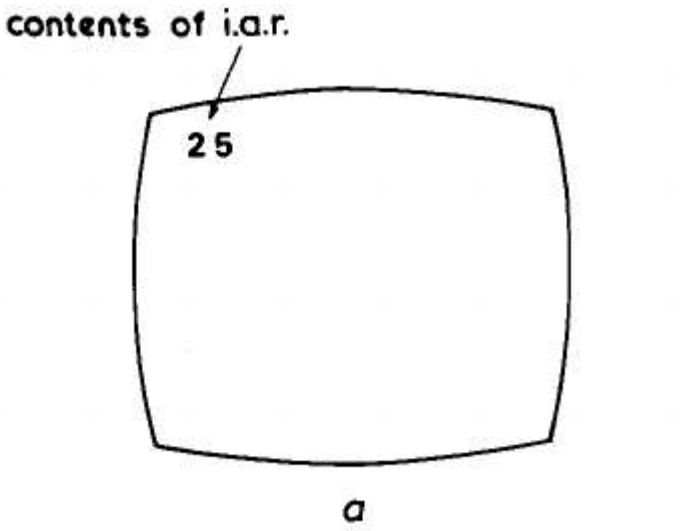
Experimental Schools Computer Display

The TV display on the experimental school’s computer shows various pieces of information, at various times during the execution of programs and instructions. The documentation of the machine, which is limited, has some examples of the display. This document is an attempt to list these displays and the information they contain, link that to the events that caused the display and hopefully build up the rules that the machine uses to put information onto the display. This can then be coded in the simulation to give the user a display that is as useful as the original and also hopefully close to the original displays.

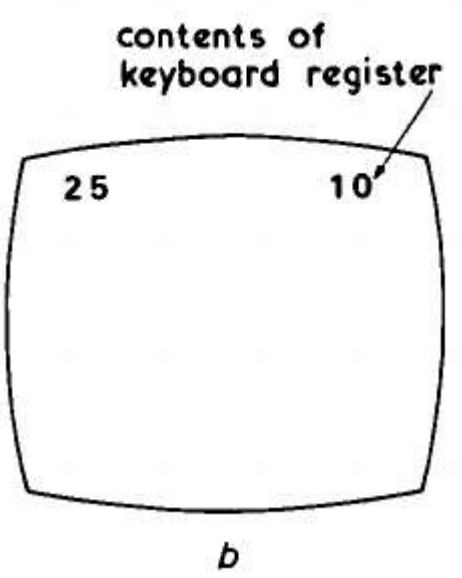
The display is 15 characters wide by six lines.

Sequence 1

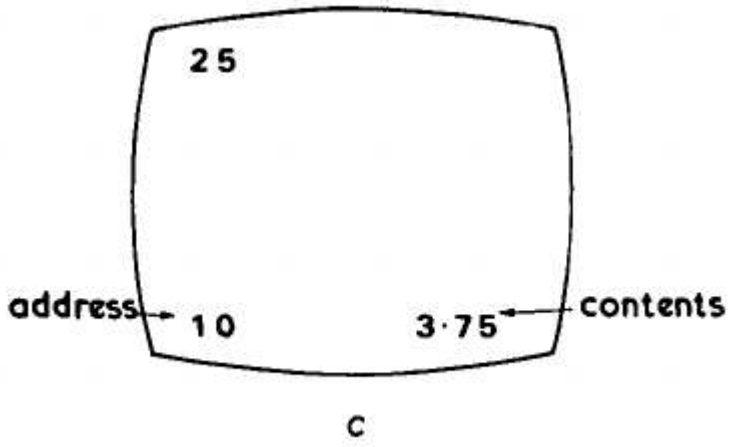
After resetting



After keying in address

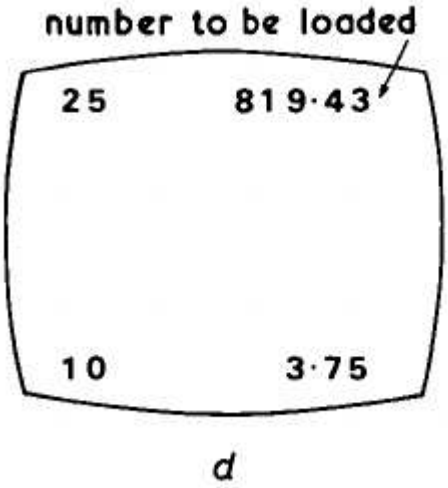


After touching LOAD ADDR key



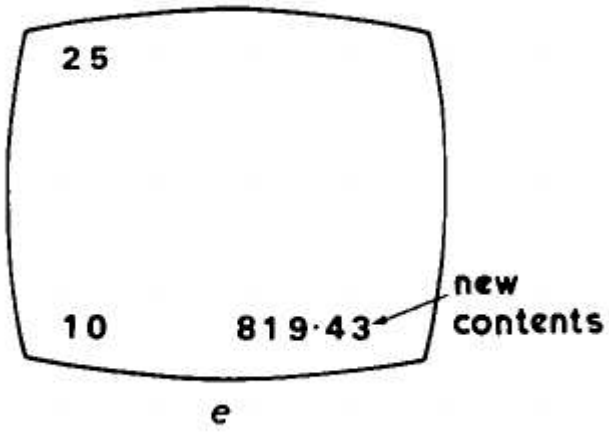
c

After keying in number to be loaded



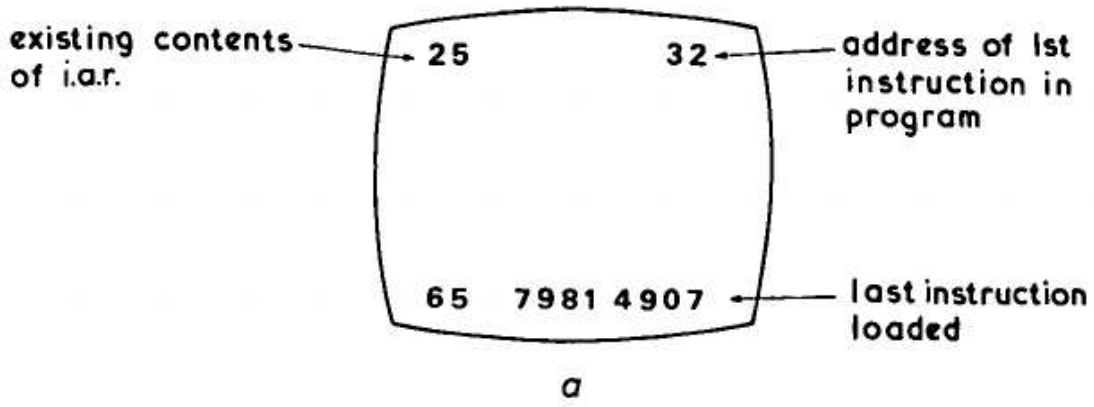
d

After touching LOAD STORE key

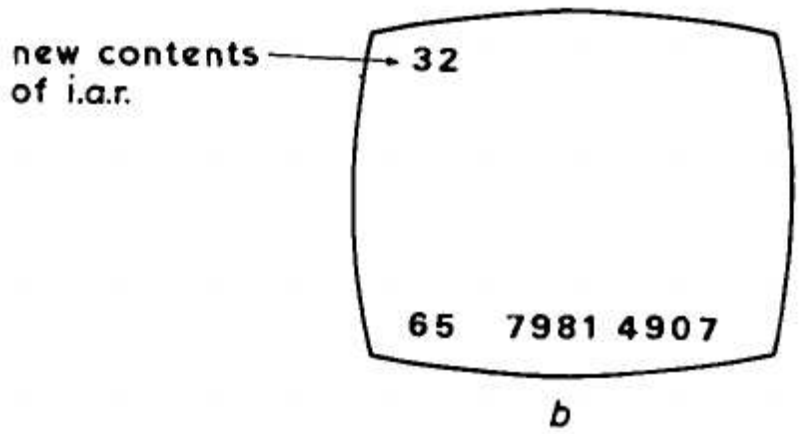


Sequence 2

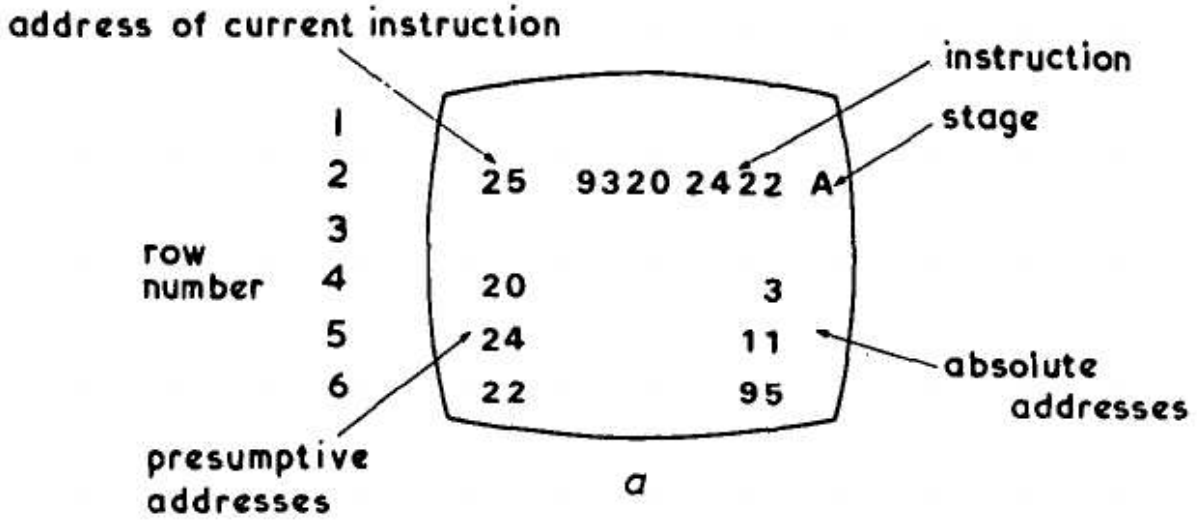
After keying in address of first instruction in program



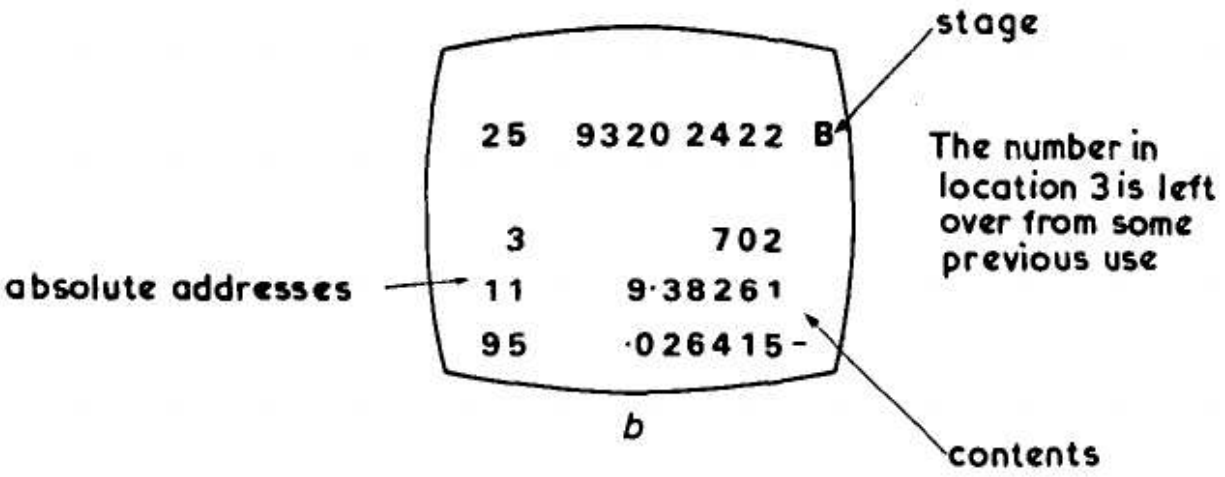
After touching LOAD IAR key



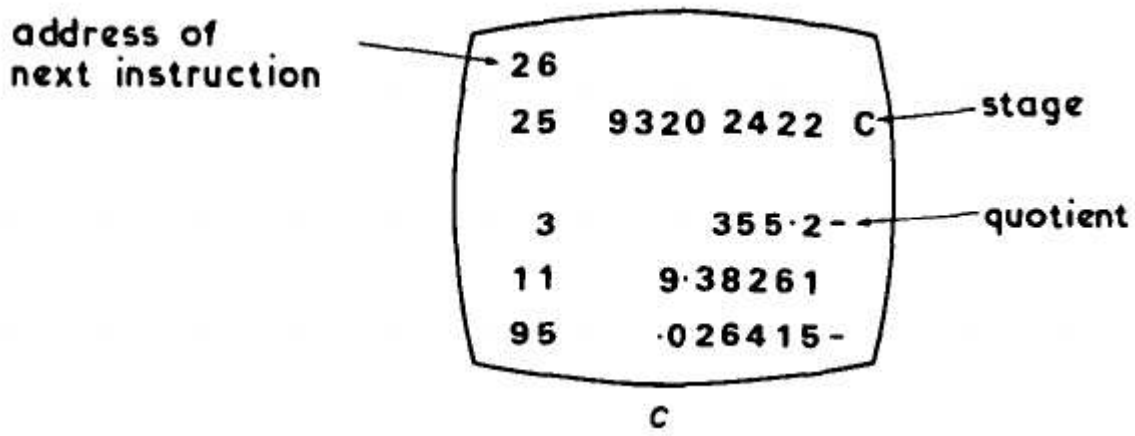
b



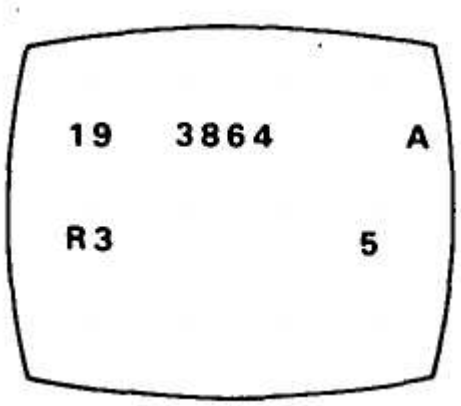
Stage A



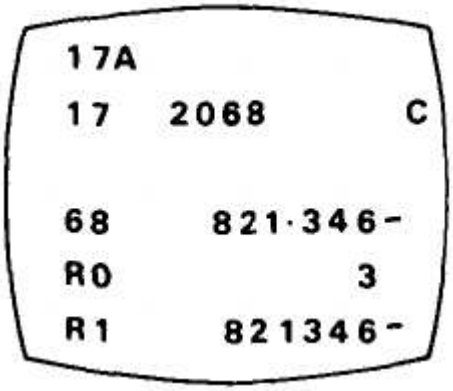
Stage B


address of
next instruction
26
25 9320 2422 C
stage
3 355·2-
quotient
11 9·38261
95 ·026415-
C

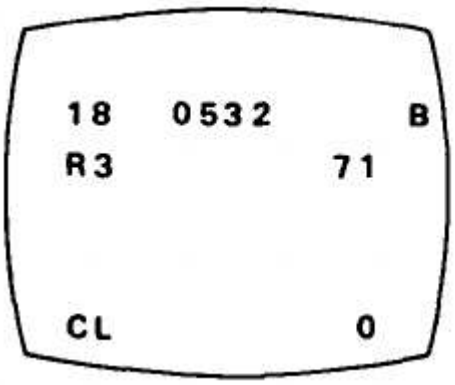
Stage C



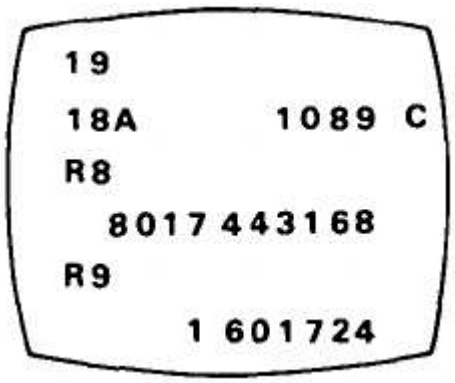
Single-address instruction with relative addressing



Single-address READ STORE instruction



TEST instruction



Adding contents of two double-length registers

From these screen layouts it appears that the top two lines of the display are in a fixed format, with the IAR, the address of the next instruction and the keyboard register contents displayed as the registers have values entered in them. There is also a display of the IAR flag that shows an ‘A’ when the instruction in the lower 4 digits is being referenced. The instruction processing stage (A,B, or C0 is also displayed.

The lower 4 lines, though, seem to be more free-form, with data displayed as instructions are processed. These lines will have data displayed as instructions are processed.

The character set is quite complete, the full ASCII set is available to the simulation, so that will be used. A small OLED display on the PCB is used to recreate the TV display, there is also a Usb CLI that has moire extensive displays, for instance the entire store can be displayed.

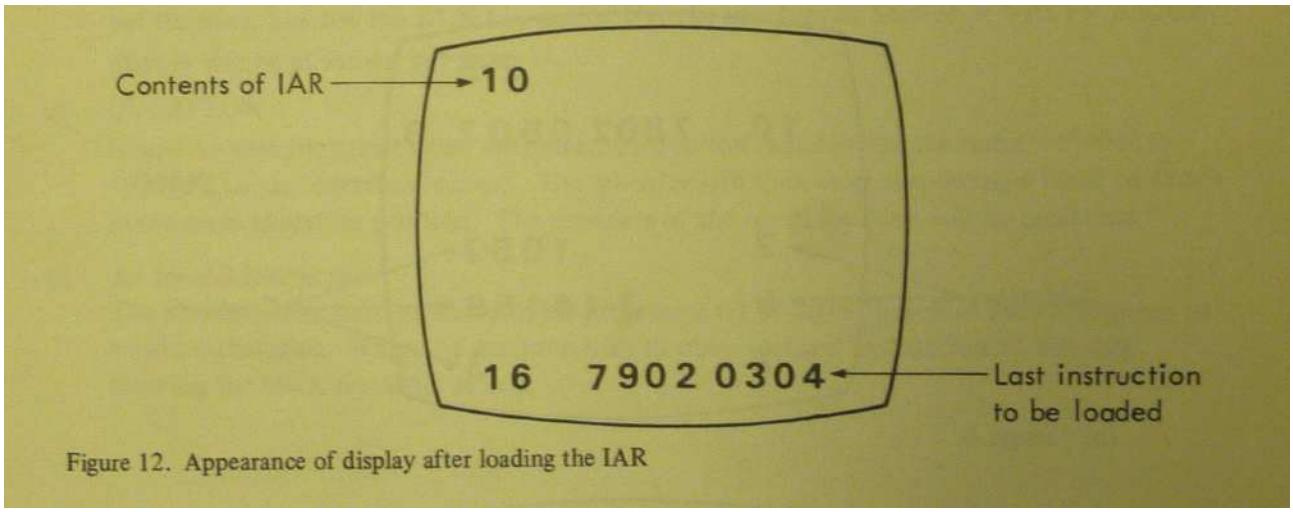
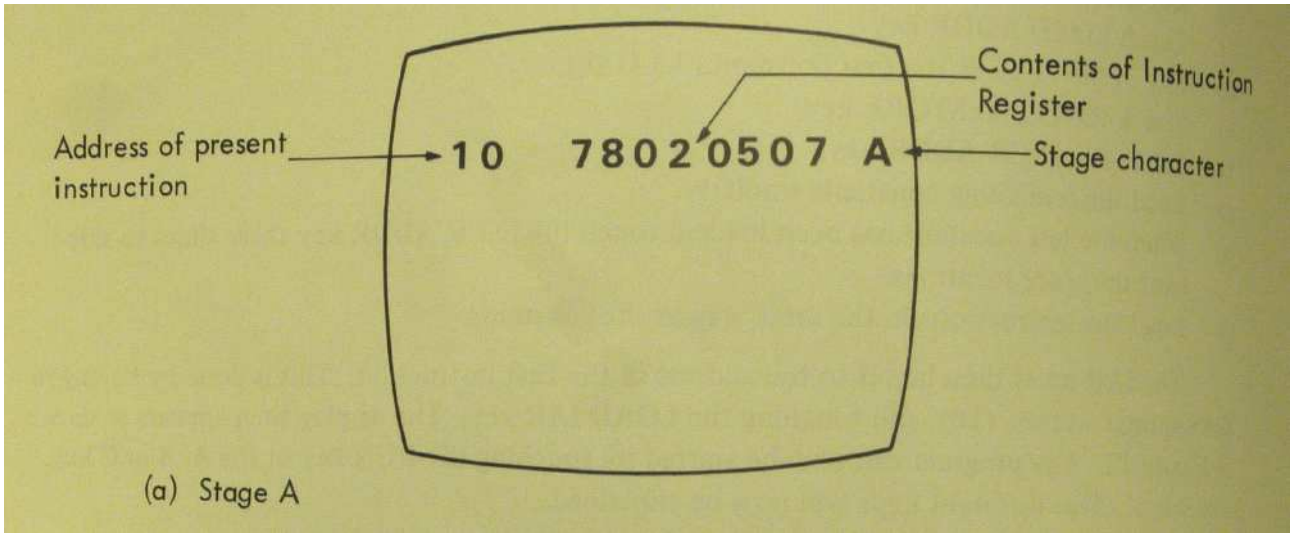
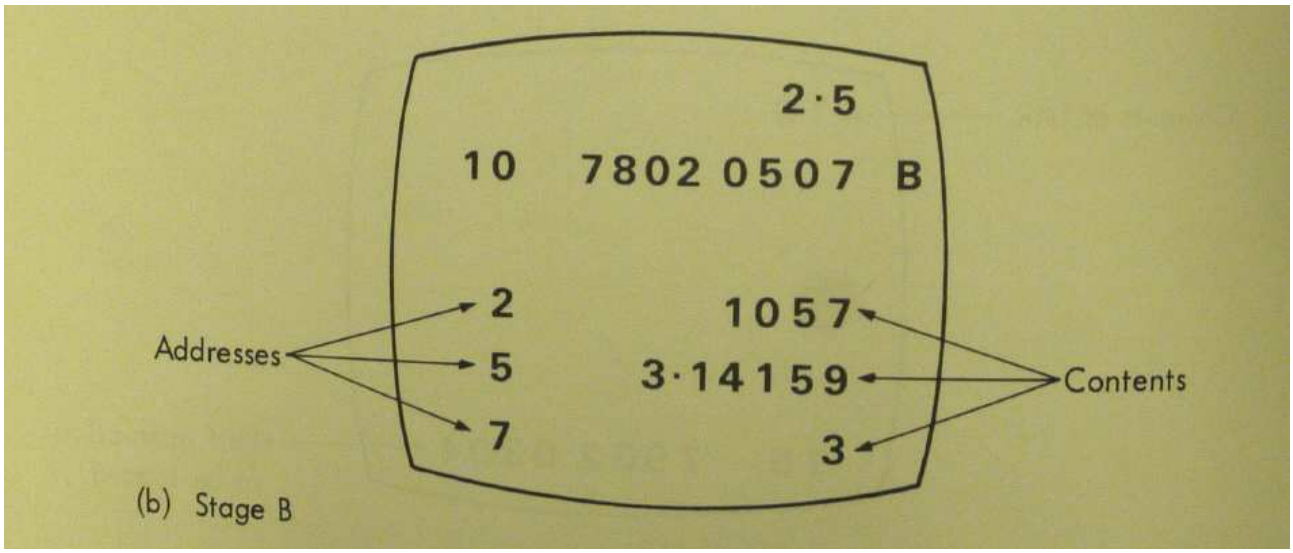
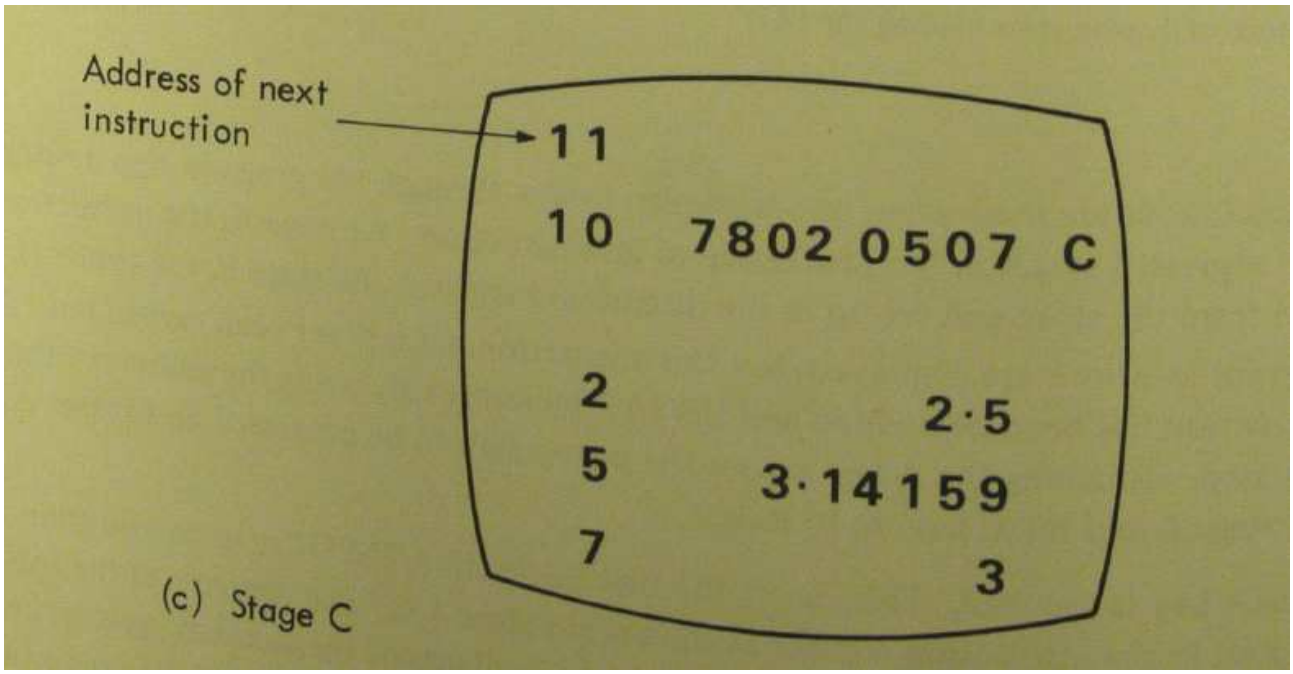
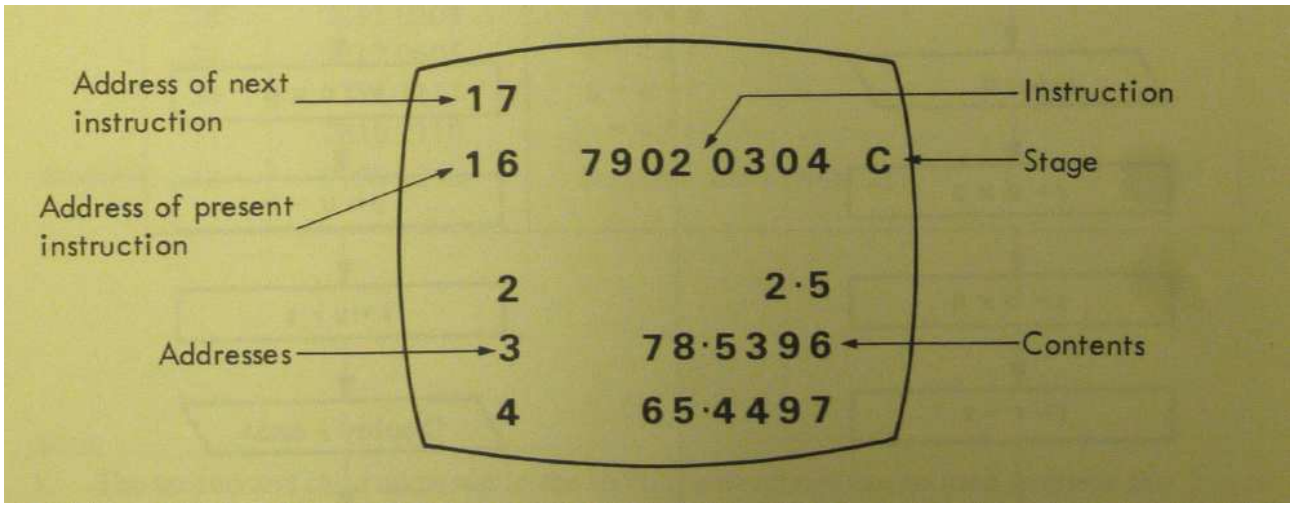


Figure 12. Appearance of display after loading the IAR




2·5
10 7802 0507 B
2
5
7
1057
3·14159
3
Addresses
Contents
(b) Stage B


Address of next instruction
11
10 7802 0507 C
2
5
7
2·5
3·14159
3
(c) Stage C



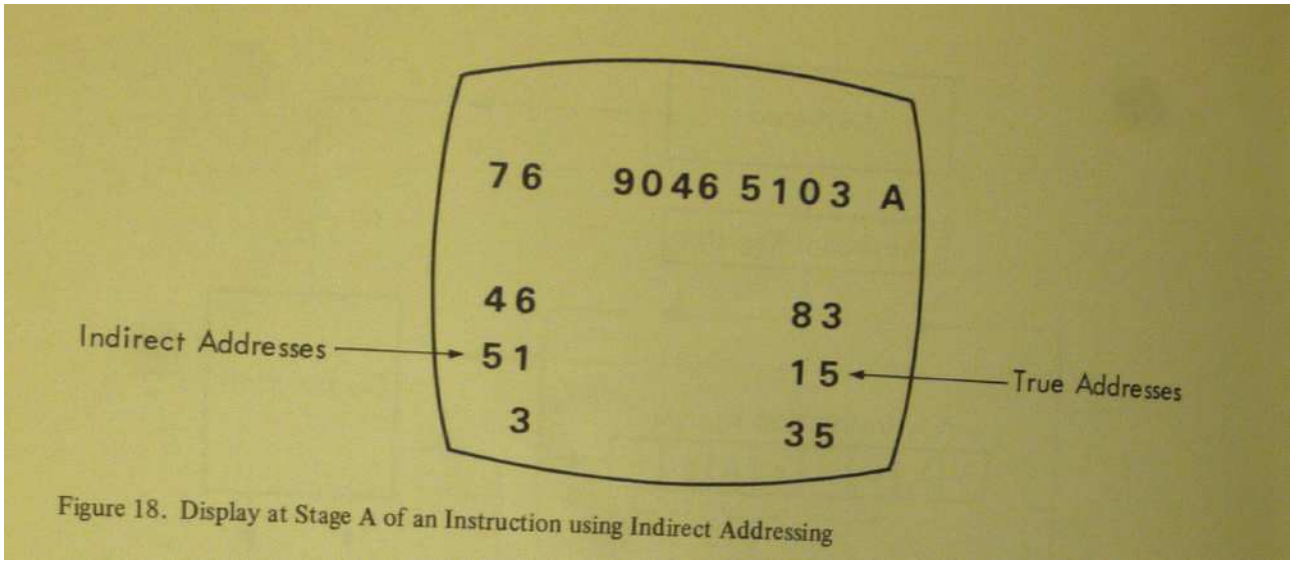


Figure 18. Display at Stage A of an Instruction using Indirect Addressing