

30
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FOR THE
SPECTRUM AND ZX-81

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Ivan Hissey

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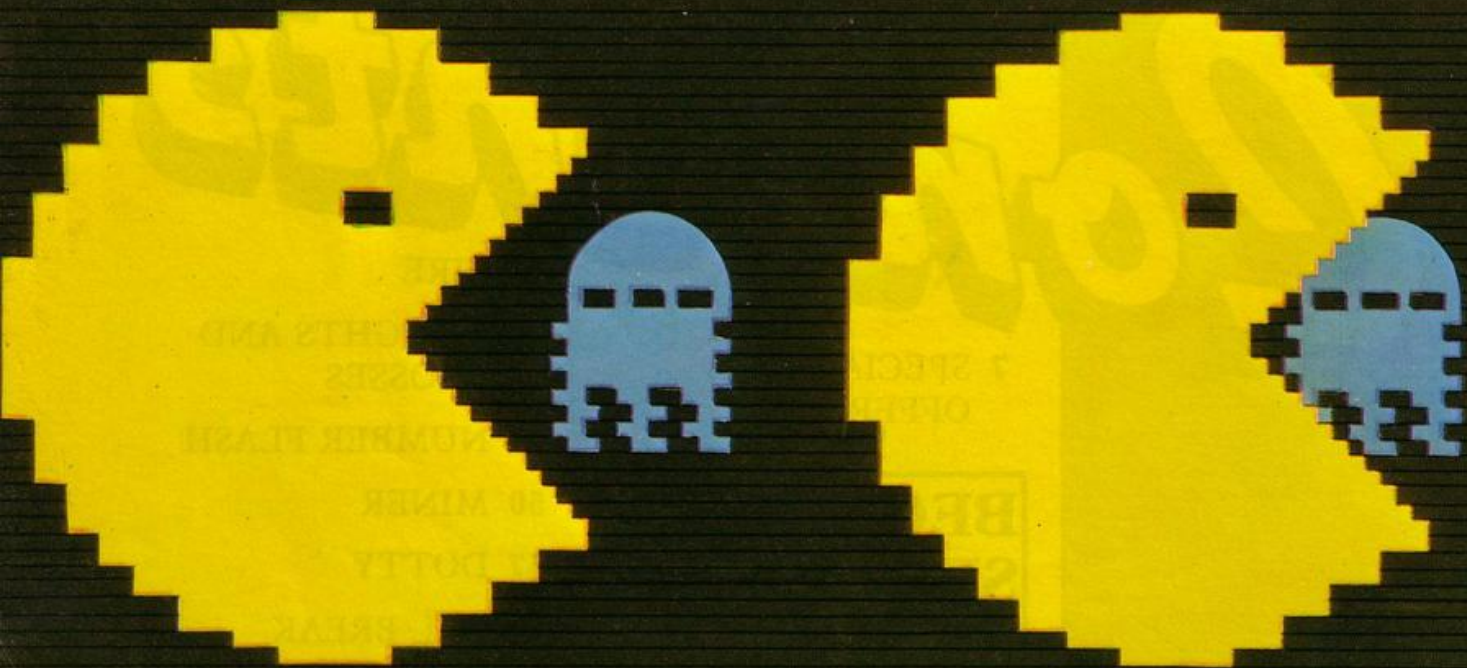
Instructions for graphics characters are printed in lower-case letters in our listings. They are enclosed by brackets and separated by colons to distinguish them and the brackets and colons should not be entered.

Inverse characters are represented by the letter "i" and graphics characters by "g". Thus an inverse W would be represented by "iw", a graphics W by "gw", and an inverse graphics W by "igw".

Spaces are represented by "sp" and inverse spaces by "isp". Whenever any character is to be used more than once, the number of times it is to be used is shown before it, together with a multiplication sign. Thus "6*isp" means six inverse spaces and "(g4:4*i4:g3)" would be entered as a graphic four, followed by an inverse four, repeated four times, followed by a graphics three.

Where whole words are to be written in inverse letters they appear in the listings as lower-case letters. Letters to be entered in graphics mode on the Spectrum are underlined.

Inverse characters may be entered on the ZX-81 by changing to graphics mode and then typing the appropriate characters and on the Spectrum by changing to inverse video and typing the appropriate letters. Graphics characters may be entered on the ZX-81 by changing to graphics mode and then pressing symbol shift while the appropriate characters are entered. On the Spectrum graphics characters may be obtained by changing to graphics mode and then pressing the appropriate character. User-defined graphics will appear as normal letters until the program has been RUN.



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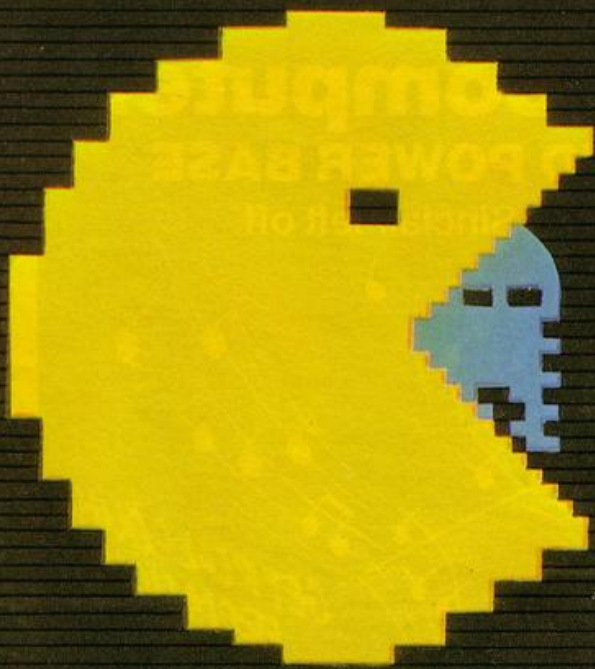
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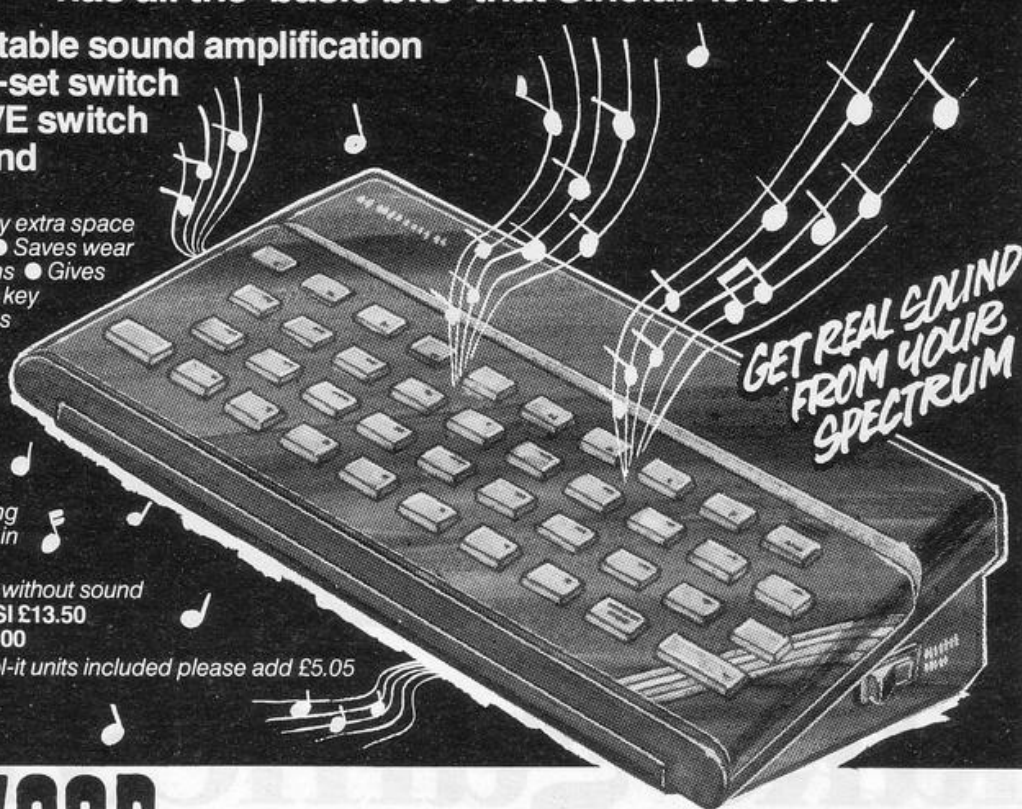
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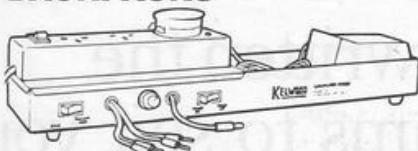
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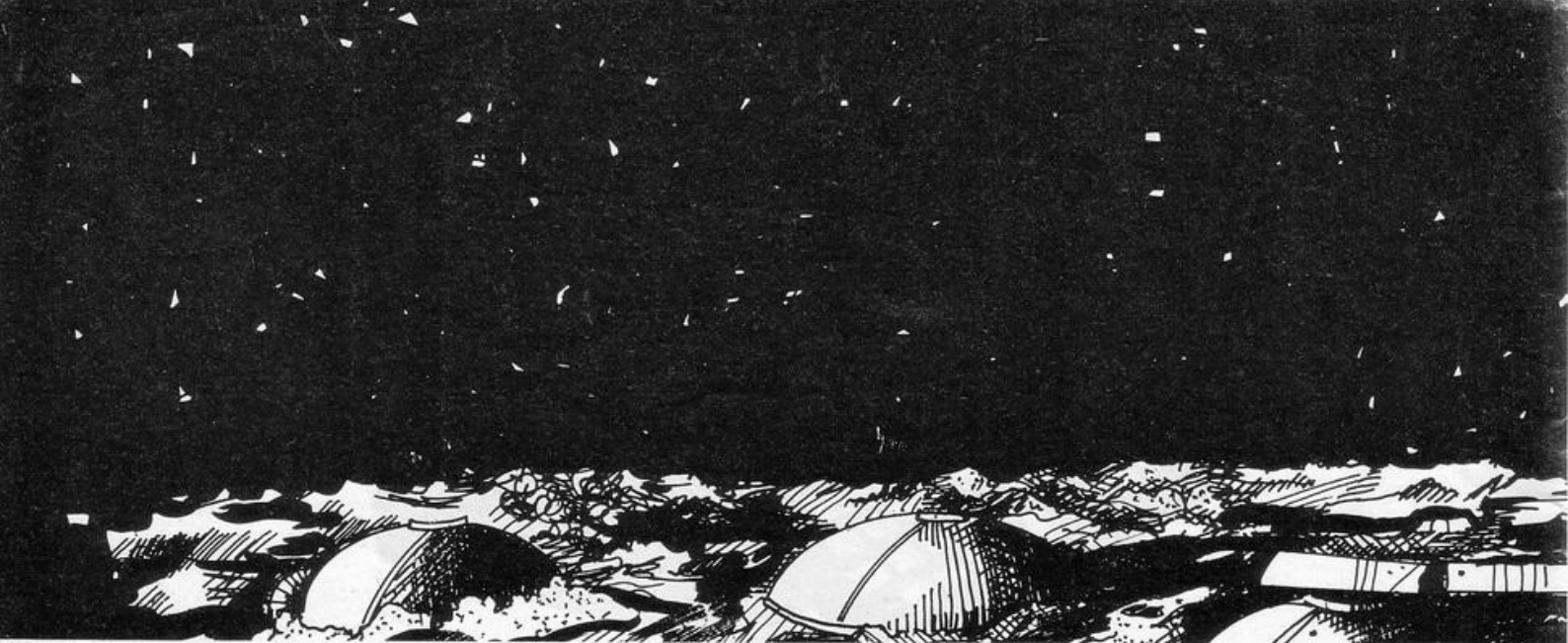
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MOON LA

```

5 LET high=0
8 GO SUB 9000
9 GO SUB 8000
10 BORDER 0: PAPER 0: INK 7: C
LS
12 LET l=1/100: LET fuel=20
15 LET lives=3: LET saved=0
20 LET a=1: LET b=15
21 LET pad=INT (RND*24+1): IF
pad<6 THEN GO TO 21
24 FOR n=1 TO 25
25 LET c=INT (RND*254): LET d=
INT (RND*120)+40
26 PLOT BRIGHT 1;c,d
28 NEXT n
30 FOR n=18 TO 21
31 PRINT INK 4; BRIGHT 1;AT n
,0;"(32*isp)"
32 NEXT n
33 PRINT INK 4; BRIGHT 1;AT 1
7,0;"(5*isp)";AT 16,0;"(3*isp)";
AT 15,0;"(2*isp)";AT 14,0;"(1sp)"
"
34 PRINT INK 4; BRIGHT 1;AT 1
7,20;"(4*isp)";AT 16,30;"(2*isp)"
"
35 PRINT INK 2; BRIGHT 1; PAP
ER 4; OVER 0;AT 10,pad;"(3*isp)"
36 FOR p=0 TO 2
37 LET f=INT (RND*14)+2: LET g
=INT (RND*29)+1
38 PRINT AT f,g: INK 3; BRIGHT
1;"g"
39 NEXT p: REM ***MAIN*LOOP***
40 PRINT AT a,b: INK 5;"a"
41 PRINT AT 0,0;"FUEL ";INT fu
el: IF fuel<=7 THEN PRINT AT 0,

```

```

0; FLASH 1;"FUEL ";INT fuel
42 PRINT AT 0,10;" LIVES ";l
ives;AT 0,20;" SAVED ";saved
43 BEEP 1,50
44 LET a=a+1: LET fuel=fuel-.2
5
45 PRINT AT a-1,b;" "
60 IF INKEY#="5" AND b>0 THEN
LET b=b-1: PRINT AT a,b+1;" "
80 IF INKEY#="8" AND b<31 THEN
LET b=b+1: PRINT AT a,b-1;" "
105 IF fuel<=0 THEN GO TO 1000
110 IF ATTR (a,b)=68 THEN GO T
O 1000
115 IF ATTR (a,b)=71 THEN GO T
O 1000
120 IF ATTR (a,b)=98 THEN GO T
O 2000
125 IF ATTR (a,b)=67 THEN LET
fuel=fuel+5: BEEP .5,25: BEEP .5
,30
130 GO TO 40
1000 PRINT AT a,b: PAPER 2; FLAS
H 1;"b"
1020 BEEP 1,-12: BEEP .6,-12: BE
EP .3,-12: BEEP .9,-12: BEEP .6,
-9: BEEP .3,-10: BEEP .57,-10: B
EEP .3,-12: BEEP .6,-12: BEEP .4
,-13: BEEP 1,-12
1030 LET lives=lives-1
1035 IF fuel<=0 THEN GO TO 1054
1045 IF lives<=0 THEN GO TO 105
4
1050 CLS : GO TO 20
1054 CLS
1055 IF saved>high THEN LET hig
h=saved

```




MOONLANDER

PASSENGER RESCUE was written for the 16K Spectrum by Steven Brown of Epsom, Surrey. Make a successful landing on the moon and pick up your passenger who awaits rescue. Hit the fuel pods when your supply runs low but avoid the hostile asteroids as they attempt to sabotage your mission.

```

1056 PRINT AT 18,6; PAPER 6; INVERSE 1; INK 2;"YOUR HIGH SCORE IS ";high
1057 PRINT AT 16,8; INK 4; INVERSE 1;"YOU SAVED ";saved;" MEN"
1500 PRINT PAPER 2; INK 7; FLASH 1; AT 10,11;"GAME OVER"; INPUT "Another game y/n ?";a$
1510 IF a$="y" THEN GO TO 9
1520 STOP
2005 PRINT AT a-1,b; INK 5;"a"
2006 FOR m=27 TO b+1 STEP -1
2007 PRINT AT 17,m+1;" "
2010 PRINT AT 17,m;"c"
2020 BEEP .1,30
2030 NEXT m
2035 PRINT AT 17,m+1;" "
2040 PRINT AT a-1,b; INK 5;"a"
2050 BEEP .4,6; BEEP .3,6; BEEP .8,8
2060 LET saved=saved+1
2065 CLS
2070 GO TO 20
8000 BORDER 1; PAPER 1; INK 5; CLS
8010 PRINT AT 0,10; INK 2; BRIGHT 1;"MOONLANDER"
8020 PRINT "'You are the Pilot of your job to rescue a team of explorers from an unknown Planet. Your fuel supply is rather low, but if you manage to hit a fuel pod you will gain extra fuel."
8030 PRINT "'You must dodge the stars and land on the red lan

```

```

ding Pad, otherwise it will s
pell instant"; FLASH 1;"
DEATH."
8040 PRINT INK 4; INVERSE 1;"'
CONTROLS ARE:"
8050 PRINT "500 - Left + Right"
8070 PRINT INK 2; INVERSE 1; PAPER 6;"PRESS ANY KEY TO PLAY"
8080 PAUSE 0
8090 CLS
8510 INPUT "ENTER SKILL LEVEL 1 to 9 EASIEST";l
8515 IF l<0 OR l>9 THEN GO TO 8510
8520 RETURN
9000 FOR n=0 TO 7
9010 READ a: POKE USR "a"+n,a
9020 NEXT n
9030 DATA 60,255,60,0,126,255,219,195
9040 FOR n=0 TO 7
9050 READ a: POKE USR "b"+n,a
9060 NEXT n
9070 DATA 137,73,44,231,24,44,74,137
9080 FOR n=0 TO 7
9090 READ a: POKE USR "c"+n,a
9100 NEXT n
9110 DATA 14,14,4,30,5,12,19,17
9120 FOR n=0 TO 7
9130 READ a: POKE USR "d"+n,a
9140 NEXT n
9150 DATA 24,60,126,255,255,126,60,24
9500 RETURN

```


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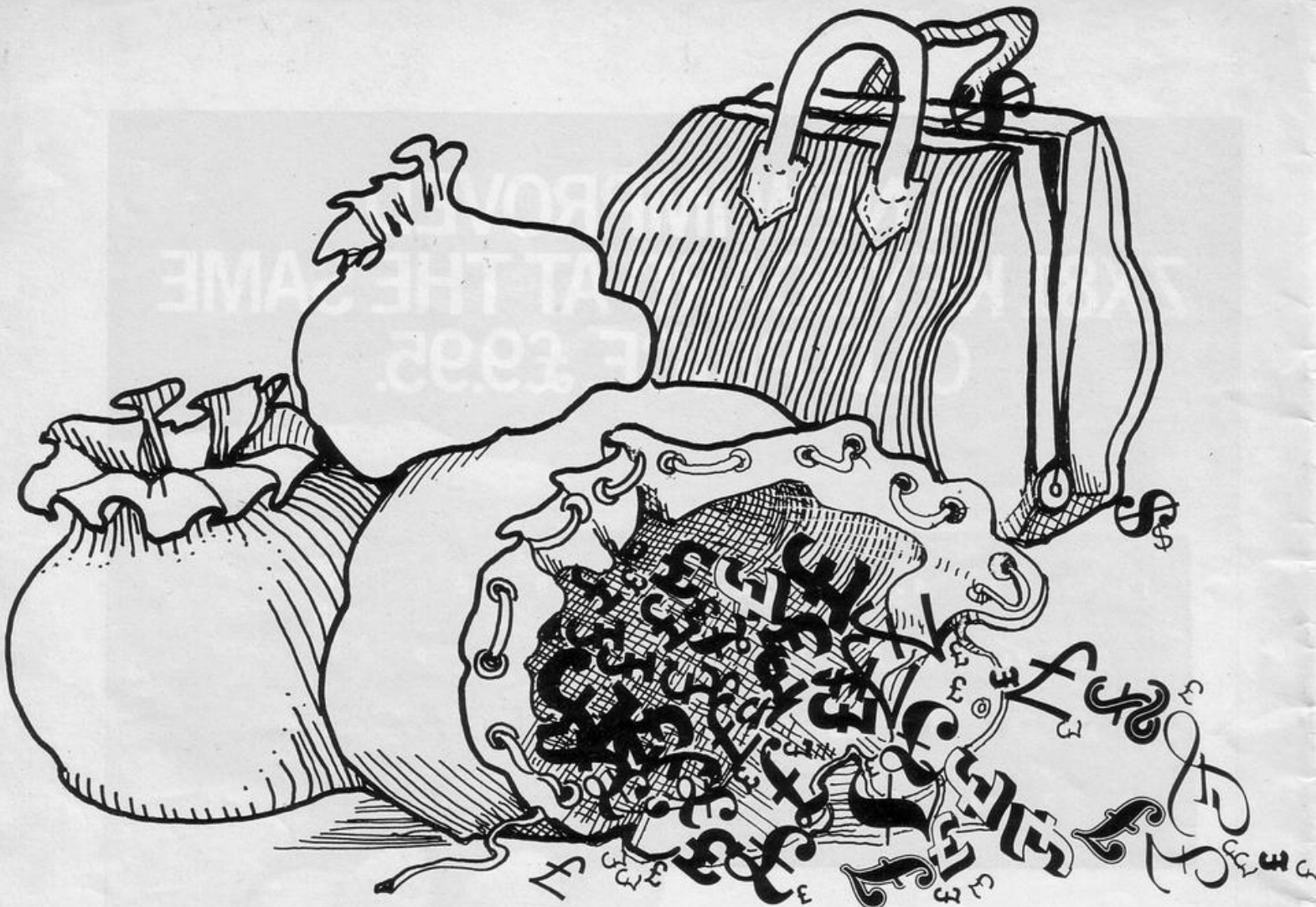
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MONEY BAGS

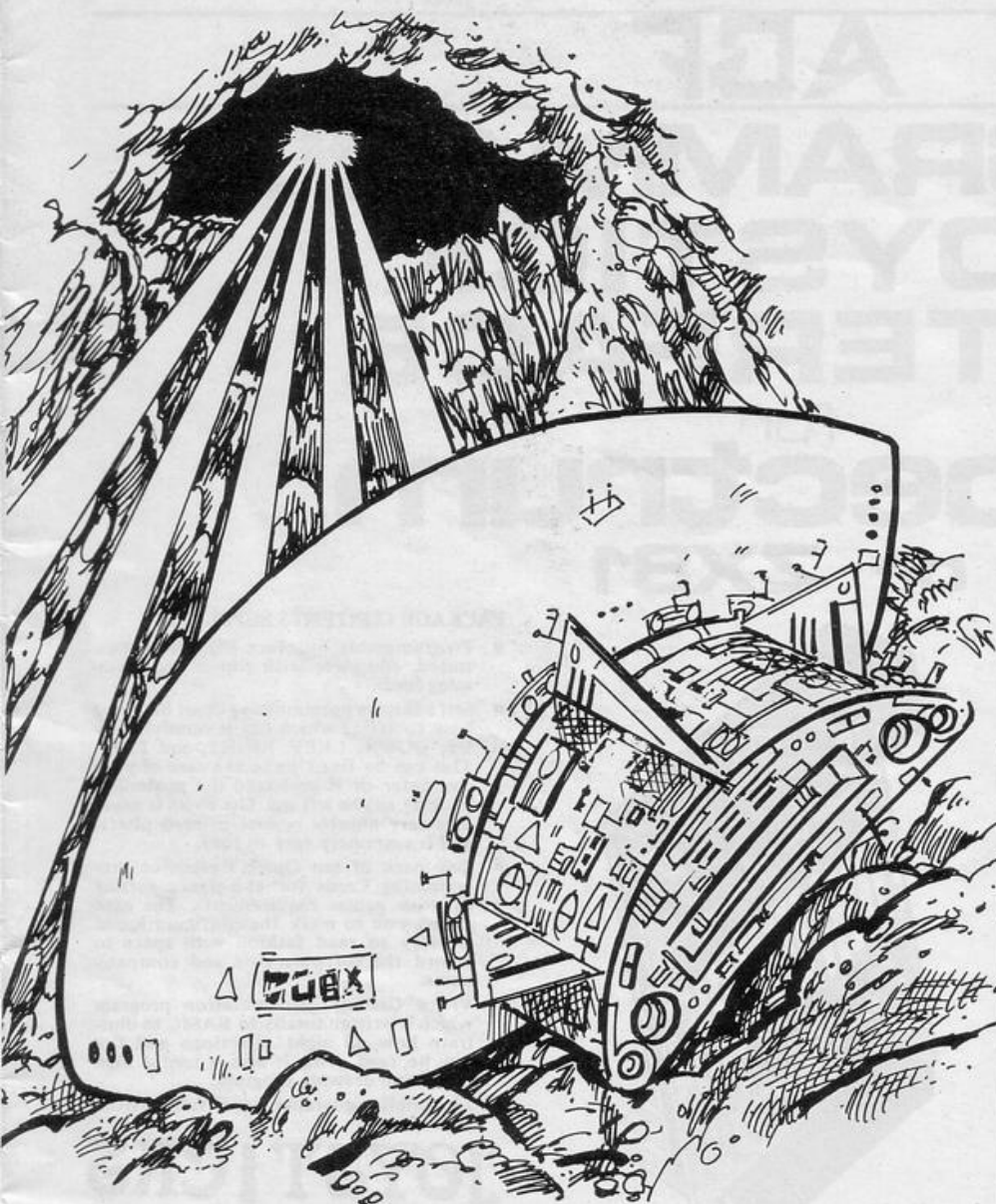
MONEY BAGS was written by R Smith of Scunthorpe, South Humberside. Race from your starting position to the "H", jumping the barrels using "K" and jumping for the money bags to collect extra points. Use "M" to go straight ahead, and "Z" to go backwards. You score in pounds and gain an extra life on accumulating £1,500.

Money Bags is for the 16K Spectrum.

```

1 PAPER 0: INK 4: BORDER 0: C
LS
2 GO SUB 120
3 LET hi=3500: LET h#="SPECTR
UM"
4 POKE 23658,0: LET l=0: LET
a#="": LET t=0
5 LET a=1+INT (RND*28): LET y
=19: LET x=0
6 CLS
7 IF t>100 THEN PRINT AT 2,
31,"b"
10 PLOT 0,15: DRAW 255,0
20 PLOT 0,87: DRAW 255,0
30 PLOT 0,135: DRAW 255,0
40 FOR n=11 TO 19: PRINT AT n,
a: INK 2:"c": NEXT n
50 FOR n=5 TO 10: PRINT AT n,(
a/a+10): INK 2:"c": NEXT n
55 PRINT INK 6:AT 3,(a/a+15):
"bb"
60 GO SUB 250
70 PRINT AT 3,31,"H"
80 IF RND>.3 THEN GO SUB 200
90 PRINT AT 0,0:"Money=£":t:
Lives="":l:"Hi score=£":hi:" By
":h#
100 PRINT AT 18,a-1:"":AT 19
,a:"":AT 9,(a/a+9):":AT 10
,(a/a+10):": INK 2:AT 18,a:"c
":TAB a:"c":AT 9,(a/a+10):"c":TA
B-(a/a+10):"c": GO TO 60
110 PRINT AT y,x+1,"b": LET t=t
+100: BEEP .01,0: BEEP .01,2: BE
EP .01,4: GO TO 5
120 FOR n=USR "a" TO USR "c"+7
130 READ a: POKE n,a: NEXT n
140 DATA 56,56,56,16,124,16,40,
108,126,60,102,219,143,223,195,1
26,129,255,129,129,129,255,129,1
29
150 RETURN
200 LET b=y: FOR n=30 TO 1 STEP
-1: PRINT AT b,n:"0": GO SUB
250: NEXT n
210 RETURN
250 IF INKEY#="k" THEN LET y=y
-1: LET a#="k": PRINT AT y+1,x:"
"
251 IF SCREEN#(y,x+2)="0" THEN
LET l=l-1: BEEP .5,50
252 IF t=1500 THEN LET l=l+1
253 IF ATTR (y-1,x+1)=2 THEN L
ET y=y-3: GO TO 253
254 IF ATTR (y,x+2)=6 THEN LET
t=t+50: BEEP .1,0
255 IF SCREEN#(y-1,x+2)="H" TH
EN GO TO 110
256 IF l<=0 THEN GO TO 300
260 PRINT AT y,x:"a":AT y-1,x
-1:""
270 IF a#="k" THEN LET x=x+1:
LET y=y+1: LET a#=" "
280 LET x=x+(INKEY#="m" AND x<2
9)-(INKEY#="z" AND x>1)
290 RETURN
300 CLS: POKE 23658,8
310 IF t>hi THEN LET hi=t: PRI
NT AT 10,5: FLASH 1:"YOU HAVE TH
E HIGH":AT 11,5: INVERSE 1:"SC0
RE! PLEASE ENTER YOUR NAME AFTER
THE TONE.": PAUSE 100: BEEP 1,-1
0: INPUT h#
320 CLS: PRINT AT 6,6:"Your sc
ore=£":t:"TAB 0:"High score=£":h
i:"TAB 10:"By ": FLASH 1:h#
330 INPUT "":"Another go (Y/N)
":b#:" IF b#="Y" THEN GO TO 4
340 IF b#<>"N" THEN GO TO 330
360 STOP

```

CAVE CONFLICT

YOUR SPACESHIP is trapped in a cave and your life is threatened by the approaching invaders. Fire at the enemy and prevent them passing you. Failure to do so will result in the loss of a life, of which you have three. A bonus ship is gained at 1,000 points and again at 5,000 points. Sunlight enters the cave as you gain each bonus ship and diminishes the visibility in the cave.

Cave Conflict was written for the 16K Spectrum by Rhodri Jones of Anglesey, Gwynedd.

```

420 IF a$="6" AND x<15 THEN LE
T x=x+1
435 LET u=135
440 IF a$="0" THEN PRINT AT x,
y;"....."
442 PRINT AT x,y;"
"
445 IF e=x AND a$="0" THEN GO
TO 5000
460 IF p<=0 THEN GO TO 6000
470 PRINT AT e,p; INK 4;"b"; BE
EP 0.001,20; PRINT AT e,p;" "
480 NEXT p
490 GO TO 391
5000 FOR a=0 TO 5; FOR n=0 TO 30
STEP 30; BEEP .01,n; NEXT n; NE
XT a
5010 LET score=score+20
5011 PRINT AT 0,9;score
5012 IF score=1000 THEN GO TO 5
050
5014 IF score=5000 THEN GO TO 5
100
5020 GO TO 391
5050 PRINT AT 11,4;"BONUS!!!EXTR
A SHIP"
5060 LET lives=lives+1
5065 FOR b=0 TO 100; NEXT b
5070 PAPER 6; CLS; BORDER 6; IN
K 2
5080 PRINT £0;" CAVE CO
NFLICT
"
5090 GO TO 101
5100 PRINT AT 11,4;"BONUS!!!EXTR
A SHIP"
5110 FOR c=0 TO 100; NEXT c
5120 LET lives=lives+1
5130 PAPER 5; CLS; BORDER 5
5140 PRINT#0;" CAVE C
ONFLICT
"
5150 GO TO 101
6000 BEEP 1,1; BEEP 1,-20
6003 LET lives=lives-1
6005 PRINT AT 0,23;lives
6010 IF lives=0 THEN GO TO 6050
6020 GO TO 319
6050 PRINT AT 10,5;"Game Over (h
a ha)"
6055 FOR g=0 TO 200; NEXT g
6060 GO TO 10
7000 FOR a=USR "a" TO USR "b"+2
7010 READ user; PUKE a,user
7020 NEXT a
7030 DATA 192,224,252,255,252,22
4,192
7040 DATA 36,126,219,255,90,102,
0
7050 RETURN

```

```

3 GO SUB 7000
10 LET score=0
12 LET lives=3
20 BORDER 0; PAPER 0; CLS; IN
K 3
40 INK 4; PRINT AT 4,0;"Your s
paceship is stuck in a narrow
cavern. Invaders attack you. D
on't let any pass or you will l
ose a life"
50 INK 3; PRINT AT 9,0;"Missio
n controls are:"; AT 11,4;"7 UP";
AT 12,4;"6 DOWN"; AT 13,4;"0 FIRE
"
60 INK 4; PRINT AT 14,0;"You c
an lose a life by..." AT 15,2;"
Letting an invader pass OR"; AT 1
6,2;"Being hit by an invader"
70 INK 3; PRINT AT 18,0;"20 pt
s PER INVADER. U GOT 3 LIVES"; AT
19,2;"BONUS SHIP AT 1000+5000 pt
s"; AT 21,7; INVERSE 1;"PRESS 'EN
TER' KEY"; INVERSE 0
75 INPUT b$
78 CLS
80 PRINT AT 10,6;"PRESS ANOTHE
R ENTER"
90 INPUT b$
95 CLS

```

```

100 INK 7
101 PRINT AT 0,3;"SCORE "; AT 0,
17;"LIVES "; lives
105 LET w=255; LET r=165
110 DRAW w,0; PLOT 0,20; DRAW w
,0
120 PLOT 0,40; DRAW w,0; PLOT 0
,165
130 DRAW w,0; PLOT 0,145; DRAW
w,0
140 PLOT 0,125; DRAW w,0
150 PLOT 0,0; DRAW 127,40
160 PLOT 90,0; DRAW 37,40
170 PLOT r,0; DRAW -30,40
180 PLOT w,0; DRAW -120,40
190 PLOT 0,r; DRAW 127,-40
200 PLOT 90,r; DRAW 37,-40; PLO
T r,r; DRAW -30,-40
210 PLOT w,r; DRAW -120,-40
300 LET x=10; LET y=1
394 LET e=INT (RND*7)+7
396 FOR p=INT (RND*20)+10 TO 0
STEP -1
400 PRINT AT x,y;"a"; BEEP .000
1,0; PRINT AT x,y;" "
405 LET a$=INKEY$
410 IF a$="7" AND x>7 THEN LET
x=x-1

```


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or **ZX81**

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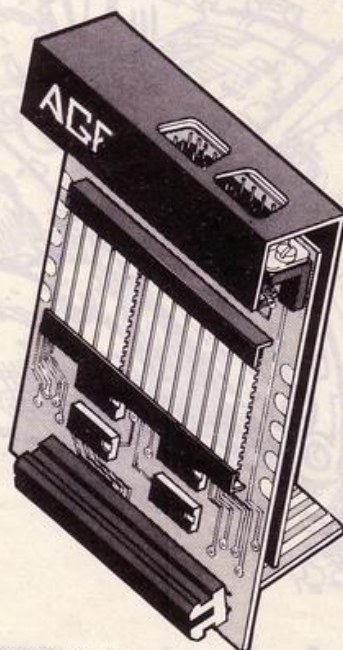
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- ★ Rear extension connector for all other add-ons.
- ★ Free demo program and instructions.

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AS DOCTOR WHO you must use keys 5 and 8 to steer the tardis on to the landing pad of the planet you are approaching. Avoid the stars and planets which appear or their gravitational field will send you crashing downwards. If you land safely you will gain 30 extra points and move to the next sheet.

Tardis Lander was written for the 1K ZX-81 by Terry Bishop of Leyton, London.

```

1 LET S=VAL "-30"
2 LET S=S+VAL "30"
3 LET Y=INT (RND*10)
4 CLS
5 PRINT AT 15,0;"(11*9a)"
6 PRINT AT 14,RND*Y;"(1SP)"
7 FOR X=0 TO VAL "15"
8 PRINT AT RND*10,RND*Y;"(91)"
9 AT RND*10,RND*Y;CHR$ 23
10 PRINT AT X,Y
20 LET C=PEEK (PEEK 16398+VAL
"256"*PEEK 16399)
30 IF C=23 OR C=1 OR C=0 THEN
GOTO 200
40 IF C=VAL "120" THEN GOTO 2
50 PRINT "(1)"
55 LET Y=Y+(INKEY$="8" AND Y<1
0)-(INKEY$="5" AND Y>0)
60 LET S=S+VAL "2"
70 NEXT X
80 GOTO 4
200 FOR T=X TO VAL "15"
200 FOR T=X TO VAL "15"
210 PRINT AT T,Y;"(1)" AT T,Y;
"A"
220 NEXT T
230 PRINT AT T-1,Y;"(1)"
240 PRINT "(15:10:10:10:10:95)"
JS

```

TARDIS LANDER



FOXHUNT



USING the cunning of a fox you have to weave in and out of the descending pack of hounds. As you negotiate one pack, you are met by another pack.

The highest score appears at the end of each game, along with the name of the scorer. Use cursor key 5 to move left and 8 to move right. Beware, you have only one life.

Foxhunt was written for the 1K ZX-81 by Adam Evans of East Dereham, Norfolk.

```

2 LET M=0
3 LET N=20
4 LET Z=10
5 CLS
6 LET T=20-A
7 LET X=INT (RND*9)+1
10 FOR N=1 TO A
15 PRINT AT A,Z-1;"(SP:11:SP)"
20 PRINT AT N,0;"(11*1SP)" AT
N-1,0;" AT N,X;" "
50 LET Z=Z+(INKEY$="8" AND Z<1
1)-(INKEY$="5")
60 NEXT N
70 IF Z<X THEN GOTO 500
95 LET A=A-1
100 GOTO 6
500 PRINT "SPLAT"
502 PAUSE 50
505 CLS
507 IF T>M THEN PRINT "NAME?"
508 IF T>M THEN INPUT U$
509 IF T>M THEN LET M=T
510 PRINT "SCORE=";T;" HIGH SC
ORE HELD BY ";U$;" WITH ";M;" PO
INTS"
520 INPUT C$
530 GOTO 3

```


WALKIES



IN RESPONSE to our request for animation programs, Patricia Richardson of Maidstone, Kent submitted this short program, **Walkies**. A man is seen to throw a ball which is retrieved by a dog. The process is repeated with a GOTO instruction in the program. The flight of the ball has been plotted with half a SIN curve.

We would still like to see more animation programs. (16K Spectrum).

BEGINNER

```
10 GO SUB 300
40 PRINT AT 20,0;"a"
50 PRINT AT 21,0;"ch"
60 PAUSE 5: PRINT AT 20,0;"b"
70 PAUSE 5: PRINT AT 20,0;"a"
99 REM ££ PLOT BALL TRAJECTORY
££
100 FOR n=0 TO 255 STEP 4
120 PLOT n,40*SIN (n/255*PI)
130 PLOT INVERSE 1;n,40*SIN (n/255*PI)
140 NEXT n
150 PLOT 255,0
```

```
199 REM ££ BALL CHASE ££
200 FOR b=1 TO 30
210 PRINT AT 21,b;" d": PAUSE 4
PRINT AT 21,b;" f": PAUSE 4
220 NEXT b
230 FOR b=29 TO 1 STEP -1
240 PRINT AT 21,b;" e": PAUSE
4: PRINT AT 21,b;" g": PAUSE 4
250 NEXT b
260 PRINT AT 21,1;"1": PAUSE 3
0
270 GO TO 50
299 REM ££ GRAPHICS ££
```

```
300 FOR m=0 TO 8: FOR n=0 TO 7:
READ a: POKE USR CHR# (144+n)+n
,a: NEXT n: NEXT m
305 DATA 96,112,96,64,96,96,112
,110,96,114,100,72,112,96,96,96,
96,96,96,80,72,72,72,100
310 DATA 0,0,4,131,63,60,66,129
,0,0,32,193,254,62,66,129
315 DATA 0,0,4,131,63,60,60,40,
0,0,32,193,254,62,34,20
320 DATA 0,0,5,3,31,28,28,52,0,
0,160,192,248,56,56,44
330 RETURN
```

TEMPERATURE CONVERTER

BEGINNER

TEMPERATURE CONVERTER was written for the 16K Spectrum by Carl Inwood, aged 13, of Sheffield, Walsall. It is a very accurate and useful program and allows you to convert Centigrade to Fahrenheit and vice versa.

```
5 INK 7: BORDER 1: PAPER 1: C
LS
20 PRINT AT 0,10; FLASH 1;"CON
VERTER"
25 PRINT AT 2,3;"Choose from e
ither:-"
30 PRINT "a)Centigrade to Fah
renheit"
40 PRINT "-----"
50 PRINT "b)Fahrenheit to Cen
tigrade"
60 PRINT "-----"
65 PRINT "Input a) or b)"
70 INPUT x#
80 IF x#="a" THEN GO TO 100
83 IF x#="b" THEN GO TO 300
85 IF x#<>" " THEN GO TO 70
100 CLS
105 PRINT AT 0,7;"Input Centigr
ade"
```

```
106 INPUT x
107 CLS
109 PRINT AT 1,3;x;" Centigrade
="
110 LET y=(x*1.8)+32
111 PRINT AT 1,23;x;"F"
115 PAUSE 200
116 CLS
120 GO TO 10
300 CLS
310 PRINT AT 0,7;"Input Fahrenh
eit"
320 INPUT y
330 CLS
340 PRINT AT 1,3;y;" Farenhight
="
350 LET y=(y-32)/1.8
360 PRINT AT 1,23;y;"C"
370 PAUSE 200
380 CLS
390 GO TO 10
```

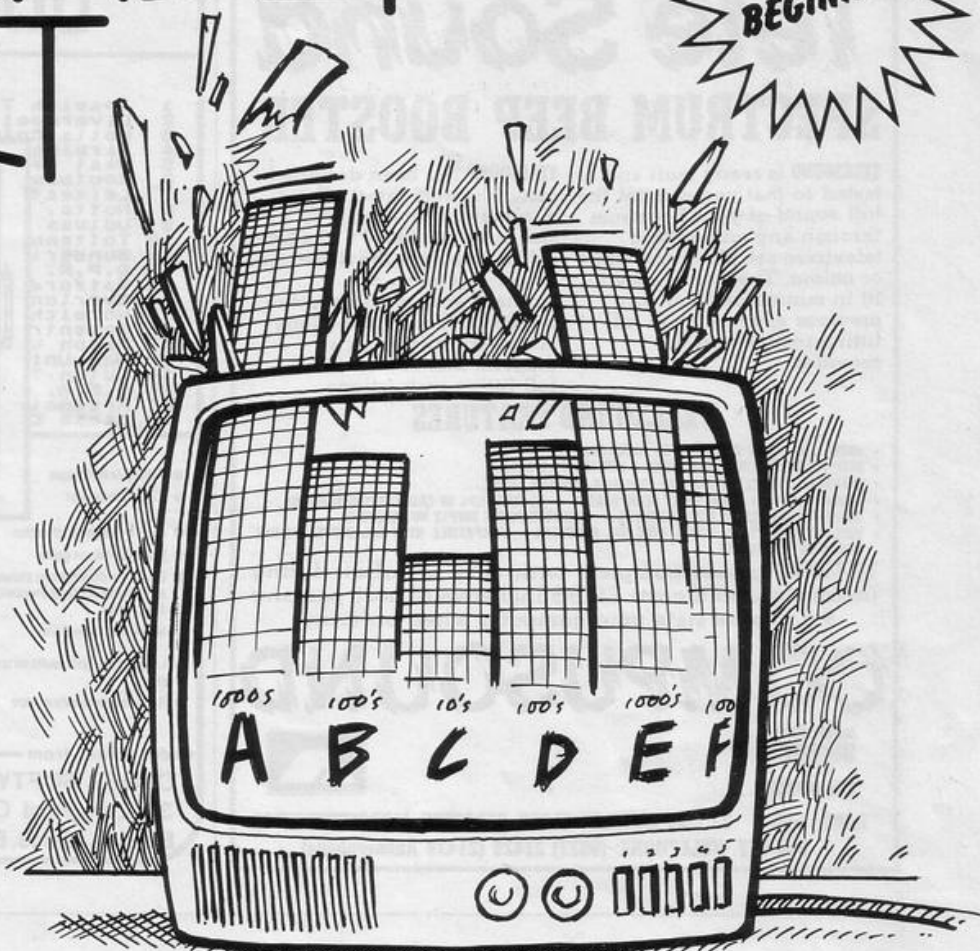


ALPHABET CHART

BEGINNER

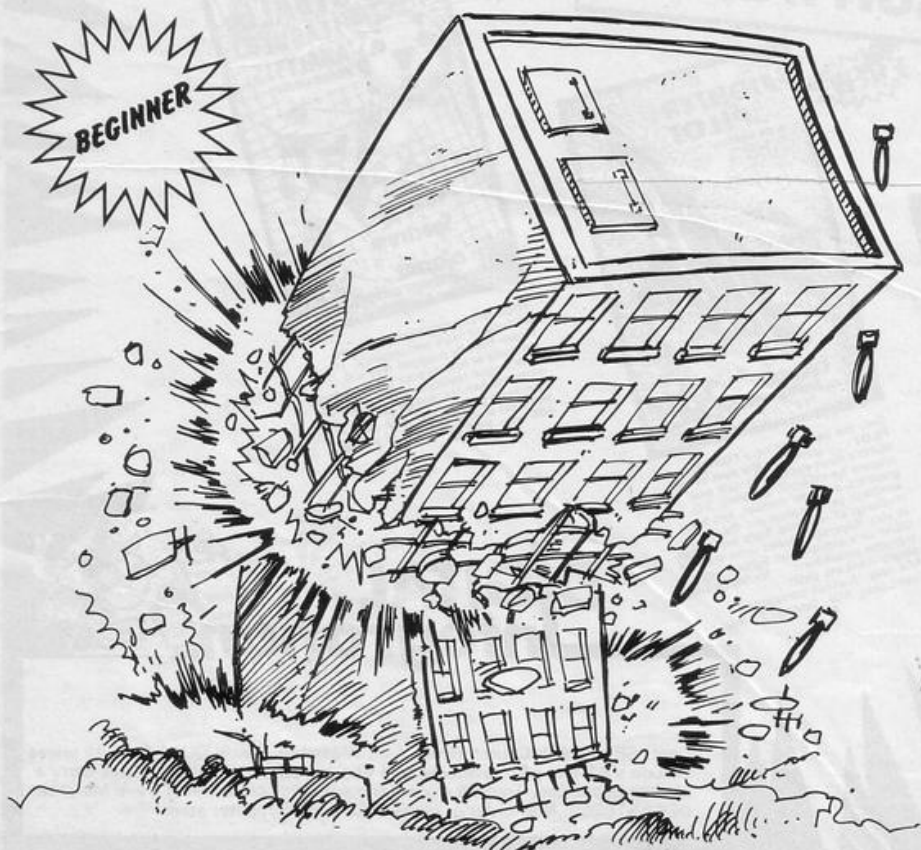
PHILIP TAYLOR of Rowlands Castle, Hampshire submitted a simple program for the 1K ZX-81. **Alphabet Chart** could be useful to people interested in language study or code-breaking. Input a piece of text with no punctuation or numbers and the computer will draw a bar chart.

```
1 FAST
2 INPUT A$
3 SLOW
20 PRINT AT 21,3;"ABCDEFGHIJKL
MNOPQRSTUVWXYZ"
30 FOR J=1 TO LEN A$
40 LET A=CODE A$(J)-35
45 FOR Z=VAL "20" TO VAL "0" S
TEP -1
50 IF CODE A$(J)<38 OR CODE A$
(J)>63 THEN NEXT J
60 PRINT VAL Z,A;" ";
70 IF PEEK (PEEK 16398+256*PEE
K 16399)=128 THEN NEXT Z
80 PRINT AT Z,A;"(1SP)"
90 NEXT J
```



TOWER OF DESTRUCTION

BEGINNER



YOU ARE the pilot of an aircraft and have to fly across a randomly-generated city, bombing the tower blocks as you pass over. You can drop only two bombs each time you pass over the city and must wait for the return journey to fire again.

Use key "Z" to fire your bombs.

Tower Destruction was written for the 1K ZX-81 by Stephen Hill of Seabridge, Newcastle.

```
2 INPUT A
4 LET U=VAL "0"
5 FOR W=3 TO 16
10 FOR N=INT (RND*5)+10-A TO 1
0
20 PRINT AT N,W;"(1=)"
30 NEXT N
40 NEXT W
90 FOR B=0 TO 10
100 FOR N=0 TO 17
104 PRINT AT B,N+1;
105 IF PEEK (PEEK 16398+256*PEE
K 16399)=148 THEN STOP
110 PRINT AT B,N;" >"
112 IF N=0 THEN LET U=0
115 IF INKEY$="Z" THEN GOSUB 19
0
116 IF U=3 THEN STOP
117 PRINT AT B,18;" "
120 NEXT N
130 NEXT B
135 PRINT " YOU HAVE LANDED"
190 LET U=U+1
200 FOR P=B+1 TO 10
210 PRINT AT P,N+1;"."
215 PRINT AT P,N+1;" "
221 NEXT P
250 RETURN
```


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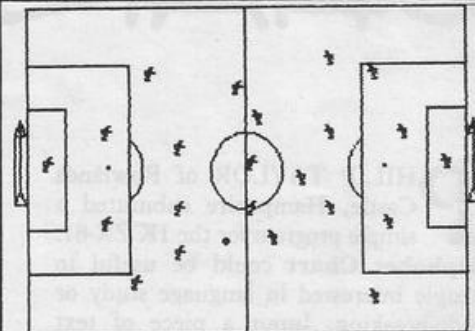


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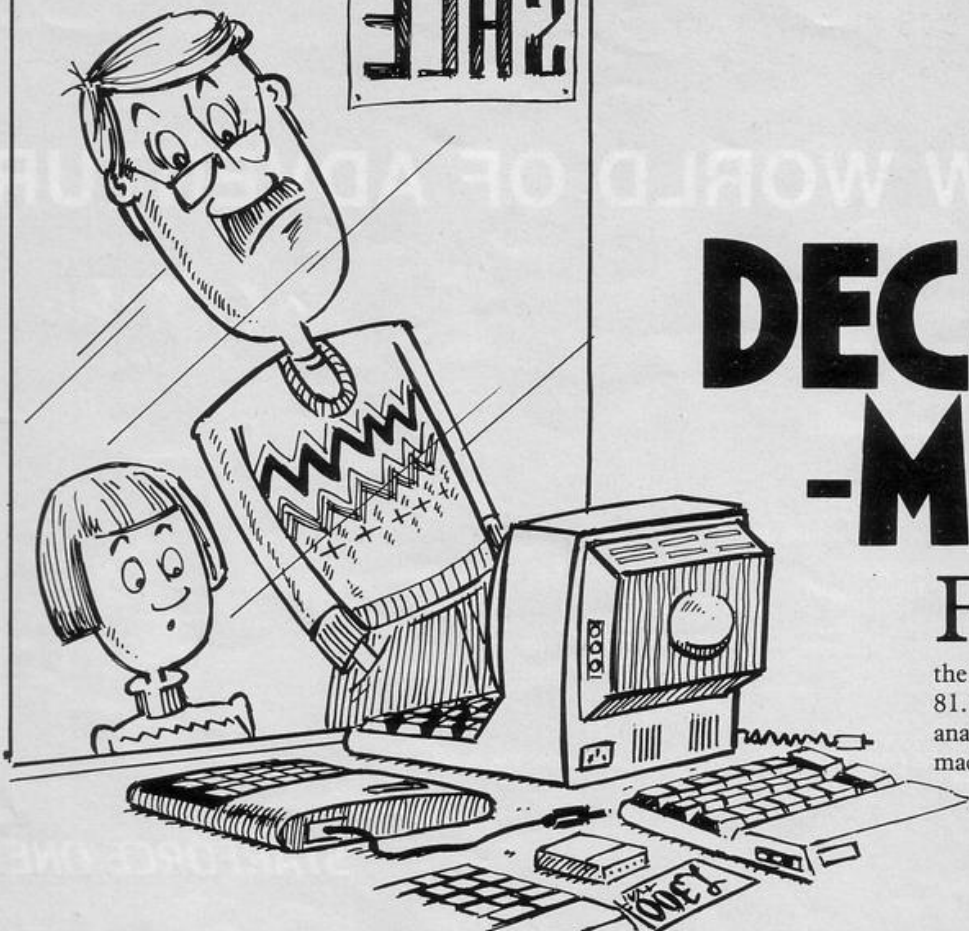


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DECISION-MAKER

FACED with the daunting prospect of buying a new computer, P Bayliss of Willerby, Hull wrote the **Decision-Maker** for the 16K ZX-81. It provides a purely objective way of analysing the pros and cons of various machines on the market.

```

190 DIM Q$(32)
200 LET W$="(31*9h)"
210 CLS
220 PRINT AT 6,0;W$
230 PRINT "HOW MANY OPTION
S ARE THERE TO          DECIDE B
ETWEEN ?"
240 PRINT "W$
250 INPUT NO
260 IF NO<2 OR NO>20 THEN GOTO
210
270 DIM A(NO)
280 CLS
290 DIM O$(NO,30)
300 FOR F=1 TO NO
310 PRINT AT 0,0;W$;AT 0,0;Q$;A
T 0,5;"NAME OF OPTION NO.,"F," ?
"
320 INPUT O$(F)
330 IF PEEK 16442<4 THEN GOSUB
1260
340 PRINT AT F+2,0;F;"",O$(F)
350 NEXT F
360 GOSUB 1230
370 CLS
380 PRINT AT 8,0;W$
390 PRINT "HOW MANY FACTORS A
RE THERE WHEN CONSIDERING THESE
",NO," OPTIONS ?"
400 PRINT "W$
410 INPUT NF
420 IF NF>300 THEN GOTO 410
430 CLS
440 DIM F$(NF,30)
450 FOR F=1 TO NF
460 PRINT AT 0,0;W$;AT 0,0;Q$;A
T 0,5;"NAME OF FACTOR NO.,"F," ?
"
470 INPUT F$(F)
480 PRINT AT F+2,0;F;"",F$(F)
490 IF PEEK 16442<4 THEN GOSUB
1260
500 NEXT F
510 DIM I(NF)
520 GOSUB 1230
530 CLS
540 PRINT AT 4,0;W$
550 PRINT "IN DECIDING BETW
EEN THE ",NO
560 PRINT "OPTIONS,HOW IMPORT
ANT TO YOU IS"

```

```

570 FOR F=1 TO NF
580 PRINT AT 11,0;W$;AT 11,0;Q$
,AT 11,0;F$(F)
590 PRINT "TAB 5;"(ON A SCALE
1 TO 20)"
600 PRINT "W$
610 INPUT I(F)
620 IF I(F)<1 OR I(F)>20 THEN G
OTO 530
630 NEXT F
640 DIM R(NO,NF)
650 CLS
660 FOR F=1 TO NO
670 LET R(F)=0
680 CLS
690 FOR G=1 TO NF
700 CLS
710 PRINT AT 4,0;W$
720 PRINT "TAKING THE ",O$(
F)
730 PRINT "HOW WOULD YOU RATE I
TS";TAB 0,,F$(G)
740 PRINT "1 TO 20 AGAIN)"
750 PRINT "W$
760 INPUT R(F,G)
770 IF R(F,G)<1 OR R(F,G)>20 TH
EN GOTO 700
780 LET R(F,G)=R(F,G)*I(G)
790 LET R(F)=R(F)+R(F,G)
800 NEXT G
810 NEXT F
820 CLS
830 PRINT AT 8,0;W$;AT 10,1;"LE
T ME DIGEST THE FIGURES A BIT";A
T 12,0;W$
840 FOR F=0 TO 4
850 GOSUB 1230
860 NEXT F
870 CLS
880 GOSUB 1310
890 PRINT "OK,THIS IS HOW THEY
SCORE:"
900 PRINT W$;AT 3,0;
910 FOR F=1 TO NO
920 PRINT TAB 0,O$(F);TO 29-LE
N STR$(S(F));S(F);"/"
930 IF PEEK 16442<6 THEN GOSUB
1230
940 IF NO<6 THEN PRINT
950 NEXT F
960 POKE 16418,0

```

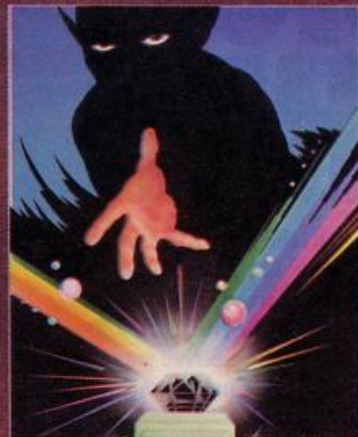
```

970 PRINT AT 23,0;"Press P for
Printout'r to re 'run"
980 POKE 16418,2
990 LET A$=INKEY$
1000 IF A$="P" THEN GOTO 1030
1010 IF A$="R" THEN RUN
1020 GOTO 990
1030 FAST
1040 PRINT AT 0,0;
1050 LPRINT TAB 3;"decision make
r iii'results";
1060 LPRINT TAB 0;
1070 FOR F=1 TO NO
1080 LET L=LEN STR$(S(F))
1090 LPRINT O$(F);TO 29-L);S(F)
,"92/94"
1100 NEXT F
1110 LPRINT
1120 LPRINT TAB 6;"(factors cons
idered)"
1130 LPRINT TAB 0,,
1140 FOR F=1 TO NF
1150 LET L=LEN STR$(I(F))
1160 LPRINT F$(F);TO 32-L);I(F)
1170 NEXT F
1180 FOR F=0 TO 3
1190 LPRINT
1200 NEXT F
1210 SLOW
1220 GOTO 960
1230 FOR S=0 TO 15
1240 NEXT S
1250 RETURN
1260 FOR F=0 TO 3
1270 SCROLL
1280 NEXT F
1290 RETURN
1300 REM calculate Percentages
1310 LET MAX=(NF*20)*2
1320 DIM S(NO)
1330 FOR F=1 TO NO
1340 LET S(F)=(R(F)/MAX)*100
1350 LET S(F)=(INT ((S(F)*100))
+.5)/100)
1360 NEXT F
1370 RETURN
9997 CLEAR
9998 SAVE "DECISION MAKER II;"
9999 RUN 190

```


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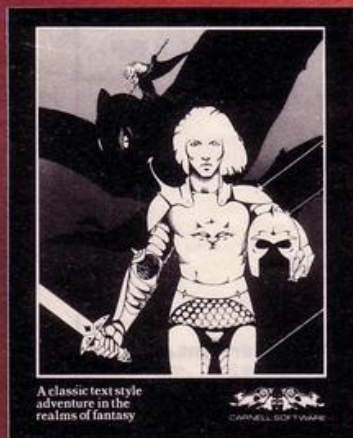
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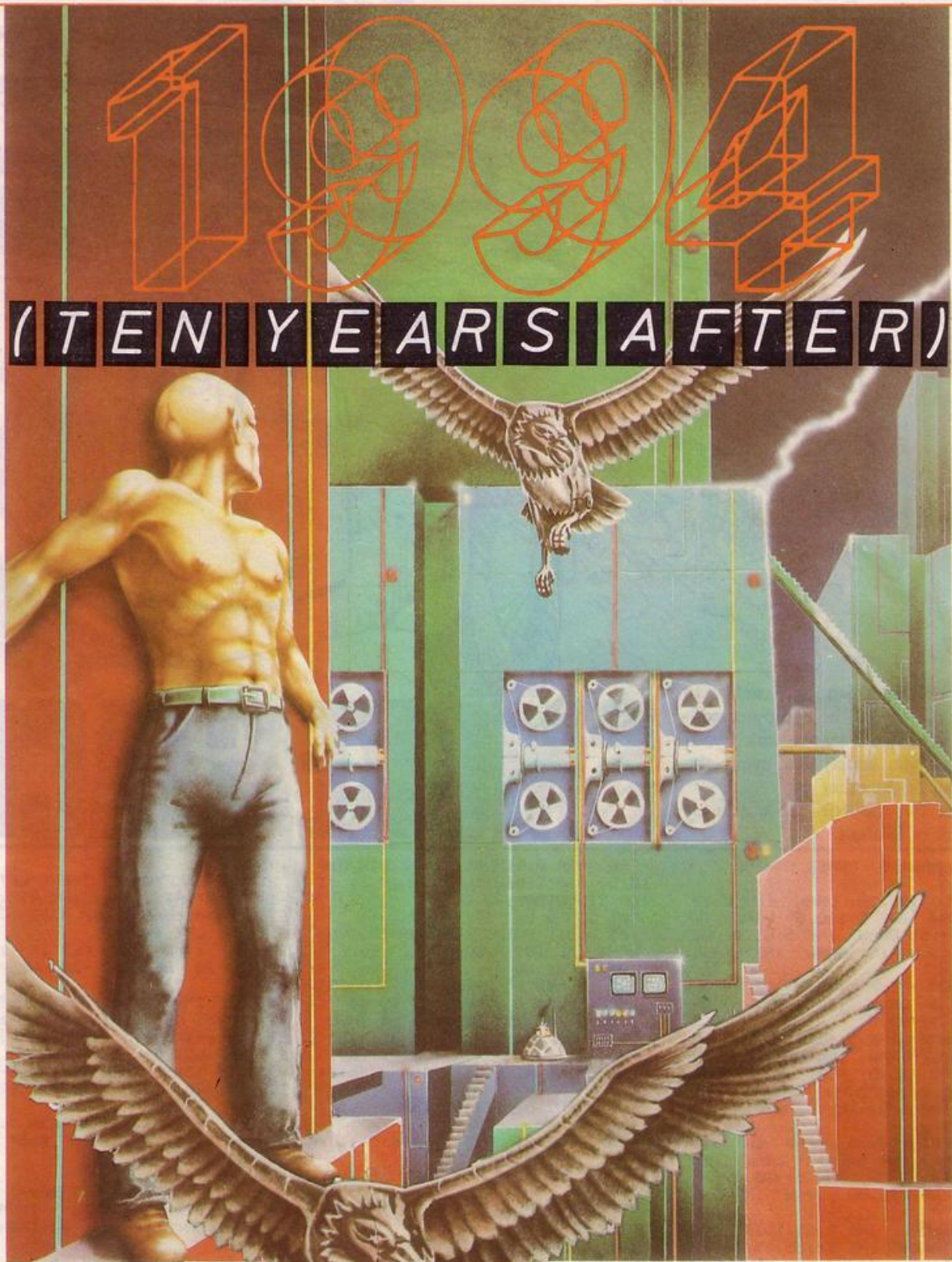
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THE AIM of Smoke Stack is to block the car the computer controls with the smoke which your car emits. You must also avoid the smoke trail of the other car.

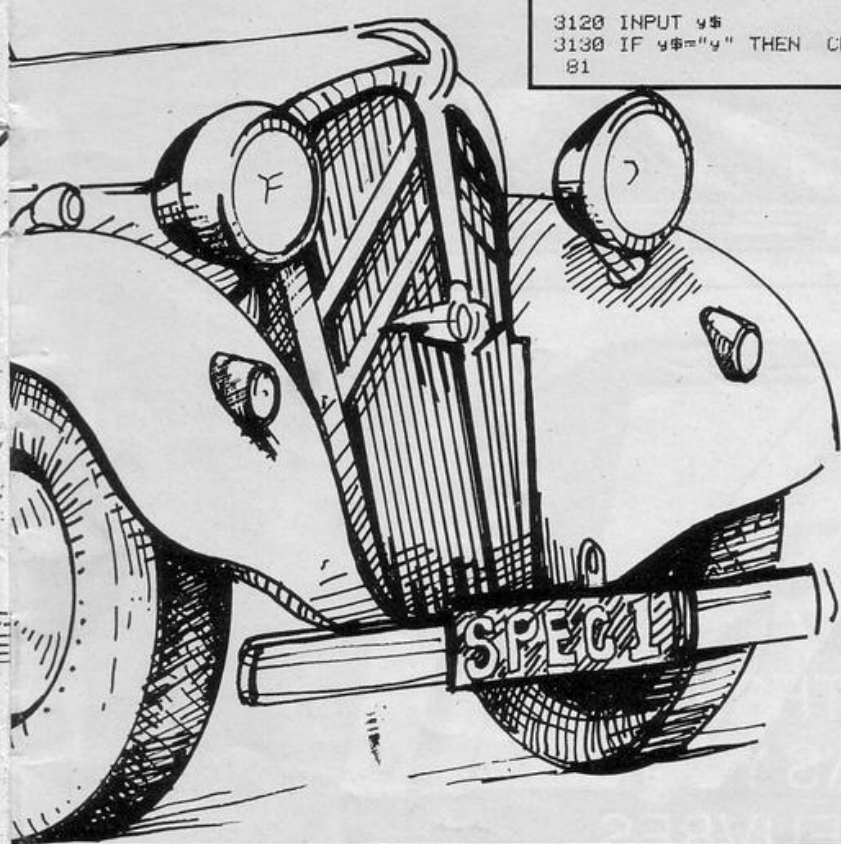
Written for the 16K Spectrum by David Gill of Walsall.

SMOKE STACK

```
3 BORDER 0: PAPER 0: INK 7: C
LS
4 PLOT 20,20: DRAW INK 5,10,
30: DRAW INK 5,100,0: DRAW INK
5,20,-15: DRAW INK 5,45,0: DRA
W INK 5,0,-15: DRAW INK 5,-30,
0
5 DRAW INK 5,-5,5: DRAW INK
5,-10,0: DRAW INK 5,-5,-5: DRA
W INK 5,-80,0
6 DRAW INK 5,-5,5: DRAW INK
5,-10,0: DRAW INK 5,-5,-5: DRA
W INK 5,-25,0: PLOT 35,35: DRAW
INK 5,0,10: DRAW INK 5,30,0:
DRAW INK 5,0,-10: DRAW INK 5,-
30,0
7 PLOT 100,35: DRAW INK 5,0,
10: DRAW INK 5,20,0: DRAW INK
5,10,-10: DRAW INK 5,-30,0
8 PLOT 110,50: DRAW INK 5,-1
0,20
9 CIRCLE INK 5,55,15,7
10 CIRCLE INK 5,155,15,7
20 PRINT: PRINT "DO YOU WANT
THE INSTRUCTIONS? (y,n)"
21 BEEP .1,10: BEEP .1,10: BEE
P .1,10: BEEP .7,5: BEEP .7,0: B
EEP .1,10: BEEP .1,10: BEEP .1,1
0: BEEP .7,5: BEEP .7,0
23 BEEP .5,20: BEEP .5,20: BEE
P .5,20: BEEP .9,10: BEEP .9,5:
BEEP .5,20: BEEP .5,20: BEEP .5,
20: BEEP .9,10: BEEP .9,5
30 INPUT a$
31 IF a$="y" THEN GO TO 9000
32 IF a$="n" THEN GO TO 40
33 IF a$<>"y" OR a$<>"n" THEN
GO TO 30
50 FOR g=0 TO 7: READ a: POKE
USR "a"+g,a: NEXT g
60 DATA BIN 10010010,BIN 00100
100,BIN 10010010,BIN 00100100,BI
N 10010010,BIN 00100100,BIN 1001
0010,BIN 00100100
70 FOR s=0 TO 7: READ h: POKE
USR "h"+s,h: NEXT s
```

```
80 DATA 0,BIN 00111000,BIN 010
10100,BIN 11010110,255,BIN 11101
110,BIN 01000100,0
81 GO TO 90
85 CLS: PRINT: PRINT "DO YOU
WANT THE INSTRUCTIONS? (y,n)"
86 INPUT b$
87 IF b$="y" THEN GO TO 9000
88 IF b$="n" THEN GO TO 40
89 IF a$<>"y" OR a$<>"n" THEN
GO TO 30
90 CLS
100 PRINT AT 10,10: INK 6:"(11*
isp)"
110 PRINT AT 11,10: INK 6:"(11*
isp)"
120 PRINT AT 9,10: INK 6:"(11*1
sp)"
130 PRINT AT 8,10: INK 6:"(1*1s
p)"
191 FOR a=0 TO 31: PRINT AT 0,a
: INK 5:"(isp)": NEXT a
192 FOR b=0 TO 19: PRINT AT b,0
: INK 5:"(isp)": NEXT b
193 FOR c=0 TO 31: PRINT AT 19,
c: INK 5:"(isp)": NEXT c
194 FOR d=0 TO 19: PRINT AT d,3
1: INK 5:"(isp)": NEXT d
195 LET men=1
196 LET score=0
197 LET j=2: LET i=2
198 LET x=29: LET z=17
199 FOR l=0 TO 1
200 IF INKEY$="q" THEN LET j=j
-1: PRINT AT j+1,1: INK 4:"a": L
ET score=score+5: IF ATTR (j,1)=
6 THEN LET j=j+1
201 IF j<=0 THEN LET j=j+1: BE
EP .7,-20: BEEP .7,-20: BEEP .9,
-30
210 IF INKEY$="a" THEN LET j=j
+1: PRINT AT j-1,1: INK 4:"a": L
ET score=score+5: IF ATTR (j,1)=
6 THEN LET j=j-1
211 IF j>=19 THEN LET j=j-1: B
EEP .7,-20: BEEP .7,-20: BEEP .9
```

```
, -30
220 IF INKEY$="i" THEN LET i=i
-1: PRINT AT j,i+1: INK 4:"a": L
ET score=score+5: IF ATTR (j,i)=
6 THEN LET i=i+1
221 IF i<=0 THEN LET i=i+1: BE
EP .7,-20: BEEP .7,-20: BEEP .9,
-30
230 IF INKEY$="o" THEN LET i=i
+1: PRINT AT j,i-1: INK 4:"a": L
ET score=score+5: IF ATTR (j,i)=
6 THEN LET i=i-1
231 IF i>=31 THEN LET i=i-1: B
EEP .7,-20: BEEP .7,-20: BEEP .9,
-30
233 IF ATTR (j,i)=4 THEN LET m
en=men-1: BEEP .7,-20: BEEP .7,-
20: BEEP .9,-30
234 NEXT l
235 IF j>z THEN LET z=z+1: PRI
NT AT z-1,x: INK 4:"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN LE
T z=z-1
236 IF j<z THEN LET z=z-1: PRI
NT AT z+1,x: INK 4:"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN LE
T z=z+1
237 IF i<x THEN LET x=x-1: PRI
NT AT z,x+1: INK 4:"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN LE
T x=x+1
238 IF i>x THEN LET x=x+1: PRI
NT AT z,x-1: INK 4:"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN LE
T x=x-1
240 IF ATTR (z,x)=3 THEN LET m
en=men-1: IF ATTR (z,x)=4 THEN
LET x=x+1: PRINT AT z,x: OVER 1:
INK 2:"a": BEEP .7,-20: BEEP .7,
-20: BEEP .9,-30: BEEP .7,-20:
BEEP .7,-20: BEEP .9,-40
575 PRINT AT 20,0:"SCORE="; sco
re
589 PRINT AT j,1: INK 3:"b"
590 PRINT AT z,x: INK 2:"b"
600 PRINT AT 21,0:"LIVES="; men
```

```

710 IF men<=0 THEN GO TO 3100
1000 GO TO 199
3100 CLS
3110 PRINT INK 5; FLASH 1; AT 0,
5;"GAME OVER, DO YOU WANT"; INK 5
; FLASH 1; AT 1,5;"ANOTHER GAME (
y,n)"; PRINT ; PRINT ; PRINT IN
K 6;" YOUR SCORE IS: ";score
3120 INPUT y$
3130 IF y$="y" THEN CLS : GO TO
81

```

```

3140 IF y$="n" THEN STOP
3150 IF y$<>"y" OR y$<>"n" THEN
GO TO 3002
8999 STOP
9000 CLS : PRINT " BLOCK'
EM
9001 PRINT OVER 1; AT 0,8;"-----
----"

```

```

9002 PRINT ; PRINT "THE OBJECT O
F THIS GAME IS TO OUT RUN THE
OPPOINENTS CAR (CONTROLLED
BY THE COMPUTER). YOU ALSO HAV
E TO AVOID BUMPING INTO THE SMO
KE YOU LAY AND THE SMOKE THE CO
MPUTER LAYS."

```

```

9003 PRINT ; PRINT "YOU ALSO HAV
E TO AVOID BUMPING INTO THE OUT
-SIDE AND INSIDE WALLS."; PRI
NT ; PRINT "YOU LOSE A LIFE WHEN
YOU-"; PRINT "HIT YOUR SMOKE."

```

```

; PRINT "HIT THE OTHER CAR OR IT
'S SMOKE."; PRINT "IF YOU CRASH
INTO THE OUT SIDE OR INSIDE WAL
L."

```

```

9004 PRINT ; PRINT "PRESS ANY KE
Y FOR THE KEYS"; PAUSE 0
9005 CLS :

```

```

9007 PRINT ; PRINT "THE KEYS ARE
:-"; PRINT ; PRINT INK 3; FLASH
1;"PLAYER 1 THE MAGENTA CAR:-";
PRINT INK 4; FLASH 1;"UP DOWN
LEFT RIGHT"; PRINT FLASH 1; INK
5;"a 3 1 0"

```

```

9008 PRINT ; PRINT ; PRINT "PRES
S"; AT 8,6; INK 2; FLASH 1;"r"; F
LASH 0; INK 7;" TO RUN THE GAME"
9009 INPUT INKEY$
9010 IF INKEY$<>"r" THEN GO TO
9009
9020 IF INKEY$="r" THEN GO TO 4
0

```

```

1 LET Z=SGN PI
2 LET S=PI-PI
3 LET X=CODE "<9t)"
5 PRINT AT CODE "<9s)",CODE "
?";"score ";S
10 LET A=INT (RND*X)+Z
20 LET B=INT (RND*X)+Z
30 LET C=INT (RND*X)+Z
40 PRINT A
50 PRINT B
60 PRINT C
70 IF A=B AND B=C THEN PRINT "
JackPot 100"
73 IF A=B AND B=C THEN LET S=S
+VAL "100"
75 IF A=B AND B=C THEN GOTO CO
DE "ABS "
80 IF A=B OR A=C OR B=C THEN G
OTO CODE "COS "
90 GOTO CODE "ABS "
200 PRINT "BONUS ";CODE "M"
205 LET S=S+CODE "M"
210 IF INKEY$="" THEN GOTO CODE
"ABS "
215 CLS
220 GOTO CODE "<9s)"

```

JUNIOR JACKPOT



A SIMPLE program submitted by S G Wylie of Ramsgate, Kent for the 1K ZX-81. Three random numbers, chosen by the computer, appear to the left of the screen. Fifty bonus points are awarded for two corresponding numbers, between 1 and 6, and a jackpot of 100 bonus points for three identical numbers.

You have to press NEWLINE key for each set of numbers and your score is totalled at the end of each turn. A POKE command is inserted in the program which must be executed before typing the program into the computer prior to cassette storage—(POKE 16389,76).

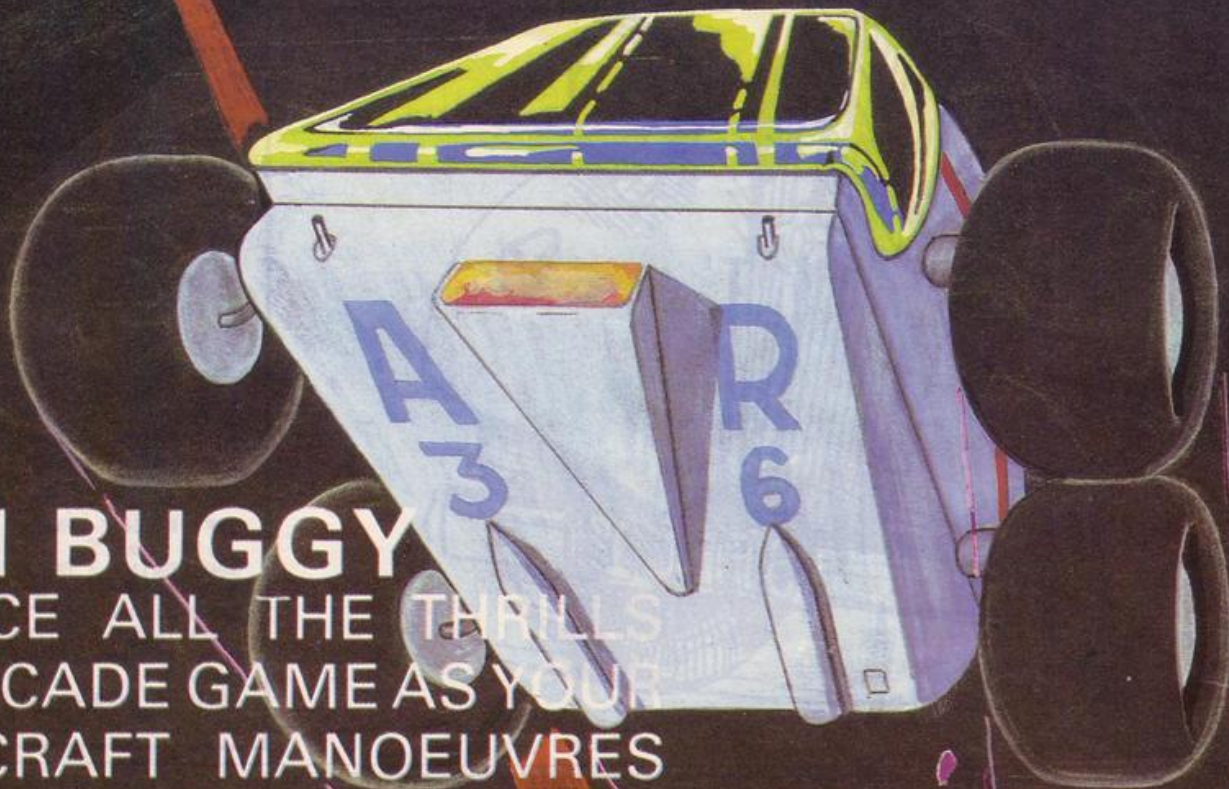
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FIND THE LETTER

FIND THE LETTER for the 16K ZX-81 was written by R Banks of Leigh-on-Sea, Essex. You have 15 seconds in which to find the letter the computer has selected.

```

10 SLOW
20 GOSUB 600
30 LET U=0
40 PRINT AT 2,0;"TRY TO GUESS
THE RIGHT LETTER..."
50 LET A=INT (RND*26)+1
60 IF A=1 THEN LET A$=CHR$ 65
70 IF A=2 THEN LET A$=CHR$ 66
80 IF A=3 THEN LET A$=CHR$ 67
90 IF A=4 THEN LET A$=CHR$ 68
100 IF A=5 THEN LET A$=CHR$ 69
110 IF A=6 THEN LET A$=CHR$ 70
120 IF A=7 THEN LET A$=CHR$ 71
130 IF A=8 THEN LET A$=CHR$ 72
140 IF A=9 THEN LET A$=CHR$ 73
150 IF A=10 THEN LET A$=CHR$ 74
160 IF A=11 THEN LET A$=CHR$ 75
170 IF A=12 THEN LET A$=CHR$ 76
180 IF A=13 THEN LET A$=CHR$ 77
190 IF A=14 THEN LET A$=CHR$ 78
200 IF A=15 THEN LET A$=CHR$ 79
210 IF A=16 THEN LET A$=CHR$ 80
220 IF A=17 THEN LET A$=CHR$ 81
230 IF A=18 THEN LET A$=CHR$ 82
240 IF A=19 THEN LET A$=CHR$ 83
250 IF A=20 THEN LET A$=CHR$ 84
260 IF A=21 THEN LET A$=CHR$ 85
270 IF A=22 THEN LET A$=CHR$ 86
280 IF A=23 THEN LET A$=CHR$ 87
290 IF A=24 THEN LET A$=CHR$ 88
300 IF A=25 THEN LET A$=CHR$ 89
310 IF A=26 THEN LET A$=CHR$ 90
320 IF INKEY$=A$ THEN GOTO 360
330 LET U=U+1
340 IF U=100 THEN GOTO 520
350 GOTO 320
360 PRINT
370 PRINT "WELL DONE."
380 PRINT
390 PRINT
400 PRINT "THE LETTER WAS: """;A
#:"""

```

```

410 PRINT
420 PRINT "YOU WERE LUCKY..."
430 PRINT "BUT I BET YOU CAN'T
DO IT AGAIN."
440 PRINT AT 1,0;
450 FOR N=1 TO 200
460 NEXT N
470 FOR F=1 TO 20
480 PRINT "
490 NEXT F
500 LET E=1
510 RUN 30
520 PRINT
530 PRINT
540 PRINT "YOU RAN OUT OF TIME."
550 PRINT
560 PRINT "THE LETTER WAS: """;A
#:"""
570 PRINT
580 PRINT "TRY AGAIN."
590 GOTO 440
600 PRINT
610 PRINT "DO YOU WANT INSTRUCT
IONS?"
620 IF CODE INKEY$=51 THEN RETU
RN
630 IF CODE INKEY$=52 THEN GOTO
570
640 GOTO 620
650 PRINT AT 2,0;" -INSTR
UCTIONS-
660 PRINT
670 PRINT "ALL YOU HAVE TO DO I
S TO GUESS WHICH LETTER THE COM
PUTER HAS CHOSEN."
680 PRINT
690 PRINT "BUT BE CAREFUL, THERE
IS A 15 SECOND TIME LIMIT."
700 PRINT
710 PRINT "GOOD LUCK..."
720 PRINT AT 21,5;"PRESS N/L T
O PLAY."
730 IF CODE INKEY$=118 THEN GOT
O 750
740 GOTO 730
750 PRINT AT 0,31;
760 FOR F=1 TO 21
770 PRINT "
780 NEXT F
790 RETURN
9998 SAVE "G.T.L."
9999 RUN

```


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1. TENS AND UNITS ADDITION. You may choose simple sums or sums which involve carrying ten. Helpful correction sequences are provided if mistakes are made. An attractive landscape is formed as the sums are successfully completed, and the scene is animated at the end of the program.

2. TENS AND UNITS SUBTRACTION. Choose simple or difficult sums. Either of the two methods of subtraction taught in schools may be selected at the start of the program. Detailed help is given if errors are made. Correct answers add sections to a bridge. If no mistakes are made, the tank will drive across the completed bridge and fire its gun.

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3. PICTURE PLOTTER. This program has been written so that children can create their own pictures on the television screen. It is so simple that even pre-reading children can use it, yet its sophistication makes it suitable for producing multicolour maps and diagrams.

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You may replace the questions in this program with your own (create a bank of up to 250 questions with a 48K Spectrum). Any subject area may be chosen.

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4. NORTH AMERICAN INDIANS

SPECTRUM 16K
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11. THE STRUCTURE OF THE FLOWER. This program explains how the parts of the flower are involved in the formation of seeds. This is a three part program which makes full use of high resolution colour graphics.

12. LONG DIVISION. This detailed program takes the learner through long division sums in easy stages. Correction sequences are automatically provided when they are needed. Sums with remainders can be chosen if required.

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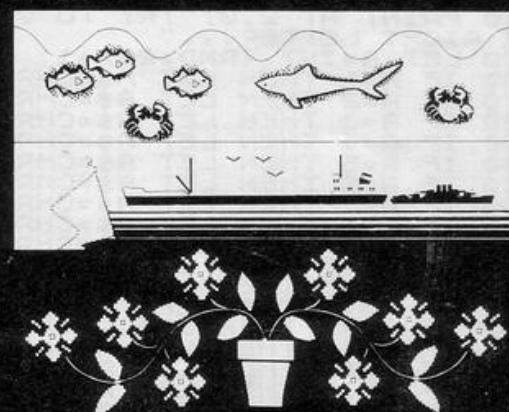
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PROGRAMS 9-12



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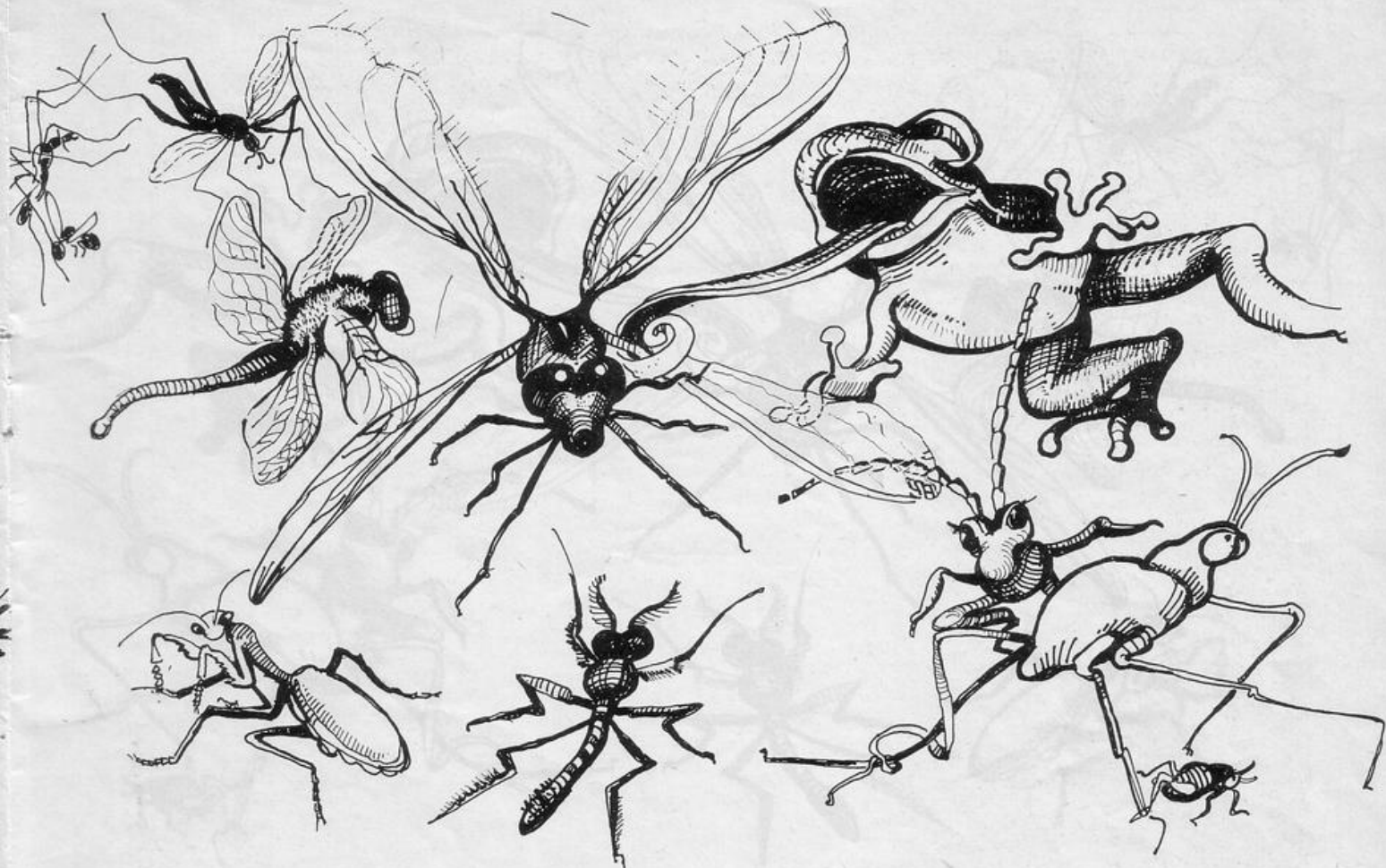
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Additional features of the CALPAC LEARNING SERIES include:-

*Spelling checkers

**"Help" call up routine

*Easy insertion of subject material of your own choice into the programs



YOU HAVE one minute to catch as many types of insects as possible with the sticky tongue of your frog. The controls are 5 — skip left; 8 — skip right; 6 — jump left; 7 — jump right; 0 releases the tongue. Press R to return to the lily pad for a new game.

Bugfever was written by Simon Cox of Dunstable, Beds.

BUG FEVER

```

1 DATA 14,17,17,35,37,42,116,
63,96,152,8,8,16,32,132,248,96,1
58,65,48,12,7,5,9,3,4,100,181,23
4,100,4,2,24,32,64,170,85,64,32,
24,0,0,192,62,61,255,62,32,0,127
,1,0,1,127,0,0,3,14,255,255,255,
14,3,0
2 DATA 240,0,128,128,128,0,24
0,0,0,0,0,130,130,130,130,186,
254,124,124,56,56,56,56,108,68,6
8,68,68,68,0,0,34,34,34,34,34
,34,54,28,28,28,28,62,62,127,93,
93,65,65,65,65,0,0,0,112,216,124
,126,255,127,63,255
3 DATA 14,27,62,126,255,254,2
52,255,248,0,128,255,128,0,248,0
,0,0,254,128,0,128,254,0,0,192,1
12,255,255,255,112,192,0,15,0,1,
4,1,0,15
4 RESTORE : FOR q=0 TO 167 ST
EP 8: FOR r=0 TO 7: READ a: POKE
USR "(9a)+4+r,a: NEXT r: NEXT
q
10 DATA BIN 1010010,BIN 010101
01,BIN 01010101,BIN 00101011,BIN
00101011,BIN 10010111,BIN 10001
111,BIN 01111111,BIN 01100101,BI
N 01101010,BIN 10101010,BIN 1101
0100,BIN 11010100,BIN 11101001,B
IN 1110001,255
15 DATA BIN 1010010,BIN 010101
01,BIN 01010101,BIN 00101011,BIN
00101011,BIN 10010111,BIN 10001
111,BIN 01111111,BIN 01100101,BI
N 01101010,BIN 10101010,BIN 1101

```

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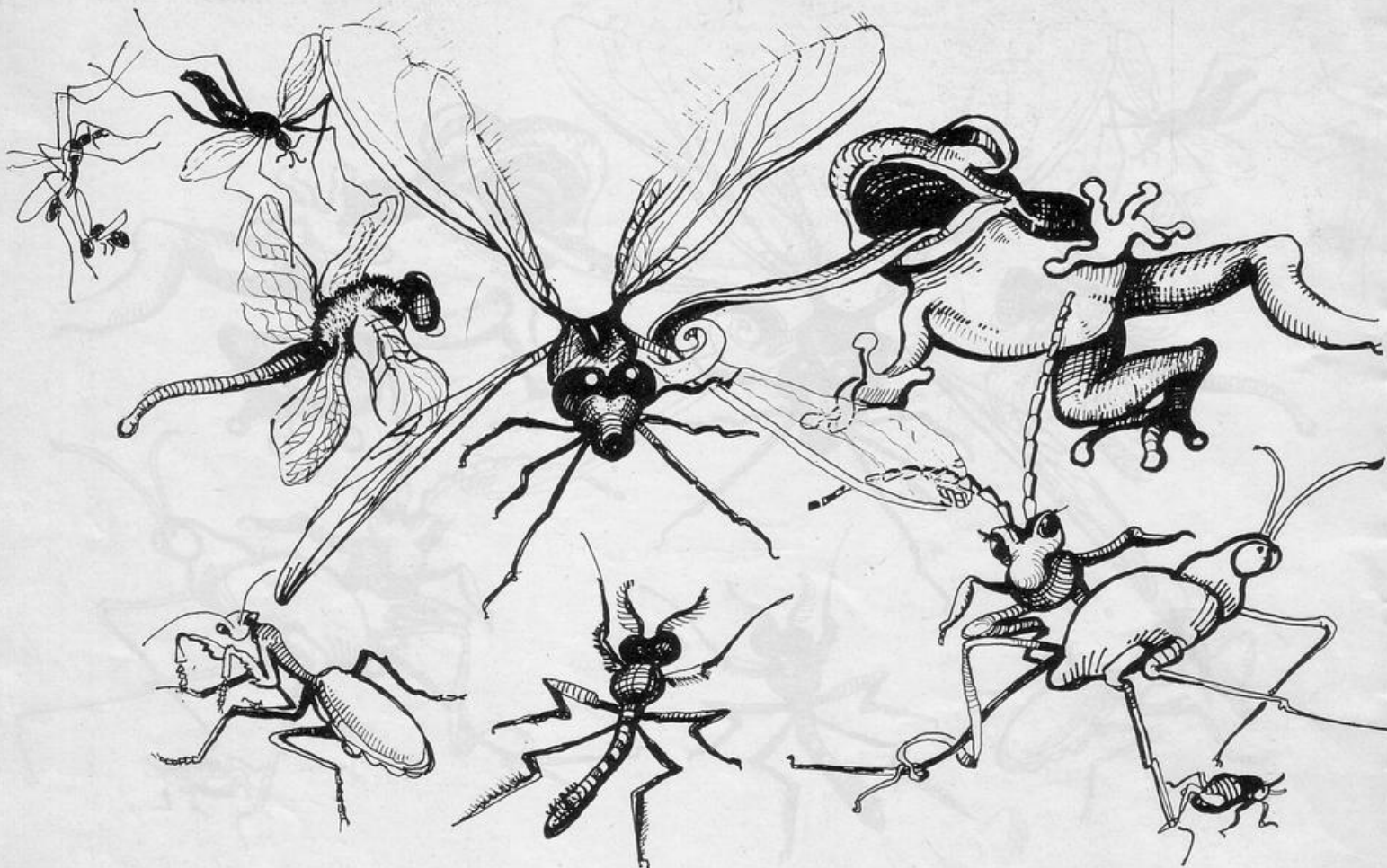
0100,BIN 11010100,BIN 11101001,B
IN 1110001,255
20 DATA 14,17,17,35,37,42,116,
63,96,152,8,8,16,32,132,248
900 BORDER 5: PAPER 8: BRIGHT 1
CLS: FOR n=0 TO 10: PRINT AT
n,0: PAPER 5,, NEXT n: FOR n=11
TO 21: PRINT AT n,0: PAPER 1,,
NEXT n
901 INK 7: FOR r=0 TO 80 STEP 1
6: FOR q=0+RND*4 TO 255 STEP 16:
PLOT q,r: DRAW 2,2: DRAW 2,-1:
NEXT q: NEXT r
911 LET time=60: LET score=0
912 INK 1: PAPER 4: PRINT AT 17
,3: "(15P:193:19KSP:193)"
913 PRINT AT 18,3: "
914 PRINT AT 19,3: "(15P:193:21KSP
P:193)"
915 INK 0: PAPER 4: PLOT 35,26:
DRAW 170,0
916 FOR n=45 TO 190 STEP 8: PLO
T n,26: DRAW 8,8: DRAW -8,-8: DR
AW 8,-8: NEXT n
917 FOR n=0 TO 255: PLOT INK 4
,n,8: DRAW INK 4,0,INT (RND*8):
NEXT n
918 RESTORE 10: FOR n=0 TO 15:
READ a: POKE USR "(9a)+n,a: NEX
T n
919 PRINT AT 19,1: INK 3: PAPER
1: "(9a:9b)" AT 16,3: INK 6: PAP
ER 1: "(9a:9b)" AT 16,2: INK 7:
PAPER 1: "(9a:9b)" AT 19,28: INK

```

```

6: PAPER 1: "(9a:9b)"
920 RESTORE 20: FOR n=0 TO 15:
READ a: POKE USR "(9a)+n,a: NEX
T n
930 FOR q=1 TO 0 STEP -.1: PLOT
INK 6,224,175: DRAW INK 6,31,
-44,4: NEXT q
940 OVER 0: FOR r=40 TO 200: FO
R q=1 TO 4: PLOT INK 3,r+q,16:
DRAW INK 3,0,12: NEXT q: LET r=
r+INT (10+RND*20): NEXT r
1010 PAPER 8: INK 0: REM frog
1015 PRINT AT 21,0: PAPER 4,,
1016 PRINT AT 21,11: INK 7: "BUGF
EVER"
1020 LET x=16: LET y=13
1021 PRINT AT x,y: INK 7: "(9q)"
1025 LET z=10
1026 GO TO 5360
5020 FOR n=x-3 TO x-z+(3 AND y)=
25 AND z>3: STEP -1: INK 0+(7 AN
D n>10): BRIGHT 1: PRINT AT n,y:
"9j " AT n+1,y: "9k " AT n+2,y: "l
" AT n+3,y: " GO SUB 6050
5030 NEXT n
5035 PRINT AT n+1,y: " " AT n+2,y
: " " AT n+3,y: " "
5040 FOR p=y TO y+4-(3 AND y)=25
)
5050 PRINT AT n,p: "(99:9h:9i)"
5051 IF INKEY#="0" THEN BEEP .0
1,0: PRINT AT n,p+3: INK 0: "(9r)"
"
5052 IF (SCREEN# (n,p+4)<0) "> A
ND INKEY#="0" THEN PRINT AT n,p

```

```

+3; INK 2;"(9r)"; FOR n=5 TO 1 STEP -1: BEEP .01,-r: NEXT n: PRINT AT a,b-1;" " : LET score=score+sc1: GO SUB 5310
5053 GO SUB 6050
5060 NEXT P
5061 LET time=time-(4 AND z<3)-(4/10 AND z=3)
5065 PRINT AT n,p-1;" "
5070 FOR n=x-z<3 AND y=25 AND z>3 TO x: INK 0+(7 AND n>10): PRINT AT n-3,y+4;"(9m)"; AT n-2,y+4;"(9n)"; AT n-1,y+4;"(9o)"; AT n-4,y+4;" " : GO SUB 6050
5080 NEXT n
5085 PRINT AT n-4,y+4;" " ; AT n-3,y+4;" " ; AT n-2,y+4;" "
5090 LET y=y+4: PRINT AT x,y: INK 7;"(9q)"
5095 BEEP .01,-20: BEEP .01,-10
5096 IF y>29 THEN LET time=time-3: PRINT AT x,y: INK 1;" " : INK 7: FOR n=1 TO 20: BEEP .003,n: PLOT 236,32: GO SUB 6050: DRAW INT (-10+RND*20),INT (RND*15): NEXT n: GO SUB 6050: FOR a=16 TO 18: PRINT AT a,28: PAPER 1;" " : GO SUB 9120: GO SUB 6050: NEXT a: LET x=16: LET y=13
5100 RETURN
5120 FOR n=x-3 TO x-z STEP -1: INK 0+(7 AND n>10): PRINT AT n,y;"(9j)"; AT n+1,y;"(9k)"; AT n+2,y;"(9l)"; AT n+3,y;" " : GO SUB 6050
5130 NEXT n
5135 PRINT AT n+1,y;" " ; AT n+2,y;" " ; AT n+3,y;" "
5140 FOR p=y TO y-4 STEP -1
5150 PRINT AT n,p;"(9u)"; AT n,p;"(9v)"; AT n,p;"(9w)"; AT n,p;"(9x)"; AT n,p;"(9y)"; AT n,p;"(9z)" : GO SUB 6050: POKE USR "(9u)" + 4,4
5156 IF INKEY$="0" THEN BEEP .01,0: POKE USR "(9u)" + 4,255
5157 IF (SCREEN$(n,p-1)<>" ") AND INKEY$="0" THEN POKE USR "(9u)" + 4,255: FOR r=5 TO 1 STEP -1: BEEP .01,-r: NEXT r: PRINT AT a

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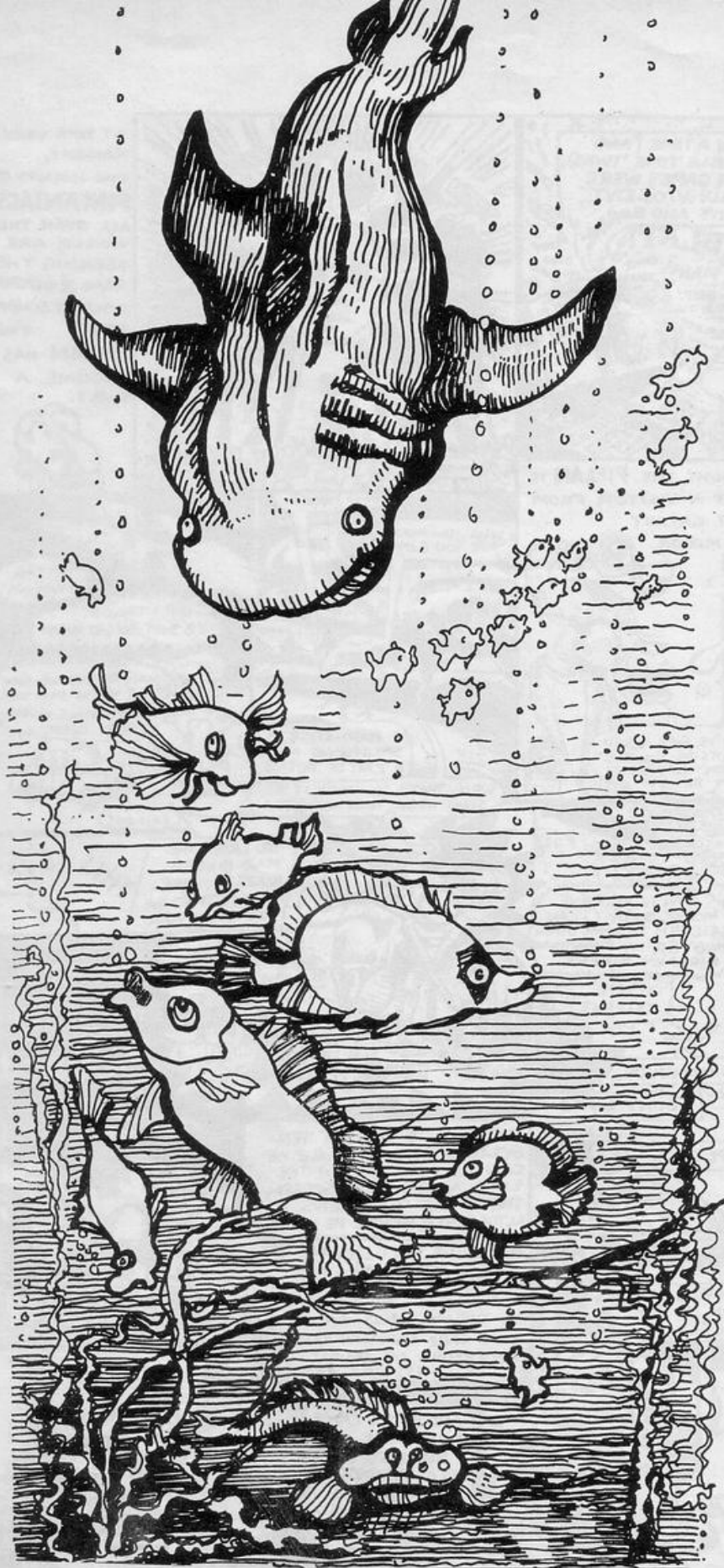
,b-1;" " : LET score=score+sc1: GO SUB 5310
5160 NEXT P
5161 LET time=time-(4 AND z<3)-(4/10 AND z=3)
5165 PRINT AT n,p+1;" "
5170 FOR n=x-z TO x: INK 0+(7 AND n>10): PRINT AT n-3,y-4;"(9m)"; AT n-2,y-4;"(9n)"; AT n-1,y-4;"(9o)"; AT n-4,y-4;" " : GO SUB 6050
5180 NEXT n
5185 PRINT AT n-4,y-4;" " ; AT n-3,y-4;" " ; AT n-2,y-4;" "
5190 LET y=y-4: PRINT AT x,y;"(9p)"
5195 BEEP .01,-20: BEEP .01,-10
5196 IF y<3 THEN LET time=time-3: PRINT AT x,y: INK 1;" " : INK 7: FOR n=1 TO 20: BEEP .003,n: PLOT 11,32: GO SUB 6050: DRAW INT (-10+RND*20),INT (RND*10): NEXT n: GO SUB 6050: FOR a=16 TO 18: PRINT AT a,0: PAPER 1;" " : GO SUB 9110: GO SUB 6050: NEXT a: LET x=16: LET y=13
5200 RETURN
5310 LET a=INT (1+RND*7): LET b1=INT (1+RND*3)
5320 IF b1=1 THEN LET a$="(9a:9b)"; LET d=-1: LET d1=0: LET b=29: LET sc1=150
5330 IF b1=2 THEN LET a$="(9d:9e)"; LET d=-1: LET d1=0: LET b=29: LET sc1=200
5340 IF b1=3 THEN LET a$="(9c:9f)"; LET d=1: LET d1=29: LET b=0: LET sc1=50
5350 RETURN
5360 GO SUB 5310
6000 GO SUB 6050
6001 PRINT AT 21,0: INK 7;"TIME:"; INT time AND time>0;" " ; AT 21,22: INK 7;"SCORE:"; score
6002 IF time<=0 THEN LET time=0: PRINT AT 10,9: INK 7: PAPER 4;" " : GAME-OVER " : GO TO 9000

```

```

6005 IF INKEY$="0" THEN LET z=3: BEEP .01,8: GO SUB 5016
6010 IF INKEY$="7" THEN LET z=x-a-1: BEEP .01,7: GO SUB 5016
6020 IF INKEY$="5" AND y>1 THEN LET z=3: BEEP .01,5: GO SUB 5120
6030 IF INKEY$="6" AND y>1 THEN LET z=x-a-1: BEEP .01,6: GO SUB 5120
6035 LET time=time-1/10
6040 GO TO 6000
6050 PRINT AT a,b: INK 0;a$
6060 LET b=b+d: IF b=d1 THEN PRINT AT a,b-1;" " : GO SUB 5310
6065 BEEP .001,b
6070 RETURN
9000 IF INKEY$<>"r" THEN GO TO 6000
9015 PRINT AT 1,12;"SCORING"; AT 2,12;"-----"
9020 PRINT AT 4,3;"(9d:9e) DRAGONFLIES----- 200"
9040 PRINT AT 6,3;"(9a:9b) BUTTERFLIES----- 150"
9070 PRINT AT 8,3;"(9c:9f) FLIES----- 50"
9080 FOR n=1 TO 50: NEXT n
9090 IF INKEY$<>"r" THEN GO TO 9090
9100 FOR n=1 TO 10: PRINT AT n,0: PAPER 5: INK 7;" " : NEXT n: PRINT AT 21,28: PAPER 4: INK 4;" " : PRINT AT x,y;" " : LET score=0: LET z=10: LET x=16: LET y=13: LET time=61: PRINT AT x,y: INK 7;"(9q)"; GO TO 5360
9110 INK 7: FOR n=0 TO 16 STEP 1: PLOT n,32: DRAW 2,1: DRAW 2,-1: NEXT n: PRINT AT 16,13;"(9q)" : RETURN
9120 INK 7: FOR n=0 TO 16 STEP 1: PLOT n+230,32: DRAW 2,1: DRAW 2,-1: NEXT n: PRINT AT 16,13;"(9q)" : RETURN

```

JAWS

SHEILA BRITTON of Reading, Berkshire wrote **Jaws** for her five-year-old daughter. It is for the 16K ZX81 and is a simple mathematics program with a shark chasing a fish at the bottom of the screen. If you answer correctly the fish will escape.

```

10 PRINT AT 3,12;"JAWS"
15 PRINT AT 4,12;"===="
20 PRINT AT 7,0;"TRY TO HELP T
HE FISH ESCAPE FROM"
25 PRINT "THE SHARK BY GETTING
THE ANSWERS"
30 PRINT "RIGHT."
35 PRINT AT 12,0;"AT THE END P
RESS Y AND NEWLINE"
40 PRINT "TO PLAY THE GAME AGA
IN."
45 PRINT AT 16,0;"PRESS ANY KE
Y TO START."
50 IF INKEY$="" THEN GOTO 50
100 CLS
105 LET W=0
110 LET F=0
120 LET X=0
130 PRINT AT 20,0;"(9a'9d'9a'9d
9a'9d'9a'9d'9a'9d'9a'9d'9a'9d'9a'
9d'9a'9d'9a'9d'9a'9d'9a'9d'9a'9
d'9a'9d'9a'9d'9a'9d)"
140 PRINT AT 16,30;"Y"
150 PRINT AT 17,30;"Y"
160 PRINT AT 18,20;"Y Y"
170 PRINT AT 19,20;"Y Y"
180 GOSUB 600
190 GOSUB 700
200 RAND
210 LET A=INT (RND*11)
220 LET B=INT (RND*11)
230 IF X=0 THEN GOTO 800
235 GOSUB 900
240 PRINT AT 4,5;"WHAT IS "A;"
+"B
250 INPUT ANSWER
260 PAUSE 40
270 PRINT TAB 13;"A"+"B"="AN
SWER
280 IF ANSWER=A+B THEN GOTO 400
300 PRINT TAB 13;"WRONG.TRY AGA
IN."
310 FOR Z=15 TO 18
320 PRINT AT 2,W;" "
330 NEXT Z
340 LET W=W+6
350 GOSUB 600
360 IF F=W+2 THEN GOTO 490
370 GOTO 235
400 PRINT TAB 13;"RIGHT.WELL DO
NE."
410 PRINT AT 16,F;" "
420 PRINT AT 17,F;" "
430 LET F=F+6
440 GOSUB 700
450 IF F=26 THEN GOTO 540
460 GOTO 210
480 PRINT AT 10,0;"SORRY.YOUR F
ISH HAS BEEN EATEN."
490 GOTO 550
540 PRINT AT 10,0;"CLEVER YOU.T
HE FISH HAS ESCAPED."
550 PRINT AT 12,0;"DO YOU WANT
TO PLAY AGAIN?Y OR N"
560 INPUT R#
570 IF R#="" THEN GOTO 100

580 CLS
585 PRINT AT 10,12;"GOODBYE."
590 STOP
600 PRINT AT 15,W;"(9a' 4*9a)"
610 PRINT AT 16,W;"(4*9a'10'9a)"
"
620 PRINT AT 17,W;"(6*9a)"
630 PRINT AT 18,W;"(9a' 4*9a)"
640 RETURN
700 PRINT AT 16,F;"(9w'1sp'1*)"
710 PRINT AT 17,F;"9e'2*1sp)"
720 RETURN
800 PRINT AT 3,0;"HELLO."
810 LET X=1
820 GOTO 240
900 FOR Z=3 TO 6
910 PRINT AT 2,0;" "
"
920 NEXT Z
930 RETURN

```


THE STORY SO FAR...

AUTOMATA

UK LTD
PUT SOME TING
IN COMPUTING! IN
1981 THEY WERE THE
FIRST TO PUT FREE
MUSIC TRACKS ON
COMPUTER CASSETTES.
IN 1982 THEY WERE
THE FIRST WITH BIG
PRIZE GAMES. IN '83
IT WAS COMIC STRIP
ADS. THIS IS THEIR STORY.

ONCE UPON A TIME (AND
A MISERABLE TIME 'T WAS),
COMPUTER GAMES WERE
EXTREMELY VIOLENT,
DESTRUCTIVE AND BORING.



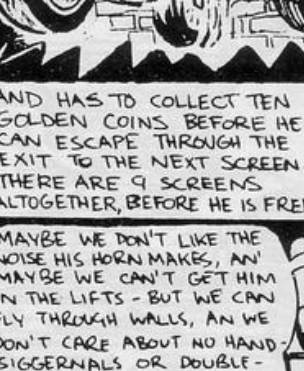
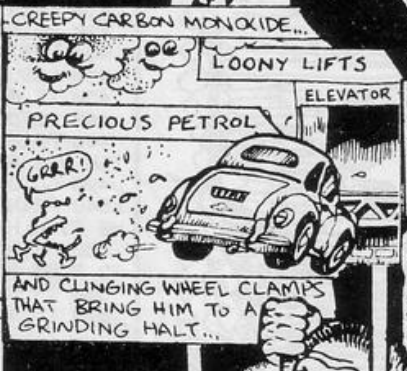
LATE ONE NIGHT THE PIMAN IS
DISTURBED BY A VISITOR FROM
THE DISTANT GALAXY
OF MORRIS MINOR.



AT THIS VERY
MOMENT,
THOUSANDS OF
PIMANIACS
ALL OVER THE
WORLD, ARE
SEEKING THE
REAL £6000
GOLDEN SUNDAY
OF PI. THE
PIMAN HAS
BECOME A
CULT.



THE CRITICS GO WILD!
PIMANIA IS HAILED AS AN



GO TO JAIL!
HEH HEH...
HEH HEH...
AND IF YOU CAN'T
FIND ANY
HUMANS TO
PLAY AGAINST,
WE DARE YOU
TO PLAY YOUR...
*2 TO 5 PLAYERS
*LARGE SIZE
MOVING BOARD
DISPLAY *SAVE-GAME FACILITY.
*STATE OF PLAY AT THE TOUCH OF A
BUTTON *YOUR COMPUTER AS 'HONEST
BANKER' GO TO JAIL!

THE STORY SO FURTHER



HAVING LOST AT GO TO JAIL TO THEIR COMPUTER, THE PIMAN & A PAL GO TO THE

FLICKS... WHEREIN AUTOMATA SPRING A SURPRISE.



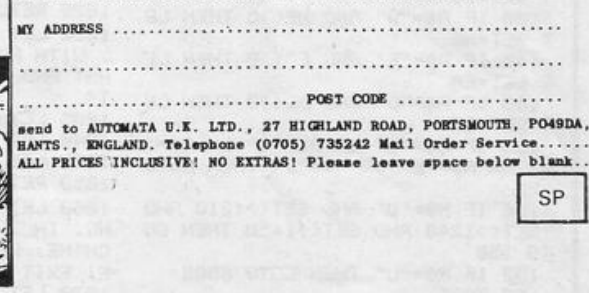
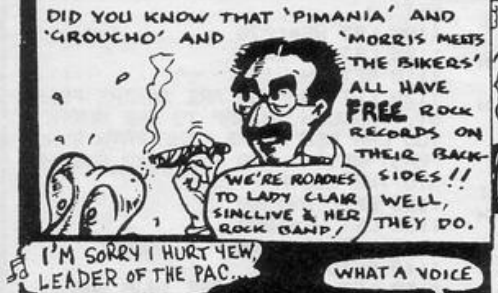
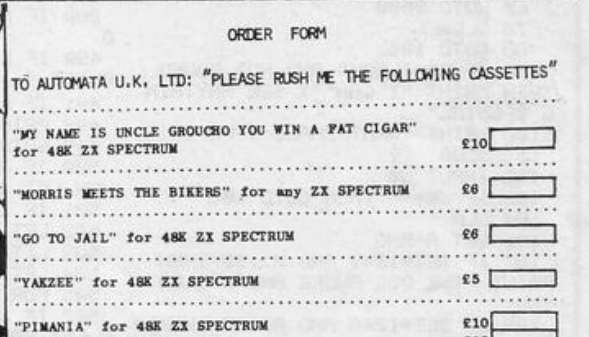
OUT NOW
MY NAME IS **UNCLE GROUCHO** YOU WIN A FAT CIGAR!
FIND THE HOLLYWOOD PERSONALITY IN THIS GAME, AND WIN A TRIP TO MEET 'EM, FLY OUT BY CONCORDE, STAY AT A REAL LUXURY HOTEL AND HAVE £500 TO SPEND...



HAVING HIDDEN A WORLD-FAMOUS HOLLYWOOD STAR IN "GROUCHO," AUTOMATA WILL SEND 2 LUCKY PLAYERS TO MEET THEM! TRACK GROUCHO AS HE TOURS THE U.S.A. - CARTOONS, MUSIC & LARFS.



ON THE OPPOSITE PAGE, THE PIMAN WAS SOLD A CANTANKEROUS MORRIS, WHICH HE PROMPTLY ABANDONED IN A MULTI-STORY EYESORE... BUT GROUCHO HAS OTHER IDEAS...



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"THE PIMAN'S CHRISTMAS STOCKING" (including Piman's 1984 Kartoon Kalendar, Piman's own C20 Blank Computer Cassette, plus the truly amazing "PIMAN'S GREATEST HITS" stereo L.P.) £5

I ENCLOSE THE RIGHT MONEY, TOTAL £ or please charge my ACCESS/EURO/MASTERCARD

CARD NUMBER

MY SIGNATURE

MY NAME

MY ADDRESS

POST CODE

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ALL PRICES INCLUSIVE! NO EXTRAS! Please leave space below blank.

SP

TIMESLIDE

```

2 LET FED=0
3 LET I=0
4 LET SET=1000
5 LET INIT=9100
6 GOSUB INIT
14 LET A$=""
17 CLS
20 LET NU=0
22 LET EA=0
24 LET WE=0
26 LET SO=0
27 LET UP=0
28 LET DO=0
30 LET I$=""
32 FAST
35 GOSUB SET
40 CLS
45 PRINT I$
50 LET FOUND=0
52 LET P=0
60 GOTO 9600
70 SLOW
80 GOTO 100
90 IF A$="LOOK" AND NOT FOUND
THEN PRINT "I CAN""T SEE ANYTHIN
G SPECIAL"
100 PRINT "WHAT SHALL I DO ?"
101 SLOW
102 INPUT J$
103 IF J$="" THEN GOTO 100
104 CLS
106 LET A=RND
107 IF SET=1240 AND A>.95 THEN
PRINT "THE DOG AWOKE AND KILLED
YOU"
108 IF SET=1240 AND A>.95 THEN
GOTO 9000
109 GOSUB 500
110 PRINT A$;" " ;B$
111 IF B$="" THEN GOTO 115
112 IF B$(1)=" " THEN LET B$=B$
(2 TO )
113 IF A$="TAKE" OR A$="GET" OR
A$="PUT" OR A$="DROP" THEN LET
B$=B$+"
114 IF B$="" THEN GOTO 112
115 IF A$="N" AND NU<>0 THEN LE
T SET=NO
120 IF A$="S" AND SO<>0 THEN LE
T SET=SO
130 IF A$="W" AND WE<>0 THEN LE
T SET=WE
140 IF A$="E" AND EA<>0 THEN LE
T SET=EA
150 IF A$="D" AND DO<>0 THEN LE
T SET=DO
155 IF A$="N" OR A$="S" OR A$="
W" OR A$="E" OR A$="D" THEN GOTO
20
156 IF A$="U" AND SET<>1210 AND
SET<>1240 AND SET<>1450 THEN GO
TO 158
157 IF A$="U" THEN GOTO 6000
158 FAST
160 IF A$="R" THEN GOTO 40
170 IF A$="HELP" THEN PRINT "NO

```

```

CHANCE MATE"
175 IF A$="HELP" THEN GOTO 100
180 IF A$="TAKE" OR A$="GET" TH
EN GOTO 2000
185 IF A$="SAVE" THEN GOTO 9800
190 IF A$="PUT" OR A$="DROP" TH
EN GOTO 4500
200 IF A$="OPEN" THEN GOTO 2500
205 IF A$="FEED" THEN GOTO 3500
210 IF A$="LOOK">= GOTO 60
215 IF A$="SWIM" THEN GOTO 4000
225 IF A$="LIGHT" THEN GOTO 750
0
230 IF A$="READ" THEN GOTO 6500
240 IF A$="UNLOCK" THEN GOTO 30
00
250 IF A$="I" THEN GOSUB 5500
255 IF A$="I" THEN GOTO 100
260 IF A$="INSERT" THEN GOTO 70
00
275 IF A$="QUIT" THEN GOTO 9000
280 IF A$="SAVE" THEN GOSUB 990
0
490 IF LEN A$=1 THEN PRINT "I C
AN""T "
491 IF LEN A$=1 THEN GOTO 100
498 PRINT "I CAN""T " ;A$;" " ;B$
499 GOTO 100
500 IF J$(1)=" " AND LEN J$>1 T
HEN LET J$=J$(2 TO )
501 IF J$(1)=" " THEN GOTO 500
502 LET SP=0
503 LET A$=""
504 LET B$=""
505 FOR N=1 TO LEN J$
507 IF J$(N)=" " AND NOT SP THE
N LET SP=1
508 IF J$(N)=" " AND NOT SP THE
N GOTO 520
510 IF SP=0 THEN LET A$=A$+J$(N
)
515 IF SP>0 THEN LET B$=B$+J$(N
)
520 NEXT N
530 RETURN
1000 LET I$="YOU ARE IN A FOREST
. THERE ARE PATHS LEADING NORTH
AND SOUTH"
1010 LET NO=1390
1015 LET SO=1030
1020 RETURN
1030 LET I$="YOU ARE IN A FOREST
, WITH PATHS LEADING NORTH AND E
AST AND A CLEARING TO THE WEST"
1035 LET NO=1000
1040 LET EA=1090
1045 LET WE=1060
1050 RETURN
1060 LET I$="YOU ARE IN A CLEARI
NG. IN THE CENTRE IS A TIME MA
CHINE, WHICH LACKS A POWER SOURC
E. EXIT EAST"
1070 LET EA=1030
1080 RETURN
1090 LET I$="YOU ARE IN A FOREST

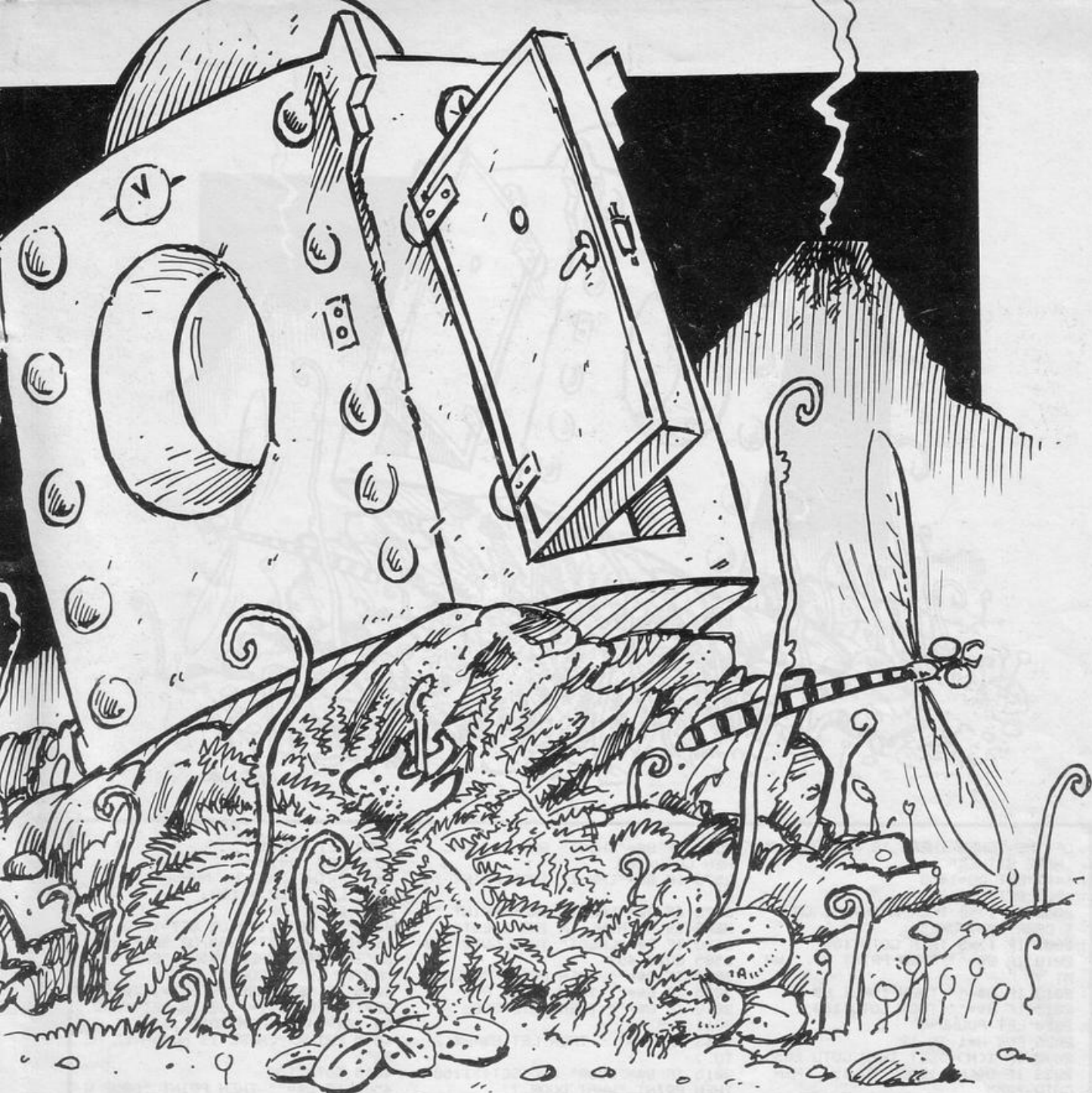
```



```

. THERE IS A PATH RUNNING EAST-W
EST"
1100 LET WE=1030
1105 LET EA=1120
1110 RETURN
1120 LET I$="YOU ARE IN THE FORE
ST. THROUGH A GAP TO THE NORTH
YOU CAN SEE ALAKE. THE PATH RUNS
EAST-WEST AND THERE IS A CAVE
TO THE SOUTH"
1125 LET EA=1300
1130 LET WE=1090
1135 LET SO=1150
1140 RETURN
1150 LET I$="YOU ARE IN A SMALL
CAVE. DAYLIGHT IS TO THE
NORTH. THERE IS A DOOR TO THE WE
ST AND AN OPENING TO THE SOUT
H"
1160 LET SO=1190
1165 LET NO=1120
1170 RETURN
1180 LET I$="YOU ARE IN A LARGE
CAVERN. THERE IS A CHEST LYING IN
ONE CORNER, AND A SKELETON IN A
NOTHER. THE ONLY EXIT IS TO THE
NORTH"
1190 LET NO=1150
1200 RETURN
1210 LET I$="I CAN""T SEE A THIN
G"

```

KEITH BEVAN, aged 14, of Stevenage, Herts wrote **Timeslide**, a 16K ZX-81 adventure game. Your time machine crashes in the dim and distant past. To return to your own time you must repair your craft. With trial and error, make a plan of your environment and collect the objects you think may be of use. The computer will accept direct commands, i.e., verbs followed by nouns. These are:

Take or get	Drop or put
Open	Feed
Look	Swim
Light	Read
Unlock	Insert
Quit	

The abbreviations for directions are N,S,E,W, and D for descend and C for climb. I will bring up the inventory and R repeats the description. Bevan sold his ZX-81 recently, this is his final offering before he upgrades to a Spectrum.

```

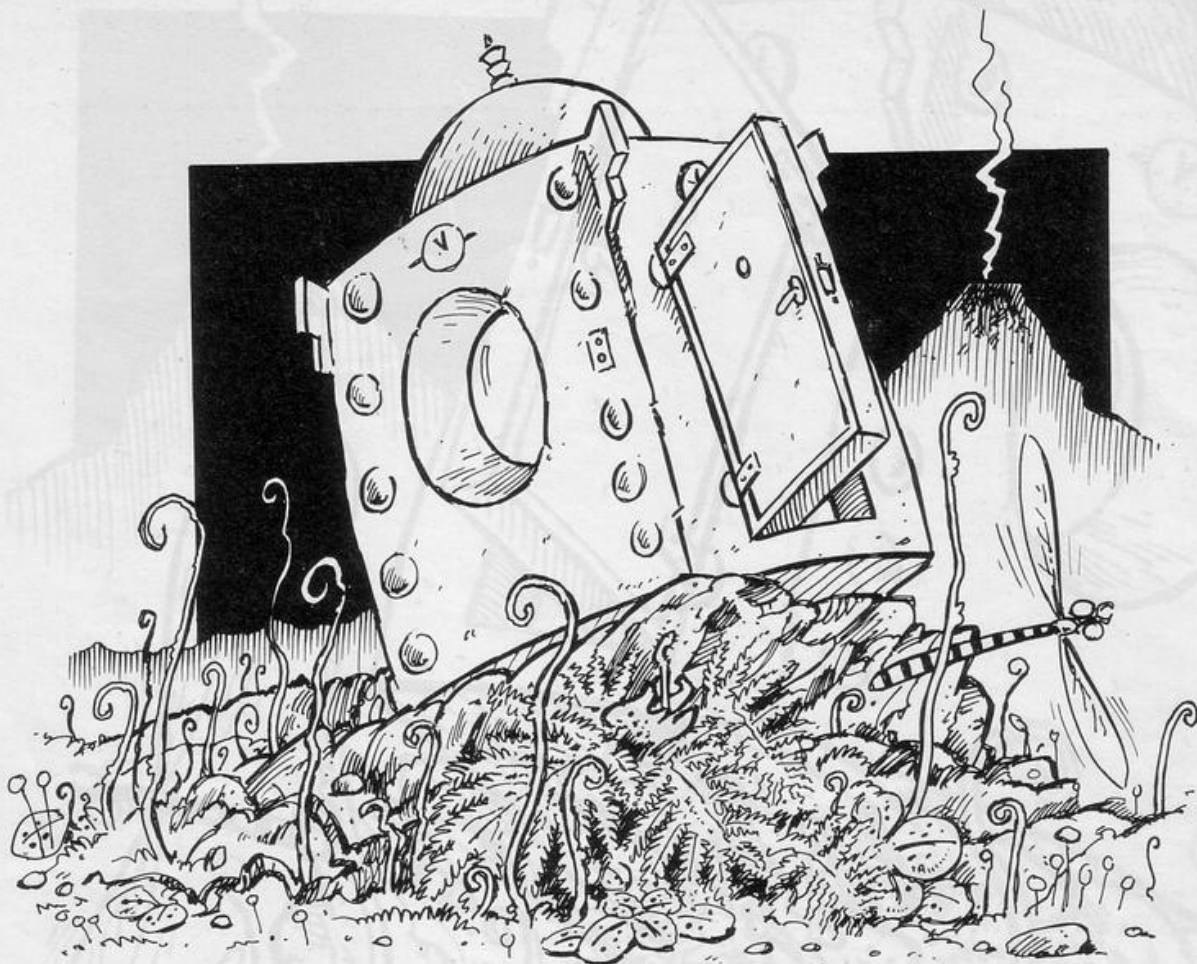
1220 LET UP=1150
1230 RETURN
1240 LET I$="YOU ARE IN A LONG PASSAGE. YOU CAN HEAR THE SOUND OF DRIPPING WATER. TO THE NORTH IS A FLIGHT OF STAIRS WITH A LARGE DOG SLEEPING ON THE BOTTOM STEP"
1250 LET SO=1210
1260 RETURN
1270 LET I$="YOU ARE ON AN ISLAND IN THE CENTRE OF THE LAKE. THERE IS A HOLE IN THE GROUND WITH A STAIR-CASE IN IT"
1280 LET DO=1240
1290 RETURN
1300 LET I$="YOU ARE BESIDE A LAKE. THERE IS AN ISLAND IN THE MIDDLE OF THE LAKE. TO THE WEST IS THE FOREST AND TO THE NORTH IS A ROCKERY"
1310 LET NO=1330
1315 LET WE=1120
1320 RETURN
1330 LET I$="YOU ARE IN A ROCKERY. THE LAKE IS TO THE WEST, AND THERE ARE SOME REEDS TO THE NORTH"
1340 LET NO=1360
1345 LET SO=1300

```

```

1350 RETURN
1360 CLS
1365 PRINT "I HAVE FALLEN INTO A SWAMP. GLUG.....GLUG.....GLUG....."
1370 GOTO 9000
1390 LET I$="YOU ARE IN A SHRUBBERY. THE FOREST IS TO THE SOUTH. THE LAKE IS TO THE EAST, AND THE MEADOW IS TO THE NORTH"
1400 LET NO=1420
1405 LET SO=1000
1410 RETURN
1420 LET I$="YOU ARE IN A MEADOW. THE LAKE IS TO THE SOUTH-EAST. TO THE SOUTH IS THE SHRUBBERY AND TO THE EAST IS A TOWER"
1430 LET EA=1450
1435 LET SO=1390
1440 RETURN
1450 LET I$="YOU ARE AT THE FOOT OF A TOWER. THERE IS NO DOOR TO BE SEEN. TO THE WEST IS THE MEADOW AND TO THE EAST ARE SOME REEDS."
1455 LET EA=1360
1460 LET WE=1420
1465 LET UP=1480
1470 RETURN
1480 LET I$="YOU ARE AT THE TOP

```

OF THE TOWER THERE IS NO DOOR UP
HERE EITHER"

1490 LET DO=1450

1500 RETURN

2000 IF I>=5 THEN PRINT "I CAN"
T CARRY ANYMORE"

2005 IF I>=5 THEN GOTO 100

2010 IF B\$="" THEN PRINT A\$," WH
AT ?"

2013 IF B\$="" THEN INPUT B\$

2015 IF B\$="" THEN GOTO 100

2020 LET FOUND=0

2025 FOR N=1 TO 12

2030 IF I(N)<>SET THEN GOTO 2055

2033 IF O(N)<>B\$(1 TO 15) THEN
GOTO 2055

2035 PRINT "OK..."

2040 LET FOUND=1

2045 LET I(N)=0

2050 LET I=I+1

2055 NEXT N

2060 IF FOUND=0 THEN GOTO 499

2065 GOTO 100

2500 IF B\$="" THEN PRINT "OPEN W
HAT ?"

2505 IF B\$="" THEN INPUT B\$

2510 IF B\$="" THEN GOTO 2500

2511 CLS

2515 IF B\$="DOOR" AND SET<>1150

THEN PRINT "WHAT DOOR"

2520 IF B\$="DOOR" AND SET<>1150
THEN GOTO 499

2525 IF B\$="DOOR" AND UND=0 THEN
PRINT "IT""S LOCKED DUMBO..."

2530 IF B\$="DOOR" AND UND=0 THEN
GOTO 499

2535 IF B\$="DOOR" THEN PRINT "TH
ERE IS A STAIR GOING DOWN."

2540 IF B\$="DOOR" THEN LET DO=12
10

2545 IF B\$="DOOR" THEN GOTO 100

2550 IF B\$="CHEST" AND SET<>1180
THEN PRINT "I SEE NO CHEST"

2555 IF B\$="CHEST" AND SET<>1180
THEN GOTO 100

2560 IF B\$="CHEST" AND NOT UNC T
HEN PRINT "IT""S LOCKED"

2565 IF B\$="CHEST" AND NOT UNC T
HEN GOTO 100

2570 IF B\$="CHEST" THEN PRINT "O
K"

2575 IF B\$="CHEST" THEN PRINT "T
HERE IS NOTHING IN THE CHEST"

2580 IF B\$="CHEST" THEN GOTO 100

2585 GOTO 499

3000 IF B\$="" THEN PRINT "UNLOCK"

3005 IF B\$="" THEN INPUT B\$

3010 IF B\$="" THEN GOTO 3000

3011 CLS

3013 IF B\$="" THEN LET B\$=B\$(2

TO)

3015 IF B\$="DOOR" AND SET<>1150

THEN PRINT "WHAT DOOR ?"

3020 IF B\$="DOOR" AND SET<>1150

THEN GOTO 100

3025 IF I(7)>0 THEN GOTO 499

3030 IF B\$="DOOR" THEN LET UND=1

3035 IF UND=1 THEN PRINT "CLICK

"

3040 IF UND=1 THEN GOTO 100

3045 IF B\$="CHEST" AND SET<>1180

THEN PRINT "WHAT CHEST ?"

3050 IF B\$="CHEST" AND SET<>1180

THEN GOTO 100

3055 IF B\$="CHEST" THEN LET UNC=

1

3060 IF B\$="CHEST" THEN PRINT "C
LUNK"

3065 IF B\$="CHEST" THEN GOTO 100

3070 GOTO 499

3500 IF B\$="" THEN PRINT "FEED W
HAT ?"

3505 IF B\$="" THEN INPUT B\$

3510 IF B\$="" THEN GOTO 3500

3515 IF B\$<>"DOG" THEN PRINT "DO
N""T BE SILLY"

3520 IF B\$<>"DOG" THEN GOTO 499

3525 IF SET<>1240 THEN PRINT "TH
ERE IS NO DOG HERE"

3530 IF SET<>1240 THEN GOTO 100

3535 IF I(12)>0 THEN PRINT "I HA
VE NO DOG FOOD"

3540 IF I(12)>0 THEN GOTO 100

3545 LET I=I-1

3550 LET FED=1

3555 LET UP=1270

3560 PRINT "MUNCH, MUNCH"

3565 LET I(12)=1180

3570 GOTO 100

4000~IF SET=1120 OR SET=1270 OR

SE=1300 OR SET=1330 OR SET=1390

OR SET=1420 THEN PRINT "BRR. THE

WATER IS TO COLD"

4005 IF SET=1120 OR SET=1270 OR

SE=1300 OR SET=1330 OR SET=1390

OR SET=1420 THEN GOTO 100

4010 PRINT "THERE IS NO WATER HE

RE"

4015 GOTO 100

4500 IF B\$="" THEN PRINT "DROP W
HAT ?"

4502 IF B\$="" THEN INPUT B\$

4503 IF B\$="" THEN GOTO 4500

4505 FOR N=1 TO 12

4507 IF B\$(1)= " " THEN LET B\$=B\$

(2 TO)

4508 IF B\$(1)= " " THEN GOTO 4507

4510 IF I(N)<>0 THEN GOTO 4545

4520 IF O(N)<>B\$(1 TO 15) THEN

GOTO 4545

4530 LET I(N)=SET

4532 LET FOUND=1

4535 PRINT "OK..."

4540 LET I=I-1

4545 NEXT N

4555 GOTO 100

5500 LET FOUND=0

5505 FOR N=1 TO 12

5510 IF I(N)<>0 THEN GOTO 5530

5515 IF NOT FOUND THEN PRINT "I

HAVE THE FOLLOWING..."

5520 PRINT TAB 10;" A " ;O\$(N)

5525 LET FOUND=1

5530 NEXT N

5555 RETURN

6000 IF SET=1240 THEN GOTO 6100

6002 IF SET=1210 THEN LET SET=UP

6005 IF SET<>1450 THEN LET SET=U

P

6010 IF SET=UP THEN GOTO 20

6020 IF I(3)>0 THEN PRINT "THERE


```

IS NO WAY UP"
6030 IF I(3)>0 THEN GOTO 100
6040 IF UP>0 THEN LET SET=UP
6050 IF SET=UP THEN GOTO 20
6060 PRINT "I CAN'T GO UP"
6070 GOTO 100
6100 IF FED=0 THEN PRINT "THERE"
"IS A DOG IN THE WAY"
6110 IF FED=0 THEN GOTO 100
6120 LET SET=1270
6130 GOTO 20
6500 IF B$="" THEN PRINT A$; " WHAT?"
6510 IF B$="" THEN INPUT B$
6520 IF B$="" THEN GOTO 6500
6530 IF B$<>"MANUSCRIPT" THEN GO
TO 499
6540 IF I(11)>0 AND SET<>1480 TH
EN PRINT "I DO NOT HAVE ";B$
6550 IF I(11)>0 AND SET<>1480 TH
EN GOTO 100
6555 CLS
6560 PRINT "THE MANUSCRIPT SAYS:
PP3 - TM I
SLAND "
6570 GOTO 100
7000 IF SET<>1060 OR I(9) THEN G
OTO 499
7010 PRINT "YOU HAVE SUCCESSFULLY
COMPLETED THE ADVENTURE."
7015 PRINT
7020 PRINT "YOUR TIME SHIP TAKES
OF FOR YOUR OWN TIME."
7025 PRINT AT 14,12;"(6*isp)"
7026 PRINT AT 16,12;"(6*isp)"
7027 PRINT AT 15,12;"(isp)";TAB
17;"(isp)"
7030 LET Z=INT (RND*250)+1995
7040 FOR A=2003 TO 1983 STEP -1
7050 PRINT AT 15,13;A

```

```

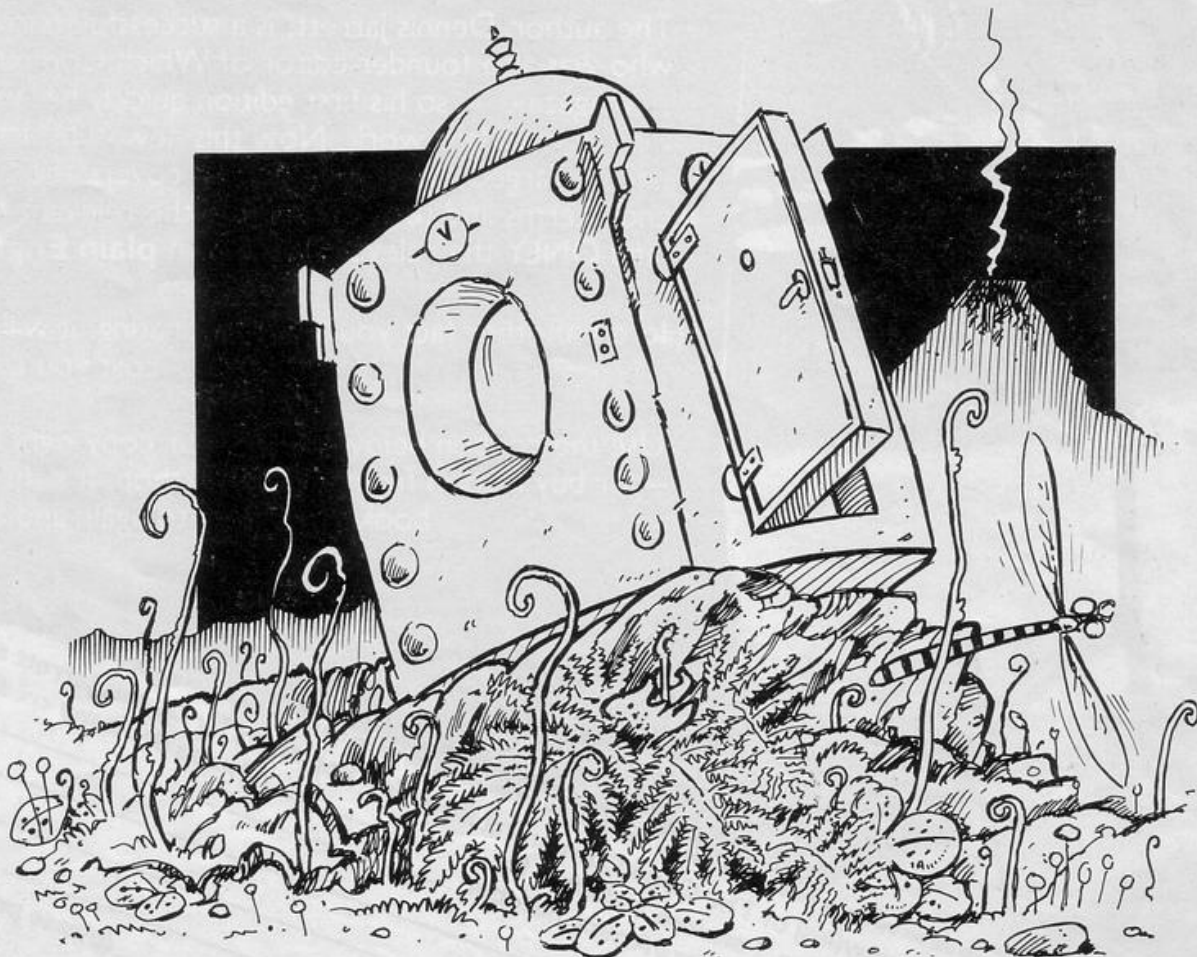
7060 NEXT A
7070 PRINT
7100 GOTO 9000
7500 IF B$="" THEN PRINT "LIGHT
WHAT?"
7510 IF B$="" THEN INPUT B$
7520 IF B$="" THEN GOTO 7500
7530 IF I(8)>0 THEN GOTO 499
7540 IF SET=1210 THEN LET NO=124
0
7550 IF NO>0 THEN PRINT "YOU ARE
IN A SMALL ROOM. THERE IS A ST
AIR CASE TO THE EAST AND A DAMP
PASSAGE TO THE NORTH."
7560 IF NO<>0 THEN GOTO 100
7570 PRINT "THAT DIDN'T DO MUCH
GOOD"
7580 GOTO 100
8000 CLS
8010 PRINT "TIME
SWITCH
=====
8020 PRINT
8030 PRINT
8040 PRINT " YOU ARE STRANDED
IN THE DIM AND DISTANT PAST. YO
U MUST FIND YOUR WAY BACK TO YOU
R OWN TIME USING WHAT YOU CAN F
IND ON YOUR JOURNEY"
8050 PRINT AT 18,4;"PRESS A KEY
TO START"
8060 IF INKEY$="" THEN GOTO 8060
8070 GOTO 9500
9000 PRINT "DO YOU WANT TO TRY A
GAIN Y OR N"
9010 INPUT B$
9020 IF B$="Y" THEN RUN
9030 STOP
9100 FAST
9101 CLS
9110 DIM I(12)

```

```

9120 DIM O$(12,15)
9130 FOR N=1 TO 12
9140 LET X=INT (RND*15)
9145 LET I(N)=(X*30)+1000
9147 IF I(N)=1360 THEN GOTO 9140
9148 IF I(N)>1200 AND I(N)<1271
THEN GOTO 9140
9150 NEXT N
9160 LET I(9)=1270
9170 LET I(7)=1480
9180 LET I(11)=1480
9190 LET I(3)=1060
9200 LET O$(1)="ROPE"
9210 LET O$(2)="ROCK"
9220 LET O$(3)="LADDER"
9230 LET O$(4)="GOLD RING"
9240 LET O$(5)="GUN"
9250 LET O$(6)="13 AMP PLUG"
9260 LET O$(7)="GOLDEN KEY"
9280 LET O$(8)="TORCH"
9290 LET O$(9)="BATTERY"
9300 LET O$(10)="LOG"
9310 LET O$(11)="MANUSCRIPT"
9320 LET O$(12)="MARROW-BONE"
9400 SLOW
9425 LET UND=0
9475 LET UNC=0
9480 GOTO 8000
9500 RETURN
9600 FOR N=1 TO 12
9605 LET P=P+1
9610 IF I(N)=SET THEN GOTO 9630
9615 IF P=12 THEN GOTO 90
9620 GOTO 9650
9630 IF NOT FOUND THEN PRINT "I
CAN SEE A..."
9640 PRINT O$(N)
9650 NEXT N
9700 GOTO 100
9800 SAVE "Ts"
9900 GOTO 1

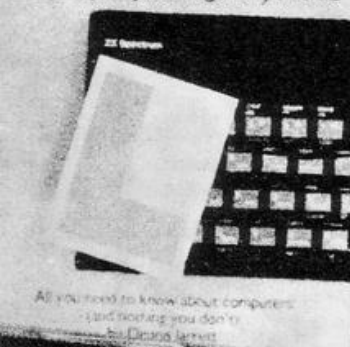
```



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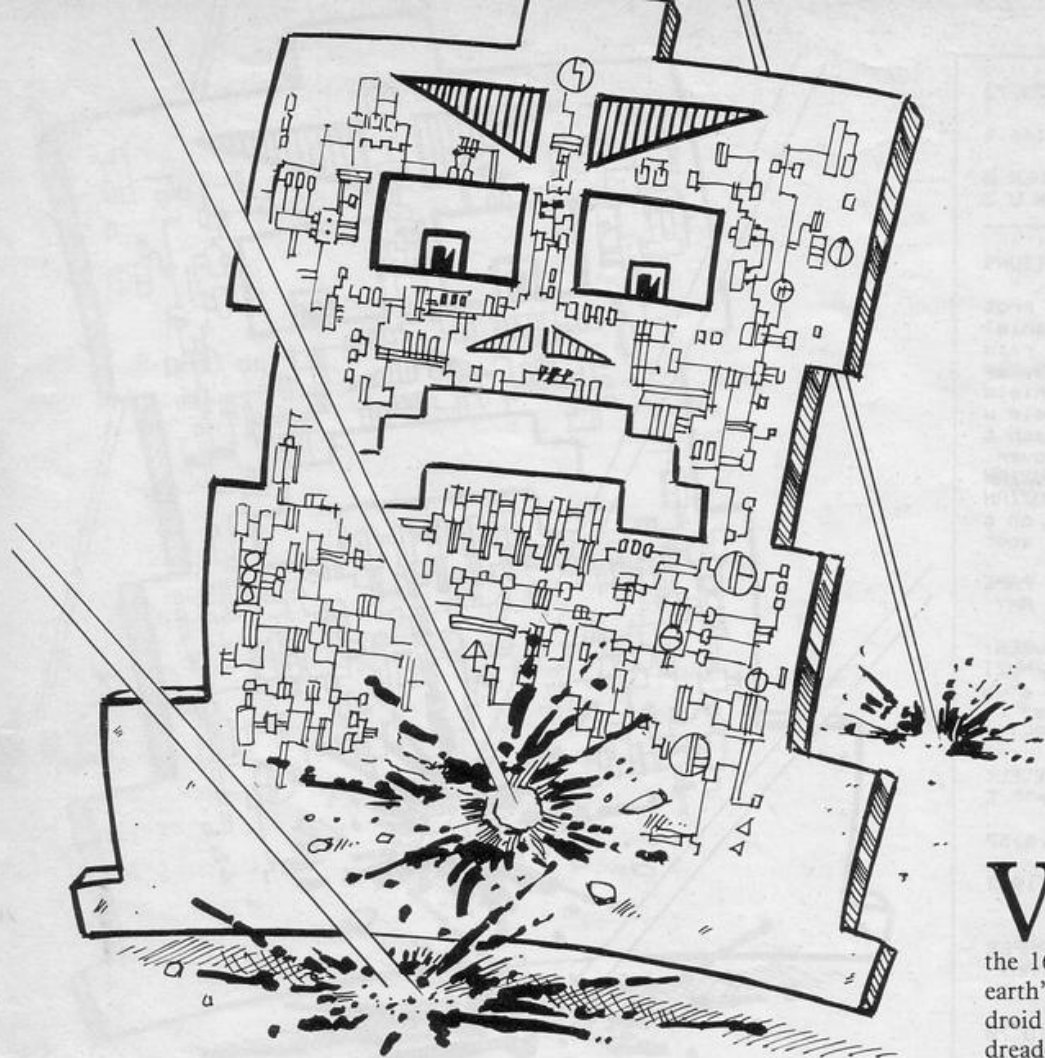
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VENUSIAN INVASION was written by Andrew Kirk of Brough, North Humberside for the 16K ZX-81. You must protect the earth's defence shields with your android from the kamikaze raids of the dreaded Zanuzians.

VENUSIAN INVASION

```

2 GO SUB 5000: GO SUB 6000: G
0 SUB 7000: REM initialise,UBUs
  instructions
10 BORDER 1: PAPER 1: INK 2: C
LS: PRINT AT 19-k,0: "(31*193)"
20 IF ss=2 THEN PRINT AT 19-
k,0: "(31*193)"
30 IF ss=3 THEN PRINT AT 20-
k,0: "(31*193)"
40 IF ss=4 THEN PRINT AT 21-
k,0: "(31*193)"
41 INK 6
45 PRINT AT 4,6: FLASH 1: INK
2: PAPER 7: "VENUZIANAS ASSEMBLING"
50 LET a=18-k-1: DIM a(32)
53 FOR f=1 TO 28
55 LET aa=INT (RND*32)
60 FOR g=1 TO 32: IF aa=a(g) T
HEN GO TO 55
70 NEXT g
80 PRINT AT sx,aa: "(9a)"
100 LET a(f)=aa
105 NEXT f
110 LET j=28: FOR g=0 TO 31
120 IF SCREEN# (sx,g)=" " THEN
PRINT AT sx,g: "(9a)": LET a(j)
=9: LET j=j+1: IF j=33 THEN GO
TO 140
130 NEXT g
140 PRINT AT 4,6: "
200 FOR f=1 TO 3: FOR g=50 TO -
10 STEP -1: BEEP .005,g: NEXT g:
NEXT f
210 LET f=1
220 IF hsc>9999 THEN LET hsc=0
230 PRINT AT 21,23: "HIGH:"hsc

```

```

510 LET x=sx: LET y=a(f): LET f
=f+1: IF f=33 THEN GO SUB 2000:
GO TO 10: REM all dropped
520 PRINT AT x-1,y: "AT x,y"
BRIGHT 1: "(9a)": LET x=x+1
525 BEEP 0.01,-x+10
530 IF x=a+1 THEN PRINT AT x-1
,y: BRIGHT 1: "(9a)": LET v=v+1:
GO TO 510
531 PRINT AT 21,0: "VENUZIANAS:"
v:
532 PRINT AT 21,13: "SCORE:"sc
533 IF v=3 THEN LET v=0: PRINT
AT 5,1: "THREE LANDED...ONE SHIE
LD LESS!": FOR h=1 TO 30: BEEP 0
.1,h: NEXT h: PRINT AT a+s,0: "
AT a,0: "
"AT 5,1: "
"LET s=s-1
534 IF s=0 THEN LET s=4: GO TO
4000
539 PRINT AT a,b: "
540 IF INKEY#="o" OR INKEY#="O"
THEN LET b=b-(b<>0): LET b1=1:
IF SCREEN# (a,b<>) " THEN LET
v=v-1: LET sc=sc+10
550 IF INKEY#="p" OR INKEY#="P"
THEN LET b=b+(b<>31): LET b1=2:
IF SCREEN# (a,b<>) " THEN LE
T v=v-1: LET sc=sc+10:
560 PRINT INK 7: BRIGHT 1: AT a
,b:b#(b1)
600 GO TO 520
2010 PRINT AT 7,7: "NEXT LEVEL..."
LET sc=sc+100: FOR f=1 TO 300
NEXT f: PRINT AT 17,0: "
LET

```

```

v=0: LET s=s-1: LET l=l-1
2020 LET ss=ss-1: IF ss=0 THEN
BEEP 1,2: LET sx=sx+2: LET ss=4
2030 LET s=ss
2040 RETURN
4010 BEEP 1,1:
4020 PRINT AT 10,11: "GAME OVER":
FOR g=1 TO 5: FOR f=0 TO 10: BE
EP .02,f: NEXT f: NEXT g: IF sc<
hsc THEN GO TO 4500
4100 PAPER 3: BORDER 3: INK 6: C
LS: INVERSE 1: PRINT AT 5,1: "YO
U HAVE THE NEW HIGH SCORE OF:"AT
7,15:sc: INVERSE 0: LET hsc=sc:
FOR f=1 TO 3: FOR g=-20 TO 20:
BEEP 0.01,g: NEXT g: NEXT f
4500 PAPER 2: BORDER 2: INK 6: C
LS: PRINT AT 10,10: "ANOTHER GO?"
4510 IF INKEY#="y" OR INKEY#="Y"
THEN GO SUB 7000: LET sc=0: LE
T l=1: LET a=17: LET b=16: LET v
=0: LET s=4: LET ss=4: LET sx=0:
GO TO 10
4520 IF INKEY#="n" OR INKEY#="N"
THEN STOP
4530 GO TO 4510
5000 LET l=1: LET a=17: LET b=16:
LET v=0: LET s=4: LET ss=4: LE
T sx=0: LET hsc=0: LET sc=0: LET
b#="(9c:9d)": LET b1=1
5010 RETURN
6010 FOR f=USR "a" TO USR "d"+7:
READ xx: POKE f,xx: NEXT f: RET
URN
6020 DATA 65,65,99,127,73,91,127
,28
6030 DATA 28,127,73,109,127,99,6

```



```

5,65
6040 DATA 15,137,64,70,127,73,73
,194
6050 DATA 240,145,2,98,254,146,1
46,97
7000 BRIGHT 1: PAPER 0: BORDER 0
: INK 7: CLS: PRINT "VENU 2
: IAN INVASION."

```

```

7010 PRINT AT 4,10;"INSTRUCTIONS
: "AT 7,10;"

```

```

7030 PRINT AT 7,1;"You must Prot
ect the Earth's defence shiel
ds from the kamikaze raid
s of the dreaded VENUZIANs. If
three of them are on the shield
at any one time, that shield w
ill collapse. You must squash t
he ZANUZIANs by running over
them with your ANTI-VENUZIAN
ANDROID. If a VENUZIAN
should land directly on t
op of it, it will count as anot
her one on the shield."

```

```

7040 PRINT FLASH 1: INK 1: PAPER
6: AT 21,0;" PRESS ANY
KEY

```

```

7050 CLS: PRINT AT 2,5;"SCORES:
"AT 4,5;"10 Squashing a VENUZI
AN"AT 5,5;"100 Destroying a wh
ole attack wave"

```

```

7055 PRINT AT 10,10;"KEYS ARE:"
AT 12,10;"<<0 P>>"

```

```

7056 PRINT AT 18,7;"SKILL LEVEL(
1-9)" : LET k=INKEY$: IF k$="" T
HEN GO TO 7056

```

```

7057 IF CODE k$<49 OR CODE k$>57
THEN GO TO 7056

```

```

7058 LET k=VAL k$: PRINT AT 19,7
;"SKILL LEVEL: "k

```

```

7059 FOR f=1 TO 100: NEXT f
7060 PRINT AT 21,0: INK 1: PAPER
6: FLASH 1;" PRESS ANY
KEY

```

```

7065 BRIGHT 0
7070 IF INKEY$="" THEN GO TO 70
70

```

```

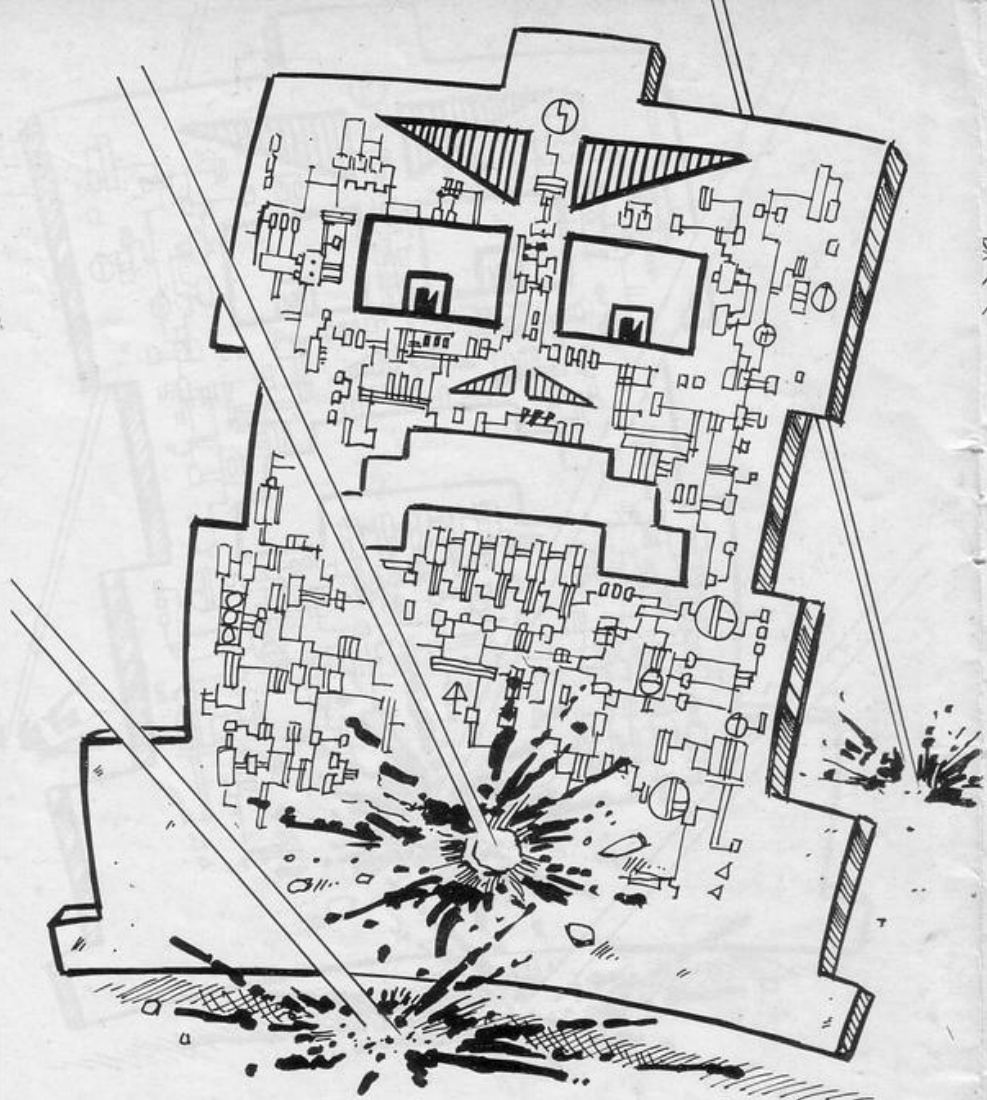
7080 RETURN

```

```

9999 RUN

```



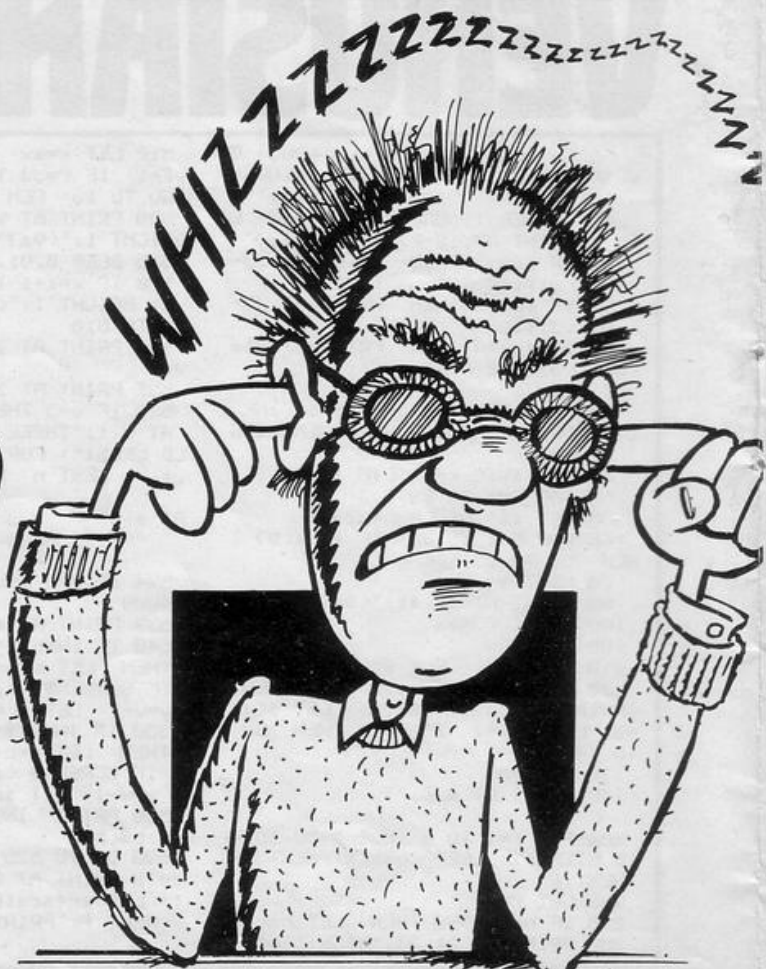
```

9000 CLEAR 28500: FOR n=28500 TO
28527: READ v: POKE n,v: NEXT n
: RANDOMIZE USR 28500
9010 DATA 38,2,1,25,1,22,0,122,2
11,254,20,124,186,32,248,11,62,0
,184,32,240,36,62,210,188,32,231
,201
9020 BORDER 7

```

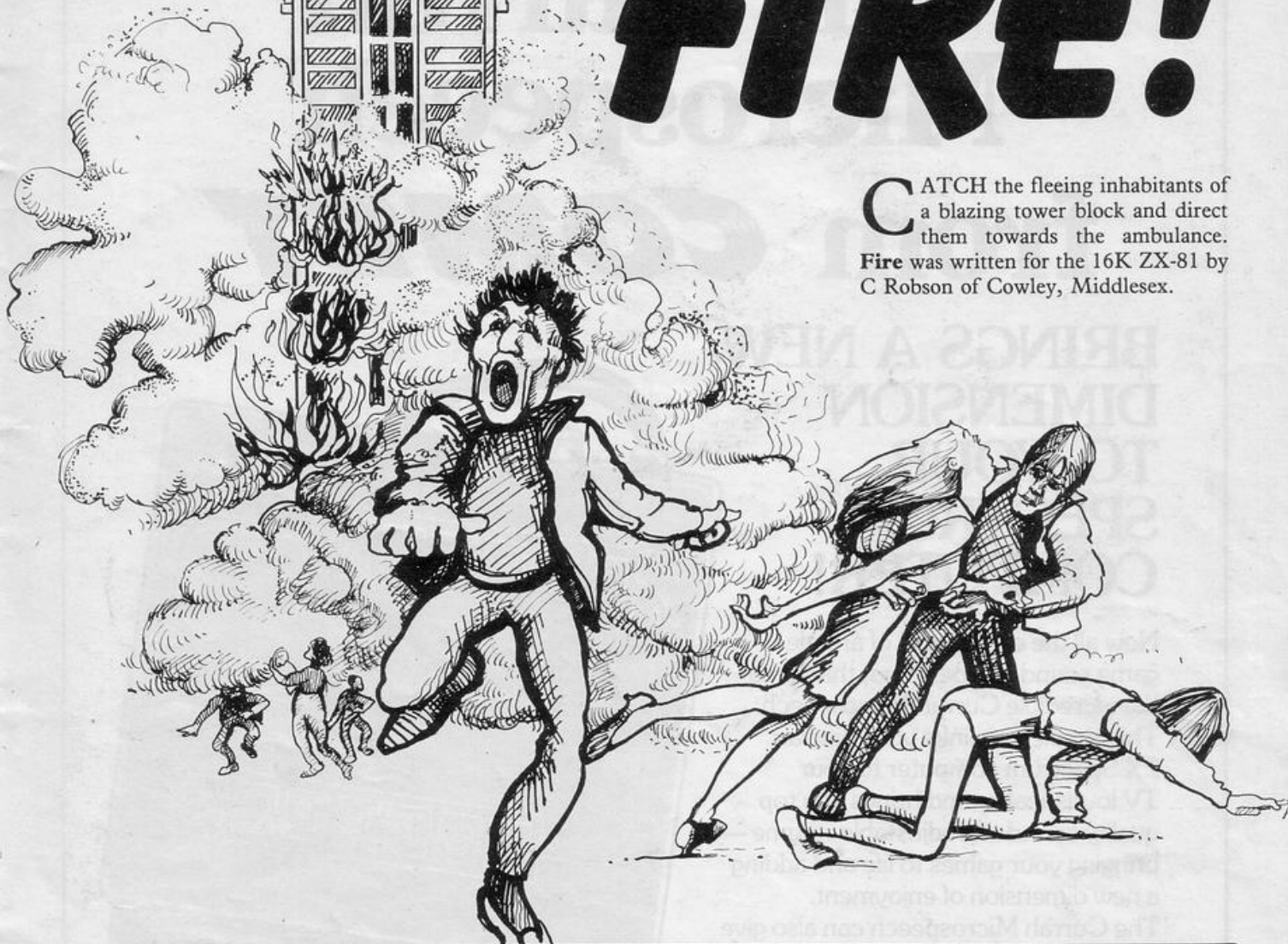
SOUND EFFECT

SOUND EFFECT is a useful routine, written for the Spectrum by Paul Scott, aged 15, of Wimborne, Dorset. When you have typed the routine into the computer you can recall it using RANDOMIZE USR 28500. The routine, which is suitable for inclusion in a larger program, produces a whizzing sound and a striped border which flickers about very quickly.



FIRE!

CATCH the fleeing inhabitants of a blazing tower block and direct them towards the ambulance. **Fire** was written for the 16K ZX-81 by C Robson of Cowley, Middlesex.



```

1 FAST
2 RAND
10 LET A$="0505060709121512100
910121510091011121314"
15 LET FIRST=1
20 DIM A(20)
30 FOR C=1 TO 20
40 LET A(C)=VAL A$(2*C-1 TO 2*
C)
50 NEXT C
60 DIM S(4)
65 DIM U(4)
70 DIM B(4)
80 LET SCORE=0
90 LET DEAD=0
100 FOR C=1 TO 4
110 LET S(C)=-1
112 LET U(C)=0
115 LET B(C)=0
117 NEXT C
118 LET S(1)=INT (RND*5+5)
120 FOR C=0 TO 21
130 PRINT AT C,0;"(30*isp)"
140 NEXT C
150 FOR C=5 TO 19 STEP 2
160 PRINT AT C,1;"(96' 96)" ;A
T C+1,1;"(97' 97)"
170 NEXT C
180 PRINT AT 16,25;"(94)" ;AT
17,25;"(92'9e' 97')" ;AT 18,25;"
"(91'9e' 97')" ;AT 19,25;"(isp'1*isp'1*
)"
190 LET PX=7
191 SLOW
192 IF FIRST=1 THEN GOSUB 2000

```

```

195 FOR C=1 TO 4
200 PRINT AT 16,PX;"(isp'9e'2*9
6'9r'isp)"
210 LET B(C)=B(C)+1
220 LET K$=INKEY$
225 LET PX=PX+(1 AND K$="8" AND
PX<19)-(1 AND K$="5" AND PX>6)
230 IF S(C)=-1 THEN GOTO 400
240 LET BY=A(B(C))
250~LET BX=S(C)+B(C)
260 PRINT AT BY,BX;"(1*)"
270 PRINT AT U(C),BX-1;"(isp)"
275 LET U(C)=BY
276 PRINT AT 16,PX;"(isp'9e'2*9
6'9r'isp)"
277 LET K$=INKEY$
278 LET PX=PX+(1 AND K$="8" AND
PX<19)-(1 AND K$="5" AND PX>6)
280 IF BY=15 THEN GOTO 500
290 IF B(C)=20 THEN GOTO 600
300 GOTO 1000
400 IF RND<=.9-SCORE*.05 THEN G
OTO 1000
410 LET S(C)=INT (RND*5+5)
420 LET B(C)=0
430 PRINT AT 4,6;"help" ;AT 4,6;"
(4*isp)"
440 GOTO 1000
500 IF BX=PX+2 OR BX=PX+3 THEN
GOTO 1000
510 PRINT AT 15,BX;"ouch" ;AT 15
"ouch"
520 LET DEAD=DEAD+1
530 PRINT AT 1,DEAD;"(1*)"
540 IF DEAD<4 THEN GOTO 800

```

```

550 PRINT AT 10,10;"GAME(isp)OV
ER" ;AT 12,10;"SCORE(isp)=(isp)";
SCORE
560 GOSUB 2040
570 GOTO 80
600 PRINT AT 14,25;"(5*isp)"
620 LET SCORE=SCORE+1
800 LET S(C)=-1
810 LET U(C)=0
820 LET B(C)=0
1000 NEXT C
1010 GOTO 195
2000 LET FIRST=0
2010 PRINT AT 4,10;"(3*1*isp'fi
re:isp'3*1*)"
2020 PRINT AT 6,6;"use the curso
r keys S+8" ;AT 7,6;"to move the
sheet :1:(9e'2*96'9r'i)"
2030 PRINT AT 9,6;"and get the P
2030 PRINT AT 9,6;"and get the P
eople" ;AT 10,6;"safely to the am
bulance"
2040 PRINT AT 14,6;"Press any ke
y to start"
2050 IF INKEY$="" THEN GOTO 2050
2060 IF INKEY$<>"" THEN GOTO 206
0
2070 FOR Q=4 TO 14
2080 PRINT AT Q,6;"(24*isp)"
2090 NEXT Q
3000 RETURN
5000 CLEAR
5010 SAVE "Fire"
5020 RUN

```


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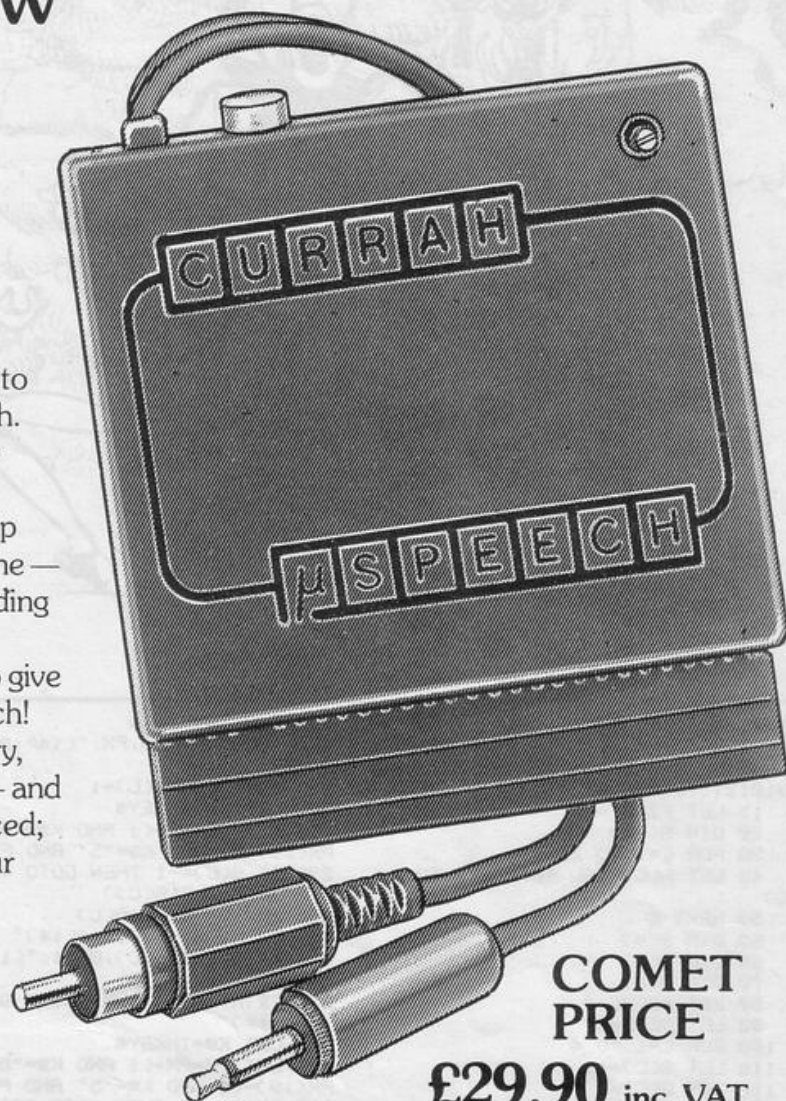
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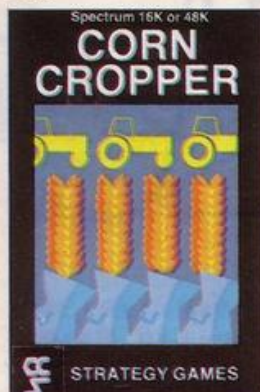
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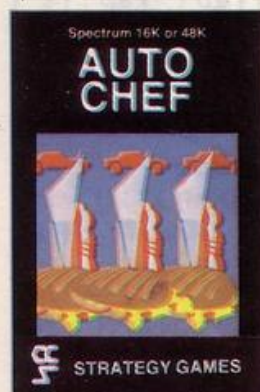
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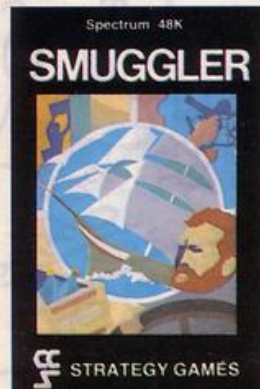
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A wing and a prayer will not be enough to turn your £3 million to £30 million in the time allowed, but your financial wizardry will enable you to take over British Airways, or will it? Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.



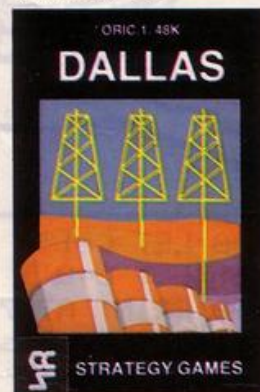
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Limited cash and droughts are two of the problems facing the farmer. Planting fertilizing and harvesting must all be done economically if you are to reap the rewards offered in corn cropper. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.



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You have a million in capital and need to increase this to £25 million in the shortest time possible. Inflation, strikes, sluggish markets are only some of the hazards to overcome. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.



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As master of a 19th century vessel you plough between England and the continent visiting ports to buy and sell your cargo, but beware the customs men, pirates and gale force winds can all run you aground. Runs on Spectrum 48K — £6.



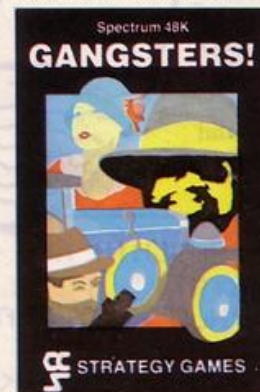
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Can you amass enough petro dollars to take over the Euing empire. Cut throat business and an eye for the main chance may get you there but you'll need nerves of steel to become the oil king of Dallas. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.



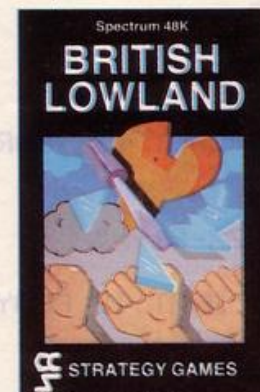
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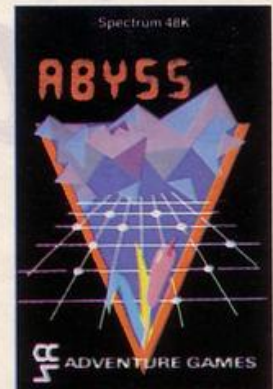
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Can you singe the King of Spain's beard. Engage the Spanish ships on the high seas survive their broadsides and plunder the gold destined for the Armada and you might get your Knighthood before Francis Drake. Runs on Spectrum 48K — £6.



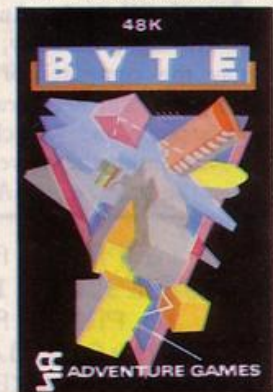
GANGSTER Spectrum 48K
Are you cold hearted and callous enough to warrant the title of Don. You need to be if you are to rise to the top of the pile. A quick trigger finger and an even quicker brain are needed to control the mobs and their rackets. Runs on Spectrum 48K — £6.



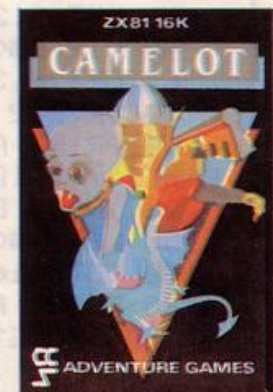
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Can you journey across the long-forgotten Abyss and outwit the evil monsters that lurk in the shadows awaiting the foolhardy and careless adventurer. There are many bridges and many monsters. Will you be the one to make the Abyss safe to cross again. Runs on Spectrum 48K — £5.



BYTE 48K
Complete the ten circuits you need to build your computer system then return home. Easy. Byte has sent its electronic monsters to harry you through this three dimensional maze of circuitry, if any of them catch you... Runs on Spectrum 48K — £5.



CAMELOT ZX81 16K
As the banished Arthur Pendragon you must find seven treasures without falling prey to the Brigands, Dragons and Evil Magicians that stand in your way and make a triumphant return to Camelot to be crowned King. Runs on ZX81 16K — £5 and Spectrum 48K — £5.

Available from W H Smith, Boots, Rumbelows and all good computer shops or
Cases Computer Simulations Ltd., 14 Langton Way, London SE3 7TL.



Strategy Games. They're no pushover

NOUGHTS AND CROSSES



IN Noughts and Crosses for the 16K ZX-81 by Andrew Moore of Hoyland, Barnsley, you can either play the computer or a friend. The computer will keep track of each person's move and will check for invalid moves. Input the move as the number, then the letter, e.g., 1A.

```

10 PRINT AT 0,6;"NOUGHTS AND C
ROSSSES";AT 1,6;"(18*97)"
20 PRINT AT 0,7;"HOW MANY PLAY
ERS?";AT 10,12;"(1 OR 2)"
30 IF INKEY$<>"2" AND INKEY$<>
"1" THEN GOTO 30
40 LET P=VAL INKEY$
45 DIM S(3)
50 LET S(1)=0
55 LET S(2)=0
60 DIM B$(3,9)
65 LET S(3)=0
70 IF P=2 THEN GOTO 120
80 PRINT AT 8,7;"WHAT IS YOUR
NAME?";AT 10,12;" "
90 INPUT B$(1)
100 LET B$(2)=" ZX-81. "
110 GOTO 160
120 PRINT AT 8,4;"WHAT IS PLAYE
R 1'S NAME?";AT 10,12;" "
130 INPUT B$(1)

140 PRINT AT 8,19;"2"
150 INPUT B$(2)
160 PRINT AT 8,4;" "
    )AT 3,0;"PLAYER 1";A
T 3,23;"PLAYER 2"
170 PRINT AT 5,0;B$(1);AT 5,23;
B$(2)
175 LET PG=1

```

```

180 LET G=1
185 LET C=0
190 PRINT AT 7,10;"(4*SP:1*P:3*
SP:1*P)";"(10*SP:1:3*SP:1*P:3*SP
:1*P)";"(14*SP:1*P:3*SP:1*P)";"(
11*SP:11*1*P)";"(14*SP:1*P:3*SP:
1*P)";"(10*SP:2:3*SP:1*P:3*SP:1*
P)";"(14*SP:1*P:3*SP:1*P)";"(11*
SP:11*1*P)";"(14*SP:1*P:3*SP:1*P
:1*P)";"(10*SP:3:4*SP:1*P:3*SP:1*
P)";"(14*SP:1*P:3*SP:1*P)"
195 PRINT AT 10,12;"A B C"
200 DIM A$(3,3)
205 LET G=PG
210 IF C=9 THEN GOTO 850
215 PRINT AT 4,0;"(30*SP)";AT 2
,0;"(29*SP)";AT 4,(G-1)*23;"(8*9
s)";AT 2,(G-1)*23;"(8*9d)"
220 LET C=C+1
225 LET Z$=("O" AND G=1)+("X" A
ND G=2)
230 IF G=2 AND P=1 THEN GOTO 60
0
240 INPUT M$
245 IF LEN M$<>2 THEN GOTO 500
250 IF VAL M$(1)>3 OR VAL M$(1)
<1 OR M$(2)<>"A" AND M$(2)<>"B"
AND M$(2)<>"C" THEN GOTO 500
260 LET A=VAL M$(1)
270 LET B=CODE M$(2)-37
280 IF A$(A,B)<>" " THEN GOTO 5
00

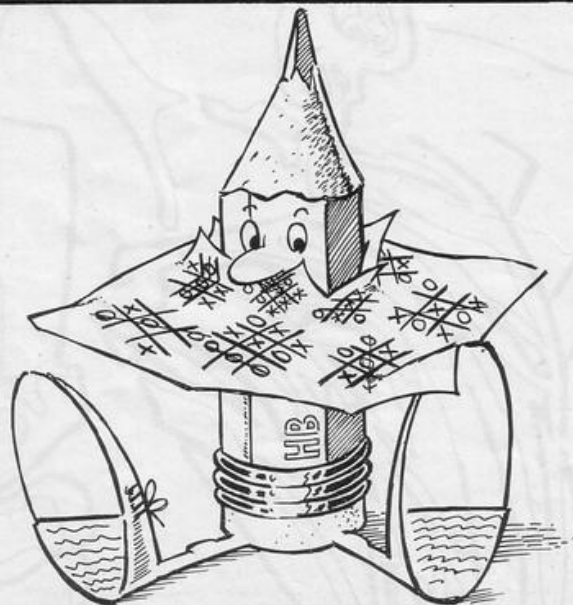
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```

290 PRINT AT (A*4)+4,(B*4)+8;Z$
300 LET A$(A,B)=Z$
310 IF A$(1)=Z$+Z$+Z$ OR A$(2)=
Z$+Z$+Z$ OR A$(3)=Z$+Z$+Z$ OR A$
(1,1)=Z$ AND A$(2,2)=Z$ AND A$(3
,3)=Z$ OR A$(1,3)=Z$ AND A$(2,2)
=Z$ AND A$(3,1)=Z$ THEN GOTO 100
0
320 IF A$(1,1)=Z$ AND A$(2,1)=Z
$ AND A$(3,1)=Z$ OR A$(1,2)=Z$ A
ND A$(2,2)=Z$ AND A$(3,2)=Z$ OR
A$(1,3)=Z$ AND A$(2,3)=Z$ AND A$
(3,3)=Z$ THEN GOTO 1000
330 LET G=G+1
340 IF G=3 THEN LET G=1
350 GOTO 210
490 STOP
500 PRINT AT 20,4;"INVALID MOVE
,TRY AGAIN."
510 FOR F=0 TO 20
520 NEXT F
530 PRINT AT 20,4;"
"
540 GOTO 240
600 LET B=0
605 IF C<=3 THEN GOTO 770
610 LET F$="X"
620 FOR A=1 TO 3
630 LET B=(1 AND A$(A))=" " +F$+F
$)+(2 AND A$(A))=F$+" " +F$)+(3 AN
D A$(A))=F$+F$+" "
640 IF B>0 THEN GOTO 290
650 NEXT A
660 LET A=0
670 FOR B=1 TO 3
680 LET A=(1 AND A$(1,B))=" " AN
D A$(2,B)=F$ AND A$(3,B)=F$)+(2
AND A$(1,B)=F$ AND A$(2,B))=" " A
ND A$(3,B)=F$)+(3 AND A$(1,B)=F$
AND A$(2,B)=F$ AND A$(3,B))=" "
690 IF A>0 THEN GOTO 290
700 NEXT B
705 LET M$=""
710 LET M$=("1A" AND A$(1,1))="
" AND A$(2,2)=F$ AND A$(3,3)=F$)

```



```

+("2B" AND A$(1,1)=F$ AND A$(2,2)
)=" " AND A$(3,3)=F$)+( "3C" AND
A$(1,1)=F$ AND A$(2,2)=F$ AND A$
(3,3)=" ")
715 IF M$<>" " THEN GOTO 260
720 LET M$=("1C" AND A$(1,3))="
" AND A$(2,2)=F$ AND A$(3,1)=F$)
+("2B" AND A$(1,3)=F$ AND A$(2,2)
)=" " AND A$(3,1)=F$)+( "3A" AND
A$(1,3)=F$ AND A$(2,2)=F$ AND A$
(3,1)=" ")
730 IF M$<>" " THEN GOTO 260
740 IF F$="0" THEN GOTO 770
750 LET F$="0"
760 GOTO 620
770 LET A=INT (RND*3)+1
775 LET B=INT (RND*3)+1
780 IF A$(A,B)<>" " THEN GOTO 7
70
785 IF C=2 AND A$(2,2)=" " THEN
GOTO 800
790 GOTO 290
800 LET A=2
810 LET B=2
820 GOTO 290
860 LET G=3
870 LET B$(G)=" NOBODY"
1000 FOR F=0 TO 20
1010 NEXT F
1015 FOR F=7 TO 10
1020 PRINT AT F,10;"
"
1025 NEXT F
1030 PRINT AT 9,8;"*****
***";AT 10,8;"*";B$(G);" WINS*")
AT 11,8;"*****"
1035 LET S(G)=S(G)+1
1037 LET G=2
1050 FOR F=1 TO C
1060 LET G=G+1
1065 IF G=3 THEN LET G=1
1070 NEXT F
1080 PRINT AT 7,0;("(2*1sp:95)");S
(1);("(97:7*1sp:95:SCORE:97:8*1sp
)");S(2);("(97:2*1sp)")
1090 FOR F=0 TO 4E4
1095 PRINT AT 13,10;"Press any k
ey";AT 13,10;"
"
1100 IF INKEY$="" THEN NEXT F
1105 FOR F=9 TO 11
1106 PRINT AT F,8;"
"
1108 NEXT F
1110 PRINT AT 7,0;"
"
1120 IF S(1)=9 OR S(2)=9 THEN ST
OP
1130 LET PG=PG+1
1140 IF PG=3 THEN LET PG=1
1500 GOTO 185
2990 STOP
3000 SAVE "NAC"
3010 RUN

```


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**timex
sinclair
user**


```

2 CLS
3 LET HI=0
5 LET Z=0
7 LET SCORE=0
10 PRINT "HELLO,ANYONE THERE?"
11 PAUSE 200
12 PRINT "WELL PRESS SOMETHING
THEN"
13 PRINT
14 IF INKEY$="" THEN GOTO 13
20 PRINT "A RANDOM NUMBER WILL
APPEAR ON THE SCREEN FOR A SET
TIME,YOU HAVE TO TYPE IT BACK
"
25 PRINT "SELECT LEVEL 1(HARD)
OR LEVEL 2 (VERY HARD)"
30 PRINT
40 PRINT "SELECT LEVEL 1(HARD
OR 2(SUICIDE)"

```

```

50 INPUT A$
60 IF A$="1" THEN LET TIME=6.7
5
70 IF A$="2" THEN LET TIME=2.7
5
80 LET X=INT (RND*999)+1
90 LET C=INT (RND*20)
100 LET D=INT (RND*10)
110 CLS
130 PRINT AT D,C)X
140 PAUSE TIME
150 CLS
160 INPUT B
170 IF X=B THEN PRINT AT 0,0);"c
orrect"
175 IF X=B THEN LET SCORE=SCORE
+1
180 IF B<>X THEN PRINT AT 0,0);"
wrong"
184 PAUSE 4E4
190 CLS
200 LET Z=Z+1
202 IF Z<10 THEN GOTO 220
205 PRINT AT 0,0);"score="
210 PRINT AT 0,7);SCORE
211 IF SCORE<=HI THEN GOTO 210
212 LET HI=SCORE
213 PRINT "YOU HAVE ACHIEVED TH
E HI-SCORE,ENTER YOUR NAME"
214 INPUT H$
215 PRINT AT 13,8);"hi="
217 PRINT AT 13,13);HI);" BY ");H$
218 PAUSE 4E4
219 GOTO 0
220 GOTO 80
230 SAVE "NUMBER FLASH"
240 RUN

```



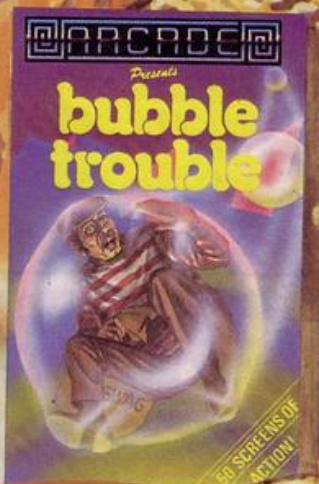
NUMBER FLASH

R WILLIAMSON aged 11, of Hucknall, Notts, wrote **Number Flash** for the 16K ZX-81. Set your level at difficult, or suicidal, then enter the number flashed before your eyes.

ARCADE

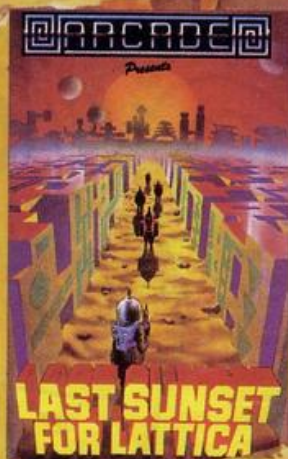
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SOFTWARE

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You take on the role of our super hero ZIGGY shown here above in his exploratory capsule in combat with an Urk disguised as a pangalactic gargleblaster (!!) This is a true representation of the on-screen graphics.

**For 48K
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MINER

MINER for the 16K ZX-81 was submitted by Philip Turner of Warley, West Midlands. A lift will take you into the mine, where you have to search for gold while avoiding the hazards. On clearing the mine, enter the lift to return to the surface, where you will be able to deposit your gold in the bank. Use cursor keys 5, 6, 7 and 8.

```

1 GOTO 1000
100 POKE MA,CH
102 IF I=1 THEN GOSUB 3300
103 IF PEEK MA=8 THEN LET DE=1
104 IF U=1 THEN GOSUB 3200
105 POKE LI,128
106 IF DE=1 THEN GOTO 4000
110 LET P$=INKEY$
120 LET D=(P$="8")-(P$="5")+33*
((P$="6")-(P$="7"))
123 IF D=0 THEN IF PEEK (MA+DD)
=0 THEN LET D=DD
125 POKE LI,0
126 IF D<>0 THEN IF DD<>D THEN
LET DD=D
127 IF PEEK (MA+D)=0 THEN LET D
D=D
130 IF PEEK (MA+D)=0 THEN GOTO
500
140 IF PEEK (MA+D)=128 THEN GOT
O 200
150 IF PEEK (MA+D)=155 THEN GOT
O 2000
160 IF PEEK (MA+D)=133 THEN GOT
O 3000
170 IF U=1 THEN GOSUB 3200
180 IF I=1 THEN GOSUB 3300
190 GOTO 100
200 LET MA=MA+D
205 LET CH=23
210 POKE MA,CH
215 POKE MA-D,0
220 GOTO 100
450 GOTO 100
510 LET MA=MA+D
513 IF D=-1 THEN IF PEEK (MA-2)
=136 AND PEEK (MA-1)=136 THEN GO
TO 700
515 IF CH=151 AND ABS D=33 THEN
LET LI=MA
517 IF CH=151 AND LI<>MA THEN L
ET CH=23
520 POKE MA,CH
530 POKE MA-D,0
540 IF MA=LI THEN LET CH=151
650 GOTO 100
700 POKE MA+1,0
713 IF MA=LI THEN GOTO 515
715 IF MA=L+662 THEN GOTO 100
720 POKE MA,23
730 POKE MA+33,23
740 LET MA=MA+33
750 POKE MA-33,0
760 IF MA<>L+662 THEN GOTO 720
765 FOR O=1 TO 30
770 POKE MA,131
780 POKE MA,3
790 NEXT O
800 GOTO 4000
999 STOP
1000 PRINT " "
1005 PRINT " "
1000000
1010 FOR D=1 TO 18
1020 PRINT " "
1030 NEXT D
1040 PRINT " "
1045 PRINT AT 1,23;"000100"
1050 LET L=PEEK 16396+256*PEEK 1
6397+1
1060 FOR A=1 TO 40
1070 LET X=INT (RND*660)+L+66
1080 IF PEEK X<>128 THEN GOTO 10
70
1090 POKE X,155
1100 NEXT A
1110 LET LI=L+35
1120 LET MA=L+45
1130 LET CH=23
1140 LET MO=0
1150 LET CA=0
1160 LET SCO=100
1170 LET DD=0
1180 LET U=0
1190 LET I=0
1200 LET U$="GOLD ROCK SAND GAS
WATER"
1210 LET P=L+33*21-1
1220 LET DE=0
1230 LET V=0
1500 GOTO 100
2000 LET R=INT (RND*5)+1
2005 IF R=5 THEN IF I=1 THEN GOT
O 2000
2007 LET V=V+1
2010 POKE MA,0
2020 LET MA=MA+D
2030 POKE MA,143
2040 LET H$=U$(R*5-4 TO R*5)
2050 PRINT AT 0,4;H$
2060 GOTO (2000+R*100)
2100 LET GL=INT (RND*20)+10
2110 PRINT AT 0,6;"-";GL;" NUGGE
TS"
2120 LET CA=CA+GL
2130 LET MO=MO+GL*(INT (RND*5)+3
)
2140 FOR O=1 TO 30
2150 POKE MA,136
2160 POKE MA,CH
2170 NEXT O
2180 PRINT AT 0,4;" "
2190 GOTO 100
2200 PRINT AT 0,3;" ROCK ";
2202 PRINT "YOU USE DRILL"
2204 PRINT AT 1,6;"LOSE MONEY"
2210 FOR O=1 TO 30
2220 POKE MA,6
2230 POKE MA,134
2240 NEXT O
2270 LET SCO=SCO-25
2285 PRINT AT 0,3;" "
";AT 1,6;" "
2290 GOTO 3010
2300 PRINT AT 1,3;"RISK OF LOSIN
G GOLD"
2320 LET CA=INT (CA*.4+.5)
2330 LET MO=INT (MO*.6+.5)
2340 FOR O=1 TO 30
2350 POKE MA,INT (RND*10)
2360 NEXT O
2370 PRINT AT 1,3;" "
";AT 0,4;" "
2380 GOTO 100
2400 LET GA=MA
2410 LET U=1
2420 FOR O=1 TO 30
2430 POKE MA,9
2440 POKE MA,137
2450 NEXT O
2460 PRINT AT 0,4;" "
2470 GOTO 100
2500 PRINT AT 0,4;"FLOODING"
2510 FOR O=1 TO 30
2520 POKE MA,48
2530 POKE MA,0
2540 NEXT O
2550 LET I=1
2560 PRINT AT 0,4;" "
2570 GOTO 100
3000 LET SCO=SCO+MO*(INT (RND*4)
+2)
3002 LET U=0
3003 LET I=0

```




```

3005 LET MG=0
3007 IF V=40 THEN GOTO 5000
3010 LET H$="000000"+STR$(SCO)
3020 PRINT AT 1,23;H$(LEN H$-5 T
0 )
3050 GOTO 100
3200 LET UU=GA+INT (RND*3)-1+33*
(INT (RND*3)-1)
3210 IF PEEK UU=0 OR PEEK UU=8 T
HEN LET GA=UU
3220 POKE GA,136
3230 POKE GA,6
3240 RETURN
3300 LET P=P-1
3310 IF PEEK P=0 THEN POKE P,8
3320 RETURN
4000 PRINT AT 0,4;"DEAD ...."
4010 FOR A=21 TO 0 STEP -1
4020 PRINT AT A,0;"          G A M E
O V E R
4025 IF A<18 THEN PRINT AT A+4,0
;"

```

```

4030 NEXT A
4040 PRINT ,,"YOU FINISHED THE
GAME WITH"
4050 PRINT ,,">>>>> £";SCO
4070 GOTO 5000
5000 CLS
5010 PRINT "
5020 PRINT "
5030 PRINT "
5040 PRINT "
5050 PRINT "
5060 PRINT "
5070 PRINT "
5080 PRINT "
5090 PRINT "YOU HAVE £";SCO
5100 PRINT "AND ";CA;" GOLD NUSS
ETS"
5200 PRINT AT 17,0;"
E OVER
5120 STOP

```




```

1 LET X=10
2 LET score=0
3 LET r=INT (RND*30)+1
5 LET W=0
6 PAPER 7: INK 0
7 PAPER 7: INK 0
10 PRINT AT 21,0;"111=LIVES"
11 FOR Z=1 TO 3
20 PRINT AT 21,15; FLASH 1;"SC
ORE = ";score
21 PRINT AT 20,0;"eeeeeeeeeeeeee
eeeeeeeeeeeeeeeeeeee"
23 FOR f=2 TO 19
25 FOR n=0 TO 3
30 PRINT AT f,r;"d"; PRINT AT
f-1,r;" " : NEXT n
70 IF INKEY$="5" THEN LET x=x
-1
80 IF INKEY$="8" THEN LET x=x
+1
81 IF x<0 THEN LET x=0
82 IF x>27 THEN LET x=27
85 PRINT AT 19,x;" abc "
86 NEXT f
87 IF r=x+1 OR r=x+2 OR r=x+3
THEN LET score=score+1: LET r=I
NT (RND*30)+1: BEEP .1,1: BEEP .
1,5: GO TO 20
88 PRINT AT 21,2-1;" "
89 BEEP .1,1: BEEP .1,2: BEEP
.1,3: BEEP .1,4: BEEP .1,5
90 NEXT Z
94 GO SUB 105
95 BEEP 1,0: BEEP 1,2: BEEP .5
,2: BEEP 1,0
96 BEEP 1,0: BEEP 1,2: BEEP .5
,2: BEEP 1,0
97 BEEP 1,3: BEEP 1,5: BEEP 2,
7
98 BEEP 1,3: BEEP 1,5: BEEP 2,
7
99 BEEP .75,7: BEEP .25,8: BEE
P .5,7: BEEP .5,5: BEEP .5,3: BE
EP .5,2: BEEP 1,0
100 BEEP .75,7: BEEP .25,8: BEE
P .5,7: BEEP .5,5: BEEP .5,3: BE
EP .5,2: BEEP 1,0
101 BEEP 1,0: BEEP 1,-5: BEEP 2
,0
102 BEEP 1,0: BEEP 1,-5: BEEP 2
,0
103 CLS

```

YOU HAVE three lives, during which your objective is to catch as many cannonballs in your boat as possible. Each time you miss a cannonball you lose a life. Move left with key 5 and right with key 8.

Start the game by entering GOTO 1003. Underlined letters should be entered in graphics mode.

Catch a Cannonball was written for the Spectrum by Brett Marl of Chester.



CATCH A C

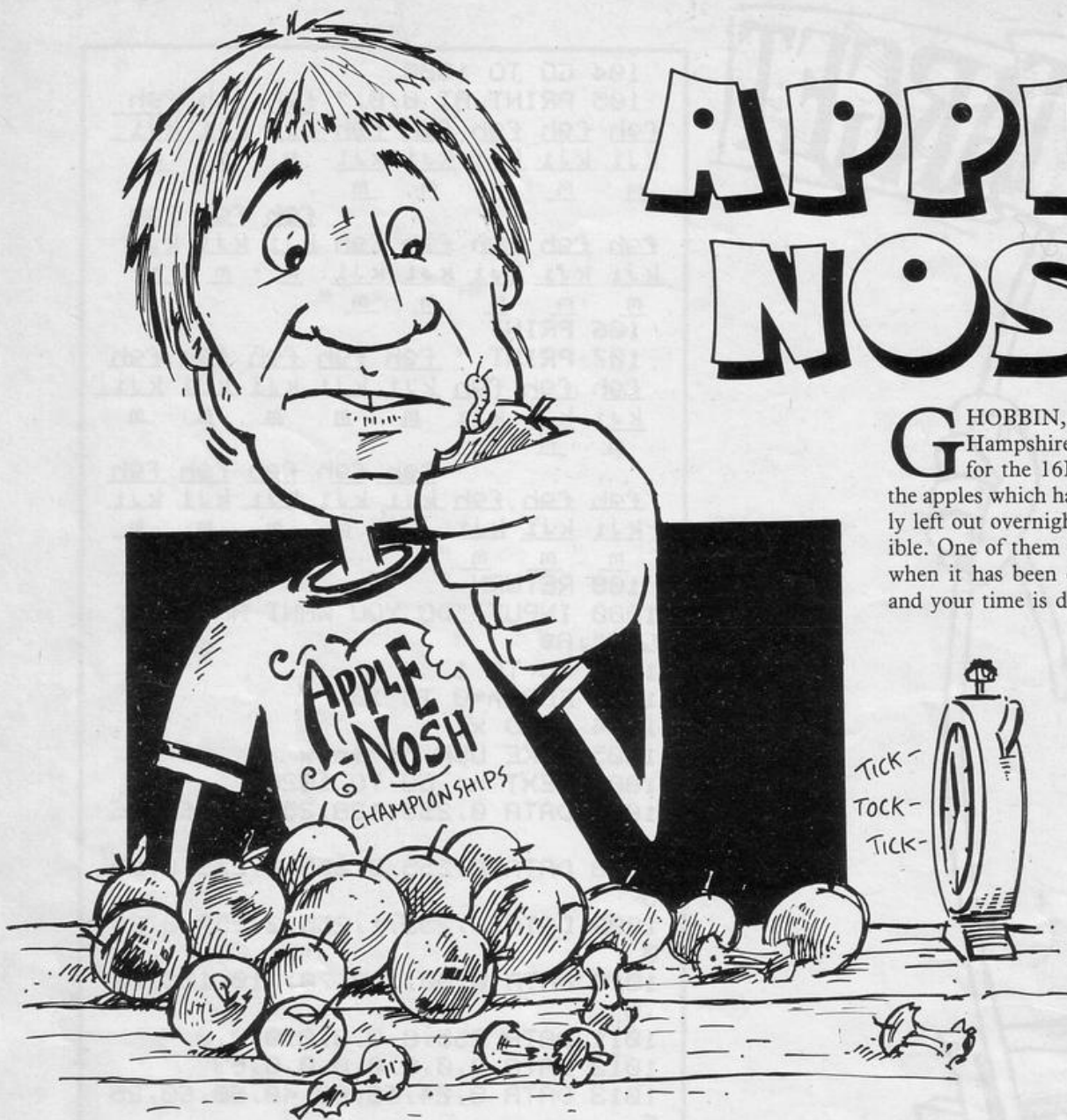


```

104 GO TO 1000
105 PRINT AT 0,0;" fah fah fah
fah fah fah fah fah kji kji kji
kji kji kji kji kji m m m
m m m m m fah fah fah
fah fah fah fah fah kji kji kji
kji kji kji kji kji m m m
m m m m m "
106 PRINT
107 PRINT " fah fah fah fah fah
fah fah fah kji kji kji kji kji
kji kji kji m m m m m
m m m fah fah fah fah fah
fah fah fah kji kji kji kji kji
kji kji kji m m m m m
m m m "
108 RETURN
1000 INPUT "DO YOU WANT ANOTHER
GO?",A$
1002 GO TO 1
1003 FOR n=0 TO 104
1004 READ x
1005 POKE USR "a"+n,x
1006 NEXT n: GO TO 1020
1007 DATA 0,255,128,255,64,63,16
,15
1008 DATA 0,255,0,255,0,255,0,25
5
1009 DATA 0,255,1,255,2,252,8,24
0
1010 DATA 0,60,110,70,110,126,60
,0
1011 DATA 255,0,0,0,0,0,0,0
1012 DATA 0,0,0,0,0,0,0,63
1013 DATA 0,24,60,60,40,60,60,25
5
1014 DATA 0,0,0,0,0,0,0,252
1015 DATA 246,246,252,0,0,0,0,0
1016 DATA 255,231,255,60,60,60,6
0,60
1017 DATA 111,111,63,0,0,0,0,0
1018 DATA 0,0,0,0,255,66,60,24
1019 DATA 60,60,60,60,60,60,60,2
4,0
1020 PRINT AT 10,10;" READY
PRESS A
KEY TO
START"
1021 PAUSE 0
1022 CLS : GO TO 1

```

ANNONBALL



APPLE NOSH

G HOBBIN, aged 15, of Liphook, Hampshire wrote **Applenosh** for the 16K Spectrum. Munch the apples which have been inadvertently left out overnight as quickly as possible. One of them is a magic apple and when it has been eaten the game ends and your time is displayed.

```

3 PAPER 1: INK 7: BORDER 1: C
LS
5 FOR n=USR "a" TO USR "e"-1
6 READ a: PUKE n,a: NEXT n
10 DATA 60,126,201,237,255,189,66,60
20 DATA 16,8,42,127,127,127,62,28
22 DATA 60,126,201,237,255,129,66,60
24 DATA 0,8,8,8,42,28,8,0
26 GO SUB 9000
30 LET x=10: LET y=15
50 FOR n=1 TO 35
51 PRINT AT RND*20,RND*30: PAPER 1: INK 4: "<9b>": BEEP .0009,RND*30+20
52 NEXT n
100 LET a=INT (RND*20): LET b=INT (RND*30)
140 PRINT AT a,b: INK 4: PAPER 1: "<9b>"
150 IF x=a AND y=b THEN GO TO 2000
210 LET x=x+(INKEY$="6" AND x<20)-(INKEY$="7" AND x>0)
220 LET y=y+(INKEY$="8" AND y<31)-(INKEY$="5" AND y>0)
500 PRINT AT x,y: INK 6: "<9a>"
520 PRINT AT x,y: INK 6: "<9c>"
521 BEEP .0009,55: BEEP .0005,6

```

```

0
522 LET t=t+1
530 PRINT AT 21,2: "TIME ";t: "QUICKEST ";ht
999 PRINT AT x,y: " "
1000 GO TO 140
2000 FOR n=0 TO 21
2010 PRINT AT n,0: INK 4: "<32*9b>)"
2015 OUT 100,20: OUT 100,130: OUT 100,140
2020 NEXT n
2030 PRINT AT 10,1: FLASH 1: INK 0: PAPER 7: "YOU FOUND THE APPLE!"
2031 IF ht>t THEN LET ht=t: GO TO 5000
2032 PRINT AT 12,1: PAPER 6: INK 0: "TIME TAKEN ";t
2033 PRINT AT 14,1: PAPER 6: INK 0: "QUICKEST TIME ";ht
2035 FOR n=1 TO 7: BORDER n: PAUSE 20: NEXT n: BORDER 1
2060 PRINT AT 16,1: PAPER 7: INK 0:a: "best so far"
7: FLASH 1: "Any key for another 90"
2110 PAUSE 0
2115 LET t=0
2120 CLS: BORDER 1: GO TO 30
5000 CLS: PRINT AT 10,2: "YOU HA

```

```

VE THE QUICKEST TIME!!"
5010 INPUT "ENTER your name";A$
5020 GO TO 2050
9000 LET t=0: LET ht=999999
9010 PRINT AT 9,8: INK 4: PAPER 1: "<12*9b>"
9020 PRINT AT 10,8: INK 4: "<9b:10*9b>"
9030 PRINT AT 10,9: INK 6: FLASH 1: PAPER 2: "APPLE-NOSH"
9040 PRINT AT 11,8: INK 4: PAPER 1: "<12*9b>"
9060 FOR f=0 TO 200: OUT 200,200: OUT 200,250: OUT 10,10: OUT 20,20: NEXT f
9070 CLS
9100 PRINT AT 0,8: "INSTRUCTIONS"
9110 PRINT AT 4,2: "The idea is to eat the <9b> and try to get the mystery apple in the quickest time."
9120 PRINT AT 10,2: "Move <9a> with keys:";AT 13,3: "1 2 3 4 5 6 7 8 9 0"
9130 PRINT AT 15,5: " < ↑ d >"
9140 PRINT AT 20,8: "Any key to play"
9300 PAUSE 0
9400 CLS
9500 RETURN

```


FOR 16K SPECTRUM (will also run on 48K Spectrum)



CASSETTE A
GHOST GOBBLER
Eat the ghosts before the ghosts eat you. Eat a star and you can chase the ghosts for a while.

ALIENKILL Control lasers, rockets and a force-field to stop the aliens from landing.

MOUSETRAP Trap the mouse in the corner but not anywhere else.

REVERSI A game of skill with simple rules but sophisticated tactics. Play against the computer.

LASER DEFENCE Control the laser sight to shoot down the alien ships. Machine code sound routines.

Ten programs for £6

TANK BATTLE For 2 players simultaneously or play against the computer. Each player has 2 rotate controls and move and fire controls. The tanks fire steerable missiles.

PHOEBUS A puzzle.

BLACKSPOT Gobble the stars and avoid running into black spots created by crossing your own path.

CUBE Manipulate a cube any size from 2x2x2 to 7x7x7.

MINEMINE Collect the crowns while avoiding the mines and the electrified fence.

plus an extra...

GRAPHIC DEMO Did you know your Spectrum could do all this?

CASSETTE 1: eleven programs (including 7 in machine code): Recti, Invaders, Phantom Aliens, Maze of Death, Planet Lander, Bouncing Letters, Bug Splat, I Ching, Codebreak, Robots, Basic Hangman.

for 1K ZX-81

£3.80

CASSETTE 2: ten games in Basic: Reversi, Awari, Laser Bases, Wordmaster, Rectangles, Crash, Roulette, Pontoon, Penny Shoot, Gun Command.

for 16K ZX-81

£5

CASSETTE 3: eight programs (including 1 in machine code): Starship Trojan, Star Trek, Princess of Kraal, Battle, Cube, Kalambasz, Secret Messages, Martian Cricket.

for 16K ZX-81

£5

ZX-SCRAMBLE with 3 stages. (machine code) Bomb and shoot your way through the fortified caves.



CASSETTE 4 8 games for 16K ZX-81 £6

GUNFIGHT (machine code)



INVADERS (machine code)



"quantity as well as quality"
Sinclair User, Oct '82

"If each game was on a separate tape and selling for £5 each I would still recommend them"

ZX Computing, Oct/Nov '82

GALAXY INVADERS (machine code)
Fleets of swooping and diving alien craft to fight off.

SNAKEBITE (machine code)
Eat the snake before it eats you. Variable speed (very fast at top speed).

LIFE (machine code)
A ZX-81 version of the well known game.

3D TIC-TAC-TOE (Basic)
Played on a 4x4x4 board, this is a game for the brain. It is very hard to beat the computer at it.

"Easy to operate, graphically impressive and good value for money."
The Times, 11th Dec '82

"Definitely good value for money at £6... A smooth clear display and a relatively fast response from the keys. Graphics are as good as you will ever get on the 81."
What Micro? Nov '83

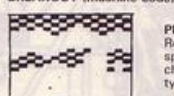
7 of the 8 games are in machine code, because this is much faster than Basic.
(Some of these games were previously available from J. Steadman).

CASSETTE 5 8 games for 16K ZX-81 £6

BYTE-MAN (machine code)
(previously available from Mindseye)



BREAKOUT (machine code)



SPACE RESCUE (machine code)
(previously available from Mindseye)



BLITZ (machine code)



PLANETOIDIS (machine code)
Rotate, move, fire and hyperspace controls. Wide range of choice of speed and difficulty.

DODGEMS (machine code)
Dodge the computer's car while eating the dots.

DRAUGHTS (machine code)
Three skill levels.

MERCHANT (Basic)
Make your fortune on trading voyages in the Mediterranean and beyond.

"New polish on old favourites... the quality of the software and the smooth action displays created on the screen make the programs worthwhile for anyone who has a ZX-81 and plays games using it... It is pleasant to see that Orwin's kind of quality is available again."
Sinclair User, Sept '83

"Among the best reviewed was Cassette 5 from Orwin Software. For a mere £6, you get eight top-quality games... All the games are of very high quality and would cost £4 or £5 if sold separately... Many of the other software houses could learn a lesson from these."
What Micro? Games supplement, Nov '83

7 of the 8 games are in machine code because it is much faster than Basic.

CENTIPOID PLUS THREE for 48K SPECTRUM. £6



CENTIPOID (machine code).

Centipoid is a full-feature arcade game with mushrooms, spiders, webs, scorpions, goblins, indestructible dead segments of centipoids that drop down on you, and, of course, the centipoids themselves.

You can choose your own control keys. It is playable from the keyboard or using any joystick interface which, like AGF Interface II, makes the joystick behave like keys on the keyboard.

Plus these games in Basic for the 48K Spectrum on the same cassette.

PANIC

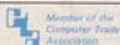


HOUND



3D TIC TAC TOE

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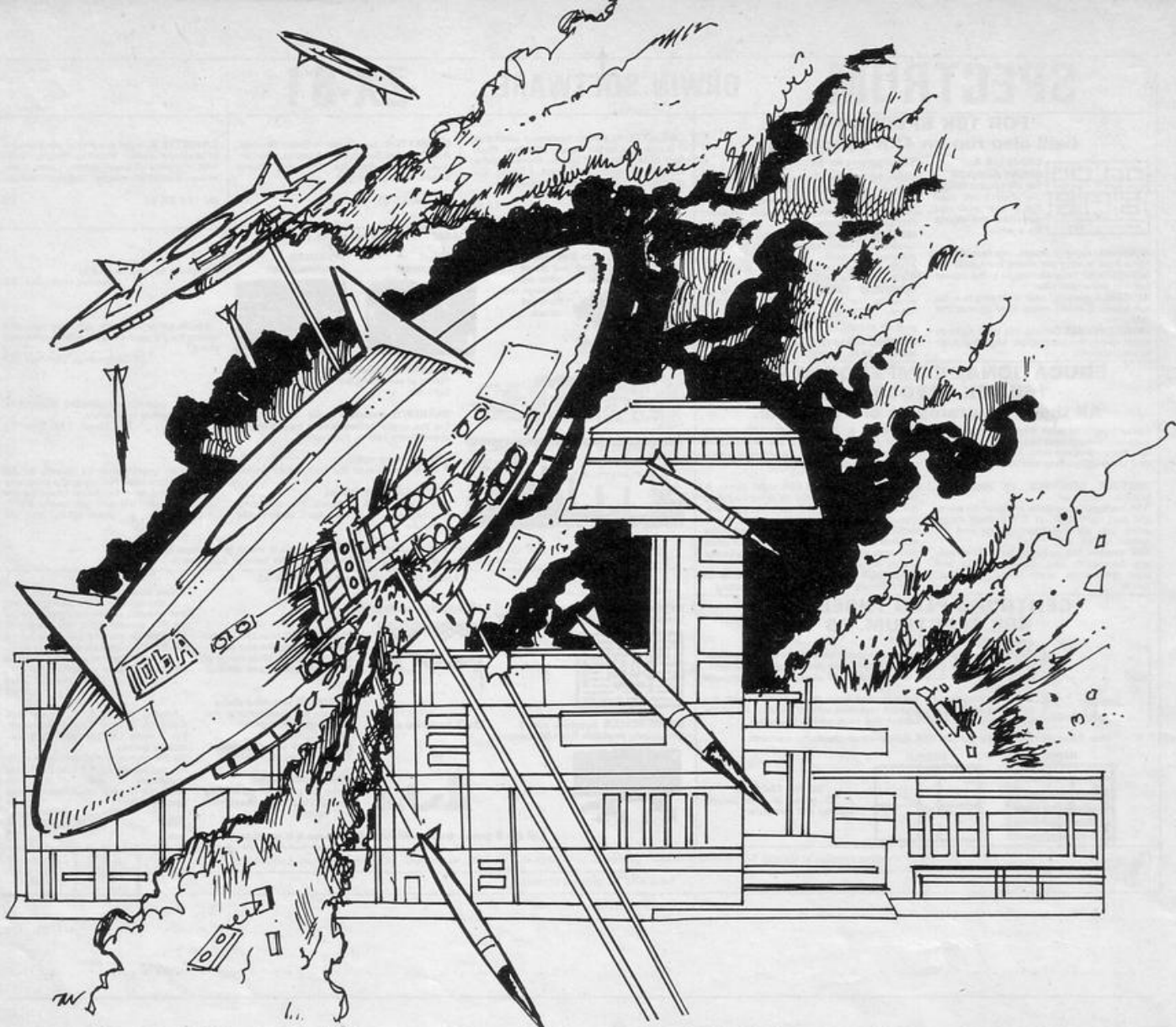
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For Spectrum

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* delete as necessary

SP2





MISSILE COMMAND

```

1 CLS
20 GO SUB 900
30 GO SUB 700
35 GO SUB 800
40 GO SUB 300
45 GO SUB 100
50 IF ht<>1 THEN GO SUB 100
70 PRINT INK 5: OVER 0:AT 19,
6:Po: " " :AT 19,25:sc:AT 20,6:lz:
AT 20,15:tno:AT 20,25:k1
80 IF Po<0 THEN GO TO 600
90 GO TO 40
100 LET uxo=ux: LET uyo=uy
101 LET us=INKEY$
105 IF us="" THEN RETURN
106 IF us="m" OR us="n" THEN G
O TO 150
110 LET ux=ux+(us="p" AND ux<29
)-(us="1" AND ux>2)
120 LET uy=uy+(us="z" AND uy<13
)-(us="4" AND uy>2)
125 IF ux=uxo AND uy=uyo THEN
RETURN
130 PRINT INK 7:AT uxo,uxo:"a"
: INK 6:AT uy,uy:"a": LET Po=Po-
1: BEEP .005,20-uy: RETURN
150 INK 5: LET Po=Po-10
155 LET lz=lz+1: LET lcx=ux*8+4
: LET lcy=(21-uy)*8+4
160 FOR n=1 TO 2: BEEP .04,6: B
EEP .02,12: PLUT 8,56: DRAW lcx-
8,lcy-56: INK 7: NEXT n
175 INK 6: FOR n=1 TO 2: PRINT

```

```

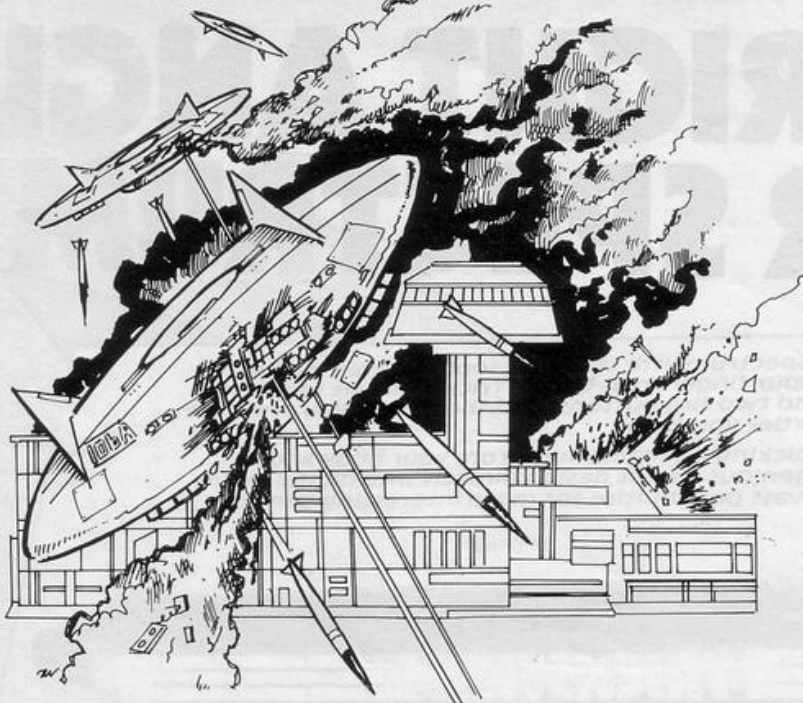
AT uy,ux-1:">9<": BEEP .03,24: I
NK 7: NEXT n
180 IF NOT (uy=ty AND ux>tx-df
AND ux<tx+df+LEN t$) THEN INK
5: RETURN
200 OVER 1: LET ht=0: LET k1=k1
+1: LET sc=sc+100-LEN t$*10
210 FOR n=1 TO 4: PRINT AT uy-1
,ux-1:"f/":AT uy,ux-1:"f/f":AT
uy+1,ux-1:"f/": BEEP .17,36: BEE
P .05,6: INK 7: NEXT n: LET ht=1
220 RETURN
300 IF ht=1 THEN GO TO 360
302 LET tyo=ty: LET txo=tx
305 LET us=t$: LET tx=tx+1
310 IF ty>=12 THEN LET tc=-1
311 IF ty<=4 THEN LET tc=1
312 LET ty=ty+tc+(INT (RND*2) A
ND ty<14)-(INT (RND*2) AND ty>3)
315 LET t$="": LET t$=(t$ AND
tx<9)+("cd" AND tx>9 AND tx<18)
+("cd" AND tx>18)
330 PRINT INK 4:AT tyo,txo:us)
AT ty,tx:t$: BEEP .02,-12
343 IF ty>8 AND RND<.7 AND ((tx
>16 AND tx<21) OR tx=24) THEN I
NK 2: FOR m=1 TO 2: FOR n=1 TO
2: PLUT tx*8+12,175-(ty*8)-12: D
RAW n*3,-40: BEEP .003,30: NEXT
n: INK 7: PRINT INK 6:AT 21,0:"
TOWER LOSS": LET Po=Po-9: NEXT m
355 IF tx<=27 THEN RETURN
360 PRINT INK 7:AT ty,tx:t$: L

```

```

ET tno=tno+1: LET tx=2: LET ty=7
+INT (RND*6): LET tc=1: LET ht=0
375 LET t$="b"
380 PRINT INK 4:AT ty,tx:t$
385 RETURN
600 FOR n=0 TO 74: INK n/10: BE
EP .06,n-50: PRINT AT 10,0:"- M1
SSION ENDED -": NEXT n
640 FOR n=0 TO 74: BURDER 7-n/1
0: BEEP .05,n-20: NEXT n
680 INPUT INK 6:TAB 6:"ANOTHER
MISSION? " :us
685 IF us="n" THEN GO TO 9999
690 RESTORE : GO TO 30
700 INPUT INK 2:"Difficulty?:0
(hard) or 1 " :r$: IF r$<>"0" THE
N LET r$="1"
705 LET df=VAL r$
710 LET ux=10: LET uy=10
715 LET uxo=ux: LET uyo=uy
720 LET tx=4: LET ty=2: LET txo
=tx: LET tyo=ty: LET tc=1
730 LET Po=999: LET sc=0: LET k
1=0: LET lz=0: LET ht=0
740 LET t$="b": LET tno=1
750 FOR n=USR "a" TO USR "g"+7
760 READ d: POKE n,d: NEXT n
770 RETURN
780 DATA 255,129,0,0,0,129,129,
255,0,0,0,24,36,255,36,0
796 DATA 0,0,2,7,9,255,9,2,0,0,
32,224,144,255,144,64,112,32,210
,255,126,255,126,189

```

```

885 PRINT AT 19,0;"POWER";AT 19
,19;"SCORE";AT 20,0;"LAZER";AT 2
0,12;"NO";AT 20,19;"KILLS"
890 BEEP 1,9: RETURN
900 BORDER 7: PAPER 7: INK 0
905 OVER 0: CLS
910 PRINT AT 0,4;"- MOON BASE A
LPHA -"
915 PRINT ""You control a laz
er station""Protecting a moon b
ase from""the dreaded ZALROGS"
930 PRINT ""Press any key to
continue": PAUSE 0: CLS
950 PRINT "You use up your limi
ted amount of POWER,firing the
laser and moving the tracking
sights."
955 PRINT ""The base is shield
ed by an""energy field.""This a
lso takes Power to sustainEvery
time the base is hit Poweris los
t."
960 PRINT ""When your Power is
exhausted, the mission ends."
965 PRINT ""CONTROLS:"""I to m
ove left""P to move right""Z t
o move down""Q to move up""& M
or N to fire"
970 PRINT ""Press any key to co
ntinue"
985 PAUSE 0: RETURN
9999 SAVE "ALPHA": PRINT " VERIF
Y REWIND TAPE": VERIFY ""

```

```

790 DATA 16,66,16,6,230,0,20,16
,149,88,40,231,82,20,74,145
800 BORDER 0: PAPER 0: INK 7
805 OVER 0: CLS
810 PLOT 3,26: DRAW 247,0: DRAW
0,144: DRAW -247,0: DRAW 0,-144
811 LET gy=34: LET gc=6
812 FOR n=1 TO 6: PLOT 5,gy
813 DRAW 243,0: LET gc=gc-1: LE
T gy=gy+gc: NEXT n
815 FOR n=1 TO 70: INK 2+RND*6:
PLOT 10+RND*230,70+RND*90: DRAW
RND,0: NEXT n: INK 7
820 LET gc=1: LET gy=54
821 FOR n=5 TO 247: LET gy=gy+g
c+INT (RND*3)-1: PLOT n,gy: DRAW
0,-(RND*(gy-55) AND gy>54)

```

```

822 IF RND<.1 THEN LET gc=-gc
823 IF gy>61 THEN LET gc=-INT
(RND*2.5)
824 IF gy<54 THEN LET gc=INT (
RND*2.5)
826 NEXT n
828 PRINT INK 5;AT 15,1;"(92)"
;AT 15,30;"(91)"
830 FOR m=0 TO 60 STEP 20
832 IF m=40 THEN NEXT m
834 FOR n=38 TO 51: PLOT 140+m,
n: DRAW 20,0,.7: NEXT n: DRAW -2
0,0,.7: NEXT m
850 FOR n=1 TO 5: CIRCLE INK 4
;23,140,n: NEXT n: OVER 1
870 PRINT INK 6;AT uy,ux;"3"
880 PRINT AT ty,tx;"b"

```

DOTTY

MOVE AROUND the maze eating as many dots as possible before the maze closes in on you and you become trapped. You score 10 points for each dot you eat. Use key "Z" to move down, "W" to move up,

"A" to move left and "S" to move right.

Dotty was written for the 1K ZX-81 by Jason Moody of Thornton Heath, Surrey.

```

2 PRINT "(15*isp)"
3 FOR N=1 TO 14
4 PRINT "(1sp).....:1
sp)"
5 NEXT N
6 PRINT "(15*isp)"
7 LET D=VAL "2"
8 LET S=VAL "0"
9 LET C=VAL "2"
10 LET D=D+(INKEY#="S")-(INKEY
#="A")
11 LET C=C+(INKEY#="Z")-(INKEY
#="W")

```

```

12 PRINT AT C,D;
13 LET A=VAL "PEEK (PEEK 16398
+256*PEEK 16399)"
14 IF A=VAL "128" THEN GOTO VA
L "19"
15 IF A=VAL "27" THEN LET S=S+
VAL "10"
16 PRINT "(9h)";AT RND*14,RND*
14;"(1sp)";AT RND*14,RND*13;"(2*
isp)";AT 0,20;"SCORE ";S
17 PRINT AT C,D;" "
18 GOTO VAL "10"
19 PRINT "GAME OVER"

```



GET THE RIGHT ANGLE ON YOUR SPECTRUM

Trickstick turns your Spectrum into the most sophisticated games machine in the world. Your fingers rest on the Trickstick's six sensitive pads (four directions and two fire buttons) and the harder you press the faster you go or the harder you turn.

Trickstick works by picking up mains hum from your body and converting it by an ingenious circuit design directly into digital input. Proportionality gives vast possibilities for more interesting games.



- ★ Each Trickstick comes with its own interface included in the price.
- ★ Up to eight interfaces can be stacked into each other for 1-8 simultaneous players. (Own 1-8 player game is Attaktics at £10).
- ★ Works with most Kempston compatible software, and with our new programmable adaptor (£10 for Trickstick owners) it works with ANY software.
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- ★ In the shops soon. Now available by mail / telephone order at £34.50.

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Runs Rings round
ordinary joysticks**

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The SP48 simply plugs into the sockets provided by Sinclair in your Spectrum. Easy to fit, full instructions provided and no soldering. Fits both Issue 2 and Issue 3 machines (Issue 1 £35) and gives you a standard 48k Spectrum. And no other expansion kit allows you to upgrade later to the 80k Spectrum. Over 20,000 16k Spectrum owners have already upgraded with the SP48. Join them.

And you get a free copy of BEYOND HORIZONS, so there's yet another angle to look at.

THE 80k SPECTRUM – £57.50

Upgrade your 16k Spectrum to a full 80k with the SP80 – a 64k expansion kit giving two 32k pages above address 32767. Not recommended for beginners, but ideal for the serious programmer. Pages are switched using software instructions only, and an LED indicates which page you are on. The other page is isolated from the system, but retains all its information until switched back.

The SP80 simply plugs into the sockets in the 16k Spectrum. Full fitting instructions are provided. It is easy to fit and no soldering is required.

See 48/80 FORTH for another angle.

48/80 FORTH – £14.95

The latest, best and most complete version of this popular language for the Spectrum. FORTH runs many times faster than machine code – a tonic if you're fed up with all those GOTOS.

Each tape includes both a 48k version and an 80k version (for use on Spectrums upgraded with our SP80). SP48 owners are offered a part-exchange price of £18 if they upgrade to 80k.

The manual provides both the normal technical definitions of the language, and an outstanding brief introduction for the beginner. Each tape also includes a superb EDITOR program to give you full control of the 16 (48k) or 32 (80k) disk screens.

A FORTH Toolkit (giving floating point etc) and an extension for the Microdrive will be available shortly. 48/80 FORTH uses standard FIG-FORTH definitions with extensions to exploit the special characteristics of the Spectrum, including BEEP (for real arcade quality sound), DRAW, PLOT and CIRCLE.

BEYOND HORIZONS – £4.50

This teaching program has already made computing less mysterious for thousands of people. It guides you through the Spectrum 48k memory, teaches you to PEEK and POKE systems variables, shows you how the display file and colour attributes work, how a BASIC program is stored byte by byte, and much much more. Outstanding value for those who get stuck on the second half of the Spectrum manual.

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JAIL BREAK

RACE against time in **Jailbreak** by P Carolan of Marsh Green, Wigan for the 16K ZX-81. Using the cursor keys, you dash from your cell when the guard's back is turned. A key is hidden somewhere in the prison yard at the locations marked "X". Once you have found the key you may pass through the wall on the right of the screen and make for home "H".

```

10 PRINT "(26*I+5*ISP)"
15 PRINT AT 21,0;"(27*I+5*ISP)"
)"
16 FOR W=1 TO 20
17 PRINT AT W,1;"(31*ISP)"
18 NEXT W
20 FOR I=1 TO 21
22 PRINT AT I,0;"(I+)"
25 NEXT I
31 PRINT AT 11,30;"H"
32 FOR H=0 TO 21
33 PRINT AT H,27;"(I+)"
35 NEXT H
50 LET Z=20
52 LET X=1
54 FOR T=1 TO 10
56 LET A=INT (RND*20+1)
58 LET S=INT (RND*26+1)
60 PRINT AT A,S;"X"
69 NEXT T
70 SLOW
71 FOR D=1 TO 100
72 PRINT AT Z,X;"""
73 PRINT AT Z,X;"""
74 PRINT AT Z,X;"(ISP)"
100 LET X=X+(INKEY$="8")-(INKEY
$="5")
110 IF X>26 THEN LET X=X-1
120 IF X<1 THEN LET X=X+1
130 LET Z=Z+(INKEY$="6")-(INKEY
$="7")
140 IF Z>20 THEN LET Z=Z-1
145 IF Z<1 THEN LET Z=Z+1
147 IF Z=A AND X=S THEN PRINT A
T 21,0;"YOU" "VE GOT THE KEY"
148 IF Z=A AND X=S THEN GOTO 10
00
150 NEXT D
160 PRINT AT 0,0;"HARD LUCK, YOU
""VE RUN OUT OF TIME"
165 STOP
1000 FOR S=1 TO 100-D
1004 PRINT AT Z,X;"""
1005 PRINT AT Z,X;"""
1007 PRINT AT Z,X;"(ISP)"
1010 LET X=X+(INKEY$="8")-(INKEY
$="5")
1020 IF X>31 THEN LET X=X-1
1030 IF X<0 THEN LET X=X+1
1040 LET Z=Z+(INKEY$="6")-(INKEY
$="7")
1050 IF Z>21 THEN LET Z=Z-1
1070 IF Z=11 AND X=30 THEN PRINT
AT 0,0;"*HOORAY* YOU""VE DONE
IT"
1080 IF Z=11 AND X=30 THEN STOP
1090 NEXT S
2000 PRINT AT 0,0;"HARD LUCK YOU
""VE RUN OUT OF TIME"
2010 STOP

```


MATCH FISHING

IF YOU fancy your chances as an angler but the prospect of sitting on a river bank does not appeal, try Match Fishing for the 16K Spectrum.

There are three levels of play and you have a minute to catch as many fish as possible. Use key "Z" to move left, "X" to move right, "K" to move down. When the game has ended the angler walks away.

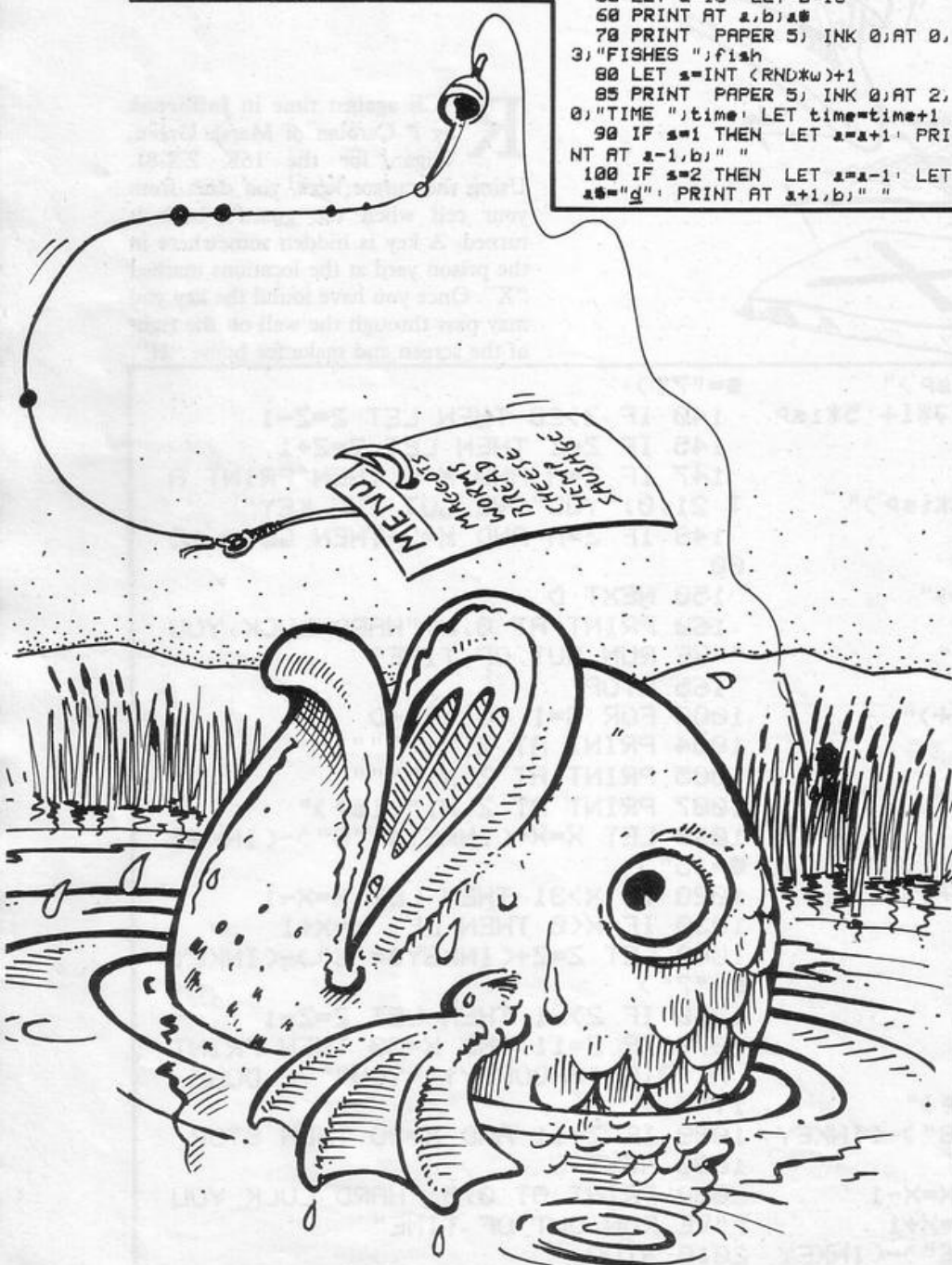
Match Fishing was written for the 16K Spectrum by Nicholas Marshall, aged 13, of Hull, North Humberside.

```
1 INK 7: BORDER 2: PAPER 1: C
LS: FOR t=1 TO 30: BEEP .01,t:
NEXT t: FOR t=30 TO 1 STEP -1: B
EEP .01,t: NEXT t: PRINT "1-EASY
": PRINT: PRINT "2-MEDIUM": PRI
NT: PRINT "3-HARD": PRINT FLAS
H 1: AT 12,0: "MATCH FISHING": INP
UT q: IF q=1 THEN LET w=7
2 CLS: FOR t=-10 TO 50: BEEP
.01,t: NEXT t: PRINT "KEYS:" AT
2,0: "Z left": AT 4,0: "X right": A
T 6,0: "K up": AT 8,0: "M down": PR
INT AT 21,0: "PRESS ANY KEY TO ST
ART": PAUSE 0: BEEP .5,10: IF q=
2 THEN LET w=5:
```

```
3 IF q=3 THEN LET w=4: CLS
4 LET fish=0
5 LET a="d"
6 LET c=16: LET d=10
7 LET time=0
10 PAPER 1: BORDER 2: CLS
13 GO SUB 2000
15 INK 7
20 FOR a=0 TO 10: PRINT PAPER
5: "": NEXT a
30 PRINT PAPER 5: INK 0: AT 10
,0: "bbbbc"
40 PRINT PAPER 5: INK 0: AT 9,
4: "a"
50 LET a=15: LET b=15
60 PRINT AT a,b:a#
70 PRINT PAPER 5: INK 0: AT 0,
3: "FISHES": fish
80 LET s=INT (RND*w)+1
85 PRINT PAPER 5: INK 0: AT 2,
0: "TIME": time: LET time=time+1
90 IF s=1 THEN LET a=a+1: PRI
NT AT a-1,b: " "
100 IF s=2 THEN LET a=a-1: LET
a#="d": PRINT AT a+1,b: " "
```

```
110 IF s=3 THEN LET b=b+1: LET
a#="e": PRINT AT a,b-1: " "
120 IF s=4 THEN LET b=b-1: PRI
NT AT a,b+1: " "
130 IF a>21 THEN LET a=21
140 IF a<11 THEN LET a=11
150 IF b>31 THEN LET b=31
160 IF b<0 THEN LET b=0
170 PRINT PAPER 1: INK 4: AT 21
,0: " f ff f f f f
180 PRINT AT c,d: "g"
190 IF INKEY#="z" THEN LET d=d
-1: PRINT AT c,d+1: " "
200 IF INKEY#="x" THEN LET d=d
+1: PRINT AT c,d-1: " "
210 IF INKEY#="m" THEN LET c=c
+1: PRINT AT c-1,d: " "
220 IF INKEY#="k" THEN LET c=c
-1: PRINT AT c+1,d: " "
230 IF c>21 THEN LET c=21
240 IF c<11 THEN LET c=11
250 IF d>31 THEN LET d=31
260 IF d<0 THEN LET d=0
270 IF c=a AND d=b THEN LET f1
sh=fish+1: BEEP .5,30
280 IF time=200 THEN GO TO 100
0
```

```
999 GO TO 60
1000 FOR e=11 TO 21
1010 PRINT PAPER 5: INK 0: AT e,
0: "iiih
": PAUSE 10: NEXT e
1015 INK 0: PAPER 5: FOR p=4 TO
0 STEP -1: PRINT AT 8,p: "1": PRI
NT AT 9,p: "m": FOR m=1 TO 20: NE
XT m: PRINT AT 8,p: "j": PRINT AT
9,p: "k": FOR m=1 TO 20: NEXT m:
PRINT AT 8,p: " ": PRINT AT 9,p:
" ": NEXT p: PRINT AT 8,0: " ": AT
9,0: " ": INK 7
1017 PAPER 0
1020 PAUSE 50: CLS: PRINT "YOU
CAUGHT": fish: "FISHES": PRINT A
T 10,0: "PRESS ANY KEY FOR ANOTHE
R FISH": PAUSE 0
1998 RUN
1999 STOP
2000 RESTORE 2020
2010 FOR q=1 TO 13: READ q#: FOR
n=0 TO 7: READ r: POKE USR q#+n
,r: NEXT n: NEXT q
2020 DATA "a",196,200,144,224,12
0,240,208,216
2030 DATA "b",255,8,8,8,8,8,8
2040 DATA "c",255,65,65,65,65,65
,65,65
2050 DATA "d",0,BIN 00111001,BIN
01011111,255,BIN 01111111,BIN 0
0111001,0,0
2060 DATA "e",0,BIN 10011100,BIN
1111010,255,254,BIN 10011100,0
,0
2065 DATA "f",BIN 00100010,BIN 0
0010100,BIN 00101001,BIN 0011001
0,BIN 01001010,BIN 00101001,BIN
00011010,BIN 00011100
2067 DATA "g",32,32,32,32,34,38,
18,12
2068 DATA "h",65,65,65,65,65,65,
65,65
2069 DATA "i",8,8,8,8,8,8,8,8
2070 DATA "j",56,56,56,16,56,120
,120,184
2080 DATA "k",56,56,40,40,72,68,
68,BIN 11001100
2085 DATA "l",7,7,7,2,7,7,7,7
2090 DATA "m",7,7,2,2,6,2,3,6
2100 RETURN
```





IN YOUR CAPACITY as chief mushroom it is your task to protect the smaller mushrooms from an invading **Caterpillar**. Fire at the caterpillar as it advances towards you and guarantee the safety of the other mushrooms. If the caterpillar succeeds in eating a mushroom the game ends. Use key 5 to move left, 8 to move right and 0 to fire.

Caterpillar was written for the 16K Spectrum by Stuart Edwards, aged 12, of Brighton, East Sussex.

CATERPILLAR

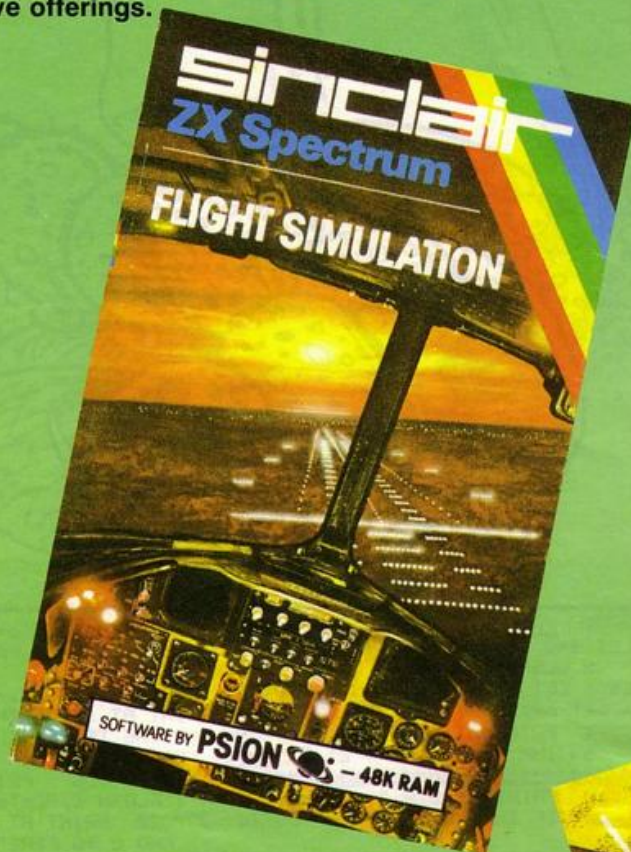
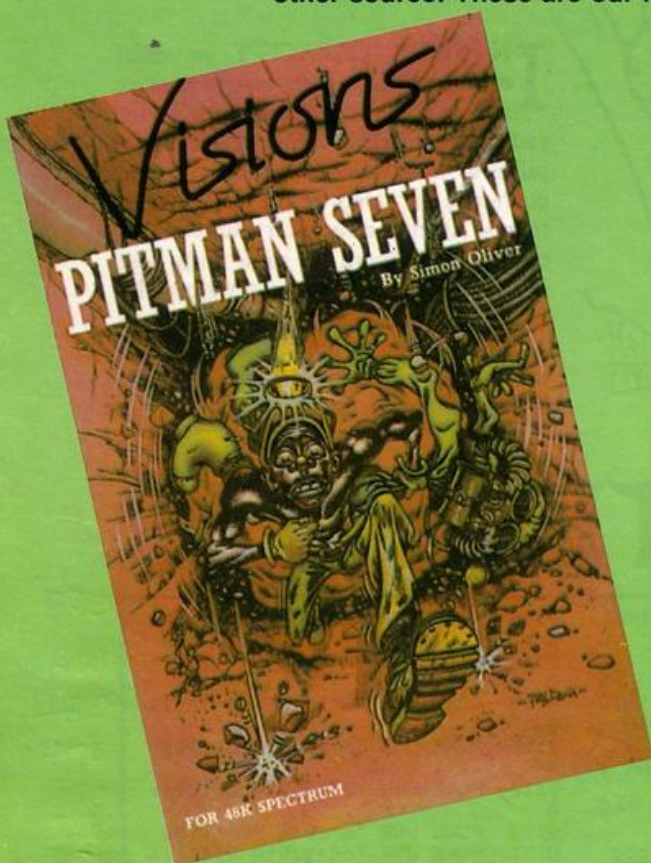
```

300 1 GO SUB 9100: GO SUB 7000:
302 LET s=0: LET h=100
304 2 CLS: PAPER 5: BORDER 2: C
306 LS: LET a=0: LET b=INT (RND*31)
308 3 LET m=12
4 PRINT AT 20,m;"a"
5 INK 4: PRINT AT 21,0;"dada
dadaaaaaaaaaaaaaaaaaaaaaa"
10 PRINT AT 0,0;"SCORE=";s
20 IF INKEY#="5" THEN GO TO
100
30 IF INKEY#="8" THEN GO TO
200
40 IF INKEY#="0" THEN GO TO
300
50 IF INKEY#="" THEN BEEP .0
05-.5: GO TO 1000
100 PRINT AT 20,m;" ": LET m=m
-1: IF m=0 THEN LET m=30
101 INK 1: PRINT AT 20,m;"a":
GO TO 1000
200 PRINT AT 20,m;" ": LET m=m
+1: IF m=31 THEN LET m=1
201 INK 1: PRINT AT 20,m;"a":
GO TO 1000
300 PLOT m*8+4,16: INK 3: DRAW
0,159: PAUSE 20: INK 5: PLOT m*
8+4,16: DRAW 0,155: IF m=b THEN
LET a=0: LET b=5: PRINT AT a,b;
" ": LET s=s+5: FOR q=49 TO 56:
BEEP .001,q: NEXT q: GO TO 2
301 IF s>=h THEN BEEP .01,1:
PRINT AT 20,0;s: LET h=h+100: LE
T s=s+5: PAUSE 50: GO TO 9000
302 GO TO 1000
1000 BEEP .01,a: LET o=INT (RND
*3)
1010 IF o=0 THEN GO TO 1500
1020 IF o=1 THEN GO TO 2000
1030 IF o=2 THEN GO TO 2500
1040 GO TO 1000
1500 INK 1: PRINT AT a,b;"c": L
ET a=a+1: IF a=20 THEN GO TO 80
00
1501 INK 2: PRINT AT a,b;"b": G
O TO 10
2000 INK 2: PRINT AT a,b;"c": L
ET b=b+1: IF b=0 THEN LET b=30
2001 INK 2: PRINT AT a,b;"b": G
O TO 10
2500 INK 4: PRINT AT a,b;"c": L
ET b=b+1: IF b=31 THEN LET b=1
2501 INK 2: PRINT AT a,b;"b": G
O TO 10
7000 BEEP .1,-2: BEEP .1,+2: PR
INT AT 12,0: INK 2: FLASH 1;"STO
P THE TAPE": IF INKEY#="" THEN
GO TO 7000
7010 CLS: PRINT AT 1,10: INK 2
: FLASH 1;"CaTeRpilla'"
7020 PRINT AT 4,2:"USE KEYS 5&8
AND 0 TO FIRE"
7021 PRINT AT 12,0: INK 2;"ccc
ccc ccc ccc ccc ccc ccc"
7022 PRINT AT 13,0: INK 4;" cc
c ccc ccc ccc ccc ccc ccc"
7025 PAUSE 20
7030 PRINT AT 20,0:"PrEss Any K
eY To StArT The GaMe"
7040 IF INKEY#="" THEN GO TO 7
040
7099 RETURN
8000 CLS: LET s=0: PRINT AT 12
,2: INK 0;"The CaTeRpilla' AtE Y
oUr MuShRoOm,AnOtHeR G
o Y/N?"
8001 INPUT INKEY#
8002 IF INKEY#="y" THEN GO TO
2
8003 IF INKEY#="n" THEN NEW
GO TO 8001
9100 POKE USR "a",BIN 00011000
9101 POKE USR "a"+1,BIN 0011110
0
9102 POKE USR "a"+2,BIN 0111111
0
9103 POKE USR "a"+3,BIN 0111111
0
9104 POKE USR "a"+4,BIN 0001100
0
9105 POKE USR "a"+5,BIN 0001100
0
9106 POKE USR "a"+6,BIN 0001100
0
9107 POKE USR "a"+7,BIN 0001100
0
9110 POKE USR "b",BIN 10111101
9111 POKE USR "b"+1,BIN 0100001
0
9112 POKE USR "b"+2,BIN 0100001
0
9113 POKE USR "b"+3,BIN 0101101
0
9114 POKE USR "b"+4,BIN 0111111
0
9115 POKE USR "b"+5,BIN 0111111
0
9116 POKE USR "b"+6,BIN 0110011
0
9117 POKE USR "b"+7,BIN 0110011
0
9120 POKE USR "c",BIN 00111100
9121 POKE USR "c"+1,BIN 0111111
0
9122 POKE USR "c"+2,BIN 1111111
1
9123 POKE USR "c"+3,BIN 1111111
1
9124 POKE USR "c"+4,BIN 1111111
1
9125 POKE USR "c"+5,BIN 1111111
1
9126 POKE USR "c"+6,BIN 0111111
0
9127 POKE USR "c"+7,BIN 0001111
000
9130 POKE USR "d",BIN 00110111
9131 POKE USR "d"+1,BIN 1111111
1
9132 POKE USR "d"+2,BIN 1111111
1
9133 POKE USR "d"+3,BIN 1111111
1
9134 POKE USR "d"+4,BIN 1111111
1
9135 POKE USR "d"+5,BIN 1111111
1
9136 POKE USR "d"+6,BIN 1111111
1
9137 POKE USR "d"+7,BIN 1111111
1
9138 RETURN
9900 SAVE "CaTa" LINE 9950: SAV
E "C"CODE 30000,2767
9910 PRINT "VERIFY"
9920 VERIFY "CaTa": VERIFY "C"
ODE 30000,2767
9930 STOP
9950 CLEAR 29999: LOAD "C"CODE
30000,2767
9960 RUN

```


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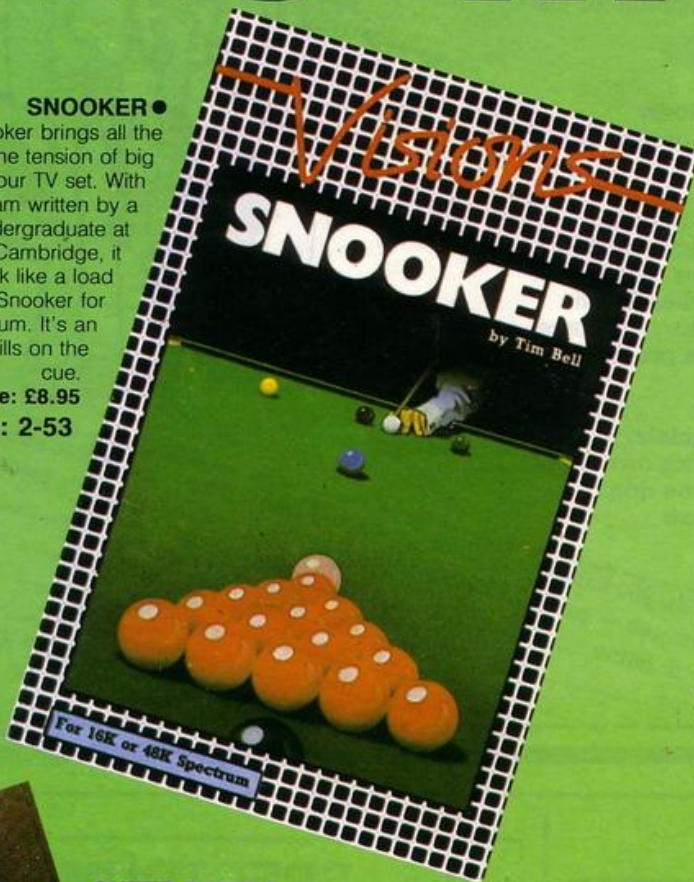
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