

The image displays a grid of 60 small tables, organized into 10 rows and 6 columns. Each table contains technical data, likely related to the 'TRAPS TEST' mentioned in the header. The data is presented in a structured, tabular format, possibly representing test results or system configurations. The text within the tables is small and difficult to read, but the overall layout is consistent across the grid.

11-11-77

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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 (00000) (THIS LOCATION IS ALSO THE STATUS WORD FOR THAT VECTOR ENTRANCE. BUT THIS WILL HAVE NO EFFECT ON IT ALSO BEING THE NEXT INSTRUCTION).

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

5.3 PROGRAM AND/OR OPERATOR ACTION

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

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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

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

IMPORTANT

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

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

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

; LISTING

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

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

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

235
236 000200 000167 000414
237 000210 000210
238 000210 005037 000306
239 000214 000167 000400
240 000300
241
242
243
244
245 000300
246 000046
247 000046 015502
248 000052
249 000052 000000
250 000300
251
252
253
254
255 000300
256 000300 000000
257 000302 000000
258 000304 000000
259 000306 000000
260 000310 000000
261 000312 000000
262 000314 000000
263 000316 000000
264 000320
265 000320 000
266 000321 000
267 000322 000000
268 000324 000000
269 000326 000000
270
271
272
273
274
275
276 000330
277
278
279
280
281
282
283 000330
284 000024 000024
285 000024 000200
286 000044 000044
287 000044 000330
288 000330
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290

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      .=200
      JMP      BEGIN
      .=210
      CLR      @#SPASS
      JMP      BEGIN
      .=300
.SBTTL  ACT11 HOOKS
;*****
;HOOKS REQUIRED BY ACT11
      $SVPC=.          ;SAVE PC
      .=46
      SENDAD          ;;1)SET LOC.46 TO ADDRESS OF SENDAD IN .SEOP
      .=52
      .WORD  0          ;;2)SET LOC.52 TO ZERO
      .=$SVPC          ;; RESTORE PC
.SBTTL  APT MAILBOX-ETABLE
;*****
.EVEN
$MAIL:          ;; APT MAILBOX
$MSGTY: .WORD  AMSGTY  ;; MESSAGE TYPE CODE
$FATAL: .WORD  AFATAL  ;; FATAL ERROR NUMBER
$TESTN: .WORD  ATESTN  ;; TEST NUMBER
$PASS:   .WORD  APASS   ;; PASS COUNT
$DEVCT: .WORD  ADEVCT  ;; DEVICE COUNT
$UNIT:  .WORD  AUNIT   ;; I/O UNIT NUMBER
$MSGAD: .WORD  AMSGAD  ;; MESSAGE ADDRESS
$MSGLG: .WORD  AMSGLG  ;; MESSAGE LENGTH
$ETABLE:          ;; APT ENVIRONMENT TABLE
$ENV:   .BYTE  AENV    ;; ENVIRONMENT BYTE
$ENVM:  .BYTE  AENVM   ;; ENVIRONMENT MODE BITS
$SWREG: .WORD  ASWREG  ;; APT SWITCH REGISTER
$USWR:  .WORD  AUSWR   ;; USER SWITCHES
$CPUOP: .WORD  ACPUOP  ;; CPU TYPE, OPTIONS
; *
; *          BITS 15-11=CPU TYPE
; *          11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
; *          11/70=06,PDQ=07,Q=10
; *          BIT 10=REAL TIME CLOCK
; *          BIT  9=FLOATING POINT PROCESSOR
; *          BIT  8=MEMORY MANAGEMENT
$ETEND:
.MEXIT
.SBTTL  APT PARAMETER BLOCK
;*****
;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
;*****
      .SX=.          ;; SAVE CURRENT LOCATION
      .=24          ;; SET POWER FAIL TO POINT TO START OF PROGRAM
      200          ;; FOR APT START UP
      .=44          ;; POINT TO APT INDIRECT ADDRESS PNTR.
      $APTHDR      ;; POINT TO APT HEADER BLOCK
      .=$SX        ;; RESET LOCATION COUNTER
;*****
;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC

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

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

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;USER PAGE DESCRIPTOR REGISTERS

;USER PAGE ADDRESS REGISTERS

;KERNEL PAGE DESCRIPTOR REGISTERS

;KERNEL PAGE ADDRESS REGISTERS

J01

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SEQ 0009

347 000616 000614
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ADREND: .-2

K01

SEQ 0010

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351
352 000620 012737 177777 015530 BEGIN: MOV # -1, @#PASSPT ;CLEAR THE ITERATION COUNTER
353 000626 005067 177446 RESTRT: CLR $MSGTY
354 000632 012767 015706 177164 MOV #PWRDWN, 24 ;SET UP THE POWER DOWN VECTOR
355 000640 012767 000340 177160 MOV #340, 26 ;SET UP POWER DOWN PRIORITY
356 000646 005067 177432 CLR $TSTNM
357 000652 005067 177424 CLR $ERROR
358 000656 012702 000300 MOV # $MSGTY, R2
359
360 ;SPECIAL CASE OF ODD; .EVEN .BYTE AND REGISTER 6
361 000000 HERE=0
362
363 000662 000167 000024 JMP TST1
364 000666 000000 K1: 0
365 000670 000000 K2: 0
366 000672 000000 K3: 0
367 000674 000000 K4: 0
368 000676 000000 K5: 0
369 000700 000000 K6: 0
370 000702 052525 K7: 052525
371 000704 052400 K10: 052400
372 000706 000000 K11: 0
373 000710 000000 K12: 0
374 ;*****
375 ;TEST 1 TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES
376 ;*****
377 000712 005237 000304 TST1: INC @#$TESTN ;UPDATE TEST NUMBER
378 000716 022737 000001 000304 CMP #1, @#$TESTN ;SEQUENCE ERROR?
379 000724 001137 BNE TST2-12 ;BR TO ERROR HALT ON SEQ ERROR
380 000726 005006 CLR %6
381 000730 112667 177044 MOVB (6)+, HERE ;SIX SHOULD INCREMENT BY TWO
382 000734 020627 000002 CMP %6, #2
383 000740 001405 BEQ BR1
384 000742 012737 000001 000302 MOV #1, @#$FATAL ;MOVE TO MAILBOX # ***** 1 *****
385 000750 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
386 000752 000000 HALT ;R6 DID NOT AUTO INCREMENT BY TWO
387 ; TO SCOPE REPLACE HALT W/ 240
388 ; AND REPLACE NEXT INST W/ 764
389
390 000754 012706 001000 BR1: MOV #1000, %6
391 000760 114627 000000 MOVB -(6), #HERE ;SHOULD DECREMENT BY TWO
392 000764 020627 000776 CMP %6, #776
393 000770 001405 BEQ (R2)
394 000772 012737 000002 000302 MOV #2, @#$FATAL ;MOVE TO MAILBOX # ***** 2 *****
395 001000 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
396 001002 000000 HALT ;R6 DID NOT AUTO DECREMENT BY 2
397 ; TO SCOPE REPLACE HALT W/ 240
398 ; AND REPLACE NEXT INST W/ 750
399
400 001004 005006 BR2: CLR %6
401 001006 112626 MOVB (6)+, (6)+ ;DOUBLES AUTO INCREMENT OF R6
402 001010 020627 000004 CMP %6, #4
403 001014 001405 BEQ BR3
404 001016 012737 000003 000302 MOV #3, @#$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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L01

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TEST AUTO INCREMENT AND DECREMENT OF R6 FOR WORD AND BYTES

SEQ 0011

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

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MO1

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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 #11,%SFATAL ;MOVE TO MAILBOX # ***** 11 *****
469 001232 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
470 001234 000000 HALT ;WRONG DECREMENT OF R6 OR WRONG STSTNM
471 ; TO SCOPE REPLACE HALT W/ 240
472 ; AND REPLACE NEXT INST W/ 633
473 ;*****
474 ;TEST 2 TEST TRANSFER OF .BYTE USING R6
475 ;*****
476 001236 005237 000304 TST2: INC %STESTN ;UPDATE TEST NUMBER
477 001242 022737 000002 000304 CMP #2,%STESTN ;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 MOV#B (6)+,(5)+ ;LOW .BYTE OF R6 TO R5
484 001300 022767 050456 177360 CMP #050456,K1
485 001306 001405 BEQ BR11
486 001310 012737 000012 000302 MOV #12,%SFATAL ;MOVE TO MAILBOX # ***** 12 *****
487 001316 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
488 001320 000000 HALT ;FALSE TRANSFER OF .BYTE
489 ; TO SCOPE REPLACE HALT W/ 240
490 ; AND REPLACE NEXT INST W/ 753
491
492 001322 012767 123456 177346 BR11: MOV #123456,K5
493 001330 012767 050505 177330 MOV #050505,K1
494 001336 012705 000666 MOV #K1,%5 ;%5(050505)K1
495 001342 012706 000700 MOV #K6,%6 ;%6(123456)K5
496 001346 114625 MOV#B -(6),(5)+ ;LOW .BYTE OF R6 TO R5 (DECREMENT)
497 001350 026727 177312 050456 CMP K1,%050456
498 001356 001405 BEQ BR12
499 001360 012737 000013 000302 MOV #13,%SFATAL ;MOVE TO MAILBOX # ***** 13 *****
500 001366 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
501 001370 000000 HALT ;FALSE R6 .BYTE TRANSFER
502 ; TO SCOPE REPLACE HALT W/ 240
503 ; AND REPLACE NEXT INST W/ 727
504
505 001372 012767 123456 177266 BR12: MOV #123456,K1
506 001400 012767 050505 177270 MOV #050505,K5
507 001406 012705 000666 MOV #K1,%5 ;(123456)
508 001412 012706 000676 MOV #K5,%6 ;(050505)
509 001416 112526 MOV#B (5)+,(6)+ ;LOW OF R5 TO LOW OF R6
510 001420 022767 050456 177250 CMP #050456,K5
511 001426 001405 BEQ BR13
512 001430 012737 000014 000302 MOV #14,%SFATAL ;MOVE TO MAILBOX # ***** 14 *****
513 001436 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
514 001440 000000 HALT ;FALSE R6 .BYTE TRANSFER
515 ; TO SCOPE REPLACE HALT W/ 240
516 ; AND REPLACE NEXT INST W/ 703
517
518 001442 012767 123456 177216 BR13: MOV #123456,K1
  
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NO1

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TEST TRANSFER OF .BYTE USING R6

SEQ 0013

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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           MOVB    (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,#$FATAL ;MOVE TO MAILBOX # ***** 15 *****
526 001506 005212           INC     (R2)          ;SET MSGTYP TO FATAL ERROR
527 001510 000000           HALT                    ;FALSE R6 .BYTE TRANSFER
528                                     ; TO SCOPE REPLACE HALT W/ 240
529                                     ; AND REPLACE NEXT INST W/ 657
530
531 001512 012767 123456 177146 BR14:  MOV      #123456,K1
532 001520 012767 050505 177150      MOV      #050505,K5
533 001526 012705 000667           MOV      #K1+1,%5     ;R5-123456-ODD ADDRESS
534 001532 012706 000676           MOV      #K5,%6       ;R6-050505--EVEN ADDRESS
535 001536 112625           MOVB    (6)+(5)+     ;LOW OF R6 TO HIGH OF R5
536 001540 022767 042456 177120      CMP      #042456,K1
537 001546 001405           BEQ     TST3
538 001550 012737 000016 000302      MOV      #16,#$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 ;*****
546 001562 005237 000304           TST3:  INC     #STESTN ;UPDATE TEST NUMBER
547 001566 022737 000003 000304      CMP      #3,#STESTN ;SEQUENCE ERROR?
548 001574 001103           BNE    TST4-12 ;BR TO ERROR HALT ON SEQ ERROR
549 001576 126767 177100 177077      CMPB    K7,K7+1     ;SAME .WORD LOW TO HIGH
550 001604 001405           BEQ     BR15
551 001606 012737 000017 000302      MOV      #17,#$FATAL ;MOVE TO MAILBOX # ***** 17 *****
552 001614 005212           INC     (R2)          ;SET MSGTYP TO FATAL ERROR
553 001616 000000           HALT                    ;SHOULD COMPARE LOW TO HIGH
554                                     ; TO SCOPE REPLACE HALT W/ 240
555                                     ; AND REPLACE NEXT INST W/ 766
556
557 001620 126767 177057 177054 BR15:  CMPB    K7+1,K7     ;COMPARE ODD TO .EVEN SAME .WORD
558 001626 001405           BEQ     BR16
559 001630 012737 000020 000302      MOV      #20,#$FATAL ;MOVE TO MAILBOX # ***** 20 *****
560 001636 005212           INC     (R2)          ;SET MSGTYP TO FATAL ERROR
561 001640 000000           HALT                    ;ODD TO .EVEN .BYTE FAILURE
562                                     ; TO SCOPE REPLACE HALT W/ 240
563                                     ; AND REPLACE NEXT INST W/ 755
564
565 001642 126767 177037 177032 BR16:  CMPB    K10+1,K7    ;SEQUENTIAL .BYTES
566 001650 001405           BEQ     BR17
567 001652 012737 000021 000302      MOV      #21,#$FATAL ;MOVE TO MAILBOX # ***** 21 *****
568 001660 005212           INC     (R2)          ;SET MSGTYP TO FATAL ERROR
569 001662 000000           HALT                    ;ODD TO .EVEN FAILED
570                                     ; TO SCOPE REPLACE HALT W/ 240
571                                     ; AND REPLACE NEXT INST W/ 744
572
573 001664 126767 177014 177006 BR17:  CMPB    K10,K6
574 001672 001405           BEQ     BR20
  
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575 001674 012737 000022 000302      MOV      #22,#SFATAL      ;MOVE TO MAILBOX # ***** 22 *****
576 001702 005212                    7INC      (R2)           ;SET MSGTYP TO FATAL ERROR
577 001704 000000                    HALT                               ;EVEN TO EVEN FAILED
578                                     ; TO SCOPE REPLACE HALT W/ 240
579                                     ; AND REPLACE NEXT INST W/ 733
580 001706 126767 176771 176771 BR20:  CMPB     K7+1,K10+1
581 001714 001405                    BEQ      BR21
582 001716 012737 000023 000302      MOV      #23,#SFATAL      ;MOVE TO MAILBOX # ***** 23 *****
583 001724 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
584 001726 000000                    HALT                               ;ODD TO ODD FAILED
585                                     ; TO SCOPE REPLACE HALT W/ 240
586                                     ; AND REPLACE NEXT INST W/ 722
587
588 001730 126767 176750 176747 BR21:  CMPB     K10,K10+1
589 001736 001005                    BNE     BR22
590 001740 012737 000024 000302      MOV      #24,#SFATAL      ;MOVE TO MAILBOX # ***** 24 *****
591 001746 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
592 001750 000000                    HALT                               ;LOW TO HIGH IN SAME .WORD FAILED
593                                     ; TO SCOPE REPLACE HALT W/ 240
594                                     ; AND REPLACE NEXT INST W/ 711
595
596 001752 126767 176727 176725 BR22:  CMPB     K10+1,K10+1
597 001760 001405                    BEQ      BR23
598 001762 012737 000025 000302      MOV      #25,#SFATAL      ;MOVE TO MAILBOX # ***** 25 *****
599 001770 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
600 001772 000000                    HALT                               ;HIGH TO LOW IN SAME .WORD FAILED
601                                     ; TO SCOPE REPLACE HALT W/ 240
602                                     ; AND REPLACE NEXT INST W/ 700
603
604 001774 126767 176704 176701 BR23:  CMPB     K10,K7+1
605 002002 001005                    BNE     TST4
606 002004 012737 000026 000302      MOV      #26,#SFATAL      ;MOVE TO MAILBOX # ***** 26 *****
607 002012 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
608 002014 000000                    HALT                               ;.EVEN TO ODD FAILED,OR WRONG STSTNM
609                                     ; TO SCOPE REPLACE HALT W/ 240
610                                     ; AND REPLACE NEXT INST W/ 667
611
612
613 ;*****
614 ;TEST 4 TEST THE CC BITS
615 ;*****
616 002016 005237 000304                    TST4:  INC      #STESTN      ;UPDATE TEST NUMBER
617 002022 022737 000004 000304      CMP      #4,#STESTN      ;SEQUENCE ERROR?
618 002030 001062                    BNE     TST5-12 ;BR TO ERROR HALT ON SEQ ERROR
619 002032 000277                    SCC                               ;SET STATUS
620 002034 005067 175736                    CLR     STATUS          ;CLEAR STATUS
621 002040 103005                    BCC     BR33
622 002042 012737 000027 000302      MOV      #27,#SFATAL      ;MOVE TO MAILBOX # ***** 27 *****
623 002050 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
624 002052 000000                    HALT                               ;C NOT CLEAR
625                                     ; TO SCOPE REPLACE HALT W/ 240
626                                     ; AND REPLACE NEXT INST W/ 766
627
628 002054                    BR33:  BVC     BR34
629 002056 102005 000030 000302      MOV      #30,#SFATAL      ;MOVE TO MAILBOX # ***** 30 *****
630 002064 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR

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631 002066 00J000          HALT          ; V NOT CLEAR
632                                     ; TO SCOPE REPLACE HALT W/ 240
633                                     ; AND REPLACE NEXT INST W/ 760
634 002070          BR34:          BNE          BR35
635 002070 001005          MOV          #31, @#SFATAL ; MOVE TO MAILBOX # ***** 31 *****
636 002072 012737 000031 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
637 002100 005212          HALT          ; Z NOT CLEAR
638 002102 C00000          ; TO SCOPE REPLACE HALT W/ 240
639                                     ; AND REPLACE NEXT INST W/ 752
640
641 002104          BR35:          BPL          BR36
642 002104 100005          MOV          #32, @#SFATAL ; MOVE TO MAILBOX # ***** 32 *****
643 002106 012737 000032 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
644 002114 005212          HALT          ; N NOT CLEAR
645 002116 000000          ; TO SCOPE REPLACE HALT W/ 240
646                                     ; AND REPLACE NEXT INST W/ 744
647
648 002120 000257          BR36:          CCC          #17, STATUS ; CLEAR CONDITION CODES
649 002122 052767 000017 175646      BIS          ; SET STATUS TO ONES
650
651 002130 103405          BCS          BR37
652 002132 012737 000033 000302      MOV          #33, @#SFATAL ; MOVE TO MAILBOX # ***** 33 *****
653 002140 005212          INC          (R2) ; SET MSGTYP TO FATAL ERROR
654 002142 000000          HALT          ; C NOT SET
655                                     ; TO SCOPE REPLACE HALT W/ 240
656                                     ; AND REPLACE NEXT INST W/ 732
657
658 002144          BR37:          BVS          BR40
659 002144 102405          MOV          #34, @#SFATAL ; MOVE TO MAILBOX # ***** 34 *****
660 002146 012737 000034 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
661 002154 005212          HALT          ; V NOT SET
662                                     ; TO SCOPE REPLACE HALT W/ 240
663                                     ; AND REPLACE NEXT INST W/ 724
664
665 002160          BR40:          BEQ          BR41
666 002160 001405          MOV          #35, @#SFATAL ; MOVE TO MAILBOX # ***** 35 *****
667 002162 012737 000035 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
668 002170 005212          HALT          ; Z NOT SET
669                                     ; TO SCOPE REPLACE HALT W/ 240
670                                     ; AND REPLACE NEXT INST W/ 716
671
672 002174          BR41:          BMI          TST5
673 002174 100405          MOV          #36, @#SFATAL ; MOVE TO MAILBOX # ***** 36 *****
674 002176 012737 000036 000302      INC          (R2) ; SET MSGTYP TO FATAL ERROR
675 002204 005212          HALT          ; N NOT SET, OR WRONG STSTNM
676                                     ; TO SCOPE REPLACE HALT W/ 240
677                                     ; AND REPLACE NEXT INST W/ 710
678
679 ; *****
680 ; TEST 5 TEST THAT A TRAP OCCURS ON A RESERVED INSTRUCTION
681 ; *****
681 002210 005237 000304          TST5:  INC          @#STESTN ; UPDATE TEST NUMBER
682 002214 022737 000005 000304      CMP          #5, @#STESTN ; SEQUENCE ERROR?
683 002222 001006          BNE          RETA ; BR TO ERROR HALT ON SEQ ERROR
684 002224 012706 000500          MOV          #BUFF, SP ; STACK POINTER SETUP
685 002230 012767 002252 175552      MOV          #RETAH, RTRAP ; RETURN LOCATION
686 002236 000007          TRAPA          ; RESERVED INSTRUCTION, SHOULD TRAP

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687 002240          RETA:  MOV      #37,#$FATAL      ;MOVE TO MAILBOX # ***** 37 *****
688 002240 012737 000037 000302  INC      (R2)      ;SET MSGTYP TO FATAL ERROR
689 002246 005212          HALT      ;RESERVE INSTRUCTION DIDN'T TRAP,OR WRONG STSTNM
690 002250 000000          ; TO SCOPE REPLACE HALT W/ 240
691          ; AND REPLACE NEXT INST W/ 764
692
693 002252          RETAH:
694          ;*****
695          ;TEST 6 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
696          ;*****
697 002252 005237 000304  TST6:  INC      @#STESTN      ;UPDATE TEST NUMBER
698 002256 022737 000006 000304  CMP      #6,@#STESTN      ;SEQUENCE ERROR?
699 002264 001011          BNE      TST7-12 ;BR TO ERROR HALT ON SEQ ERROR
700 002266 012706 000500          MOV      #BUFF,SP      ;STACK POINTER SETUP
701 002272 012767 002302 175510  MOV      #RETB,RTRAP     ;RETURN POINTER
702 002300 000007          TRAPA          ;RESERVED INSTRUCTION
703 002302 020627 000474          RETB:  CMP      SP,#BUFF-4    ;TEST DECREMENT OF SP
704 002306 001405          BEQ      TST7
705 002310 012737 000040 000302  MOV      #40,#$FATAL     ;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/ 761
710          ;*****
711          ;TEST 7 TEST THAT PROPER P.C. IS SAVED
712          ;*****
713 002322 005237 000304  TST7:  INC      @#STESTN      ;UPDATE TEST NUMBER
714 002326 022737 000007 000304  CMP      #7,@#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 000041 000302  MOV      #41,#$FATAL     ;MOVE TO MAILBOX # ***** 41 *****
722 002370 005212          INC      (R2)      ;SET MSGTYP TO FATAL ERROR
723 002372 000000          HALT      ;INCORRECT P.C.,OR WRONG STSTNM
724          ; TO SCOPE REPLACE HALT W/ 240
725          ; AND REPLACE NEXT INST W/ 760
726          ;*****
727          ;TEST 10 TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
728          ;*****
729 002374 005237 000304  TST10: INC      @#STESTN      ;UPDATE TEST NUMBER
730 002400 022737 000010 000304  CMP      #10,@#STESTN     ;SEQUENCE ERROR?
731 002406 001040          BNE      TST11-12 ;BR TO ERROR HALT ON SEQ ERROR
732 002410 012706 000500          MOV      #BUFF,SP      ;SET UP
733 002414 012767 002432 175366  MOV      #RETD,RTRAP     ;SET UP
734 002422 005067 175350          CLR      CC          ;CLEAR CC AND PRIORITY
735 002426 000257          CCC
736 002430 000007          TRAPA          ;TRAP
737 002432 026727 176040 000000  RETD:  CMP      BUFF-2,#0    ;TEST THAT OLD STATUS WENT TO STACK
738 002440 001405          BEQ      1$
739 002442 012737 000042 000302  MOV      #42,#$FATAL     ;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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TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK

SEQ 0017

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

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

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

SEQ 0020

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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
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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967
968 003504 012706 000500 5S: MOV #BUFF, SP ; AND REPLACE NEXT INST W/ 726
969 003510 012767 003526 174316 MOV #RETG1, RTRAP1
970 003516 012767 000357 174312 MOV #357, RTRAP1+2 ; SET NEW "CC" AND PRIORITY
971 003524 104400 TRAP ; TRAP HERE
972 003526 RETG1:
973 003526 100405 BMI 1S
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
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 707
977
978
979 003542 1S:
980 003542 001405 BEQ 2S
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
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 701
984
985
986 003556 2S:
987 003556 102405 BVS 3S
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
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 673
991
992
993 003572 3S:
994 003572 103405 BCS 4S
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
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 665
998
999
1000 003606 016706 174164 4S: 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 STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 651
1007
1008
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 STSTNM

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J02

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

SEQ 0022

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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                                     BHS RC1                                     ; 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 †ST20: 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 STSTNM
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 †ST21: 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 STSTNM
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 †ST22: 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 STSTNM
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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TEST THAT PROPER P.C. IS SAVED

SEQ 0023

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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 1S:
1096 004204 012767 004224 173606
1097 004212 012767 000357 173556
1098 004220 000277
1099 004222 000004
1100 004224 026727 174246 000357 RETE2:
1101 004232 001405
1102 004234 012737 000102 000302
1103 004242 005212
1104 004244 000000
1105
1106
1107
1108
1109
1110 004246 005237 000304
1111 004252 022737 000024 000304
1112 004260 001121
1113 004262 012706 000500
1114 004266 012767 004302 173524
1115 004274 005067 173522
1116 004300 000004
1117 004302 RETF2:
1118 004302 100005
1119 004304 012737 000103 000302
1120 004312 005212
1121 004314 000000
1122
1123
1124 004316 1S:
1125 004316 001005
1126 004320 012737 000104 000302
1127 004326 005212
1128 004330 000000
1129
1130
1131 004332 2S:
1132 004332 102005
1133 004334 012737 000105 000302
1134 004342 005212
    
```

 †ST23: INC @#STESTN ;UPDATE TEST NUMBER
 CMP #23,@#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
 CCC
 IOT ;TRAP
 RETD2: CMP BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
 BEQ 1S
 MOV #101,@#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
 1S: 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,@#SFATAL ;MOVE TO MAILBOX # ***** 102 *****
 INC (R2) ;SET MSGTYP TO FATAL ERROR
 HALT ;INCORRECT STATUS ON STACK,OR WRONG STSTNM
 ; TO SCOPE REPLACE HALT W/ 240
 ; AND REPLACE NEXT INST W/ 732

 ;TEST 24 TEST THAT "NEW" STATUS IS CORRECT

 †ST24: INC @#STESTN ;UPDATE TEST NUMBER
 CMP #24,@#STESTN ;SEQUENCE ERROR?
 BNE BR46 ;BR TO ERROR HALT ON SEQ ERROR
 MOV #BUFF,SP
 MOV #RETF2,RTRAP2
 CLR RTRAP2+2 ;CLEAR FUTURE PRIORITY AND CC
 IOT
 RETF2: ;TEST FOR "C" CLEARED
 BPL 1S
 MOV #103,@#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
 1S: BNE 2S
 MOV #104,@#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
 2S: BVC 3S
 MOV #105,@#SFATAL ;MOVE TO MAILBOX # ***** 105 *****
 INC (R2) ;SET MSGTYP TO FATAL ERROR

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0025

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1191 004534 000000          HALT          ; PRIORITY WAS CHANGED, OR WRONG STSTNM
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    @#STESTN      ; UPDATE TEST NUMBER
1200 004554 022737 000025 000304      CMP    #25,@#STESTN      ; SEQUENCE ERROR?
1201 004562 001006          BNE    TST26-12         ; BR TO ERROR HALT ON SEQ ERROR
1202 004564 012706 000500          MOV    #BUFF,SP         ; STACK POINTER SETUP
1203 004570 012767 004612 173232      MOV    #RETA3,RTRAP3    ; RETURN LOCATION
1204 004576 104000          EMT                    ; RESERVE INSTRUCTION, SHOULD TRAP
1205 004600 012737 000115 000302      MOV    #115,@#SFATAL    ; MOVE TO MAILBOX # ***** 115 *****
1206 004606 005212          INC    (R2)            ; SET MSGTYP TO FATAL ERROR
1207 004610 000000          HALT                    ; EMT DIDN'T TRAP, OR WRONG STSTNM
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    @#STESTN      ; UPDATE TEST NUMBER
1215 004616 022737 000026 000304      CMP    #26,@#STESTN      ; SEQUENCE ERROR?
1216 004624 001011          BNE    TST27-12         ; BR TO ERROR HALT ON SEQ ERROR
1217 004626 012706 000500          MOV    #BUFF,SP         ; STACK POINTER SETUP
1218 004632 012767 004642 173170      MOV    #RETB3,RTRAP3    ; RETURN POINTER
1219 004640 104000          EMT                    ; RESERVED INSTRUCTION
1220 004642 020627 000474          RETB3: CMP    SP,#BUFF-4  ; TEST DECREMENT OF SP
1221 004646 001405          BEQ    TST27
1222 004650 012737 000116 000302      MOV    #116,@#SFATAL    ; MOVE TO MAILBOX # ***** 116 *****
1223 004656 005212          INC    (R2)            ; SET MSGTYP TO FATAL ERROR
1224 004660 000000          HALT                    ; NOT DECREMENTED TWO WORDS, OR WRONG STSTNM
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    @#STESTN      ; UPDATE TEST NUMBER
1231 004666 022737 000027 000304      CMP    #27,@#STESTN      ; SEQUENCE ERROR?
1232 004674 001012          BNE    TST30-12         ; BR TO ERROR HALT ON SEQ ERROR
1233 004676 012706 000500          MOV    #BUFF,SP         ; STACK POINTER SETUP
1234 004702 012767 004712 173120      MOV    #RETC3,RTRAP3    ; RETURN FROM TRAP POINTER
1235 004710 104000          EMT                    ; TRAP ON THIS INSTRUCTION
1236 004712 022767 004712 173554      RETC3: CMP    #,BUFF-4    ; CHECK FOR INCREMENTED P.C.
1237 004720 001405          BEQ    TST30
1238 004722 012737 000117 000302      MOV    #117,@#SFATAL    ; MOVE TO MAILBOX # ***** 117 *****
1239 004730 005212          INC    (R2)            ; SET MSGTYP TO FATAL ERROR
1240 004732 000000          HALT                    ; INCORRECT P.C. OR WRONG STSTNM
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    @#STESTN      ; UPDATE TEST NUMBER
    
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; AND REPLACE NEXT INST W/ 745

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1303
1304 005162          35:
1305 005162 103005   BCC      45
1306 005164 012737 000125 000302  MOV      @125,@SFATAL ; MOVE TO MAILBOX # ***** 125 *****
1307 005172 005212   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1308 005174 000000   HALT                    ; C NOT CLEARED
1309                                     ; TO SCOPE REPLACE HALT W/ 240
1310                                     ; AND REPLACE NEXT INST W/ 737
1311 005176 032767 000340 172572 45:  BIT      @340,CC
1312 005204 001405   BEQ      55
1313 005206 012737 000126 000302  MOV      @126,@SFATAL ; MOVE TO MAILBOX # ***** 126 *****
1314 005214 005212   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1315 005216 000000   HALT                    ; PRIORITY NOT ZERO
1316                                     ; TO SCOPE REPLACE HALT W/ 240
1317                                     ; AND REPLACE NEXT INST W/ 726
1318 005220 012706 000500          55:  MOV      @BUFF,SP
1319 005224 012767 005242 172576  MOV      @RETG3,RTRAP3
1320 005232 012767 000357 172572  MOV      @357,RTRAP3+2 ; SET NEW "CC" AND PRIORITY
1321 005240 104000   EMT
1322                                     ; TRAP HERE
1323 005242 100405          RETG3: BMI      15
1324 005244 012737 000127 000302  MOV      @127,@SFATAL ; MOVE TO MAILBOX # ***** 127 *****
1325 005252 005212   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1326 005254 000000   HALT                    ; N NOT SET
1327                                     ; TO SCOPE REPLACE HALT W/ 240
1328                                     ; AND REPLACE NEXT INST W/ 707
1329 005256          15:
1330 005256 001405   BEQ      25
1331 005260 012737 000130 000302  MOV      @130,@SFATAL ; MOVE TO MAILBOX # ***** 130 *****
1332 005266 005212   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1333 005270 000000   HALT                    ; Z NOT SET
1334                                     ; TO SCOPE REPLACE HALT W/ 240
1335                                     ; AND REPLACE NEXT INST W/ 701
1336 005272          25:
1337 005272 102405   BVS      35
1338 005274 012737 000131 000302  MOV      @131,@SFATAL ; MOVE TO MAILBOX # ***** 131 *****
1339 005302 005212   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1340 005304 000000   HALT                    ; V NOT SET
1341                                     ; TO SCOPE REPLACE HALT W/ 240
1342                                     ; AND REPLACE NEXT INST W/ 673
1343 005306          35:
1344 005306 103405   BCS      45
1345 005310 012737 000132 000302  MOV      @132,@SFATAL ; MOVE TO MAILBOX # ***** 132 *****
1346 005316 005212   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1347 005320 000000   HALT                    ; C NOT SET
1348                                     ; TO SCOPE REPLACE HALT W/ 240
1349                                     ; AND REPLACE NEXT INST W/ 665
1350 005322          45:
1351 005324 022767 000340 172444  CCC
1352 005332 001405   CMP      @340,CC
1353 005334 012737 000133 000302  BEQ      TST32
1354 005342 005212   MOV      @133,@SFATAL ; MOVE TO MAILBOX # ***** 133 *****
1355 005344 000000   INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1356                                     ; PRIORITY WAS CHANGED, OR WRONG STSTNM
1357                                     ; TO SCOPE REPLACE HALT W/ 240
1358                                     ; AND REPLACE NEXT INST W/ 653
;*****

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

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

```

E03

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0030

1471	006022	005212				INC	(R2)		:SET MSGTYP TO FATAL ERROR
1472	006024	000000				HALT			:C NOT CLEARED
1473									: TO SCOPE REPLACE HALT W/ 240
1474									: AND REPLACE NEXT INST W/ 761
1475	006026				1S:				
1476	006026	001005				BNE	2S		
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				2S:				
1483	006042	102005				BVC	3S		
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				3S:				
1490	006056	103005				BCC	4S		
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	4S:	BIT	#340,CC		: TEST PRIORITY
1497	006100	001405				BEQ	5S		
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		5S:	MOV	#BUFF,SP		
1504	006120	012767	006136	171666		MOV	#RETG4,RTRAP4		
1505	006126	012767	000357	171662		MOV	#357,RTRAP4+2		: SET NEW "CC" AND PRIORITY
1506	006134	000003				TRT			: TRAP HERE
1507	006136				RETG4:				
1508	006136	100405				BMI	1S		
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				1S:				
1515	006152	001405				BEQ	2S		
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				2S:				
1522	006166	102405				BVS	3S		
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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1527                                     ; AND REPLACE NEXT INST W/ 673
1528 006202 3S: BCS 4S
1529 006202 103405 MOV #152,2#SFATAL ; MOVE TO MAILBOX # ***** 152 *****
1530 006204 012737 000152 000302 INC (R2) ; SET MSGTYP TO FATAL ERROR
1531 006212 005212 HALT ; C NOT SET
1532 006214 000000 ; TO SCOPE REPLACE HALT W/ 240
1533 ; AND REPLACE NEXT INST W/ 665
1534
1535 006216 016706 171554 4S: MOV CC,SP
1536 006222 042706 000017 BIC #17,SP
1537 006226 022706 000340 CMP #340,SP
1538 006232 001405 BEQ BR51A

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1539 006234 BR51: MOV #153,2#SFATAL ; MOVE TO MAILBOX # ***** 153 *****
1540 006234 012737 000153 000302 INC (R2) ; SET MSGTYP TO FATAL ERROR
1541 006242 005212 HALT ; PRIORITY WAS CHANGED, OR WRONG STSTNM
1542 006244 000000 ; 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 CLR 16

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1547
1548 ; PDP-11 ILLEGAL AND ADDRESS INSTRUCTION TEST
1549 ; ALL INSTRUCTIONS THAT ARE RESERVED
1550 ; SHOULD TRAP TO LOCATION 4, AND THE
1551 ; PC THAT POINTS TO THE TRAPPING INSTRUCTION
1552 ; SHOULD BE PLACED ON THE STACK
1553

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1554 ; *****
1555 ; TEST 40 TEST THAT A TRAP OCCURS ON AN ILLEGAL INSTRUCTION
1556 ; *****

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1557 006260 005237 000304 000304 TST40: INC 2#STESTN ; UPDATE TEST NUMBER
1558 006264 022737 000040 000304 CMP #40,2#STESTN ; SEQUENCE ERROR?
1559 006272 001006 BNE TST41-12 ; BR TO ERROR HALT ON SEQ ERROR
1560 006274 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1561 006300 012767 006322 171476 MOV #RETAS,RTRAPS ; RETURN LOCATION
1562 006306 000100 JMP %0 ; ILLEGAL INSTRUCTION, SHOULD TRAP
1563 006310 012737 000154 000302 MOV #154,2#SFATAL ; MOVE TO MAILBOX # ***** 154 *****
1564 006316 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1565 006320 000000 HALT ; ILLEGAL INSTRUCTION DIDN'T TRAP, OR WRONG STSTNM
1566 ; TO SCOPE REPLACE HALT W/ 240
1567 ; AND REPLACE NEXT INST W/ 764

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1568 006322 RETAS:
1569 ; *****
1570 ; TEST 41 TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1571 ; *****

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1572 006322 005237 000304 000304 TST41: INC 2#STESTN ; UPDATE TEST NUMBER
1573 006326 022737 000041 000304 CMP #41,2#STESTN ; SEQUENCE ERROR?
1574 006334 001011 BNE TST42-12 ; BR TO ERROR HALT ON SEQ ERROR
1575 006336 012706 000500 MOV #BUFF,SP ; STACK POINTER SETUP
1576 006342 012767 006352 171434 MOV #RETBS,RTRAPS ; RETURN POINTER
1577 006350 000100 JMP %0 ; RESERVED INSTRUCTION
1578 006352 020627 000474 RETBS: CMP SP,#BUFF-4 ; TEST DECREMENT OF SP
1579 006356 001405 BEQ TST42
1580 006360 012737 000155 000302 MOV #155,2#SFATAL ; MOVE TO MAILBOX # ***** 155 *****
1581 006366 005212 INC (R2) ; SET MSGTYP TO FATAL ERROR
1582 006370 000000 HALT ; NOT DECREMENTED TWO WORDS, OR WRONG STSTNM

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G03

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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      @#STESTN      ;UPDATE TEST NUMBER
1589 006376 022737 000042 000304  CMP      #42,@#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,@#SFATAL ;MOVE TO MAILBOX # ***** 156 *****
1597 006440 005212                INC      (R2)        ;SET MSGTYP TO FATAL ERROR
1598 006442 000000                HALT                ;INCORRECT P.C. OR WRONG $TSTNM
1599                                     ; TO SCOPE REPLACE HALT W/ 240
1600                                     ; AND REPLACE NEXT INST W/ 760
1601                                     ;*****
1602 :TEST 43          TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1603 :*****
1604 006444 005237 000304          TST43: INC      @#STESTN      ;UPDATE TEST NUMBER
1605 006450 022737 000043 000304  CMP      #43,@#STESTN ;SEQUENCE ERROR?
1606 006456 001040                BNE      TST44-12     ;BR TO ERROR HALT ON SEQ ERROR
1607 006460 012706 000500                MOV      #BUFF,SP    ;SET UP
1608 006464 012767 006502 171312        MOV      #RETDS,RTRAPS ;SET UP
1609 006472 005067 171300                CLR      CC          ;CLEAR CC AND PRIORITY
1610 006476 000257                CCC
1611 006500 000100                JMP      %0          ;TRAP
1612 006502 026727 171770 000000  RETDS:  CMP      BUFF-2,#0 ;TEST THAT OLD STATUS WENT TO STACK
1613 006510 001405                BEQ      1$
1614 006512 012737 000157 000302        MOV      #157,@#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 ;COMPARES STATUS ON STACK
1625 006556 001405                BEQ      TST44
1626 006560 012737 000160 000302        MOV      #160,@#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 $TSTNM
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      @#STESTN      ;UPDATE TEST NUMBER
1635 006576 022737 000044 000304  CMP      #44,@#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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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0033

1639	006620	005067	171162		CLR	RTRAP5+2		; CLEAR FUTURE PRIORITY AND CC
1640	006624	000100			JMP	%0		
1641	006626				RETFS:			; TEST FOR "C" CLEARED
1642	006626	100005			BPL	1\$		
1643	006630	012737	000161	000302	MOV	#161, @SFATAL		; MOVE TO MAILBOX # ***** 161 *****
1644	006636	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1645	006640	000000			HALT			; C NOT CLEARED
1646								; TO SCOPE REPLACE HALT W/ 240
1647								; AND REPLACE NEXT INST W/ 761
1648	006642				1\$:			
1649	006642	001005			BNE	2\$		
1650	006644	012737	000162	000302	MOV	#162, @SFATAL		; MOVE TO MAILBOX # ***** 162 *****
1651	006652	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1652	006654	000000			HALT			; Z NOT CLEARED
1653								; TO SCOPE REPLACE HALT W/ 240
1654								; AND REPLACE NEXT INST W/ 753
1655	006656				2\$:			
1656	006656	102005			BVC	3\$		
1657	006660	012737	000163	000302	MOV	#163, @SFATAL		; MOVE TO MAILBOX # ***** 163 *****
1658	006666	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1659	006670	000000			HALT			; V NOT CLEARED
1660								; TO SCOPE REPLACE HALT W/ 240
1661								; AND REPLACE NEXT INST W/ 745
1662	006672				3\$:			
1663	006672	103005			BCC	4\$		
1664	006674	012737	000164	000302	MOV	#164, @SFATAL		; MOVE TO MAILBOX # ***** 164 *****
1665	006702	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1666	006704	000000			HALT			; C NOT CLEARED
1667								; TO SCOPE REPLACE HALT W/ 240
1668								; AND REPLACE NEXT INST W/ 737
1669	006706	032767	000357	171062	4\$:	#357, CC		; TEST PRIORITY
1670	006714	001405			BEQ	5\$		
1671	006716	012737	000165	000302	MOV	#165, @SFATAL		; MOVE TO MAILBOX # ***** 165 *****
1672	006724	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1673	006726	000000			HALT			; PRIORITY NOT ZERO
1674								; TO SCOPE REPLACE HALT W/ 240
1675								; AND REPLACE NEXT INST W/ 726
1676	006730	012706	000500		5\$:	#BUFF, SP		
1677	006734	012767	006752	171042	MOV	#RETG5, RTRAP5		
1678	006742	012767	000357	171036	MOV	#357, RTRAP5+2		; SET NEW "CC" AND PRIORITY
1679	006750	000100			JMP	%0		; TRAP HERE
1680	006752				RETGS:			
1681	006752	100405			BMI	1\$		
1682	006754	012737	000166	000302	MOV	#166, @SFATAL		; MOVE TO MAILBOX # ***** 166 *****
1683	006762	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1684	006764	000000			HALT			; N NOT SET
1685								; TO SCOPE REPLACE HALT W/ 240
1686								; AND REPLACE NEXT INST W/ 707
1687	006766				1\$:			
1688	006766	001405			BEQ	2\$		
1689	006770	012737	000167	000302	MOV	#167, @SFATAL		; MOVE TO MAILBOX # ***** 167 *****
1690	006776	005212			INC	(R2)		; SET MSGTYP TO FATAL ERROR
1691	007000	000000			HALT			; Z NOT SET
1692								; TO SCOPE REPLACE HALT W/ 240
1693								; AND REPLACE NEXT INST W/ 701
1694	007002				2\$:			

```

1695 007002 102405      BVS      3S
1696 007004 012737 000170 000302  MOV      #170,0#SFATAL ;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

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```

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

```

```

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

```

```

:*****
:TEST 45      TEST THAT A TRAP OCCURES ON ALL ILLEGAL INSTRUCTION
:*****

```

```

1718 007056 005237 000304 4S:  INC      0#STESTN ;UPDATE TEST NUMBER
1719 007062 022737 000045 000304  CMP      #45,0#STESTN ;SEQUENCE ERROR?
1720 007070 001006      BNE      TST46-12 ;BR TO ERROR HALT ON SEQ ERROR
1721 007072 012706 000500      MOV      #BUFF,SP ;STACK POINTER SETUP
1722 007076 012767 007120 170700  MOV      #RETH5,RTRAPS ;RETURN LOCATION
1723 007104 004000      JSR      %0,%0 ;RESERVED INSTRUCTION, SHOULD TRAP
1724 007106 012737 000173 000302  MOV      #173,0#SFATAL ;MOVE TO MAILBOX # ***** 173 *****
1725 007114 005212      INC      (R2)      ;SET MSGTYP TO FATAL ERROR
1726 007116 000000      HALT          ;DIDN'T TRAP,OR WRONG STSTNM
1727                                     ; TO SCOPE REPLACE HALT W/ 240
1728                                     ; AND REPLACE NEXT INST W/ 764

```

```

RETH5:
:*****
:TEST 46      TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
:*****

```

```

1730 007120 005237 000304 4S:  INC      0#STESTN ;UPDATE TEST NUMBER
1731 007124 022737 000046 000304  CMP      #46,0#STESTN ;SEQUENCE ERROR?
1732 007132 001011      BNE      TST47-12 ;BR TO ERROR HALT ON SEQ ERROR
1733 007134 012706 000500      MOV      #BUFF,SP ;STACK POINTER SETUP
1734 007140 012767 007150 170636  MOV      #RETJ,RTRAPS ;RETURN POINTER
1735 007146 004000      JSR      %0,%0 ;RESERVED INSTRUCTION
1736 007150 020627 000474      RETJ:  CMP      SP,#BUFF-4 ;TEST DECREMENT OF SP
1737 007154 001405      BEQ      TST47
1738 007156 012737 000174 000302  MOV      #174,0#SFATAL ;MOVE TO MAILBOX # ***** 174 *****
1739 007164 005212      INC      (R2)      ;SET MSGTYP TO FATAL ERROR
1740 007166 000000      HALT          ;NOT DECREMENTED TWO WORDS,OR WRONG STSTNM
1741                                     ; TO SCOPE REPLACE HALT W/ 240
1742                                     ; AND REPLACE NEXT INST W/ 761

```

```

:*****
:TEST 47      TEST THAT PROPER P.C. IS SAVED
:*****
1743 007170 005237 000304 4S:  INC      0#STESTN ;UPDATE TEST NUMBER

```


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TEST THAT PROPER P.C. IS SAVED

SEQ 0035

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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      RETK:    CMP      #INSTK+2,BUFF-4 ;CHECK FOR INCREMENTED P.C.
1757 007226 001405                    BEQ      TST50
1758 007230 012737 000175 000302      MOV      #175,0#SFATAL ;MOVE TO MAILBOX # ***** 175 *****
1759 007236 005212                    INC      (R2)           ;SET MSGTYP TO FATAL ERROR
1760 007240 000000                    HALT
;INCORRECT P.C. OR WRONG STSTNM
;TO SCOPE REPLACE HALT W/ 240
;AND REPLACE NEXT INST W/ 760

```

```

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

```

```

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

```

```

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

```

```

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

```

```

1797 007370 005237 000304 000304      TST51:  INC      0#STESTN      ;UPDATE TEST NUMBER
1798 007374 022737 000051                    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      ;CLEAR FUTURE PRIORITY AND CC
1801 007410 012767 007424 170366      MOV      #RETN,RTRAPS
1802 007416 005067 170364                    CLR      RTRAPS+2
1803 007422 004000                    JSR      %0,%0          ;TEST FOR "C" CLEARED
1804 007424 100005                    RETN:   BPL      1$
1805 007424 012737 000200 000302      MOV      #200,0#SFATAL ;MOVE TO MAILBOX # ***** 200 *****

```

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0036

1807	007434	005212				INC	(R2)		;SET MSGTYP TO FATAL ERROR
1808	007436	000000				HALT			;C NOT CLEARED
1809									; TO SCOPE REPLACE HALT W/ 240
1810									; AND REPLACE NEXT INST W/ 761
1811	007440				1S:				
1812	007440	001005				BNE	2S		
1813	007442	012737	000201	000302		MOV	#201, @SFATAL		; MOVE TO MAILBOX # ***** 201 *****
1814	007450	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1815	007452	000000				HALT			; Z NOT CLEARED
1816									; TO SCOPE REPLACE HALT W/ 240
1817									; AND REPLACE NEXT INST W/ 753
1818	007454				2S:				
1819	007454	102005				BVC	3S		
1820	007456	012737	000202	000302		MOV	#202, @SFATAL		; MOVE TO MAILBOX # ***** 202 *****
1821	007464	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1822	007466	000000				HALT			; V NOT CLEARED
1823									; TO SCOPE REPLACE HALT W/ 240
1824									; AND REPLACE NEXT INST W/ 745
1825	007470				3S:				
1826	007470	103005				BCC	4S		
1827	007472	012737	000203	000302		MOV	#203, @SFATAL		; MOVE TO MAILBOX # ***** 203 *****
1828	007500	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1829	007502	000000				HALT			; C NOT CLEARED
1830									; TO SCOPE REPLACE HALT W/ 240
1831									; AND REPLACE NEXT INST W/ 737
1832	007504	016700	170266		4S:	MOV	CC,%0		; TEMP STORAGE
1833	007510	001405				BEG	5S		
1834	007512	012737	000204	000302		MOV	#204, @SFATAL		; 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		5S:	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	1S		
1845	007550	012737	000205	000302		MOV	#205, @SFATAL		; MOVE TO MAILBOX # ***** 205 *****
1846	007556	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1847	007560	000000				HALT			; N NOT SET
1848									; TO SCOPE REPLACE HALT W/ 240
1849									; AND REPLACE NEXT INST W/ 710
1850	007562				1S:				
1851	007562	001405				BEG	2S		
1852	007564	012737	000206	000302		MOV	#206, @SFATAL		; MOVE TO MAILBOX # ***** 206 *****
1853	007572	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1854	007574	000000				HALT			; Z NOT SET
1855									; TO SCOPE REPLACE HALT W/ 240
1856									; AND REPLACE NEXT INST W/ 702
1857	007576				2S:				
1858	007576	102405				BVS	3S		
1859	007600	012737	000207	000302		MOV	#207, @SFATAL		; MOVE TO MAILBOX # ***** 207 *****
1860	007606	005212				INC	(R2)		; SET MSGTYP TO FATAL ERROR
1861	007610	000000				HALT			; V NOT SET
1862									; TO SCOPE REPLACE HALT W/ 240

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TEST THAT "NEW" STATUS IS CORRECT

SEQ 0037

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1863                                     ; AND REPLACE NEXT INST W/ 674
1864 007612                               3S:
1865 007612 103405                        BCS      4S
1866 007614 012737 000210 000302        MOV      #210, @SFATAL ; MOVE TO MAILBOX # ***** 210 *****
1867 007622 005212                        INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1868 007624 000000                        HALT
1869                                     ; C NOT SET
1870                                     ; TO SCOPE REPLACE HALT W/ 240
1871 007626 016700 170144                 4S:  MOV      CC,%0
1872 007632 022700 000357                 CMP      #357,%0
1873 007636 001405                        BEQ      TST52
1874 007640 012737 000211 000302        MOV      #211, @SFATAL ; MOVE TO MAILBOX # ***** 211 *****
1875 007646 005212                        INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1876 007650 000000                        HALT
1877                                     ; PRIORITY WAS CHANGED, OR WRONG STSTNM
1878                                     ; TO SCOPE REPLACE HALT W/ 240
1879                                     ; AND REPLACE NEXT INST W/ 654
1880                                     ;*****
1881                                     ;TEST 52          TEST THAT A TRAP OCCURES ON AN ILLEGAL ADDRESS
1882                                     ;*****
1883 007652 005237 000304                 TST52: INC      @STESTN ; UPDATE TEST NUMBER
1884 007656 022737 000052 000304        CMP      #52, @STESTN ; SEQUENCE ERROR?
1885 007664 001007                        BNE     TST53-12      ; BR TO ERROR HALT ON SEQ ERROR
1886 007666 012706 000500                 MOV      #BUFF, SP   ; STACK POINTER SETUP
1887 007672 012767 007716 170104        MOV      #RETP, RTRAPS ; RETURN LOCATION
1888 007700 005767 170075                 TST 1 ; ILLEGAL ADDRESS INSTRUCTION, SHOULD TRAP
1889 007704 012737 000212 000302        MOV      #212, @SFATAL ; MOVE TO MAILBOX # ***** 212 *****
1890 007712 005212                        INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1891 007714 000000                        HALT
1892                                     ; ILLEGAL ADDRESS DID NOT TRAP, OR WRONG STSTNM
1893                                     ; TO SCOPE REPLACE HALT W/ 240
1894 007716                                RETP:
1895                                     ;*****
1896                                     ;TEST 53          TEST DECREMENT OF STACK POINTER ON A TRAP OPERATION
1897                                     ;*****
1898 007716 005237 000304                 TST53: INC      @STESTN ; UPDATE TEST NUMBER
1899 007722 022737 000053 000304        CMP      #53, @STESTN ; SEQUENCE ERROR?
1900 007730 001012                        BNE     TST54-12      ; BR TO ERROR HALT ON SEQ ERROR
1901 007732 012706 000500                 MOV      #BUFF, SP   ; STACK POINTER SETUP
1902 007736 012767 007750 170040        MOV      #RETQ, RTRAPS ; RETURN POINTER
1903 007744 005767 170031                 TST 1 ; RESERVED INSTRUCTION
1904 007750 020627 000474                 RETQ:  CMP      SP, #BUFF-4 ; TEST DECREMENT OF SP
1905 007754 001405                        BEQ      TST54
1906 007756 012737 000213 000302        MOV      #213, @SFATAL ; MOVE TO MAILBOX # ***** 213 *****
1907 007764 005212                        INC      (R2)          ; SET MSGTYP TO FATAL ERROR
1908 007766 000000                        HALT
1909                                     ; NOT DECREMENTED TWO WORDS, OR WRONG STSTNM
1910                                     ; TO SCOPE REPLACE HALT W/ 240
1911                                     ; AND REPLACE NEXT INST W/ 760
1912                                     ;*****
1913                                     ;TEST 54          TEST THAT PROPER P.C. IS SAVED
1914                                     ;*****
1914 007770 005237 000304                 TST54: INC      @STESTN ; UPDATE TEST NUMBER
1915 007774 022737 000054 000304        CMP      #54, @STESTN ; SEQUENCE ERROR?
1916 010002 001013                        BNE     TST55-12      ; BR TO ERROR HALT ON SEQ ERROR
1917 010004 012706 000500                 MOV      #BUFF, SP   ; STACK POINTER SETUP
1918 010010 012767 010022 167766        MOV      #RETR, RTRAPS ; RETURN FROM TRAP POINTER
  
```

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TEST THAT PROPER P.C. IS SAVED

SEQ 0038

```

1919 010016 005767 167757          TST 1          ; TRAP ON THIS INSTRUCTION
1920 010022 022767 010022 170444 RETR: CMP          #. BUFF-4    ; CHECK FOR INCREMENTED P.C.
1921 010030 001405                      BEQ          TST55
1922 010032 012737 000214 000302  MOV          #214, @SFATAL ; MOVE TO MAILBOX # ***** 214 *****
1923 010040 005212                      INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1924 010042 000000                      HALT                    ; INCORRECT P.C., OR WRONG STSTNM
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 757
  
```

```

1925
1926
1927 *****
1928 ; TEST 55          TEST THAT "OLD" CC AND PRIORITY ARE PLACED ON STACK
1929 *****
  
```

```

1930 010044 005237 000304          TST55: INC          @STESTN ; UPDATE TEST NUMBER
1931 010050 022737 000055 000304  CMP          #55, @STESTN ; SEQUENCE ERROR?
1932 010056 001042                      BNE          TST56-12 ; BR TO ERROR HALT ON SEQ ERROR
1933 010060 012706 000500                      MOV          #BUFF, SP ; SET UP
1934 010064 012767 010104 167712  MOV          #RETS, RTRAPS ; SET UP
1935 010072 005067 167700                      CLR          CC        ; CLEAR CC AND PRIORITY
1936 010076 000257                      CCC
  
```

```

1937 010100 005767 167675          TST 1          ; TRAP
1938 010104 026727 170366 000000 RETS: CMP          BUFF-2, #0 ; TEST THAT OLD STATUS WENT TO STACK
1939 010112 001405                      BEQ          IS
1940 010114 012737 000215 000302  MOV          #215, @SFATAL ; MOVE TO MAILBOX # ***** 215 *****
1941 010122 005212                      INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1942 010124 000000                      HALT                    ; INCORRECT STATUS
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 754
  
```

```

1943
1944
1945 010126 012706 000500          IS:  MOV          #BUFF, SP ; SET UP
1946 010132 012767 010154 167644  MOV          #RETT, RTRAPS ; SET UP
1947 010140 012767 000357 167630  MOV          #357, CC    ; SET PRIORITY
1948 010146 000277                      SCC                    ; SET CC
1949 010150 005767 167625          TST 1          ; TRAP
  
```

```

1950 010154 026727 170316 000357 RETT: CMP          BUFF-2, #357 ; COMPARES STATUS ON STACK
1951 010162 001405                      BEQ          TST56
1952 010164 012737 000216 000302  MOV          #216, @SFATAL ; MOVE TO MAILBOX # ***** 216 *****
1953 010172 005212                      INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1954 010174 000000                      HALT                    ; INCORRECT STATUS ON STACK, OR WRONG STSTNM
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 730
  
```

```

1955 *****
1956 ; TEST 56          TEST THAT "NEW" STATUS IS CORRECT
1957 *****
  
```

```

1958
1959
1960 010176 005237 000304          TST56: INC          @STESTN ; UPDATE TEST NUMBER
1961 010202 022737 000056 000304  CMP          #56, @STESTN ; SEQUENCE ERROR?
1962 010210 001121                      BNE          TST57-12 ; BR TO ERROR HALT ON SEQ ERROR
1963 010212 012706 000500                      MOV          #BUFF, SP
1964 010216 012767 010234 167560  MOV          #RETT, RTRAPS
1965 010224 005067 167556                      CLR          RTRAPS+2 ; CLEAR FUTURE PRIORITY AND CC
1966 010230 005767 167545          TST 1          ; TRAP HERE
  
```

```

1967 010234 000000          RETU:          ; TEST FOR "C" CLEARED
1968 010234 100005                      BPL          IS
1969 010236 012737 000217 000302  MOV          #217, @SFATAL ; MOVE TO MAILBOX # ***** 217 *****
1970 010244 005212                      INC          (R2)      ; SET MSGTYP TO FATAL ERROR
1971 010246 000000                      HALT                    ; C NOT CLEARED
                                ; TO SCOPE REPLACE HALT W/ 240
                                ; AND REPLACE NEXT INST W/ 760
1972
1973
1974 010250          IS:
  
```



```

2031 010440 000000          HALT          ;C NOT SET
2032                                     ; TO SCOPE REPLACE HALT W/ 240
2033                                     ; AND REPLACE NEXT INST W/ 663
2034 010442 016700 167330    45:  MOV      CC,%0
2035 010446 022700 000357    CMP      #357,%0
2036 010452 001405          BEQ      TST57
2037 010454 012737 000230 000302  MOV      #230,%#FATAL ;MOVE TO MAILBOX # ***** 230 *****
2038 010462 005212          INC      (R2)          ;SET MSGTYP TO FATAL ERROR
2039 010464 000000          HALT          ;PRIORITY WAS CHANGED,OR WRONG STSTNM
2040                                     ; TO SCOPE REPLACE HALT W/ 240
2041                                     ; AND REPLACE NEXT INST W/ 651
2042                                     ;*****
2043                                     ;TEST 57          TEST THAT DECREMENT R6 TO A VALUE LESS THAN 400 TRAPS
2044                                     ;*****
2045 010466 005237 000304    TST57: INC      %#STESTN ;UPDATE TEST NUMBER
2046 010472 022737 000057 000304  CMP      #57,%#STESTN ;SEQUENCE ERROR?
2047 010500 001006          BNE      TST60-12    ;BR TO ERROR HALT ON SEQ ERROR
2048 010502 012706 000150          MOV      #150,%6    ;R6 = 150
2049 010506 012767 010530 167270  MOV      #TDEC1,4    ;STACK OVERFLOW TRAP POINTER
2050 010514 005746          TST      -(6)        ;WITH R6 = 150 SHOULD TRAP
2051 010516 012737 000231 000302  MOV      #231,%#FATAL ;MOVE TO MAILBOX # ***** 231 *****
2052 010524 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2053 010526 000000          HALT          ;SHOULD HAVE TRAPPED,OR WRONG STSTNM
2054                                     ; TO SCOPE REPLACE HALT W/ 240
2055                                     ; AND REPLACE NEXT INST W/ 764
2056 010530          TDEC1:
2057                                     ;*****
2058                                     ;TEST 60          TEST FOR DECREMENT OF R6 ON OVERFLOW TRAP
2059                                     ;*****
2060 010530 005237 000304    TST60: INC      %#STESTN ;UPDATE TEST NUMBER
2061 010534 022737 000060 000304  CMP      #60,%#STESTN ;SEQUENCE ERROR?
2062 010542 001011          BNE      TST61-12    ;BR TO ERROR HALT ON SEQ ERROR
2063 010544 012706 000150          MOV      #150,%6    ;R6 = 150
2064 010550 012767 010560 167226  MOV      #TDEC2,4    ;TRAP POINTER
2065 010556 005746          TST      -(6)        ;WITH R6 = 150 SHOULD TRAP
2066 010560 020627 000142          TDEC2: CMP      %6,#142 ;DID R6 DECREMENT
2067 010564 001405          BEQ      TST61
2068 010566 012737 000232 000302  MOV      #232,%#FATAL ;MOVE TO MAILBOX # ***** 232 *****
2069 010574 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2070 010576 000000          HALT          ;R6 NOT = 142,OR WRONG STSTNM
2071                                     ; TO SCOPE REPLACE HALT W/ 240
2072                                     ; AND REPLACE NEXT INST W/ 761
2073
2074

```



```

2075 ;*****
2076 ;TEST 61      TEST DIFFERENT TYPES OF OVERFLOW
2077 ;*****
2078 010600 005237 000304      TST61: INC      @#STESTN      ;UPDATE TEST NUMBER
2079 010604 022737 000061 000304      CMP      #61,@#STESTN      ;SEQUENCE ERROR?
2080 010612 001043              BNE      TST62-12          ;BR TO ERROR HALT ON SEQ ERROR
2081 010614 012706 000150      MOV      #150,%6
2082 010620 005067 167322      CLR      146              ;STATUS WORD OF LOC 10
2083 010624 012767 010634 167152      MOV      #TDEC3,4          ;RETURN TO LOC 4
2084 010632 005246              INC      -(6)
2085 010634 005767 167306      TDEC3: TST      146
2086 010640 001005              BNE      1$
2087 010642 012737 000233 000302      MOV      #233,@#SFATAL      ;MOVE TO MAILBOX # ***** 233 *****
2088 010650 005212              INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2089 010652 000000              HALT                       ;INCREMENT OPERATION NOT INHIBITED
2090 ; ; TO SCOPE REPLACE HALT W/ 240
2091 ; ; AND REPLACE NEXT INST W/ 757
2092 010654 012705 001000      1$:  MOV      #1000,%5
2093 010660 012706 000400      MOV      #400,%6
2094 010664 012767 010706 167112      MOV      #TDEC4,4
2095 010672 124645              CMPB    -(6),-(5)
2096 010674 012737 000234 000302      MOV      #234,@#SFATAL      ;MOVE TO MAILBOX # ***** 234 *****
2097 010702 005212              INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2098 010704 000000              HALT                       ;STACK = 400 AND DECREMENTED, SHOULD TRAP
2099 ; ; TO SCOPE REPLACE HALT W/ 240
2100 ; ; AND REPLACE NEXT INST W/ 742
2101 010706 012706 000400      TDEC4: MOV      #400,%6
2102 010712 012767 010734 167064      MOV      #TDEC7,4
2103 010720 134546              BITB    -(5),-(6)
2104 010722
2105 010722 012737 000235 000302      TDEC6: MOV      #235,@#SFATAL      ;MOVE TO MAILBOX # ***** 235 *****
2106 010730 005212              INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2107 010732 000000              HALT                       ;NO STACK OVERFLOW, OR WRONG STSTNM
2108 ; ; TO SCOPE REPLACE HALT W/ 240
2109 ; ; AND REPLACE NEXT INST W/ 727
2110 010734      TDEC7:
2111 ;*****
2112 ;TEST 62      TEST THAT AN 7 CAUSES AN OVERFLOW TRAP
2113 ;*****
2114 ;*****
2115 010734 005237 000304      TST62: INC      @#STESTN      ;UPDATE TEST NUMBER
2116 010740 022737 000062 000304      CMP      #62,@#STESTN      ;SEQUENCE ERROR?
2117 010746 001011              BNE      VDEC2              ;BR TO ERROR HALT ON SEQ ERROR
2118 010750 012706 000400      MOV      #400,%6              ;SET UP STACK TO OVERFLOW
2119 010754 012767 010772 167026      MOV      #VDEC2,10          ;SET UP 7 VECTOR
2120 010762 012767 011004 167014      MOV      #VDEC1,4          ;SET UP OVERFLOW VECTOR
2121 010770 000007              7 ; THIS TRAP SHOULD CAUSE OVERFLOW
2122 010772
2123 010772 012737 000236 000302      VDEC2: MOV      #236,@#SFATAL      ;MOVE TO MAILBOX # ***** 236 *****
2124 011000 005212              INC      (R2)              ;SET MSGTYP TO FATAL ERROR
2125 011002 000000              HALT                       ;TRAP FLAG OVERFLOW DID NOT OCCUR, OR WRONG STSTNM
2126 ; ; TO SCOPE REPLACE HALT W/ 240
2127 ; ; AND REPLACE NEXT INST W/ 761
2128 011004 012767 000012 166776      VDEC1: MOV      #10+2,10
2129 ;*****
2130 ;TEST 63      TEST THAT AN IOY CAUSES AN OVERFLOW TRAP
    
```

```

2131 :*****
2132 011012 005237 000304 TST63: INC 2#STESTN ;UPDATE TEST NUMBER
2133 011016 022737 000063 000304 CMP #63,2#STESTN ;SEQUENCE ERROR?
2134 011024 001011 BNE VDEC4 ;BR TO ERROR HALT ON SEQ ERROR
2135 011026 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2136 011032 012767 011050 166760 MOV #VDEC4,20 ;SET UP IOT VECTOR
2137 011040 012767 011062 166736 MOV #VDEC3,4 ;SET UP OVERFLOW VECTOR
2138 011046 000004 IOT ;THIS TRAP SHOULD CAUSE OVERFLOW
2139 011050
2140 011050 012737 000237 000302 VDEC4: MOV #237,2#SFATAL ;MOVE TO MAILBOX # ***** 237 *****
2141 011056 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2142 011060 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2143 ; TO SCOPE REPLACE HALT W/ 240
2144 ; AND REPLACE NEXT INST W/ 761
2145 011062 012767 000022 166730 VDEC3: MOV #20+2,20
2146 :*****
2147 ;TEST 64 TEST THAT AN EMT CAUSES AN OVERFLOW TRAP
2148 :*****
2149 011070 005237 000304 TST64: INC 2#STESTN ;UPDATE TEST NUMBER
2150 011074 022737 000064 000304 CMP #64,2#STESTN ;SEQUENCE ERROR?
2151 011102 001011 BNE VDEC5 ;BR TO ERROR HALT ON SEQ ERROR
2152 011104 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2153 011110 012767 011126 166712 MOV #VDEC6,30 ;SET UP EMT VECTOR
2154 011116 012767 011140 166660 MOV #VDEC5,4 ;SET UP OVERFLOW VECTOR
2155 011124 104000 EMT ;THIS TRAP SHOULD CAUSE OVERFLOW
2156 011126
2157 011126 012737 000240 000302 VDEC6: MOV #240,2#SFATAL ;MOVE TO MAILBOX # ***** 240 *****
2158 011134 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2159 011136 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2160 ; TO SCOPE REPLACE HALT W/ 240
2161 ; AND REPLACE NEXT INST W/ 761
2162 011140 012767 000032 166662 VDEC5: MOV #30+2,30
2163 :*****
2164 ;TEST 65 TEST THAT AN TRAP CAUSES AN OVERFLOW TRAP
2165 :*****
2166 011146 005237 000304 TST65: INC 2#STESTN ;UPDATE TEST NUMBER
2167 011152 022737 000065 000304 CMP #65,2#STESTN ;SEQUENCE ERROR?
2168 011160 001011 BNE VDEC8 ;BR TO ERROR HALT ON SEQ ERROR
2169 011162 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW
2170 011166 012767 011204 166640 MOV #VDEC8,34 ;SET UP TRAP VECTOR
2171 011174 012767 011216 166602 MOV #VDEC7,4 ;SET UP OVERFLOW VECTOR
2172 011202 104400 TRAP ;THIS TRAP SHOULD CAUSE OVERFLOW
2173 011204
2174 011204 012737 000241 000302 VDEC8: MOV #241,2#SFATAL ;MOVE TO MAILBOX # ***** 241 *****
2175 011212 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2176 011214 000000 HALT ;TRAP FLAG OVERFLOW DID NOT OCCUR,OR WRONG STSTNM
2177 ; TO SCOPE REPLACE HALT W/ 240
2178 ; AND REPLACE NEXT INST W/ 761
2179 011216 012767 000036 166610 VDEC7: MOV #34+2,34
2180 :*****
2181 ;TEST 66 TEST THAT AN TRT CAUSES AN OVERFLOW TRAP
2182 :*****
2183 011224 005237 000304 TST66: INC 2#STESTN ;UPDATE TEST NUMBER
2184 011230 022737 000066 000304 CMP #66,2#STESTN ;SEQUENCE ERROR?
2185 011236 001011 BNE VDEC10 ;BR TO ERROR HALT ON SEQ ERROR
2186 011240 012706 000400 MOV #400,%6 ;SET UP STACK TO OVERFLOW

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TEST THAT AN TRT CAUSES AN OVERFLOW TRAP

SEQ 0043

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

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 DFKABC.P11 03-MAY-77 08:42 T71 TEST FOR FALSE OVERFLOW TRAP SEQ 0044

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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 POINTER
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
2259 011540 012737 000246 000302      FOVER:  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 $TSTNM
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 PSM WILL CAUSE A TRAP TO 14
2268                                     ;*****
2269 011564 005237 000304                    TST72: 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
2284                                     RETAT:
2285                                     ;*****
2286                                     ;TEST 73      TEST STACK POINTER DECREMENTS
2287                                     ;*****
2287 011640 005237 000304                    TST73: 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      #RETBT,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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2299                                     ; TO SCOPE REPLACE HALT W/ 240
2300                                     ; AND REPLACE NEXT INST W/ 757
2301 011714 020627 000474 RETBT: CMP SP,#BUFF-4
2302 011720 001405 BEQ TST74
2303 011722 012737 000251 000302 MOV #251,#$FATAL ;MOVE TO MAILBOX # ***** 251 *****
2304 011730 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2305 011732 000000 HALT ;STACK POINTER WAS NOT PUSHED BY TRAP,OR WRONG $TESTN
                                     ; TO SCOPE REPLACE HALT W/ 240
                                     ; AND REPLACE NEXT INST W/ 747
2306
2307
2308 ;*****
2309 ;TEST 74 TEST FOR PROPER PC ON STACK
2310 ;*****
2311 011734 005237 000304 TST74: INC @#$TESTN ;UPDATE TEST NUMBER
2312 011740 022737 000074 000304 CMP #74,@#$TESTN ;SEQUENCE ERROR?
2313 011746 001016 BNE TST75-12 ;BR TO ERROR HALT ON SEQ ERROR
2314 011750 012706 000500 MOV #BUFF,SP
2315 011754 012767 011774 166032 MOV #RETCT,RTRAP4
2316 011762 012746 000020 MOV #20,-(SP) ;PUSH T BIT
2317 011766 012746 011774 MOV #.+6,-(SP) ;PUSH PC
2318 011772 000002 RTI ;SET T BIT
2319 ;TRAP HERE
2320 011774 022767 011774 166472 RETCT: CMP #. BUFF-4
2321 012002 001405 BEQ TST75
2322 012004 012737 000252 000302 MOV #252,@#$FATAL ;MOVE TO MAILBOX # ***** 252 *****
2323 012012 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2324 012014 000000 HALT ;CORRECT PC WAS NOT SAVED ON STACK,OR WRONG $TESTN
                                     ; TO SCOPE REPLACE HALT W/ 240
                                     ; AND REPLACE NEXT INST W/ 754
2325
2326
2327
2328
2329 ;*****
2330 ;TEST 75 TEST THAT RTT POPS T- BIT
2331 ;*****
2332 012016 005237 000304 TST75: INC @#$TESTN ;UPDATE TEST NUMBER
2333 012022 022737 000075 000304 CMP #75,@#$TESTN ;SEQUENCE ERROR?
2334 012030 001015 BNE TST76-12 ;BR TO ERROR HALT ON SEQ ERROR
2335
2336 012032 012706 000500 MOV #BUFF,SP
2337 012036 005001 CLR R1 ;CLEAR R1
2338 012040 012746 000020 MOV #20,-(SP)
2339 012044 012746 012060 MOV #RTT1,-(SP)
2340 012050 012767 012076 165736 MOV #RTT2,14
2341 012056 000006 RTT
2342 012060 000240 RTT1: NOP
2343 012062 001405 BEQ TST76
2344 012064 012737 000253 000302 MOV #253,@#$FATAL ;MOVE TO MAILBOX # ***** 253 *****
2345 012072 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2346 012074 000000 HALT ;T-BIT DID NOT TRAP,OR WRONG $TESTN
                                     ; TO SCOPE REPLACE HALT W/ 240
                                     ; AND REPLACE NEXT INST W/ 755
2347
2348
2349
2350 012076 RTT2:
2351 ;*****
2352 ;TEST 76 TEST THAT RTT ALLOWS ONE INST. BEFORE TRAP
2353 ;*****
2354 012076 005237 000304 TST76: INC @#$TESTN ;UPDATE TEST NUMBER

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

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*****
2411          :*****
2412 012302 005237 000304  †ST100: INC      @#STESTN      ;UPDATE TEST NUMBER
2413 012306 022737 000100 000304  CMP      #100,@#STESTN ;SEQUENCE ERROR?
2414 012314 001120          BNE      TST101-12   ;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,@#SFATAL ;MOVE TO MAILBOX # ***** 260 *****
2419 012342 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2420 012344 000000          HALT                ;ODD ADDRESS SHOULD HAVE TRAPPED
2421          ; TO SCOPE REPLACE HALT W/ 240
2422          ; AND REPLACE NEXT INST W/ 763
2423 012346 022767 000001 166120 R7TR1:  CMP      #1,BUFF-4
2424 012354 001405          BEQ      1$
2425 012356 012737 000261 000302  MOV      #261,@#SFATAL ;MOVE TO MAILBOX # ***** 261 *****
2426 012364 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2427 012366 000000          HALT                ;CORRECT PC WAS NOT SAVED ON STACK
2428          ; TO SCOPE REPLACE HALT W/ 240
2429          ; AND REPLACE NEXT INST W/ 752
2430
2431 012370 012706 000500          1$:  MOV      #BUFF,%6    ;STACK POINTER
2432 012374 012767 012416 165402  MOV      #R7TR2,4
2433 012402 005207          INC      %7          ;PC BECOMES ODD
2434 012404
2435 012404 012737 000262 000302  R7TR2A: MOV      #262,@#SFATAL ;MOVE TO MAILBOX # ***** 262 *****
2436 012412 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2437 012414 000000          HALT                ; TO SCOPE REPLACE HALT W/ 240
2438          ; AND REPLACE NEXT INST W/ 737
2439
2440 012416 022767 012405 166050 R7TR2:  CMP      #R7TR2A+1,BUFF-4
2441 012424 001405          BEQ      1$
2442 012426 012737 000263 000302  MOV      #263,@#SFATAL ;MOVE TO MAILBOX # ***** 263 *****
2443 012434 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2444 012436 000000          HALT                ;CORRECT PC NOT ON STACK
2445          ; TO SCOPE REPLACE HALT W/ 240
2446          ; AND REPLACE NEXT INST W/ 726
2447 012440 012706 000500          1$:  MOV      #BUFF,%6
2448 012444 012767 012466 165332  MOV      #R7TR3,4
2449 012452 005307          BR60:  DEC      %7
2450 012454 012737 000264 000302  MOV      #264,@#SFATAL ;MAKE PC ODD
2451 012462 005212          INC      (R2)        ;MOVE TO MAILBOX # ***** 264 *****
2452 012464 000000          HALT                ;SET MSGTYP TO FATAL ERROR
2453          ; SHOULD TRAP
2454          ; TO SCOPE REPLACE HALT W/ 240
2455          ; AND REPLACE NEXT INST W/ 713
2455 012466 022767 012453 166000 R7TR3:  CMP      #BR60+1,BUFF-4 ;CHECK VALUE OF PC ON STACK
2456 012474 001405          BEQ      1$
2457 012476 012737 000265 000302  MOV      #265,@#SFATAL ;MOVE TO MAILBOX # ***** 265 *****
2458 012504 005212          INC      (R2)        ;SET MSGTYP TO FATAL ERROR
2459 012506 000000          HALT                ;WRONG VALUE ON STACK
2460          ; TO SCOPE REPLACE HALT W/ 240
2461          ; AND REPLACE NEXT INST W/ 702
2462
2463 012510 012706 000500          1$:  MOV      #BUFF,%6
2464 012514 012767 012540 165262  MOV      #R7TR4,4
2465 012522 000261          SEC
2466 012524 006107          ROL      %7          ;CARRY EQUALS A 1
                          ;PC BECOMES ODD
    
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2467 012526 TR4A: MOV #266,%SFATAL ;MOVE TO MAILBOX # ***** 266 *****
2468 012526 012737 000266 000302 INC (R2) ;SET MSGTYP TO FATAL ERROR
2469 012534 005212 HALT ;ODD ADDRESS DIDN'T TRAP
2470 012536 000000 ; TO SCOPE REPLACE HALT W/ 240
2471 ; AND REPLACE NEXT INST W/ 666
2472 ; RESET UP A HALT FOR TRAP
2473 012540 012767 000006 165236 R7TR4: MOV #6,4
2474 012546 022767 025255 165720 CMP #(<2*TR4A+1),BUFF-4 ;CHECK FOR VALUE ON STACK
2475 012554 001405 BEQ TST101
2476 012556 012737 000267 000302 MOV #267,%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 %STESTN ;UPDATE TEST NUMBER
2485 012574 022737 000101 000304 CMP #101,%STESTN ;SEQUENCE ERROR?
2486 012602 001027 BNE BR70 ;BR TO ERROR HALT ON SEQ ERROR
2487
2488 012604 012706 000500 MOV #BUFF,%6
2489 012610 012767 012650 165176 MOV #TRACE,14 ;TRACE TRAP
2490 012616 005027 000016 CLR #16
2491 012622 005027 000022 CLR #22
2492 012626 012767 012674 165164 MOV #TONT1,20 ;IOT TRAP
2493 012634 012746 000020 MOV #20,-(SP) ;PUSH T BIT
2494 012640 012746 012646 MOV #.+6,-(SP) ;PUSH PC
2495 012644 000006 RTT
2496 012646 000004 IOT ;TRAP, NEW CC HAVE TRACE RESET
2497 012650 TRACE:
2498 012650 012737 000270 000302 MOV #270,%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 012662 BR70:
2504 012662 012737 000271 000302 MOV #271,%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 %STESTN ;UPDATE TEST NUMBER
2515 012714 022737 000102 000304 CMP #102,%STESTN ;SEQUENCE ERROR?
2516 012722 001020 BNE STP3 ;BR TO ERROR HALT ON SEQ ERROR
2517 012724 012706 000500 MOV #BUFF,%6 ;SET UP STACK POINTER
2518 012730 012767 012754 165056 MOV #TRC1,14 ;TRACE TRAP RETURN
2519 012736 005067 165054 CLR 16
2520 012742 012746 000020 MOV #20,-(SP) ;SET THE T BIT
2521 012746 012746 012754 MOV #TRC1,-(SP)
2522 012752 000002 RTI

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2523 012754 036727 165516 000020 TRC1: BIT    BUFF-2, #20    ;CHECK FOR T BIT ON STACK
2524 012762 001005                BNE    STP30
2525 012764                STP3:
2526 012764 012737 000272 000302      MOV    #272, @#SFATAL ;MOVE TO MAILBOX # ***** 272 *****
2527 012772 005212                INC    (R2)           ;SET MSGTYP TO FATAL ERROR
2528 012774 000000                HALT                ;T BIT NOT SAVED ON THE STACK, OR WRONG STSTNM
2529                                     ; TO SCOPE REPLACE HALT W/ 240
2530                                     ; AND REPLACE NEXT INST W/ 752
2531 012776 012767 000016 165010 STP30: MOV    #16, 14
2532
2533
2534                                     ; THIS ROUTINE TEST THAT NO LEGAL ADDRESS TRAPS.
2535                                     ; AND THAT AN ILLEGAL ADDRESS TRAPS TO LOCATION 4
2536                                     ; *****
2537                                     ; TEST 103 TEST NON-EXISTENT ADDRESS TRAPS
2538                                     ; *****
2539 013004 005237 000304                TST103: INC    @#STESTN ;UPDATE TEST NUMBER
2540 013010 022737 000103 000304      CMP    #103, @#STESTN ;SEQUENCE ERROR?
2541 013016 001063                BNE    AUTO1         ;BR TO ERROR HALT ON SEQ ERROR
2542
2543                                     ; THIS ROUTINE TESTS MEMORY UNTIL IT DOES A NXM TRAP
2544                                     ;
2545 013020 000402                BR     ADALL
2546 013022 000000                TSL:   0
2547 013024 000000                CORH:  0
2548 013026 005000                ADALL: CLR    %0
2549 013030 005067 164752                CLR    6
2550 013034 012767 013070 164742      MOV    #ATRAP, 4    ;SET UP ADDRESS TRAP ENTRANCE
2551 013042 012706 000500                NOR:  MOV    #BUFF, SP
2552 013046 105720                TSTB  (0)+         ;IF OUTSIDE OF CORE, TRAP TO 4
2553 013050 020027 160000                CMP    %0, #160000 ;IS POINTER IN SIDE CORE
2554 013054 101772                BLOS  NOR          ;TEST THE REST OF CORE
2555 013056 012737 000273 000302      AUTO: MOV    #273, @#SFATAL ;MOVE TO MAILBOX # ***** 273 *****
2556 013064 005212                INC    (R2)         ;SET MSGTYP TO FATAL ERROR
2557 013066 000000                HALT                ;SHOULD HAVE TRAPED
2558                                     ; TO SCOPE REPLACE HALT W/ 240
2559                                     ; AND REPLACE NEXT INST W/ 753
2560
2561 013070 010067 177730                ; RETURN HERE ON AN ADDRESS TRAP
2562 ATRAP: MOV    RO, CORH ;MOVE THE FIRST NXM LOCATION IN CORH
2563 ; THIS ROUTINE DOES NXM TRAPS UNTIL IT FINDS AN EXISTANT MEMORY LOCATION
2564 013074 012700 160001                MOV    #160001, RO ;SET UP THE HIGHEST MEM LOCATION
2565 013100 012767 013136 164676      CTRAP: MOV    #BTRAP, 4 ;SET UP THE VECTOR
2566 013106 012706 000500                MOV    #BUFF, SP
2567 013112 105740                TSTB  -(RO)        ; DOES IT EXIST?
2568 013114 005200                DTRAP: INC    RO    ; IF YES INCREMENT IT
2569 013116 020067 177702                CMP    RO, CORH   ; IS IT THE SAME LOCATION?
2570 013122 001426                BEQ    TRAPB
2571 013124 012737 000274 000302      MOV    #274, @#SFATAL ;MOVE TO MAILBOX # ***** 274 *****
2572 013132 005212                INC    (R2)         ;SET MSGTYP TO FATAL ERROR
2573 013134 000000                HALT                ;CONTENTS OF RO AND CORH SHOULD HAVE BEEN EQUAL
2574                                     ; TO SCOPE REPLACE HALT W/ 240
2575                                     ; AND REPLACE NEXT INST W/ 730
2576                                     ; IF THIS COMPARISON FAILS IT MEANS
2577                                     ; THAT SOME LEGAL ADDRESS TRAPPED OR
2578                                     ; THAT AN ILLEGAL ADDRESS DID NOT TRAP
2578 013136 005767 164634                BTRAP: TST    STATUS

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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 STSTN
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
2604 013244 012767 000006 164532  DL11W1: MOV     #6,4    ;INCREMENT IF NO DL11W
2605
2606                                     ;*****
2607                                     ;TEST 104 TEST THAT A TTY INTERRUPT CAUSES AN OVERFLOW TRAP
2608                                     ;*****
2609 013252 005237 000304          TST104: INC     2#STSTN ;UPDATE TEST NUMBER
2610 013256 022737 000104 000304  CMP     #104,2#STSTN ;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 STSTN
2630                                     ; TO SCOPE REPLACE HALT W/ 240
2631                                     ; AND REPLACE NEXT INST W/ 741
2632 013362 005067 164176          TDEC77: CLR     TTCSR
2633 013366 012767 000006 164410  MOV     #6,4
2634 013374 005067 164406          CLR     6
    
```


M04

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DFKABC.P11 03-MAY-77 08:42 T104

TEST THAT A TTY INTERRUPT CAUSES AN OVERFLOW TRAP

SEQ 0051

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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
;*****
†ST105: INC 2#STESTN ;UPDATE TEST NUMBER
;*****
CMP #105,2#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 #301,2#SFATAL ;MOVE TO MAILBOX # ***** 301 *****
INC (R2) ;SET MSGTYP TO FATAL ERROR
HALT ;TTY SHOULDN'T HAVE INTERRUPTED
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 740

BR71: MOV #302,2#SFATAL ;MOVE TO MAILBOX # ***** 302 *****
INC (R2) ;SET MSGTYP TO FATAL ERROR
HALT ;TRAP OCCURRED FIRST OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 733

TR2: CLR 36
BIC #100,TTCSR

NODL:
;*****
;TEST 106 TEST THAT A PENDING INTERRUPT, INTERRUPTS BETWEEN TRAPS
;*****
†ST106: INC 2#STESTN ;UPDATE TEST NUMBER
;*****
CMP #106,2#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 #303,2#SFATAL ;MOVE TO MAILBOX # ***** 303 *****
INC (R2) ;SET MSGTYP TO FATAL ERROR
HALT ;NO INTERRUPT BETWEEN TRAPS, OR WRONG STSTNM
; TO SCOPE REPLACE HALT W/ 240
; AND REPLACE NEXT INST W/ 741

```

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

```

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

```



```

2747 ;TEST 111 TEST THAT WHEN TTY INTERRUPTS IT POPS NEW STATUS
2748 :*****
2749 014074 005237 000304 TST111: INC 0#STESTN ;UPDATE TEST NUMBER
2750 014100 022737 000111 000304 CMP 0111,0#STESTN ;SEQUENCE ERROR?
2751 014106 001051 BNE TTY11 ;BR TO ERROR HALT ON SEQ ERROR
2752 014110 005767 177122 TST PROFTE
2753 014114 001055 BNE NODL3
2754 014116 000005 RESET
2755 014120 012706 000500 MOV #BUFF,%6 ;SET UP STACK
2756 014124 012767 014150 163732 MOV #TTY3,%6 ;INTERRUPT VECTOR
2757 014132 005067 163640 CLR STATUS ;DROP PROCESSOR PRIORITY
2758 014136 012767 000357 163722 MOV #357,%6 ;HIGH PRIORITY ON INTERRUPT
2759 014144 005167 163414 COM TTCSR ;SHOULD SET INTERRUPT ENABLE & INTERRUPT
2760 014150 026727 163622 000357 TTY3: CMP STATUS,#357
2761 014156 001405 BEQ IS
2762 014160 012737 000307 000302 MOV #307,0#SFATAL ;MOVE TO MAILBOX # ***** 307 *****
2763 014166 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2764 014170 000000 HALT ;INTERRUPT DID NOT POP CORRECT STATUS
2765 ; TO SCOPE REPLACE HALT W/ 240
2766 ; AND REPLACE NEXT INST W/ 746
2767 014172 000005 IS: RESET ;CLR INTERRUPT ENABLE
2768 014174 012706 000500 MOV #BUFF,%6 ;STACK SET UP
2769 014200 012767 014224 163656 MOV #TTY4,%6 ;INTERRUPT VECTOR
2770 014206 005067 163654 CLR %6 ;CLR NEW STATUS
2771 014212 012767 000157 163556 MOV #157,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 #310,0#SFATAL ;MOVE TO MAILBOX # ***** 310 *****
2777 014240 005212 INC (R2) ;SET MSGTYP TO FATAL ERROR
2778 014242 000000 HALT ;INCORRECT STATUS OR WRONG STSTNM
2779 ; TO SCOPE REPLACE HALT W/ 240
2780 ; AND REPLACE NEXT INST W/ 721
2781 014244 005067 163314 TTT37: CLR TTCSR
2782 014250 NODL3:
2783 :*****
2784 ;TEST 112 TEST THE 'WAIT' INSTRUCTION
2785 :*****
2786 014250 005237 000304 TST112: INC 0#STESTN ;UPDATE TEST NUMBER
2787 014254 022737 000112 000304 CMP 0112,0#STESTN ;SEQUENCE ERROR?
2788 014262 001055 BNE STP4 ;BR TO ERROR HALT ON SEQ ERROR
2789 014264 042767 000100 163272 BIC #100,TPS ;CLEAR INTERRUPT ENABLE
2790 014272 012706 000500 MOV #BUFF,SP ;SET UP THE STACK
2791 014276 012767 014366 163560 MOV #WATE,%6 ;SET UP THE INTERRUPT VECTOR
2792 014304 005067 163556 CLR %6
2793 014310 105767 163250 WATE1: TSTB TPS ;WAIT FOR READY
2794 014314 100375 BPL WATE1 ;TO BE UP
2795 014316 012767 000015 163242 MOV #15,TPB ;DO A CARRIAGE RETURN
2796 014324 105767 163234 WATE2: TSTB TPS ;WAIT FOR READY TO COME UP
2797 014330 100375 BPL WATE2
2798 014332 012767 000015 163226 MOV #15,TPB ;DO ANOTHER CARRIAGE RETURN
2799 014340 052767 000100 163216 BIS #100,TPS ;SET THE INTERRUPT ENABLE
2800 014346 005067 163424 CLR STATUS ;CLEAR THE PSW
2801 014352 000001 WATE3: WAIT ;WAIT FOR THE INTERRUPT

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C05

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 DFKABC.P11 03-MAY-77 08:42 T112 TEST THE 'WAIT' INSTRUCTION

SEQ 0054

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

E05

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 DFKABC.P11 03-MAY-77 08:42 T112 TEST THE 'WAIT' INSTRUCTION

SEQ 0056

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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      DONE40         ;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 ;*****
2943 ;TEST 113 TEST THAT ALL RESERVED INSTRUCTIONS TRAP
2944 ;*****
2945 ST113: INC      #STESTN ;UPDATE TEST NUMBER
2946        CMP      #113,#STESTN ;SEQUENCE ERROR?
2947        BNE     RET4 ;BR TO ERROR HALT ON SEQ ERROR
2948        BIC     #100,TPS
2949        MOV     #TRAP244,#244 ; SET UP TO SEE IF
2950        MOV     #10,TENSAVE ; THIS PROCESSOR HAS THE
2951        MOV     #TRAP10,#10 ; FLOATING POINT OPTION
2952        .WORD 170007 ; AN ILLEGAL FPP INSTRUCTION
2953        BR     AROUND ; THE FOLLOWING
2954 TRAP244: MOV     #FPP,FINISH ; IF FPP IN--
2955        RTI ; RESET END OF TABLE POINTER
2956 TRAP10: ; AND RETURN
2957        RTI ; LEAVE THE TABLE ALONE
2958 TENSARE: .WORD 0 ; AND RETURN
2959 ; A PLACE TO STORE CONTENTS OF 10
2960 AROUND: ; CONTINUATION POINT
2961        MOV     #246,#244 ; RESTORE THE TRAP VECTOR
2962        MOV     TENSARE,#10 ; RESTORE THE ILLEGAL INST. VECTOR
2963        MOV     #TABLE,TAB ; TABLE POINTER
2964 GIN1: MOV     (TAB)+,FIRST ; FIRST OR CURRENT INSTRUCTION
2965        MOV     (TAB)+,LAST ; LAST INSTRUCTION OR GROUP
2966        CMP     FIRST,FINISH ; TESTED ALL
2967        BEQ     GIN3 ; YES BRANCH
2968        MOV     FIRST,INST ; SET UP INST
2969 GIN2: INC     INST
2970        MOV     #RET,10 ;SET UP RETURN FROM TRAP

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 DFKABC.P11 03-MAY-77 08:42 T113

TEST THAT ALL RESERVED INSTRUCTIONS TRAP

SEQ 0057

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

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3027                                     ; AND REPLACE NEXT INST W/ 604
3028 015634 026701 000034 RET3:  CMP     INST, LAST
3029 015640 001636          BEQ     GIN1
3030 015642 000167 177506          JMP     GIN2
3031                                     ; SET UP NEW GROUP
3032 015646 000006          TABLE: 6
3033 015650 000077          77
3034 015652 000207          207
3035 015654 000227          227
3036 015656 006777          6777
3037 015660 007777          7777
3038 015662 075037          075037
3039 015664 076777          76777
3040 015666 167777          FPP:   167777
3041 015670 177777          177777
3042 015672 015672          FINISH:
3043 015674 000000          INST:  HALT
3044 015676 000000          HALT
3045 015700 000000          HALT
3046 015702 000000          HALT
3047 015704 000000          HALT
3048 015706 012767 015716 162110 PWRDWN: MOV     #PWRUP, 24
3049 015714 000000          HALT
3050
3051 015716 012767 015706 162100 PWRUP:  MOV     #PWRDWN, 24
3052 015724 012706 000500          MOV     #BUFF, SP
3053 015730 132767 000040 162363 BITB   #40, $ENVM
3054 015736 001013          BNE    PFRES
3055 015740 012700 015772          MOV     #MSGPWF, RO
3056 015744 105737 177564          PWAIT: TSTB  @*TPS
3057 015750 100375          BPL   PWAIT
3058 015752 112037 177566          MOVB   (RO)+, @*TPB
3059 015756 001372          BNE    PWAIT
3060 015760 105737 177564          PWAIT1: TSTB @*TPS
3061 015764 100375          BPL   PWAIT1
3062 015766 000167 162634          PFRES:  JMP   RESTR
3063 015772 005015 047520 042527 MSGPWF: .ASCIZ <15><12>.POWER FAILED!.
3064 016000 020122 040506 046111
3065 016006 042105 000041
3066 016012 005077 162464          CLRALL: CLR   @SR0
3067 016016 005000          CLR   RO
3068 016020 012701 000040          MOV   #32, R1
3069 016024 005070 000516          CLRLP: CLR  @ADRTAB(R0)
3070 016030 005720          TST  (RO)+
3071 016032 077104          SOB  R1, CLRLP
3072 016034 000207          RTS   %7
3073
3074                                     ; SUBROUTINE TO MAKE ALL PAGES RW, BANK 0, 4K, UP
3075 016036 005077 162440          RWALL: CLR  @SR0
3076 016042 012701 000516          MOV   #ADRTAB, R1
3077 016046 012700 000010          RWL1:  MOV   #10, RO
3078 016052 005071 000020          RWL2:  CLR  @20(R1)
3079 016056 012731 077406          MOV   #77406, @*(R1)+
3080 016062 077005          SOB  RO, RWL2
3081 016064 062701 000020          ADD  #20, R1
3082 016070 020127 000616          CMP   R1, #ADREND
    
```

```

; AND REPLACE NEXT INST W/ 604
; SET UP NEW GROUP
; FINISH OLD GROUP
; END OF INSTRUCTION GROUP
; END OF OPERATE
; RTS, RT1, JMP
; START OF THE FPP INSTRUCTIONS
; END FLAG
; WILL CONTINUE RESERVED INST
; SHOULD TRAP TO LOC 10
; LOC 10 SHOULD SEND YOU TO
; RET
; WILL APT ALLOW PRINTING?
; NO
; GET MSG ADDR.
; TTY READY
; NO WAIT
; PRINT CHARACTER
; NEXT IF NOT DONE.
; COUNT OF REGISTERS TO BE CLEARED
; CLEAR REGISTERS THRU ADDRESS TABLE
; MOVE POINTER
; LOOP TILL DONE
; R1 POINTS TO ADDRESS TABLE
; RO IS COUNTER
; CLEAR PAR
; SET PDR RW, 4K
; POINTER TO NEXT GROUP
    
```


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DFKABC.P11 03-MAY-77 08:42 T113 TEST THAT ALL RESERVED INSTRUCTIONS TRAP

SEQ 0059

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

ABASE = 000000	254			
ACDW1 = 000000	254			
ACDW2 = 000000	254			
ACPUOP = 000000	254	269		
ACT 015472	2976	2978	2980	2990#
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			
ADREND 000616	347#	3082		
ADRTAB 000516	311#	3069#	3076	
ADR25 014476	2832#	2842	2847	
ADR25A 014500	2833#	2857		
ADR40 014756	2889#	2909		
ADR40A 015040	2902#	2912		
ADR40B 015136	2921#	2929		
ADR40C 015140	2922#	2933		
RENV = 000000	254	265		
RENVN = 000000	254	266		
AFATAL = 000000	254	257		
AMADR1 = 000000	254			
AMADR2 = 000000	254			
AMADR3 = 000000	254			
AMADR4 = 000000	254			
AMAMS1 = 000000	254			
AMAMS2 = 000000	254			
AMAMS3 = 000000	254			
AMAMS4 = 000000	254			
AMSGAD = 000000	254	262		
AMSGLG = 000000	254	263		
AMSGTY = 000000	254	256		
AMTYP1 = 000000	254			
AMTYP2 = 000000	254			
AMTYP3 = 000000	254			
AMTYP4 = 000000	254			
APASS = 000000	254	259		
APRIOR = 000000	254			
AROUND 015316	2952	2960#		
ASWREG = 000000	254	267		
ATESTN = 000000	254	258		
ATRAP 013070	2549	2561#		

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

CROSS REFERENCE TABLE -- USER SYMBOLS

SENDAD 015502
SENV 000320
SEVM 000321
SERV = 000317

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

SEERROR= 000302
SETABL 000320
SETEND 000330
SFATAL 000302

SHIBTS 000330
SMAIL 000300

E06

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0069

SMBADR 000332
SMSGAD 000314
SMSGLC 000316
SMSGTY 000300
SPASS 000306
SPASTM 000336
SSVPC = 000300
SSWR = 000000
SSWREG 000322
STESTN 000304

295#														
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263#														
256#	353*	358												
238#	259#	2974*												
297#														
245#	250													
1#														
267#														
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						
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	1401#	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#	2668	2674#	2697		
2703#	2716	2723	2729#	2746	2752#	2784	2790#	2941	2947#					

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STSTM= 000304
SUNIT 000312
SUNITM 000340
SUSWR 000324
SX = 015246

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261#														
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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	1886#	1892	1901#	1909		
1917#	1925	1933#	1943	1955	1963#	1972	1979	1986	1993	2000	2011	2018		

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0070

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

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\$XXX = 000604

= 016116

G06

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0071

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2293	2299	2306	2314	2317	2320	2325	2335	2347	2357	2370	2379	2388
2398	2406	2415	2421	2428	2438	2445	2453	2460	2471	2479	2487	2494
2501	2507	2517	2529	2542	2558	2573	2583	2591	2612	2624	2630	2642
2657	2663	2674	2689	2703	2713	2720	2729	2740	2752	2765	2779	2790
2806	2813	2821	2839	2843	2848	2851	2855	2858	2875	2895	2907	2910
2913	2927	2930	2934	2947	3011	3018	3026	3042				
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.SX = 000330

.ABS. 016116 000

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

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

H06