4.0 Data

The personality of UNATRON is largely traceable to the data ingested by the program.

4.1 Overlaid data

Round by round the game changes. This is accomplished not by counters or flags but by changing the first level of

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One byte equates:
G1L      Length of shot originating from gun #1.
G2L      Length of shot originating from gun #2.
GCH      Relative chance of computer guns firing.
MAXH     Max # of holemakers to appear on the
         screen this round.
MAXM     Max # of mines that can appear on screen
         this round.
MBEFH    Number of mines that must appear before
         a hole appears.
MINCH    Relative chance of a mine appearing.
MINSPH   The longest number of cycles a mine will
         wait before chasing player.
MINSPL   The shortest number of cycles a mine will
         wait before chasing player.
NUMN     Number of neutrons released when a mine
         is exploded.
Two byte equates:
AIM      Screen location where CURC is heading for,
         affinity based on ATRCT.
G1S      Screen loc of where gun #1 appears.
G1V      Vector for shot originating from gun #1.
G2S      Screen loc of where gun #2 appears.
G2V      Vector for shot originating from gun #2.
MANST    Screen loc of where player's character starts.
MSCR     Screen loc of where mines appear.
STBO     Addr of start of screen borders layout.
SETPTR   Addr of next set of overlaid data.
SHP1ST   Screen loc of where first atom starts
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Figure 4.1 Overlaid data equates

data driving the program.

There are parameters with values specific to a round which must be consulted repeatedly by UNATRON. Examples are; the screen locations for the computer's guns, the maximum number of mines allowed on the screen, etc. Because the values have to be looked up often, any savings in time in doing that is significant. A very fast method it to store all values in the 256 byte page of memory pointed to by the direct page register. Access to the parameters is direct, as opposed to extended, and hence takes less space and time.

The direct page register is set to page $24 in UNATRON. The first $29 bytes of that page is what is referred to as overlaid data. At the start of each round those $29 bytes are picked up from the memory location indicated by an equate called SETPTR and transferred to $2400 through $2428. The overlaid data controls what shape table will be used this round and where to find the data words to draw the screen among other things. Figure 4.1 is a list of these items and their descriptions. See also appendix B. At present $1F of the $29 bytes are being used.

In addition to the overlaid data, all temporary storage takes place in page $24 also.

4.2 Data tables

1) The addresses of shapes are in 7 seperate tables at $800, $900, $AC0, $B00, $C00, $D00 and $E00. One of these shape address tables is accessed each round. For argument, say the round we are in uses the table at $B00. The address for shape #2 can be found at $B02, the address for shape #4 at $B04, etc.

2) The shape instructions start at $1000 and extend up to $1A2C. There is some free space after that.

3) Screen border layouts start at $2C00 and extend to around $2200. The layout for screen #9 is tucked in at $F00. Border layouts consist of consecutive two byte screen addresses in two groups. The addresses where shape #108 is to be drawn come first, delimited by a negative address and then followed by addresses for shape #110.

4) Overlaid data. The information here controls the difficulty of each round, what screen layout to use, what shape table to access and where to find the next set of overlaid data for the next round. There are nine sets of data, one for each round. Each is $29 bytes long. Sets start at $2200 and are overlaid byte for byte starting at $2400. Overlaid EQUates are marked by an asterisk in the source. (See figure 4.1)

5) Text strings start at $1800 and extend to $1B9D