

5.0 Modifications

There are two ways to modify UNATRON. The first, shown by examples in section 5.1, involves changing the data that UNATRON eats. The second, section 5.2, involves replacing the main loop with a different piece of code.

5.1 Data modification examples

1) \$221A is the location which controls the number of holemakers allowed in round 1. (See appendix B) It is normally set to 1. Changing the 1 byte value at \$221A changes the number of holemakers which will appear in round 1.

2) The address of the screen layout for round one can be found at \$2202. It will be found to be equal to \$2000. Placing the following four 16 bit words at \$2000 will cause the screen layout of round one to have only one horizontal and one vertical brick at the upper left at the screen.

```
$0000 ;screen address 0
$FFFF ;done with horizontals
$0000 ;screen address 0
$FFFF ;done with verticals
```

3) The shape # for the hole the holemaker writes when it hits something is 104. In the first round, the shape table is located at \$800. Adding the 104 + \$800 gives \$868, the address of the instructions for writing the hole. The instructions for writing an "e" are at \$1A1D. If the two byte value at \$868 is changed to \$1A1D an "e" will be written whenever the holemaker bounces into something.

4) The address of the start of the text string "Computer Hits" can be found at \$2463 (from listings). The address is \$1B5E. Copying the following bytes into memory starting at \$1B5E will cause the word "potato" to be printed instead of "Computer hits". Note the bytes are in decimal form this time.

```
186 ;"p"
184 ;"o"
198 ;"t"
16C ;"a"
198 ;"t"
184 ;"o"
C ;end of text
```

5.2 BIRD13X - Replacing the main loop.

Load UNATRON into your computer from tape as you normally do. Don't type EXEC this time (though it won't hurt if you do, just hit the reset button). Type CLOADM <cr> a second time. A short program called BIRD13X is loaded on top of and replacing the UNATRON main loop. You can type EXEC <cr> now.

BIRD13X uses the c-list, the same shapes, shape tables and subroutines as UNATRON. The mountains are from round 4, the birds are from round 9 (have you ever seen them before?) The object of the game is to jump off one of the mountains, onto a bird and fly all the way to the top of the screen. If you fall off and plunge too far you go splat and lose the game.

Like BIRD13X, the program in appendix C can be assembled and loaded ON TOP of UNATRON to make a completely different program. It loads 80 dots into the c-list and causes them to alternately cluster and disperse. The program watches the value in TMP3 to decide what the dots should do.