8TR06A

7080 PROGRAM TAPE
GENERATOR AND LOADER

April 15, 1961

I GENERAL DESCRIPTION

A. Purpose

1. To store test programs on tape.

2. To provide a fast and efficient 7621 tape system input of test programs and employing 7080 stored program control.

B. Scope

1. Capable of storing any 705 I, II, III and 7080 program except:

   a) Those that lie wholly or in part within memory locations 18200-18799.

   b) Those that occupy more than 80K positions of memory.

2. Capable of permitting automatic load and execution of all programs singly, sequentially, and/or selectively by high-speed file search.

3. Capable of detecting channel check error conditions and indicating same after three loading or generation attempts.

4. Prevents generating erroneous records by causing an automatic SKIP tape command after every third attempt.

C. Program Description

1. 8TR06 is an 11 card program, which, when read into memory, occupies positions 18200-18799.

2. Both generation and tape loading usage modes are contained within this 600 position Control Area.

3. There are 3 alternate cards for card #011. Only one of these may be used in the 11 card set. It must match the input loaders used.

D.   **8TR06 Generated Tape Description**

1.   Each program contained on a 8TR06 generated tape is composed of <u>four</u> 20K records.

2.   During generation, these records are written at high density under record counter control from 00000, 20000, 40000, and 60000 respectively.

3.   The 8TR06 Control Area is an <u>integral</u> permanent part of the <u>first</u> record of <u>each</u> program on tape, and when read into memory, occupies memory positions 18200-18799.

4.   Each Control Area is identical, instruction for instruction, to every other Control Area except for each program's exclusive six character identification contained within it.

5.   A tape mark is written behind the last record of the last program on tape to establish end-of-file.

II   **GENERATION PROCEDURE**

A.   **Basic Setup Requirements**

1.   A 7080 equipped with either a 7302 I (160K) or 7302 II (80K) memory must be used while generating an 8TR06 test tape.

2.   The recipient 8TR06 tape must be:

a)   On a 7621 Tape Control System
b)   Addressed 0200
c)   Set at HIGH Density.

3.   Program input to CPU, preparatory to being stored on the 8TR06 tape, may be from any <u>one</u> of the following 80 character input modes:

a)   714 Card Reader
b)   7502 Console Card Reader
c)   7621 Tape

4. Regardless of input mode used, <u>each</u> program to be stored must be preceded by one of the three sets of 2 card loaders provided (8LD01, 8LD10, or 8LD02) and followed by an 11 card set of 8TR06 cards, the eleventh card of which must match the loaders used.

    <u>For reference:</u>

    8LD01 - 714 Card Reader Input
    8LD10 - 7502 Console Card Reader Input
    8LD02 - 7621 Tape (80 character records) Input

    With 8LD01 - Use 8TR06 #011-01
    With 8LD10 - Use 8TR06 #011-10
    With 8LD02 - Use 8TR06 #011-02

B. <u>Area of Machine Required</u>

    1. Units - CPU, Card Reader, and/or Tape

    2. Memory Locations: 18200 - 18799

C. <u>Program Deck Input Sequence</u>

    Note: See Comment I. 3

    1. <u>714 Card Reader:</u> **ON-LINE** Direct CR to CPU

8LD01	2 cards	
8----	- cards	Program Deck
8TR06	11 cards	(Use #011-01)
8LD01	2 cards	
8----	- cards	Program Deck
8TR06	11 cards	(Use #011-01)
Etc.		

    2. <u>7502 Console Card Reader:</u> **ON-LINE** Direct CCR to CPU

8LD10	2 cards	
8----	- cards	Program Deck
8TR06	11 cards	(Use #011-10)
8LD10	2 cards	
8----	- cards	Program Deck
8TR06	11 cards	(Use #011-10)
Etc.		

3.   <u>7621 Tape:</u>   ON-LINE Tape to CPU
                      Preceded by OFF-LINE CR to Tape

8LD02	2 cards	
8----	- cards	Program Deck
8TR06	11 cards	(Use #011-02)
8LD02	2 cards	
8----	- cards	Program Deck
8TR06	11 cards	(Use #011-02)
Etc.		

D.   <u>Manual Loading Procedures</u>

    1.   <u>714 Card Reader Input</u>

        a)   Place sequenced decks in CR.
        b)   Clear memory
        c)   Auto-Load 0100

                This initiates card loading of the first program test deck and 8TR06 from 8LD01 control. The first "00" card detected within 8TR06 (Card #008) transfers control to 8TR06 generation. Generation mode dumps four 20K records onto tape 0200, clears memory, and reads the next set of load cards which read-in the next program deck. This process is repeated until all decks are read into memory and written on tape. When the card reader stops with no more cards in the hopper, the operator must depress start on the reader. This establishes EOF, writes a tape mark on 0200, rewinds it, and halts the 7080 with a stop 7777.

                <u>Note:</u> See Comments, I. 1, 2, and 3

    2.   <u>7502 Console Card Reader Input</u>

        a)   Place sequenced decks in CCR.
        b)   Clear memory
        c)   Auto-Load 0101

                This initiates essentially the same operations as are executed in 714 CR input.

                The basic difference between the two is that it is not necessary to manually depress start on the CCR when the card hopper is empty.

                <u>Note:</u> See Comments, I. 1, 2, and 3

3. **7621 Tape Input**

    a)   Place sequenced 80 character record Off-Line generated tape file on drive addressed 0202.

    b)   Set Density LOW *OR HI*

    c)   Clear memory and channel reset

    d)   Auto-Load 0202

        This initiates tape record loading in essentially the same manner as card loading.

        When EOF is detected on the 0202 input tape, a tape mark is written on 0200 and both tapes are rewound.

4. **7621 Tape Input from "Standard" Tapes #1, #2, or #4**

    a)   Place "Standard" tape file on 0202

    b)   Set Density LOW *o R HI*

    c)   Clear memory and channel reset

    d)   Auto-Load 0202

        This initiates tape record loading. **But** since this is a "standard" tape, the first auto-load will read-in 8ED01 (the 80 character record tape update program), type-out, and stop the 7080 with a Halt 9999.

        This program must be bypassed to allow 8TR06 tape-to-tape generation. Therefore--

    e)   Auto-Load 0202 <u>again.</u>

        This initiates tape loading and progresses automatically through the entire file loading and writing until generation is complete.

        200 SET HI

E. **Program Control**

    1.   Alteration Switches - None used.

    2.   Check Switches - all in automatic.

F. **Normal Stops**

7777 - Indicates 8TR06 generation complete.

G. **Error Stops**

None programmed.

H.   Typed Information

1.   Normal Type-Outs

8-----   Six character identification of each pro-
                gram as loaded.

2.   Error Type-Outs

----Skip   Indicates that 3 attempts had been made
                to write the loaded program on 0200 and
                that a skip tape command was executed.
                The first four characters identify the
                program with which these conditions were
                encountered.

I.   Comments

1.   If a check stop occurs during 714 or 7502 input gener-
      ation, it is not necessary to reload the _entire_ card deck
      sequence.

      The following may be done instead:

      a)   Clear memory
      b)   Reload only the 2 card loaders and all of the
            cards within the deck in which the error
            occurred.
      c)   Follow the above cards with 8TR06 and all
            subsequent card decks.
      d)   Do not rewind 0200.

2.   If a ----SKIP tape operation occurs, generation of the
      same program will be attempted again and as many
      times as are necessary until successfully written.

3.   Be sure there are no cards behind the last 11 card
      set of 8TR06 to be loaded.

III   TAPE USAGE PROCEDURE

A.   Initial Loading and Manual Operations

Note: The 705 I/II and 40K switches must be OFF.

1.   Place file protected 8TR06 tape on 0200 (Channel 20).

2.   Set Density HIGH.

3.   Clear memory and channel reset.

4.   Auto-Load 0200 or   SEL   0200
                                  RD   0000
                                  Reset and Start

The preceding manual operations execute the following:

a)   Reads-In the first 20K record of the first program
         on tape and transfers to 0004.
b)   A standard transfer instruction at 0004 (1 Y209-
         placed there during generation) is made to the
         8TR06 Control Area.
c)   The Control Area takes over and reads the re-
         maining 3 records of the program into 20000,
         40000, and 60000 respectively.
d)   The 1Y209 instruction at 0004 is replaced with the
         program's own first instruction.
e)   The program's identification is typed

*At this point, the 0914 alteration switch is interrogated.

If 0914 is ON -

a)   The 7080 is stopped with a programmed Halt 9999.
b)   To execute the program indicated: RESET and START.
c)   To bypass the program indicated, and read-in the
         next program from tape: START only.

If 0914 is OFF -

a)   The program indicated will be executed immediately.

B.   Alteration Switch 0914 Function

1.   The 0914 alteration switch interrogation within 8TR06
was designed to be as compatible as possible with the
0914 interrogation within the test programs in addition
to offering more flexibility of program selection and
execution.

2.   For reference, the 0914 functions are as follows:

0914 ON -

a)   Repeat program - Within test program
b)   Stop before program execution - Within 8TR06

0914 OFF -

a)   Read-in next program - Within test program
b)   Execute program immediately - Within 8TR06

3.   The features of this scheme are:

a)   When 0914 is OFF, permits uninterrupted and
automatic read-in and execution of all programs
sequentially.
Lends itself readily to an "All Machine Area"
system checkout with minimum operator attendance.

b)   When 0914 is ON - permits the user to execute a
"low speed file search" for any program he desires
without having to wait for each program to be tested.

Furthermore, it allows repetition of any program
for as long as 0914 is left ON.

This fact may be important to the user since during
"Automatic System Checkout" there are many pro-
grams that require more tape-read time than the
time used to execute one completed pass. As a result
the program would have been read, executed, and
replaced with another program before the observer
realized what had transpired.

C.   Tape Read Checking

1.   Each program on the 8TR06 tape is "channel-checked" for error during the four record program loading.

2.   In the event a channel check occurs, the 8TR06 tape is backspaced four records and another attempt is made to load the program error free.

3.   If the error persists after the third consecutive attempt, a type-out, CHAN CHKS PROG ENTRY, is executed and the program is loaded regardless.

4.   This type-out indication does not prevent program execution, but serves as a warning to the observer that the program may not have been loaded correctly.

5.   If the program is continued, sequence, time required, type-outs, and check indications should be closely observed for possible program malfunction.

6.   If in doubt, reload the program.

D.   File Search (High-Speed Mode)

*Never use Auto-Load when File-Searching for a specific program in High Speed Mode.

File-Search may be initiated from any point on tape, except at tape mark (behind last program on tape).

File-Search may be executed with 0914 ON or OFF.

To initiate, obey these manual instructions only:

1.   SEL   0200
2.   RD   0000
3.   Store at 18200 - 18203
     The middle four characters identification of the program desired.
                (Example: Desired -   8SB09A)
                             Store   -   SB09
4.   RESET and START
                Note: See Comments F. 2.

These operations will initiate 8TR06 control to read all records of all programs until the desired program is found.

When found, the programs full identification will be typed, and as in other modes, the 7080 will stop at halt 9999 if 0914 is ON, or execute the program immediately if 0914 is OFF.

If a program desired is not on tape, two passes of tape or two consecutive EOF detections will be made before a type-out, ---- NOT ON TAPE will be executed indicating that the four characters stored do not compare equal to any program identification on tape.

E. **Manual Intervention**

1. If it is desired to <u>load</u> the <u>next</u> program from tape before the program in progress has completed its pass -

    a) Depress STOP
    b) Manually transfer to 18219
                  OR
        Clear memory and channel reset
    b) Auto-Load 0200

    <u>Caution:</u>   *A manual transfer to 18219 is permissible if the test in progress is not 8MU69, 8MU99, or 8MU88.

        **If the program in progress is the last one on tape, usage of Auto-Load 0200 will repeat the same program.

        The control area will handle all EOF situations except Auto-Load from last program.

2. If it is desired to <u>reload</u> the <u>same</u> program from tape -

    a) SEL 0200
    b) Backspace the tape four times (Control 0004)
    c) Clear memory and channel reset
    d) Auto-Load 0200

F.   Comments

1.   No diagnostic programs are permitted to <u>occupy</u> any portion of the 8TR06 control area.

In the event that a program <u>tests</u> any part of this area, there must be a reservation within that program to replace the control area before attempting automatic read-in of the next program from tape.

At this time, there are three separate 7080 diagnostic programs which do destroy the 8TR06 control area because the control area resides within the <u>objective test area</u> of each program. However, each of these replaces the control area <u>before</u> calling in the next program from tape, but <u>only</u> after each complete program pass has been completed.

They are: 8MU69   (For 7302 I 160K OC Memory)
8MU99   (For 7302 I 160K AC Memory)
8MU88   (For 7302 II 80K AC Memory)

If for any reason, it is desired to stop any one of the above tests <u>before</u> the <u>last</u> section is complete, the user <u>must</u> <u>Auto-Load 0200</u> to read-in the next program from tape, because, as mentioned above, the control area has been destroyed.

2.   Although not foolproof, there is an alternate method available to initiate high speed File Search.

This method involves only <u>two</u> manual operations instead of the normal five recommended operations.

They are:

a)   Store at 18200 - 18203 the middle four character identification of the program desired.
b)   Transfer to 18219.

A Word of Caution -

The above operations will initiate File Search <u>provided</u>:

a)   The 8TR06 Control Area has been loaded into 18200 - 18799 from some previous program read-in.
b)   The program in progress (and stopped) is not 8MU69, 8MU99, or 8MU88.

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8TR06A   4-4-61
-7080-
TAPE GENERATOR & INPUT SYSTEM
FOR ALL PROGS & TAPE CONTROL
EXCEPT-- TRC CONTROL --AND
PROGRAMS THAT LIE
BETWEEN 18200-18799

2 005 18204   0000X   FILE SEARCH IDENT STORE AREA

```
  18209 BSP 3        0004          BACKSPACE RECORD 1
  18214 TSA O 03 18219 Y2A9

A02  18219 EEM 3 14  0000 0&-0      ENTER 7080 MODE
     18224 LIM   07  0000 0 &0      LEAVE INTERRUPT MODE
     18229 SPC       0000           RESET SPC TO BANK 0

     18234 SET B 01  0004 00 4      FS STORE AREA INTO ASU 01
     18239 LOD 8 01 18203 Y2 3      0 INTO ASU 02
     18244 RAD H 02 18588 Y5Q8
     18249 SET B 05  0005 0  5      1Y219 INTO ASU 05
     18254 LOD 8 05 18534 YVT4
     18259 CHR 3 13  0000 0& 0      RESET ALL CHANNELS

B02  18264 SEL 2       0200         SELECT DIAGNOSTIC INPUT TAPE
     18269 SDH 3       0038         SET DENSITY HIGH
     18274 SRC R 02    0040 00M0    SET RECORD CTR FOR 4 READS
     18279 RD  Y       0000         READ INTO 0K-20K-40K-60K
     18284 TSA O 03 18299 Y2I9      TEST FOR CHAN CHK OR EOF
     18289 TRS O    18404 Y404  D02 EOF
     18294 TR  1    18379 Y379  C02
     18299 TTC O 02 18309 Y3-9      TEST FOR CHANNEL CHK
     18304 TR  1    18289 Y289

     18309 CMP 4 01 18229 Y2S9      TEST FOR FILE SEARCH MODE
     18314 TRE L    18334 Y334      NOT FILE SEARCH
     18319 CMP 4 01 18636 Y6T6      TEST FOR WANTED PROGRAM
     18324 TRE L    18334 Y334      FS PROG FOUND
     18329 TR  1    18264 Y264      NOT FOUND - CONTINUE SEARCH

     18334 ADD G 02 18589 Y5Q9      ADD 1 TO CHAN CHK CTR
     18339 CMP 4 02 18205 Y2-5      TEST FOR 3 COUNT
     18344 TRE L    18364 Y364
     18349 SRC R 02    0040 00M0    SET RECORD CTR FOR 4 BACKSPACE
     18354 BSP 3       0004
     18359 TR  1    18264 Y264
     18364 SEL 2       0500
     18369 WR  R    18550 Y550      CHAN CHKS PROG ENTRY
     18374 TR  1    18474 Y474  E02 GO TO IDENTIFY PROGRAM ANYHOW
```

```
C01••••••••18379 CMP 4 01 18229 Y2S9 □         TEST FOR FS MODE
       □ 18384 TRE L      18474 Y474━■━━▼       NOT FS
       □                                 I
       □ 18389 CMP 4 01 18636 Y6T6 □     I       TEST FOR WANTED PROGRAM
       □ 18394 TRE L      18474 Y474━■━━▼        FS PROG FOUND
       □ 18399 TR  1      18264 Y264━■━━I━━━━B01  NOT FOUND ━ CONTINUE SEARCH
                                         I

D01••••••••■•18404 IOF 3     0000    □   I       TURN TI OFF
       □ 18409 RWD 3      0002    □        I       REWIND
       □                          □        I
       □ 18414 CMP 4 01 18229 Y2S9 □   I       TEST FOR FS MODE
       □ 18419 TRE L      18264 Y264━■━━I━━━━B01  NOT FS
       □                                 I
       □ 18424 SET B 15 0002 0&&2 □   I
       □ 18429 CMP 4 15 18546 YED6 □   I       TEST ASU 15 FOR 11
       □ 18434 TRE L      18449 Y449━■━▼I
       □                          □   II       PLACE 11 IN ASU 15
       □ 18439 RAD H 15 18549 YED9 □   II
       □ 18444 TR  1      18264 Y264━■━II━━━━B01
                                         II
                                         II
       □ 18449 UNL 7 01 18574 Y5X4━■••II       PLACE ASU 01 CONTENTS IN T-0
       □ 18454 SEL 2      0500    □   I
       □ 18459 WR  R      18571 Y571 □   I       ━━━━ NOT ON TAPE
       □                          □   I
       □ 18464 UNL 7 05 0004 0  4 □   I       PLACE 1Y219 INTO 0000━0004
       □ 18469 TR  1      18509 Y509━■━▼I
                                         II
                                         II
E01••••••••■•18474 RCV U     0000••••••■•II       REPLACE FIRST INSTRUCTION
       □ 18479 TMT 9 05 18540 YVU0 □   I
       □                          □   I
       □ 18484 SEL 2      0500    □   I
       □ 18489 WR  R      18632 Y632 □   I       ━━━━     PROG IDENT
       □                          □   I
       □ 18494 LEM 3 15 0000 0&&0 □   I       LEAVE 7080 MODE
       □ 18499 TAD I 04 18509 YV09━■━▼       STOP BEFORE PROG EXE IF 914 ON
       □ 18504 TR  1      0004    □   I       GO DIRECTLY INTO PROGRAM
                                         I
       □ 18509 LOD 8 01 18229 Y2S9■•I       RESET ASU 01 TO 0000
       □ 18514 UNL 7 01 18203 Y2 3 □       RESET 18200━18203 TO 0000
       □ 18519 RAD H 02 18588 Y5Q8 □       RESET ASU 02 TO 0
       □ 18524 RAD H 15 18589 YEH9 □       RESET ASU 15 TO 1
       □                          □
       □ 18529 HLT J      9999    □       PROGRAM PRE-ENTRANCE STOP
       □                          □       RESET & START━TO RUN PROG INDI
       □ 18534 TR  1      18219 Y219━■━━━━━━━━A01  START━     ━TO READ NEXT PROG
                          I
                          I
2 005 18539               1Y209
2 005 18544                              FIRST INSTRUCTION STORAGE AREA
2 005 18549               11 1A
2 020 18569               CHAN CHKS PROG ENTRY
2 001 18570               □
2 016 18586               ━━━━ NOT ON TAPE
2 001 18587               □
2 001 18588               &0
2 001 18589               &1
```

```
 □□□□□□□□□□□□V□□□□□□□□□□□□□
•••••18594 LOD 8 04 18636 YW36 □
I □ 18599 UNL 7 04 18623 YW23 □
I  □                            □
I  □ 18604 SEL 2      0500      □
I  □ 18609 WR  R      18620 Y620 □
I  □                            □
I  □ 18614 RAD H 02 18588 Y5Q8 □
I  □ 18619 TR  1      18659 Y659-□-▼
I  □□□□□□□□□□□□□□□□□□□□□□□□□  I
I                             I
I                             I
I
 2 009 18628              ---- SKIP
 2 001 18629             □
```

PLACE PROG ID INTO SKIP T-O

---- SKIP

RESET ASU 02 TO 0

GENERATION AREA - CARD #8

```
I  □□□□□□□□□□□□□□□□□□□□□□□□  I
I  □ 18659 SET B 05  0005 0   5 □ I
I  □ 18664 RCV U      18540 Y540 □ I
I  □ 18669 TMT 9 05  0000 0   0 □ I
I  □ 18674 RCV U      0000      □ I
I  □ 18679 TMT 9 05  18535 YVT5 □ I
I  □                            □ I
I  □ 18684 SET B 04  0004 0 04 □ I
I  □ 18689 SEL 2      0200      □ I
I  □ 18694 SDH 3      0038      □ I
I  □                            □ I
I  □ 18699 RAD H 02 18588 Y5Q8 □ I
I  □ 18704 TR  1      18774 Y774 □ I
I  □□□□□□□□□□□□□□□□□□□□□□□□  I
```

RESET ASU 02 TO 0
GO TO READ CARD #9

CARD #9

```
I  □□□□□□□□□□□□□□□□□□□□□□□□  I
I  □ 18659 SEL 2      0200•••••□•I
I•••■•18664 SRC R 02  0040 00M0 □ I
II □ 18669 WR  R 01  0000 00 0 □ I
II □                         □ I
II □ 18674 TSA 0 03 18684 Y6H4-■-▼
II □ 18679 TR  1      18774 Y774 □ I
II □                            □ I
II □ 18684 SRC R 02  0040 00M0•□•I
II □ 18689 BSP 3      0004      □ I
II □                            □ I
II □ 18694 ADD G 02 18589 Y5Q9 □ I
II □ 18699 CMP 4 02 18205 Y2-5 □ I
II □ 18704 TRE L      18714 Y714-■-□I
I•-■-18709 TR  1      18664 Y664 □ I
I  □ 18714 SKP 3      0009•••••□•I
I--■-18719 TR  1      18594 Y594 □
   □□□□□□□□□□□□□□□□□□□□□□□□□□
```

SET RECORD CTR FOR 4 WRITES
WRITE FROM 0K-20K-40K-60K

TEST FOR CHANNEL CHK
GO TO READ CARD CARD #10

SET RECORD CTR FOR 4 BACKSPACE

ADD 1 TO CHAN CHK CTR
TEST FOR 3 COUNT

SKIP SOME TAPE - AND
INDICATE SAME AND TRY AGAIN

CARD #10
CLEAR MEMORY ROUTINE

```
 □□□□□□□□□□□□□□□□□□□□□□□□□□□
 □ 18659 LNG D 01  0286 02Y6 □
 □ 18664 UNL 7 01 18198 Y1Z8 □
 □ 18669 SPR 5 01 18199 Y1Z9 □
 □ 18674 UNL 7 15 17973 XIG3 □
 □                            □
 □ 18679 RCV U      18800 Y800 □
•••■•18684 TMT 9 01 17974 X9X4 □
I □                            □
I □ 18689 CMP 4 15 17973 XIG3 □
I--■-18694 TRE L      18684 Y684 □
 □ 18699 TR  1      18774 Y774 □
 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

GO TO READ CARD #11

```
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 18659 SEL 2        0100        □
□ 18664 RD  Y        0000        □
□ 18669 TRS 0        18679 Y679—□—▼
□ 18674 TR  1        0004        □ I
□                                □ I
□ 18679 SEL 2        0200••••••□•□
□ 18684 WTM 3        0001        □
□ 18689 RWD 3        0002        □
□                                □
••□•18694 HLT J        7777        □
┼—□—18699 TR  1        18694 Y694 □
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

CARD #11-01
FOR USE WITH 8LD01 GR LOADERS

SELECT CARD READER 0100

EOF
READ AND GENERATE NEXT PROGRAM

WRITE TAPE MARK
REWIND

TAPE GENERATION COMPLETE

```
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 18659 SEL 2        0101        □
□ 18664 RD  Y        0000        □
□ 18669 TRS 0        18679 Y679—□—▼
□ 18674 TR  1        0004        □ I
□                                □ I
□ 18679 SEL 2        0200••••••□•□
□ 18684 WTM 3        0001        □
□ 18689 RWD 3        0002        □
□                                □
••□•18694 HLT J        7777        □
┼—□—18699 TR  1        18694 Y694 □
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

CARD #11-10   --ALTERNATE
FOR USE WITH 8LD10 CCR LOADERS

SELECT CONSOLE CARD READER 101

EOF
READ AND GENERATE NEXT PROGRAM

WRITE TAPE MARK
REWIND

TAPE GENERATION COMPLETE

```
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 18659 SEL 2        0202        □
□ 18664 RD  Y        0000        □
□ 18669 TSA 0 03 18674 Y6G4—□—▼
□ 18674 TRS 0        18684 Y684▼□□□▼
□ 18679 TR  1        0004        □ I
□                                □ I
□ 18684 IOF 3        0000••••••□•□
□ 18689 RWD 3        0002        □
□                                □
□ 18694 SEL 2        0200        □
□ 18699 WTM 3        0001        □
□ 18704 RWD 3        0002        □
□                                □
••□•18709 HLT J        7777        □
┼—□—18714 TR  1        18709 Y709 □
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

CARD #11-02   --ALTERNATE
FOR USE WITH 8LD02 TAPE LOADER

SELECT TAPE 0202

EOF
READ AND GENERATE NEXT PROGRAM

REWIND INPUT TAPE 0202

WRITE TAPE MARK ON 0200
REWIND

TAPE GENERATION COMPLETE