 MOV #BUFF,SP ;SET UP
1250 004754 012767 004772 173046 MOV #RETD3,RTRAP3 ;SET UP
1251 004762 005067 173010 CLR CC ;CLEAR CC AND PRIORITY
1252 004766 000257 CCC
1253 004770 104000 EMT ;TRAP
1254 004772 026727 173500 000000 RETD3: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
1255 005000 001405 BEQ 1$
1256 005002 012737 000120 000302 MOV #120,0#SFATAL ;MOVE TO MAILBOX # ***** 120 *****
1257 005010 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1258 005012 000000 HALT ;INCORRECT STATUS
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 755
1259
1260
1261 005014 012706 000500 1$: MOV #BUFF,SP ;SET UP
1262 005020 012767 005040 173002 MOV #RETE3,RTRAP3 ;SET UP
1263 005026 012767 000357 172742 MOV #357,CC ;SET PRIORITY
1264 005034 000277 SCC ;SET CC
1265 005036 104000 EMT ;TRAP
1266 005040 026727 173432 000357 RETE3: CMP BUFF-2,#357 ;COMPARES STATUS ON STACK
1267 005046 001405 BEQ TST31
1268 005050 012737 000121 000302 MOV #121,0#SFATAL ;MOVE TO MAILBOX # ***** 121 *****
1269 005056 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1270 005060 000000 HALT ;INCORRECT STATUS ON STACK,OR WRONG $STNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 732
1271
1272
1273 ;*****
1274 ;TEST 31 TEST THAT "NEW" STATUS IS CORRECT
1275 ;*****
1276 005062 005237 000304 TST31: INC 0#STESTN ;UPDATE TEST NUMBER
1277 005066 022737 000031 000304 CMP #31,0#STESTN ;SEQUENCE ERROR?
1278 005074 001117 BNE TST32-12 ;BR TO ERROR HALT ON SEQ ERROR
1279 005076 012706 000500 MOV #BUFF,SP
1280 005102 012767 005116 172720 MOV #RETF3,RTRAP3
1281 005110 005067 172716 CLR RTRAP3+2 ;CLEAR FUTURE PRIORITY AND CC
1282 005114 104000 EMT
1283 005116 RETF3: ;TEST FOR "C" CLEARED
1284 005116 100005 BPL 1$
1285 005120 012737 000122 000302 MOV #122,0#SFATAL ;MOVE TO MAILBOX # ***** 122 *****
1286 005126 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1287 005130 000000 HALT ;C NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 761
1288
1289
1290 005132 1$:
1291 005132 001005 BNE 2$
1292 005134 012737 000123 000302 MOV #123,0#SFATAL ;MOVE TO MAILBOX # ***** 123 *****
1293 005 42 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1294 005144 000000 HALT ;Z NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 753
1295
1296
1297 005146 2$:
1298 005146 102005 BVC 3$
1299 005150 012737 000124 000302 MOV #124,0#SFATAL ;MOVE TO MAILBOX # ***** 124 *****
1300 005156 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
1301 005160 000000 HALT ;V NOT CLEARED
; TO SCOPE REPLACE HALT W/ 240
1302

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B03

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 DFKABE.P11 19-NOV-75 07:55 T31

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0029

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1303                                     ; AND REPLACE NEXT INST W/ 745
1304 005162                                     35:
1305 005162 103005                                BCC      45
1306 005164 012737 000125 000302                MOV      8125,28SFATAL
1307 005172 005212                                INC      (R2)
1308 005174 000000                                HALT
1309                                     ; MOVE TO MAILBOX # ***** 125 *****
1310                                     ; SET MSGTYP TO FATAL ERROR
1311                                     ; C NOT CLEARED
1312 005176 032767 000340 172572 45:           BIT      8340,CC
1313 005204 001405                                BEQ      55
1314 005206 012737 000126 000302                MOV      8126,28SFATAL
1315 005214 005212                                INC      (R2)
1316 005216 000000                                HALT
1317                                     ; MOVE TO MAILBOX # ***** 126 *****
1318                                     ; SET MSGTYP TO FATAL ERROR
1319                                     ; PRIORITY NOT ZERO
1320 005220 012706 000500 172576 55:           MOV      8BUFF,SP
1321 005224 012767 005242 172576                MOV      8RETG3,RTRAP3
1322 005232 012767 000357 172572                MOV      8357,RTRAP3+2
1323 005240 104000                                EMT
1324 005242                                     ; SET NEW "CC" AND PRIORITY
1325 005242 100405                                RETG3:
1326 005244 012737 000127 000302                BMI      15
1327 005252 005212                                MOV      8127,28SFATAL
1328 005254 000000                                INC      (R2)
1329                                     ; MOVE TO MAILBOX # ***** 127 *****
1330                                     ; SET MSGTYP TO FATAL ERROR
1331                                     ; N NOT SET
1332 005256 001405                                HALT
1333 005260 012737 000130 000302                MOV      8130,28SFATAL
1334 005266 005212                                INC      (R2)
1335 005270 000000                                HALT
1336                                     ; MOVE TO MAILBOX # ***** 130 *****
1337                                     ; SET MSGTYP TO FATAL ERROR
1338                                     ; Z NOT SET
1339 005272 102405                                BEQ      25
1340 005272 012737 000131 000302                MOV      8131,28SFATAL
1341 005274 005212                                INC      (R2)
1342 005302 000000                                HALT
1343                                     ; MOVE TO MAILBOX # ***** 131 *****
1344                                     ; SET MSGTYP TO FATAL ERROR
1345                                     ; V NOT SET
1346 005306 103405                                BVS      35
1347 005310 012737 000132 000302                MOV      8132,28SFATAL
1348 005316 005212                                INC      (R2)
1349 005320 000000                                HALT
1350                                     ; MOVE TO MAILBOX # ***** 132 *****
1351                                     ; SET MSGTYP TO FATAL ERROR
1352                                     ; C NOT SET
1353 005322 000257                                BCS      45
1354 005324 022767 000340 172444                MOV      8132,28SFATAL
1355 005332 001405                                INC      (R2)
1356 005334 012737 000133 000302                HALT
1357 005342 005212                                MOV      8340,CC
1358 005344 000000                                CMP      YST32
1359                                     ; MOVE TO MAILBOX # ***** 133 *****
1360                                     ; SET MSGTYP TO FATAL ERROR
1361                                     ; PRIORITY WAS CHANGED, OR WRONG STSTNM
1362                                     ; TO SCOPE REPLACE HALT W/ 240
1363                                     ; AND REPLACE NEXT INST W/ 653
1364                                     ; *****

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 OFKAB8.F11 19-NOV-75 07:55 T31

TEST THAT "NEW" STATUS IS CORRECT

SEQ 0030

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1359 ;TEST 32 TEST THAT ALL COMBINATION OF EMT WILL CAUSE A TRAP
1360 *****
1361 005346 005237 000304 000304 TST32: INC 2*STESTN ;UPDATE TEST NUMBER
1362 005352 022737 000032 000304 CMP 32,2*STESTN ;SEQUENCE ERROR?
1363 005360 001011 000000 000304 BNE BR47 ;BR TO ERROR HALT ON SEQ ERROR
1364 005362 012767 104000 000012 MOV 8EMT,RB ;INITIALIZE BASE EMT INSTRUCTION
1365 005370 012767 005416 172432 MOV 8RA,30 ;RETURN FROM TRAP TO RA
1366 005376 012706 000500 000500 RC: MOV 8BUFF,SP ;SET UP STACK POINTER
1367 005402 104000 000000 000500 RB: EMT ;TRAP INST. WILL BE MODIFIED TO EMT+377
1368 005404 000000 000000 000500 BR47:
1369 005404 012737 000134 000302 MOV 8134,2*SFATAL ;MOVE TO MAILBOX 8 ***** 134 *****
1370 005412 005212 000000 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1371 005414 000000 000000 000302 HALT ;PREVIOUS INST FAILED TO TRAP OR WRONG $TSTNM
1372 ; TO SCOPE REPLACE HALT W/ 240
1373 ; AND REPLACE NEXT INST W/ 761
1374 005416 005267 177760 177752 RA: INC RB ;INCREMENT TRAP INSTRUCTION
1375 005422 022767 104377 177752 CMP 8104377,RB ;EMT+377 TO EMT?
1376 005430 103362 000000 177752 BHS RC ;HAVE WE TESTED ALL
1377 ; YES
1378 005432 012767 000032 172370 MOV 832,30 ;/..+
1379 005440 005067 172366 172370 CLR 32 ;HALT
1380 *****
1381 ;TEST 33 TEST THAT A TRAP OCCURES ON AN "TRACE-TAT" INSTRUCTION
1382 *****
1383 005444 005237 000304 000304 TST33: INC 2*STESTN ;UPDATE TEST NUMBER
1384 005450 022737 000033 000304 CMP 833,2*STESTN ;SEQUENCE ERROR?
1385 005456 001006 000000 000304 BNE TST34-12 ;BR TO ERROR HALT ON SEQ ERROR
1386 005460 012706 000500 000304 MOV 8BUFF,SP ;STACK POINTER SETUP
1387 005464 012767 005506 172322 MOV 8RETA4,RTRAP4 ;RETURN LOCATION
1388 005472 000003 000000 000304 TRT ;RESERVED INSTRUCTION, SHOULD TRAP
1389 005474 012737 000135 000302 MOV 8135,2*SFATAL ;MOVE TO MAILBOX 8 ***** 135 *****
1390 005502 005212 000000 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1391 005504 000000 000000 000302 HALT ;TRT DIDN'T TRAP OR WRONG $TSTNM
1392 ; TO SCOPE REPLACE HALT W/ 240
1393 ; AND REPLACE NEXT INST W/ 764
1394 005506 RETA4:
1395 *****
1396 ;TEST 34 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1397 *****
1398 005506 005237 000304 000304 TST34: INC 2*STESTN ;UPDATE TEST NUMBER
1399 005512 022737 000034 000304 CMP 834,2*STESTN ;SEQUENCE ERROR?
1400 005520 001011 000000 000304 BNE TST35-12 ;BR TO ERROR HALT ON SEQ ERROR
1401 005522 012706 000500 000304 MOV 8BUFF,SP ;STACK POINTER SETUP
1402 005526 012767 005536 172260 MOV 8RETB4,RTRAP4 ;RETURN POINTER
1403 005534 000003 000000 000304 TRT ;RESERVED INSTRUCTION
1404 005536 020627 000474 000304 RETB4: CMP SP,8BUFF-4 ;TEST DECREMENT OF SP
1405 005542 001405 000000 000304 BEQ TST35
1406 005544 012737 000136 000302 MOV 8136,2*SFATAL ;MOVE TO MAILBOX 8 ***** 136 *****
1407 005552 005212 000000 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
1408 005554 000000 000000 000302 HALT ;NOT DECREMENTED TWO WORDS, OR WRONG $TSTNM
1409 ; TO SCOPE REPLACE HALT W/ 240
1410 ; AND REPLACE NEXT INST W/ 761
1411 *****
1412 ;TEST 35 TEST THAT PROPER P.C. IS SAVED
1413 *****
1414 005556 005237 000304 000304 TST35: INC 2*STESTN ;UPDATE TEST NUMBER

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 OFKABE.P11 19-NOV-75 07:55 T35 TEST THAT PROPER P.C. IS SAVED

SEQ 0031

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1415 005562 022737 000035 000304      CMP      #35,0#STESTN      ;SEQUENCE ERROR?
1416 005570 001012      BNE      TST36-12      ;BR TO ERROR HALT ON SEQ ERROR
1417 005572 012706 000500      MOV      #BUFF,SP      ;STACK POINTER SETUP
1418 005576 012767 005606 172210      MOV      #RETC4,RTRAP4    ;RETURN FROM TRAP POINTER
1419 005604 000003      TRT      ;TRAP ON THIS INSTRUCTION
1420 005606 022767 005606 172660 RETC4: CMP      #.BUFF-4      ;CHECK FOR INCREMENTED P.C.
1421 005614 001405      BEQ      TST36
1422 005616 012737 000137 000302      MOV      #137,0#SFATAL    ;MOVE TO MAILBOX # ***** 137 *****
1423 005624 005212      INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1424 005626 000000      HALT      ;INCORRECT P.C., OR WRONG STSTNM
1425      ; TO SCOPE REPLACE HALT W/ 240
1426      ; AND REPLACE NEXT INST W/ 760
1427      ;*****
1428      ;TEST 36      TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1429      ;*****
1430 005630 005237 000304      TST36: INC      0#STESTN      ;UPDATE TEST NUMBER
1431 005634 022737 000036 000304      CMP      #36,0#STESTN    ;SEQUENCE ERROR?
1432 005642 001040      BNE      TST37-12      ;BR TO ERROR HALT ON SEQ ERROR
1433 005644 012706 000500      MOV      #BUFF,SP      ;SET UP
1434 005650 012767 005666 172136      MOV      #RETD4,RTRAP4    ;SET UP
1435 005656 005067 172114      CLR      CC              ;CLEAR CC AND PRIORITY
1436 005662 000257      CCC
1437 005664 000003      TRT
1438 005666 026727 172604 000000 RETD4: CMP      BUFF-2,0#      ;TRAP
1439      ;TEST THAT OLD STATUS WENT TO STACK
1440      ;TEST FOR ALL ZEROS
1441 005674 001405      BEQ      1$
1442 005676 012737 000140 000302      MOV      #140,0#SFATAL    ;MOVE TO MAILBOX # ***** 140 *****
1443 005704 005212      INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1444 005706 000000      HALT      ;INCORRECT STATUS
1445      ; TO SCOPE REPLACE HALT W/ 240
1446      ; AND REPLACE NEXT INST W/ 755
1447 005710 012706 000500 1$:      MOV      #BUFF,SP      ;SET UP
1448 005714 012767 005734 172072      MOV      #RETE4,RTRAP4    ;SET UP
1449 005722 012767 000357 172046      MOV      #357,CC          ;SET PRIORITY
1450 005730 000277      SCC      ;SET-SET CC
1451 005732 000003      TRT      ;TRAP
1452 005734 026727 172536 000357 RETE4: CMP      BUFF-2,0#357    ;COMPARES STATUS ON STACK
1453 005742 001405      BEQ      TST37
1454 005744 012737 000141 000302      MOV      #141,0#SFATAL    ;MOVE TO MAILBOX # ***** 141 *****
1455 005752 005212      INC      (R2)          ;SET MSGTYP TO FATAL ERROR
1456 005754 000000      HALT      ;INCORRECT STATUS ON STACK, OR WRONG STSTNM
1457      ; TO SCOPE REPLACE HALT W/ 240
1458      ; AND REPLACE NEXT INST W/ 732
1459      ;*****
1460      ;TEST 37      TEST THAT "NEW" STATUS IS CORRECT
1461      ;*****
1462 005756 005237 000304      TST37: INC      0#STESTN      ;UPDATE TEST NUMBER
1463 005762 022737 000037 000304      CMP      #37,0#STESTN    ;SEQUENCE ERROR?
1464 005770 001121      BNE      BR51          ;BR TO ERROR HALT ON SEQ ERROR
1465 005772 012706 000500      MOV      #BUFF,SP      ;CLEAR FUTURE PRIORITY AND CC
1466 005776 012767 006012 172010      MOV      #RETF4,RTRAP4    ;TEST FOR "C" CLEARED
1467 006004 005067 172006      CLR      RTRAP4+2
1468 006010 000003      TRT
1469 006012 100005      RETF4: BPL      1$
1470 006014 012737 000142 000302      MOV      #142,0#SFATAL    ;MOVE TO MAILBOX # ***** 142 *****

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E03

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 OFKABB.P11 19-NOV-75 07:55 T37 TEST THAT "NEW" STATUS IS CORRECT

SEG 0032

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

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0033

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1527                                     : AND REPLACE NEXT INST W/ 673
1528 006202 35: BCS 45
1529 006202 103405 000152 000302 MOV #152,0#SFATAL ; MOVE TO MAILBOX # ***** 152 *****
1530 006204 012737 000152 000302 INC (R2) ; SET MSGTYP TO FATAL ERROR
1531 006212 005212 000152 000302 HALT ; C NOT SET
1532 006214 000000 000152 000302 ; TO SCOPE REPLACE HALT W/ 240
1533 ; AND REPLACE NEXT INST W/ 665
1534
1535 006216 016706 171554 45: MOV CC, SP
1536 006222 042706 000017 BIC #17, SP
1537 006226 022706 000340 CMP #340, SP
1538 006232 001405 000340 BEQ BR51A
1539 006234 000153 000302 BR51: MOV #153,0#SFATAL ; MOVE TO MAILBOX # ***** 153 *****
1540 006234 012737 000153 000302 INC (R2) ; SET MSGTYP TO FATAL ERROR
1541 006242 005212 000153 000302 HALT ; PRIORITY WAS CHANGED, OR WRONG $STNM
1542 006244 000000 000153 000302 ; TO SCOPE REPLACE HALT W/ 240
1543 ; AND REPLACE NEXT INST W/ 651
1544
1545 006246 012767 000016 171540 BR51A: MOV #16,14
1546 006254 005067 171536 16 CLR 16
1547
1548 ; POP-11 ILLEGAL AND ADDRESS INSTRUCTION TEST
1549 ; ALL INSTRUCTIONS THAT ARE RESERVED
1550 ; SHOULD TRAP TO LOCATION 4, AND THE
1551 ; PC THAT POINTS TO THE TRAPPING INSTRUCTION
1552 ; SHOULD BE PLACED ON THE STACK
1553
1554 ; *****
1555 ; TEST 40 TEST THAT A TRAP OCCURS ON AN ILLEGAL INSTRUCTION
1556 ; *****
1557 006260 005237 000304 000304 TST40: INC 0#$TESTN ; UPDATE TEST NUMBER
1558 006264 022737 000040 000304 CMP #40,0#$TESTN ; SEQUENCE ERROR?
1559 006272 001006 000500 000304 BNE TST41-12 ; BR TO ERROR HALT ON SEQ ERROR
1560 006274 012706 000500 000304 MOV #BUFF, SP ; STACK POINTER SETUP
1561 006300 012767 006322 171476 MOV #RETAS, RTRAPS ; RETURN LOCATION
1562 006306 000100 000302 JMP %0 ; ILLEGAL INSTRUCTION, SHOULD TRAP
1563 006310 012737 000154 000302 MOV #154,0#SFATAL ; MOVE TO MAILBOX # ***** 154 *****
1564 006316 005212 000154 000302 INC (R2) ; SET MSGTYP TO FATAL ERROR
1565 006320 000000 000154 000302 HALT ; ILLEGAL INSTRUCTION DIDN'T TRAP, OR WRONG $STNM
1566 ; TO SCOPE REPLACE HALT W/ 240
1567 ; AND REPLACE NEXT INST W/ 764
1568 006322
1569
1570 ; *****
1571 ; TEST 41 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1572 ; *****
1572 006322 005237 000304 000304 TST41: INC 0#$TESTN ; UPDATE TEST NUMBER
1573 006326 022737 000041 000304 CMP #41,0#$TESTN ; SEQUENCE ERROR?
1574 006334 001011 000500 000304 BNE TST42-12 ; BR TO ERROR HALT ON SEQ ERROR
1575 006336 012706 000500 000304 MOV #BUFF, SP ; STACK POINTER SETUP
1576 006342 012767 006352 171434 MOV #RETBS, RTRAPS ; RETURN POINTER
1577 006350 000100 000474 000302 JMP %0 ; RESERVED INSTRUCTION
1578 006352 020627 000474 000302 RETBS: CMP SP, #BUFF-4 ; TEST DECREMENT OF SP
1579 006356 001405 000155 000302 BEQ TST42
1580 006360 012737 000155 000302 MOV #155,0#SFATAL ; MOVE TO MAILBOX # ***** 155 *****
1581 006366 005212 000155 000302 INC (R2) ; SET MSGTYP TO FATAL ERROR
1582 006370 000000 000155 000302 HALT ; NOT DECREMENTED TWO WORDS, OR WRONG $STNM

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TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION

SEQ 0034

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1583                                     ; TO SCOPE REPLACE HALT W/ 240
1584                                     ; AND REPLACE NEXT INST W/ 761
1585 *****
1586 TEST 42      TEST THAT PROPER P.C. IS SAVED
1587 *****
1588 006372 005237 000304      TST42: INC      2*STESTN      ;UPDATE TEST NUMBER
1589 005376 022737 000042 000304      CMP      #42,2*STESTN      ;SEQUENCE ERROR?
1590 006404 001012              BNE      TST43-12      ;BR TO ERROR HALT ON SEQ ERROR
1591 006406 012706 000500      MOV      #BUFF,SP      ;STACK POINTER SETUP
1592 006412 012767 006422 171364      MOV      #RETCS,RTRAPS      ;RETURN FROM TRAP POINTER
1593 006420 000100              JMP      %0      ;TRAP ON THIS INSTRUCTION
1594 006422 022767 006422 172044      RETCS: CMP      #,BUFF-4      ;CHECK FOR INCREMENTED P.C.
1595 006430 001405              BEQ      TST43
1596 006432 012737 000156 000302      MOV      #156,2*SFATAL      ;MOVE TO MAILBOX # ***** 156 *****
1597 006440 005212              INC      (R2)      ;SET MSGTYP TO FATAL ERROR
1598 006442 000000              HALT      ;INCORRECT P.C. OR WRONG STSTNM
1599                                     ; TO SCOPE REPLACE HALT W/ 240
1600                                     ; AND REPLACE NEXT INST W/ 760
1601 *****
1602 TEST 43      TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1603 *****
1604 006444 005237 000304      TST43: INC      2*STESTN      ;UPDATE TEST NUMBER
1605 006450 022737 000043 000304      CMP      #43,2*STESTN      ;SEQUENCE ERROR?
1606 006456 001040              BNE      TST44-12      ;BR TO ERROR HALT ON SEQ ERROR
1607 006460 012706 000500      MOV      #BUFF,SP      ;SET UP
1608 006464 012767 006502 171312      MOV      #RETDS,RTRAPS      ;SET UP
1609 006472 005067 171300      CLR      CC      ;CLEAR CC AND PRIORITY
1610 006476 000257              CCC
1611 006500 000100              JMP      %0      ;TRAP
1612 006502 026727 171770 000000      RETDS: CMP      BUFF-2,#0      ;TEST THAT OLD STATUS WENT TO STACK
1613 006510 001405              BEQ      1$
1614 006512 012737 000157 000302      MOV      #157,2*SFATAL      ;MOVE TO MAILBOX # ***** 157 *****
1615 006520 005212              INC      (R2)      ;SET MSGTYP TO FATAL ERROR
1616 006522 000000              HALT      ;INCORRECT STATUS
1617                                     ; TO SCOPE REPLACE HALT W/ 240
1618                                     ; AND REPLACE NEXT INST W/ 755
1619 006524 012706 000500      1$: MOV      #BUFF,SP      ;SET UP
1620 006530 012767 006550 171246      MOV      #RETES,RTRAPS      ;SET UP
1621 006536 012767 000357 171232      MOV      #357,CC      ;SET PRIORITY
1622 006544 000277              SCC
1623 006546 000100              JMP      %0      ;SET CC
1624 006550 026727 171722 000357      RETES: CMP      BUFF-2,#357      ;TRAP
1625 006556 001405              BEQ      TST44      ;COMPARES STATUS ON STACK
1626 006560 012737 000160 000302      MOV      #160,2*SFATAL      ;MOVE TO MAILBOX # ***** 160 *****
1627 006566 005212              INC      (R2)      ;SET MSGTYP TO FATAL ERROR
1628 006570 000000              HALT      ;INCORRECT STATUS ON STACK, OR WRONG STSTNM
1629                                     ; TO SCOPE REPLACE HALT W/ 240
1630                                     ; AND REPLACE NEXT INST W/ 732
1631 *****
1632 TEST 44      TEST THAT "NEW" STATUS IS CORRECT
1633 *****
1634 006572 005237 000304      TST44: INC      2*STESTN      ;UPDATE TEST NUMBER
1635 006576 022737 000044 000304      CMP      #44,2*STESTN      ;SEQUENCE ERROR?
1636 006604 001117              BNE      TST45-12      ;BR TO ERROR HALT ON SEQ ERROR
1637 006606 012706 000500      MOV      #BUFF,SP
1638 006612 012767 006626 171164      MOV      #RETFS,RTRAPS

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 DFKABB.P11 19-NOV-75 07:55 144 TEST THAT "NEW" STATUS IS CORRECT

SEQ 0035

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

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 OFKAB8.F11 19-NOV-75 07:55 T44 TEST THAT "NEW" STATUS IS CORRECT

SEQ 0036

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1695 007002 102405      BVS      3$
1696 007004 012737 000170 000302  MOV      #170,2#$FATAL ;MOVE TO MAILBOX # ***** 170 *****
1697 007012 005212      INC      (R2) ;SET MSGTYP TO FATAL ERROR
1698 007014 000000      HALT      ;V NOT SET
1699                                     ; TO SCOPE REPLACE HALT W/ 240
1700                                     ; AND REPLACE NEXT INST W/ 673
1701 007016                                     3$:
1702 007016 103405      BCS      4$
1703 007020 012737 000171 000302  MOV      #171,2#$FATAL ;MOVE TO MAILBOX # ***** 171 *****
1704 007026 005212      INC      (R2) ;SET MSGTYP TO FATAL ERROR
1705 007030 000000      HALT      ;C NOT SET
1706                                     ; TO SCOPE REPLACE HALT W/ 240
1707                                     ; AND REPLACE NEXT INST W/ 665
1708 007032 016706 170740      4$:  MOV      CC,SP
1709 007036 022706 000357      CMP      #357,SP
1710 007042 001405      BEQ      TST45
1711 007044 012737 000172 000302  MOV      #172,2#$FATAL ;MOVE TO MAILBOX # ***** 172 *****
1712 007052 005212      INC      (R2) ;SET MSGTYP TO FATAL ERROR
1713 007054 000000      HALT      ;PRIORITY WAS CHANGED,OR WRONG $STNM
1714                                     ; TO SCOPE REPLACE HALT W/ 240
1715                                     ; AND REPLACE NEXT INST W/ 653
1716 ;*****
1717 ;TEST 45      TEST THAT A TRAP OCCURES ON ALL ILLEGAL INSTRUCTION
1718 ;*****
1719 007056 005237 000304      TST45: INC      2#$TESTN ;UPDATE TEST NUMBER
1720 007062 022737 000045 000304  CMP      #45,2#$TESTN ;SEQUENCE ERROR?
1721 007070 001006      BNE      TST46-12 ;BR TO ERROR HALT ON SEQ ERROR
1722 007072 012706 000500      MOV      #BUFF,SP ;STACK POINTER SETUP
1723 007076 012767 007120 170700  MOV      #RETH5,RTRAPS ;RETURN LOCATION
1724 007104 004000      JSR      %0,%0 ;RESERVED INSTRUCTION, SHOULD TRAP
1725 007106 012737 000173 000302  MOV      #173,2#$FATAL ;MOVE TO MAILBOX # ***** 173 *****
1726 007114 005212      INC      (R2) ;SET MSGTYP TO FATAL ERROR
1727 007116 000000      HALT      ;DIDN'T TRAP,OR WRONG $STNM
1728                                     ; TO SCOPE REPLACE HALT W/ 240
1729                                     ; AND REPLACE NEXT INST W/ 764
1730 007120      RETH5:
1731 ;*****
1732 ;TEST 46      TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1733 ;*****
1734 007120 005237 000304      TST46: INC      2#$TESTN ;UPDATE TEST NUMBER
1735 007124 022737 000046 000304  CMP      #46,2#$TESTN ;SEQUENCE ERROR?
1736 007132 001011      BNE      TST47-12 ;BR TO ERROR HALT ON SEQ ERROR
1737 007134 012706 000500      MOV      #BUFF,SP ;STACK POINTER SETUP
1738 007140 012767 007150 170636  MOV      #RETJ,RTRAPS ;RETURN POINTER
1739 007146 004000      JSR      %0,%0 ;RESERVED INSTRUCTION
1740 007150 020627 000474      RETJ:  CMP      SP,#BUFF-4 ;TEST DECREMENT OF SP
1741 007154 001405      BEQ      TST47
1742 007156 012737 000174 000302  MOV      #174,2#$FATAL ;MOVE TO MAILBOX # ***** 174 *****
1743 007164 005212      INC      (R2) ;SET MSGTYP TO FATAL ERROR
1744 007166 000000      HALT      ;NOT DECREMENTED TWO WORDS,OR WRONG $STNM
1745                                     ; TO SCOPE REPLACE HALT W/ 240
1746                                     ; AND REPLACE NEXT INST W/ 761
1747 ;*****
1748 ;TEST 47      TEST THAT PROPER P.C. IS SAVED
1749 ;*****
1750 007170 005237 000304      TST47: INC      2#$TESTN ;UPDATE TEST NUMBER

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 DFKAB8.P11 19-NOV-75 07:55 T47 TEST THAT PROPER P.C. IS SAVED

SEQ 0037

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1751 007174 022737 000047 000304      CMP      #47,0#STESTN ;SEQUENCE ERROR?
1752 007202 001012                    BNE      TST50-12 ;BR TO ERROR HALT ON SEQ ERROR
1753 007204 012706 000500                    MOV      #BUFF,SP ;STACK POINTER SETUP
1754 007210 012767 007220 170566      MOV      #RETK,RTRAPS ;RETURN FROM TRAP POINTER
1755 007216 004000                    JSR      %0,%0 ;TRAP ON THIS INSTRUCTION
1756 007220 022767 007220 171246 INSTK:  CMP      #INSTK+2,BUFF-4 ;CHECK FOR INCREMENTED P.C.
1757 007226 001405 RETK:    BEQ      TST50
1758 007230 012737 000175 000302      MOV      #175,0#SFATAL ;MOVE TO MAILBOX # ***** 175 *****
1759 007236 005212                    INC      (R2) ;SET MSGTYP TO FATAL ERROR
1760 007240 000000                    HALT    ;INCORRECT P.C. OR WRONG $TSTNM
1761                                     ; TO SCOPE REPLACE HALT W/ 240
1762                                     ; AND REPLACE NEXT INST W/ 760
1763
1764                                     ;*****
1765 :TEST 50 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1766 :*****
1767 007242 005237 000304 000304      TST50: INC      0#STESTN ;UPDATE TEST NUMBER
1768 007246 022737 000050 000304      CMP      #50,0#STESTN ;SEQUENCE ERROR?
1769 007254 001040                    BNE      TST51-12 ;BR TO ERROR HALT ON SEQ ERROR
1770 007256 012706 000500                    MOV      #BUFF,SP ;SET UP
1771 007262 012767 007300 170514      MOV      #RETL,RTRAPS ;SET UP
1772 007270 005067 170502                    CLR      CC ;CLEAR CC AND PRIORITY
1773 007274 000257                    CCC
1774 007276 004000                    JSR      %0,%0 ;TRAP
1775 007300 026727 171172 000000 RETL:  CMP      BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
1776 007306 001405                    BEQ      15
1777 007310 012737 000176 000302      MOV      #176,0#SFATAL ;MOVE TO MAILBOX # ***** 176 *****
1778 007316 005212                    INC      (R2) ;SET MSGTYP TO FATAL ERROR
1779 007320 000000                    HALT    ;INCORRECT STATUS
1780                                     ; TO SCOPE REPLACE HALT W/ 240
1781                                     ; AND REPLACE NEXT INST W/ 755
1782 007322 012706 000500 15:    MOV      #BUFF,SP ;SET UP
1783 007326 012767 007346 170450      MOV      #RETM,RTRAPS ;SET UP
1784 007334 012767 000357 170434      MOV      #357,CC ;SET PRIORITY
1785 007342 000277                    SCC      ;SET CC
1786 007344 004000                    JSR      %0,%0 ;TRAP
1787 007346 026727 171124 000357 RETM:  CMP      BUFF-2,#357 ;COMPARES STATUS ON STACK
1788 007354 001405                    BEQ      TST51
1789 007356 012737 000177 000302      MOV      #177,0#SFATAL ;MOVE TO MAILBOX # ***** 177 *****
1790 007364 005212                    INC      (R2) ;SET MSGTYP TO FATAL ERROR
1791 007366 000000                    HALT    ;INCORRECT STATUS ON STACK,OR WRONG $TSTNM
1792                                     ; TO SCOPE REPLACE HALT W/ 240
1793                                     ; AND REPLACE NEXT INST W/ 732
1794
1795 :TEST 51 TEST THAT "NEW" STATUS IS CORRECT
1796 :*****
1797 007370 005237 000304 000304      TST51: INC      0#STESTN ;UPDATE TEST NUMBER
1798 007374 022737 000051 000304      CMP      #51,0#STESTN ;SEQUENCE ERROR?
1799 007402 001116                    BNE      TST52-12 ;BR TO ERROR HALT ON SEQ ERROR
1800 007404 012706 000500                    MOV      #BUFF,SP
1801 007410 012767 007424 170366      MOV      #RETN,RTRAPS
1802 007416 005067 170364                    CLR      RTRAPS+2 ;CLEAR FUTURE PRIORITY AND CC
1803 007422 004000                    JSR      %0,%0
1804 007424                    RETN:    BPL      15 ;TEST FOR "C" CLEARED
1805 007424 100005                    MOV      #200,0#SFATAL ;MOVE TO MAILBOX # ***** 200 *****
1806 007426 012737 000200 000302

```

K03

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0038

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

L03

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0039

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1863                                     ; AND REPLACE NEXT INST W/ 674
1864 007612 3$: BCS 4$
1865 007612 103405 000210 000302 MOV #210,0$FATAL ; MOVE TO MAILBOX # ***** 210 *****
1866 007614 012737 INC (R2) ; SET MSGTYP TO FATAL ERROR
1867 007622 005212 HALT ; C NOT SET
1868 007624 000000 ; TO SCOPE REPLACE HALT W/ 240
1869 ; AND REPLACE NEXT INST W/ 666
1870
1871 007626 016700 170144 4$: MOV CC,%0
1872 007632 022700 000357 CMP #357,%0
1873 007636 001405 BEQ TST52
1874 007640 012737 000211 000302 MOV #211,0$FATAL ; MOVE TO MAILBOX # ***** 211 *****
1875 007646 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1876 007650 000000 HALT ; PRIORITY WAS CHANGED, OR WRONG $STNM
1877 ; TO SCOPE REPLACE HALT W/ 240
1878 ; AND REPLACE NEXT INST W/ 654
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; TEST 52 TEST THAT A TRAP OCCURES ON AN ILLEGAL ADDRESS

```

1883 007652 005237 000304 TST52: INC 0$STESTN ; UPDATE TEST NUMBER
1884 007656 022737 000052 000304 CMP #52,0$STESTN ; SEQUENCE ERROR?
1885 007664 001007 BNE TST53-12 ; BR TO ERROR HALT ON SEQ ERROR
1886 007666 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1887 007672 012767 007716 170104 MOV #RETP,RTRAPS ; RETURN LOCATION
1888 007700 005767 170075 TST 1 ; ILLEGAL ADDRESS INSTRUCTION, SHOULD TRAP
1889 007704 012737 000212 000302 MOV #212,0$FATAL ; MOVE TO MAILBOX # ***** 212 *****
1890 007712 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1891 007714 000000 HALT ; ILLEGAL ADDRESS DID NOT TRAP, OR WRONG $STNM
1892 ; TO SCOPE REPLACE HALT W/ 240
1893 ; AND REPLACE NEXT INST W/ 763
1894
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RETP:

; TEST 53 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION

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1898 007716 005237 000304 TST53: INC 0$STESTN ; UPDATE TEST NUMBER
1899 007722 022737 000053 000304 CMP #53,0$STESTN ; SEQUENCE ERROR?
1900 007730 001012 BNE TST54-12 ; BR TO ERROR HALT ON SEQ ERROR
1901 007732 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1902 007736 012767 007750 170040 MOV #RETQ,RTRAPS ; RETURN POINTER
1903 007744 005767 170031 TST 1 ; RESERVED INSTRUCTION
1904 007750 020627 000474 RETQ: CMP SP,#BUFF-4 ; TEST DECREMENT OF SP
1905 007754 001405 BEQ TST54
1906 007756 012737 000213 000302 MOV #213,0$FATAL ; MOVE TO MAILBOX # ***** 213 *****
1907 007764 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1908 007766 000000 HALT ; NOT DECREMENTED TWO WORDS, OR WRONG $STNM
1909 ; TO SCOPE REPLACE HALT W/ 240
1910 ; AND REPLACE NEXT INST W/ 760
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1918

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; TEST 54 TEST THAT PROPER P.C. IS SAVED

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1914 007770 005237 000304 TST54: INC 0$STESTN ; UPDATE TEST NUMBER
1915 007774 022737 000054 000304 CMP #54,0$STESTN ; SEQUENCE ERROR?
1916 010002 001013 BNE TST55-12 ; BR TO ERROR HALT ON SEQ ERROR
1917 010004 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1918 010010 012767 010022 167766 MOV #RETR,RTRAPS ; RETURN FROM TRAP POINTER

```

M03

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SEQ 0040

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

```

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.MAIN. MACY11 27(1006) 22-OCT-76 12:41 PAGE 39
DFKABB.F11 19-NOV-75 07:55 T56 TE

Year	Address	Instruction	Op-Code	Register	Comment	Label	Value	Text
1975	010250	001005						
1976	010252	012737	000220	000302	BNE	25		
1977	010260	005212			MOV	#220,2#FATAL		; MOVE TO MAILBOX # ***** 220 *****
1978	010262	000000			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1979					HALT			; Z NOT CLEARED
1980								; TO SCOPE REPLACE HALT W/ 240
1981	010264							; AND REPLACE NEXT INST W/ 752
1982	010264	102005			BVC	35		
1983	010266	012737	000221	000302	MOV	#221,2#FATAL		; MOVE TO MAILBOX # ***** 221 *****
1984	010274	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1985	010276	000000			HALT			; V NOT CLEARED
1986								; TO SCOPE REPLACE HALT W/ 240
1987								; AND REPLACE NEXT INST W/ 744
1988	010300							
1989	010300	103005			BCC	45		
1990	010302	012737	000222	000302	MOV	#222,2#FATAL		; MOVE TO MAILBOX # ***** 222 *****
1991	010310	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1992	010312	000000			HALT			; C NOT CLEARED
1993								; TO SCOPE REPLACE HALT W/ 240
1994								; AND REPLACE NEXT INST W/ 736
1995	010314	032767	000357	167454	BIT	#357,CC		; TEST PRIORITY FOR ZERO
1996	010322	001405			BEQ	55		
1997	010324	012737	000223	000302	MOV	#223,2#FATAL		; MOVE TO MAILBOX # ***** 223 *****
1998	010332	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1999	010334	000000			HALT			; PRIORITY NOT ZERO
2000								; TO SCOPE REPLACE HALT W/ 240
2001								; AND REPLACE NEXT INST W/ 725
2002	010336	012706	000500		MOV	#BUFF,SP		
2003	010342	012767	010362	167434	MOV	#RETV,RTRAP5		
2004	010350	012767	000357	167430	MOV	#357,RTRAP5+2		; SET NEW "CC" AND PRIORITY
2005	010356	005767	167417		TST	1		; TRACE HERE
2006	010362							
2007	010362	100405			BMI	15		
2008	010364	012737	000224	000302	MOV	#224,2#FATAL		; MOVE TO MAILBOX # ***** 224 *****
2009	010372	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
2010	010374	000000			HALT			; N NOT SET
2011								; TO SCOPE REPLACE HALT W/ 240
2012								; AND REPLACE NEXT INST W/ 705
2013	010376							
2014	010376	001405			BEQ	25		
2015	010400	012737	000225	000302	MOV	#225,2#FATAL		; MOVE TO MAILBOX # ***** 225 *****
2016	010406	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
2017	010410	000000			HALT			; Z NOT SET
2018								; TO SCOPE REPLACE HALT W/ 240
2019								; AND REPLACE NEXT INST W/ 677
2020	010412							
2021	010412	102405			BVS	35		
2022	010414	012737	000226	000302	MOV	#226,2#FATAL		; MOVE TO MAILBOX # ***** 226 *****
2023	010422	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
2024	010424	000000			HALT			; V NOT SET
2025								; TO SCOPE REPLACE HALT W/ 240
2026								; AND REPLACE NEXT INST W/ 671
2027	010426							
2028	010426	103405			BCC	45		
2029	010430	012737	000227	000302	MOV	#227,2#FATAL		; MOVE TO MAILBOX # ***** 227 *****
2030	010436	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR

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TEST THAT "NEW" STATUS IS CORRECT

SEG 0042

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2033: 010440 000000          HALT          ;C NOT SET
2034:                                     ; TO SCOPE REPLACE HALT W/ 240
2035:                                     ; AND REPLACE NEXT INST W/ 663
2036: 010442 016700 167330 48:  MOV CC,%0
2037: 010446 022700 000357      CMP #357,%0
2038: 010450 001405      BEQ TST57
2039: 010454 012737 000230 000302  MOV #230,%R2
2040: 010458 005212      INC (R2)
2041: 010464 000000      HALT
2042:                                     ; MOVE TO MAILBOX # ***** 230 *****
2043:                                     ; SET MSGTYP TO FATAL ERROR
2044:                                     ; PRIORITY WAS CHANGED, OR WRONG STSTNM
2045:                                     ; TO SCOPE REPLACE HALT W/ 240
2046:                                     ; AND REPLACE NEXT INST W/ 651
2047:
2048: *****
2049: :TEST 57      TEST THAT DECREMENT R6 TO A VALUE LESS THAN 400 TRAPS
2050: *****
2051: TST57: INC #STESTN      ; UPDATE TEST NUMBER
2052:      CMP #57,%STESTN    ; SEQUENCE ERROR?
2053:      BNE TST60-12      ; BR TO ERROR HALT ON SEQ ERROR
2054:      MOV #150,%R6      ; R6 = 150
2055:      MOV #TDEC1,4      ; STACK OVERFLOW TRAP POINTER
2056:      TST -(R6)          ; WITH R6 = 150 SHOULD TRAP
2057:      MOV #231,%R2      ; MOVE TO MAILBOX # ***** 231 *****
2058:      INC (R2)          ; SET MSGTYP TO FATAL ERROR
2059:      HALT              ; SHOULD HAVE TRAPPED, OR WRONG STSTNM
2060:                                     ; TO SCOPE REPLACE HALT W/ 240
2061:                                     ; AND REPLACE NEXT INST W/ 764
2062:
2063: TDEC1:
2064:
2065: *****
2066: :TEST 60      TEST FOR DECREMENT OF R6 ON OVERFLOW TRAP
2067: *****
2068: TST60: INC #STESTN      ; UPDATE TEST NUMBER
2069:      CMP #60,%STESTN    ; SEQUENCE ERROR?
2070:      BNE TST61-12      ; BR TO ERROR HALT ON SEQ ERROR
2071:      MOV #150,%R6      ; R6 = 150
2072:      MOV #TDEC2,4      ; TRAP POINTER
2073:      TST -(R6)          ; WITH R6 = 150 SHOULD TRAP
2074:      CMP %R6,#142      ; DID R6 DECREMENT
2075:      BEQ TST61
2076:      MOV #232,%R2      ; MOVE TO MAILBOX # ***** 232 *****
2077:      INC (R2)          ; SET MSGTYP TO FATAL ERROR
2078:      HALT              ; R6 NOT = 142 OR WRONG STSTNM
2079:                                     ; TO SCOPE REPLACE HALT W/ 240
2080:                                     ; AND REPLACE NEXT INST W/ 761
2081:
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2100:

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C04

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SEQ 0043

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2075
2076
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2078 010600 005237 000304
2079 010604 022737 000061 000304
2080 010612 001043
2081 010614 012706 000150
2082 010620 005067 167322
2083 010624 012767 010634 167152
2084 010632 005246
2085 010634 005767 167306
2086 010640 001005
2087 010642 012737 000233 000302
2088 010650 005212
2089 010652 000000
2090
2091
2092 010654 012705 001000
2093 010660 012706 000400
2094 010664 012767 010706 167112
2095 010672 124645
2096 010674 012737 000234 000302
2097 010702 005212
2098 010704 000000
2099
2100
2101 010706 012706 000400
2102 010712 012767 010734 167064
2103 010720 134546
2104 010722
2105 010722 012737 000235 000302
2106 010730 005212
2107 010732 000000
2108
2109
2110 010734
2111
2112
2113
2114
2115 010734 005237 000304
2116 010740 022737 000062 000304
2117 010746 001011
2118 010750 012706 000400
2119 010754 012767 010772 167026
2120 010762 012767 011004 167014
2121 010770 000007
2122 010772
2123 010772 012737 000236 000302
2124 011000 005212
2125 011002 000000
2126
2127
2128 011004 012767 000012 166776
2129
2130

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*****
;TEST 61      TEST DIFFERENT TYPES OF OVERFLOW
*****
TST61: INC      2*STESTN      ;UPDATE TEST NUMBER
        CMP      2*STESTN      ;SEQUENCE ERROR?
        BNE      TST62-12      ;BR TO ERROR HALT ON SEQ ERROR
        MOV      2*150,%6
        CLR      146           ;STATUS WORD OF LOC 10
        MOV      2TDEC3,4      ;RETURN TO LOC 4
        INC      -(6)
        TST      146
        BNE      15
        MOV      2233,2*SFATAL ;MOVE TO MAILBOX # ***** 233 *****
        INC      (R2)          ;SET MSGTYP TO FATAL ERROR
        HALT                  ;INCREMENT OPERATION NOT INHIBITED
                               ; TO SCOPE REPLACE HALT W/ 240
                               ; AND REPLACE NEXT INST W/ 757
15:     MOV      2*1000,%5
        MOV      2*400,%6
        MOV      2TDEC4,4
        CMPEB    -(6),-(5)
        MOV      2234,2*SFATAL ;MOVE TO MAILBOX # ***** 234 *****
        INC      (R2)          ;SET MSGTYP TO FATAL ERROR
        HALT                  ;STACK = 400 AND DECREMENTED, SHOULD TRAP
                               ; TO SCOPE REPLACE HALT W/ 240
                               ; AND REPLACE NEXT INST W/ 742
TDEC4:  MOV      2*400,%6
        MOV      2TDEC7,4
        BITB     -(5),-(6)
TDEC6:  MOV      2235,2*SFATAL ;MOVE TO MAILBOX # ***** 235 *****
        INC      (R2)          ;SET MSGTYP TO FATAL ERROR
        HALT                  ;NO STACK OVERFLOW, OR WRONG STSTNM
                               ; TO SCOPE REPLACE HALT W/ 240
                               ; AND REPLACE NEXT INST W/ 727
TDEC7:
*****
;TEST 62      TEST THAT AN 7 CAUSES AN OVERFLOW TRAP
*****
TST62:  INC      2*STESTN      ;UPDATE TEST NUMBER
        CMP      2*62,2*STESTN ;SEQUENCE ERROR?
        BNE      VDEC2        ;BR TO ERROR HALT ON SEQ ERROR
        MOV      2*400,%6
        MOV      2*VDEC2,10    ;SET UP STACK TO OVERFLOW
        MOV      2*VDEC1,4     ;SET UP 7 VECTOR
        MOV      7            ;SET UP OVERFLOW VECTOR
                               ;THIS TRAP SHOULD CAUSE OVERFLOW
VDEC2:  MOV      2236,2*SFATAL ;MOVE TO MAILBOX # ***** 236 *****
        INC      (R2)          ;SET MSGTYP TO FATAL ERROR
        HALT                  ;TRAP FLAG OVERFLOW DID NOT OCCUR, OR WRONG STSTNM
                               ; TO SCOPE REPLACE HALT W/ 240
                               ; AND REPLACE NEXT INST W/ 761
VDEC1:  MOV      2*10+2,10
*****
;TEST 63      TEST THAT AN IOT CAUSES AN OVERFLOW TRAP
*****

```

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 OFRAB8.P11 19-NOV-75 07:55 T62

TEST THAT W/ 7 CAUSES AN OVERFLOW TRAP

SEQ 0044

```

2131 *****
2132 011012 005237 000304 000304 TST63: INC 2*STESTN ;UPDATE TEST NUMBER
2133 011016 022737 000063 000304 CMP 863,2*STESTN ;SEQUENCE ERROR?
2134 011024 001011 000000 000304 BNE VDEC4 ;BR TO ERROR HALT ON SEQ ERROR
2135 011026 012706 000400 000304 MOV 400,%6 ;SET UP STACK TO OVERFLOW
2136 011032 012767 011050 166760 MOV 8VDEC4,20 ;SET UP IOT VECTOR
2137 011040 012767 011062 166736 MOV 8VDEC3,4 ;SET UP OVERFLOW VECTOR
2138 011046 000004 000000 000304 IOT ;THIS TRAP SHOULD CAUSE OVERFLOW
2139 011050 000000 000000 000304
2140 011050 012737 000237 000302 VDEC4: MOV 237,2*SFATAL ;MOVE TO MAILBOX 237 *****
2141 011056 005212 000000 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
2142 011060 000000 000000 000302 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2143 ; TO SCOPE REPLACE HALT W/ 240
2144 ; AND REPLACE NEXT INST W/ 761
2145 011062 012767 000022 166730 VDEC3: MOV 20+2,20
2146 *****
2147 ;TEST 64 TEST THAT AN EMT CAUSES AN OVERFLOW TRAP
2148 *****
2149 011070 005237 000304 000304 TST64: INC 2*STESTN ;UPDATE TEST NUMBER
2150 011074 022737 000064 000304 CMP 864,2*STESTN ;SEQUENCE ERROR?
2151 011102 001011 000000 000304 BNE VDEC6 ;BR TO ERROR HALT ON SEQ ERROR
2152 011104 012706 000400 000304 MOV 400,%6 ;SET UP STACK TO OVERFLOW
2153 011110 012767 011126 166712 MOV 8VDEC6,30 ;SET UP EMT VECTOR
2154 011116 012767 011140 166660 MOV 8VDEC5,4 ;SET UP OVERFLOW VECTOR
2155 011124 104000 000000 000304 EMT ;THIS TRAP SHOULD CAUSE OVERFLOW
2156 011126 000000 000000 000304
2157 011126 012737 000240 000302 VDEC6: MOV 240,2*SFATAL ;MOVE TO MAILBOX 240 *****
2158 011134 005212 000000 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
2159 011136 000000 000000 000302 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2160 ; TO SCOPE REPLACE HALT W/ 240
2161 ; AND REPLACE NEXT INST W/ 761
2162 011140 012767 000032 166662 VDEC5: MOV 30+2,30
2163 *****
2164 ;TEST 65 TEST THAT AN TRAP CAUSES AN OVERFLOW TRAP
2165 *****
2166 011146 005237 000304 000304 TST65: INC 2*STESTN ;UPDATE TEST NUMBER
2167 011152 022737 000065 000304 CMP 865,2*STESTN ;SEQUENCE ERROR?
2168 011160 001011 000000 000304 BNE VDEC8 ;BR TO ERROR HALT ON SEQ ERROR
2169 011162 012706 000400 000304 MOV 400,%6 ;SET UP STACK TO OVERFLOW
2170 011166 012767 011204 166640 MOV 8VDEC8,34 ;SET UP TRAP VECTOR
2171 011174 012767 011216 166602 MOV 8VDEC7,4 ;SET UP OVERFLOW VECTOR
2172 011202 104400 000000 000304 TRAP ;THIS TRAP SHOULD CAUSE OVERFLOW
2173 011204 000000 000000 000304
2174 011204 012737 000241 000302 VDEC8: MOV 241,2*SFATAL ;MOVE TO MAILBOX 241 *****
2175 011212 005212 000000 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
2176 011214 000000 000000 000302 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2177 ; TO SCOPE REPLACE HALT W/ 240
2178 ; AND REPLACE NEXT INST W/ 761
2179 011216 012767 000036 166610 VDEC7: MOV 34+2,34
2180 *****
2181 ;TEST 66 TEST THAT AN TRT CAUSES AN OVERFLOW TRAP
2182 *****
2183 011224 005237 000304 000304 TST66: INC 2*STESTN ;UPDATE TEST NUMBER
2184 011230 022737 000066 000304 CMP 866,2*STESTN ;SEQUENCE ERROR?
2185 011236 001011 000000 000304 BNE VDEC10 ;BR TO ERROR HALT ON SEQ ERROR
2186 011240 012706 000400 000304 MOV 400,%6 ;SET UP STACK TO OVERFLOW
  
```

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 OFRAB8.P11 19-NOV-75 07:55 T66

TEST THAT AN TRT CAUSES AN OVERFLOW TRAP

SEQ 0045

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

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DFKABB.P11 19-NOV-75 07:55 T71 TEST FOR FALSE OVERFLOW TRAP

2243	011462	022737	000071	000304		CMP	#71,2#STESTN	;SEQUENCE ERROR?
2244	011470	001023				BNE	FOVER	;BR TO ERROR HALT ON SEQ ERROR
2245								
2246	011472	012767	011540	166304		MOV	#FOVER,4	;SET UP OVERFLOW PCINTER
2247	011500	012706	001002			MOV	#1002,%6	
2248	011504	005746				TST	-(6)	;SHOULD NOT OVERFLOW
2249	011506	012706	002002			MOV	#2002,%6	
2250	011512	005746				TST	-(6)	;SHOULD NOT OVERFLOW
2251	011514	012706	004002			MOV	#4002,%6	
2252	011520	005746				TST	-(6)	;SHOULD NOT OVERFLOW
2253	011522	012706	010002			MOV	#10002,%6	
2254	011526	005746				TST	-(6)	
2255	011530	012706	020000			MOV	#20000,%6	;SHOULD NOT OVERFLOW
2256	011534	005746				TST	-(6)	
2257	011536	000405				BR	STP	
2258	011540				FOVER:			
2259	011540	012737	000246	000302		MOV	#246,2#SFATAL	;MOVE TO MAILBOX # ***** 246 *****
2260	011546	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2261	011550	000000				HALT		;IT OVERFLOWED,OR WRONG \$STNM
2262								; TO SCOPE REPLACE HALT W/ 240
2263								; AND REPLACE NEXT INST W/ 747
2264	011552	012767	000006	166224	STP:	MOV	#6,4	
2265	011560	005067	166222			CLR	6	
2266								*****
2267								;TEST 72 TEST THAT BIT 4 PSW WILL CAUSE A TRAP TO 14
2268								*****
2269	011564	005237	000304		†ST72:	INC	2#STESTN	;UPDATE TEST NUMBER
2270	011570	022737	000072	000304		CMP	#72,2#STESTN	;SEQUENCE ERROR?
2271	011576	001013				BNE	TST73-12	;BR TO ERROR HALT ON SEQ ERROR
2272	011600	012706	000500			MOV	#BUFF,SP	
2273	011604	012767	011640	166202		MOV	#RETAT,RTRAP4	;SET UP TO TRAP TO 14
2274	011612	012746	000020			MOV	#20,-(SP)	;PUSH T BIT
2275	011616	012746	011624			MOV	#.+6,-(SP)	;PUSH PC
2276	011622	000002				RTI		;SET T BIT
2277	011624	000240				NOP		;TRAP HERE
2278	011626	012737	000247	000302		MOV	#247,2#SFATAL	;MOVE TO MAILBOX # ***** 247 *****
2279	011634	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2280	011636	000000				HALT		;TRACE BIT DID NOT TRAP!,OR WRONG \$TESTN
2281								; TO SCOPE REPLACE HALT W/ 240
2282								; AND REPLACE NEXT INST W/ 757
2283	011640				RETAT:			
2284								*****
2285								;TEST 73 TEST STACK POINTER DECREMENTS
2286								*****
2287	011640	005237	000304		†ST73:	INC	2#STESTN	;UPDATE TEST NUMBER
2288	011644	022737	000073	000304		CMP	#73,2#STESTN	;SEQUENCE ERROR?
2289	011652	001023				BNE	TST74-12	;BR TO ERROR HALT ON SEQ ERROR
2290	011654	012706	000500			MOV	#BUFF,SP	
2291	011660	012767	011714	166126		MOV	#RETB,RTRAP4	
2292	011666	012746	000020			MOV	#20,-(SP)	;PUSH T BIT
2293	011672	012746	011700			MOV	#.+6,-(SP)	;PUSH PC
2294	011676	000002				RTI		;SET T BIT
2295	011700	000240				NOP		;TRAP HERE
2296	011702	012737	000250	000302		MOV	#250,2#SFATAL	;MOVE TO MAILBOX # ***** 250 *****
2297	011710	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2298	011712	000000				HALT		;TRACE BIT DID NOT TRAP!

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 DFKABB.P11 19-NOV-75 07:55 T73 TEST STACK POINTER DECREMENTS

SEG 0047

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-2299
2300                                     ; TO SCOPE REPLACE HALT W/ 240
2301 011714 020627 000474 RETBT: CMP SP, #BUFF-4 ; AND REPLACE NEXT INST W/ 757
2302 011720 001405 TST74
2303 011722 012737 000251 000302 MOV #251, @#SFATAL ; MOVE TO MAILBOX # ***** 251 *****
2304 011730 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
2305 011732 000000 HALT ; STACK POINTER WAS NOT PUSHED BY TRAP, OR WRONG $TESTN
2306                                     ; TO SCOPE REPLACE HALT W/ 240
2307                                     ; AND REPLACE NEXT INST W/ 747
2308 *****
2309 ; TEST 74 TEST FOR PROPER PC ON STACK *****
2310 *****
2311 011734 005237 000304 TST74: INC @#STESTN ; UPDATE TEST NUMBER
2312 011740 022737 000074 000304 CMP #74, @#STESTN ; SEQUENCE ERROR?
2313 011746 001016 BNE TST75-12 ; BR TO ERROR HALT ON SEQ ERROR
2314 011750 012706 000500 MOV #BUFF, SP
2315 011754 012767 011774 166032 MOV #RETCT, RTRAP4
2316 011762 012746 000020 MOV #20, -(SP) ; PUSH T BIT
2317 011766 012746 011774 MOV #.+6, -(SP) ; PUSH PC
2318 011772 000002 RTI ; SET T BIT
2319 ; TRAP HERE
2320 011774 022767 011774 166472 RETCT: CMP #. BUFF-4
2321 012002 001405 BEQ TST75
2322 012004 012737 000252 000302 MOV #252, @#SFATAL ; MOVE TO MAILBOX # ***** 252 *****
2323 012012 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
2324 012014 000000 HALT ; CORRECT PC WAS NOT SAVED ON STACK, OR WRONG $TESTN
2325                                     ; TO SCOPE REPLACE HALT W/ 240
2326                                     ; AND REPLACE NEXT INST W/ 754
2327
2328
2329 *****
2330 ; TEST 75 TEST THAT RTT POPS T- BIT *****
2331 *****
2332 012016 005237 000304 TST75: INC @#STESTN ; UPDATE TEST NUMBER
2333 012022 022737 000075 000304 CMP #75, @#STESTN ; SEQUENCE ERROR?
2334 012030 001015 BNE TST76-12 ; BR TO ERROR HALT ON SEQ ERROR
2335
2336 012032 012706 000500 MOV #BUFF, SP
2337 012036 005001 CLR R1 ; CLEAR R1
2338 012040 012746 000020 MOV #20, -(SP)
2339 012044 012746 012060 MOV #RTT1, -(SP)
2340 012050 012767 012076 165736 MOV #RTT2, 14
2341 012056 000006 RTT
2342 012060 000240 RTT1: NOP
2343 012062 001405 BEQ TST76
2344 012064 012737 000253 000302 MOV #253, @#SFATAL ; MOVE TO MAILBOX # ***** 253 *****
2345 012072 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
2346 012074 000000 HALT ; T-BIT DID NOT TRAP, OR WRONG $TESTN
2347                                     ; TO SCOPE REPLACE HALT W/ 240
2348                                     ; AND REPLACE NEXT INST W/ 755
2349
2350 012076 RTT2:
2351 *****
2352 ; TEST 76 TEST THAT RTT ALLOWS ONE INST. BEFORE TRAP *****
2353 *****
2354 012076 005237 000304 TST76: INC @#STESTN ; UPDATE TEST NUMBER

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 DFKABB.P11 19-NOV-75 07:55 T76 TEST

THAT RTT ALLOWS ONE INST. BEFORE TRAP

SEQ 0048

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2355 012102 022737 000076 000304      CMP      #76,0#STESTN      ;SEQUENCE ERROR?
2356 012110 001031                BNE      TST77-12      ;BR TO ERROR HALT ON SEQ ERROR
2357 012112 012705 177777          MOV      #177777,%5
2358 012116 012706 000500          RTT5:  MOV      #BUFF,SP
2359 012122 012746 000020          MOV      #20,-(SP)
2360 012126 012746 012144          MOV      #RTT3,-(SP)
2361 012132 012767 012164 165654  MOV      #RTT4,14
2362 012140 005001                CLR      R1              ;CLEAR R0
2363 012142 000006                RTT              ;SET T-BIT
2364 012144 005201          RTT3:  INC      R1
2365 012146 005205                INC      %5
2366 012150 001762          BEQ      RTT5              ;DO THIS TEST NO MORE THAN 2 TIMES
2367 012152 012737 000254 000302  MOV      #254,0#SFATAL ;MOVE TO MAILBOX # ***** 254 *****
2368 012160 005212          INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2369 012162 000000          HALT              ;DID NOT TRAP
2370                                ; TO SCOPE REPLACE HALT W/ 240
2371                                ; AND REPLACE NEXT INST W/ 752
2372                                ;SEE IF RTT ALLOWS 1 INST.
2373 012164 005301          RTT4:  DEC      R1
2374 012166 001407          BEQ      RTT6
2375 012170 005205          INC      %5              ;DO THIS TEST NO MORE THAN TWO TIMES
2376 012172 001751          BEQ      RTT5
2377 012174 012737 000255 000302  MOV      #255,0#SFATAL ;MOVE TO MAILBOX # ***** 255 *****
2378 012202 005212          INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2379 012204 000000          HALT              ;RTT DID NOT ALLOW 1 INST.,OR WRONG $TESTN
2380                                ; TO SCOPE REPLACE HALT W/ 240
2381                                ; AND REPLACE NEXT INST W/ 741
2382 012206          RTT6:
2383  ;*****
2384  ;TEST 77          TEST THAT RTI DOES NOT ALLOW 1 INST.
2385  ;*****
2386  ;ST77:  INC      0#STESTN      ;UPDATE TEST NUMBER
2387  CMP      #77,0#STESTN      ;SEQUENCE ERROR?
2388  BNE      TST100-12      ;BR TO ERROR HALT ON SEQ ERROR
2389  MOV      #BUFF,SP
2390  MOV      #20,-(SP)
2391  MOV      #RTI1,-(SP)
2392  MOV      #RTI2,14
2393  CLR      R1
2394  RTI
2395  RTI1:  INC      R1              ;SET T-BIT
2396  MOV      #256,0#SFATAL      ;RTI SHOULD NOT ALLOW THIS
2397  INC      (R2)              ;MOVE TO MAILBOX # ***** 256 *****
2398  HALT              ;SET MSGTYP TO FATAL ERROR
2399                                ;T- BIT DID NOT CAUSE TRAP
2400                                ; TO SCOPE REPLACE HALT W/ 240
2401                                ; AND REPLACE NEXT INST W/ 756
2402 012264 005701          RTI2:  TST      R1
2403                                ;RTI SHOULD NOT ALLOW 1 INST. BEFORE TRAP
2404  BEQ      TST100
2405  MOV      #257,0#SFATAL      ;MOVE TO MAILBOX # ***** 257 *****
2406  INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2407  HALT              ;RTI DID ALLOW 1 INST. BEFORE TRAP,OR WRONG $TESTN
2408                                ; TO SCOPE REPLACE HALT W/ 240
2409                                ; AND REPLACE NEXT INST W/ 747
2410  ;*****
2411  ;TEST 100      DOES THE PROCESSOR TRAP WHEN %7 IS ODD?

```

2411								:*****
2412	012302	005237	000304		TST100:	INC	#TESTN	;UPDATE TEST NUMBER
2413	012306	022737	000100	000304		CMP	#100,#\$TESTN	;SEQUENCE ERROR?
2414	012314	001120				BNE	TST101-12	;BR TO ERROR HALT ON SEQ ERROR
2415	012316	012706	000500			MOV	#BUFF,%6	;SET UP STACK POINTER
2416	012322	012767	012346	165454		MOV	#R7TR1,4	;RETURN FROM TRAP
2417	012330	012707	000001			MOV	#1,%7	;PC EQUALS ONE
2418	012334	012737	000260	000302		MOV	#260,#\$FATAL	;MOVE TO MAILBOX # ***** 260 *****
2419	012342	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2420	012344	000000				HALT		;ODD ADDRESS SHOULD HAVE TRAPPED
2421								; TO SCOPE REPLACE HALT W/ 240
2422								; AND REPLACE NEXT INST W/ 763
2423	012346	022767	000001	166120	R7TR1:	CMP	#1,BUFF-4	
2424	012354	001405				BEQ	1\$	
2425	012356	012737	000261	000302		MOV	#261,#\$FATAL	;MOVE TO MAILBOX # ***** 261 *****
2426	012364	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2427	012366	000000				HALT		;CORRECT PC WAS NOT SAVED ON STACK
2428								; TO SCOPE REPLACE HALT W/ 240
2429								; AND REPLACE NEXT INST W/ 752
2430								
2431	012370	012706	000500		1\$:	MOV	#BUFF,%6	;STACK POINTER
2432	012374	012767	012416	165402		MOV	#R7TR2,4	
2433	012402	005207				INC	%7	;PC BECOMES ODD
2434	012404				R7TR2A:			
2435	012404	012737	000262	000302		MOV	#262,#\$FATAL	;MOVE TO MAILBOX # ***** 262 *****
2436	012412	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2437	012414	000000				HALT		; TO SCOPE REPLACE HALT W/ 240
2438								; AND REPLACE NEXT INST W/ 737
2439								
2440	012416	022767	012405	166050	R7TR2:	CMP	#R7TR2A+1,BUFF-4	
2441	012424	001405				BEQ	1\$	
2442	012426	012737	000263	000302		MOV	#263,#\$FATAL	;MOVE TO MAILBOX # ***** 263 *****
2443	012434	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2444	012436	000000				HALT		;CORRECT PC NOT ON STACK
2445								; TO SCOPE REPLACE HALT W/ 240
2446								; AND REPLACE NEXT INST W/ 726
2447	012440	012706	000500		1\$:	MOV	#BUFF,%6	
2448	012444	012767	012466	165332		MOV	#R7TR3,4	
2449	012452	005307			BR60:	DEC	%7	;MAKE PC ODD
2450	012454	012737	000264	000302		MOV	#264,#\$FATAL	;MOVE TO MAILBOX # ***** 264 *****
2451	012462	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2452	012464	000000				HALT		;SHOULD TRAP
2453								; TO SCOPE REPLACE HALT W/ 240
2454								; AND REPLACE NEXT INST W/ 713
2455	012466	022767	012453	166000	R7TR3:	CMP	#BR60+1,BUFF-4	;CHECK VALUE OF PC ON STACK
2456	012474	001405				BEQ	1\$	
2457	012476	012737	000265	000302		MOV	#265,#\$FATAL	;MOVE TO MAILBOX # ***** 265 *****
2458	012504	005212				INC	(R2)	;SET MSGTYP TO FATAL ERROR
2459	012506	000000				HALT		;WRONG VALUE ON STACK
2460								; TO SCOPE REPLACE HALT W/ 240
2461								; AND REPLACE NEXT INST W/ 702
2462								
2463	012510	012706	000500		1\$:	MOV	#BUFF,%6	
2464	012514	012767	012540	165262		MOV	#R7TR4,4	
2465	012522	000261				SEC		;CARRY EQUALS A 1
2466	012524	006107				ROL	%7	;PC BECOMES ODD

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DOES THE PROCESSOR TRAP WHEN %7 IS ODD?

SEQ 0050

```

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

```

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TEST THAT THE TRACE BIT IS SAVED IN THE STACK

SEQ 0051

```

2523 012754 036727 165516 000020 TRC1: BIT      BUFF-2, #20      ;CHECK FOR T BIT ON STACK
2524 012762 001005                      BNE      STP3D
2525 012764                      STP3:
2526 012764 012737 000272 000302      MOV      #272, @#SFATAL ;MOVE TO MAILBOX # ***** 272 *****
2527 012772 005212                      INC      (R2)      ;SET MSGTYP TO FATAL ERROR
2528 012774 000000                      HALT      ;T BIT NOT SAVED ON THE STACK, OR WRONG STSTNM
2529                      ; TO SCOPE REPLACE HALT W/ 240
2530                      ; AND REPLACE NEXT INST W/ 752
2531 012776 012767 000016 165010 STP3D: MOV      #16, 14
2532
2533
2534 ;THIS ROUTINE TEST THAT NO LEGAL ADDRESS TRAPS.
2535 ;AND THAT AN ILLEGAL ADDRESS TRAPS TO LOCATION 4
2536 ;*****
2537 ;TEST 103 TEST NON-EXISTENT ADDRESS TRAPS
2538 ;*****
2539 013004 005237 000304          TST103: INC      @#STESTN ;UPDATE TEST NUMBER
2540 013010 022737 000103 000304      CMP      #103, @#STESTN ;SEQUENCE ERROR?
2541 013016 001063                      BNE      AUTO1 ;BR TO ERROR HALT ON SEQ ERROR
2542
2543 ;THIS ROUTINE TESTS MEMORY UNTIL IT DOES A NXM TRAP
2544 013020 000402                      BR      ADALL
2545 013022 000000                      TSL:      0
2546 013024 000000                      CORH:     0
2547 013026 005000                      ADALL:    CLR      %0
2548 013030 005067 164752                      CLR      6
2549 013034 012767 013070 164742      MOV      #ATRAP, 4 ;SET UP ADDRESS TRAP ENTRANCE
2550 013042 012706 000500      NOR:      MOV      #BUFF, $P
2551 013046 105720                      TSTB     (0)+ ;IF OUTSIDE OF CORE, TRAP TO 4
2552 013050 020027 160000                      CMP      %0, #160000 ;IS POINTER IN SIDE CORE
2553 013054 101772                      BLOS     NOR ;TEST THE REST OF CORE
2554 013056
2555 013056 012737 000273 000302      AUTO:    MOV      #273, @#SFATAL ;MOVE TO MAILBOX # ***** 273 *****
2556 013064 005212                      INC      (R2)      ;SET MSGTYP TO FATAL ERROR
2557 013066 000000                      HALT      ;SHOULD HAVE TRAPED
2558                      ; TO SCOPE REPLACE HALT W/ 240
2559                      ; AND REPLACE NEXT INST W/ 753
2560
2561 013070 010067 177730          ;RETURN HERE ON AN ADDRESS TRAP
2562          ATRAP: MOV      RO, CORH ;MOVE THE FIRST NXM LOCATION IN CORH
2563          ;THIS ROUTINE DOES NXM TRAPS UNTIL IT FINDS AN EXISTANT MEMORY LOCATION
2564 013074 012700 160001          MOV      #160001, RO ;SET UP THE HIGHEST MEM LOCATION
2565 013100 012767 013136 164676      CTRAP: MOV      #BTRAP, 4 ;SET UP THE VECTOR
2566 013106 012706 000500          MOV      #BUFF, $P
2567 013112 105740                      TSTB     -(RO) ;DOES IT EXIST?
2568 013114 005200                      DTRAP: INC      RO ;IF YES INCREMENT IT
2569 013116 020067 177702                      CMP      RO, CORH ;IS IT THE SAME LOCATION?
2570 013122 001426                      BEQ      TRAPB
2571 013124 012737 000274 000302      MOV      #274, @#SFATAL ;MOVE TO MAILBOX # ***** 274 *****
2572 013132 005212                      INC      (R2)      ;SET MSGTYP TO FATAL ERROR
2573 013134 000000                      HALT      ;CONTENTS OF RO AND CORH SHOULD HAVE BEEN EQUAL
2574                      ; TO SCOPE REPLACE HALT W/ 240
2575                      ; AND REPLACE NEXT INST W/ 730
2576                      ; IF THIS COMPARISON FAILS IT MEANS
2577                      ; THAT SOME LEGAL ADDRESS TRAPPED OR
2578                      ; THAT AN ILLEGAL ADDRESS DID NOT TRAP
2578 013136 005767 164634          BTRAP: TST      STATUS

```

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SEQ 0052

```

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

```

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TEST THAT A TTY INTERRUPT CAUSES AN OVERFLOW TRAP

SEQ 0053

```

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

R7TRX:
;*****
;TEST 105 TEST THAT A PENDING INTERRUPT OCCURS BEFORE TRAP
;*****
TST105: INC @STESTN ;UPDATE TEST NUMBER
        CMP #105,@STESTN ;SEQUENCE ERROR?
        BNE BR71 ;BR TO ERROR HALT ON SEQ ERROR
        TST PROFTE
        BNE NODL
        MOV #BUFF,%6
        MOV #340,STATUS ;SET TO A HIGH PRIORITY LEVEL
        MOV #TR0,64
        MOV #100,TTCSR ;INTERRUPT FOR TTY PUNCH/PRINTER
        MOV #BR71,34 ;TRAP VECTOR
        MOV #TR2,64 ;TTY VECTOR
        MOV #340,36 ;IF TRAP TRAPS, MOVE 340 TO PRIORITY
        CLR STATUS ;SHOULD INTERRUPT AT END OF CLR INST
        TRAP ;TTY INTERRUPT SHOULD OVERRIDE TRAP

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

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

TR2: CLR 36
      BIC #100,TTCSR
NODL:
;*****
;TEST 106 TEST THAT A PENDING INTERRUPT, INTERRUPTS BETWEEN TRAPS
;*****
TST106: INC @STESTN ;UPDATE TEST NUMBER
        CMP #106,@STESTN ;SEQUENCE ERROR?
        BNE TR5 ;BR TO ERROR HALT ON SEQ ERROR
        TST PROFTE
        BNE NODL1
        MOV #BUFF,%6
        MOV #340,STATUS
        MOV #100,TTCSR
        MOV #TR3,34 ;TRAP
        MOV #TR4,64 ;TTY OUTPUT
        MOV #TR5,20 ;IOT
        MOV #340,22 ;IOT PRIORITY
        TRAP ;THE ACT OF TRAPPING LOWER PRIORITY
        IOT ;INTERRUPT SHOULD OCCUR IN PLACE OF IOT TRAP

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

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TEST THAT A PENDING INTERRUPT, INTERRUPTS BETWEEN TRAPS

SEQ 0054

```

2691 013646 005067 164150 TR4: CLR 22 ;CLR IOT PRIORITY
2692 013652 012767 000036 164154 MOV #36,34
2693 013660 012767 000003 164176 MOV #66,64
2694 013666 012767 000022 164124 MOV #22,20
2695 013674
2696
2697
2698 ;*****
2699 ;TEST 107 TEST THAT "RESET" GOES TO OUTSIDE WORLD
2700 013674 005237 000304 TST107: INC #107,2#STESTN ;UPDATE TEST NUMBER
2701 013700 022737 000107 000304 CMP #107,2#STESTN ;SEQUENCE ERROR?
2702 013706 001027 BNE TST110-12 ;BR TO ERROR HALT ON SEQ ERROR
2703 013710 005767 177322 TST PROFTE
2704 013714 001031 BNE NODL2
2705 013716 012767 000100 163640 MOV #100,TTCSR ;SET INTERRUPT ENABLE
2706 013724 012767 000100 163626 MOV #100,TRCSR ;SET INTERRUPT ENABLE
2707 013732 000005 RESET ;SHOULD CLEAR INTERRUPT ENABLE
2708 013734 032767 000100 163622 BIT #100,TTCSR ;TEST FOR CLEAR
2709 013742 001405 BEQ 1$
2710 013744 012737 000304 000302 MOV #304,2#SFATAL ;MOVE TO MAILBOX # ***** 304 *****
2711 013752 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2712 013754 000000 HALT ;RESET FAILED TO CLEAR TTCSR
2713 ; TO SCOPE REPLACE HALT W/ 240
2714 ; AND REPLACE NEXT INST W/ 754
2715 013756 032767 000100 163574 1$: BIT #100,TRCSR ;TEST FOR CLEAR
2716 013764 001405 BEQ TST110
2717 013766 012737 000305 000302 MOV #305,2#SFATAL ;MOVE TO MAILBOX # ***** 305 *****
2718 013774 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2719 013776 000000 HALT ;RESET FAILED TO CLEAR TRCSR,OR WRONG $TSTNM
2720 ; TO SCOPE REPLACE HALT W/ 240
2721 ; AND REPLACE NEXT INST W/ 743
2722 014000 NODL2:
2723 ;*****
2724 ;TEST 110 TEST THAT RESET HAS NO EFFECT ON THE TRACE TRAP
2725 ;*****
2726 014000 005237 000304 TST110: INC #107,2#STESTN ;UPDATE TEST NUMBER
2727 014004 022737 000110 000304 CMP #110,2#STESTN ;SEQUENCE ERROR?
2728 014012 001014 BNE RESET3 ;BR TO ERROR HALT ON SEQ ERROR
2729 014014 012706 000500 MOV #BUFF,%6 ;SET STACK
2730 014020 012767 014056 163766 MOV #RESET2,14 ;SET UP TRACE VECTOR
2731 014026 012746 000020 MOV #20,-(R6) ;SET THE T-BIT ON STACK
2732 014032 012746 014040 MOV #1$,-(R6) ;MOVE NEW PC ON STACK
2733 014036 000006 RTT
2734 014040 000005 1$: RESET ;SHOULD HAVE NO EFFECT
2735 014042 000005 RESET ;NO EFFECT
2736 014044
2737 014044 012737 000306 000302 RESET3: MOV #306,2#SFATAL ;MOVE TO MAILBOX # ***** 306 *****
2738 014052 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2739 014054 000000 HALT ;TRACE TRAP FAILED,OR WRONG $TSTNM
2740 ; TO SCOPE REPLACE HALT W/ 240
2741 ; AND REPLACE NEXT INST W/ 756
2742 014056 005067 163714 RESET2: CLR STATUS ;CLEAR TRACK
2743 014062 005067 163730 CLR 16 ;TRACE STATUS
2744 014066 012767 000016 163720 MOV #16,14
2745
2746 ;*****

```

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 OFR88.P11 19-NOV-75 07:55 T110

TEST THAT RESET HAS NO EFFECT ON THE TRACE TRAP

SEG 0055

```

2747 :TEST 111 TEST THAT WHEN TTY INTERRUPTS IT POFS NEW STATUS
2748 :*****
2749 014074 005237 000304 :ST111: INC 00$TESTN :UPDATE TEST NUMBER
2750 014100 022737 000111 000304 :CMP 0111,00$TESTN :SEQUENCE ERROR?
2751 014106 001051 :BNE TTY11 :BR TO ERROR HALT ON SEQ ERROR
2752 014110 005767 177122 :TST PROFTE
2753 014114 001055 :BNE MODL3
2754 014116 000005 :RESET
2755 014120 012706 000500 :MOV 0$BUFF,%6 :SET UP STACK
2756 014124 012767 014150 163732 :MOV 0$TTY3,%4 :INTERRUPT VECTOR
2757 014132 005067 163640 :CLR STATUS :DROP PROCESSOR PRIORITY
2758 014136 012767 000357 163722 :MOV 0357,%6 :HIGH PRIORITY ON INTERRUPT
2759 014144 005167 163414 :COM TTCSR :SHOULD SET INTERRUPT ENABLE & INTERRUPT
2760 014150 026727 163622 000357 TTY3: CMP STATUS,%357
2761 014156 001405 :BEQ IS
2762 014160 012737 000307 000302 :MOV 0307,00$FATAL :MOVE TO MAILBOX 0 ***** 307 *****
2763 014166 005212 :INC :SET MSGTYP TO FATAL ERROR
2764 014170 000000 :HALT :INTERRUPT DID NOT POP CORRECT STATUS
2765 : : TO SCOPE REPLACE HALT W/ 240
2766 : : AND REPLACE NEXT INST W/ 746
2767 014172 000005 :IS: RESET :CLR INTERRUPT ENABLE
2768 014174 012706 000500 :MOV 0$BUFF,%6 :STACK SET UP
2769 014200 012767 014224 163656 :MOV 0$TTY4,%4 :INTERRUPT VECTOR
2770 014206 005067 163654 :CLR 66 :CLR NEW STATUS
2771 014212 012767 000157 163556 :MOV 0157,STATUS :PROCESSOR STATUS
2772 014220 005167 163340 :COM TTCSR :SET INTERRUPT ENABLE
2773 014224 005767 163546 TTY4: TST STATUS
2774 014230 001405 :BEQ TTT37
2775 014232 TTY11:
2776 014232 012737 000310 000302 :MOV 0310,00$FATAL :MOVE TO MAILBOX 0 ***** 310 *****
2777 014240 005212 :INC :SET MSGTYP TO FATAL ERROR
2778 014242 000000 :HALT :INCORRECT STATUS, OR WRONG $TSTNM
2779 : : TO SCOPE REPLACE HALT W/ 240
2780 : : AND REPLACE NEXT INST W/ 721
2781 014244 005067 163314 TTT37: CLR TTCSR
2782 014250 :MODL3:
2783 :*****
2784 :TEST 112 TEST THE 'WAIT' INSTRUCTION
2785 :*****
2786 014250 005237 000304 :ST112: INC 00$TESTN :UPDATE TEST NUMBER
2787 014254 022737 000112 000304 :CMP 0112,00$TESTN :SEQUENCE ERROR?
2788 014262 001055 :BNE STP4 :BR TO ERROR HALT ON SEQ ERROR
2789 014264 042767 000100 163272 :BIC 0100,TPS :CLEAR INTERRUPT ENABLE
2790 014272 012706 000500 :MOV 0$BUFF,SP :SET UP THE STACK
2791 014276 012767 014366 163560 :MOV 0$WATE,%4 :SET UP THE INTERRUPT VECTOR
2792 014304 005067 163556 :CLR 66
2793 014310 105767 163250 WATE1: TSTB TPS :WAIT FOR READY
2794 014314 100375 :BPL WATE1 :TO BE UP
2795 014316 012767 000015 163242 :MOV 015,TPB :DO A CARRIAGE RETURN
2796 014324 105767 163234 WATE2: TSTB TPS :WAIT FOR READY TO COME UP
2797 014330 100375 :BPL WATE2
2798 014332 012767 000015 163226 :MOV 015,TPB :DO ANOTHER CARRIAGE RETURN
2799 014340 052767 000100 163216 :BIS 0100,TPS :SET THE INTERRUPT ENABLE
2800 014346 005067 163424 :CLR STATUS :CLEAR THE PSW
2801 014352 000001 WATE3: WAIT :WAIT FOR THE INTERRUPT
  
```

C05

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 OFRABE.P11 19-NOV-75 07:55 T112 TEST THE 'WAIT' INSTRUCTION

SEQ 0056

28033	014354	012737	000311	000302	MOV	#311,2#SFATAL	:MOVE TO MAILBOX # ***** 311 *****
28034	014362	005212			INC	(R2)	:SET MSGTYP TO FATAL ERROR
28035	014364	000000			HALT		:WAIT INSTRUCTION DID NOT LOOP
28036							: TO SCOPE REPLACE HALT W/ 240
28037							: AND REPLACE NEXT INST W/ 736
28038	014366	005767	163404		WATE:	TST	STATUS :IS THE PSW CORRECT?
28039	014372	001405			BEG	IS	
28040	014374	012737	000312	000302	MOV	#312,2#SFATAL	:MOVE TO MAILBOX # ***** 312 *****
28041	014402	005212			INC	(R2)	:SET MSGTYP TO FATAL ERROR
28042	014404	000000			HALT		:NEW PSW SHOULD HAVE BEEN ZERO
28043							: TO SCOPE REPLACE HALT W/ 240
28044							: AND REPLACE NEXT INST W/ 726
28045	014406	026727	164062	014354	IS:	CMP	BUFF-4, #WATE3+2
28046	014414	001405			BEG	STP4E	:IS THE OLD PC SAVED
28047	014416				STP4:		
28048	014416	012737	000313	000302	MOV	#313,2#SFATAL	:MOVE TO MAILBOX # ***** 313 *****
28049	014424	005212			INC	(R2)	:SET MSGTYP TO FATAL ERROR
28050	014426	000000			HALT		:OLD PC WAS NOT SAVED OR WRONG STSTN
28051							: TO SCOPE REPLACE HALT W/ 240
28052							: AND REPLACE NEXT INST W/ 715
28053	014430	012767	000066	163426	STP4E:	MOV	#66,64
28054							
28055	014436	004767	001272		JSR	%7,CLRALL	:CLEAR ALL KT11-D REGISTERS
28056	014442	012777	077406	164106	MOV	#77406,2KPDRO	:MAP KERNEL 0 TO BANK 0, RW, 4K
28057	014450	004767	001346		JSR	PC,KERN7	:MAP KERNEL PAR/PDR 7 TO EXT BANK
28058	014454	012777	014510	164030	MOV	#INT25,2KTVEC	:SETUP RETURN VECTOR
28059	014462	005077	164026		CLR	2KTSTA	
28060	014466	012704	020000		MOV	#20000,R4	:USE R4 TO REFERENCE NR KERNEL 1
28061	014472	005277	164004		INC	2SR0	:TURN ON KT11-D
28062	014476	005724			ADR25:	TST	:REFERENCE NR KERNEL 1
28063	014500	000000			ADR25A:	HALT	:SHOULD HAVE ABORTED ALREADY
28064	014502	005077	163774		CLR	2SR0	:TURN OFF KT11-D
28065	014506	000442			BR	DON25	
28066	014510	017701	163766		INT25:	MOV	2SR0,R1
28067	014514	005377	163762		DEC	2SR0	:SAVE CONTENTS OF SR0
28068	014520	022701	100003		CMP	#100003,R1	:TURN OFF KT11-D
28069	014524	001401			BEG	.+4	:CHECK SAVED CONTENTS OF SR0
28070	014526	000000			HLT		:SR0 INCORRECT AFTER NR ABORT
28071							:((SEE SAVED CONTENTS IN R1))
28072	014530	022777	014476	163752	CMP	#ADR25,2SR2	:CK SR2
28073	014536	001401			BEG	.+4	
28074	014540	000000			HLT		:SR2 INCORRECT-SHOULD CONTAIN ADDRESS
28075							:OF LAST FETCH BEFORE THE ABORT
28076	014542	005077	163742		CLR	2SR2	:TRY TO WRITE INTO SR2
28077	014546	022777	014476	163734	CMP	#ADR25,2SR2	:SR2 SHOULD BE READ ONLY
28078	014554	001401			BEG	.+4	
28079	014556	000000			HLT		:SR2 NOT READ ONLY
28080	014560	022777	077506	163770	CMP	#77506,2KPDRO	
28081	014566	001401			BEG	.+4	
28082	014570	000000			HLT		:KERNEL PDR 0 INCORRECT
28083							:W BIT SHOULD HAVE BEEN SET BY THE STACK WRITE
28084	014572	005777	163762		TST	2KPDRI	
28085	014576	001401			BEG	.+4	
28086	014600	000000			HLT		:KERNEL PDR 1 INCORRECT
28087	014602	021627	014500		CMP	(R6), #ADR25A	:CHECK VALUE PUSHED ON STACK
28088	014606	001401			BEG	.+4	

Address	Instruction	Op-Code	Register	Value	Label	Comment
2859	HLT	000000				: INCORRECT VALUE ON STACK
2860	CMP	022626				: RESTORE STACK
2861	CLR	005077				: CHANGE TRAP VECTOR TO CAUSE A
2862	MOV	016777	163674	163664	DON25:	: HALT ON A FALSE TRAP
2863						
2864						
2865						
2866	JSR	004767	001126			: MAP ALL PAGES RW, 4K, BANK 0
2867	MOV	012777	000004	163720		: MAP KERNEL 1 NR, 1 PAGE
2868	JSR	004767	001156			: MAP KERNEL PAR/PDR 7 TO EXT BANK
2869	MOV	012777	014670	163640		: SETUP ABORT RETURN
2870	CLR	005077	163636			
2871	INC	005277	163520			: TURN ON KT11-D
2872	TST	005737	030000			: REFERENCE NR KERNEL 1 - SHOULD ABORT
2873	HALT	000000				: NO NR ABORT
2874	CMP	022777	140003	163604	RET33:	: CHECK SRC
2875	BEQ	001401				
2876	HLT	000000				: SRC INCORRECT - SHOULD SHOW KERNEL
2877						: PAGE 1, AND BOTH NR + PL EPROGS SET
2878	CLR	005077	163574			
2879	MOV	016777	163602	163576		: RESTORE TRAP CATCHER
2880						
2881						
2882	JSR	004767	001014			: CLEAR ALL KT11-D REGISTERS
2883	JSR	004767	001076			: MAP KERNEL PAR/PDR 7 TO EXT BANK
2884	MOV	012777	077406	163624		: MAP KERNEL 0 RW, RK, BANK0
2885	MOV	012777	077402	163620		: MAP KERNEL 1 NAM, KSZ K, BANK0
2886	MOV	012777	014774	163544		: SETUP RETURN VECTOR
2887	CLR	005077	163542			
2888	INC	005277	163524			: TURN ON KT11-D
2889	MOV	013737	037776	037776	ADR40:	: REFERENCE KERNEL 1 - 1ST ABORT
2890	CLR	005077	163512			: TURN OFF KT11-D
2891	HLT	000000				: REFERENCE TO KERNEL 1
2892	BR	000510				: DIDN'T ABORT
2893	BIC	042777	000001	163500	INT40:	: TURN OFF KT11-D
2894	CMP	022777	020002	163472		: CHECK SRC
2895	BEQ	001401				
2896	HLT	000000				: SRC INCORRECT AFTER NAM ABORT
2897	MOV	012777	015050	163470		: SETUP NEW RETURN VECTOR
2898	CMP	022626				: RESTORE STACK POINTER
2899	MOV	012702	037776			: SETUP R2 TO REFERENCE KERNEL 1
2900	BIS	052777	000001	163444		: TURN ON KT11-D
2901	MOV	012242				: REFERENCE KERNEL 1 - 2ND ABORT
2902	CLR	005077	163436		ADR40A:	: TURN OFF KT11-D
2903	HLT	000000				: 2ND REFERENCE TO KERNEL 1
2904	BR	000462				: DIDN'T ABORT
2905	BIC	042777	000001	163424	INT40A:	: TURN OFF KT11-D
2906	CMP	022777	020002	163416		: CHECK SRC
2907	BEQ	001401				
2908	HLT	000000				: SRC INCORRECT AFTER 2ND NAM ABORT
2909	CMP	022777	014756	163412		: CHECK SR2
2910	BEQ	001401				
2911	HLT	000000				: SR2 DOESN'T CONTAIN VALUE FROM 1ST ABORT
2912	CMP	021627	015040			: CHECK ADDRESS PUSHED ON STACK
2913	BEQ	001401				
2914	HLT	000000				: INCORRECT ADDRESS ON STACK

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SEG 0058

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2915 015112 022626      CMP      (R6)+,(R6)+      ;RESTORE STACK POINTER
2916 015114 012777 015150 163370      MOV      #INT40B, &KTVEC      ;CHANGE RETURN ADDRESS
2917 015122 005077 163354      CLR      &SR0      ;CLEAR NAM ERROR BIT-SHOULD
2918      ;"UNLOCK" ERROR TRACKING
2919 015126 012702 037776      MOV      #37776, R2      ;SETUP R2 TO REFERENCE KERNEL 1
2920 015132 005277 163344      INC      &SR0      ;TURN ON KT11-D
2921 015136 012242      ADR40B: MOV      (R2)+, -(R2)      ;3RD NAM REFERENCE, ERROR BIT WAS CLEARED
2922 015140 005077 163336      ADR40C: CLR      &SR0      ;TURN OFF KT11-D
2923 015144 000000      HLT      ;3RD REFERENCE TO KERNEL 1
2924 015146 000422      BR      ;DIDN'T ABORT
2925 015150 042777 000001 163324      INT40B: BIC      #1, &SR0      ;TURN OFF KT11-D
2926 015156 022777 020002 163316      CMP      #20002, &SR0      ;CHECK SR0
2927 015164 001401      BEQ      .+4
2928 015166 000000      HLT      ;SR0 INCORRECT
2929 015170 022777 015136 163312      CMP      #ADR40B, &SR2      ;CHECK SR2
2930 015176 001401      BEQ      .+4
2931 015200 000000      HLT      ;SR2 INCORRECT - SHOULD CONTAIN
2932      ;LAST FETCH ADDRESS BEFORE ABORT
2933 015202 022716 015140      CMP      #ADR40C, (SP)      ;CHECK STACK
2934 015206 001401      BEQ      .+4
2935 015210 000000      HLT      ;PC ON STACK INCORRECT
2936 015212 022626      CMP      (R6)+,(R6)+      ;RESTORE STACK POINTER
2937 015214 005077 163262      DONE40: CLR      &SR0      ;CLEAR ERROR BIT
2938 015220 005077 163270      CLR      &KTSTA      ;CHANGE TRAP RETURN TO CAUSE A HALT
2939 015224 016777 163264 163260      MOV      KTSTA, &KTVEC      ;ON A FALSE INTERRUPT
2940
2941      ;*****
2942      ;TEST 113      TEST THAT ALL RESERVED INSTRUCTIONS TRAP
2943      ;*****
2944 015232 005237 000304      TST113: INC      &STESTN      ;UPDATE TEST NUMBER
2945 015236 022737 000113 000304      CMP      #113, &STESTN      ;SEQUENCE ERROR?
2946 015244 001137      BNE      RET4      ;BR TO ERROR HALT ON SEQ ERROR
2947 015246 042767 000100 162310      BIC      #100, TPS
2948 015254 012703 015570      MOV      #TABLE, TAB      ;TABLE POINTER
2949 015260 012305      GIN1: MOV      (TAB)+, FIRST      ;FIRST OR CURRENT INSTRUCTION
2950 015262 012301      MOV      (TAB)+, LAST      ;LAST INSTRUCTION OR GROUP
2951 015264 020567 000324      CMP      FIRST, FINISH      ;TESTED ALL
2952 015270 001415      BEQ      GIN3      ;YES BRANCH
2953 015272 010567 000320      MOV      FIRST, INST      ;SET UP INST
2954 015276 005267 000314      GIN2: INC      INST
2955 015302 012767 015474 162500      MOV      #RET, 10      ;SET UP RETURN FROM TRAP
2956 015310 012706 000500      MOV      #BUFF, SP      ;SET UP STACK POINTER
2957 015314 005067 162456      CLR      CC      ;CLEAR PRIORITY
2958 015320 000167 000272      JMP      INST      ;EXECUTE RESERVED INSTRUCTION
2959 015324 005237 000306      GIN3: INC      &SPASS
2960 015330 105267 000116      INCB      PASSPT      ;SHOULD PRINT THIS PASS?
2961 015334 001027      BNE      ACT      ;NO
2962 015336 132767 000040 162755      BITB      #40, $ENVM      ;WILL APT ALLOW PRINTING?
2963 015344 001023      BNE      ACT      ;NO
2964 015346 023727 000042 015424      CMP      &42, #SENDAD
2965 015354 001417      BEQ      ACT
2966 015356 012700 015454      MOV      #MSG, R0      ;GET MSG ADDR.
2967 015362 105737 177564      WAIT: TSTB      &TPS      ;TTY READY
2968 015366 100375      BPL      WAIT      ;NO WAIT
2969 015370 112037 177566      MOVB      (R0)+, &TPB      ;PRINT CHARACTER
2970 015374 001372      BNE      WAIT      ;NEXT IF NOT DONE.

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SEG 0059

2971	015376	105737	177564	WAIT1:	TSTB	2*TPS	
2972	015402	100375			BPL	WAIT1	
2973	015404	000005			RESET		
2974	015406	012767	177761	000036	MOV	#177761,PASSPT	;DO IT ABOUT 15 DECIMAL TIMES
2975	015414	013700	000042	ACT:	MOV	2*42,RO	;CHECK ACT
2976	015420	001405			BEQ	GOAGIN	;KEEP GOING
2977	015422	000005			RESET		
2978	015424	004710		SENDAD:	JSR	PC,(RO)	;ACT HOOKS
2979	015426	000240			NOP		
2980	015430	000240			NOP		
2981	015432	000240			NOP		
2982	015434	012767	000012	162346	GOAGIN:	MOV	#12,10
2983	015442	005067	162344		CLR	12	
2984	015446	000167	163154		JMP	RESTR	;DO NEXT PASS
2985	015452	177777		PASSPT:	-1		
2986	015454	005015	047105	020104	MSG:	.ASCIZ	<15><12>.END OF DFKAB .
2987	015462	043117	042040	045506			
2988	015470	041101	000040				
2989							
2990							
2991	015474	020627	000474				
2992	015500	001405		RET:	CMP	SP,#BUFF-4	;TEST DECREMENT OF SP
2993	015502	012737	000314	000302	BEQ	RET1	
2994	015510	005212			MOV	#314,2*SFATAL	;MOVE TO MAILBOX # ***** 314 *****
2995	015512	000000			INC	(R2)	;SET MSGTYP TO FATAL ERROR
2996					HALT		;WRONG DECREMENT
2997							; TO SCOPE REPLACE HALT W/ 240
2998	015514	026727	162754	015620	RET1:	CMP	BUFF-4,#INST+2
2999	015522	001405			BEQ	RET2	; AND REPLACE NEXT INST W/ 654
3000	015524	012737	000315	000302	MOV	#315,2*SFATAL	;LOC OF INST UNINCREMENTED
3001	015532	005212			INC	(R2)	;MOVE TO MAILBOX # ***** 315 *****
3002	015534	000000			HALT		;SET MSGTYP TO FATAL ERROR
3003							;INST INC ON TRAP
3004							; TO SCOPE REPLACE HALT W/ 240
3005	015536	005767	162734		RET2:	TST	BUFF-2
3006	015542	001405			BEQ	RET3	
3007	015544				RET4:		
3008	015544	012737	000316	000302	MOV	#316,2*SFATAL	;MOVE TO MAILBOX # ***** 316 *****
3009	015552	005212			INC	(R2)	;SET MSGTYP TO FATAL ERROR
3010	015554	000000			HALT		;CONDITION CODES SET ON TRAP OR WRONG \$TSTNM
3011							; TO SCOPE REPLACE HALT W/ 240
3012							; AND REPLACE NEXT INST W/ 633
3013	015556	026701	000034		RET3:	CMP	INST, LAST
3014	015562	001636			BEQ	GIN1	;SET UP NEW GROUP
3015	015564	000167	177506		JMP	GIN2	;FINISH OLD GROUP
3016							;END OF INSTRUCTION GROUP
3017	015570	000006		TABLE:	6		;END OF OPERATE
3018	015572	000077			77		
3019	015574	000207			207		
3020	015576	000227			227		
3021	015600	006777			6777		
3022	015602	007777			7777		
3023	015604	075037			075037		
3024	015606	076777			76777		
3025	015610	167777			167777		
3026	015612	177777			177777		

;RTS,RT1,JMP

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SEQ 0060

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3027 015614 015614          FINISH: .          :END FLAG
3028 015616 000000          INST:  HALT          :WILL CONTINUE RESERVED INST
3029 015620 000000          :HALT          :SHOULD TRAP TO LOC 10
3030 015622 000000          :HALT          :LOC 10 SHOULD SEND YOU TO
3031 015624 000000          :HALT          :RET
3032 015626 000000          :HALT
3033 015630 012767 015640 162166 PWRDWN: MOV      #PWRUP,24
3034 015636 000000          :HALT
3035
3036 015640 012767 015630 162156 PWRUP: MOV      #PWRDWN,24
3037 015646 012706 000500          :MOV      #BUFF,SP
3038 015652 132767 000040 162441 :BITB     #40,SENVN      :WILL APT ALLOW PRINTING?
3039 015660 001013          :BNE      PFRES          :NO
3040 015662 012700 015714          :MOV      #MSGPWF,RO     :GET MSG ADDR.
3041 015666 105737 177564 PWAIT: TSTB     @*TPS      :TTY READY
3042 015672 100375          :BPL      PWAIT          :NO WAIT
3043 015674 112037 177566          :MOVB     (RO)+,@*TPB    :PRINT CHARACTER
3044 015700 001372          :BNE      PWAIT          :NEXT IF NOT DONE.
3045 015702 105737 177564 PWAIT1: TSTB     @*TPS
3046 015706 100375          :BPL      PWAIT1
3047 015710 000167 162712 PFRES: JMP      RESTRT
3048 015714 005015 047520 042527 MSGPWF: .ASCIZ  <15><12>.POWER FAILED!.
3049 015722 020122 040506 046111
3050 015730 042105 000041
3051 015734 005077 162542 CLRALL: CLR      @SRO
3052 015740 005000          :CLR      RO
3053 015742 012701 000040          :MOV      #32,R1
3054 015746 005070 000516 C_RLP: CLR      @ADRTAB(RO)      :COUNT OF REGISTERS TO BE CLEARED
3055 015752 005720          :TST      (RO)+          :CLEAR REGISTERS THRU ADDRESS TABLE
3056 015754 077104          :SOB      R1,CLRLP       :MOVE POINTER
3057 015756 000207          :RTS       %7           :LOOP TILL DONE
3058
3059 :SUBROUTINE TO MAKE ALL PAGES RW, BANK 0, 4K, UP
3060 015760 005077 162516 RWALL: CLR      @SRO
3061 015764 012701 000516          :MOV      #ADRTAB,R1    :R1 POINTS TO ADDRESS TABLE
3062 015770 012700 000010          :MOV      #10,RO        :RO IS COUNTER
3063 015774 005071 000020          :CLR      @20(R1)       :CLEAR PAR
3064 016000 012731 077406          :MOV      #77406,@(R1)+ :SET PDR RW, 4K
3065 016004 077005          :SOB      RO,RWL2
3066 016006 062701 000020          :ADD      #20,R1
3067 016012 020127 000616          :CMP      R1,#ADREND    :POINTER TO NEXT GROUP
3068 016016 002764          :BLT      RWL1
3069 016020 000207          :RTS       %7
3070 :MAP KERNEL PAR/PDR 7 TO EXTERNAL BANK
3071 016022 012777 007600 162564 KERN7: MOV      #7600,@KPAR7
3072 016030 012777 077406 162536          :MOV      #77406,@KPDR7
3073 016036 000207          :RTS       PC
3074 000001          :END

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0061

ABASE = 000000	254			
ACDW1 = 000000	254			
ACDW2 = 000000	254			
ACPUOP= 000000	254	269		
ACT 015414	2961	2963	2965	2975*
ADALL 013026	2544	2547*		
ADDW0 = 000000	254			
ADDW1 = 000000	254			
ADDW10= 000000	254			
ADDW11= 000000	254			
ADDW12= 000000	254			
ADDW13= 000000	254			
ADDW14= 000000	254			
ADDW15= 000000	254			
ADDW2 = 000000	254			
ADDW3 = 000000	254			
ADDW4 = 000000	254			
ADDW5 = 000000	254			
ADDW6 = 000000	254			
ADDW7 = 000000	254			
ADDW8 = 000000	254			
ADDW9 = 000000	254			
ADEVCT= 000000	254	260		
ADEVN = 000000	254			
ADREN0 000616	347*	3067		
ADRTAB 000516	311*	3054*	3061	
ADR25 014476	2832*	2842	2847	
ADR25A 014500	2833*	2857		
ADR40 014756	2889*	2909		
ADR40A 015040	2902*	2912		
ADR40B 015136	2921*	2929		
ADR40C 015140	2922*	2933		
AENV = 000000	254	265		
AENVN = 000000	254	266		
AFATAL= 000000	254	257		
AMADR1= 000000	254			
AMADR2= 000000	254			
AMADR3= 000000	254			
AMADR4= 000000	254			
AMAMS1= 000000	254			
AMAMS2= 000000	254			
AMAMS3= 000000	254			
AMAMS4= 000000	254			
AMSGAD= 000000	254	262		
AMSGLG= 000000	254	263		
AMSGTY= 000000	254	256		
AMTYP1= 000000	254			
AMTYP2= 000000	254			
AMTYP3= 000000	254			
AMTYP4= 000000	254			
APASS = 000000	254	259		
APRIOR= 000000	254			
ASWREG= 000000	254	267		
ATESTN= 000000	254	258		
ATRAP 013070	2549	2561*		
AUNIT = 000000	254	261		

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SEG 0062

AUSMR = 000000	254	268												
AUTO 013056	2554*													
AUTO1 013166	2541	2587*												
AVECT1= 000000	254													
AVECT2= 000000	254													
BEGIN 000620	236	239	352*											
BELL = 000240	227*													
BR1 000754	383	390*												
BR10 001206	457	454*												
BR11 001322	485	492*												
BR12 001372	498	505*												
BR13 001442	511	518*												
BR14 001512	524	531*												
BR15 001620	550	557*												
BR16 001642	558	565*												
BR17 001664	566	573*												
BR2 001004	393	400*												
BR20 001706	574	580*												
BR21 001730	581	588*												
BR22 001752	589	596*												
BR23 001774	597	604*												
BR3 001030	403	410*												
BR33 002054	621	627*												
BR34 002070	628	634*												
BR35 002104	635	641*												
BR36 002120	642	648*												
BR37 002144	651	657*												
BR4 001056	414	421*												
BR40 002160	658	664*												
BR41 002174	665	671*												
BR45 003674	1014	1019*												
BR46 004524	1112	1188*												
BR46A 004536	1187	1194*												
BR47 005404	1363	1368*												
BR5 001104	425	432*												
BR51 006234	1463	1539*												
BR51A 006246	1538	1545*												
BR6 001132	436	442*												
BR60 012452	2449*	2455												
BR7 001160	446	453*												
BR70 012662	2486	2503*												
BR71 013512	2641	2648	2659*											
BTRAP 013136	2564	2578*												
BUFF 000500	304*	684	700	703	716	719	732	737	744	749	762	801	853	
	868	871	884	887	900	905	912	916	929	968	1017	1036	1051	
	1054	1067	1070	1083	1088	1095	1100	1113	1152	1202	1217	1220	1233	
	1236	1249	1254	1261	1266	1279	1318	1366	1386	1401	1404	1417	1420	
	1433	1438	1446	1451	1464	1503	1560	1575	1578	1591	1594	1607	1612	
	1619	1624	1637	1676	1722	1737	1740	1753	1756	1770	1775	1782	1787	
	1800	1839	1886	1901	1904	1917	1920	1923	1938	1945	1950	1963	2002	
	2272	2290	2301	2314	2320	2336	2358	2388	2415	2423	2431	2440	2447	
	2455	2463	2474	2488	2517	2523	2550	2565	2585	2598	2644	2676	2729	
	2755	2768	2791	2815	2956	2991	2998	3005	3037					
CC = 177776	234*	734*	746*	794	833	902*	914*	961	1000	1085*	1097*	1145	1184	
	1251*	1263*	1311	1351	1435*	1448*	1496	1535	1609*	1621*	1669	1708	1772*	
	1784*	1832	1871	1935*	1947*	1995	2034	2957*						

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEG 0063

CLRAL	015734	2825	2882	3051*															
CLRLP	015746	3054*	3056																
CORH	013024	2546*	2561*	2568															
CTRAP	013100	2564*	2586																
DL11W	013240	2599	2603*																
DL11W1	013244	2601	2604*																
DONE40	015214	2892	2904	2924	2937*														
DON25	014614	2835	2861*																
DTRAP	013114	2567*	2585																
FINISH	015614	2951	3027*																
FOVER	011540	2244	2246	2258*															
GIN1	015260	2949*	3014																
GIN2	015276	2954*	3015																
GIN3	015324	2952	2959*																
GOAGIN	015434	2976	2982*																
HERE =	000000	361*	381*	391*	465														
HLT =	000000	215*	2840	2844	2849	2852	2856	2859	2876	2891	2896	2903	2908	2911					
		2914	2923	2928	2931	2935													
ILLA =	004700	232*	2206																
ILLB =	000100	233*	2230																
INST	015616	2953*	2954*	2958	2998	3013	3028*												
INSTC	002350	718*																	
INSTK	007216	1755*	1756																
INT25	014510	2828	2836*																
INT40	014774	2886	2893*																
INT40A	015050	2897	2905*																
INT40B	015150	2916	2925*																
ITRAPS=	000004	217*																	
KERN7	016022	2827	2868	2883	3071*														
KPAR0	000576	339*																	
KPAR1	000600	340*																	
KPAR2	000602	341*																	
KPAR3	000604	342*																	
KPAR4	000606	343*																	
KPAR5	000610	344*																	
KPAR6	000612	345*																	
KPAR7	000614	346*	3071*																
KPOR0	000556	330*	2826*	2850	2884*														
KPOR1	000560	331*	2854	2867*	2885*														
KPOR2	000562	332*																	
KPOR3	000564	333*																	
KPOR4	000566	334*																	
KPOR5	000570	335*																	
KPOR6	000572	336*																	
KPOR7	000574	337*	3072*																
KTSTA	000514	310*	2829*	2861*	2862	2870*	2879	2887*	2938*	2939									
KTVEC	000512	309*	2828*	2862*	2869*	2879*	2886*	2897*	2916*	2939*									
K1	000666	364*	480*	481	484	493*	494	497	505*	507	518*	520	531*	533					
		536																	
K10	000704	371*	565	573	580	588	596	604											
K11	000706	372*																	
K12	000710	373*																	
K2	000670	365*																	
K3	000672	366*																	
K4	000674	367*																	
K5	000676	368*	479*	482	492*	506*	508	510	519*	521	523	532*	534						

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEG 0064

K6	000700	369#	495	573						
K7	000702	370#	549	557	565	580	604			
MSG	015454	2966	2986#							
MSGPMF	015714	3040	3048#							
NODL	013536	2643	2667#							
NODL1	013674	2675	2695#							
NODL2	014000	2704	2722#							
NODL3	014250	2753	2782#							
NOP	= 000240	228#								
NOR	013042	2550#	2553							
PASSPT	015452	352#	2960#	2974#	2985#					
PFRES	015710	3039	3047#							
PROFTE	013236	2597#	2602#	2603#	2612	2642	2674	2703	2752	
PWAIT	015666	3041#	3042	3044						
PWAIT1	015702	3045#	3046							
PWRDWN	015630	354	3033#	3036						
PWRUP	015640	3033	3036#							
RA	005416	1365	1374#							
RA1	003706	1016	1025#							
RB	005402	1364#	1367#	1374#	1375					
RB1	003672	1015#	1018#	1025#	1026					
RC	005376	1366#	1376							
RC1	003666	1017#	1027							
RESET2	014056	2730	2742#							
RESET3	014044	2728	2736#							
RESTR1	000626	353#	2984	3047						
RET	015474	2955	2991#							
RETA	002240	683	687#							
RETAM	002252	685	693#							
RETAT	011640	2273	2283#							
RETA1	003100	854	861#							
RETA2	003776	1037	1044#							
RETA3	004612	1203	1210#							
RETA4	005506	1387	1394#							
RETA5	006322	1561	1568#							
RETB	002302	701	703#							
RETB1	011714	2291	2301#							
RETB2	003130	869	871#							
RETB3	004026	1052	1054#							
RETB4	004642	1218	1220#							
RETB5	005536	1402	1404#							
RETB6	006352	1576	1578#							
RETC	002352	717	719#							
RETC1	011774	2315	2320#							
RETC2	003200	885	887#							
RETC3	004076	1068	1070#							
RETC4	004712	1234	1236#							
RETC5	005606	1418	1420#							
RETC6	006422	1592	1594#							
RETD	002432	733	737#							
RETD1	003260	901	905#							
RETD2	004156	1084	1088#							
RETD3	004772	1250	1254#							
RETD4	005666	1434	1438#							
RETD5	006502	1608	1612#							
RETE	002500	745	749#							

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0065

RETE1	003324	913	916*
RETE2	004224	1096	1100*
RETE3	005040	1262	1266*
RETE4	005734	1447	1451*
RETE5	006550	1620	1624*
RETF	002556	763	766*
RETF1	003402	930	933*
RETF2	004302	1114	1117*
RETF3	005116	1280	1283*
RETF4	006012	1465	1468*
RETF5	006626	1638	1641*
RETG	002702	802	805*
RETG1	003526	969	972*
RETG2	004426	1153	1156*
RETG3	005242	1319	1322*
RETG4	006136	1504	1507*
RETG5	006752	1677	1680*
RETH5	007120	1723	1730*
RETJ	007150	1738	1740*
RETK	007220	1754	1756*
RETL	007300	1771	1775*
RETM	007346	1783	1787*
RETN	007424	1801	1804*
RETO	007546	1840	1843*
RETP	007716	1887	1894*
RETQ	007750	1902	1904*
RETR	010022	1918	1920*
RETS	010104	1934	1938*
RETT	010154	1946	1950*
RETL	010234	1964	1967*
RETV	010362	2003	2006*
RET1	015514	2992	2998*
RET2	015536	2999	3005*
RET3	015556	3006	3013*
RET33	014670	2869	2874*
RET4	015544	2946	3007*
RTI1	012250	2390	2394*
RTI2	012264	2391	2400*
RTRAP =	000010	231*	685*
RTRAP1=	000034	222*	854*
RTRAP2=	000020	221*	1037*
RTRAP3=	000030	220*	1203*
RTRAP4=	000014	219*	1387*
RTRAP5=	000004	218*	1561*
		1771*	1783*
		2003*	2004*
RTT1	012060	2339	2342*
RTT2	012076	2340	2350*
RTT3	012144	2360	2364*
RTT4	012164	2361	2372*
RTT5	012116	2358*	2366*
RTT6	012206	2373	2381*
RWALL	015760	2866	3060*
RWL1	015770	3062*	3068*
RWL2	015774	3063*	3065*
R7TRX	013400	2613	2635*

701*	717*	733*	745*	763*	764*	802*	803*
869*	885*	901*	913*	930*	931*	969*	970*
1052*	1068*	1084*	1096*	1114*	1115*	1153*	1154*
1218*	1234*	1250*	1262*	1280*	1281*	1319*	1320*
1402*	1418*	1434*	1447*	1465*	1466*	1504*	1505*
1576*	1592*	1608*	1620*	1638*	1639*	1677*	1678*
1801*	1802*	1840*	1841*	1887*	1902*	1918*	1934*
						2273*	2291*
						1723*	1738*
						1946*	1964*
							2315*
							1754*
							1965*

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[illegible]

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 DFKAB8.P11 19-NOV-75 07:55 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0067

TST111	014074	2749#		
TST112	014250	2787#		
TST113	015232	2944#		
TST12	003024	848#		
TST13	003100	850	865#	
TST14	003150	867	872	881#
TST15	003222	883	888	897#
TST16	003246	899	917	926#
TST17	003238	928	1003	1012#
TST2	001238	379	467	476#
TST20	003734	1033#		
TST21	003776	1035	1048#	
TST22	004046	1050	1055	1064#
TST23	004120	1066	1071	1080#
TST24	004246	1082	1101	1110#
TST25	004550	1199#		
TST26	004612	1201	1214#	
TST27	004662	1216	1221	1230#
TST3	001562	478	537	546#
TST30	004734	1232	1237	1246#
TST31	005062	1248	1267	1276#
TST32	005346	1278	1352	1361#
TST33	005444	1383#		
TST34	005506	1385	1398#	
TST35	005556	1400	1405	1414#
TST36	005630	1416	1421	1430#
TST37	005756	1432	1452	1461#
TST4	002016	548	605	616#
TST40	006260	1557#		
TST41	006322	1559	1572#	
TST42	006372	1574	1579	1588#
TST43	006444	1590	1595	1604#
TST44	006572	1606	1625	1634#
TST45	007056	1636	1710	1719#
TST46	007120	1721	1734#	
TST47	007170	1736	1741	1750#
TST5	002210	618	672	681#
TST50	007242	1752	1757	1767#
TST51	007370	1769	1788	1797#
TST52	007652	1799	1873	1883#
TST53	007716	1885	1898#	
TST54	007770	1900	1905	1914#
TST55	010044	1916	1921	1930#
TST56	010176	1932	1951	1960#
TST57	010466	1962	2036	2045#
TST6	002252	697#		
TST60	010530	2047	2061#	
TST61	010600	2063	2068	2078#
TST62	010734	2080	2115#	
TST63	011012	2132#		
TST64	011070	2149#		
TST65	011146	2166#		
TST66	011224	2183#		
TST67	011302	2200#		
TST7	002322	699	704	713#
TST70	011400	2215	2224#	

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0068

TST71	011456	2242#																		
TST72	011564	2269#																		
TST73	011640	2271#	2287#																	
TST74	011734	2289#	2302#	2311#																
TST75	012016	2313#	2321#	2332#																
TST76	012076	2334#	2343#	2354#																
TST77	012206	2356#	2385#																	
TTC99	0127564	223#	2619#	2632#	2647#	2666#	2678#	2705#	2708	2759#	2772#	2781#								
TTT37	014244	2774#	2781#																	
TTY11	014232	2751#	2775#																	
TTY3	014150	2756#	2760#																	
TTY4	014224	2769#	2773#																	
UPR0	000536	321#																		
UPR1	000540	322#																		
UPR2	000542	323#																		
UPR3	000544	324#																		
UPR4	000546	325#																		
UPR5	000550	326#																		
UPR6	000552	327#																		
UPR7	000554	328#																		
UPR8	000516	312#																		
UPR1	000520	313#																		
UPR2	000522	314#																		
UPR3	000524	315#																		
UPR4	000526	316#																		
UPR5	000530	317#																		
UPR6	000532	318#																		
UPR7	000534	319#																		
VDEC1	011004	2120#	2128#																	
VDEC10	011262	2185#	2187#	2190#																
VDEC11	011340	2202#	2204#	2207#																
VDEC12	011352	2205#	2213#																	
VDEC13	011436	2226#	2228#	2231#																
VDEC14	011450	2229#	2237#																	
VDEC2	010772	2117#	2119#	2122#																
VDEC3	011062	2137#	2145#																	
VDEC4	011050	2134#	2136#	2139#																
VDEC5	011140	2154#	2162#																	
VDEC6	011126	2151#	2153#	2156#																
VDEC7	011216	2171#	2179#																	
VDEC8	011204	2168#	2170#	2173#																
VDEC9	011274	2188#	2196#																	
WAIT	015362	2967#	2968#	2970																
WAIT1	015376	2971#	2972#																	
WATE	014366	2792#	2808#																	
WATE1	014310	2794#	2795#																	
WATE2	014324	2797#	2798#																	
WATE3	014352	2802#	2815#																	
SAPTND	000330	287#	293#																	
SCPUOP	000326	269#																		
SDEVCT	000310	260#																		
SENDAC	015424	247#	2964	2978#																
SENV	000320	265#																		
SENVH	000321	266#	2962	3038																
SENVH	000317	1#	384	385#	394	395#	404	405#	415	416#	426	427#	437	438#						
		447	448#	458	459#	468	469#	486	487#	499	500#	512	513#	525						

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEG C069

526*	538	539*	551	552*	559	560*	567	568*	575	576*	582	583*
590*	591*	598*	599*	606	607*	622*	623*	629	630*	636*	637*	643*
644*	652*	653*	659	660*	666	667*	673	674*	686	689*	705	706*
721*	722*	729*	740*	751	752*	768	769*	775	776*	782	783*	789*
790*	796	797*	807	808*	814	815*	821	822*	828	829*	838	839*
856	857*	873	874*	889	890*	907	908*	918	919*	935	936*	942*
943*	949	950*	956	957*	963	964*	974	975*	981	982*	988	989*
995	996*	1004	1005*	1020	1021*	1039	1040*	1056	1057*	1072	1073*	1090
1091*	1102	1103*	1119	1120*	1126	1127*	1133	1134*	1140	1141*	1147	1148*
1158	1159*	1165	1166*	1172	1173*	1179	1180*	1189	1190*	1205	1206*	1222
1223*	1238	1239*	1256	1257*	1268	1269*	1285	1286*	1292	1293*	1299	1300*
1306	1307*	1313	1314*	1324	1325*	1331	1332*	1338	1339*	1345	1346*	1353
1354*	1369	1370*	1389	1390*	1406	1407*	1422	1423*	1441	1442*	1453	1454*
1470	1471*	1477	1479*	1484	1485*	1491	1492*	1498	1499*	1509	1510*	1516
1517*	1523	1524*	1530	1531*	1540	1541*	1563	1564*	1580	1581*	1596	1597*
1614	1615*	1626	1627*	1643	1644*	1650	1651*	1657	1658*	1664	1665*	1671
1672*	1682	1683*	1689	1690*	1696	1697*	1703	1704*	1711	1712*	1725	1726*
1742	1743*	1758	1759*	1777	1778*	1799	1790*	1806	1807*	1813	1814*	1820
1821*	1827	1828*	1834	1835*	1845	1846*	1852	1853*	1859	1860*	1866	1867*
1874	1875*	1889	1890*	1906	1907*	1922	1923*	1940	1941*	1952	1953*	1969
1970	1976	1977*	1983	1984*	1990	1991*	1997	1998*	2008	2009*	2015	2016*
2022	2023*	2029	2030*	2037	2038*	2051	2052*	2069	2070*	2087	2088*	2096
2097*	2105	2106*	2123	2124*	2140	2141*	2157	2158*	2174	2175*	2191	2192*
2208	2209*	2216	2217*	2232	2233*	2259	2260*	2278	2279*	2296	2297*	2303
2304*	2322	2323*	2344	2345*	2367	2368*	2376	2377*	2395	2396*	2403	2404*
2418	2419*	2425	2426*	2435	2436*	2442	2443*	2450	2451*	2457	2458*	2468
2469*	2476	2477*	2498	2499*	2504	2505*	2526	2527*	2555	2556*	2570	2571*
2580	2581*	2588	2589*	2621	2622*	2627	2628*	2654	2655*	2660	2661*	2686
2687*	2710	2711*	2717	2718*	2737	2738*	2762	2763*	2776	2777*	2803	2804*
2810	2811*	2818	2819*	2993	2994*	3000	3001*	3008	3009*			
301*	357*											
264*												
276*	299											
257*	301	384*	394*	404*	415*	426*	437*	447*	458*	468*	486*	499*
512*	525*	538*	551*	559*	567*	575*	582*	590*	598*	606*	622*	629*
636*	643*	652*	659*	666*	673*	688*	705*	721*	739*	751*	768*	775*
782*	789*	796*	807*	814*	821*	828*	838*	856*	873*	899*	907*	918*
935*	942*	949*	956*	963*	974*	981*	988*	995*	1004*	1020*	1039*	1056*
1072*	1090*	1102*	1119*	1126*	1133*	1140*	1147*	1158*	1165*	1172*	1179*	1189*
1205*	1222*	1238*	1256*	1268*	1285*	1292*	1299*	1306*	1313*	1324*	1331*	1338*
1345*	1353*	1369*	1389*	1406*	1422*	1441*	1453*	1470*	1477*	1484*	1491*	1498*
1509*	1516*	1523*	1530*	1540*	1563*	1580*	1596*	1614*	1626*	1643*	1650*	1657*
1664*	1671*	1682*	1689*	1696*	1703*	1711*	1725*	1742*	1758*	1777*	1789*	1806*
1813*	1820*	1827*	1834*	1845*	1852*	1859*	1866*	1874*	1889*	1906*	1922*	1940*
1952*	1969*	1976*	1983*	1990*	1997*	2008*	2015*	2022*	2029*	2037*	2051*	2069*
2087*	2096*	2105*	2123*	2140*	2157*	2174*	2191*	2208*	2216*	2232*	2259*	2278*
2296*	2303*	2322*	2344*	2367*	2376*	2395*	2403*	2418*	2425*	2435*	2442*	2450*
2457*	2468*	2476*	2498*	2504*	2526*	2555*	2570*	2580*	2598*	2621*	2627*	2654*
2660*	2686*	2710*	2717*	2737*	2762*	2776*	2803*	2810*	2818*	2993*	3000*	3008*
294*												
255*	295	299										
295*												
262*												
263*												
256*	353*	358										
238*	259*	2959*										

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 SETABL 000320
 SETEND 000330
 SFATAL 000302

SHIBTS 000330
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D06

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0070

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 SSAR = 000000
 SSAREG 000322
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297*													
245*	250												
1*													
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258*	300	377*	378	476*	477	546*	547	616*	617	681*	682	697*	
698	713*	714	729*	730	759*	760	848*	849	865*	866	881*	882	
897*	898	926*	927	1012*	1013	1033*	1034	1048*	1049	1064*	1065	1080*	
1081	1110*	1111	1199*	1200	1214*	1215	1230*	1231	1246*	1247	1276*	1277	
1361*	1362	1383*	1384	1398*	1399	1414*	1415	1430*	1431	1461*	1462	1557*	
1558	1572*	1573	1588*	1589	1604*	1605	1634*	1635	1719*	1720	1734*	1735	
1750*	1751	1767*	1768	1797*	1798	1883*	1884	1898*	1899	1914*	1915	1930*	
1931	1960*	1961	2045*	2046	2061*	2062	2078*	2079	2115*	2116	2132*	2133	
2149*	2150	2166*	2167	2183*	2184	2200*	2201	2224*	2225	2242*	2243	2269*	
2270	2287*	2288	2311*	2312	2332*	2333	2354*	2355	2385*	2386	2412*	2413	
2484*	2485	2514*	2515	2539*	2540	2609*	2610	2639*	2640	2671*	2672	2700*	
2701	2726*	2727	2749*	2750	2787*	2788	2944*	2945					

STN = 000114

1*	374	380*	467	473	479*	537	543	549*	605	613	619*	672	
678	684*	694	700*	704	710	716*	720	726	732*	750	756	762*	
845	851*	862	868*	872	878	884*	888	894	900*	917	923	929*	
1003	1009	1015*	1030	1036*	1045	1051*	1055	1061	1067*	1071	1077	1083*	
1101	1107	1113*	1196	1202*	1211	1217*	1221	1227	1233*	1237	1243	1249*	
1267	1273	1279*	1352	1358	1364*	1380	1386*	1395	1421*	1405	1411	1417*	
1421	1427	1433*	1452	1458	1464*	1554	1560*	1569	1575*	1579	1585	1591*	
1595	1601	1607*	1625	1631	1637*	1710	1716	1722*	1731	1737*	1741	1747	
1753*	1757	1764	1770*	1788	1794	1800*	1873	1880	1886*	1895	1901*	1905	
1911	1917*	1921	1927	1933*	1951	1957	1963*	2036	2042	2048*	2058	2064*	
2068	2075	2081*	2112	2118*	2129	2135*	2146	2152*	2163	2169*	2180	2186*	
2197	2203*	2215	2221	2227*	2239	2245*	2266	2272*	2284	2290*	2302	2308	
2314*	2321	2329	2335*	2343	2351	2357*	2382	2388*	2402	2409	2415*	2475	
2481	2487*	2511	2517*	2536	2542*	2606	2612*	2636	2642*	2669	2674*	2697	
2703*	2716	2723	2729*	2746	2752*	2784	2790*	2941	2947*				

STSTM 000334
 STSTM= 000304
 SUNIT 000312
 SUNITM 000340
 SUSAR 000324
 SX = 015246

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300*	356*												
261*													
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268*													
380*	387	397	407	418	429	440	450	461	471	479*	489	502	
515	528	541	549*	554	562	570	578	585	593	601	609	619*	
625	632	639	646	655	662	669	676	684*	691	700*	708	716*	
724	732*	742	754	762*	771	778	785	792	799	810	817	824	
831	841	851*	859	868*	876	884*	892	900*	910	921	929*	938	
945	952	959	966	977	984	991	998	1007	1015*	1023	1036*	1042	
1051*	1059	1067*	1075	1083*	1093	1105	1113*	1122	1129	1136	1143	1150	
1161	1168	1175	1182	1192	1202*	1208	1217*	1225	1233*	1241	1249*	1259	
1271	1279*	1288	1295	1302	1309	1316	1327	1334	1341	1348	1356	1364*	
1372	1386*	1392	1401*	1409	1417*	1425	1433*	1444	1456	1464*	1473	1480	
1487	1494	1501	1512	1519	1526	1533	1543	1560*	1566	1575*	1583	1591*	
1599	1607*	1617	1629	1637*	1646	1653	1660	1667	1674	1685	1692	1699	
1706	1714	1722*	1728	1737*	1745	1753*	1761	1770*	1780	1792	1800*	1809	
1816	1823	1830	1837	1848	1855	1862	1869	1877	1885*	1892	1901*	1909	
1917*	1925	1933*	1943	1955	1963*	1972	1979	1986	1993	2000	2011	2018	
2025	2032	2040	2048*	2054	2064*	2072	2081*	2090	2099	2108	2118*	2126	
2135*	2143	2152*	2160	2169*	2177	2186*	2194	2203*	2211	2219	2227*	2235	
2245*	2262	2272*	2281	2290*	2299	2306	2314*	2325	2335*	2347	2357*	2370	
2379	2388*	2398	2406	2415*	2421	2428	2438	2445	2453	2460	2471	2479	
2487*	2501	2507	2517*	2529	2542*	2558	2573	2583	2591	2612*	2624	2630	

E06

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CROSS REFERENCE TABLE -- USER SYMBOLS

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SXXX = 000633

= 016040

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2790#	2906	2813	2821	2947#	2996	3003	3011					
387#	397#	407#	418#	429#	440#	450#	461#	471#	489#	502#	515#	528#
541#	554#	562#	570#	578#	585#	593#	601#	609#	625#	632#	639#	646#
655#	662#	669#	676#	691#	708#	724#	742#	754#	771#	778#	785#	792#
799#	810#	817#	824#	831#	841#	859#	876#	892#	910#	921#	938#	945#
952#	959#	966#	977#	984#	991#	998#	1007#	1023#	1042#	1059#	1075#	1093#
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1241#	1259#	1271#	1288#	1295#	1302#	1309#	1316#	1327#	1334#	1341#	1348#	1356#
1372#	1392#	1409#	1425#	1444#	1456#	1473#	1480#	1487#	1494#	1501#	1512#	1519#
1526#	1533#	1543#	1566#	1583#	1599#	1617#	1629#	1646#	1653#	1660#	1667#	1674#
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1830#	1837#	1848#	1855#	1862#	1869#	1877#	1892#	1909#	1925#	1943#	1955#	1972#
1979#	1986#	1993#	2000#	2011#	2018#	2025#	2032#	2040#	2054#	2072#	2090#	2099#
2108#	2126#	2143#	2160#	2177#	2194#	2211#	2219#	2235#	2262#	2281#	2299#	2306#
2325#	2347#	2370#	2379#	2398#	2406#	2421#	2428#	2438#	2445#	2453#	2460#	2471#
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387#	397#	407#	418#	429#	440#	450#	461#	471#	489#	502#	515#	529#
541#	554#	562#	570#	578#	585#	593#	601#	609#	625#	632#	639#	646#
655#	662#	669#	676#	691#	708#	724#	742#	754#	771#	778#	785#	792#
799#	810#	817#	824#	831#	841#	859#	876#	892#	910#	921#	938#	945#
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1526#	1533#	1543#	1566#	1583#	1599#	1617#	1629#	1646#	1653#	1660#	1667#	1674#
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1830#	1837#	1848#	1855#	1862#	1869#	1877#	1892#	1909#	1925#	1943#	1955#	1972#
1979#	1986#	1993#	2000#	2011#	2018#	2025#	2032#	2040#	2054#	2072#	2090#	2099#
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235#	237#	240#	245	246#	248#	250#	283	284#	286#	288#	303#	347
380	387	397	407	418	429	440	450	461	471	479	489	502
515	528	541	549	554	562	570	578	585	593	601	609	619
625	632	639	646	655	662	669	676	684	691	700	708	716
719	724	732	742	754	762	771	778	785	792	799	810	817
824	831	841	851	859	868	876	884	887	892	900	910	921
929	938	945	952	959	966	977	984	991	998	1007	1015	1023
1036	1042	1051	1059	1067	1070	1075	1083	1093	1105	1113	1122	1129
1136	1143	1150	1161	1168	1175	1182	1192	1202	1208	1217	1225	1233
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1869	1877	1896	1892	1901	1909	1917	1920	1925	1933	1943	1955	1963
1972	1979	1986	1993	2000	2011	2018	2025	2032	2040	2049	2054	2064
2072	2081	2090	2099	2108	2118	2126	2135	2143	2152	2160	2169	2177
2186	2194	2203	2211	2219	2227	2235	2245	2262	2272	2275	2281	2290
2293	2299	2306	2314	2317	2320	2325	2335	2347	2357	2370	2379	2388
2398	2406	2415	2421	2429	2438	2445	2453	2460	2471	2479	2487	2494
2501	2507	2517	2529	2542	2558	2573	2583	2591	2612	2624	2630	2642

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SEQ 0072

[illegible]

ERROR	18	363	393	403	414	425	436	446	457	467	485	498	511	524	537
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	671	687	704	720	738	750	767	773	780	787	795	806	812	819	826
	836	856	872	888	906	917	934	940	947	954	962	973	979	986	993
	1003	1019	1039	1055	1071	1089	1101	1118	1124	1131	1138	1146	1157	1163	1170
	1177	1187	1205	1221	1237	1255	1267	1284	1290	1297	1304	1312	1323	1329	1336
	1343	1352	1368	1389	1405	1421	1440	1452	1469	1475	1482	1489	1497	1508	1514
	1521	1528	1538	1563	1579	1595	1613	1625	1642	1648	1655	1662	1670	1681	1687
	1694	1701	1710	1725	1741	1757	1776	1788	1805	1811	1818	1825	1833	1844	1850
	1857	1864	1873	1889	1905	1921	1939	1951	1968	1974	1981	1988	1996	2007	2013
	2020	2027	2036	2051	2068	2086	2096	2104	2122	2139	2156	2173	2190	2207	2215
	2231	2257	2278	2296	2302	2321	2343	2367	2375	2395	2402	2418	2424	2434	2441
	2450	2456	2467	2475	2497	2503	2524	2554	2569	2579	2586	2621	2626	2653	2659
	2685	2709	2716	2736	2761	2774	2803	2809	2816	2993	3000	3006			
LOOP	18	387	397	407	418	429	440	450	461	471	489	502	515	528	541
	554	562	570	578	585	593	601	609	625	632	639	646	655	662	669
	676	691	708	724	742	754	771	778	785	792	799	810	817	824	831
	841	859	876	892	910	921	938	945	952	959	966	977	984	991	998
	1007	1023	1042	1059	1075	1093	1105	1122	1129	1136	1143	1150	1161	1168	1175
	1182	1192	1208	1225	1241	1259	1271	1288	1295	1302	1309	1316	1327	1334	1341
	1348	1356	1372	1392	1409	1425	1444	1456	1473	1480	1487	1494	1501	1512	1519
	1526	1533	1543	1566	1583	1599	1617	1629	1646	1653	1660	1667	1674	1685	1692
	1699	1706	1714	1728	1745	1761	1780	1792	1809	1816	1823	1830	1837	1848	1855
	1862	1869	1877	1892	1909	1925	1943	1955	1972	1979	1986	1993	2000	2011	2018
	2025	2032	2040	2054	2072	2090	2099	2108	2126	2143	2160	2177	2194	2211	2219
	2235	2262	2281	2299	2306	2325	2347	2370	2379	2398	2406	2421	2428	2438	2445
	2453	2460	2471	2479	2501	2507	2529	2558	2573	2583	2591	2624	2630	2657	2663
	2689	2713	2720	2740	2765	2779	2806	2813	2821	2996	3003	3011			
NEWST	18	374	473	543	613	678	694	710	726	756	845	862	878	894	923
	1009	1030	1045	1061	1077	1107	1196	1211	1227	1243	1273	1358	1380	1395	1411
	1427	1458	1554	1569	1585	1601	1631	1716	1731	1747	1764	1794	1880	1895	1911
	1927	1957	2042	2058	2075	2112	2129	2146	2163	2180	2197	2221	2239	2266	2284
	2308	2329	2351	2382	2409	2481	2511	2536	2606	2636	2668	2697	2723	2746	2784
	2941														
STARS	18	243	253	280	282	284	374	376	473	475	543	545	613	615	678
	680	694	696	710	712	726	728	756	758	845	847	862	864	878	880
	894	896	923	925	1009	1011	1030	1032	1045	1047	1061	1063	1077	1079	1107
	1109	1196	1198	1211	1213	1227	1229	1243	1245	1273	1275	1358	1360	1380	1382
	1395	1397	1411	1413	1427	1429	1458	1460	1554	1556	1569	1571	1585	1587	1601
	1603	1631	1633	1716	1718	1731	1733	1747	1749	1764	1766	1794	1796	1880	1882
	1895	1897	1911	1913	1927	1929	1957	1959	2042	2044	2058	2060	2075	2077	2112
	2114	2129	2131	2146	2148	2163	2165	2180	2182	2197	2199	2221	2223	2239	2241
	2266	2268	2284	2286	2308	2310	2329	2331	2351	2353	2382	2384	2409	2411	2481
	2483	2511	2513	2536	2538	2606	2608	2636	2638	2668	2670	2697	2699	2723	2725
	2746	2748	2784	2786	2941	2943									
VTRP	18	2112	2129	2146	2163	2180	2197	2221							
SSERCD	18	384	394	404	415	426	437	447	458	468	486	499	512	525	538
	551	559	567	575	582	590	598	606	622	629	636	643	652	659	666
	673	688	705	721	739	751	768	775	782	789	796	807	814	821	828
	838	856	873	889	907	918	935	942	949	956	963	974	981	988	995
	1004	1020	1039	1056	1072	1090	1102	1119	1126	1133	1140	1147	1158	1165	1172
	1179	1189	1205	1222	1238	1256	1268	1285	1292	1299	1306	1313	1324	1331	1338
	1345	1353	1369	1389	1406	1422	1441	1453	1470	1477	1484	1491	1498	1509	1516
	1523	1530	1540	1563	1580	1596	1614	1626	1643	1650	1657	1664	1671	1682	1689
	1696	1703	1711	1725	1742	1758	1777	1789	1806	1813	1820	1827	1834	1845	1852
	1859	1866	1874	1889	1906	1922	1940	1952	1969	1976	1983	1990	1997	2008	2015

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CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0074

	2022	2029	2037	2051	2069	2087	2096	2105	2123	2140	2157	2174	2191	2208	2216
	2232	2259	2278	2296	2303	2322	2344	2367	2376	2395	2403	2418	2425	2435	2442
	2450	2457	2468	2476	2498	2504	2526	2555	2570	2580	2588	2621	2627	2654	2660
	2686	2710	2717	2737	2762	2776	2803	2810	2818	2993	3000	3008			
SSERNL	1#	384	394	404	415	426	437	447	458	468	486	499	512	525	538
	551	559	567	575	582	590	598	606	622	629	636	643	652	659	666
	673	688	705	721	739	751	768	775	782	789	796	807	814	821	828
	838	856	873	889	907	918	935	942	949	956	963	974	981	988	995
	1004	1020	1039	1056	1072	1090	1102	1119	1126	1133	1140	1147	1159	1165	1172
	1179	1189	1205	1222	1238	1256	1268	1295	1292	1299	1306	1313	1324	1331	1338
	1345	1353	1369	1389	1406	1422	1441	1453	1470	1477	1484	1491	1498	1509	1516
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	1696	1703	1711	1725	1742	1758	1777	1789	1806	1813	1820	1827	1834	1845	1852
	1859	1866	1874	1889	1906	1922	1940	1952	1969	1976	1983	1990	1997	2008	2015
	2022	2029	2037	2051	2069	2087	2096	2105	2123	2140	2157	2174	2191	2208	2216
	2232	2259	2278	2296	2303	2322	2344	2367	2376	2395	2403	2418	2425	2435	2442
	2450	2457	2468	2476	2498	2504	2526	2555	2570	2580	2588	2621	2627	2654	2660
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SSLOP	1#	387	397	407	418	429	440	450	461	471	489	502	515	528	541
	554	562	570	578	585	593	601	609	625	632	639	646	655	662	669
	676	691	708	724	742	754	771	778	785	792	799	810	817	824	831
	841	859	876	892	910	921	938	945	952	959	966	977	984	991	998
	1007	1023	1042	1059	1075	1093	1105	1122	1129	1136	1143	1150	1161	1168	1175
	1182	1192	1208	1225	1241	1259	1271	1288	1295	1302	1309	1316	1327	1334	1341
	1348	1356	1372	1392	1409	1425	1444	1456	1473	1480	1487	1494	1501	1512	1519
	1526	1533	1543	1566	1583	1599	1617	1629	1646	1653	1660	1667	1674	1685	1692
	1699	1706	1714	1728	1745	1761	1780	1792	1809	1816	1823	1830	1837	1848	1855
	1862	1869	1877	1892	1909	1925	1943	1955	1972	1979	1986	1993	2000	2011	2018
	2025	2032	2040	2054	2072	2090	2099	2108	2126	2143	2160	2177	2194	2211	2219
	2235	2262	2281	2299	2306	2325	2347	2370	2379	2398	2406	2421	2428	2438	2445
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	2689	2713	2720	2740	2765	2779	2806	2813	2821	2996	3003	3011			
SSNEWY	1#	374	473	543	613	678	694	710	726	756	845	862	878	894	923
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	1427	1458	1554	1569	1585	1601	1631	1716	1731	1747	1764	1794	1880	1895	1911
	1927	1957	2042	2058	2075	2112	2129	2146	2163	2180	2197	2221	2239	2266	2284
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	2941														
.SACT1	235#	241													
.SAPT8	235#	251													
.SAPTH	235#	278													

. ABS. 016040 000

ERRORS DETECTED: 0
 DEFAULT GLOBALS GENERATED: 0

DFKABB,DFKABB/SOL/CRF/DS:ERFZ+DFKABB.P11
 RUN-TIME: 54 41 6 SECONDS
 RUN-TIME RATIO: 130/103=1.2
 CORE USED: 11K (22 PAGES)

I06

.MAIN. MACY11 27(1006) 22-OCT-76 12:41 PAGE 75
DFKABB.P11 19-NOV-75 07:55 CROSS REFERENCE TABLE -- MACRO NAMES

SEQ 0075

Spooler runtime 13 Seconds, 59 KCS, 359 disk reads, 3 disk writes, 73 pages

Page 01-000-76 17:00:18 Monitor IPC-0 602 (600) 000000

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