

Space invaders in 1K cause plenty of headaches to a conscientious laser base determined to survive.

Tim Bull's Cosmax aliens come in four different varieties depending on the player's score. When you score above 1,000 points you find yourself up against a second generation alien.

Another mutation takes place at 2,000 points. The fourth variety are at liberty to drop on you at any time and being "semi-invisible" they carry a bonus of 50 points.

You are rewarded for an early strike on the descending creatures as they are worth 100 points to you at the top of the screen but only five if you leave them to the last moment.

To destroy the creatures you move your laser base so that one of its two guns, mounted at either end, is directly below the centre of the alien. The "1" key moves the base left and the "3" key moves it right.

To fire press the "0" key. The guns fire invisible laser rays when key is pressed.

Only one life in this game though and the first alien to hit your base puts an end to your score. Tim has some ideas which will help games writers working with limited memory.

In lines 10-30 the "VAL" function is used to set up variables since it takes up less memory. Lines 50 to 80 determine which type of alien will come down the screen next. Note that the

middle character between the quote in line 60 is a reversed quote character.

Line 90 determines the initial height of the alien and line 120 tests whether the alien is above one of the two laser base's guns and whether the "fire" button is being pressed — if both conditions are fulfilled control jumps to line 250.

Lines 130 and 140 move the laser base. 150 and 160 move the alien and keep it on the screen. Line 180 tests whether the alien has hit your laser base and line 200 prints an explosion and your score.

The variables used are AS, alien type; H, horizontal position of alien; P, position of laser base; S, score; V, vertical position of alien.

COSMAX program listing

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5 RAND
10 LET K = VAL "2"
20 LET S = VAL "0"
30 LET P = VAL "8"
40 LET H = INT (RND*18)
50 LET AS = "<V>"
60 IF S>1E3 THEN LET AS =
  "███"
70 IF S>2E3 THEN LET AS =
  "████"
80 IF RND>.8 THEN LET AS =
  "..."
90 FOR V = INT(RND*15) TO 19
100 CLS
110 PRINT AT V, H-1; AS; AT
  20, P-K; "███"
120 IF ABS (P-H) = K AND
  INKEY$="0" THEN GOTO 250
130 IF INKEY$="1" THEN LET
  P = P-(P>K)
140 IF INKEY$="3" THEN LET
  P = P+(P<15)
150 LET H = H+INT(RND*3)-1
160 LET H = H+(H<K)-(H>16)
170 NEXT V
180 IF ABS (P-H)>3 THEN
  GOTO 40
190 CLS
200 PRINT AT 19, P-3; "X X X";
  AT 20, P-3; "XXXXX"; AT 7, K;
  "GAME OVER"; S
210 PAUSE 40000
220 POKE 16437, 255
230 RUN
250 PRINT AT V, H-K;
  ">X X<"
260 LET S = S+100-V*5+50*
  (CODE AS = 14)
270 GOTO 40

```

COSMAX RUNS ON A SINCLAIR ZX81 IN 1K.

COSMAX

BY TIM BULL

