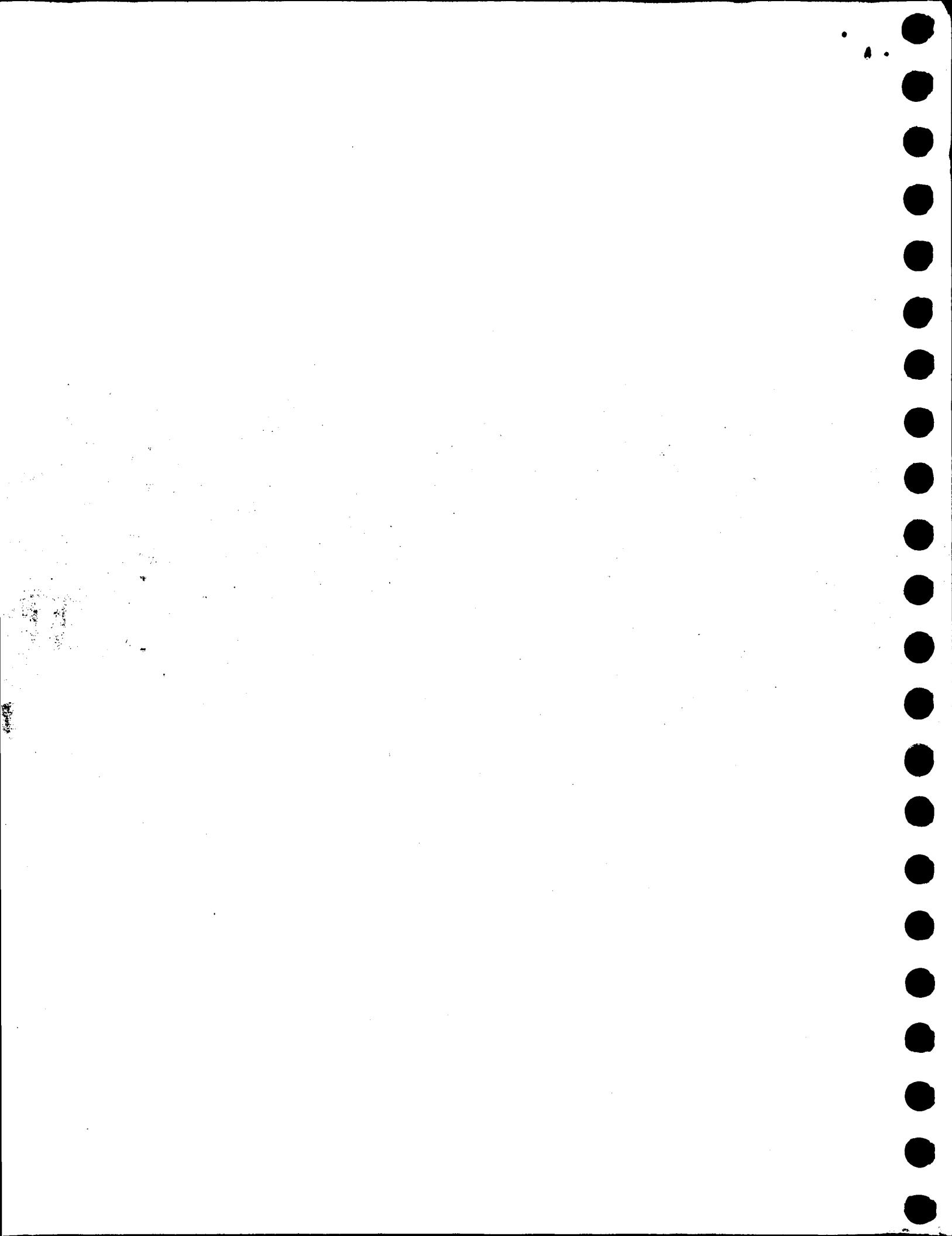


STORE 0 IN 0059

8CC01C

CONSOLE CARD READER TEST

August 11, 1961



8CC01

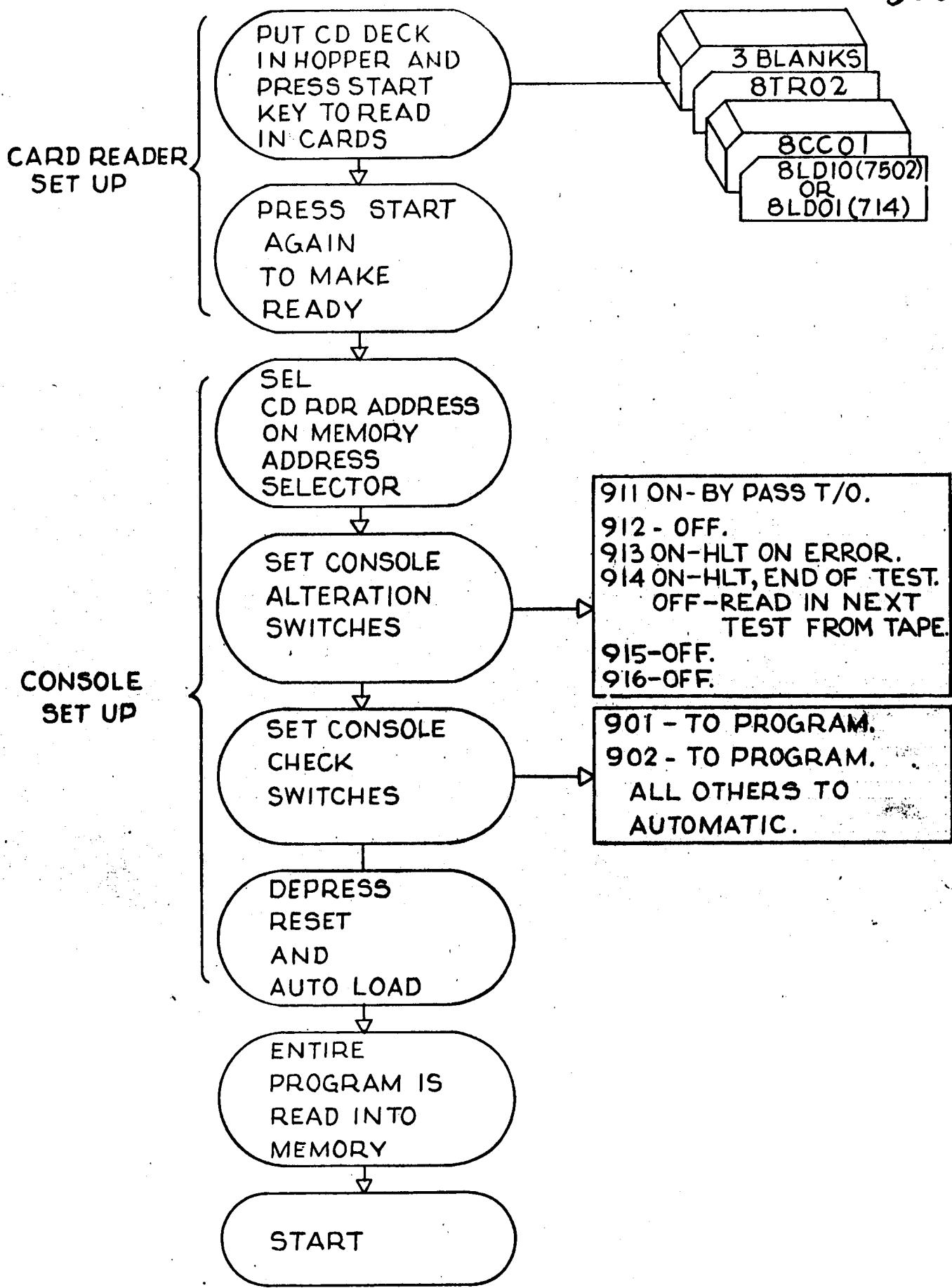


FIGURE I

THIS PROGRAM SUPERCEDES AND OBSOLETES 8CC01B

A. PURPOSE OF TEST:

A Diagnostic aid for trouble shooting on the 7502 console card reader.

B. METHOD OF TEST

The program tests the reading and checking circuits of the console card reader, using a prepunched test deck.

The 7502 select address in the test is 0101.

1. A multi-punch routine containing five cards with multi-punches in column 1 of each of the cards. Multi-punch is also referred to as "Card Code Check".

- a. 1 and 3 in card 1
- b. 2 and 6 in card 2
- c. 4 and 7 in card 3
- d. 1 and 2 in card 4
- e. 5 and 6 in card 5

If a 902 is not detected, a typeout occurs; refer to section: (H).

2. An illegal character routine containing two cards with two characters punched in column 1 of each of the cards. Illegal character is also referred to as "BCD Code Check".

- a. Q and 5 Card 1
- b. H and 6 Card 2

If a 902 is not detected, a typeout occurs; refer to section H.

3. Comparing a series of known constants, 80 characters long against test cards containing 80 characters each. The first 52 cards in this section are in the normal collating sequence.

The last 30 cards contain 80 characters in varied patterns, such as alternate columns, ripple patterns, and worst patterns.

If an error is detected, a typeout occurs; refer to section H.

4. Checking the card reader storage mark recognition circuit by having the last card in the test deck punched as follows:

39 A's - Reader storage mark (12-1-4-7) - 40B's.

The program checks to see if any information after the reader storage mark is read into memory.

If an error is detected a typeout occurs; refer to section H.

5. End of file is checked after each read.

C. AREA OF MACHINE REQUIRED

Units

1. 7502 CR and 7080 CPU, and typewriter. (Printer optional)
Tape input optional.

Memory Locations

2. 0900 thru 9007

D. LOADING PROCEDURE

1. The program may be read in from the 714 reader using the load cards 8LD01.
2. The program may be read in from the console card reader using the load cards 8LD10.
3. Tape

This program may be put on tape and used under control of 8TR06.

The cards should be loaded in the following order:

Off Line Card Input from 714

8LD02
8CC01
8TR06 (Card #11-02)
8LD02
Next Test Program
8TR06 (Card #11-02)

On Line Direct Generation
with Card Input from the 714

8LD01
8CC01
8TR06 (Card #11-01)
8LD01
Next Test Program
8TR06 (Card #11-01)

E. PROGRAM CONTROL

This program will be run in 705 III mode

1. Card Deck

2 cards - 8LD01 (for 714) or 8LD10 (for 7502 Console CD RDR)
197 cards - 8CC01
1 card - 8TR02
3 cards - blanks
90 cards - Test deck

2. Switch Setting

a. Alteration Switches

911 ON - Bypass typeout
913 ON - Halt on error
914 ON - Halt, end of test -- 914 OFF - Read in next test from tape
All others off

b. Check Switches

901 Program
902 Program
All others to automatic

F. NORMAL STOPS

0001 - To let operator load test deck in reader and set check switches.
0006 - End of test - to repeat test - start

G. ERROR STOPS

0002 - Occurs in the multi-punch routine, when 913 is on, and a 902 check was not detected. To continue, press start.
0003 - Occurs in the illegal character routine, when 913 is on, and a 902 was not detected.
0004 - Occurs in the 80 character compare section, when 913 is on. If the characters do not compare equal, the 80 characters read are checked character by character and a HLT 0004 will occur each time an error is detected. To continue, press start.
0005 - Occurs when the reader storage mark recognition fails. Halt will occur on error regardless of alteration switch settings.

- 6666 - Occurs when an E.O.F. is not indicated after this last card is read, regardless of alteration switch settings.
- 7777 - Occurs when a 901 check is indicated on a WR instruction.
- 8888 - Occurs when a false E.O.F. is indicated. Press start for further instructions.
- 9999 - Occurs when a compare error is indicated on the first 39 columns of the last card in the test deck halt will occur on error, regardless of alteration switch settings.

H. PRINTED RESULTS

Typewriter output is used.

Printer output may be used for long typeouts by storing 0400 at location 0061.

1. Normal typeout

- a. The following typeout occurs on the first pass:
 1. 901, 902 TO PROGRAM.
 2. LOAD ALL TEST CDS IN RDR AND START.
- b. The following typeout occurs on successive passes:
"LOAD ALL TEST CDS IN RDR AND START."
- c. The following typeout occurs after the last card is read:
E.O.F.
- d. The following typeout occurs at the end of test if 914 is on:
"END OF TEST. TO REPEAT START."

2. Error Typeouts

a. "FAILED TO DETECT M/P ON CARD #1."

This typeout appears during the multi-punch routine if a 902 check is not detected, and 911 is off.

b. "FAILED TO DETECT ILLEGAL CHARACTER CD #1."

This typeout appears during the illegal character routine, if a check is not detected, and 911 is off.

c. CL-----1-----2-----3-----4

SB	A		
IS	1		

This typeout occurs during the 80 character compare section. When the read field and constant field do not compare equal, a character by character compare is done until the one in error is found. Then the character in the read field that is in error, and the corresponding correct character in the constant field are unloaded into typeout areas and appear as the above sample typeout.

The "CL" typeout indicates the card column is increments of 10. The "SB" typeout indicates what the field should have been. The "IS" typeout indicates what the field actually is.

- d. The following typeout occurs if a 901 check has been detected while typing.

"901 on WR."

- e. The following typeout occurs if a 902 is detected on reading the cards with 80 characters:

902 CHK 1770

1770 represents the address of the 80 character constant field that the card read will be compared against.

- f. RDR DID NOT RECOGNIZE READER STORAGE MARK

The above typeout occurs if a reader storage mark recognition failure is detected.

- g. READ ERROR

The above typeout occurs when an error is detected on the first 39 columns of the last card of the test deck.

- h. The following typeout occurs when a false E.O.F. is indicated: "FALSE E.O.F. - RESTART TEST."

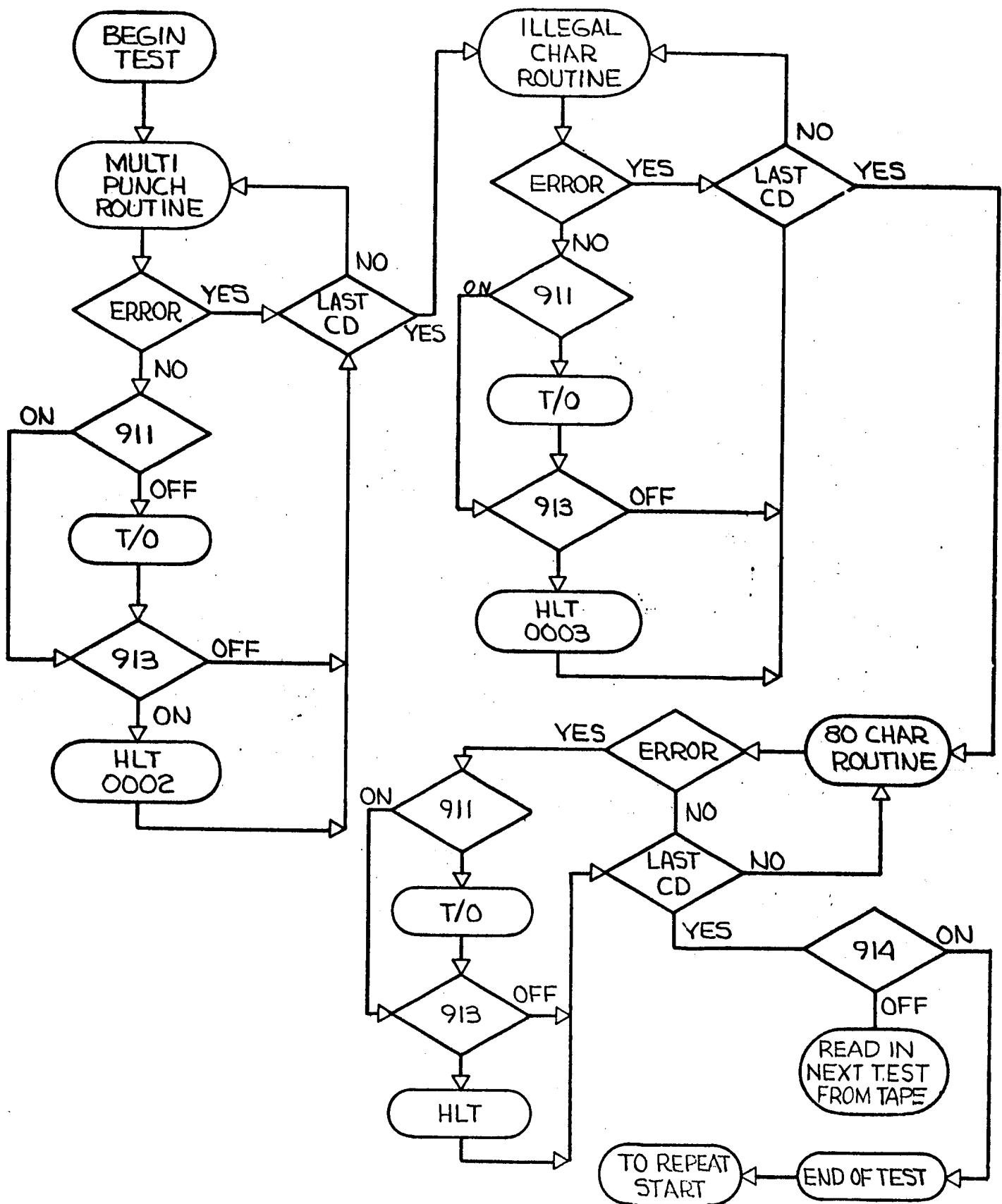
The above typeout is followed by HLT 8888. Press start for instructions.

- i. The following typeout occurs when an E.O.F. is not indicated after reading the last card:

E.O.F. - FAILED

I. COMMENTS

1. This test will be run in 705 III Mode, as no 7080 instructions are used, and indirect addressing of the card reader and typewriter is utilized.
2. The cards in the test deck must be in the following order:
 - 5 multi-punched cards
 - 2 illegal character cards
 - 82 cards of 80 columns each, in the same sequence as the listing
 - 1 card - 80 columns - to check reader storage mark
3. If the console card reader address is to be other than 0101, change card #1 column 75, and the listing at location 0059.
4. The field that each card is read into starts at location 8690.



THIS DIAGRAM IS ONLY USED TO SHOW THE ALTERATION SW. SETTINGS

FIGURE II

FLOW CHART

8CC01

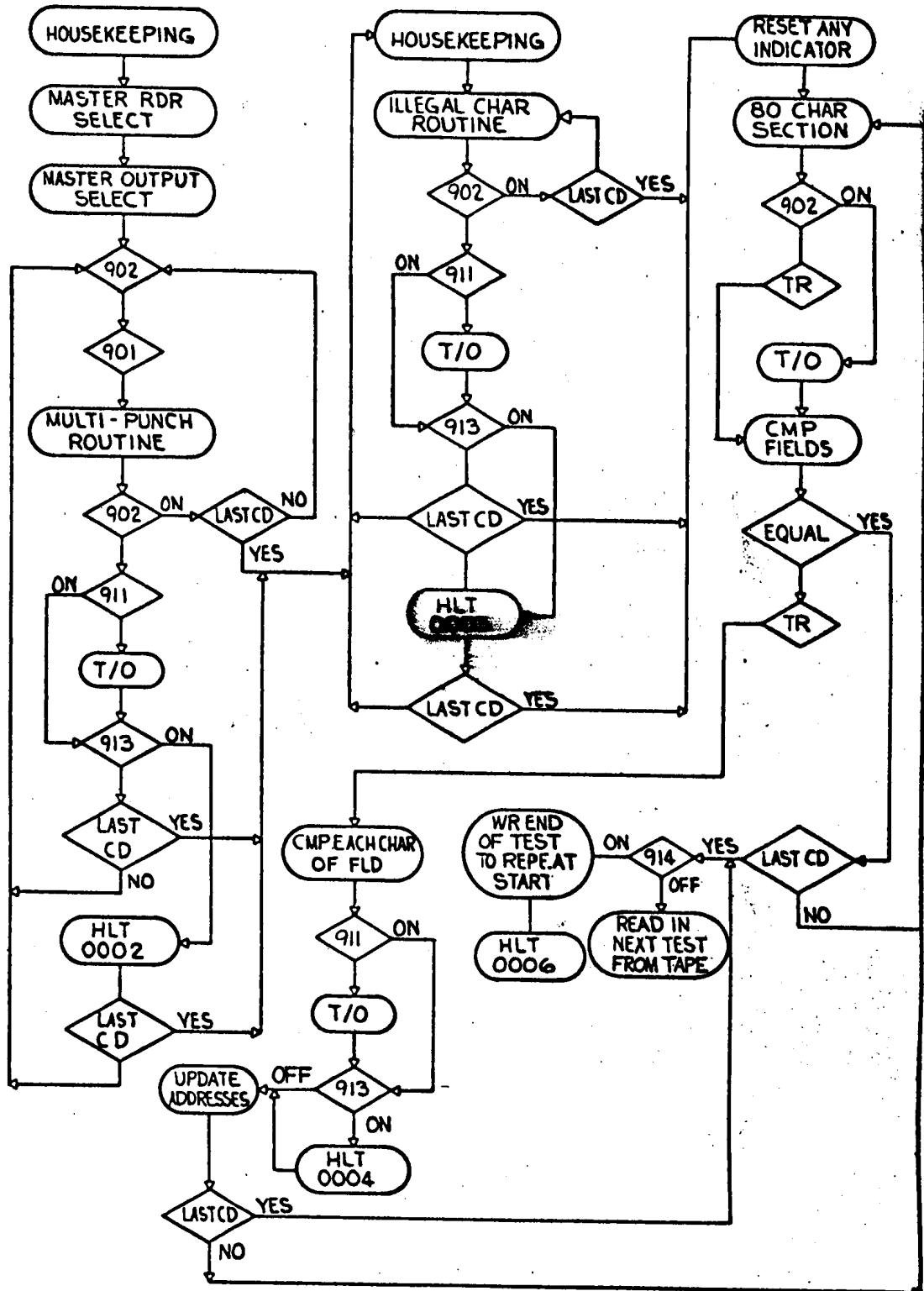
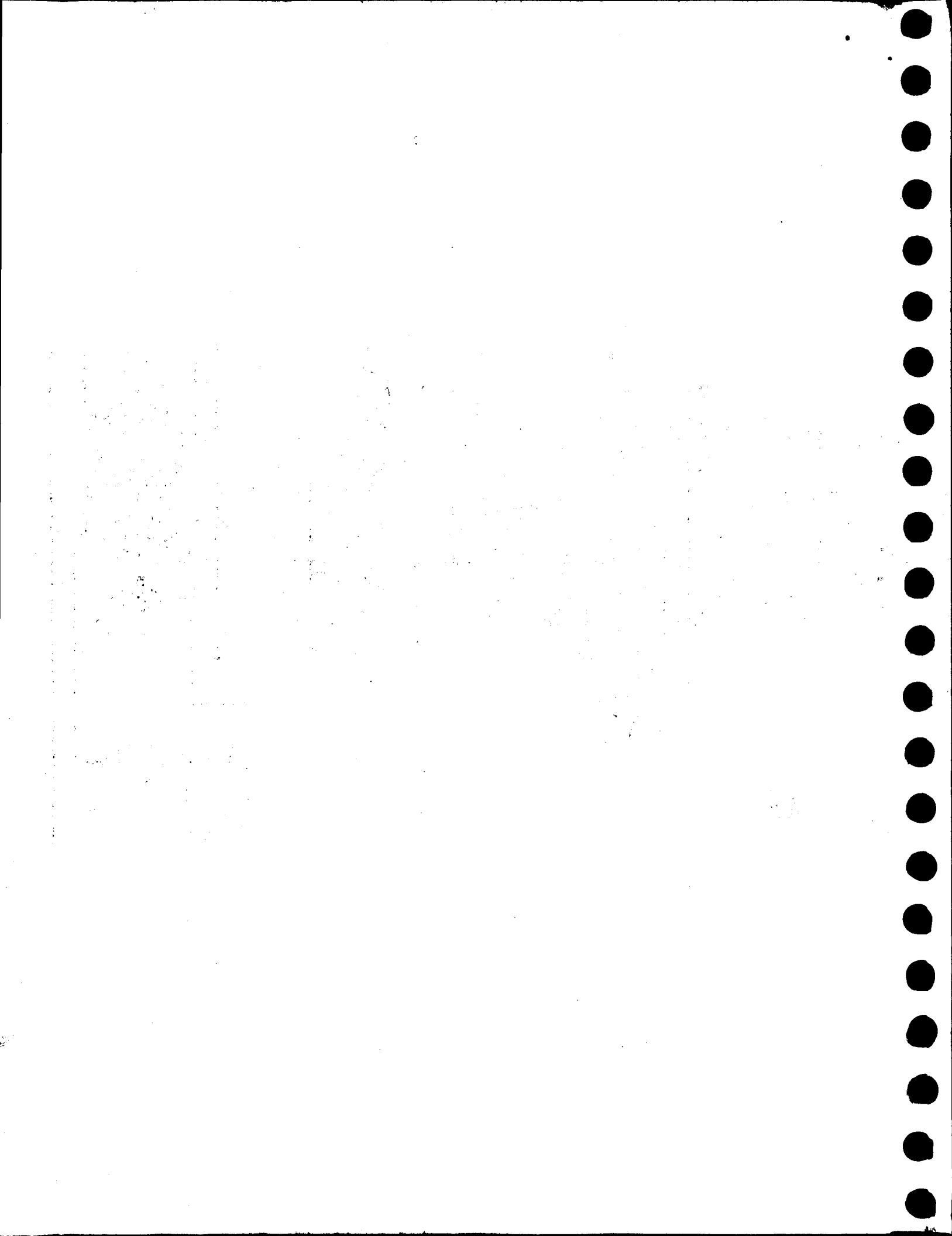


FIGURE III

8CC01



BKWD TR LOCATION OPN ASU ADDRESS

FWD TR PAGE 01 OF 11

8CC01

CONSOLE CARD READER TEST
8CC01C AUGUST-11-1961

SWITCH SUMMARY

911 ON BYPASS T/O
913 ON STOP ON ERROR
914 ON HALT END OF TEST

00004 EEM 3 14 0000 0E-0
00009 SPC , 0000
00014 LIM , 07 0000 0 E0
00019 LEM 3 15 0000 0&E0

A05.....

00024 NOP A 0044
00029 SGN T 0020

00034 SEL 2 0500
00039 WR R 1289

00044 SEL 2 0500
00049 WR R 1252
00054 HLT J 0001

00059 NOP A 0100

00064 NOP A 0500

00069 SET B 01 0079 00X9
00074 RCV U 1947
00079 TMT 9 01 1946 19U6

00084 SET B 01 0079 00X9
00089 RCV U 4497
00094 TMT 9 01 4496 44Z6

00099 RAD H 01 1250 12V0
00104 RAD H 02 1186 11Q6
00109 RAD H 03 1186 11H6
00114 SET B 04 0001 0 01
00119 LOD 8 04 1187 1/87
00124 SET B 05 0080 0 Y0
00129 LOD 8 05 8655 8WV5
00134 RAD H 14 1192 1AR2

00139 SEL 2 0902
00144 TRS O 0149-----
00149 SEL 2 0901*****
00154 TRS O 0159-----

901,902 TO PROGRAM

LOAD ALL TEST CARDS IN RDR AND

MASTER SEL CD RDR

MASTER SEL OUTPUT

79 GM

79 RM

PLUS 0085 HOUSEKEEPING
PLUS 0
PLUS 0

GROUP MARK

K/CK/
PLUS 0001

B02.....

RESET 902

RESET 901

NEXT PAGE

FROM PREVIOUS PAGE

PAGE 02 OF 11

8CG01

C01.....
00159 RCV U 8694
00164 BLM \$ 0016

CLEAR RD AREA 80 POSITIONS

I
00169 SEL 2 005Z
00174 RD Y 8690
00179 TRS O 1154-----L05
00184 ADD G 02 1343 13M3
00189 CMP 4 02 1194 11R4
00194 SEL 2 0902
00199 TRS O 0209-----
00204 TR 1 0219-----
00209 TRE L 0279-----
00214 TR 1 0139-----B01
00219 UNL 7 02 1339 13L9 . . . I
00224 SEL 2 0911
00229 TRS O 0244-----
00234 SEL 2 006U
00239 WR R 1309
00244 SEL 2 0913
00249 TRS O 0264-----
00254 TRE L 0279-----
00259 TR 1 0139-----B01
00264 HLT J 0002
00269 TRE L 0279-----
00274 TR 1 0139-----B01

MULTI PUNCH ROUTINE

5 CDS

I A READER SEL

T/O FALSE E.O.F.
INC 02 BY 1
5

UNL 02 TO T/O AREA

I A SEL OUTPUT

FAILED TO DETECT M/P ON CARD #

HLT ON ERROR

00279 RCV U 8694
00284 BLM \$ 0016

CLEAR RD AREA

I
00289 SEL 2 0902
00294 TRS O 0299-----
00299 SEL 2 0901
00304 TRS O 0309-----

I
00309 SEL 2 005Z
00314 RD Y 8690
00319 TRS O 1154-----L05
00324 ADD G 03 1343 13D3
00329 CMP 4 03 1197 11I7
00334 SEL 2 0902
00339 TRS O 0349-----
00344 TR 1 0359-----
00349 TRE L 0419-----D03
00354 TR 1 0279
00359 UNL 7 03 1413 14A3
00364 SEL 2 0911
00369 TRS O 0384-----
00374 SEL 2 006U
00379 WR R 1378
00384 SEL 2 0913
00389 TRS O 0404-----
00394 TRE L 0419-----D03
00399 TR 1 0279
00404 HLT J 0003
00409 TRE L 0419-----D03
00414 TR 1 0279

ILLEGAL CHAR ROUTINE

2 CDS

I A READER SEL

T/O FALSE E.O.F.
INC 03 BY 1
2

UNL 03 TO T/O AREA 2

I A SEL OUTPUT

FAILED TO DETECT ILLEGAL CHAR

D02.....■.00419 TRA I 0424-----■
 ■ 00424 SEL 2 0902•••••■ I
 ■ 00429 TRS O 0434-----■
 ■ 00434 SEL 2 0901•••••■ I
 ■ 00439 TRS O 0444-----■
 ■ 00444 SET B 0004•••••■ I
 ■ 00449 LOD 8 8676 ■
 ■ 00454 UNL 7 8774 ■
 ■ 00459 UNL 7 0594 ■
 ■ 00464 SET B 0004 ■
 ■ 00469 LOD 8 8664 ■
 ■ 00474 UNL 7 0769 ■
 ■ 00479 LOD 8 8668 ■
 ■ 00484 UNL 7 0779 ■
 ■ 00489 RCV U 8694 ■
 ■ 00494 BLM \$ 0016 ■
 ■ 00499 RCV U 1519 ■
 ■ 00504 BLM \$ 0016 ■
 ■ 00509 RCV U 1604 ■
 ■ 00514 BLM \$ 0016 ■
 ■ 00519 RCV U 8779 ■
 ■ 00524 BLM \$ 0016 ■
 ■ 00529 RCV U 8864 ■
 ■ 00534 BLM \$ 0016 ■
 ■ 00539 SET B 0080 ■
 ■ 00544 SEL 2 005Z ■
 ■ 00549 RD Y 8690 ■
 ■ 00554 TRS O 1154-----L05
 ■ 00559 SEL 2 0902 ■
 ■ 00564 TRS O 0574-----■
 ■ 00569 TR 1 0594-----■
 ■ 00574 LDA * 0594•••••■ I
 ■ 00579 UNL 7 1244 ■
 ■ 00584 SEL 2 0500 ■
 ■ 00589 WR R 1230 ■
 ■ 00594 LOD 8 1770•••••■ I
 ■ 00599 CMP 4 8769 ■
 ■ 00604 UNL 7 8854 ■
 ■ 00609 LOD 8 8769 ■
 ■ 00614 UNL 7 8939 ■
 ■ 00619 TRE L 0629-----■
 ■ 00624 TR 1 0664-----F04
 ■ 00629 CMP 4 05 8769 8XW9•••■ I
 ■ 00634 TRE L 1029-----K05
 ■ 00639 AAM @ 01 8774 87X4 ■
 ■ 00644 SET B 0004 ■
 ■ 00649 LOD 8 8774 ■
 ■ 00654 UNL 7 0594 ■
 ■ 00659 TR 1 0489 ■

RESET ANY INDICATOR

SET ACC
 FIRST CONST ADDR TO BE MODIFIED
 UNL TO ADDR MOD AREA
 RESET TO INITIAL

80 CHAR CMP SECTION

RESET T/O 3 ADDR

RESET T/O 4 ADDR

CLEAR RD AREA

CLEAR T/O AREA 3

CLEAR T/O AREA 4

CLEAR WORK AREA 1

CLEAR WORK AREA 2

I A READER SEL

T/O FALSE E.O.F.

CONTINUE

TO T/O

RD FLD
 UNL ACC INTO WORK AREA 1

UNL RD FLD INTO WORK AREA 2

TO ERROR ROUTINE
 CMP TO LAST CONST

STEP CONST ADDR & 85

MODIFIED ADDR

F03.....
 □ 00664 SEL 2 0902 □
 □ 00669 TRS O 0674 -----
 □ 00674 SEL 2 0901 ••••• I
 □ 00679 TRS O 0684 -----
 □ 00684 SET B 12 0004 0&04 ••• I
 □ 00689 LOD 8 12 8680 8F80 □
 □ 00694 UNL 7 12 0734 OG34 □
 □ 00699 SET B 13 0004 0& 4 □
 □ 00704 LOD 8 13 8684 8FY4 □
 □ 00709 UNL 7 13 0739 OGT9 □
 □ 00714 UNL 7 13 0774 OGX4 □
 □ 00719 CMP 4 12 8688 8F88 □
 □ 00724 TRE L 0844 -----
 □ 00729 SET B 0001 □ I
 □ 00734 LOD 8 8775 □ I
 □ 00739 CMP 4 8860 □ I
 □ 00744 TRE L 0754 -----
 □ 00749 TR 1 0769 -----
 □ 00754 ADM 6 14 0769 OG09 ••• I I
 □ 00759 ADM 6 14 0779 OGP9 □ I I
 □ 00764 TR 1 0919 -----
 □ 00769 UNL 7 1515 ••••• I I
 □ 00774 LOD 8 8860 □ I I
 □ 00779 UNL 7 1600 □ I I
 □ 00784 ADM 6 14 0769 OG09 □ I I
 □ 00789 ADM 6 14 0779 OGP9 □ I I
 □ 00794 TR 1 0919 -----

WORK AREA 1 ADDR 1ST CHAR

WORK AREA 2 ADDR 1ST CHAR

TO T/O

1ST CHAR OF CONST FLD
1ST CHAR OF RD FLDSTEP UNL ADDR FOR T/O #3 & 1
STEP UNL ADDR FOR T/O #4 & 1

TO T/O AREA 3

TO T/O AREA 4
STEP UNL ADDR FOR T/O #3 & 1
STEP UNL ADDR FOR T/O #4 & 1

G05.....
 □ 00799 SET B 0004 □ I I
 □ 00804 LOD 8 8672 □ I I
 □ 00809 CMP 4 0594 □ I I
 □ 00814 TRE L 1029 ----- K05
 □ 00819 AAM @ 01 8774 87X4 □ I I
 □ 00824 SET B 0004 □ I I
 □ 00829 LOD 8 8774 □ I I
 □ 00834 UNL 7 0594 □ I I
 □ 00839 TR 1 0464 ----- E03

ADDR OF LAST CONST
IS IT LAST CONST

STEP CONST ADDR & 85

MODIFIED ADDR

NEXT CD

TO 913 SW AND BYPASS T/O
I A SEL OUTPUT

CL

SB

IS

TO T/O

TO 913 SW

901 ON WR

TO HLT

UPDATE

II 00844 SEL 2 0911 ••••• I I
 II 00849 TRS O 0904 -----
 II 00854 SEL 2 006U □ I I
 II 00859 WR R 1428 □ I I
 II 00864 WR R 1513 □ I I
 II 00869 WR R 1598 □ I I
 II 00874 SEL 2 0901 □ I I
 II 00879 TRS O 0889 -----
 II 00884 TR 1 0904 -----
 II 00889 SEL 2 0500 ••••• I I
 II 00894 WR R 1681 □ I I
 II 00899 HLT J 7777 □ I I
 II 00904 SEL 2 0913 ••••• I I
 II 00909 TRS O 0949 ----- H05
 II 00914 TR 1 0799 □ I I

INC ADDR BY 1
INC ADDR BY 1

CHK NEXT CHAR

H04..... 00949 HLT J 0004 □
 □ 00954 TR 1 0799 ----- G04 HLT ON ERROR
 UPDATE

J06..... 00959 SEL 2 0914 □
 I □ 00964 TRS O 0974 -----
 I □ 00969 TR 1 18219 Y219 □ I
 I □ 00974 SEL 2 0500 I
 I □ 00979 WR R 1199 □
 I □ 00984 HLT J 0006 □
 I □ 00989 TR 1 0024 ----- A01 RD IN NEXT TEST
 END OF TEST

I 00994 SEL 2 005Z □ I A READER SEL
 I □ 00999 RD Y 8690 □ OK E.O.F.
 I □ 01004 TRS O 1174 ----- M06 I A OUTPUT SEL
 I □ 01009 SEL 2 006U □ E.O.F.-FAILED
 I □ 01014 WR R 8994 □
 I □ 01019 HLT J 6666 □
 I - 01024 TR 1 0959 □

K03
 K04.... 01029 RCV U 8694 □
 I □ 01034 BLM \$ 0016 □ CLEAR RD FLD

I 01039 SEL 2 005Z □ IA READER SEL
 I □ 01044 RD Y 8690 □
 I □ 01049 TRS O 1059 -----
 I □ 01054 TR 1 1064 -----
 I □ 01059 TR 1 1154 -----
 I □ 01064 SET B 0040 I TO T/O FALSE E.O.F.
 I □ 01069 LOD 8 8769 □ LAST 40 CHAR OF RD FLD
 I □ 01074 CMP 4 1770 □ BLANKS
 I □ 01079 TRE L 1089 -----
 I □ 01084 TR 1 1114 -----
 I .. 01089 SET B 0039 I OK
 I □ 01094 LOD 8 8728 □ T/O
 I □ 01099 CMP 4 2959 □ FIRST 39 CHAR OF RD FLD
 I - 01104 TRE L 0994 □ 39 A,S
 I □ 01109 TR 1 1134 -----
 I OK
 I T/O

I 01114 SEL 2 006U I A OUTPUT SEL
 I □ 01119 WR R 8941 □ TO CONTINUE-START

I 01134 SEL 2 006U I READ ERROR
 I □ 01139 WR R 8983 □ TO CONTINUE-START
 I □ 01144 HLT J 9999 □
 I - 01149 TR 1 0994 □

L02
 L03.... 01154 SEL 2 006U I A OUTPUT SEL
 □ 01159 WR R 1345 FALSE E O F -RESTART TEST
 □ 01164 HLT J 8888 □ HIT START
 □ 01169 TR 1 0024 ----- A01

M05.....
01174 SEL 2 006U
01179 WR R 1371
01184 TR 1 0959

J05

E.O.F.

CONSTANTS

3	08664	1515	1515	ADDR FIRST CHAR T/O AREA 3
3	08668	1600	1600	ADDR FIRST CHAR T/O AREA 4
3	08672	8655	8655	ADDR OF LAST CONST
3	08676	1770	1770	ADDR OF FIRST CONST COMPARED
3	08680	8775	8775	ADDR 1ST CHAR OF CONST FLD IN WK AREA
3	08684	8860	8860	ADDR 1ST CHAR OF RD FLD IN WK AREA
3	08688	8855	8855	CONST FLD LAST CHAR ADDR PLUS 1
5	080 08769 00			RD FLD ADDR
5	005 08774			ADDR MOD AREA FOR CONST FLD
5	080 08851 00			WORK AREA 1
5	001 08853			□
2	080 08939 00			WORK AREA 2
2	001 08940			□
2	021 08961			RDR DID NOT RECOGNIZE
2	020 08981			READER STORAGE MARK
2	001 08982			□
2	010 08992			READ ERROR
2	001 08993			□
2	013 09006			E.O.F.-FAILED
2	001 09007			□

