

DECUS No. 5/8-27

ERC Boot

The ERC Boot is a bootstrap routine somewhat simpler than the one presently available for the PDP-8. This routine restores the entire last page, consisting of:

1. a Clear Memory Routine,
2. RIM Loader and,
3. Modified Binary Loader.

The Clear Memory routine is entered at 7600 (octal). It clears (to 0000) the lower 31 pages of memory, then branches to the Binary Loader.

The modified Binary Loader halts after reading tape with the checksum in the accumulator. If the binary tape is properly terminated, pressing CONTINUE takes a branch to the beginning location of the program. PAL compiled programs may be properly terminated by ending the PAL symbolic tape in the following manner:

```
P
A
  L
S
  Y
    M
P   B
R   O
  O L
    G I
      R C
        A
          M
*START (any named starting address)
$
```

The Binary Loader stores the octal value for START in the location labeled ORIGIN in BIN. The instruction following HLT in BIN is replaced by JMP 1 ORIGIN (5616), causing a branch to START.

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ERC Boot

Instructions for the bootstrap operation are as follows: Toggle in the instructions beginning at 0030.

```
0030 Load Address
7404 Deposit
6036 Deposit
7012 Deposit
7010 Deposit
3025 Deposit
2034 Deposit
5030 Deposit
0030 LOAD ADDRESS
      START
```

Place the tape in the ASR33 reader with pins under the first character.

Turn reader to ready.  
Press CONTINUE four times.

When reader stops, entry may be made at 7600 (to clear memory), or in normal fashion to RIM or BIN.

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PAL III Modifications for PDP-8 and ASR-33

This modification of the PAL III Assembler speeds up assembly on the ASR-33/35 and operates only with this I/O device. The symbolic tape is read only once, on pass 0, and stored in the machine. This pass initiates as does pass 1, except that both switches 0 and 1 must be down. Other passes of the assembly initiate normally, but do not end the symbolic tape.

If the program is too large for the buffer, the Teletype punches 50, 200 codes before halting. If the program size is doubtful, it is advisable to leave the punch on during pass 0 and not continue to pass 1.