IDENTIFICATION

Product Code: MAINDEC-12-D9CA-D

Product Name: PDP-12 Operating Procedure

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1. ABSTRACT

   Due to console switch and control differences between
   Family-of-Eight and PDP-12 computers, the following generalized
   instructions are given to insure proper loading and starting
   of punched paper tape programs supplied by DEC for the PDP-12.

2. REQUIREMENTS

   2.1 Equipment

   a) Any PDP-12 computer with necessary options for each
      particular program.
   b) An ASR-33 teletype or equivalent.

   2.2 Preliminary Programs

   a) RIM - Formatted tapes require only that the rim loader
      be in core and operating.
   b) BINARY - Formatted tapes require that the binary loader
      be in core and operating.

3. LOADING PROCEDURES

   3.1 Rim Loader

   The Rim Loader is a minimum-logic program designed to load
   basic processor and memory diagnostics. It is toggled in from
   the console in the following manner:

   a) Set the MODE switch to 8 MODE.
   b) Set the IF switches to the desired memory bank (usually ∅∅∅).
   c) Depress I/O preset.
   d) Place the address of the first instruction in the left
      switches (7756).
   e) Place the first instruction in the right switches (6∅32).
   f) Depress FILL; this loads the instruction at the specified
      address, and also places that address in the MA register.
   g) Depress FILL STEP; this reloads the instruction at the
      specified address, and increments the MA.
   h) Place the second, and succeeding, instructions in the right
      switches, depressing fill step after each instruction.
   i) When completed, the MA should equal 7776.

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          RIM LOADER
          (LOW SPEED)
ADDR            CONT
7756            6032
7757            6031
7760            5357
7761            6036
7762            7106
7763            7006
7764            7510
7765            5357
7766            7006
7767            6031
7770            5367
7771            6034
7772            7420
7773            3776
7774            3376
7775            5356
```

3.2 **Binary Loader**

The Binary Loader is a rim-formatted program designed to increase loading speed by 50% over the rim loader. It is loaded using the rim loader in the following manner.

a) Set the MODE switch to 8 mode.
b) Set the IF switches to the desired memory bank in which the rim loader resides (usually 000).
c) Depress I/O preset.
d) Set the teletype reader switch to free.
e) Open the teletype reader and insert the program tape such that the directional arrows are visible and pointing in the direction of tape travel with the leader punches over the sensing fingers.
f) Close the reader and set the reader switch to start.
g) Get the teletype front panel switch to on line.
h) Set the left switches to 7756.
i) Insure that the computer is set to 8 mode.
j) Depress start LS.
k) The program tape will read in; when the data transfer is completed, as indicated by the trailer code passing over the reader, momentarily depress stop.
l) The Binary Loader is now in core.

3.3 **Rim-Formatted Paper Tapes**

The procedure is identical to loading the Binary Loader, section 3.2.

3.4 Binary-Formatted Paper Tapes

The binary loader must be in core prior to attempting to load a binary-formatted paper tape. Once this is accomplished, the program is loaded in the following manner.

a) Place the program tape in the reader (either high or low speed) with the arrows visible and pointing in the direction of travel.
b) Set the reader to on line.
c) Set the mode switch to 8 mode.
d) Set the left switches to 7777.
e) Set the right switches to 4000 if using the low speed reader, and to 0000 if using the high speed reader.
f) Set the IF switches to the memory bank in which the binary loader resides (normally 000).
g) Depress I/O preset.
h) Depress start LS.
i) The program will read into core and the binary loader will stop; the AC must equal 0000, if not, a transfer error has occurred, and the program must be reloaded.
j) Remove the program tape from the reader.

4.   STARTING PROCEDURES

Refer to the appropriate writeup for the starting address and switch settings for each program.

a) Place the starting address in the left switches.
b) Place the desired switch option settings in the right switches.
c) Place the memory bank in which the program resides in the IF switches (normally 000).
d) Set the mode switch to 8 mode.
e) Depress I/O preset.
f) Depress start LS.
g) The program is now running as described in the applicable writeup.

5.   ERROR ROUTINE

In general, whenever a program refers to a particular switch option setting, that setting will be placed in the right switches.

When a program refers to an error restart or optional restart address, that address will be placed in the left switches, and the start LS key used.

The cont. key has the same function in the PDP-12 as in Family-of-Eight computers, namely, to continue execution of a program after a halt.

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