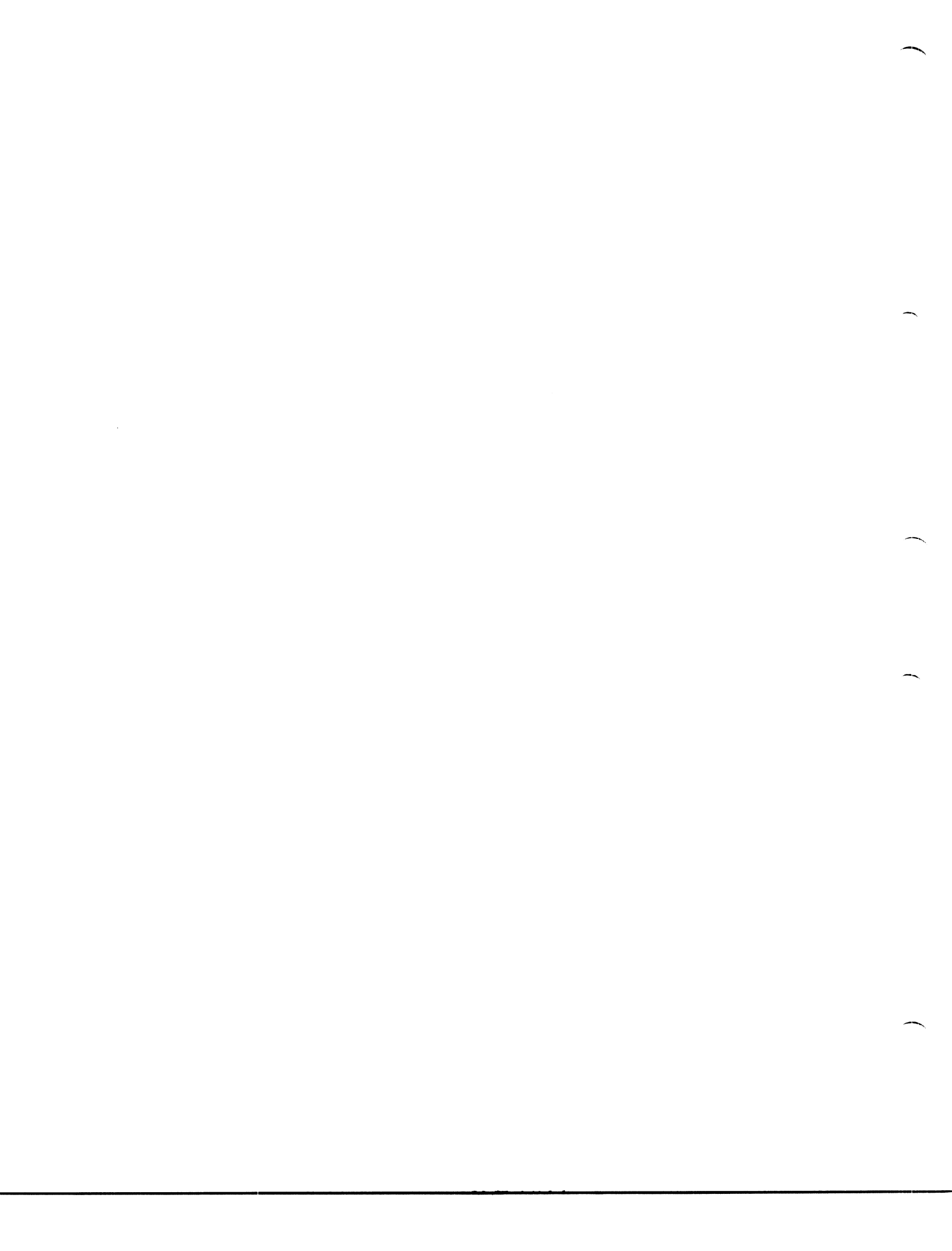


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IDENTIFICATION

PRODUCT CODE: MAINDEC-RE-DØFB-D
PRODUCT NAME: RANDOM ISE TEST
DATE CREATED: DECEMBER 10, 1970
MAINTAINER: DIAGNOSTIC GROUP
AUTHOR: BRUCE HANSEN



1. ABSTRACT

THIS PROGRAM IS WRITTEN TO TEST THE ISZ INSTRUCTION OF THE PDP-8E. AN ISZ INSTRUCTION IS PLACED IN A FROM LOCATION, AND A TO LOCATION CONTAINS THE OPERAND. PART 1 OF THE PROGRAM SELECTS FROM, TO, AND OPERAND FROM A RANDOM NUMBER GENERATOR, WITH THE OPTION OF HOLDING ANY OR ALL CONSTANT. PART 2 USES A FIXED SET OF FROM, TO, AND OPERAND NUMBERS.

2. REQUIREMENTS

2.1 EQUIPMENT

ONE PDP-8E EQUIPPED WITH TELETYPE.

2.2 STORAGE

THIS PROGRAM USES LOCATIONS 0000-7600(8). THE BINARY LOADER MUST BE STORED IN THE LAST MEMORY PAGE.

2.3 PRELIMINARY PROGRAM

MAINDEC-8E-000A, AND MAINDEC-8E-000A MUST HAVE RUN SUCCESSFULLY.

3. LOADING PROCEDURE

THE STANDARD BINARY LOADER IS USED.

4. STARTING PROCEDURE

4.1 SWITCH SETTINGS

SR0(0) = HALT ON ERROR
SR1(1) = ELIMINATE ERROR PRINTOUTS
SR3 = FIXED FROMS (1)
SR4 = RANDOM FROMS (0)
SR4 = FIXED TOE (1)
SR5 = RANDOM TOE (0)
SR5 = FIXED OPERAND (1)
SR5 = RANDOM OPERAND (0)
SR9(0) = DO ONE ISZ ONLY
SR11(1) = DO TEST PART 2 SR3, 4, 5, MUST BE 0'S
SR11(0) = DO TEST PART 1

4.2 STARTING ADDRESS

4.3 OPERATOR ACTION

- A. SET SR (SWITCH REGISTER) TO 0200 AND PRESS LOAD ADDRESS.
- B. SET SR TO DESIRED MODE OF OPERATION; FOR MOST RUNS, SR9=0 ALLOWS THE MOST TESTING IN THE LEAST AMOUNT OF TIME.

FOR FIXED FROM, TO, OR OPERAND USAGE, THE FIXED NUMBER MAY BE SELECTED AND ENTERED INTO THE MEMORY LOCATIONS SHOWN BELOW:

```

FROM      =0002
TO        =0021
OPERAND   =0022
    
```

- C. PRESS, CLEAR AND THEN CONTINUE.

5. OPERATING PROCEDURE

SAME AS PARAGRAPH 4.

6. ERRORS

6.1 ERROR HALTS AND DESCRIPTION

```

C(PC)      CAUSE
0002       PERIPHERAL INTERRUPT
0254       HALT ON ERROR. SR0=0
    
```

6.2 ERROR PRINTOUTS

```

F   XXXX  T   YYYY      NNNN  NS
0   ZZZZ  F   MMMM      R
    
```

6.2.1 PRINTOUT EXPLANATION

```

(FROM)      F XXXX -THE ISZ INSTRUCTION IN LOCATION XXXX
              FAILED.
(TO)        T YYYY -THE OPERAND ADDRESS OF THE ISZ INSTRU-
              TION WAS YYYY.
(OPERAND)   0 ZZZZ -THE STARTING COUNT IN THE ISZ LOOP WAS
              ZZZZ.
(FAILED)    F MMMM -THE FAILURE OCCURRED TRYING TO ISZ THE
              NUMBER MMMM.
(RERESULT)  R NNNN -THE RESULT OF THIS ISZ WAS NNNN.
              NS      -NO SKIP OCCURRED
              S,     -INDICATES A SKIP.
    
```

A. THE FOLLOWING IS A TYPICAL ERROR PRINTOUT.

F 3003 T 5470
0 3705 F 4777 R 5000 S

LINE 1 OF THE PRINTOUT IS A STATEMENT OF THE PROBLEM. IT SAYS THAT LOCATED AT 3003 IS AN ISE INSTRUCTION INCREMENTING AN OPERAND STORED IN LOCATION 5470. LINE 2 OF THE PRINTOUT GIVES INFORMATION FOR ERROR ANALYSIS. 3705 WAS THE INITIAL OPERAND, 4777 WAS THE OPERAND BEING INCREMENTED WHEN THE ERROR OCCURRED, AND 5000 IS THE OPERAND FOLLOWING THE FAILING INCREMENT. THE S INDICATES THAT THE INCREMENT RESULTED IN A SKIP. THE ERROR HERE IS OBVIOUSLY THAT THE SKIP SHOULD NOT HAVE OCCURRED.

B. THE FOLLOWING IS ANOTHER TYPICAL ERROR PRINTOUT.

F 3003 T 5470
0 3705 F 4777 R 5020 NS

THIS IS IDENTICAL TO EXAMPLE (A) EXCEPT THAT A DIFFERENT TYPE OF ERROR HAS OCCURRED. THE RESULT OF INCREMENTING 4777 SHOULD BE 5000, NOT 5020.

6.3

ERROR RECOVERY

THE PROGRAM CONTINUES ON, FOLLOWING AN ERROR PRINTOUT UNLESS SR0=0. AFTER A HALT ON ERROR, PUSH CONTINUE TO RESUME TESTING. WHEN ERRORS EXIST, A FAILING CONDITION CHOSEN FROM THOSE TYPED OUT MUST BE USED WITH THE SCOPE MODE. FOR THE SCOPE MODE, PERFORM THE FOLLOWING STEPS:

- A. STOP THE PROGRAM.
- B. INSERT CHOSEN FROM INTO LOCATION 0002.
- C. INSERT CHOSEN TO INTO LOCATION 0021.
- D. INSERT CHOSEN FAILING OPERAND INTO LOCATION 0022
- E. RESTART PROGRAM WITH CONTROL SWITCHES 1,3,4,5, SET TO 1 AND 9 SET TO A 0.

NOTE! BY SETTING SR0 TO A 0, THE PROGRAM HALTS FOLLOWING THE ERROR PRINTOUT. THE OPERATOR MAY AT THIS TIME SET SWITCHES 1, 3, 4, 5, TO A 1 AND 9 TO A 0 AND PUSH CONTINUE. THE PROGRAM ENTERS A SCOPE MODE USING THE FAILING CONDITIONS JUST PRINTED.

7. RESTRICTIONS

7.1 STARTING RESTRICTIONS

NONE.

7.2 OPERATING RESTRICTIONS

THE INTERRUPT IS ENABLED DURING PROGRAM OPERATION. ANY ATTACHED
DEVICE WHICH MIGHT CAUSE SPURIOUS INTERRUPTS, MUST BE DISABLED.

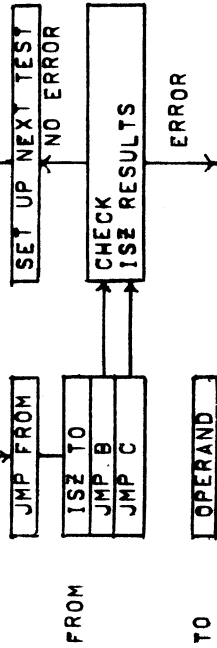
8. MISCELLANEOUS

8.1 EXECUTION TIME

SR9 = 1. 11,000 ISE OPERATIONS/SECOND.
SR9 = 0. 3,500 ISE OPERATIONS/SECOND.

9.) PROGRAM DESCRIPTION

THE TEST LOOP IS SHOWN BELOW:



PART 1 OF THE PROGRAM USES A RANDOM NUMBER GENERATOR TO SELECT THE FROM, TO, AND OPERAND NUMBERS. ONCE SELECTED, THE OPERAND IS INCREMENTED UNTIL IT REACHES ZERO. EACH ISZ IS CHECKED BY DUPLICATING ISZ WITH TAD, IAC, DCA. EACH ITERATION IS ALSO CHECKED FOR THE PROPER SKIP OR NO-SKIP CONDITION.

PART 2 OF THE PROGRAM IS ACTUALLY PART 1, WITH THE RANDOM NUMBER GENERATED REPLACED BY A FIXED NUMBER GENERATOR. SEQUENCING OF EVENTS IS AS FOLLOWS:

(NOTE: 621(8)<MEMORY TEST AREA<7600(8)):

A. FROM = 621 TO = 624 TEST A SET OF 24 SELECTED OPERANDS. TO SAVE TIME IT IS SUGGESTED THAT SR9 = 0, SO THAT THE ISZ IS PERFORMED ON EACH OPERAND ONLY ONCE INSTEAD OF INCREMENTING IT UNTIL THE ISZ INSTRUCTION SKIPS.

B. FROM = 621 TO = 625 REPEAT THE SET OF OPERANDS USED IN (A) ABOVE.

THIS SEQUENCE CONTINUES UNTIL TO REACHES THE UPPER LIMIT OF THE MEMORY TEST AREA. FROM IS THEN INCREMENTED BY 1 AND THE PROCESS IS REPEATED. WHEN FROM REACHES THE UPPER LIMIT OF THE MEMORY TEST AREA, THE TEST IS COMPLETE.

IDEALLY, IT IS DESIRABLE TO ISZ EVERY LOCATION FROM EVERY OTHER LOCATION IN THE TEST AREA AND, IN DOING SO, USE ALL 24 OF THE SELECTED WORST CASE OPERANDS FOR EACH SET OF ADDRESSES. THIS IS WHAT PART 2 DOES, BUT IT TAKES MANY DAYS TO COMPLETE THE TEST. IT IS FOR THIS REASON THAT THE PROGRAM USES THE RANDOM NUMBER GENERATOR SYSTEM OF PART 1. PART 2 IS AN ADDITIONAL FEATURE OF THE PROGRAM WITH VERY LIMITED USE.

A FB IS PRINTED AFTER EACH GROUP OF 32,000 TESTS.

/PDP-8E ISZ TEST
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/CONSTANTS AND VARIABLES

```

0000
0000
0001 5001
0002 0002
0003 0003
0004 0000
0005 0000
0006 0202
0007 0547
0010 0007
0011 0000
0012 0000
0013 7401
0014 3607
0015 0003

0000
0001
0002
0003
0004
0005
0006
0007
0010
0011
0012
0013
0014
0015

0016
0017
0020
0021
0022
0023
0024
0025
0026
0027
0030
0031
0032
0033
0034
0035
0036
0037

0040
0041
0042
4441
0614
0015

```

```

/PERIPHERAL INTERRUPT
/ISZ TEST INSTRUCTION LOCATION
/LOW LIMIT TEST AREA

/HIGH LIMIT TEST AREA
/OCTAL CONVERSION MASK
/IR0
/IR1

/THE RANDOM NUMBER LOCATION

/MOVING ISZ
/TEST INSTRUCTION
/GROUP.
/LOCATION TO BE ISZ'D
/STARTING ISZ PATTERN
/FAILING PATTERN BEFORE FAILING ISZ
/PREDICTED RESULTS OF EACH ISZ
/SWITCH REGISTER MASKS

```

```

/7'S=ERROR WITH NO SKIP
/0'S=ERROR WITH SKIP

```

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```

/SR0(0)=HALT AFTER ERROR PRINTOUT
/SR1(1)=NO PRINTOUTS
/SR3(1) = HOLD FROM CONSTANT
/SR4(1) = HOLD TO CONSTANT
/SR5(1) = HOLD PATTERN CONSTANT
/SR9(0) = DO ONE ISZ ONLY
/SR11(1) = DO TEST PART 2

```

```

/PROGRAM START
START, JMS I .+1
PATCH AND THREE
/I0N
/LAS

```


0043 7640
 0044 9426
 0045 1036
 0046 3165
 0047 7604
 0050 0030
 0051 7440
 0052 9055

SEA CLA
 JMP I K0400
 TAD ITADNM
 DCA RANUM+1
 /CHECK FOR FIXED PATTERN
 LAS
 AND K0100
 SEA
 JMP CHEK2

YSKIP IF PAF
 /GO TO PART 2

CHEK1,

/SELECT THE PATTERN
 JMS RANUM
 DCA PATRN

0053 4164
 0054 3022

SELPAT,

/CHECK FOR FIXED TO
 LAS
 AND K0200
 SEA CLA
 JMP CHEK3

0055 7604
 0056 0027
 0057 7640
 0060 9065

CHEK2,

/SELECT THE TO LOCATION
 JMS RANUM
 DCA TOLOC
 TAD TOLOC
 JMS LIMITST

0061 4164
 0062 3021
 0063 1021
 0064 4151

SELTO,

/CHECK FOR FIXED FROM
 LAS
 AND K0400
 SEA CLA
 JMP PLCINT

0065 7604
 0066 0026
 0067 7640
 0070 9075

CHEK3,

/SELECT THE FROM LOCATION
 JMS RANUM
 DCA FRMLOC
 TAD FRMLOC
 JMS LIMITST

0071 4164
 0072 3002
 0073 1002
 0074 4151

SELFRM,

/PLACE FROM INSTRUCTIONS

0075 7240
 0076 1002
 0077 3011
 0100 1016
 0101 3411
 0102 1017
 0103 3411
 0104 1020
 0105 3411

PLCINT,

CLA CMA
 TAD FRMLOC
 DCA WORK
 TAD ISZ1
 DCA I WORK
 TAD JMP1
 DCA I WORK
 TAD JMP2
 DCA I WORK

/DEPOSIT PATTERN IN TO LOCATION
 TAD PATRN
 DCA I TOLOC

0106 1022
 0107 3421

0110 1022
 0111 3023
 0112 1023
 0113 7001
 0114 3024
 0115 5407

LUP1,

/STORE PREDICTED ISZ RESULT

TAD PATRN
 DCA BEFOR
 TAD BEFOR
 IAC
 DCA AFTER
 JMP I ASUC

0116 7604
 0117 7004
 0120 7710
 0121 9132
 0122 1421
 0123 7041
 0124 1024
 0125 7640
 0126 9433
 0127 1421
 0130 7650
 0131 9433
 0132 7604
 0133 0025
 0134 7650
 0135 9047
 0136 7001
 0137 1023
 0140 9111

BACK,

/RETURN FOR NO SKIP CONDITION

LAS
 RAL
 SPA CLA
 JMP LAS1
 TAD I TOLOC
 CIA
 TAD AFTER
 SEA CLA
 JMP I AERR1
 TAD I TOLOC
 SNA CLA
 JMP I AERR1
 LAS
 AND K4
 SNA CLA
 JMP CHEK1
 IAC
 TAD BEFOR
 JMP LUP1-1

/ERROR IN ISZ OPERATION

/ERROR IN ISZ SKIP DETECTION

/SKIP IF NOT ONE ISZ (SR0)

LAS1,

/RETURN FOR SKIP CONDITION

BAKBRN, LAS
 RAL
 SPA CLA
 JMP CHEK1
 TAD I TOLOC
 SEA CLA
 JMP I AERR2
 JMP CHEK1

/SKIP IF TO LOCATION OK
/ERROR IN ISZ LOCATION

BAKBRN,

/TEST HIGH-LOW LIMITS

0151 0000
 0152 7510
 0153 9160
 0154 1003
 0155 7700
 0156 9551
 0157 9165
 0160 1006
 0161 7700
 0162 9165
 0163 9551

LIMITST, 0

SPA
 JMP .+5
 TAD LIMLO
 SMA CLA
 JMP I LIMITST
 JMP RANUM+1
 TAD LIMHI
 SMA CLA
 JMP RANUM+1
 JMP I LIMITST

/RANDOM NUMBER GENERATOR
 /AC=NEW RANDOM NUMBER

0164 0000
 0165 1014
 0166 7104
 0167 7430
 0170 1015
 0171 3014
 0172 1014
 0173 5564

 0174 1000
 0175 0000

0200
 0201 1340
 0202 3332
 0203 7040
 0204 3031
 0205 0210

0206 1331
 0207 3332
 0210 1002
 0211 3011
 0212 1370
 0213 4342

0214 1021
 0215 3011
 0216 1371
 0217 4342

0220 1022
 0221 3011
 0222 1372
 0223 4342
 0224 1023
 0225 3011
 0226 1373
 0227 4342

0230 1421
 0231 3011
 0232 1374
 0233 4342

0234 6002
 0235 1032
 0236 3011
 0237 1411

*200
 ERR1,

 JMP START
 /ERROR ROUTINE 1
 TAD SKPDAT+6
 DCA SKPDAT
 CMA
 DCA NOTE
 JMP KPGO

ERR2,
 KPGO,

 /ERROR ROUTINE 2
 TAD SKPDAT-1
 DCA SKPDAT
 TAD FRMLOC
 DCA WORK
 TAD A3
 JMS SETUP

TAD TOLOC
 DCA WORK
 TAD A4
 JMS SETUP

TAD PATRN
 DCA WORK
 TAD A5
 JMS SETUP
 TAD BEFOR
 DCA WORK
 TAD A6
 JMS SETUP

TAD I TOLOC
 DCA WORK
 TAD A7
 JMS SETUP

/TTY PRINT ROUTINE
 IOF
 TAD PRINT
 DCA WORK
 TAD I WORK

```

0240 0046
0241 0041
0242 0241
0243 1013
0244 7640
0245 0237
0246 0042
0247 0001
0250 7604
0251 7700
0252 7402

0253 1031
0254 7650
0255 0047
0256 3031
0257 0132

        /HALT AFTER ERROR (SR0)

        /RETURN TO NO SKIP ROUTINE
    
```

```

/ERROR PRINT OUT LINE 1
INFL, 306 /F FROM (INSTRUCTION LOCATION)
      240 /SPACE
INDATA, 0 /X LOCATION
        0 /X
        0 /X
        0 /X
        0 /SPACE
        240 /SPACE
        240 /SPACE
        324 /T TO (OPERAND ADDRESS)
        240 /SPACE
ONDATA, 0 /X ADDRESS
        0 /X
        0 /X
        0 /X
        215 /CR
        212 /LF
        215 /CR
        215 /CR
    
```

```

/ERROR PRINTOUT LINE 2
STDATA, 317 /O OPERAND (STARTING COUNT)
        240 /SPACE
        0 /X PATTERN
        0 /X
        0 /X
        0 /X
        240 /SPACE
        240 /SPACE
        306 /F FAILING COUNT
        240 /SPACE
FLDATA, 0 /X PATTERN BEFORE FAILING ISZ
        0 /X
        0 /X
        0 /X
        240 /SPACE
    
```

0321 0240
 0322 0322
 0323 0240

/SPACE
 /R
 /SPACE

RESULT AFTER FAILURE

0324 0000
 0325 0000
 0326 0000
 0327 0000
 0330 0240
 0331 0240
 0332 0316
 0333 0323
 0334 0215
 0335 0212
 0336 0212
 0337 0377
 0340 0316
 0341 0323

/X
 /X
 /X
 /X
 /SPACE
 /SPACE
 /N
 /S
 /CR
 /LF
 /LF
 /RUBOUT
 /N
 /S

PATTERN AFTER FAILING ISE

NO
 SKIP

RSDATA, 0

SKPDAT, 316

SETUP, 0

DCA WORK1
 TAD WORK
 RTL
 RTL
 JMS MORSU
 RTR
 RTR
 RTR
 RTR
 JMS MORSU
 RAR
 JMS MORSU
 JMS MORSU
 CLA
 JMP I SETUP

MORSU, 0
 AND MSK7
 TAD TW6
 DCA I WORK1
 TAD WORK
 JMP I MORSU

/PAGE 1 CONSTANTS

0370 0261
 0371 0271
 0372 0303
 0373 0313
 0374 0323
 0375 0260

A3,
 A4,
 A5,
 A6,
 A7,
 TW6,
 /PAGE 1 CONSTANTS
 INDATA-1
 ONDATA-1
 STDATA-1
 FLDATA-1
 RSDATA-1
 0260

/PART 2 INITIALIZATION ROUTINE

0400 1003

*400
 TAD LIMLO

```

0401 7041 CIA
0402 3310 DCA FROM
0403 1003 TAD LIMLO
0404 7040 CMA
0405 3311 DCA TO
0406 1346 TAD A0
0407 3313 DCA PATCYC
0410 1314 TAD INST1
0411 3165 DCA RANUM+1
0412 5047 JMP CHEK1
      /GO TO PAGE 0 START

      /PATH DECISION ROUTINE
PDR,  TAD RANUM
0413 1164 CIA
0414 7041 TAD GFROM
0415 1305 SNA CLA
0416 7650 JMP FRUT
0417 5303
      /SKIP IF NOT REQUESTING FROM
      /GO TO FROM ADDRESS ROUTINE

0420 1164 TAD RANUM
0421 7041 CIA
0422 1306 TAD GTO
0423 7650 SNA CLA
0424 5301 JMP TORUT
0425 5226
      /SKIP IF NOT REQUESTING TO
      /GO TO TO ADDRESS ROUTINE
      /GO TO PATTERN ROUTINE

```

```

PRUT,
0426 1713 /SELECT PATTERN AND OTHER THINGS
0427 3312 TAD I PATCYC
0430 1312 DCA PATT
0431 7450 TAD PATT
0432 5240 SNA
0433 7201 JMP .+6
0434 1313 CLA IAC
0435 1313 TAD PATCYC
0436 1312 DCA PATCYC
0437 5564 TAD PATT
      JMP I RANUM
      /RETURN, AC=NEW PATTERN

0440 1345 TAD AK7776
0441 3313 DCA PATCYC
0442 7001 IAC
0443 1311 TAD TO
0444 3311 DCA TO
0445 1311 TAD TO
0446 7041 CIA
0447 1310 TAD FROM
0450 7640 SZA CLA
0451 5255 JMP .+4
0452 1311 TAD TO
0453 1015 TAD THREE
0454 3311 DCA TO
0455 1311 TAD TO
0456 7500 SMA
0457 5276 JMP GOUT
      /RESTOR START ADDRESS OF PATT, TABLE
      /INCREMENT TO
      /SKIP IF TO = FROM
      /SKIP AROUND FROM

```

0460 1006
 0461 7710
 0462 9276
 0463 7201
 0464 1310
 0465 3310
 0466 1003
 0467 7041
 0470 3311
 0471 1310
 0472 1006
 0473 7710
 0474 9276
 0475 9200
 0476 7200
 0477 1312
 0500 9564

TAD LIMHI
 SPA CLA
 JMP GOUT
 CLA IAC
 TAD FROM
 DCA FROM
 TAD LIMLO
 CIA
 DCA TO
 TAD FROM
 TAD LIMHI
 SPA CLA
 JMP GOUT
 JMP 400
 CLA
 TAD PATT
 JMP I RANUM

/SKIP IF END TEST AREA
 /ADVANCE FROM
 /RESET TO ADDRESS

GOUT,

TORUT,
 0501 1311
 0502 9564

/SELECT TO ROUTINE
 TAD TO
 JMP I RANUM

FRUT,
 0503 1310
 0504 9564

/SELECT FROM ROUTINE
 TAD FROM
 JMP I RANUM

0505 0072
 0506 0062
 0507 0054
 0510 0000
 0511 0000
 0512 0000
 0513 0000
 0514 9435
 0515 7776
 0516 7775
 0517 7773
 0520 7767
 0521 7757
 0522 7737
 0523 7677
 0524 7577
 0525 7377
 0526 6777
 0527 9777
 0530 3777
 0531 0001
 0532 0003
 0533 0007
 0534 0017

GFROM,
 GTO,
 GPAT,
 FROM,
 TO,
 PATT,
 PATCYC,
 INST1,
 K7776,
 SELFRM+1
 SELTO+1
 SELPAT+1
 0
 0
 0
 0
 0
 7776
 7775
 7773
 7767
 7757
 7737
 7677
 7577
 7377
 6777
 9777
 3777
 0001
 0003
 0007
 0017

/PAGE 3 CONSTANTS
 /RANDOM FROM IS REQUESTED
 /STORED RETURN ADDRESS WHEN
 /RANDOM TO IS REQUESTED
 /RANDOM FROM IS REQUESTED
 /CURRENT TO ADDRESS
 /CURRENT PATTERN
 /CURRENT PATTERN ADDRESS
 /RANDOM FROM IS REQUESTED
 /STORED RETURN ADDRESS WHEN
 /RANDOM TO IS REQUESTED
 /RANDOM PATTERN IS REQUESTED
 /CURRENT TO ADDRESS
 /CURRENT PATTERN
 /CURRENT PATTERN ADDRESS

JMP I APDR

0535 0037
 0536 0077
 0537 0177
 0540 0377
 0541 0777
 0542 1777
 0543 3777
 0544 0000
 0545 0515
 0546 0544

 K3777, 3777
 AK7776, K7776
 A0, K3777+1

0547 1375 TAD CT
 0550 7001 IAC
 0551 3375 DCA CT
 0552 1375 TAD CT
 0553 7640 SEA CLA
 0554 5437 JMP I ATFCLF
 0555 1175 TAD KP
 0556 1174 TAD K1000
 0557 3175 DCA KP
 0560 1175 TAD KP
 0561 7640 SEA CLA
 0562 0437 JMP I ATFCLF
 0563 0002 IOF
 0564 1376 TAD INF2
 0565 3011 DCA WORK
 0566 5767 JMP I .+1
 0567 7602 7602
 0570 0215 215
 0571 0212 212
 0572 0306 306
 0573 0302 302
 0574 0377 377
 0575 0000 0
 0576 0567 INF2, 567

*600

/CHECK FOR TO=FROM CONFLICT

0600 1021 TFCLF, TAD TOLOC
 0601 7041 CIA
 0602 1002 TAD FRMLOC
 0603 7450 SNA
 0604 9055 JMP CHEK2
 0605 7001 IAC
 0606 7450 SNA
 0607 9055 JMP CHEK2
 0610 7001 IAC
 0611 7650 SNA CLA
 0612 9055 JMP CHEK2

0613 5402

JMP I FRMLCC

0614 0000
0615 3000
0616 1232
0617 3001
0620 1233
0621 3002
0622 1234
0623 3003
0624 1235
0625 3040
0626 1236
0627 3041
0630 0001
0631 0614

PATCH,

/RESTORE THEN GO AWAY

0 DCA 0
TAD X
DCA 1
TAD X1
DCA 2
TAD X2
DCA 3
TAD X3
DCA START
TAD X4
DCA START+1
ION
JMP I PATCH

0632 7402
0633 0000
0634 7157
0635 0001
0636 7604

X,
X1,
X2,
X3,
X4,
7402
0
7157
ION
LAS

7602 1411
7603 0046
7604 0041
7605 5204
7606 1013
7607 7640
7610 0202
7611 0217

*7602
TAD I WORK
TLS
TSF
JMP -1
TAD M377
SZA CLA
JMP -6
JMP OVR

7617 0042
7620 0001
7621 5437

*7617
TCF
ION
JMP I ATFCLF

4000
 4100
 4200
 4300
 4400
 4500
 4600
 4700
 5000
 5100
 5200
 5300
 5400
 5500
 5600
 5700
 6000
 6100
 6200
 6300
 6400
 6500
 6600
 6700
 7000
 7100
 7200
 7300
 7400
 7500

7600 00111111 11000001 11000000 00000000 00000000 00000000 00000000
 7700 00000000 00000000 00000000 00000000 00000000 00000000 00000000

A0	0546	M377	0013
A3	0370	MORSU	0362
A4	0371	MSK7	0010
A5	0372	NOTE	0031
A6	0373	NUM	0014
A7	0374	ONDATA	0272
AERR1	0033	OVR	7617
AERR2	0034	PATCH	0614
AFTER	0024	PATCYC	0513
AK7776	0545	PATRN	0022
APDR	0035	PATT	0512
ASUC	0007	PDR	0413
ATFCLF	0037	PLCINT	0075
BACK	0116	PRINT	0032
BAKBRN	0141	PRUT	0426
BEFOR	0023	RANUM	0164
CHEK1	0047	RSDATA	0324
CHEK2	0055	SELFRM	0071
CHEK3	0065	SELPAT	0093
CT	0575	SELTO	0061
ERR1	0201	SETUP	0342
ERR2	0206	SKPDAT	0332
FLDATA	0314	START	0040
FRMLOC	0002	STDATA	0304
FROM	0510	SUC	0547
FRUT	0503	TFCLF	0600
GFROM	0505	THREE	0015
GOUT	0476	TO	0511
GPAT	0507	TOLOC	0021
GTO	0506	TORUT	0501
INDATA	0262	TTY	0234
INF1	0260	TW6	0375
INF2	0576	WORK	0011
INST1	0314	WORK1	0012
ISE1	0016	X	0632
ITADNM	0036	X1	0633
JMP1	0017	X2	0634
JMP2	0020	X3	0635
K0100	0030	X4	0636
K0200	0027		
K0400	0026		
K1000	0174		
K3777	0543		
K4	0025		
K7776	0515		
KP	0175		
KPGO	0210		
LAS1	0132		
LIMHI	0006		
LIMLO	0003		
LIMTST	0151		
LUP1	0112		

ERRORS DETECTED: 0

LINKS GENERATED: 0

RUN-TIME: 5 SECONDS

2K CORE USED

