

30
PROGRAMS
FOR THE
SPECTRUM AND ZX-81

95p

An independent magazine published by ECC Publications

December 1983

Amclair Programs

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THIEF, CAROL,

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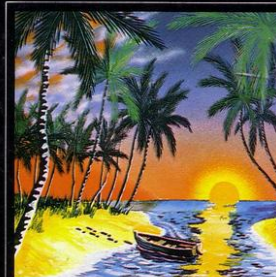
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Sinclair Programs is published
monthly by ECC Publications Ltd.

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All departments
01-359 3525

If you would like to contribute to any of the Sinclair User group of publications please send programs, articles or ideas for hardware projects to: Sinclair User and Programs, ECC Publications, 196-200 Balls Pond Road, London N1 4AQ

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We pay £10 for the copyright of each program published and £50 per 1,000 words for each article used.

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Sinclair Programs
ISSN No 0263-0265

Printed and typeset by
Cradley Print PLC,
Warley,

West Midlands

Distributed by
Spotlight Magazine Distribution Ltd,
1 Benwell Road,
Holloway,
London N7
01-607 6411

Cover Design/illustrations
Ivan Hissey

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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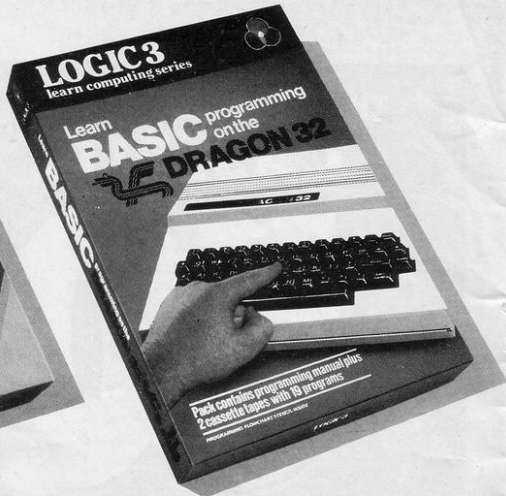
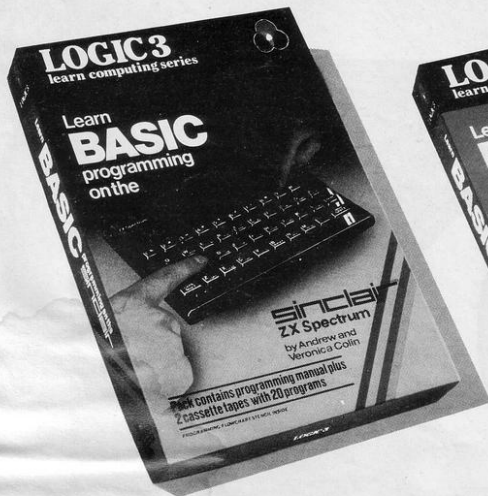
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SP 12/83

LETTERS

ZX-81 Scroll

BEING a regular reader, I was surprised to find an unnecessary program for a ZX-81 in the October edition. I am referring to Machine Code Scroll. The thing which is unnecessary about it is that it scrolls from the bottom to the top of the screen.

Any established ZX-81 user will know that the one-word command of "SCROLL" will replace the tedious task of entering the D Jones program. I see no advantage in using the machine code unless it clears quicker; in any case a simple entering of TAB 31; after your printing of characters solves that.

Apart from that program, the magazine is still wonderful for games for the ZX-81 and Spectrum.

An example of using "SCROLL" is:

```
10 SCROLL
20 PRINT "EXAMPLE
OF SCROLL"; TAB 31;
30 GOTO 10
```

The ";TAB 31;" is so that when you Stop the program and press CLS and NEWLINE it clears much quicker than without the "TAB 31;"

**Garry Philips,
Dunblane,
Perthshire.**

Graphics

I AM WRITING to see if you can give me some help with a problem.

In Protector, line 1005 has a bit in it where all the "A"s are underlined. Whenever I do the line under the a's I always get a mistake sign. The only way in which I can enter the line is either "a-a-a-a-a-a" or missing out the line completely "a a a a a", when I miss out the line and run it the game works fine except for the bottom section where

the line layers and laser are still in numbers and letters. I have tried it in other games as well and the same thing happens. I use the line symbol on the 0 key because its the only line symbol I can find on the computer.

**Graeme Rowe,
Penn, Bucks.**

WE HAVE received several queries regarding underlined letters in Spectrum programs and lower-case letters in ZX-81 programs. These, and all other graphics instructions, are explained at the foot of the Contents page each month.

More 1K Programs

I HAVE just been reading the letters page in the August issue. I disagree with D Ferrier. This month there were 11 16K programs and three 1K programs for the ZX-81. I find the 1K games helpful as I am a learner with a 1K ZX-81. If there were fewer 1K programs I would not be able to write my own programs when I get a RAM pack. So perhaps just half as many 1K programs as 16K?

**Andrew Johnson, aged 13,
Freckleton,
Preston.**

Save Memory

I BUY your magazine every month and in the August issue I noticed, in the Letters section, a letter asking "Why use 'GOTO VAL '50'" when you can use "GOTO 50"? We all know that the shorter the statement, the less memory it uses". Surprisingly, that is not the case and I am writing to explain why.

The simple answer is that numbers—other than line numbers—used alone in statements like "GOTO 50" use seven bytes per digit. Numbers used in statements like

'GOTO VAL "50"' use only one byte per digit, as they are in string form. That, therefore, helps to conserve precious RAM.

Another good way of conserving memory is to use a 'LOAD and RUN' line—a 'SAVE line—at the end of the program, followed by a RUN line to run the program after saving—and loading. After doing that, you then enter the variables in 'Direct' form (no line numbers). For example, using:

```
LET A=50
LET B=100
LET C=1
```

instead of

```
10 LET A=50
20 LET B=100
30 LET C=1
```

saves 49 bytes.

Changing the subject, from memory I found a bug in the ZX-81 Invaders program in the August issue. Each time I pressed the FIRE button, a large, black splotch shot quickly up the far left-hand side of the screen, instead of coming out of my gun as any good bullet should. I checked my listing against yours—apart from the machine code part, which is just double-dutch to me—for any programming errors but I could find none. I therefore conclude that either my faithful ZX-81 does not like having Space Invaders played on it or your listing is incorrect and should take pride of place in the Errors and Mishaps section.

Thank you for a great magazine and some great programs.

**Dave Cartwright,
Grantham, Lincs.**

Good Programs

I NOTICED in the July edition of *Sinclair Programs* that

in *Light Cycles*, line 700 was slightly erased. The best program in that issue was undoubtedly *Defender*, which was slightly long. I then went to my local shop and bought the *August Sinclair Programs* issue; I programmed *SpecVaders* and found it was not worth programming because it was almost impossible to reach 1,000 points. *Tank Duel* was a good program, so was *Labyrinth*.

**Sanjay Chokshi, aged 14,
Dagenham, Essex.**

Pontoon

FOR THOSE who have no sound, a unit can be made from one of the cheap radios. It is done by disconnecting the wires at the earphone socket, joining them together and insulating them.

Then take a lead from the signal connection to the centre terminal of the volume control—a suitable lead with the correct plugs—one plugged into the radio and the other in the earphone socket of the computer. The only snag is to remember to change over when loading.

I think it could be overcome by putting another socket at the side of the one on the radio and connecting together the two signal points.

Also remember to detune the radio to the Off-station part of the dial. I find it an asset when putting in a program, as I can tell if a command is going in by the clicks.

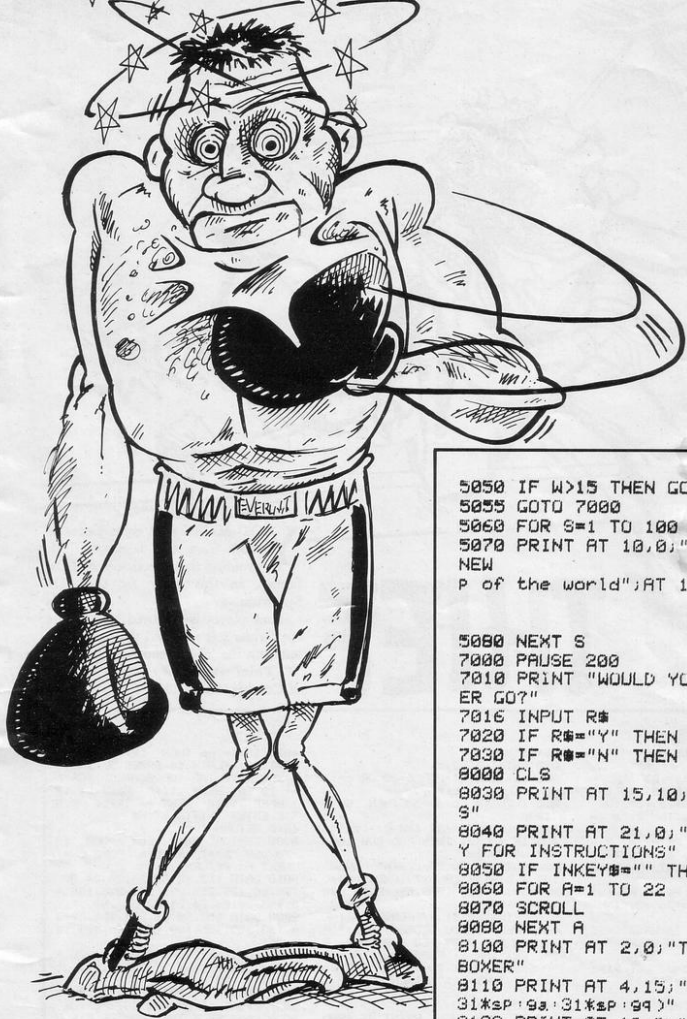
May I point out an error in program *Good for the Roses*, page 9, September issue? The variable *hhx* has not been given a value; nor has it been put in by a "LET" statement.

**C Fowler,
Sheffield.**

In subroutine 7000 *HHX* is defined.

BOXING

```
1 REM "BOXING"
2 GOTO 8000
3 LET G=22
4 GOSUB 3000
5 LET G=22
8 LET W=0
10 FOR A=5 TO 25
12 LET G=22
20 PRINT AT 15,A;"(9s)"
30 NEXT A
40 FOR B=13 TO 15
45 PRINT AT B,5;"(9a)";AT B,25
;"(isp)"
50 NEXT B
60 LET F=7
70 PRINT AT 14,F;"(9w)";AT 1
3,F;"(99)";AT 12,F;"(isp)";A
T 11,F;"0"
80 LET V=INT(RND*3)
82 IF V=1 THEN LET F=F+1
85 IF V=0 THEN LET F=F-1
86 IF V=2 THEN GOSUB 1500
87 IF F<7 THEN LET F=7
88 IF F>23 THEN LET F=23
210 PRINT AT 14,G;"(99)";AT 1
3,G;"(9a)";AT 12,G;"(isp)";A
T 11,G;"0"
220 IF INKEY#="8" THEN LET G=G+
1
225 IF INKEY#="5" THEN LET G=G-
1
230 IF INKEY#="0" THEN GOSUB 20
00
231 IF G=2=F AND INKEY#="0" THE
N GOSUB 4000
232 IF F+2=G AND V=2 THEN GOSUB
4500
235 IF G>=22 THEN LET G=22
236 IF G<=6 THEN LET G=6
240 GOTO 70
1500 PRINT AT 12,F+2;"(97)0";AT
12,F+2;"(97)0";AT 12,F+2;" "
1550 RETURN
2000 PRINT AT 12,G-1;"0(97)";AT
12,G-1;"0(97)";AT 12,G-1;" "
2010 RETURN
3000 CLS
3010 PRINT "WHAT IS YOUR NAME?"
3020 INPUT N#
3025 CLS
3040 LET H=INT(RND*4)
3045 IF H=0 THEN LET A#="CLUBBER
LANG"
3050 IF H=1 THEN LET A#="ROCKY"
3055 IF H=2 THEN LET A#="APOLLO"
3600 IF H=3 THEN LET A#="MUHAMMID
ALI"
3700 PRINT AT 3,0;"IN THE BLACK
CORNER IS ";TAB 4;N#;AT 5,0;"AND
IN THE GREY CORNER IS ";TAB 4;A
#
3710 PAUSE 300
3720 CLS
3730 RETURN
4010 PRINT AT 1,0;"THE WINNER IS
";N#
4011 PRINT AT 11,F;" ";AT 12,F;
"0 ";AT 13,F;"(isp)";AT 14,F;"(9
9,99)"
4020 GOTO 4700
4510 PRINT AT 1,0;"THE WINNER IS
";A#
4511 PRINT AT 11,G;" ";AT 12,G;
" ";AT 13,G;" ";AT 14,G;"(9w;
9a,96)0"
4512 PAUSE 200
4513 CLS
4515 GOTO 5000
4700 PAUSE 200
4720 LET W=W+1
4722 IF W=14 THEN PRINT AT 21,0;
"THIS ONES FOR THE CHAMPIONSHIP"
4723 PAUSE 50
4725 CLS
4730 GOTO 10
5000 IF W=0 THEN PRINT AT 10,0;"
YOU MAY AS WELL RETIRE"
5010 IF W>0 AND W<=3 THEN PRINT
"NOT BAD FOR A BEGINNER"
5020 IF W>3 AND W<=6 THEN PRINT
"YOU MADE amature boxing champ"
5030 IF W>6 AND W<=10 THEN PRINT
"YOU ARE NOW A PROFESSIONEL"
5040 IF W>10 AND W<=15 THEN PRIN
T "YOU LOST IN THE WORLD
CHAMPIONSHIP"
```

```

5050 IF W>15 THEN GOTO 5060
5055 GOTO 7000
5060 FOR S=1 TO 100
5070 PRINT AT 10,0;"YOU ARE THE
NEW          boxing cham
P of the world";AT 10,0;"

```

```

"
5080 NEXT S
7000 PAUSE 200
7010 PRINT "WOULD YOU LIKE ANOTH
ER GO?"
7016 INPUT R#
7020 IF R#="Y" THEN GOTO 1
7030 IF R#="N" THEN STOP
8000 CLS
8030 PRINT AT 15,10;"BY G.TOPLAS
S"
8040 PRINT AT 21,0;"PRESS ANY KE
Y FOR INSTRUCTIONS"
8050 IF INKEY#="" THEN GOTO 8050
8060 FOR A=1 TO 22
8070 SCROLL
8080 NEXT A
8100 PRINT AT 2,0;"THIS IS YOUR
BOXER"
8110 PRINT AT 4,15;"OK31*SP:1SP:
31*SP:9a:31*SP:9a)"
8120 PRINT AT 10,0;"YOU MOVE HIM
FOREWARD WITH 5 AND BACKWARD
S WITH 8.          TO MAKE HIM
THROW A PUNCH PRESS 0"
8180 PRINT AT 21,0;"PRESS ANY KE
Y TO START FIGHTING"
8190 IF INKEY#="" THEN GOTO 8190
8195 FOR S=0 TO 22
8196 SCROLL
8197 NEXT S
8199 GOTO 3

```

THE COMPUTER boxer stands at one side of the screen. It is controlled randomly, but fast-moving. Try to knock it out by moving backwards and forwards with keys 8 and 5 and throwing punches with key 0.

Boxing was written for the 16K ZX-81 by G Toplass of Stoke-on-Trent, Staffordshire.



THIEF

YOU MUST steal eight pieces of food from the farmer's field, avoiding the insecticides and the farmer, in this game for the 16K Spectrum.

Your player is coloured blue, while the farmer's is red, and you can move left with the '5' key and right with the '8'. **Thief** was sent by Simon Johnson of Crookes, Sheffield.

```

1 GO SUB 9080: GO SUB 9080
2 LET H#="SDU": LET H#:=150
3 LET SC=0: LET AS=05
4 FOR W=1 TO 21: PRINT AT INT
(RNDX18)+2,INT (RNDX28)+2: INK
3;"b": PRINT AT W,0: INK 1;"e":A
T W,31;"e": NEXT W
5 FOR W=0 TO 31: PRINT AT 0,W
6 INK 1;"e":AT 21,W;"e": NEXT W
7 LET C1=1
8 LET C1=1
9 FOR W=1 TO 10: PRINT AT INT
(RNDX18)+2,INT (RNDX28)+2: INK
4;"d": NEXT W
10 PRINT AT 21,0: INVERSE 1;"S
CORE "sc:AT 0,0:"HIGH SCORE ";H
A;" "H#": LET H#:=0
11 LET A=19: LET B=2: LET A1=-
1: LET B1=+1: LET AS#="(9a)"
12 PRINT AT A,B;" "
13 IF INKEY#="8" THEN LET B1=
+1
14 IF INKEY#="5" THEN LET B1=
-1
15 IF B1=1 THEN LET B1=+1
16 IF B1=0 THEN LET B1=-1
17 IF B=1 THEN LET A1=+1: LET
AS#="(9c)"
18 IF A=20 THEN LET A1=-1: LET
T AS#="(9a)"
19 LET A=A+1: LET B=B+1
20 IF ATR (A,B)=99 THEN LET
SC#SC+5: LET W#W+1: IF W#W=3 THEN
GO TO 3000
21 IF ATR (A,B)=60 THEN GO T
O 1000
22 PRINT AT A,B: INK 1;"a":AT 2

```

```

1,6:sc
200 PRINT AT C,D;" "
316 LET C=C+1: IF C=20 OR C=1
THEN LET C1=(C1#-1)
317 IF ATR (C,D)=57 THEN GO T
O 1000
320 PRINT AT C,D: INK 2;"(9a)"
400 IF RND<AS THEN GO SUB 2000
500 GO TO 20
1000 FOR X=1 TO 20: PRINT OVER
1;AT A,B: INK (RNDX7):CHR# (64+
RNDX65): BEEP .009,-X: BEEP .00
9,-X-2: NEXT X
1030 PRINT AT 21,0: FLASH 1: INK
6: PAPER 1;"YOU SCORED ";SC:" P
TS": GO SUB 9500: GO SUB 4000: P
RINT 08: INK 1: PAPER 5: FLASH 1:
"PRESS ANY KEY TO PLAY":
1040 IF INKEY#<>" " THEN CLS : G
O T
1045 GO TO 1040
2000 IF A>10 THEN PRINT AT (RND
I17)+2,(RNDX28)+2: INK 3;"b": RE
TURN
2010 PRINT AT (RNDX17)+2,(RNDX28
)+2: INK 4;"d": RETURN
3000 FOR W=0 TO 7: FOR X=0 TO 21
: PRINT AT X,0: INVERSE 1: INK V
5: WELL DONE WELL DONE WELL DO
NE": BEEP .005,X: NEXT X: NEXT W
3010 PRINT AT 10,7: FLASH 1;"BON
US PTS = 100": BEEP .5,10
3020 LET SC#SC+100: LET AS#AS+0
5: IF AS#=25 THEN LET AS#=.2
3030 PRINT AT 12,7:"GET READY!"
: BEEP .5,5: FOR X=1 TO 100: NEX
T X: CLS : GO TO 3

```

```

4000 IF SC>H# THEN LET H#SC: P
RINT 08: FLASH 1: PAPER 5: INK 1:
"YOU HAVE THE TOP SCORE": FOR R
=1 TO 10: BEEP .1,10: BEEP .1,12
: BEEP .1,14: NEXT R: INPUT "PLE
ASE ENTER INITIALS":H#
4010 RETURN
9000 RESTORE 9010: FOR R=USR "A"
TO USR "E"+7: READ M: POKE R,M:
NEXT M: RETURN
9010 DATA 153,90,60,24,24,24,36,
195,60,126,255,255,255,255,126,6
0,195,36,24,24,24,60,90,153
9020 DATA 153,90,60,255,255,60,9
0,153,255,195,109,165,165,109,19
5,255
9500 FOR A=0 TO -5 STEP -1: BEEP
.1,5: BEEP .1,5-2: BEEP .1,5-4:
NEXT A: RETURN
9600 BORDER 7: PAPER 7: INK 0: C
LS : PRINT "YOU MUST STEAL THE
FOOD (9b) FROM THE FARMERS FIELD"
9610 PRINT "BEWARE THE FARMER"
7: INK 2;"(9a)": INK 0:" AND THE
INSECTICIDES "; INK 4;"d"
9620 PRINT "COLLECT 8 PIECES OF
FOOD TO REACH THE NEXT LEVE
L WHICH WILL BE HARDER"
9630 PRINT "CONTROLS..."5...L
EFT 8...RIGHT"IF YOU HIT TH
E SIDES OF THE FIELD YOU WILL
BE BOUND OFF THEM"YOU START OF
F FROM THE BOTTOM LEFT"
9640 PRINT 08:"ANY KEY TO PLAY":
PAUSE 0: CLS : RETURN

```


AGF

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for

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Surpassing the outstanding specification of our Interface Module II which still offers the best software support at its price, a Joystick Interface that is compatible with ALL SOFTWARE through its unique hardware programmable design.

The Interface plugs on to the rear connector of your ZX81 or ZX Spectrum.

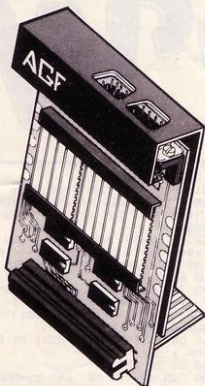
Quick clip-on connections, which are configured from a reference card supplied, allow you to define which of the forty keys are simulated by which action of the Joystick. A pack of ten Quick Reference Programming Cards makes setting for your favourite games even easier. These can be filled in to show at a glance the configuration required and stored in the cassette case of the particular game. When you change to a game using different keys the module is re-programmed in a few seconds.

As with our Interface Module II the Programmable Interface accepts all standard switch Joysticks that are Atari-compatible. Two sockets are available which are connected together for two player games which use the same keys for both players.

The Interface resides in the keyboard address space and does not affect its operation or interfere with any other add-ons. A rear extension edge connector will accommodate expansion of your system.

The unique AGF key simulation principle makes it extremely easy to incorporate Joystick action in your own programs. All eight directions and fire are read by simple BASIC.

With every order comes a free demonstration program called 'Video Graffiti' plus a full set of instructions.



KEY FEATURES

- * Programmable design gives TOTAL software support.
- * Accepts Atari, Competition Pro, Wico, Starfighter, Quick Shot, Le Stick etc.
- * Rear extension connector for all other add-ons.
- * Free demo program and instructions.

PACKAGE CONTENTS SUPPLIED

- Programmable Interface Module as illustrated, complete with clip-on programming leads.
- Self adhesive programming chart detailing how to define which key is simulated by UP, DOWN, LEFT, RIGHT, and FIRE. This can be fixed on to the case of your computer or if preferred the protective backing can be left on. The chart is made of a very durable reverse printed plastic and is extremely easy to read.
- One pack of ten Quick Reference Programming Cards for at-a-glance setting to your games requirements. The card allows you to mark the configuration in an easy to read fashion with space to record the software title and company name.
- Video Graffiti demonstration program which is written totally in BASIC to illustrate how all eight directions and fire can be read. This is also a useful high resolution drawing program.
- 12 months guarantee and full written instructions.

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FREEPOST, BOGNOR REGIS, WEST SUSSEX, PO22 9BR

QTY	ITEM	ITEM PRICE	TOTAL
	PROGRAMMABLE INTERFACE	33.95	
	JOYSTICK(S)	7.54	
	PACK(S) QUICK REFERENCE CARDS	1.00	
ONE	VIDEO GRAFFITI	FREE	
ZX81 <input type="checkbox"/> ZX SPECTRUM <input type="checkbox"/> Please tick		FINAL TOTAL	
DEALER ENQUIRIES WELCOME		EXPORT PRICES ON APPLICATION	

LAWN MOWER

```

5 LET H1=0
10 GO SUB 9000
20 GO SUB 8000
25 LET QH=0: LET LIVES=3: LET
oil=500: LET SC=0
30 IF oil<=0 THEN GO TO 4000
40 LET Z=5: LET A$="(O) ": LET
J=-2: LET V=4: LET N$="0" THEN
10: LET COL=15: IF LIVES=0 THEN
GO TO 4000
50 LET D=1
60 LET lo=lev*10:
100 BORDER 4: PAPER 4: CLS
101 FOR X=149 TO 151
102 LET J=J+2
103 IF J=4 THEN LET J=J+1
110 FOR N=1 TO lo: LET A=INT (R
NDX16)*2: LET B=INT (RND*23)+4:
PRINT AT A,B: INK J:CHR X: NEXT
n
120 NEXT x
130 PRINT AT 0,0: INK 1:"OIL:"
oil:AT 0,23:"SCORE:"sc:AT 20,0:
"LIVES:"lives:AT 20,20:"HI-SCUR
E:"hi
135 PLOT INK 0,30,160: DRAW I
NK 0,195,0: DRAW INK 0,0,-137:
DRAW INK 0,-195,0: DRAW INK 0,
0,137
150 PRINT AT li,col: PAPER v: I
NK 0,a$
151 IF oil<=0 THEN PRINT AT 0,
4: INK 2:"0 " : INK 2: PAPER 7:A
T 0,10:"OUT OF OIL": GO TO 4000
152 IF oil<100 THEN PRINT AT 0,
12: INK 7: PAPER 2: FLASH 1:"OI
L LOW"
153 IF QH=0 THEN LET JK=INT (R
NDX16)*1: IF JK=10 THEN LET B=R
NDX16*2: LET C=INT (RND*23)+4: I
F ATTR (b,c)=32 THEN PRINT AT b,
c: INK 6: BRIGHT 1:CHR 146: BE
EP .05,5: BEEP .05,10: LET QH=QH
+1
154 LET B$=INKEY$
155 IF B$="5" OR B$="6" OR B$="
7" OR B$="8" THEN BEEP .005,3:
LET SC=SC+1: PRINT AT 0,29: INK
1:sc
156 IF B$="C" AND li<18 THEN L
ET A$="(C) ": LET li=li+1: PRINT
AT li-i,col: INK 7:"(C) ": GO S

```

```

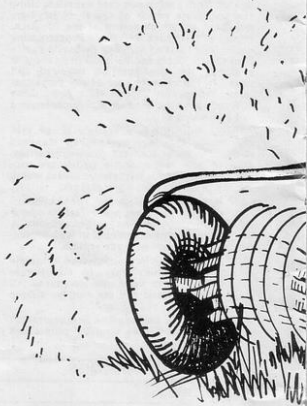
UB 6000
161 IF B$="7" AND li>2 THEN LE
T A$="(G) ": LET li=li-1: PRINT
AT li-i,col: INK 7:"(G) ": GO SU
B 6000
162 IF B$="5" AND col>4 THEN L
ET A$="(B) ": LET col=col-1: PRI
NT AT li,col+1: INK 7:"(B) ": GO
SUB 6000
153 IF B$="8" AND col<27 THEN
LET A$="(D) ": LET col=col+1: PR
INT AT li,col-1: INK 7:"(D) ":
GO SUB 6000
165 LET oil=oil-1: PRINT AT 0,4
: INK 1:oil: " "
180 GO TO 150
3000 FOR N=1 TO 20: LET ZX=RND*5
0: BEEP .1,ZX: NEXT n: RETURN
4000 PRINT AT 10,12: PAPER 7: IN
K 1: FLASH 1:"GAME OVER":AT 12,7
: FLASH 0:"ANOTHER GAME (Y/N)?":
PAUSE 10
4005 IF SC>hi THEN PRINT AT 2,9
: INK 1: FLASH 1:"NEW HIGH SCORE
!": FOR N=1 TO 5: BEEP .5,5: BEE
P .05,2: BEEP .05,10: BEEP .05,1
5: BEEP .05,20: NEXT n: LET H1=
c
4006 IF INKEY$="Y" OR INKEY$="y"
THEN GO TO 20
4010 IF INKEY$="N" OR INKEY$="n"
THEN GO TO 10000
4020 GO TO 4000
6000 IF SCREEN (li,col)<X" " TH
EN GO TO 7000
6010 RETURN
7000 IF ATTR (li,col)=34 THEN P
RINT AT 21,7: PAPER 2: INK 7: FL
ASH 1:"You have exploded!": GO S
UB 3000: PAUSE 50: LET LIVES=LIV
ES-1: CLS : GO TO 30
7010 IF ATTR (li,col)=32 THEN P
RINT AT 21,7: PAPER 0: INK 7: FL
ASH 1:"You've hit a rock!": GO S
UB 3000: PAUSE 50: LET LIVES=LIV
ES-1: CLS : GO TO 30
7020 IF ATTR (li,col)=37 THEN P
RINT AT 21,2: PAPER 1: INK 7: FL
ASH 1:"Sliced a rose! Oil spilla
9e!": GO SUB 3000: PAUSE 50: LET
oil=oil-100: CLS : GO TO 30
7030 IF ATTR (li,col)=102 THEN

```

```

PRINT AT 21,4: INK 7: FLASH 1:"5
0 gallons of extra oil!": FOR N=
1 TO 50: PRINT AT 0,10: FLASH 1:
INK 7: PAPER 2:"REFUELLING": LE
T oil=oil+1: PRINT AT 0,4: INK 2
:oil: BEEP .05,n: NEXT n: PRINT
AT li,col: PAPER 4: " ": PRINT AT
0,10: " ": AT 21,4: " ": LET QH=0:
GO TO 150
7040 LET oil=oil-50: GO TO 150
8005 BORDER 3: PAPER 6: CLS
8010 LET C$="LAWN-MOWER": FOR N=
1 TO 10: PRINT AT 2,n*10: INK 0:
"(G)":AT 2,n*9: INK 2: FLASH 1:
C$(n): PAUSE 10: NEXT n: PRINT A

```





YOU ARE a gardener with a large expanse of lawn to mow. Your fuel is limited and you must avoid the thorny roses, exploding cricket balls and rocks. Do not mow the same area twice or you will be penalised. The terrain becomes even more hazardous in levels two and three.

Lawn Mower was written for the 16K Spectrum by 13-year-old Matthew Edwards of Egginton, Derby.

```
T 2,20;" "
8012 PRINT AT 8,3; INK 1;"Press
'Y' for instructions Or 'P'
to play the game"; PAUSE 8; IF
INKEYS="P" OR INKEYS="p" THEN G
O TO 8060
8015 FOR n=8 TO 10; PRINT AT n,0
;" "
```

```
" NEXT n
8020 PRINT AT 4,2; INK 1;"The ob
ject of this game is to cut as m
uch green grass as possible
before your oil runs out.";AT
9,2; INK 0;"avoiding"; INK 2;"
<99>"; INK 0;"exploding cricket
";AT 10,26;"balls"
```

```
8030 PRINT AT 11,5; INK 0;"====";A
T 11,11;"(of)X(rocks)";AT 13,5;" "
"";AT 13,11; INK 5;"(oh)"; INK 0
;"<flowers)";
```

```
8040 PRINT AT 15,2; INK 2;"oil c
an be gained by going to a barre
l which will appear on the scr
een occasionally.";
```

```
8050 PRINT 10; PRINT AT 19,1; IN
K 4;"Use the normal cursor contr
ols";AT 21,5; INK INT (RND*7);"P
ress any key to Play"; PAUSE 1;
IF INKEYS="" THEN GO TO 8050
8060 CLS : INPUT "Level of Play?
1,2 or 3 only. ";lev; IF lev<1 O
R lev>3 THEN GO TO 8068
```

```
8070 RETURN
9000 FOR n=USR "a" TO USR "i"+7;
READ a; POKE n,a; NEXT n
9005 RETURN
9010 DATA 0,130,254,254,146,16,1
6,56
9020 DATA 0,120,48,49,63,49,48,1
28
9030 DATA 28,8,8,73,127,127,73,0
9040 DATA 30,12,140,252,140,12,3
0,0
9050 DATA 60,66,126,126,126,126,
126,60
9060 DATA 4,69,85,255,127,117,84
,16
9070 DATA 0,56,124,124,56,0,0,0
9080 DATA 28,62,119,62,28,8,8,8
9090 DATA 127,127,127,127,127,12
7,127,127,127
```


ORWIN SOFTWARE: ZX81 & SPECTRUM

SUPER SOFTWARE AT LOW PRICES

NEW! FOR 16K SPECTRUM

(will also run on 48K Spectrum)

CASSETTE A

Ten programs for £6

"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

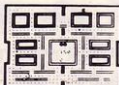
"Easy to operate, graphically impressive and good value for money."

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



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.

CASSETTE 1, eleven programs (including 7 in machine code) for 1K ZX81 £3.80

CASSETTE 2, ten games in Basic for 16K ZX81 £5

CASSETTE 3, eight programs (including 1 in machine code) for 16K ZX81 £5

CASSETTE 4 8 games for 16K ZX81 £6

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



GUNFIGHT (machine code)

INVADERS (machine code)

THE FUNGALOID'S ARE GROWING AND WHEN THEY REACH THE SKY THEY PRODUCE DEADLY SPORES. YOU CONTROL A FLYER AND YOUR MISSION IS TO DESTROY THE FUNGALOID'S BY ACCEPTING ANTI-FUNGUS BOMBS ON THEM.



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 ZX81 version of the well known game.

3D TIC-TAC-TOE (Basic)

Played on a 4 x 4 x 4 board, this is a game for the brain. It is very hard to beat the computer at it.

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).

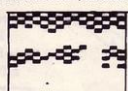
CASSETTE 5 8 games for 16K ZX81 £6

BYTE-MAN (machine code)

(previously available from Mindseye)



BREAKOUT (machine code)



SPACE RESCUE (machine code)

(previously available from Mindseye)



BLITZ (machine code)



PLANETOID'S (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.

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

"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



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5



***Inside...
New Interface 2
and ROM cartridges!
New Software!***

TAKING NEW SOFTWARE IN NEW DIRECTIONS

You'll see that this issue of Sinclair Special devotes considerable space to software. Why, when we've so much to say about hardware and peripherals? Simply because at Sinclair we believe in supporting first-class hardware with first-class software.

This month sees the start of a new commitment to education in our catalogue, both for adults and children.

In the field of micro theory, we've programs like Beyond BASIC and Make-a-Chip, which take you from the creation of simple ZX assembler subsets to simulated circuit design projects.

There's Musicmaster, to teach you music terminology, note values and composition.

And if you're keen to beat your Spectrum at chess (which can be hard), you'll certainly want to try Chess Tutor 1, the first program in a complete chess masterclass.

Coming soon...

In the pipeline are many new releases, some of which break completely new ground. LOGO and micro-PROLOG for instance. They're fifth generation languages which will take you and your Spectrum closer than ever before to the creation and application of artificial intelligence.

A formal agreement between Sinclair and Macmillan Education has been announced, the first results of which will be published this autumn. These consist of five programs in a complete early reading course plus the first four of a series of programs based on Macmillan's top selling Science Horizons Scheme. All programs are designed for use in schools or the home.

And with Blackboard software, we're publishing six more home education programs for primary school children. Covering alphabet, spelling and punctuation, each of these programs is a true gem, unlike any other education software, and fascinating to run. Even for adults!

I believe that these new titles represent a major advance in educational software for the home.

New ROM software too!

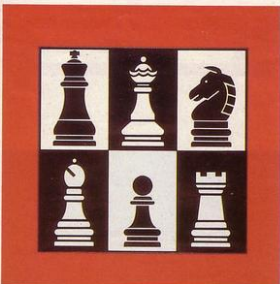
You may well have heard news of ZX Interface 2 and ROM cartridge programs. You'll find full details of the Interface and its software on the facing page (and there's an order form on the back page too!). These offer an instant games playing facility at unbeatable prices, and expand the possibilities of using your Spectrum in yet another direction.

Alison Maguire

Alison Maguire
Applications Software Manager

SOFTWARE UPDATE

The latest cassette software for ZX Computers



Chess Tutor 1

For 48K RAM Spectrum. **£9.95.**

Chess Tutor is a new way of learning all about chess - using your ZX Spectrum.

It starts from the beginning by teaching you about the chess pieces and the way they move - including castling, en passant, promotion, check, checkmate, stalemate and perpetual check.

Then it teaches you the basic tactics - pins, forks, double attacks and skewers.

There are over 120 exercises and over 200 questions for you to answer - with demonstrations and hints from your ZX Spectrum when you want them.

You can choose which parts of the course you want - and even experienced players may be surprised at what they can learn from Chess Tutor.



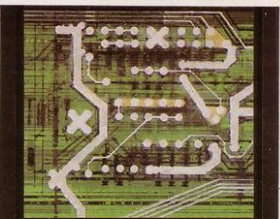
Musicmaster

For 48K RAM Spectrum. **£9.95.**

Musicmaster turns your ZX Spectrum into a musical instrument which will not only play tunes, but will also demonstrate key signatures, durations of notes, and scales.

You can write your own tunes - in any key - play them over and over again, save them on tape, modify them.

You can either write your music on a staff, or place a simple overlay on your Spectrum for a 17-note keyboard.



Make-a-Chip

For 48K RAM Spectrum. **£9.95.**

Make-a-Chip teaches you the basic elements of circuit design, shows you how they fit together, and then lets you design and test your own circuits.

When you have designed a circuit, you can give it inputs and outputs and your ZX Spectrum will check it for you. Then it will run it, or tell you what's wrong so that you can modify it.

Make-a-Chip is a fascinating way of finding out how computer logic works.

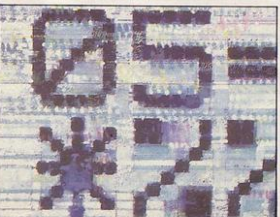


Print Utilities

For 16K and 48K RAM Spectrum. **£9.95.**

Increase the printing and display facilities of your ZX Spectrum with the Print Utilities program.

Print Utilities enables you to enhance your programs by generating characters of eight different sizes which you can place anywhere on your screen.



Beyond BASIC

For 48K RAM Spectrum. **£9.95.**

Takes the agony out of assembler. Takes the mystery out of machine code.

Beyond BASIC gives you a deeper insight into the workings of your ZX Spectrum. It explains what happens inside your micro when you run a program, and it teaches you simple Z80 machine code programming.

A major feature of Beyond BASIC is that it enables you to write your own Z80 assembler programs - then you can actually see on your screen how they affect the ZX Spectrum memory and registers.

ZX INTERFACE 2

The New ROM Cartridge/Joystick Interface

**Loads programs instantly!
Takes two joysticks!
Just plug-in and play!**

The ZX Interface 2 is the latest new peripheral for the ZX Spectrum system. It enables you to use new ZX ROM cartridge software: plug-in programs that load instantly. It allows you to use two standard joysticks, without the need for separate, special interfaces.

To use new ZX ROM cartridge programs, just connect Interface 2 to the rear of your Spectrum or Interface 1 and plug in the cartridge of your choice. The program is then loaded, ready to run!

You can use any joystick that has a 9-way D plug. Use one or two of them for extra fun with ZX ROM cartridge or Sinclair cassette programs – or with dozens of other Spectrum-compatible programs!



...AND BRAND NEW ROM CARTRIDGE SOFTWARE!

There's already plenty of choice of ZX ROM cartridge programs for your Spectrum. Some are old favourites, in an exciting new form. Others are new.

And now, thanks to ROM cartridge technology, you can run them *all* on a 16K RAM Spectrum, even if they were originally written only for 48K machines!

Every ROM cartridge program loads fast and faultlessly. No wires, no waiting, no worries about loading errors! All of them are affordably priced too, at £14.95.

New! PSSST



Robbie the Robot sits in his garden. Help him fetch compost to cultivate his prize Thyrogdian Megga Chrysanthodii. Help

him make the right choice of pesticide, to ward off devilish insects. Stop the insects breeding to overwhelming numbers before Robbie's plant has bloomed. PSSST is horticulture with a horrendous twist!

One and two player option, with a host of features including sound effects.

New! Tranz Am



Set in a future time ruled by cars and trophies, in a land where petrol replaces gold, and status is possession of the 8 Great Cups of Ultimate.

Driving your Super Blown Red Racer, use your skill to outwit and crash the Deadly Black Turbos. Use your instruments to locate and collect the trophies – before you overheat or run out of fuel.

A program with outstanding multi-directional movement, graphic features, and a playing area equivalent to more than 600 times actual screen area.

Chess



This sophisticated program does everything you'd expect at board game level, and much more besides.

The high-resolution chessboard and pieces are arranged in a row and column system, so it's easy to key in your moves.

At any stage of the game you can request the computer to suggest a move, reverse roles or change the level of skill.

Full-colour high-resolution graphics.

Horace and the Spiders



Guide Horace on the hazardous journey to the cobwebbed house full of poisonous spiders.

Safely in the house, you must move along cobwebs, choose a spot... and jump on it! The spiders will be in a frenzy – scuttling to repair their precious web.

And when a spider is spinning a new section, you're safe to attack and destroy it!

Kill all the spiders, and a new web appears... with even more spiders to catch.

Full-colour high-resolution graphics.

Backgammon



Everything you need to play the famous and deceptively simple board game. Board, stones, rolling dice and doubling dice are shown in full colour and high resolution. Choose from four levels of skill to suit experts and beginners alike – full rules are included.

Planetooids



Dodge your thrust using your thruster button, turn on a planetoid... fire! But beware – the alien ship moves fast to destroy you with cluster bombs. And when it comes to the crunch, use your hyperspace button!

Full-colour high-resolution graphics with sound.

New! Cookie



You're Charlie the Chef, who keeps his ingredients locked in the larder. But if the ingredients escape, they bring the inedible Nasties with them!

You must daze the escaping ingredients with flour bombs, and knock them into the mixing bowl. Stop them getting into the dustbin, at all costs! And beware of Nasties that get into the mixing bowl!

Cookie is fast-moving panic in the pantry, with a cast of real characters. A program to make you smile – and sweat!

Space Raiders



Your skill is all that's stopping successive waves of aliens from destroying Earth. Use your gun base to attack. Shelter behind buildings... move out and blast the passing alien soaceship!

Full-colour high-resolution graphics with sound.

Hungry Horace



Horace is forever being chased around the park by guards. "He steals their"

lunch, eats pathway flowers and creates chaos in the park by ringing the alarm! You'll have to be quick to keep Horace out of trouble!

Full-colour high-resolution graphics with sound.

New! Jet Pac



As Chief Test Pilot of the Acme Interstellar Transport Company, your task is to deliver and assemble spaceship kits. On your way round the galaxy, you're free to collect precious stones and gold.

The catch? Rocket fuel is precious and scarce. And the aliens don't take kindly to the theft of their valuables. You'll need your wits and your lasers!

With a host of features, including multi-directional movement, explosions, sound effects and one and two player option.

ZX MICRODRIVE



NOW ON RELEASE

The ZX Microdrive System – as you'd expect from Sinclair – is unique to the world of computing. It's a compact, expandable add-on system which provides high-speed access to massive data storage. With just one Microdrive alone (and Interface 1), you'll have at least 85K bytes of storage, the ability to LOAD and SAVE in mere seconds, the beginnings of a local area network of up to 64 Spectrums, and a built-in RS232 interface! The cost? Less than £50 for each Microdrive.

How to get ZX Microdrive
Spectrum owners who bought direct from us, by mail order, have been

sent full details. Order forms are being mailed in strict rotation, so if you haven't yet received your order form please bear with us. We're making good progress in meeting the huge demand.

If you didn't buy your Spectrum by mail order, don't worry. Send us the form from the bottom of this page. We'll add your name to the mailing list, and send you details by return.

Each Microdrive costs £49.95. Interface 1 costs £49.95, but just £29.95 if purchased with a ZX Microdrive. Extra ZX Microdrive cartridges: £4.95.

How to order

Simply fill in the relevant sections on the order form below. Note that there is no postage or packing to pay on some purchases. Orders may be sent FREEPOST (no stamp needed). Credit card holders may order by phone, calling 01-200 0200, 24 hours a day. 14-day money-back option, of course. Please allow 28 days for delivery.

sinclair

Sinclair Research Ltd, Stanhope Road, Camberley, Surrey, GU15 3PS. Telephone: (0276) 685311.

To: Sinclair Research Ltd, FREEPOST, Camberley, Surrey, GU15 3BR.

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Qty	Item	Code	Item Price £	Total £
	ZX Interface 2	8501	19.95	
	ZX Spectrum – 48K	3000	129.95	
	ZX Spectrum – 16K	3002	99.95	
	Postage and packing: orders under £90	0028	2.95	
	orders over £90	0029	4.95	
			TOTAL £	

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	G13/R Hungry Horace	5303	14.95
	G24/R Horace and the Spiders	5305	14.95
	G28/R PSSS	5307	14.95
	G30/R Cookie	5309	14.95
	G29/R Tranz Am	5308	14.95
	G27/R Jet Pac	5306	14.95
	G22/R Backgammon	5304	14.95
	G10/R Chess	5301	14.95

ORDER FORM

CASSETTE PROGRAMS for ZX Spectrum

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Please add my name to the Microdrive Mailing List, and send me a colour brochure with full specifications of ZX Microdrive/Interface 1 (tick here). You can use the above form to send us your name and address.

BEGINNER

```

10 PRINT AT 5,0:"      THIS IS
A PROGRAM TO      SHOW 3
DIFFERENT        MATHS AT
LOCAL FORMULA    1T LOCAL
D BE USED AS     1T PERMA
NAT REMINDER     OR FOR
MATHS HOMEWORK...."
20 PAUSE 500
30 CLS
90 PRINT "      FORMULA"
95 PRINT "      *****"
96 PRINT " (3*9a)"
100 PRINT " (3*9a)"
110 PRINT " (3*9a)" AREA OF A
RECTANGLE"
120 PRINT " (3*9a)"
130 PRINT " (3*9a)"
135 PRINT " (3*9a)"
140 PRINT "      L X B = A
"
150 PRINT
160 PRINT "      ENTER LENGTH PRES
S ENTER          THEN ENTER BREADT
H"
170 INPUT A
180 INPUT B
165 LET C=AB
190 PRINT AT 14,3:AB;" X "B;" =
"C"
200 PRINT
210 PRINT "      AREA = "C"
220 PAUSE 200
230 CLS
240 PRINT "      FORMULA"
250 PRINT "      *****"
260 PRINT
270 PRINT " (2a)"
280 PRINT " (2*9a)" AREA OF
RIGHT ANGLED"
290 PRINT " (3*9a)" TRIANGLE
"
300 PRINT " (4*9a)" L X 1/2H"
310 PRINT

```



FORMULAE

```

320 PRINT "      ENTER LENGT
H THEN          ENTER HEIGH
T"
330 INPUT D
340 INPUT E
350 LET F=D*(E/2)
360 PRINT
370 PRINT "      "D;" X 1/2
"J;" = "F"
390 PRINT "      AREA = "F"
400 PAUSE 200
410 CLS
420 PRINT "      FORMULA"
430 PRINT "      *****"
440 PRINT " (9d)"
450 PRINT " (3*9a)" AREA OF
A CIRCLE"
460 PRINT " (3*9a)"
470 PRINT " (3*9a)" 2 X PI
X R"
480 PRINT " (9s)"
490 PRINT "      OR D X P1"
500 PRINT
510 PRINT "      ENTER DIAM
ETER"
520 INPUT G
530 LET H=G*3.14
540 PRINT
550 PRINT "      "G;" X 3.
14 = "H"
560 PRINT
570 PRINT "      AREA = "H"
580 PAUSE 400
590 CLS

```

OLIVER STOCKTON of Saltdean, Sussex has written a maths program which calculates the area of rectangles, triangles and circles. He wrote it to help him with his homework and thought it might be of use to other students.

Formulae is for the 16K ZX-81.

REFLEX

```

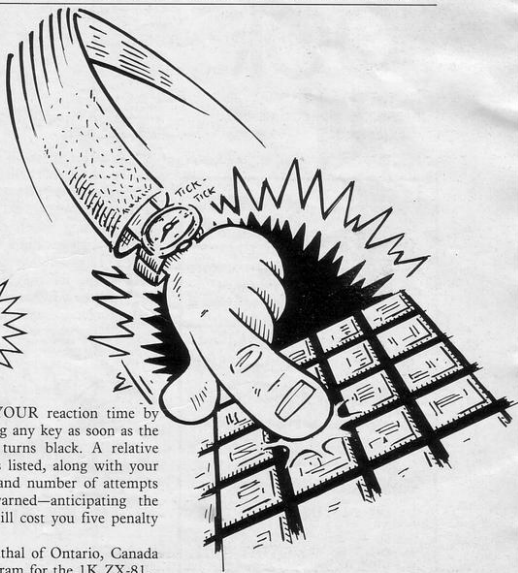
5 RAND
10 LET U=0
15 LET V=0
20 SLOW
25 LET P=0
30 PRINT "READY? ..."
40 LET R=30+INT (RND*60)
50 LET I=0
60 LET I=I+1
70 IF INKEY("<") THEN GOTO 200
80 IF I<R THEN GOTO 60
90 FAST
100 CLS
110 LET T=0
120 LET T=T+1
130 IF INKEY=" " THEN GOTO 120
135 SLOW
140 PRINT "TIME = "T;"
145 IF P>0 THEN PRINT " + "P;"
= "T+P;"
147 PRINT
150 LET U=U+T+P
155 LET V=V+1
170 PRINT "AVERAGE = "INT (U/V
+5)
175 PRINT "TURNS = "V
180 GOTO 25
200 PRINT "TOO SOON-PENALTY OF
5"
210 LET P=P+5
220 GOTO 30

```

BEGINNER

TEST YOUR reaction time by pressing any key as soon as the screen turns black. A relative **Reflex** time is listed, along with your average score and number of attempts so far. Be warned—anticipating the black screen will cost you five penalty points.

Jeffrey Rosenthal of Ontario, Canada wrote the program for the 1K ZX-81.





SLALOM

STEVE RICKARD, aged 14, of Clwyd, South Wales sent **Slalom**, a part-machine-code program. Dodge the markers as you descend the piste, 1=left and 0=right. When you crash your score is displayed; press any key for the ski lift.

Rickard has had a ZX-81 for six months and this is his first foray into machine code.

Type-in the following machine code loader first:

```
10 Rem
20 For f=16514 to 16522
30 input m
40 print f,m
50 poke f,m
60 next f
```

Then run the program, type in the numbers below one at a time, followed by enter:

1,0,0,42,14,64,78,201

When the program finishes (0/0), delete lines 20-60, then enter the main Slalom program.

```
10 REM
12 PRINT AT 1,10;"SKI-RUN";AT
5,0;"KEYS" 1=LEFT 0=
RIGHT;AT 16,0;"PRESS ANY KEY TO
START GAME"
13 IF INKEY="" THEN GOTO 13
14 CLS
15 LET A=10
```

```
17 FOR F=1 TO 9999
20 PRINT AT 10,RND*30;"T"
30 SCROLL
50 PRINT AT 7,A;
60 IF USR 16514=57 THEN GOTO 1
00
70 PRINT "0000"
80 IF INKEY="" THEN LET A=A+
```

```
1 90 IF INKEY="" THEN LET A=A-
1 95 NEXT F
100 PRINT AT 19,10;"SCORE:";F
110 PAUSE 9999
115 CLS
120 RUN
```

HOOK-UP

```
1 LET T=0
2 LET C=VAL "20"
3 LET L=VAL "10"
4 PRINT AT 17,3;"0"
11 PRINT AT 18,0;"-----"
12 PRINT AT 18,2;"(3*INV+)"
30 PRINT AT L,C;"(4*SP)";AT L-
1,C-1;"(6*SP)";AT L+1,C;" "
46 IF INKEY="" THEN PRINT
T
47 IF T>50 THEN GO TO 81
48 IF INKEY="" THEN GO TO 8
2
60 LET C=C+(INKEY="" THEN GO TO 5)
65 IF INKEY="" THEN PRINT A
T L,C;"(7*SP)";AT L-1,C-1;"---"
66 IF INKEY="" THEN GO TO 4
0
70 LET L=L+(INKEY="" THEN GO TO 5)
80 GO TO 30
81 PRINT AT 12,17;"TIME UP"
82 STOP
```

TAKE OFF in your helicopter to rescue Sam the sailor who is trapped on an oil rig in swelling seas. To control the helicopter you must use the cursor and arrow keys located at the top of the keyboard. Lower the hook to the '\$' sign which represents Sam and then try to pick him up. Remember that you cannot fly directly forward.

Hook-up, for the 1K ZX-81, was sent by Andrew Evans and Ian Williams of Huntingdon, Cambridgeshire.



```

20 DATA 62,0,230,7,67,39,0,89,
6,3,197,6,0,126,230,248,170,119,
35,16,248,193,16,242,201
30 DATA 22,20,7,143,16,2,147,
16,0,143,32,143,16,2,147,16,0,
143,32,1
40 DATA 143,16,2,147,16,0,143,
32,143,16,1,148,16,0,17,19,127,
1,36,0,205,60,32,201
50 CLEAR 32499: FOR n=32500 TO
32570: READ a: POKE n,a: NEXT n
60 PAPER 6: INK 6: PRINT AT 0,
3: FOR n=1 TO 12: PRINT " * ";
NEXT n: PRINT " * "
70 PRINT AT 9,3,TAB 28:AT 10,3
: " * ANTI MISSILE DEFENCES * ";AT
11,3:TAB 28
80 PRINT AT 12,3: FOR n=1 TO
12: PRINT " * "; NEXT n: PRINT "
* "

```

```

90 FOR n=1 TO 4: PAUSE 20: POK
E 32501,n: RANDOMIZE 0XUSR 32500
: PAUSE 60: POK E 32501,6: RANDOM
IZE 0XUSR 32500: NEXT n

```

```

100 INK 0: PAPER 7: CLS
110 PRINT AT 0,0: "Steer missile
s left with z,"TAB 15:"right wi
th m." " (If your radar aerial is
hit you cannot steer missil
es)."" "Use either key to fire m
issiles."

```

```

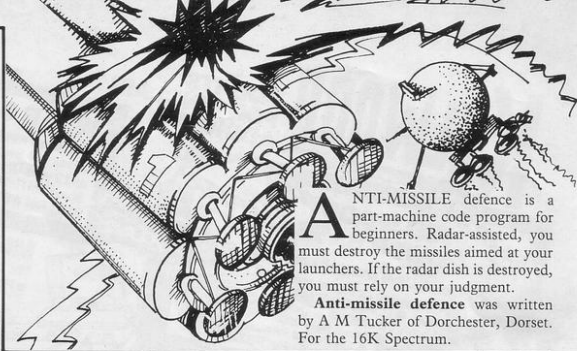
120 DATA 60,24,126,60,24,126,
42,65,0,129,0,129,66,30,129,0,66
,a,0,36,0,24,126,126,60,36,102
,2,2,4,12,56,200,24,126
130 FOR n=0 TO 39: READ a: POKE
USR "a",n,a: NEXT n
140 PRINT 0: "Press any key to
start."

```

```

150 IF INKEY="" THEN GO TO 15
0
160 CLS: PRINT: LIST USR 3256
1
170 PRINT PAPER 4:AT 21,0,
180 LET g=1: LET h=1: LET l=1:

```



ANTI-MISSILE defence is a part-machine code program for beginners. Radar-assisted, you must destroy the missiles aimed at your launchers. If the radar dish is destroyed, you must rely on your judgment.

Anti-missile defence was written by A M Tucker of Dorchester, Dorset. For the 16K Spectrum.

```

LET J=1: LET n=0: LET t=n
190 LET f=0: LET a=19: LET b=13
: LET x=0: LET y=0: LET g=1: LET
v=RND-.5: LET z=v
200 PRINT AT x,y: " (g,a) "
210 IF INKEY="" THEN LET f=f+1
220 IF f THEN PRINT AT a,b-5: "
* " AND g:AT a,b: " * " AND h:AT a,b
+5: " * " AND i
230 IF a=x+f AND (b-5=4*g OR b=
4*h OR b=5+4*i) THEN GO TO 300
240 FOR u=1 TO 25: NEXT u
250 PRINT AT x,y: " :AT a,b-5: "
: AND g:AT a,b: " : AND h:AT a,b
+5: " : AND i
260 LET x=x+1: LET y=y+z*(v<.31
AND v>.0): LET g=INT (v+.5)
270 LET a=a-(a>0)*f*(a+x)/2<I
NT ((a+x)/2)
280 LET b=b+((INKEY="" OR INKEY
Y="" OR "z"))*f*(a<18)

```

```

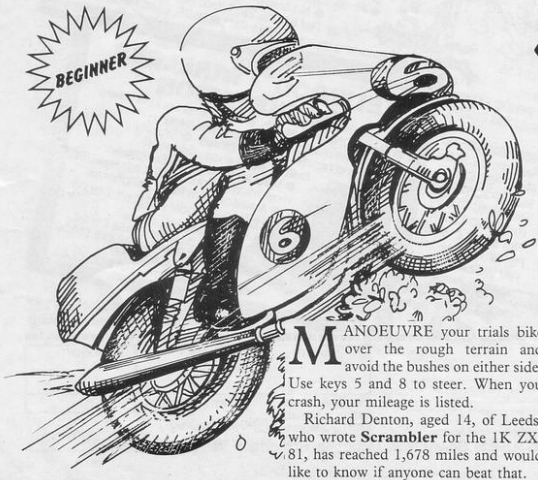
290 IF CODE SCREEN (x,y)=0 THE
N LET t=t+(g=0 OR a=13 OR g=13)
: LET g=g*(g<0): LET h=h*(g<13)
: LET i=i*(g<18): LET J=J*(g<
23)
300 IF x=20 THEN PRINT AT x,y
: "0": BEEP .25-.35: FOR u=1 TO 30
: NEXT u: PRINT AT x,y: " : GO T
O 190-130*(t=3)
310 GO TO 200
320 PRINT AT x,y: " :AT 10,0:"H
its scored":n," Launchers hit:"
: t
330 INPUT "For another game pre
ss ENTER ": LINE z#
340 IF z#="" THEN STOP
350 CLS: GO TO 160
360 LET n=n+1: PRINT AT x,y: " (g
b) ": BEEP .05*1: BEEP .02*6: FOR
u=1 TO 30: NEXT u: PRINT AT a,b
:TAB 31: GO TO 190+130*(n=10)

```

ANTI-MISSILE DEFENCE



SCRAMBLER



MANOEUVRE your trials bike over the rough terrain and avoid the bushes on either side. Use keys 5 and 8 to steer. When you crash, your mileage is listed. Richard Denton, aged 14, of Leeds, who wrote *Scrambler* for the 1K ZX-81, has reached 1,678 miles and would like to know if anyone can beat that.

```

1 FOR a=0 TO 10
2 PRINT AT a,13: " * * "
3 NEXT a
4 LET M=0
10 LET a=13
20 LET B=15
25 LET R=INT (RND*4)+1
27 LET R=(R>2.5 AND R<26)<R
<2.5 AND R>0)
30 PRINT AT 10,a: " * * "
50 SCRULL
55 LET M=M+1
60 LET B=B<(INKEY="" OR INKEY
#="" OR "5")
70 PRINT AT 0,0: "V":AT 1,0:
80 IF CHR$(PEEK (PEEK 16390)+25
6)/PEEK 16399>M THEN GOTO 200
90 GOTO 25
203 CLS
210 PRINT " YOU TRAVELLED "
: M: " MILES":AT 2,9:"AGAIN? (A/K)
"
240 PAUSE 40000
245 CLS
250 RUN

```

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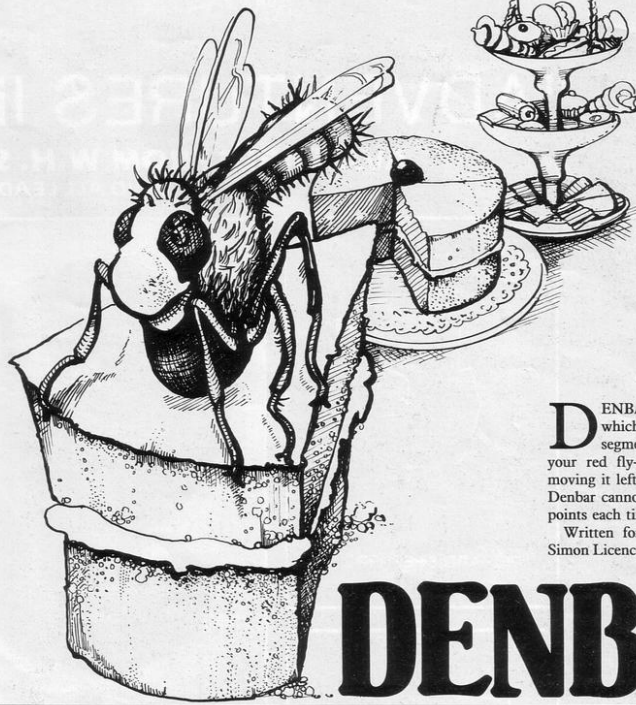
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DENBAR is an obnoxious fly which jumps from segment to segment of your cake. Move your red fly-swatter to hit Denbar, moving it left with 5 and right with 8. Denbar cannot be killed but you score points each time you hit it.

Written for the 16K Spectrum by Simon Licence of Canvey Island, Essex.

DENBAR

```

5 GO SUB 9500
10 GO TO 9000
20 PLOT 48,72: DRAW 80,16: DRA
W -64,-64: DRAW -16,48
25 RETURN
30 PLOT 48,72: DRAW 80,16: DRA
W -80,16: DRAW 0,-32
35 RETURN
40 PLOT 48,104: DRAW 80,-16: D
RAW -64,64: DRAW -16,-48
45 RETURN
50 PLOT 64,152: DRAW 64,-64: D
RAW -16,80: DRAW -48,-16
55 RETURN
60 PLOT 112,168: DRAW 16,-80:
DRAW 16,80: DRAW -32,0
65 RETURN
70 PLOT 144,168: DRAW 48,-16:
DRAW -64,-64: DRAW 16,80
75 RETURN
80 PLOT 192,152: DRAW -64,-64:
DRAW 80,16: DRAW -16,48
85 RETURN
90 PLOT 288,104: DRAW -80,-16:
DRAW 80,-16: DRAW 0,32
95 RETURN
100 PLOT 192,24: DRAW -64,64: D
RAW 80,-16: DRAW -16,-48
105 RETURN
110 PLOT 192,24: DRAW -64,64: D
RAW 16,-80: DRAW 48,16
115 RETURN
120 PLOT 144,8: DRAW -16,80: DR
AW -16,-80: DRAW 32,0
125 RETURN
130 PLOT 112,8: DRAW 16,80: DRA
W -64,-64: DRAW 48,-16

```

```

135 RETURN
1000 IF INKEY@="5" THEN GO SUB
(a:10): LET a=a-1: IF a=1 THEN
LET a=13
1010 IF INKEY@="8" THEN GO SUB
(a:10): LET a=a+1: IF a=14 THEN
LET a=2
1020 INK 2: GO SUB (a:10): INK 7
1030 PRINT AT x,y: INK 4:"a"
1040 LET c=c+.2: IF c>1 THEN LE
T c=0: LET p=INT (RND*13): GO SU
B 4000
1050 PRINT AT 1,1:J AT 17,1:t:
": LET t=t-1
1060 IF t=0 THEN GO TO 8000
1070 IF p=a THEN LET s=s+.5: FOR
n=0 TO 10: OUT 228,16+.0: OUT 22
8,0: NEXT n
1080 GO TO 1000
4000 PRINT AT x,y: ": GO SUB (P
1:0)S:800
4010 RETURN
5020 LET x=14: LET y=9: RETURN
5030 LET x=11: LET y=8: RETURN
5040 LET x=7: LET y=9: RETURN
5050 LET x=4: LET y=12: RETURN
5060 LET x=4: LET y=16: RETURN
5070 LET x=4: LET y=19: RETURN
5080 LET x=7: LET y=22: RETURN
5090 LET x=11: LET y=23: RETURN
5100 LET x=14: LET y=22: RETURN
5110 LET x=17: LET y=19: RETURN
5120 LET x=19: LET y=15: RETURN
5130 LET x=18: LET y=12: RETURN
7010 PRINT INK 2:"ZX Spectrum"
: INK 4: DENBAR WARS"
7020 PRINT AT 7,0: INK 4:"a a a

```

```

*****
7030 PRINT " INK 6:"
***** S
.L:licence 1983:""PRESS ANY KEY T
O PLAY A GAME"
7040 PAUSE 0: PAUSE 0: PAUSE 0
7050 GO TO 9010
9000 BORDER 1: PAPER 1: INK 5: C
LS
8005 RESTORE 9540
8010 FOR n=0 TO 15: READ a: BEEP
.85,a: NEXT n
8025 IF a>ha THEN LET ha=a
8030 PRINT AT 10,10:"SCORE:"a/"
HI:"ha/" ANY KEY
FOR ANOTHER GAME"
8040 PAUSE 0: PAUSE 0: PAUSE 0:
PAUSE 0
9000 BORDER 0: PAPER 0: INK 7: C
LS
9005 GO TO 7000
9010 CLS: FOR n=20 TO 130 STEP
10: INK 7: GO SUB n: NEXT n
9020 LET a=2: LET s=0
9030 LET c=0: LET x=14: LET y=9:
LET p=2: LET t=500
9040 PRINT AT 0,1:"SCORE":AT 16,
1:"TIME": PRINT E1: S.L:licence
1983"
9050 GO TO 1000
9500 LET ha=0: FOR n=0 TO 7: REA
D a: POKE USR "a"+n,a: NEXT n
9510 DATA 146,84,56,254,56,84,56
,84,146,0
9540 DATA 2,5,2,5,2,4,7,4,7,0,4,
0,4,5,9,5,9
9550 RETURN

```

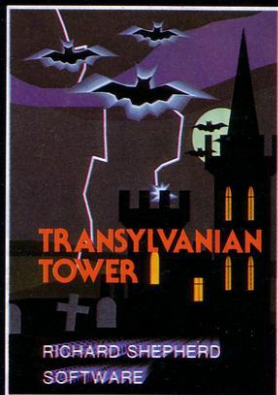
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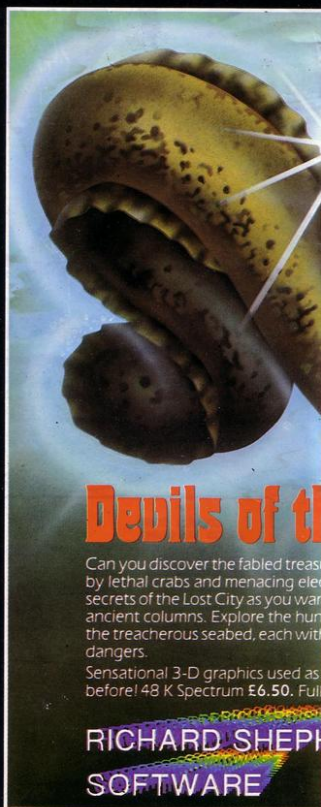
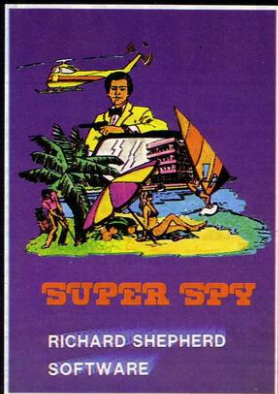


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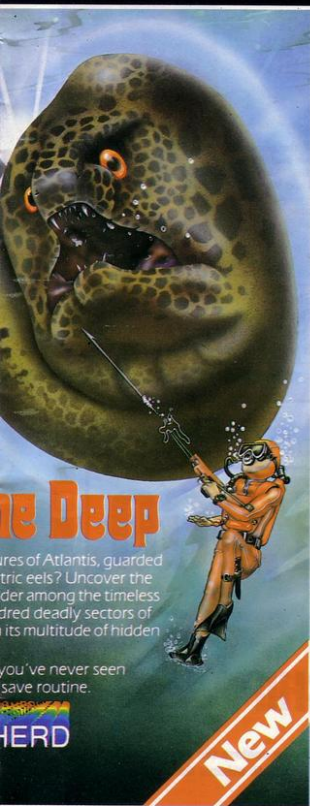
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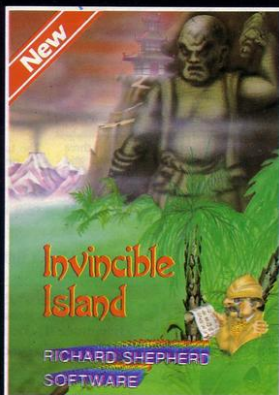
The Deep

ures of Atlantis, guarded
tronic eels? Uncover the
der among the timeless
dred deadly sectors of
its multitude of hidden

you've never seen
save routine.

HERD

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New

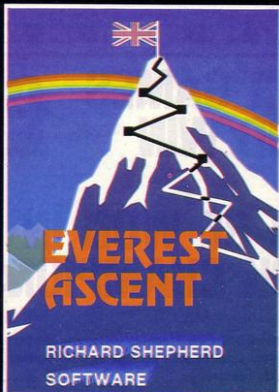
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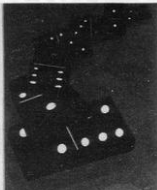
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SP11



DUCKS fly overhead. Move left with 5 and right with 8. Fire at the ducks with 0 and shoot down as many as possible.

Duck Shoot was written for the 16K ZX-81 by Neil Manning of Southport, Merseyside.

DUCK SHOOT

```

1 LET A=20
2 LET B=15
3 LET SCORE=0
4 LET BULLETS=20
5 LET SHOT=1
6 LET E=1
7 LET N=1
8 LET C=1
9 LET FIRE=0
10 GOSUB 3000
14 REM ***MOVE DUCK***
15 GOSUB 100
16 REM ***SHOOT GUN***
17 GOSUB 200
25 LET SCORE=SCORE+SHOT
30 IF FIRE=1 THEN LET BULLETS=
BULLETS-1
31 LET FIRE=0
35 IF BULLETS=0 THEN GOTO 1000
40 GOTO 15
51 FOR N=1 TO 21
52 PRINT AT N,0;"(32*1SP)"
53 NEXT N
54 LET C=INT (RND*10)+1
55 LET D=INT (RND*2)+1
56 IF D=1 THEN LET D=-1
60 IF D=1 THEN LET E=0
65 IF D=1 THEN LET D$="(1SP)1
1SP)"
70 IF D=-1 THEN LET E=31
75 IF D=-1 THEN LET D$="(1SP)1
<1SP)"
80 RETURN
100 IF E=31 OR E=0 OR SHOT=1 TH
EN GOSUB 50
105 LET SHOT=0
110 LET E=E+D
120 PRINT AT C,E,D$
130 RETURN
200 PRINT AT 20,0;"(32*1/)"
220 IF INKEY$="B" THEN LET B=B+1
230 IF INKEY$="5" THEN LET B=B-
1
235 PRINT AT A,B;"(1/11/)"
250 IF INKEY$"<"0" THEN GOTO 54
0
260 LET FIRE=1
300 FOR N=19 TO 0 STEP -1
310 PRINT AT N,B+1;"(1,)"
320 PRINT AT N,B+1;"(1SP)"
324 REM ***CHECK FOR KILL***
325 IF N=C AND B=E THEN LET SHU
T=1
326 IF N=C AND B=E THEN GOTO 20
00
330 NEXT N
340 RETURN
1000 PRINT AT 0,0;"YOU HAVE USED
YOUR LAST BULLET"
1010 PAUSE 100
1012 CLS
1015 PRINT AT 0,0;"DUCKS SHOT=",
SCORE
1020 PRINT AT 5,0;"ANOTHER PRESS
N/L"
1030 IF INKEY$="" THEN GOTO 1030
1040 GOTO 1
2000 PRINT AT C,E;"(1*)"
2010 PRINT AT C,E;"(1SP)"
2020 FOR N=C TO 20
2030 LET E=E+1
2035 IF E=25 THEN LET E=E-1
2040 PRINT AT N,E;"(1<1>)"
2045 PRINT AT N,E;"(2*1SP)"
2047 PRINT AT 20,0;"(32*1/)"
2050 NEXT N
2060 RETURN
3000 PRINT AT 5,10;"DUCK SHOOT"
3010 PRINT AT 7,2;"IN THIS GAME
YOU HAVE TO SHOOT AS MANY DUCKS
AS POSSIBLE"
3020 PRINT AT 10,2;"YOUR CONTROL
S ARE THE CURSORS."AT 11,2;"AND
0 TO FIRE THE GUN"
3030 PRINT AT 12,5;"PRESS N/L TO
START GAME"
3040 IF INKEY$="" THEN GOTO 3040
3050 CLS
3060 PRINT AT 10,10;"GOOD LUCK"
3070 RETURN

```

MANOEUVER your balloon through the minefield, using keys 5 to 8. Avoid the deadly mines. If you make contact with a mine you will lose one of your three lives but if you reach level 10 you will be awarded an extra life. If you rescue injured people you will be awarded extra points.

Crazy Balloon was written for the 16K ZX-81 by Glyn Emmett of Glamorgan.

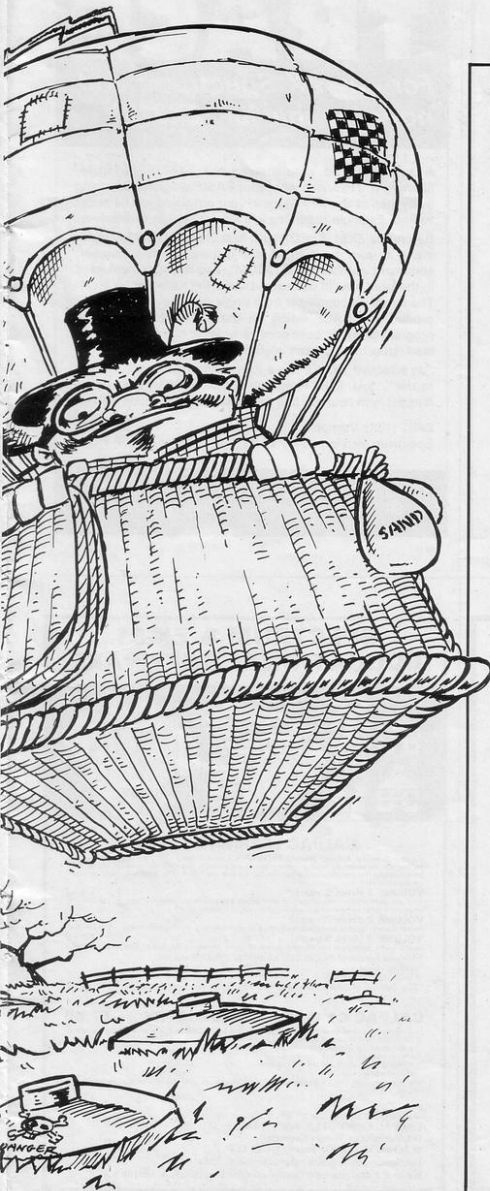
CRAZY BALLOON



```

2 LET Z$="*****"
3 GOSUB 9000
5 LET J$="ZX01"
10 LET H=1000
20 LET LI=3
30 LET L=1
40 LET B$=" "
60 LET S=0
61 LET BONUS=1000
70 LET X=20
80 LET Y=29
81 LET J=15
90 PRINT AT 0,0;"(32*9h)";AT 2
1,0;"(32*9h)"
100 FOR F=1 TO 20
110 PRINT AT F,0;"(9h)";AT F,31
;"(9h)"
120 NEXT F
130 PRINT AT 1,1;"(1SP)BONUS.(1
SP)";AT 2,1;"(9e:1SP)90a1(1SP:9r
)"
131 LET AB=2
140 PRINT AT 1,29;Z$( TO 8);AT
2,24;Z$( TO 7);AT 3,25;Z$( TO 6)
;AT 4,26;Z$( TO 5);AT 5,27;Z$( TO
4);AT 6,28;Z$( TO 3);AT 7,29;Z
$( TO 2);AT 8,30;Z$( TO 1)
150 PRINT AT 20,1;Z$( TO 18)
160 PRINT AT 18,10;Z$( TO 14)
170 PRINT AT 17,21;Z$( TO 10)
180 PRINT AT 19,1;Z$( TO 4);AT
18,1;Z$( TO 3);AT 17,1;Z$( TO 2)
190 PRINT AT 16,26;Z$( TO 5);AT
15,27;Z$( TO 4);AT 14,28;Z$( TO
3);AT 13,29;Z$( TO 2);AT 12,30;
Z$( TO 1)
200 PRINT AT 16,4;Z$( TO 14)
210 PRINT AT 15,1;Z$( TO 2)
220 FOR F=8 TO 16
230 PRINT AT F,18;Z$( TO 1)
240 NEXT F
250 FOR F=18 TO 24
260 PRINT AT 14,F;Z$( TO 1)
270 NEXT F
271 PRINT AT 12,12;"1"
272 PRINT AT 11,16;"1"
273 PRINT AT 9,19;"1"
280 FOR F=1 TO 6
290 PRINT AT F,18;Z$( TO 1)
300 NEXT F
310 FOR F=1 TO 17
320 PRINT AT 10,F;Z$( TO 1)
330 NEXT F
340 PRINT AT 11,17;Z$( TO 1);AT
12,16;Z$( TO 2);AT 13,15;Z$( TO
3);AT 14,14;Z$( TO 4);AT 15,13;
Z$( TO 5)
350 PRINT AT 3,1;Z$( TO 1);AT 3
,8;Z$( TO 1)
360 FOR F=4 TO 8
370 PRINT AT F,10;Z$( TO 1)
380 NEXT F
381 LET LL=1
391 LET X=20
392 LET Y=29
393 LET J=15
400 PRINT AT X,Y;"b"
401 PRINT AT X,Y;" "
405 LET LL=INT (RND*2)+1
406 IF LL=2 THEN PRINT AT 10,5;
"*"
407 IF LL=1 THEN PRINT AT 10,5;
B$
410 IF INKEY$="7" THEN LET J=1
420 IF INKEY$="6" THEN LET J=3
430 IF INKEY$="5" THEN LET J=4
440 IF INKEY$="8" THEN LET J=2
450 IF J=1 THEN LET X=X-1
460 IF J=2 THEN LET Y=Y+1
470 IF J=3 THEN LET X=X+1
480 IF J=4 THEN LET Y=Y-1
490 PRINT AT X,Y
500 LET Z=PEEK (PEEK 16398+256*
PEEK 16399)
510 IF Z=174 THEN LET S=S+50
511 IF Z=23 OR Z=196 THEN GOTO
700
520 LET BONUS=BONUS-1
521 PRINT AT 10,5;"*"
530 IF X=4 THEN IF Y>1 AND Y<8
THEN GOTO 550
540 GOTO 400
550 LET S=S+BONUS
560 CLS
561 LET L=L+1
562 IF L=10 THEN LET LI=LI+1

```



```
570 PRINT AT 10,10;"LEVEL=";L;A
T 12,10;"LIVES=";LI;AT 14,0;"LET
S ATTACK"
571 PRINT AT 16,10;"SCORE=";S
580 PAUSE 100
581 CLS
590 GOTO 61
700 LET LI=LI-1
710 IF LI<=0 THEN GOTO 900
720 PAUSE 50
730 GOTO 391
900 CLS
910 PRINT AT 10,10;"Game over";
AT 12,12;"SCORE=";S
920 IF H>S THEN GOTO 950
930 PRINT AT 20,0;"PLEASE ENTER
NAME"
940 INPUT J$
941 IF S>H THEN LET H=S
950 PRINT AT 14,2;"HIGH SCORE="
JH
960 PRINT AT 16,4;"BY ";J$
970 PAUSE 500
980 CLS
990 PRINT "AGAIN (Y/N)?"
991 INPUT A$
992 IF A$="Y" THEN GOTO 20
993 IF A$="" THEN GOTO 20
1000 STOP
9000 CLS
9001 PRINT TAB 0;"CRAZY BALLOON"
9010 PRINT ,, "MANOUVERE YOUR BAL
LOON THROUGH THE MINE-FIELD,A
VOIDING THE"
9020 PRINT "ALWAYS PRESENT dead1
4 MINES. IF YOU MAKE CONTACT WIT
H ONE YOU WILL LOSE ONE OF YOU
R 3 LIVES BUT IF YOU GET TO LE
VEL 10 YOU WILL BE AWARDED AN E
XTRA LIFE."
9030 PRINT
9040 PRINT "USE KEYS:"
9050 PRINT TAB 10;"5=LEFT";TAB 1
0;"8=RIGHT"
9060 PRINT TAB 10;"6=DOWN";TAB 1
0;"7=UP"
9070 PRINT ,, "BEWARE OF THE ELEC
TRIC FENCE WHICH SURROUNDS TH
E MINE-FIELD. IF YOU RESCUE THE
INJURED PEOPLE"1"YOU WILL GAIN
EXTRA POINTS."
9090 PRINT AT 13,22;"HIT ""S""
9100 PRINT AT 14,22;"TO START"
9110 PRINT AT 13,22;" " ;AT
14,22;" "
9120 IF INKEY#("<"S") THEN GOTO 90
90
9130 CLS
9140 RETURN
9990 SAVE "CRAZY BALLOON"
9999 RUN
```


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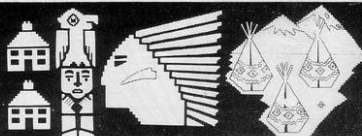
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CLOBBER CASTLE

YOU STAND on the battlements of your castle, which is being assailed by commando-style robots. If a robot reaches the battlement you will be killed, so delay them by dropping cannonballs on to their heads. Move left with Q, right with P and drop a cannonball with F.

Clobber Castle was written for the 16K or 48K Spectrum by R Flavell-White of Melton Mowbray, Leicestershire.

```

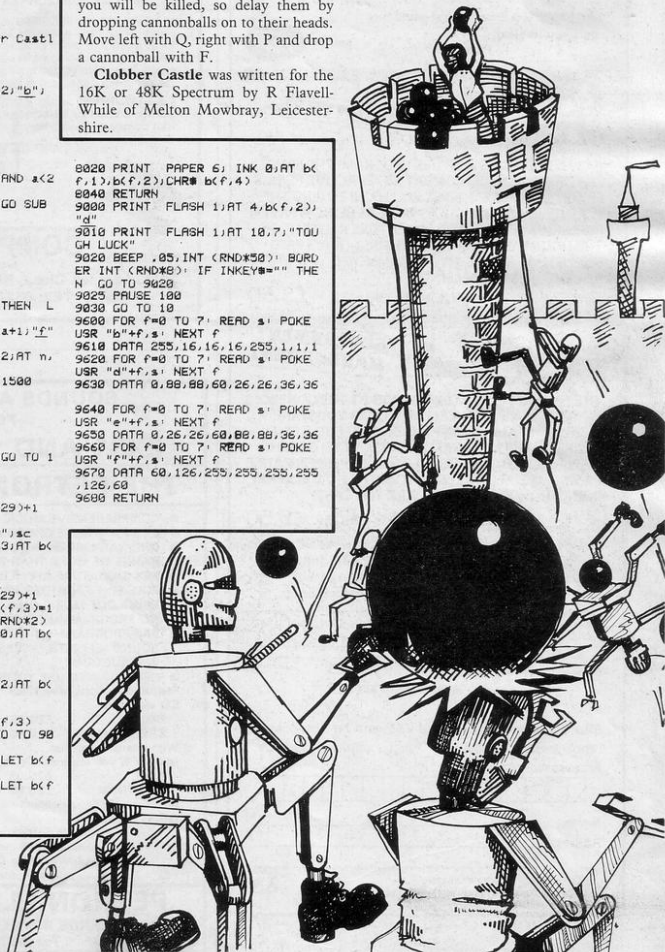
5 GO SUB 9600
10 BORDER 5: BRIGHT 1: PAPER 5
CLS
20 DIM b(10,4)
30 LET a=5: LET sc=0
90 PRINT AT 1,9:"Clobber Castl
"
100 PRINT AT 4,31:""
110 FOR f=1 TO 17*32
120 PRINT PAPER 6: INK 2;"b",
130 NEXT f
140 GO SUB 7000
200 FOR f=1 TO 10
210 GO SUB 8000
215 FOR h=1 TO 5
220 PRINT AT 4,a;"_f_"
230 LET a=a+(INKEY="P") AND a<2
9)-(INKEY="Q") AND a>0)
240 IF INKEY="F" THEN GO SUB
1000
490 NEXT h
500 NEXT f
550 GO TO 200
1000 PRINT AT 4,a+1;" "
1005 LET bh=0
1010 FOR n=5 TO 20
1020 IF ATTR (n,a+1)=112 THEN L
ET bh=1
1025 PRINT PAPER 6:AT n,a+1;"_f_"
1026 BEEP .025,0-n
1027 PRINT PAPER 6: INK 2:AT n,
a+1;"b"
1030 IF bh=1 THEN GO TO 1500
1050 NEXT n
1060
1070 RETURN
1500 LET sc=sc+10
1560 FOR j=1 TO 10
1570 IF b(j,2)*a+1 THEN GO TO 1
590
1590 NEXT j
1595 LET b(j,1)=18
1595 LET b(j,2)=INT (RND*29)+1
1600 LET b(j,3)=b(j,3)+1
1610 PRINT AT 0,0:"Score=";sc
1620 PRINT PAPER 6: INK 3:AT b
(j,1),b(j,2):CHR# b(j,4)
1630 RETURN
7000 FOR f=1 TO 10
7010 LET b(f,2)=INT (RND*29)+1
7020 LET b(f,1)=18: LET b(f,3)=1
7021 LET b(f,4)=147+INT (RND*2)
7025 PRINT PAPER 6: INK 0:AT b
(f,1),b(f,2):CHR# b(f,4)
7030 NEXT f
7040 RETURN
8000 PRINT PAPER 6: INK 2:AT b
(f,1),b(f,2):"f"
8005 BEEP .025,-30
8010 LET b(f,1)=b(f,1)-b(f,3)
8015 IF b(f,1)<=4 THEN GO TO 90
00
8016 IF b(f,4)=147 THEN LET b(f
,4)=148: GO TO 8020
8017 IF b(f,4)=148 THEN LET b(f
,4)=147

```

```

8020 PRINT PAPER 6: INK 0:AT b
(f,1),b(f,2):CHR# b(f,4)
8040 RETURN
9000 PRINT FLASH 1:AT 4,b(f,2),
"
9010 PRINT FLASH 1:AT 10,7:"TOU
GH LUCK"
9020 BEEP .05,INT (RND*50): BORD
ER INT (RND*8): IF INKEY=" " THE
N GO TO 9020
9025 PAUSE 100
9030 GO TO 10
9040 FOR f=0 TO 7: READ s: POKE
USR "b"+f,s: NEXT f
9610 DATA 255,16,16,16,255,1,1,1
9620 FOR f=0 TO 7: READ s: POKE
USR "d"+f,s: NEXT f
9630 DATA 0,88,88,60,26,26,36,36
9640 FOR f=0 TO 7: READ s: POKE
USR "e"+f,s: NEXT f
9650 DATA 0,26,26,60,88,88,36,36
9660 FOR f=0 TO 7: READ s: POKE
USR "f"+f,s: NEXT f
9670 DATA 60,126,255,255,255,255
,126,60
9680 RETURN

```



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ECM11



WEBBED WONDER

IN THIS GAME for the 16K Spectrum you have to move your spider round the screen to collect money. The keys to do it are Q, W, E, A, D, Z, X and C in the direction relative to the

S key. If you land on your own web trail you will die.

Initially the bank manager will accept £10, then £20, then £40. When you

have £70 it will be transferred to a Swiss bank account.

Webbed Wonder was sent by Tim Pilling of Aston-under-Lyne, Lancashire.

```

10 FOR a=1 TO 7
20 READ b
30 PUKE USR "c"+a.b
40 NEXT a
50 DATA 60,126,219,219,255,189
,165,165
60 LET s=0 LET h=0 LET p=0
LET su=0 LET q=2
100 LET lo=INT (RND*19)+1 LET
co=INT (RND*29)+1 LET ln=lo LET
T cn=co
110 LET lp=INT (RND*19)+1 LET
cp=INT (RND*29)+1
120 IF lp=lo AND cp=co THEN GO
TO 100
200 PLOT 249,168 : DRAW -241,0
DRAW 0,-161 : DRAW 241,0 : DRAW 0,
160
210 PRINT AT 0,0:s
220 PRINT AT 0,5:"MONEY IN THE
BANK £",h
230 PRINT AT 21,4:"MONEY IN SWI
SS BANK £",su
250 PRINT AT lo,co:"c"
260 PRINT AT lp,cp:"e"
300 LET a=""
301 LET s=INKEY$
310 IF a="" THEN LET ln=lo-1
LET cn=co-1
320 IF a="" THEN LET ln=lo-1
330 IF a="" THEN LET ln=lo-1
LET cn=co-1
340 IF a="" THEN LET cn=co+1
350 IF a="" THEN LET ln=lo+1
LET cn=co+1
360 IF a="" THEN LET ln=lo+1
370 IF a="" THEN LET ln=lo+1
LET cn=co-1
380 IF a="" THEN LET cn=co-1
395 IF LEN a=0 THEN GO TO 301
390 IF ln=21 OR ln=0 THEN LET
ln=ABS (ln-20)
395 IF cn=31 OR cn=0 THEN LET
cn=ABS (cn-30)
400 IF SCREEN$ (ln,cn)="E" THEN
LET s=s-9 : BEEP .2,2 : GO SUB 1
000
410 IF SCREEN$ (ln,cn)="E" THEN
LET s=s+1 : IF s>39 THEN GO SU
B 5000
411 IF SCREEN$ (ln,cn)="E" THEN
BEEP .1,-50+s*2,4 : GO SUB 2000
GO SUB 1000
415 PRINT AT 0,0:s : IF s<10 THE
N PRINT AT 0,1;"_"
420 PRINT AT lo,co:"e" : PRINT A
T ln,cn:"c"
425 LET lo=ln LET co=cn
430 GO TO 301
1000 LET lp=INT (RND*19)+1
1010 LET cp=INT (RND*29)+1
1020 IF lp=ln AND cp=cn OR lp=lo
AND cp=co THEN GO TO 1000
1030 PRINT AT lp,cp:"e"
1040 IF s=0 THEN GO TO 3000
1050 IF s=10 THEN CLS : LET h
+h+s : LET s=0 : GO TO 100
1060 RETURN
2000 IF h+s+su>p THEN LET p=h+s
+su
2010 LET bl=INT (RND*19)+1 LET
bc=INT (RND*29)+1
2020 IF SCREEN$ (bl,bc)="E" THEN
PRINT AT bl,bc:" " : BEEP .1,s*
.5 : RETURN
2030 GO TO 2010
3000 LET z=3
3001 BEEP .1,z
3002 IF z>=59 THEN LET z=z-1 : G
O TO 3001
3003 CLS : PRINT AT 10,8:"PEAK S
CORE = ",p : PAUSE 0 : CLS : LET p
=0 : GO TO 60
5000 PRINT AT 0,0:s : IF h+s+su>p
THEN LET p=h+s+su : LET su=s+u+7
0 : LET q=q+1
5001 LET z=-60
5002 BEEP .1,z
5003 IF z>60 THEN GO TO 5005
5004 LET z=z+1 : GO TO 5002
5005 PRINT AT 0,0:"-----"
FLASH 1 : PR
INT AT 21,4:"MONEY IN SWISS BANK
£",su : PAUSE 0 : FLASH 0
5006 LINK 7 : PAPER 0 : PRINT AT 10
,3:"PRESS ANY KEY TO CONTINUE":
LINK 0 : PAPER 7 : PAUSE 0 : PAUSE
0
5007 CLS : LET s=0 LET h=0
5008 GO TO 100

```

INCA GOLD

```

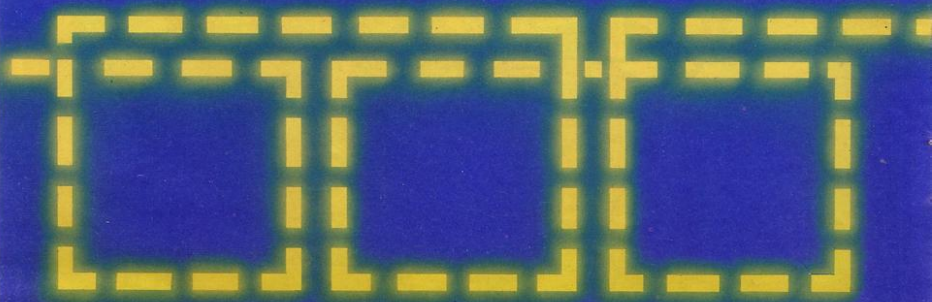
1 GOTO 9200
10 LET R=INT (RND*5)+1
20 DIM N(5)
40 LET F=INT (RND*5)+1
50 FOR L=1 TO 5
60 LET N(L)=F
70 NEXT L
80 FOR L=1 TO 5
90 LET N(L)=N(L)+R
92 LET R=R+R
94 NEXT L
95 PRINT AT 0,0;
100 FOR L=1 TO 4
110 PRINT N(L); " ";
120 NEXT L
130 PRINT "?"
140 PRINT
150 PRINT "WHAT IS THE NEXT NUMBER?
      PRESS ANY KEY WHEN YOU KNOW"
165 IF INKEY<>="" THEN GOTO 170
166 LET TM=TM+1
167 IF TM<=5 THEN GOTO 8000
168 PRINT AT 0,20;"TIME";TM;
"
169 GOTO 165
170 INPUT I
172 LET TMS=TMS+TM
174 LET S=I
"
175 PRINT AT 0,0;S;AT 2,0;S;AT
T 3,0;S
180 IF I=N(5) THEN GOTO 9000
190 GOTO 8000
1000 FAST
1005 LET A=0
1010 LET B=31
1020 LET C=21
1030 FOR L=1 TO 14
1040 FOR F=A TO B
1050 PRINT AT C,F;"(LSP)"
1060 NEXT F
1070 LET A=A+1
1080 LET B=B-1
1090 LET C=C-1
2000 NEXT L
2040 LET TM=TI
2050 LET TMS=0
2055 SLOW
2060 PRINT AT 20,0;"
"
2070 PRINT AT 10,16;" "AT 19
,16;" "AT 20,16;" "
2080 PRINT AT 15,12;" "AT 16
,14;" (9H) "AT 18,10;" "
2090 PRINT AT 15,10;" "AT 16,10
;" "AT 17,10;" "
3000 PRINT AT 14,18;" "AT 15,18
;" "AT 16,18;" "AT 13,15;"
"AT 9,15;" "
3010 LET H#="(9H)"
3020 PRINT AT 10,14;"(5*9H)";AT
11,14;"(5*9H)"
3030 PRINT AT 20,15;H#;AT 18,15;
H#;AT 15,11;H#;AT 18,12;H#;H#;AT
14,18;H#;AT 12,15;H#;AT 9,15;H#
3040 PRINT AT 4,15;"(99 99)";AT
5,14;"(99 2*97 99)";AT 6,14;"(95
) * (99)";AT 7,14;"(95) (2*1SP)";
3050 PRINT AT 20,3;"(9H) (9H)
(9H)"
3060 LET X=19
3070 LET Y=0
3080 PRINT AT X+1,Y;
3090 LET P=PEEK (PEEK 16398+256*
PEEK 16399)
4000 PRINT AT X,Y+1;
4010 LET Q=PEEK (PEEK 16398+256*
PEEK 16399)
4020 PRINT AT X-1,Y;
4030 LET W=PEEK (PEEK 16398+256*
PEEK 16399)
4040 PRINT AT X,Y-1;
4050 LET E=PEEK (PEEK 16398+256*
PEEK 16399)
6010 IF P=136 OR W=136 OR E=136
OR Q=136 THEN GOTO 8
6012 IF Q=23 THEN GOTO 9100
6015 PRINT AT X,Y;"(LX)"
6016 PRINT AT X,Y;" "
6020 LET X=X<<INKEY#="S" AND P=0
><INKEY#="?" AND W=0)
6030 LET Y=Y+<INKEY#="B" AND Q=0
><INKEY#="5" AND E=0)
6040 GOTO 3000
8000 FOR L=1 TO 19
8010 PRINT AT 20,L;"(99)"
8015 NEXT L
8018 PRINT AT X,Y;"(LX)"
8020 PRINT AT 1,0;"SORRY BUT YOU
ARE TRAPPED"
8030 PRINT "THERE IS NO ESCAPE .
.....";
8040 PRINT AT 0,0;"LAST NO.=";N(
5);" NOT ";I
8050 GOTO 9112
9000 PRINT AT X+1,Y;" " AND P=13
6;AT X,Y+1;" " AND Q=136;AT X-1,
Y;" " AND W=136;AT X,Y-1;" " AND
E=136
9010 GOTO 3000
9110 PRINT AT 0,10;"**WELL DONE**
";AT 2,0;"YOUR SCORE WAS:";TMS
9120 PRINT AT 3,0;"PRESS ANY KEY
TO TRY AGAIN"
9130 IF INKEY#="" THEN GOTO 9130
9140 CLS
9160 GOTO 9500
9240 PRINT AT 0,1;" ***** INC
A GOLD*****"
9250 PRINT TAB 5;"TO GET THE INC
A GOLD";TAB 5;"YOU MUST REACH TH
E";TAB 5;"TOP OF THE INCA TEMPLE
"
9300 PRINT TAB 5;"THE DOORS(9H)
" HAVE LOCKS.";TAB 5;"YOU WILL
ONLY OPEN IF";TAB 5;"YOU GIVE TH
E CORRECT";TAB 5;"COMBINATION WH
EN ASKED."
9300 PRINT TAB 5;"THE WRONG ONE
AND YOU";TAB 5;"ARE TRAPPED FURE
VER."
9390 PRINT TAB 5;"USE KEYS CURSOR
R";TAB 5;"KEYS TO MOVE"
9420 PRINT "*****PRESS ANY KEY T
O START*****"
9430 IF INKEY#="" THEN GOTO 9430
9500 CLS
9520 PRINT "PLEASE ENTER LEVEL O
F DIFFICULTY*****5 TO 100*****"
9522 PRINT
9523 PRINT "(THE LOWER THE HARDE
R THE GAME)"
9524 INPUT TI
9526 IF TI>1000 OR TI<=0 THEN GO
TO 9524
9528 CLS
9510 GOTO 1000
9620 SAVE "INC#"
9630 RUN

```

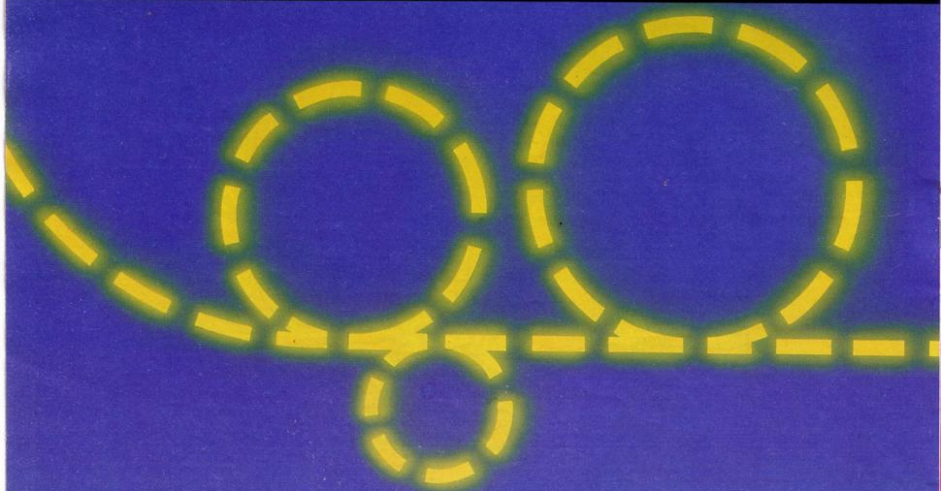
YOUR AIM is to reach the gold at the top of the Inca Temple. Move with cursor keys 5 to 8 until you reach a door. Each door must be opened by the correct combination and any error means that you will be trapped there for ever.

Inca Gold was written for the 16K ZX-81 by K. Royles of Rhyd, Clwyd.





**THE TRICKSTICK.
A REVOLUTION THAT RUN
AROUND ORDINARY JOY**



TRICKSTICK TURNS YOUR SPECTRUM INTO THE MOST SOPHISTICATED GAMES MACHINE IN THE WORLD

Why is Trickstick superior to all other joystick systems?

PROPORTIONAL: A brilliant innovation in the circuitry of the interface gives proportional control (ie varying speeds and rates of turn) even with many non-proportional games. The design tears up the textbooks on conventional analogue to digital conversion and brings you unprecedented control and versatility.

ONE TO EIGHT PLAYERS: Innovative design also enables you to put up to eight Tricksticks on a single Spectrum. Each Trickstick comes with its own interface and the interfaces simply plug into each other. So games playing need no longer be a solitary occupation, and the kids won't have to fight for their turn any more.

SOFTWARE COMPATIBLE: Trickstick is compatible with any software which will work with the old-fashioned Kempston joystick.

PROGRAMMABLE: A low cost adaptor performs the technically simple job of making the Trickstick programmable, and compatible with ANY software.

NO MOVING PARTS: Small plastic-coated metal pads on the Trickstick detect how hard you are pressing by picking up electrical radiation from your fingers. This is then amplified and fed into the interface. So there are no moving parts at all;—not even the fire buttons. This arrangement was proved in competitive trials to give the greatest control and potential for spectacular skill.

S RINGS STICKS.



TRICKSTICK

And this makes Trickstick the only games system which does not wear out with heavy use!

ATAKTICS: Trickstick gives new life to your existing software. Attaktics takes you and your Trickstick to new dimensions where skill and strategy are as important as the fast reactions of the very young. The game is very, very efficiently written in machine code and allows you to move in 64 different directions on the screen, giving perfectly smooth curves. Combine this with your new-found control of speed and rate of turn, and imagine aerial combat against your Spectrum or against other Trickstick owners!

USE THE COUPON OR THE PHONE: Trickstick and Attaktics are in stock and available now. Trickstick including interface is £28. Attaktics is £7.50 if ordered with a Trickstick and £10 on its own. The Programmable Adaptor is £10 for Trickstick owners and £15 for others. The Training Tape is Free with each Trickstick. Or call us for the name of your local stockist.

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ZX Spectrum 48K

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An exciting fast action game crawling with the most slithering nasties ever! Blast the amoeba as they descend upon your laser base - watch them mutate into slimy algae, but beware the algae channeling the amoeba towards you even faster. Features a host of bonus flies and lizards, mutant and schizoid amoeba bonus laser bases, superb animated graphics, arcade standard sound effects plus unique voice activated laser firing.

For any ZX Spectrum

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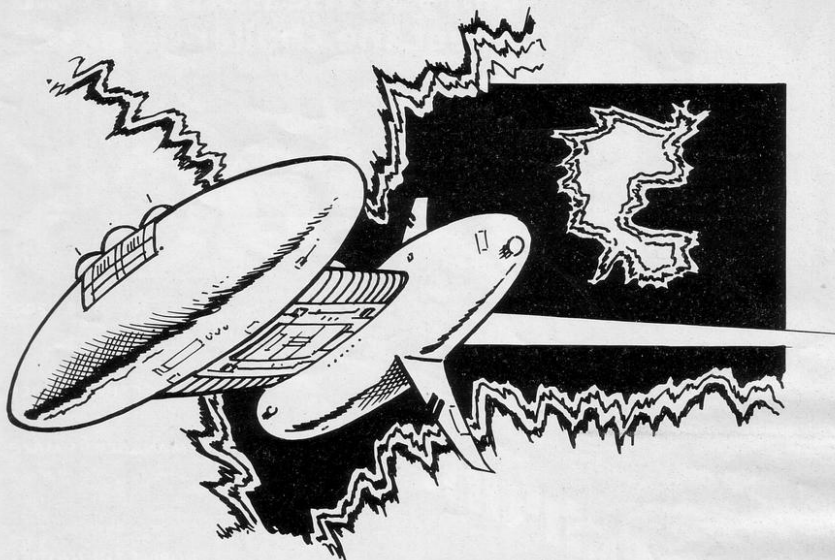
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»»» FORCEFIELD »»»

YOUR CRAFT appears on the left-hand side of the screen and must travel through the gaps in the forcefield to reach the right-hand

side. Skilful flying on your first flights may succeed in destroying the edges of the forcefields nearest to the gaps and thus make subsequent flights easier.

Move down with A and up with L. **Forcefield** was written for the 16K or 48K Spectrum by G Woolnough of Coventry, West Midlands.

```
100 GO SUB 9000
150 PAPER 0: BORDER 0: CLS
175 LET b=0
200 INK 7: PRINT AT 0,0:"Flight
  : Score: Best:"
205 PRINT AT 1,0: INK 6:" IN
  K 5:"*****
  ***": INK 6:"
210 FOR n=2 TO 20 STEP 2
220 PRINT AT n,0:"JAT n+1,0:"
b"
230 PRINT AT 21,0: INK 6:" I
  NK 5:"*****
  ****": INK 6:"
240 NEXT n
255 INK 2: FOR n=2 TO 20: PRINT
  AT n,31:"e": NEXT n
260 INK 7: FOR j=7 TO 27 STEP 5
  : FOR n=2 TO 20: PRINT AT n,j:"d
  ": NEXT n
270 FOR m=1 TO 3: LET k=INT (RN
  DK10)+2: PRINT AT k,j: INK 0:"
  : NEXT m: NEXT j
275 LET sc=1000: LET f1=0
280 REM SHIP
285 LET q=INT (RND*9)+1
290 LET q=q*2: LET q=q+1
310 LET w=1
311 PRINT AT 0,7:f1: PRINT AT 0
  ,16:sc"
312 IF f1=10 THEN GO TO 420
315 LET f1=f1+1: PRINT AT 0,7:f
  1"
319 PAUSE 25
320 INK 6: PRINT AT q,w:"c"
325 FOR k=1 TO 8: NEXT k: BEEP
```

```
.01,20
330 PRINT AT q,w) "
350 IF ATTR (q,w+1)=2 THEN GO
  TO 1000
360 IF ATTR (q,w+1)=5 THEN GO
  TO 2000
370 IF ATTR (q,w+1)=7 THEN GO
  TO 3000
375 LET q=q+(INKEY="a")-(INKEY
  ="l")
395 LET w=w+1
400 GO TO 320
420 FOR N=2 TO 20: PRINT AT N,4
  : " : PA
  USE 7: NEXT N
421 IF sc<b THEN LET b=sc
422 PRINT AT 0,20:b
425 PRINT AT 5,3:"WOULD YOU LIK
  E ANOTHER GO?" BEEP .01,4: BEEP
  .02,5: PRINT AT 7,15:"(Y/N)": F
  OR N=0 TO 4: BEEP .01,N: NEXT N
430 IF INKEY="=" THEN GO TO 43
  0
440 IF INKEY="w" THEN PRINT A
  T 5,3:"
  :JAT 7,15": :JAT 0,7:"
  : GO TO 260
450 IF INKEY("<">"v" THEN PRINT AT
  AT 10,10:"SO BE IT.FAREWELL.": S
  TOP
1010 FOR n=1 TO 10
1020 BEEP .01:INT (RND*30)
1030 NEXT n
1040 LET sc=sc+200
1999 GO TO 260
2000 PRINT AT q,w) "
```

```
2010 FOR n=16 TO 8 STEP -1
2020 BEEP .01 n
2040 LET sc=sc-100
2050 PRINT AT q,w) INK 5:"a"
2999 GO TO 260
3010 FOR n=15 TO 10 STEP -1
3020 BEEP .01,n: BEEP .01,n-3
3030 NEXT n
3040 LET sc=sc-100
3999 GO TO 260
8999 STOP
9000 FOR k=1 TO 5: FOR n=0 TO 7:
  READ a: POKE USR (CHR0 (143+k))
  +n,a: NEXT n: NEXT k
9010 DATA BIN 11111111,BIN 00000
  000,BIN 11111111,BIN 10101010,BI
  N 01010101,BIN 11111111,BIN 0000
  0000,BIN 11111111
9020 DATA BIN 10100000,BIN 10101
  000,BIN 10100100,BIN 10100010,BI
  N 10100001,BIN 10100010,BIN 1010
  0100,BIN 10101000
9030 DATA BIN 11111100,BIN 00111
  000,BIN 00111100,BIN 11111111,BI
  N 00111100,BIN 00111000,BIN 1111
  1100,BIN 00000000
9040 DATA BIN 11100001,BIN 11010
  001,BIN 11001001,BIN 11000111,BI
  N 11000111,BIN 11001001,BIN 1101
  0001,BIN 11000001
9050 DATA BIN 00000001,BIN 00100
  110,BIN 10111100,BIN 01011000,BI
  N 01011000,BIN 10111100,BIN 0010
  0101,BIN 00000001
9300 RETURN
9999 SAVE "FORCE" LINE 1
```

Can you rise from the void
to meet the challenge of the

Maziacs



HAIL THE HERO

The most ingeniously animated little fellow ever seen on a Spectrum screen.

Running in all directions fighting, blinking, tapping his feet and sitting down for a well earned rest.

MEET THE MAZIACS

Correction! DON'T meet the Maziacs. Herds of nasty spidery beety things with long hairy legs and lethal jaws.

MANAGE THE MAZE

And what a maze — Full of Maziacs, Food, Swords, Prisoners, and an endless succession of dead ends and false trails. But don't despair — you have lots of help in your search for a single box of treasure buried deep in the maze of heavily defended passageways.

NOBBLE THE NASTIES

A top Hollywood stunt man was specially flown in to stage the numerous fight sequences needed to defeat the evil guardians of the treasure.

HEAD FOR HOME

Face a return journey with a burden of treasure and unable to carry a sword.

FEATURES

MACHINE CODED COLOURFUL HIGH RES GRAPHICS - PAGE SELECT INSTRUCTIONS, INFORMATION, KEY CHANGE OPTIONS AT ANY STAGE - EVEN DURING A GAME! - KEMPSTON TYPE JOYSTICK OPTION - LEVELS OF DIFFICULTY OPTION - STRATEGY PLANNING VIEWS OF MAZE DURING THE GAME - COMPLETELY NEW RANDOM MAZE FOR EVERY GAME

This game must be
seen to be believed.
One of the best uses
of Spectrum in all
aspects that I have seen.

HOME COMPUTING WEEKLY
27 SEPTEMBER 1983

Available from BOOTS, W.H. SMITH, LASKY'S, SPECTRUM, JOHN MENZIES and good computer software stockists throughout the UK or direct for only £6.95 + 50p post and packing.

DK Tronics Ltd., Unit 6, Shire Hill Industrial Estate, Saffron Walden,
Essex CB11 3AQ. Telephone: (0799) 26350 (24 hrs) 5 lines

dktronics



MOSCOW RAID

MOSCOW RAID for the 16K Spectrum is a sophisticated version of City Bomber. Your aircraft is running out of fuel and you must make your final effort to land. You have no control over the aircraft but you can still open the bomb doors using the "b" key. Level the buildings—and land safely.

Moscow Raid was sent by Guy Bates of Nottingham.

```

1 POKE 23650,0: BORDER 0: PAPER 1: INK 7: PRINT AT 0,13:"MOSCOW": AT 13,13:"MOSCOW": FOR I=2 TO 7: PRINT AT I,14: INK 1:"RAID": BEEP .01,I: PRINT AT 21-I,14: INK 1:"RAID": PAUSE 10: NEXT I: PAUSE 100
2 INPUT "WHAT LEVEL (1 TO 8)" :L0: LET SC=0
3 IF CODE L0>8 OR CODE L0<48 OR LEN L0<1 THEN GO TO 2
4 FOR I=0 TO 7: READ A: POKE USR "P"+I,: NEXT I
5 FOR I=0 TO 7: READ A: POKE USR "I"+I,: NEXT I
6 FOR I=0 TO 7: READ A: POKE USR "D"+I,: NEXT I
9 LET BOMB=0: LET B=0: LET C=0: LET BL=0: LET BC=0
10 DIM A(32)
12 CLS
14 FOR I=1 TO 30: PLOT INT (RN D*(244)+2,INT (RND*(164)+2): NEXT I
15 PRINT AT 21,0: INK 4:"(29*I SP)"
20 FOR I=3 TO 27 STEP 2: LET A (I)=INT (RND*(12)+VAL L0: NEXT I
30 FOR I=3 TO 27 STEP 2
40 FOR Q=2 TO A(I): PRINT AT 2 0,I: INK 5: PAPER 1:"(QD)": PRIN T AT 21-Q,I: INK 5: PAPER 3:"(QI )": NEXT Q
50 NEXT I
60
70 FOR B=0 TO 20
80 FOR C=0 TO 31
90 PRINT AT B,C:"P": IF BOMB=0 THEN BEEP 0,005,-15
91 IF C<0 THEN IF 21-A(I)=B THEN BEEP 0,005,0: PRINT FLAG H I AT 1,12:" THE END ": PRINT A T 3,8:"YOUR SCORE IS ":SC: FOR R =1 TO 500: NEXT R: GO TO 2000
92 IF BOMB=1 AND BL=20 THEN P RINT AT BL,BC:"": LET BOMB=0
93 IF BOMB=1 THEN PRINT AT BL ,BC:"": BEEP 0,005,27-(BL*2): L ET BL=BL+1: PRINT AT BL,BC:"*": GO TO 290
100 IF INKEY="b" AND C>0 AND B <21 THEN LET BOMB=1: BEEP .02,0 : LET BL=B: LET BC=C: PRINT AT B ,1,BC:"*": LET SC=SC+A(C): LET A (C)=0
290 PRINT AT B,C:" "
300 NEXT C
309 IF B=0 THEN GO TO 320
310 FOR H=1 TO 2: PLOT INT (RND *244)+2,INT (RND*(8)+160-(B*8)): NEXT H
320 NEXT B
999 LET SC=SC+30: PRINT AT 11,1 0:"GOOD LANDING!": FOR V=1 TO 50 0: NEXT V: GO TO 10
2000 CLS: PRINT AT 11,3:"DO YOU WANT ANOTHER GAME?": PRINT AT 14,13:"Y" OR "N"
2010 IF INKEY="Y" THEN CLEAR : RESTORE GO TO 2
2020 IF INKEY="N" THEN STOP
2030 GO TO 2010
5000 DATA 0,0,16,0,4,254,0,16
6000 DATA 255,255,255,195,195,19 5,255,255
7000 DATA 255,255,255,195,203,20 3,195,195

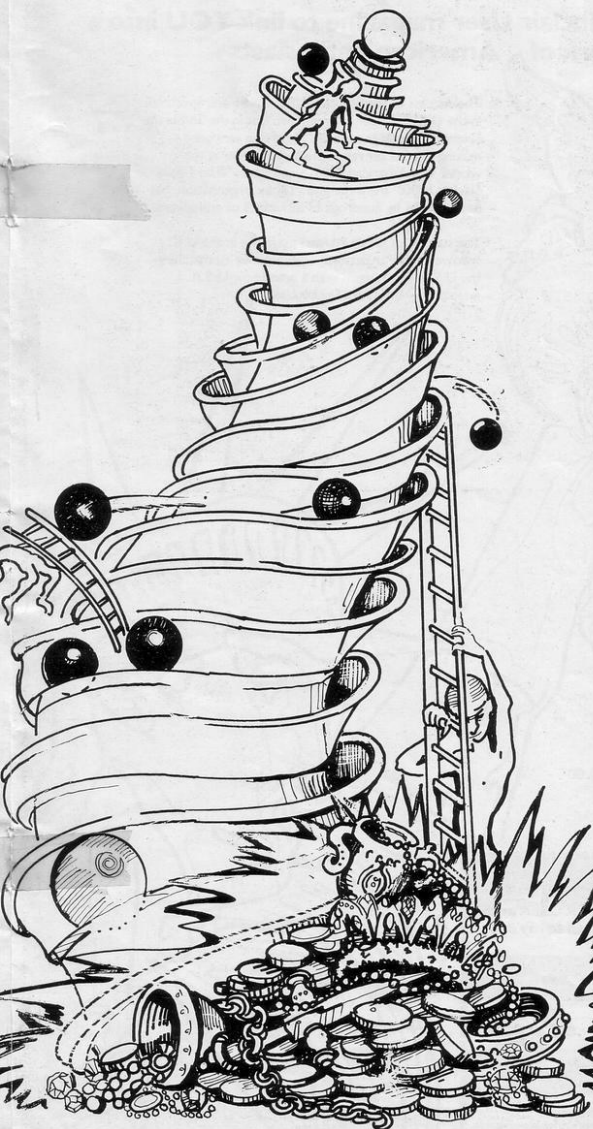
```


THE SPIRAL TOWER

```

2 GO SUB 8000
10 BORDER 0: PAPER 0: INK 6: C
LS
20 LET sc=0
25 LET cup=0: LET nd=1: LET as
="1": LET d=0: LET x=18: LET y=
5: LET g=4: LET d=0: LET t=0: LE
T p=0: LET n=17: LET b=7: LET b1
=13: LET b2=19
35 LET us="(ga)3*ap)24*ga)3*ap
)ga)"
36 LET xs="(32*ga)"
40 FOR f=0 TO 21: PRINT "(ga)"
)TAB 31:"(ga)": NEXT f
41 PRINT AT 0,0:xs
42 FOR f=4 TO 19 STEP 5: PRINT
AT f,0:us: NEXT f
43 PRINT AT 20,0:"(ga)3*ga)25*
ga)3*ga)ga)":AT 21,0:xs
44 PRINT AT 3,27: INK 4:"(gc)"
45 FOR f=14 TO 18: PRINT AT f,
26: INK 5:"(gb)": NEXT f
46 FOR f=4 TO 8: PRINT AT f,26
: INK 5:"(gb)": NEXT f
47 FOR f=9 TO 13: PRINT AT f,5
: INK 5:"(gb)": NEXT f
48 PRINT AT 18,27: INK 7:"(gd)"
)AT 4,3: INK 7:"(gm)"
50 FOR f=4 TO 18: PRINT AT f,2
: INK 5:"(gb)": NEXT f
51 FOR f=15 TO 18: PRINT AT f,
6: INK 7:"(gg)": NEXT f
52 PRINT AT n,8: INK 7:"(gh)"
53 PRINT AT 18,16:"(ga)"
54 PRINT AT 8,15:"(ga)": INK
2:"(gk)": INK 6:"(gl)"
55 PRINT AT 3,9: INK 3:"(gf)"
56 PRINT AT 13,b=1: INK 4:"(g
13)"):AT 13,b1-1: INK 4:"(g1)":AT
13,b2-1: INK 4:"(g1)"
100 PRINT AT x,y: " "
105 IF INKEY="0" THEN LET d1=
1: LET as="(g1)"
110 IF INKEY="5" THEN LET d1=
-1: LET as="(g1)"
112 LET y=y+d1
115 PRINT AT x,y: INK 5:as
117 IF x=3 AND y=4 THEN LET y=
y-1: GO TO 5000
120 IF y>27 OR y<4 THEN GO TO
7000
130 IF x=18 AND y=26 AND INKEY=
"0" THEN GO SUB 6000
140 IF x=0 AND y=26 AND INKEY=
"0" THEN GO SUB 6000
150 IF x=13 AND y=5 AND INKEY=
"0" THEN GO SUB 6000
155 IF INKEY="0" THEN PRINT A
T x,y: " ": LET x=x-1: LET y=y+d1
: PRINT AT x,y: INK 7:as: BEEP .
05,10: PRINT AT x,y: " ": LET y=y
+d1: LET x=x+1
160 LET n=n+nd: PRINT AT n,8: I
NK 7:"(gh)"
162 BEEP .003,10
165 IF n=15 THEN LET nd=1
170 IF n=18 THEN LET nd=-1
180 IF x=n AND y=0 THEN GO TO
7010
190 LET b=b+1: LET b1=b+1: LET
b2=b+1
200 PRINT AT 13,b-1: INK 4:"(g
13)"):AT 13,b1-1: INK 4:"(g1)":AT
13,b2-1: INK 4:"(g1)"
202 IF b=24 THEN PRINT AT 13,2
4: " ": LET b=5
203 IF b1=24 THEN PRINT AT 13,
24: " ": LET b1=5
204 IF b2=24 THEN PRINT AT 13,
24: " ": LET b2=5
210 IF (x=13 AND y=b) OR (x=13
AND y=b1) OR (x=13 AND y=b2) THE
N GO TO 7020
220 IF x=18 AND y=27 AND d=0 TH
EN LET d=1: LET sc=sc+10: BEEP
.5,10
230 IF (x=18 AND y=16) OR (x=0
AND y=15) OR (x=0 AND y=19) THEN
GO TO 7030
240 IF x=0 AND y=17 AND cup=0 T
HEN LET sc=sc+30: LET cup=1: BE
EP .5,10
250 IF x=3 AND y=27 AND t=0 THE
N LET t=1: LET sc=sc+60: BEEP .
5,10
260 IF x=3 AND y=9+1 AND d=1 TH
EN LET d=0: LET sc=sc+50: BEEP
.5,10: LET gv=24: PRINT AT x,y: "
": LET y=b
270 IF x=3 AND y=9+1 AND d=0 TH
EN GO TO 7040
290 PRINT AT 3,9: " "
300 LET g=g+(y)9)-(y<9)
310 PRINT AT 3,9: INK 3:"(gf)"
390 PRINT AT 0,13:sc
390 IF nd=1 THEN PRINT AT n,8:
INK 7:"(gh)"
391 IF nd=-1 THEN PRINT AT n,8
: " "
398 BEEP .003,10
399 GO TO 100
5000 PRINT AT x,y=2: " ": LET y=y
-1: LET x=x+1: FOR fmx TO 18: PR
INT AT f,y: INK 5:as: BEEP .5,10
: PRINT AT f,y: INK 5:"b": NEXT
f: LET sc=sc+40
5010 CLS: GO TO 21
6000 FOR f=1 TO 5: PRINT AT x,y:
as: BEEP .05,10: PRINT AT x,y: I
NK 5:"b": LET x=x-1: NEXT f: BEE
P .5,10: RETURN
7000 FOR fmx TO 20: PRINT AT f,y
:as: BEEP .01,10: PRINT AT f,y: "
": NEXT f: BEEP .5,10: CLS: PR
INT AT 18,10: FLASH 1:"SPLAT":A
T 21,10:"SCURE":sc: PAUSE 0: PA

```



RACE ALONG the corridors of the ancient stronghold, dodge the cannonballs and scale the ladders on your way to the treasure trove. You will encounter new hazards on each floor of **The Spiral Tower** and only your dexterity will save you in this month's program of the month.

The Spiral Tower was written by Graeme Johnston of Ascot, Berkshire for the 16K Spectrum. He was given his Spectrum for his 12th birthday in March and this is one of the first programs he has written.

```

USE 0: RUN
7010 BEEP .5,10:CLS:PRINT AT
10,10:FLASH 1:"HUNG!"AT 21,10:
"SCORE:";sc:PAUSE 0:PAUSE 0:R
UN
7020 BEEP .5,10:CLS:PRINT AT
10,10:FLASH 1:"SQUASHED!"AT 21
,10:"SCORE:";sc:PAUSE 0:PAUSE
0:RUN
7030 BEEP .5,10:CLS:PRINT AT
10,10:FLASH 1:"RAN INTO A WALL!"
AT 21,10:"SCORE:";sc:PAUSE 0:
PAUSE 0:RUN
7040 BEEP .5,10:CLS:PRINT AT
10,10:FLASH 1:"EATEN BY A GHOUL
!"AT 21,10:"SCORE:";sc:PAUSE 0
:PAUSE 0:RUN
8000 FOR f=USR "a" TO USR "m"+7:
READ a:PUKE f,a:NEXT f
8005 PRINT AT 0,0:AT 2,6:AT 5,
0:"DODGE THE NOOSE (9a):JUMP T
HE WALL (9a):GRAB THE DAGGER
(9d):SCALE THE LADDER, DODGE T
HE BOMBS (9l):UP THE LADDER
,JUMPTHE WALLS AND GRAB THE CU
P (9k):SCALE THE LADDER, GRAB
THE TREASURE (9c):KILL THE
GHOUL (9f):AND ESCAPE DOWN THE
LADDER.";"CONTROL:5-LEFT,8-RI
GHT,0-JUMP""PRESS ANY
KEY"
9006 PAUSE 0
9010 RETURN
9000 DATA 255,129,129,129,129,12
9,129,255
9001 DATA 66,66,126,66,66,66,126
,66
9002 DATA 255,129,189,189,153,15
3,129,255
9003 DATA 16,16,16,16,16,124,16,
16
9004 DATA 0,0,0,0,85,85,255
9005 DATA 24,36,69,36,66,126,153
,129
9006 DATA 16,56,16,56,16,56,16,5
6
9007 DATA 16,56,16,56,16,48,68,5
6
9008 DATA 24,24,16,60,48,120,136
,4
9009 DATA 24,24,0,60,12,30,17,32
9010 DATA 126,126,126,126,60,24,
24,126
9011 DATA 60,126,255,255,255,255
,126,60
9012 DATA 255,0,0,0,0,0,0

```

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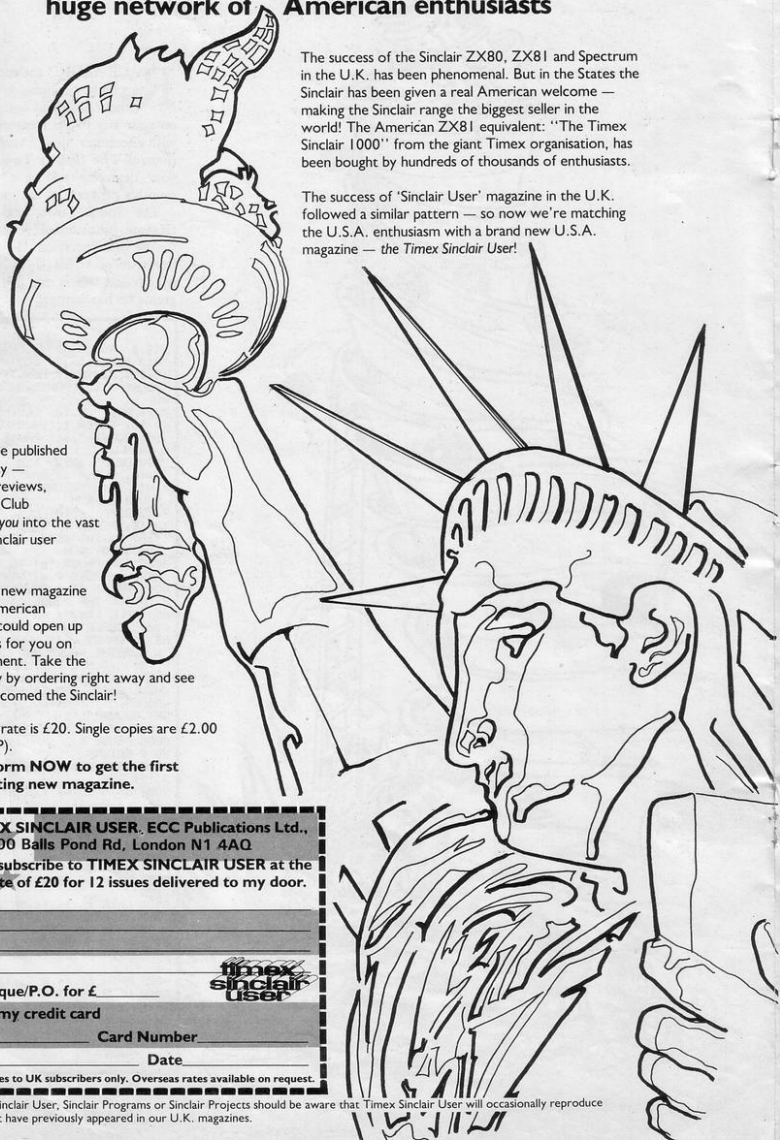
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A LIST of commodities is displayed on the screen, together with the current value of one share. When it is your turn you may buy or sell shares in the commodity available at that time. You have the choice of playing yourself, the computer or a friend.

Stock Market was written for the 16K ZX-81 by Stephen Gibbon of Wickham, Newcastle-upon-Tyne.

STOCK MARKET

```

80 CLS
90 GOSUB 6500
100 SLOW
110 FOR J=1 TO Q
120 PRINT AT 1,7;J,"
    "AT 1,16;MKJ)
130 LET E=INT (RND#12)+1
140 LET F=R#12*(J=2)
150 LET C=E+F
160 PRINT AT E+4,0;CHR# (CODE A
    #E,1)+128)
170 IF J=1 AND L=31 THEN GOTO 2
    000
180 PRINT AT 18,0;"BUY OR SELL?"
"
190 LET O=CODE INKEY#
200 IF O=0 THEN GOTO 190
210 IF O>53 AND O<57 OR O=39 OR
    O=50 THEN GOTO 250
220 GOSUB S
230 PRINT "PARDON?"
240 GOTO 190
250 GOSUB S
260 GOTO 3000+1000*(O=39)+1500*(
    O=56)+6900*(O=55)-2730*(O=50)
270 PRINT AT 1,16;"
    "AT 1,16;MKJ)
280 GOSUB S
290 GOSUB 700
300 NEXT J
310 GOSUB 1800
320 GOTO 110
500 PRINT AT 18,0;"
    "AT 18,0;
510 RETURN
600 FOR I=1 TO 120
610 NEXT I
620 RETURN
700 PRINT AT E+4,0;F#(E);TAB 13
    " "TAB 18;" "TAB 23;"
    "AT E+4,13;NKE);TAB 18;N
    (E+12);TAB 23;(E)
710 RETURN
1800 FOR I=1 TO 12

```

```

1010 IF Z(I)<X0 THEN GOTO 1030
1020 LET Z(I)=1+2*(K*VAL X0)30
1030 LET T=VAL X0
1040 LET U=VAL X0
1050 IF T+U=7 THEN LET Z(I)=Z(I)

```

```

1060 IF T=U THEN LET Z(I)=0
1070 LET C(I)=C(I)+2*(I)*2*(T+U)
1080 IF C(I)<I THEN LET C(I)=1
1090 IF C(I)>1E6 THEN LET C(I)=1E6

```

```

1100 PRINT AT I+4,23;"
)AT I+4,23;C(I)
1110 NEXT I
1120 RETURN

```

```

2000 IF N(C)<I OR M(J)<INT (RN
D*7)+5*(K<E)) THEN GOTO 2030
2010 LET F=N(C)
2020 GOTO 4540

```

```

2030 LET F=INT (RND*(M(J)+C(E)))
2040 IF F+N(C)>9999 THEN GOTO 20
30

```

```

2050 GOTO 5000
3000 PRINT "SURE ABOUT FINISHING
< Y OR N ?"

```

```

3010 IF INKEY$="Y" THEN GOTO 304
0
3020 IF INKEY$="N" THEN GOTO 270
3030 GOTO 3010

```

```

3040 CLS
3050 PRINT "I HOPE YOU ENJOYED T
HE GAME"

```

```

3060 FOR I=1 TO 12
3070 LET M(1)=M(1)+N(I)*C(I)
3080 LET M(2)=M(2)+N(I+12)*C(I)

```

```

3090 NEXT I
3100 PRINT AT 10,0;"PLAYER 1",,
," E";M(1)

```

```

3110 IF 0=1 THEN GOTO 3130
3120 PRINT AT 14,0;"PLAYER 2",,
," E";M(2)

```

```

3130 PRINT AT 19,5;"ANOTHER GO (
Y OR N ?"

```

```

3140 IF INKEY$="Y" THEN RUN
3150 IF INKEY$="N" THEN STOP
3160 GOTO 3140

```

```

4000 PRINT "HOW MANY SHARES OF
" ;A(K(E));" DO YOU WISH TO PURCHASE
?"

```

```

4010 INPUT F
4020 IF F*(K(E))*M(J) OR ABS INT F
<F> THEN GOTO 4010

```

```

4030 GOTO 5000
4500 IF N(C)=0 THEN GOTO 4600
4510 PRINT "HOW MANY SHARES OF
" ;A(K(E));" DO YOU WISH TO SELL?"

```

```

4520 INPUT F
4530 IF F*(K(E)) OR ABS INT F<F> T
HEN GOTO 4520

```

```

4540 LET F=-F
4550 GOTO 5000
4600 PRINT "YOU HAVE NONE OF THE
SE SHARES"

```

```

4610 GOSUB P
4620 GOSUB S
4630 GOTO 290

```

```

5000 LET M(J)=M(J)-(C(E)*F)
5010 LET N(C)=N(C)+F
5020 LET K(E)=C(E)-INT ((RND*(K
(E)/2)+.5)*F)

```

```

5030 IF C(E)<1 THEN LET C(E)=1
5040 IF C(E)>1E6 THEN LET C(E)=1E
6

```

```

5050 IF N(C)>9999 THEN GOTO 5500
5060 GOTO 270
5520 LET N(C)=N(C)-F
5530 PRINT "A DEALER HAS STOLEN
" ;F ;" SHARES"

```

```

5540 GOSUB P
5550 GOSUB S
5560 GOTO 270

```

```

5580 PRINT TAB 9;"INSTRUCTIONS";
TAB 9;"(1)97";,,"THERE ARE THR
EE DIFFERENT PLAYER ARRANGEMENTS:
" ;,,"1) TWO PLAYER GAME";,,"2)
ONE PLAYER GAME";,,"3) ONE PLAYE
R V THE 281";,,"PRESS KEY 1 , 2

```

```

5300 GOTO S
5310 LET F=INT ((RND*200)+N(C))-9
999)

```



```

OR 3 TO INDICATE CHOICE"
6510 LET L=CODE INKEY$
6520 IF L<29 OR L>31 THEN GOTO 6
510

```

```

6530 CLS
6540 LET Q=1+I*(K<30)

```

```

6550 PRINT "THE GAME COMPRISES O
F A TABLE WHICH GIVES INFORMAT
ION ABOUT ALL OF THE SHARES";,
" EACH LINE OF THE TABLE SHOWS";
,,"1) NAME OF THE SHARE E.G. GO
LD";,,"2) THE NUMBER OF THIS TY
PE OF SHARE HELD BY EACH PLA
YER";,,"3) COST PER SHARE E.G. £
350";,,"-----"

```

```

,,"PLAYERS TAKE TURNS"
AND L=29);,"YOU ARE PLAYER 1" A
ND L=30);,"YOU ARE PLAYER 2" AN
L=31);,"PRESS A KEY TO CONTINU
E"

```

```

6560 IF INKEY$="" THEN GOTO 6560
6570 CLS

```

```

6580 PRINT "THE FIRST LETTER OF
THE SHARE INPLAY IS INVERTED E.G
. GOLD";,,"THE SHARE IS CHOSEN A
T RANDOM";,,"THE PROMPT IS "BUY
OR SELL?";,,"PRESS 1 OF THE F
OLLOWING KEYS";,," B ALLOWS YOU
TO BUY SHARES";,," S ALLOWS YOU
TO SELL SHARES";,," R ENDS THE
GAME";,," R SAVES THE GAME ON T
APE";,," M FINISHES YOUR GO";,,"
Press a key to start"

```

```

6590 IF INKEY$="" THEN GOTO 6590
6600 CLS
6610 PRINT "THERE WILL BE A SHOR
T DELAY"

```

```

6620 DIM A$(12,12)
6630 DIM M(2)
6640 DIM C(12)
6650 DIM N(24)

```

```

6660 LET M(1)=3E3
6670 LET M(2)=M(1)

```

```

6680 LET A$(1)="GOLD"
6690 LET A$(2)="R. ELEMENTS"
6700 LET A$(3)="DIAMONDS"

```

```

6710 LET A$(4)="PLATINUM"
6720 LET A$(5)="GEMS"

```

```

6730 LET A$(6)="COMP. PARTS"
6740 LET A$(7)="MICROFILM"
6750 LET A$(8)="DRUGS"

```

```

6760 LET A$(9)="WEAPONS"
6770 LET A$(10)="MISSILES"
6780 LET A$(11)="PLANE SPARES"

```

```

6790 LET A$(12)="SILVER"
6800 LET C(1)="350003004002001004
00150150200075200"

```

```

6810 DIM Z(12)
6820 FAST
6830 FOR I=0 TO 11

```

```

6840 LET Z(I+1)=0
6850 LET N(I+1)=0
6860 LET N(I+13)=0

```

```

6870 LET C(I+1)=VAL C(I*3+1 TO
I*3+3)
6880 NEXT I

```

```

6890 CLS
6900 PRINT TAB 10;"STOCK MARKET"
" ;"PLAYER " ;A(K(E));" ;" SHARE
" ;"-";L-PL 2-COST";,,"-----"

```

```

6910 FOR I=1 TO 12
6920 PRINT A$(I);TAB 12;"-";N(I)
," -";N(I+12);TAB 22;"-";C(I)

```

```

6930 NEXT I
6940 LET M(1)=INT (RND*6)+1
6950 LET F=500

```

```

6960 LET S=500
6970 PRINT "-----"

```

```

6980 RETURN
9910 PRINT "CONNECT TAPE THEN PR
ESS " ;" ;"

```

```

9920 IF INKEY$="" THEN GOTO 99
20
9930 PRINT "START TAPE"

```

```

9940 GOSUB P
9950 SAVE "STOCK MARKET"

```

```

9960 PRINT "STOP TAPE"
9970 GOSUB P

```

```

9980 GOTO 280
9990 SAVE "STOCK MARKET"
9999 RUN

```



DAM BUILDER

IT IS raining heavily and the dam which could save your village is far from complete. Move your helicopter with the usual cursor keys, collect bricks from the right of the screen and place them on top of the dam. Try to build the dam to the top of the screen before the water on the left of it can escape.

Dam Builder was written for the 16K ZX-81 by David Jackson of Todmorden, Lancashire.

```

1220 PRINT "ON LEVEL "J20;","
1230 PRINT AT 10,0;"PRESS A KEY"
1240 IF INKEY="" THEN GOTO 1240
1250 GOTO 9000
1300 FOR K=21 TO 0 STEP -1
1305 IF <K>Y THEN PRINT AT K,0;"<
15*9a;1p;16*9a>"
1307 IF K=<Y THEN PRINT AT K,0;"
<32*9a>"
1310 NEXT K
1320 RETURN
1400 PRINT AT P1,P2;"(1p)"
1405 IF P1=0 THEN GOTO 3000
1410 LET Y=Y-1
1420 LET P1=Y
1425 LET A#="+
1430 GOTO 250
1500 PRINT AT Z,15;"<2*9a>"
1510 FOR K=2 TO 21
1520 PRINT AT K,16;"<9a>"
1560 NEXT K
1570 FOR K=21 TO Z STEP -1
1575 FOR T=1 TO 5
1575 NEXT T
1580 PRINT AT K,16;"<16*9a>"
1590 NEXT K
1600 PRINT AT 0,0;"YOU HAVE LET
THE DAM OVERFLOW"
1610 GOTO 1215
3000 PRINT AT 0,16;"+"
3005 PRINT "CONGRATULATIONS.YOU
HAVE COMPLETED THE DAM AN
D SAVED YOURTOWN"
3020 GOTO 1220
5000 LET A#="(1+)"
5010 PRINT AT P0,31;" "
5020 LET P0=INT (RND*11)+5
5030 PRINT AT P0,31;"X"
5040 RETURN
9000 CLS
9010 PRINT "IT IS RAINING HEAVIL
Y AND A DAM"
9015 PRINT "IS FAR FROM COMPLETE
,AS THE DAM"
9020 PRINT "FILLS YOU MUST CONTR
OL YOUR"
9025 PRINT "HELICOPTER "+" AND
USE IT TO
9030 PRINT "TRANSPORT LARGE CONC
RETE BLOCKS"
9035 PRINT "FROM OTHER HELICOPTER
S""X"" TO THE"
9040 PRINT "DAM.ALL THE TIME THE
WATER RISES"
9045 PRINT "THREATENING A SMALL
VILLAGE."
9050 PRINT "WHEN YOU ARE CARRYIN
G A BLOCK"
9055 PRINT "YOU ARE SHOWN AS A
"(1+)"
9060 PRINT "USE CURSOR KEYS TO M
OVE"
9100 PRINT AT 21,0;"ENTER SKILL
LEVEL (1 TO 5)"
9105 LET Z#=INKEY#
9110 IF Z#="1" OR Z#="5" THEN GO
TO 9105
9120 LET R=#0-<VAL Z#>*10
9130 CLS
9140 GOTO 85

```

```

70 RAND
80 GOTO 9000
90 LET A#="+
100 LET Z=20
110 LET Y=15
120 PRINT AT 21,0;"(15*9a;1p)"
AT 20,15;"(1p)"
125 LET P0=INT (RND*11)+5
130 PRINT AT P0,31;"X"
140 LET P1=20
150 LET P2=30
160 FOR X=1 TO R+INT (RND*11)
170 PRINT AT P1,P2;
180 LET P=PEEK (PEEK 16399+256*
PEEK 16399)
185 PRINT A#
205 GOTO (1000*(P=128))+<1200*(
P=0)>+<210*(P=0)>
210 IF P1=0 AND P2=30 THEN GOS
UB 9000
220 IF P2=15 AND P1=Y AND A#="0
" THEN GOTO 1400
230 PRINT AT P1,P2;" "
220 IF P2=15 AND P1=Y AND A#="0

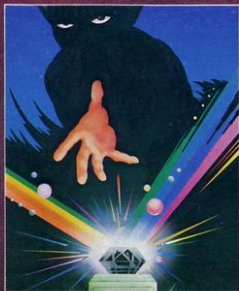
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```

" THEN GOTO 1400
230 PRINT AT P1,P2;" "
240 LET P1=P1+<INKEY#="6">+<INK
EY#="7">
250 LET P2=P2+<INKEY#="8">+<INK
EY#="5">
257 IF P2=31 THEN LET P2=30
260 NEXT X
270 PRINT AT Z,0;"(15*9a)"
280 IF Z=Y THEN GOTO 1500
285 LET Z=Z-1
290 GOTO 160
1000 GOSUB 1300
1010 PRINT AT 0,0;"YOU CRASHED I
NTO THE DAM WALL AND THE DAM H
AS OVERFLOWED"
1020 GOTO 1215
1200 GOSUB 1300
1210 PRINT AT 0,0;"YOU LANDED IN
THE WATER AND THE DAM HAS OVERF
LOWED"
1215 PRINT "BUT YOU MANAGED TO B
UILD IT TO A HEIGHT OF "J21-Y;".
CLS

```


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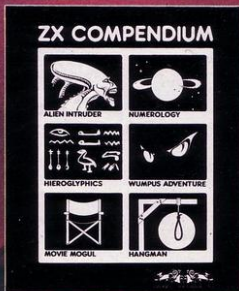


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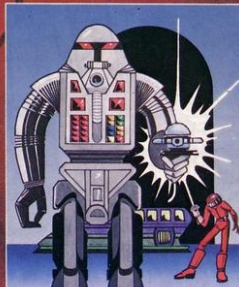
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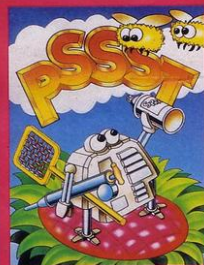
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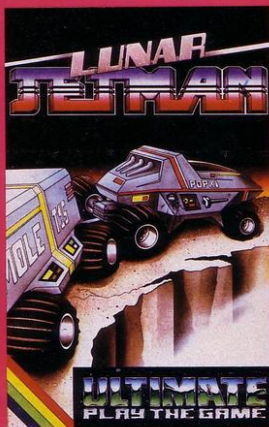


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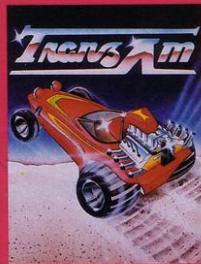
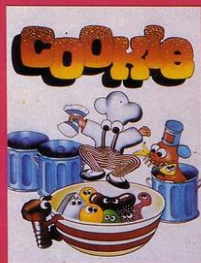
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SHARP SHOOTER

DIANE BIRD, aged 12, of Porthmadog, Gwynedd wrote **Sharpshooter** for the 16K or 48K Spectrum. A row of ducks appears on the screen and you must shoot them all down by pressing F to obtain your rating as a sharpshooter.

```

10 GO SUB 200
15 BORDER 4: PAPER 7: INK 0
20 PRINT TAB 10;"RIFLE RANGE"
25 PRINT AT 5,0;"You must hit
all the targets to"
26 PRINT AT 6,0;"learn your sh
arp shooter rating"
27 BEEP .5,7: BEEP .5,7: BEEP
.5,7: BEEP .5,2: BEEP .5,4: BEEP
.5,4: BEEP 1,2
28 BEEP .5,11: BEEP .5,11: BEE
P .5,9: BEEP .5,9: BEEP 1,5,7
30 PRINT AT 10,0;"PRESS F TO F

```

```

IRE,PRESS 0 TO START"
35 IF INKEY#<>"0" THEN GO TO
35
40 CLS
75 LET S=0
80 LET D=0
85 PRINT AT 19,15;"p"
86 PRINT AT 20,15;"f RIFLE"
90 LET A#="....."
92 PRINT AT 8,15: FLASH 1;"FIR
E"
95 PRINT AT 10,0: INK 2:A#

```



```

97 PRINT AT 11,0;"*****
*****"
100 IF INKEY$="f" THEN GO SUB
120
105 LET A$=A$(2 TO )+A$(1); PAU
SE 4
106 IF A$="
" THEN GO TO 200
110 GO TO 95
120 IF A$(16)<>" " THEN LET D=
1: BEEP .2,16
125 IF D=1 THEN LET A$(16)="h"
130 PRINT AT 10,0; INK 2;A$
135 IF D=1 THEN PRINT AT 8,15;
"GOOD SHOT"
140 IF D=0 THEN PRINT AT 8,15;
"MISSSED"
145 FOR J=0 TO 10
146 NEXT J
150 IF D=1 THEN LET A$(16)=" "
155 PRINT AT 10,0;A$

```

```

160 IF INKEY$="f" THEN GO TO 1
60
165 PRINT AT 8,15;"PRIMING "
170 FOR Y=1 TO 15
175 NEXT Y
180 PRINT AT 8,15;"FIRE "
185 LET D=0
190 LET S=S+1
195 RETURN
200 CLS
205 LET A$=" ALL GONE-PRESS s F
OR YOUR SCORE"
210 PRINT AT 10,0; INK 0;A$
215 IF INKEY$<>"s" THEN GO TO
215
220 CLS
225 PRINT AT 10,0;" 16 TARGETS
HIT WITH ";S;" SHOTS"
230 IF S>=36 THEN LET R$="OH D
EAR.WHY NOT TRY AGAIN?"
235 IF S>=21 AND S<=35 THEN LE
T R$=" *SECOND CLASS*"
240 IF S<=20 THEN LET R$="***F
IRST CLASS***"
250 PRINT AT 12,0;" SHARPSH
OOTER RATING:--;R$
260 FLASH 1; PRINT AT 17,2;"PRE
SS ANY KEY TO PLAY AGAIN"
265 PAUSE 5000
266 FLASH 0
267 CLS
270 GO TO 30
300 DATA 8,28,28,28,28,28,28,29
320 FOR n=0 TO 7
330 READ p: POKE USR "p"+n,p
340 NEXT n
345 DATA 28,28,62,62,62,62,62,6
2
350 FOR n=0 TO 7
360 READ f: POKE USR "f"+n,f
370 NEXT n
375 DATA 0,0,34,85,136,0,0,0
380 FOR n=0 TO 7
390 READ e: POKE USR "e"+n,e
400 NEXT n
405 DATA 10,17,68,129,0,66,20,0
410 FOR n=0 TO 7
420 READ h: POKE USR "h"+n,h
430 NEXT n
440 DATA 0,56,40,80,25,31,31,0
450 FOR n=0 TO 7
460 READ a: POKE USR "a"+n,a
470 NEXT n
480 RETURN

```



YOU ARE standing on the bridge, looking at an unknown part of the galaxy; suddenly you find yourself under alien fire.

You are equipped with port and starboard guns, M and Z, which can return fire on both flanks but not in the centre area of the screen when the aliens are firing. There are three levels of competence.

Enterprise was written by D Turner of Hull for the 16K ZX-81.

ENTERPRISE

```

2 GOSUB 6000
5 GOSUB 1000
7 LET S=0
9 LET H=10
10 LET A=INT (RND*18)
15 LET B=INT (RND*29)
20 IF B>12 AND B<18 THEN GOSUB
3000
80 GOSUB 2000
90 GOTO 10
1000 FAST
1001 LET S=0
1002 LET Z=0
1020 FOR J=0 TO 21
1040 PRINT AT J,0;"(33;1SP)"
1050 NEXT J
1051 PRINT AT 21,2;"score "J$
1052 PRINT AT 21,15;"hits "J$
1053 FOR J=0 TO 50
1055 LET M=RND*30
1057 LET Y=RND*30
1070 PRINT AT X,Y;"(1,)"

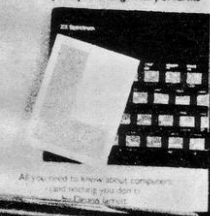
1080 NEXT J
1091 FOR J=0 TO 10
1092 LET G=RND*20
1093 LET F=RND*30
1094 PRINT AT G,F;"(9e)"
1095 NEXT J
1096 SLOW
1095 RETURN
2000 PRINT AT A,B;"(9t;10;9v)"
2010 FOR K=0 TO 2&L
2015 IF INKEY#="Z" AND B<11 THEN
GOSUB 4000
2016 IF INKEY#="M" AND B>10 THEN
GOSUB 4000
2017 NEXT K
2020 PRINT AT A,B;"(1;2&1SP)"
2030 RETURN
3005 IF RND<.3 THEN RETURN
3010 PRINT AT A,B;"(9t;10;9v)"
3020 FOR J=0 TO 2
3030 PRINT AT (A+1),B;"(9v)";TAB
(B+2);"(9q)"
3031 PRINT AT (A+1),B;"(1SP)";TAB
B(B+2);"(1SP)"
3032 PRINT AT (A+2),(B-1);" ";TAB
B(B+3);" "
3033 PRINT AT (A+2),(B-1);"(1SP)";
TAB (B+3);"(1SP)"
3034 PRINT AT (A+3),(B-3);" ";TAB
AB (B+4);" ";TAB (A+4),(B-3);" ";
TAB (B+4);" "
3035 PRINT AT (A+3),(B-3);"(2&1SP)";
TAB (B+4);"(2&1SP)";TAB (A+4)
(B-3);"(2&1SP)";TAB (B+4);"(2&1
SP)"
3040 FOR K=0 TO 10
3045 FAST
3050 SLOW
3051 NEXT K
3054 NEXT J
3055 LET H=H-1
3056 LET Z=Z+3
3058 PRINT AT 21,15;"hits "J$
3059 IF H=0 THEN GOTO 5000
3060 RETURN
4000 FOR J=20 TO A STEP -5
4001 PRINT AT J,B;"(9e;1+9v)"
4002 PRINT AT J,B;"(2&1SP)"
4003 NEXT J
4009 FOR J=0 TO 10
4010 PRINT AT A,B;"(X)"
4015 PRINT AT A,(B-1);"(1SP;1;4
&1SP;1;1SP)"
4020 NEXT J
4021 LET S=S+1
4022 PRINT AT 21,2;"score "J$
4025 IF S=30 THEN GOTO 4500
4030 RETURN
4500 CLS
4501 PRINT AT 10,3;"YOU HAVE SUR
VIVED THE ALIEN ATTACK. PRESS
""S"" FOR ANOTHER TRIP THROUGH
SPACE."
4505 INPUT A$
4510 IF A#="S" THEN GOTO 6000
4520 IF A#>"S" THEN GOTO 4505
5000 FOR K=0 TO 100
5001 LET X=RND*63
5002 LET Y=RND*41
5003 UNPLOT X,Y
5004 PRINT AT Y,2,X/2;"(9d;92)"
5005 NEXT K
5006 CLS
5010 PRINT AT 10,0;"THE ALIENS H
AVE DESTROYED YOUR SPACE SHIP.P
RESS ""P"" FOR ANOTHER GAME."
5020 INPUT A$
5030 IF A#="P" THEN GOTO 2
5040 IF A#>"P" THEN STOP
6000 PRINT AT 0,10;"ENTERPRISE
""""
6002 PRINT AT 1,11;"(10*97)"
6005 PRINT AT 2,0;"YOU ARE TRAVE
LLING THROUGH SPACE WHEN YOU ARE
SUDDENLY ATTACKED BY A FLEET O
F 30 ALIEN SHIPS. YOU HAVE TO
DESTROY THE ALIEN SHIPS USING Y
OUR TWO LASER GUNS, ""Z"" AND ""
M"" KEYS. IF YOU DESTROY 30 AL
IENS YOU WILL SURVIVE, BUT IF U
YOU SUFFER 30 HITS BY THE ALIEN CR
AFTS, YOU WILL BE DESTROYED."
6011 PRINT AT 21,8;"(17*97)"
6012 PRINT AT 15,0;"INPUT LEVEL
OF DIFFICULTY(1,2,3)"
6020 INPUT L
6030 IF L<1 OR L>3 THEN GOTO 602
0
6040 CLS
6050 PRINT AT 10,5;"PRESS ""P""
TO PLAY"
6055 PRINT AT 11,5;"(17*97)"
6060 INPUT A$
6070 IF A#>"P" THEN GOTO 6050
6080 CLS
6090 RETURN

```


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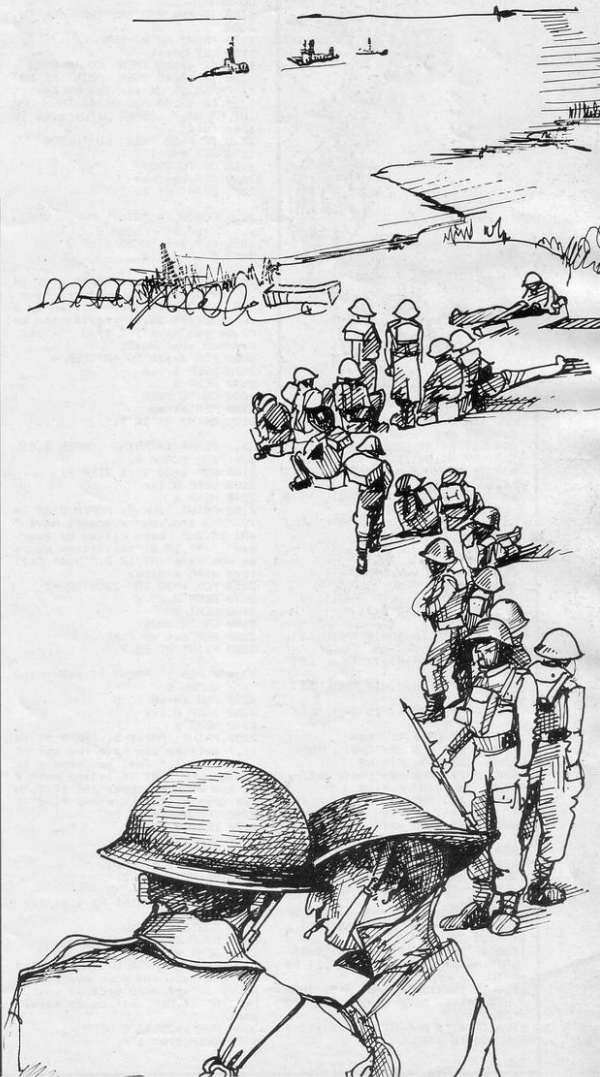
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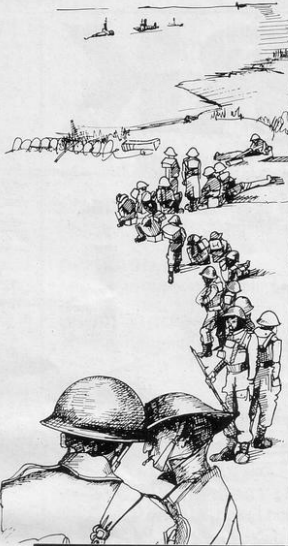
DUNKIRK

THE SPIRIT of Dunkirk lingers in this game for the 48K Spectrum. You must sail your barge through the canals off the beaches of **Dunkirk** and pick up the refugees waiting to be evacuated.

Whatever you do, do not cross the enemy lines or hit a sandbank as the result can be fatal. **Dunkirk** was sent by Robin Larham of Chatteris, Cambridgeshire.

```
100 REM characters
110 FOR n=0 TO 7: READ a
120 POKE USR "n"+n,a: NEXT n
130 DATA 0,0,0,4,126,4,0,0
140 FOR n=0 TO 7: READ a
150 POKE USR "1"+n,a: NEXT n
160 DATA 0,16,32,126,32,16,0,0
170 FOR n=0 TO 7: READ a
180 POKE USR "n"+n,a: NEXT n
190 DATA 24,96,36,24,24,24,36,1
95
200 FOR n=0 TO 7: READ a
210 POKE USR "d"+n,a: NEXT n
220 DATA 0,16,16,16,84,56,16,0
230 FOR n=0 TO 7: READ a
240 POKE USR "s"+n,a: NEXT n
250 DATA 146,214,124,56,16,16,1
6,16
260 GO TO 9500
300 REM Print layout
310 BORDER 0: INK 7: PAPER 1: C
LS
320 PRINT PAPER 2: INK 7:
DUNKIRK EVACUATION
330 INK 6: PRINT AT 1,0;"(C99)";
AT 1,13;"(6X99)";AT 1,30;"(99)";
340 PRINT AT 2,0;"(5X99)";AT 2,
8;"(4X99)";AT 2,13;"(4X99)";AT 2,
24;"(5X99)";
350 PRINT AT 3,0;"(4X99)";AT 3,
6;"(6X99)";AT 3,19;"(8X99)";AT 3,
30;"(2X99)";
360 PRINT AT 4,0;"(4X99)";AT 4,
5;"(6X99)";AT 4,13;"(5X99)";AT 4,
20;"(5X99)";AT 4,28;"(99)";
370 PRINT AT 5,0;"(3X99)";AT 5,
19;"(8X99)";
380 PRINT AT 6,0;"(2X99)";AT 6,
5;"(99)";AT 6,7;"(99)";AT 6,9;"(
6X99)";AT 6,29;"(3X99)";
390 PRINT AT 7,0;"(3X99)";AT 7,
4;"(2X99)";AT 7,16;"(2X99)";AT 7,
19;"(4X99)";AT 7,24;"(4X99)";
400 PRINT AT 8,0;"(99)";AT 8,7,
"4X99)";AT 8,12;"(3X99)";AT 8,2,
7;"(99)";AT 8,30;"(2X99)";
410 PRINT AT 9,0;"(99)";AT 9,2,
"4X99)";AT 9,7;"(4X99)";AT 9,12,
"4X99)";AT 9,17;"(7X99)";AT 9,
24;"(2X99)";AT 9,27;"(2X99)";AT
9,31;"(99)";
420 INK 4
480 LET b=""
500 REM Print evacuees
520 FOR x=1 TO 10
530 LET a=INT (RND*9)+1: LET b=
INT (RND*31)
540 IF ATTR (a,b)=12 THEN GO T
O 530
550 IF ATTR (a,b)=15 THEN PRIN
T AT a,b;"(9a)";
560 IF ATTR (a,b)=14 THEN GO T
O 530
570 NEXT x
580 LET x=INT (RND*31): LET y=2
1
590 LET e=0: LET n=0
```





```

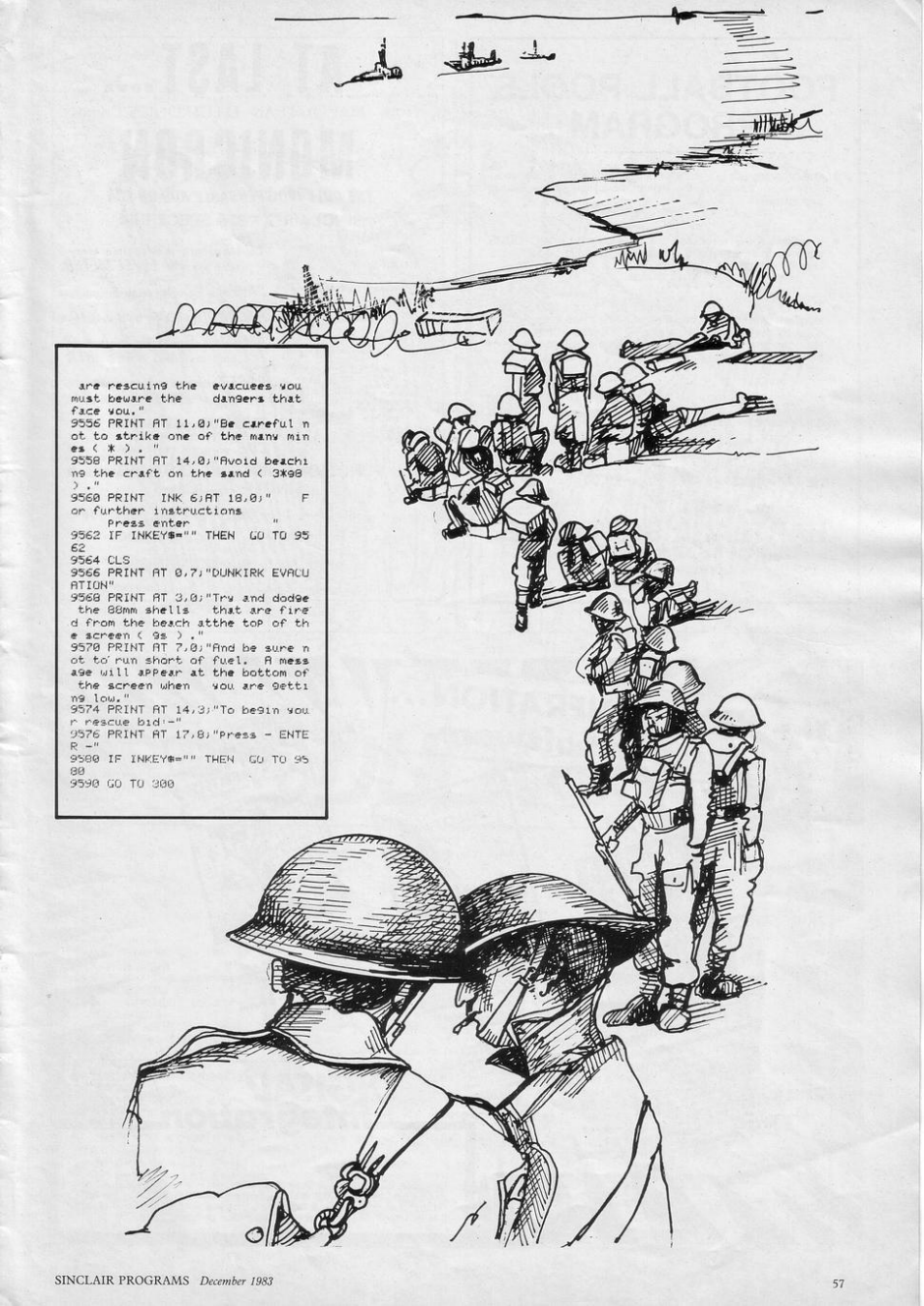
600 INK 2: REM Print mines
610 FOR z=1 TO 30
620 LET a=INT (RND*12)+9: LET b
=INT (RND*31)
630 IF ATTR (a,b)=14 THEN GO T
O 620
640 IF ATTR (a,b)=15 THEN PRIN
T AT a,b;"*"
650 IF ATTR (a,b)=12 THEN GO T
O 620
660 NEXT z
670 INK 7
680 PRINT AT v,x;b
690 BEEP 1,0
700 REM shell
710 LET q=INT (RND*31)
720 LET P=2
730 IF ATTR (p,q)=14 THEN LET
x#="(99)"
740 IF ATTR (p,q)=12 THEN LET
x#="(9m)"
750 IF ATTR (p,q)=10 THEN LET
x#=""
760 IF ATTR (p,q)=15 THEN LET
x#=""
770 PRINT AT p,q;"(9s)"
790 IF P>0 AND x#="(99)" THEN
PRINT INK 6,AT p,q;x#
900 IF P>0 AND x#="(9m)" THEN
PRINT INK 4,AT p,q;x#
810 IF P>0 AND x#="" THEN PRI
NT INK 2,AT p,q;x#
820 IF P>0 AND x#="" THEN PRI
NT PAPER 1,AT p,q;x#
1000 REM moving boat
1070 PRINT AT v,x;" "
1080 IF INKEY#="0" AND x<31 THEN
LET x=x+1: BEEP 0.05,10: LET b
#="(9r)"
1090 IF INKEY#="5" AND x>0 THEN
LET x=x-1: BEEP 0.05,-10: LET b
#="(9l)"
1100 IF INKEY#="7" AND y>1 THEN
LET y=y-1: BEEP 0.05,-5: LET b#
#="(9d)"
1110 IF INKEY#="6" AND y<21 THEN
LET y=y+1: BEEP 0.05,5: LET b#
#="(9d)"
1120 IF t>10 AND ATTR (v,x)=12 T
HEN GO TO 4500

```

```

1130 IF ATTR (v,x)=14 THEN GO T
O 2000
1140 IF ATTR (v,x)=12 THEN GO S
UB 3000
1150 IF ATTR (v,x)=10 THEN GO S
UB 2100
1160 IF P=y AND q=x THEN GO TU
2300
1170 PRINT AT v,x;b#
1180 LET m#41
1190 IF n>100 THEN GO TO 2200
1200 IF n>140 THEN PRINT AT 20,
7: PAPER 2;"danger low on fuel!"
1210 IF n>100 AND n<141 THEN PR
INT AT 20,7: PAPER 3;"warning lo
w on fuel"
1230 IF P=20 THEN GO TO 700
1250 GO TO 730
2000 REM beached
2005 PRINT AT 20,7;"
"
2010 FLASH 1: PRINT PAPER 0,AT
v,x;"(inv *): FLASH 0
2020 FOR a=1 TO 20 STEP 2
2030 BEEP 0.1,a
2040 NEXT a
2050 PRINT INK 0: PAPER 6,AT 14
,2;" You and your evacuees have
"AT 15,2;"just been killed by y
our bad";AT 16,2;" navigation be
cause you have";AT 17,2;" just
beached your boat. "
2060 FOR a=-10 TO 40 STEP 4
2070 BEEP 0.1,a
2080 NEXT a
2090 GO TO 9000
2100 REM mined
2105 PRINT AT 20,7;"
"
2110 FLASH 1: PRINT PAPER 0,AT
v,x;"*": FLASH 0
2120 FOR a=20 TO 1 STEP -1
2130 BEEP 0.1,a
2140 NEXT a
2150 PRINT INK 7: PAPER 2,AT 14
,2;" You and your evacuees have
"AT 15,2;" been killed by your
bad ";AT 16,2;"navigation becau
se you have";AT 17,2;" Just coll
ided with a mine. "
2170 BEEP 0.05,a
2180 NEXT a
2190 GO TO 9000
2200 REM out of fuel
2205 PRINT AT 20,7;"
"
2210 FLASH 1: PRINT AT v,x;"(inv
*): FLASH 0
2220 FOR a=-10 TO 5
2230 BEEP 0.1,a
2240 NEXT a
2250 PRINT PAPER 5: INK 0,AT 14
,1;" Because you have run out of
"AT 15,1;" fuel you were a s1
tting duck ";AT 16,1;"and both y
ou and your evacuees";AT 17,1;"h
ave been killed by enemy fire"
2260 FOR a=-15 TO 25
2270 BEEP 0.05,a
2280 NEXT a
2290 GO TO 9000
2300 REM hit by shell
2305 PRINT AT 20,7;"
"
2310 FLASH 1: PRINT AT v,x;"(19
*): FLASH 0
2320 FOR a=0 TO 40
2330 BEEP 0.1,a
2340 NEXT a
2350 PRINT PAPER 0: INK 7,AT 14
,0;" Both you and your evacuees";
AT 15,3;"are dead because you we
re ";AT 16,3;" hit by an enemy
shell. "
2360 FOR a=25 TO 0 STEP -1
2370 BEEP 0.07,a
2380 NEXT a
2390 GO TO 9000
3000 PRINT AT v,x;"(19m)"
3010 LET t=t+1
3020 IF t=10 THEN GO TO 4000
3030 IF t>10 THEN GO TO 4500
3040 GO TO 1000
4000 PRINT INK 4,AT 21,INT (RND
*31);"(ch)"
4010 GO TO 1000
4500 LET t=0
4500 REM successful rescue
5010 PRINT AT 20,7;"
"
5110 PRINT AT 12,4;"total evacue
es saved ";t;AT 14,10;"in ";j;"/20
";" hours"
5120 FOR a=0 TO 10
5130 BEEP 0.15,a
5140 NEXT a
5150 FOR a=-5 TO 5
5160 BEEP 0.05,a
5170 NEXT a
5180 FOR a=10 TO -10 STEP -2
5190 BEEP 0.1,a
5200 NEXT a
9000 FOR z=10 TO 1 STEP -2: BEEP
z/10,z/3: NEXT z
9010 FLASH 1: PRINT AT 21,8;"To
Play another Game Press enter":
FLASH 0
9050 FOR z=-30 TO 40 STEP 2
9060 BEEP 0.02,z
9065 NEXT z
9070 PAUSE 100
9080 IF INKEY#="" THEN GO TO 90
80
9090 IF INKEY#="n" THEN STOP
9100 RUN
9500 REM instructions
9505 BORDER 0: INK 7: PAPER 0: C
LS
9510 PRINT INK 6,AT 5,7;"DUNKIR
K EVACUATION"
9514 PRINT INK 7,AT 11,10;"do y
ou want";AT 12,9;"instructions?"
9516 PRINT INK 7,AT 15,7;"Press
"v#"" for ves";AT 16,10;"N";"n"
for no"
9520 IF INKEY#="" THEN GO TO 95
20
9522 IF INKEY#="v" THEN GO TO 9
520
9524 IF INKEY#="n" THEN GO TO 3
00
9526 STOP
9530 BORDER 1: PAPER 1: INK 7: C
LS
9532 PRINT AT 0,7;"DUNKIRK EVACU
ATION"
9534 PRINT AT 3,0;" The s1m 0
f this game is to save 1
0 evacuees who are stran
ded in the sea on the be
ach at Dunkirk. "
9536 PRINT AT 9,0;"To save the
evacuees you have to steer your bo
at (C) into the same square a
s the evacuee (9m)"
9538 PRINT AT 13,3;"To steer the
boat Press:-"
9540 PRINT AT 15,0;" " 5 " " for
left " " B " " for right"
9542 PRINT AT 17,0;" " 7 " " for
up " " 6 " " for down "
9544 PRINT INK 6,AT 20,0;" F
or further instructions
Press enter "
9546 IF INKEY#="" THEN GO TO 95
46
9548 CLS
9550 PRINT AT 0,7;"DUNKIRK EVACU
ATION"
9552 PRINT AT 3,0;"After you hav
e rescued all ten of the evacue
es you must then return to the
safe harbour ( H )"
9554 PRINT AT 7,0;"But while you

```

are rescuing the evacuees you
must beware the dangers that
face you."

9556 PRINT AT 11.0;"Be careful n
ot to strike one of the many min
es (*)."

9558 PRINT AT 14.0;"Avoid beachi
ng the craft on the sand (3K9B
) ."

9560 PRINT INK 6;AT 18.0;" F
or further instructions

Press enter "

9562 IF INKEY="" THEN GO TO 95
62

9564 CLS
9566 PRINT AT 0.7;"DUNKIRK EVACU
ATION"

9568 PRINT AT 3.0;"Try and dodge
the 80mm shells that are fired
from the beach at the top of th
e screen (9s)."

9570 PRINT AT 7.0;"And be sure n
ot to run short of fuel. A mess
age will appear at the bottom of
the screen when you are getti
ng low."

9574 PRINT AT 14.3;"To begin you
r rescue bid -"

9576 PRINT AT 17.0;"Press - ENTE
R -"

9580 IF INKEY="" THEN GO TO 95
80

9590 GO TO 300

FOOTBALL POOLS PROGRAM

- The program lists out, in order of preference, the sixteen most likely score-draws; also the sixteen most likely homes, draws and aways.
- It picks out the results on the bookmakers' FIXED ODDS coupons that have been given over-generous odds. Calculates your expected profit!
- The program will be initialised to the English and Scottish league tables. You will be able to update these league tables week by week as results come in — or enter a complete new set of league tables in other words, the program will never become 'out of date'!
- All programs are recorded on a top quality cassette (usually Sony) and are accompanied with an instruction leaflet giving a brief explanation of the theory.

Available for the ZX-81 16K (Price **£8.95**) and the ZX Spectrum 48K (Price **£9.95**) from:

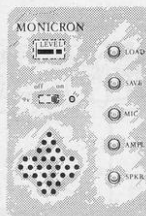
HARTLAND SOFTWARE
(Dept. R), 8 Penzance Place,
London W11 4PA.

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*ZX81 model has tape-remote-switch - state model when ordering.

The NEXT GENERATION... of Spectrum software

NEW



Aircraft in the distance signal incoming attack. **BATTLESTATIONS!** Your own machine guns and open fire with sirens of tracer bullets and open fire you've got to be quick for you'll never make it through to the ground attack for the fight to the ground attack **NIGHT GUNNER** is a challenging, super smooth game with excellent 3-D graphics.
48K only. Joystick compatible (Kempston, AGF, Snicar) **£6.95p**

NEW



Only the best become a **FIGHTER PILOT** - slings into the air on the prepare for take-off. Stunning 3-D graphics, air-to-air combat, and fully realistic performance put the challenge of real-time fighter simulation at your fingertips. Based upon the USAF air superiority jet fighter, the screen simulation is for those who simply want the best! For those who **48K only.** Joystick compatible (Kempston, AGF, Snicar) **£7.95p**

NEW

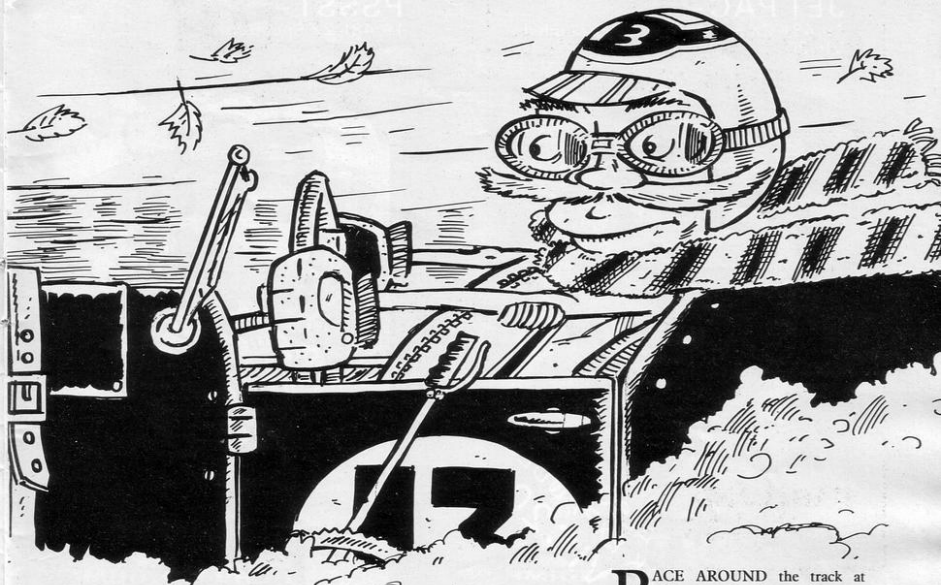


Pools forecasting based upon the analysis of team performance. This is a user-friendly program that will from league results and tables. Simply enter the fixtures and let your Spectrum guide you to your pools selection with 8 methods of analysis.
48K only. £7.95p

DIGITAL Integration



Dept. SU, 22 Ash Church Road, Ash, Aldershot, Hants GU14 9LP. All prices include VAT and p+p (overseas add 55p per cassette). All cassettes carry a lifetime guarantee. Trade & export enquiries welcome - ring Dave Marshall 0252 518269. Mail order or check your local computer store.



SILVERSTONE

RRACE AROUND the track at Silverstone but be careful not to crash into the edges. Your super-racer will be alone on the track but there is still room for error. The car will move left with Q and right with R but do not hold down the key too long or you could crash into the next corner.

Silverstone is for the 16K Spectrum from Nasser Gazi of Coventry.

```

5 RANDOMIZE
10 GO SUB 8000
15 LET a=10: LET b=12: LET c=1
3
16 LET x=10
17 LET sc=0
18 LET r=5
20 BRIGHT 0: OVER 0: PAPER 4:
INK 0: BORDER 6: CLS
25 PRINT AT 0,0: POKE 23692,25
5
30 FOR f=0 TO 21: PRINT TAB x:
INK 0:"(91;90)": PAPER 2:"(5*90
)": PAPER 4:"(90;91)": REM Graph
ics I:0: D:0,0,0,0: O:L
32 NEXT f
40 PRINT AT 21,0
50 POKE 23692,255
60 PRINT TAB x:CHR# (INT (RND*
3)+152): INK 0:"(90;90)": PAPER
2:INK TO r): PAPER 4:"(90)":CHR#
<INT (RND*3)+155): REM GRAPHICS
0
70 LET x=x+INT (RND*3)-1+<<<
1->(x)20)
100 LET c=c-<INKEY#="q">+<INKEY
#="p">
105 LET b=c-1
120 IF ATTR (a,c)=32 THEN LET
k=a: LET l=c: GO TO 1000
125 IF ATTR (a,c+1)=32 THEN LE
T k=a+1: LET l=c+1: GO TO 1000
130 INK 2: PAPER 0
140 PRINT AT a-4,b:"(90)":AT a-
3,b:"(90;90;90;90)":AT a-2,b:"9
0:(90;90;90)":AT a-1,b:"(90;90;9
0;90)":AT a,c:"(90;90;90)"
145 REM Graphics O,D,O,D: O,U,A,B
,O:O,C,D,O: O,E,F,O: G,H
150 INK 0: PAPER 4
160 LET sc=sc+1
170 IF INT (sc/70)=sc/70 AND r>
1 THEN LET r=r-1
180 GO TO 40
1000 PRINT AT 3,15: FLASH 1: BRI
GHT 1: PAPER 7: INK 1:"YOU CRASH
ED"
1010 IF sc>hi THEN LET hi=sc
1020 PRINT AT 5,18:"SCORE=":sc:FA
T 6,16:"HI-SCORE=":hi
1030 FOR f=0 TO 7: PRINT AT k,l:
FLASH 0: BRIGHT 1: INK f:"(90)"
1040 BEEP .005,f+f: BEEP .004,f-
f-f: BEEP .01,RND*40
1042 BEEP .01,RND*40+f
1043 BEEP .005,f+f
1045 NEXT f
1050 PRINT PAPER 6: BRIGHT 1:AT
21,7: Press ENTER "
1060 IF INKEY#<CHR# 13 THEN GO
TO 1060
1070 CLS : GO TO 15
1080 FOR f=1 TO 15
0010 FOR g=0 TO 7
0020 READ a
0030 POKE USR CHR# (143+f)+g,a
0040 NEXT g
8050 NEXT f
8060 DATA 255,255,255,255,31,31,
223,223
8070 DATA 255,255,255,255,240,24
0,251,251
8080 DATA 223,254,220,216,216,24
,24,24
8090 DATA 251,127,59,27,27,24,24
,24
8100 DATA 24,20,30,31,223,223,22
3,255
8110 DATA 24,56,120,240,251,251,
251,255
8120 DATA 223,223,223,31,31,127,
127,0
8130 DATA 251,251,251,240,240,25
4,254,0
8140 DATA 31,43,85,171,213,107,3
7,31
8150 DATA 31,51,109,83,109,83,45
,31
8160 DATA 31,51,13,26,37,91,37,3
1
8170 DATA 248,212,170,213,171,21
4,164,248
8180 DATA 248,204,182,202,182,20
2,180,248
8190 DATA 248,204,176,88,164,218
,164,248
8195 DATA 85,170,85,170,85,170,0
5,170
8210 LET hi=0
8220 LET r#="(5*90)"
8300 RETURN

```

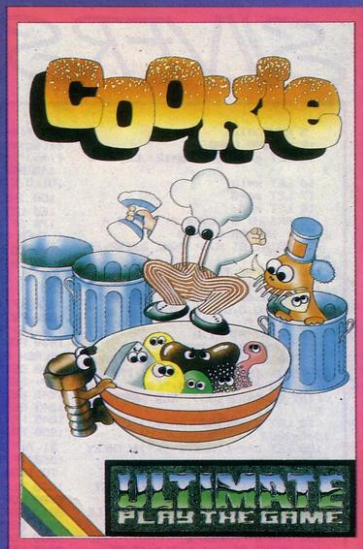
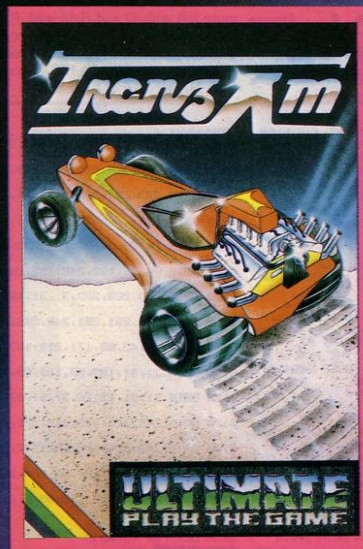
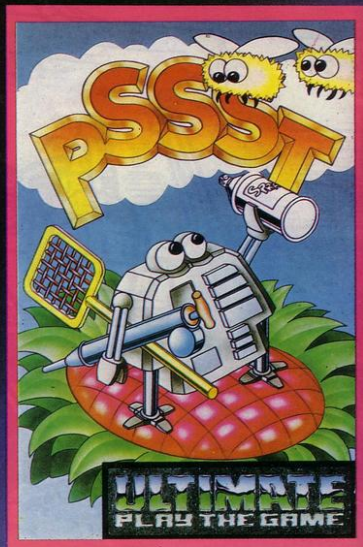

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VIC 20



PSSST –

19/48K ZX Spectrum



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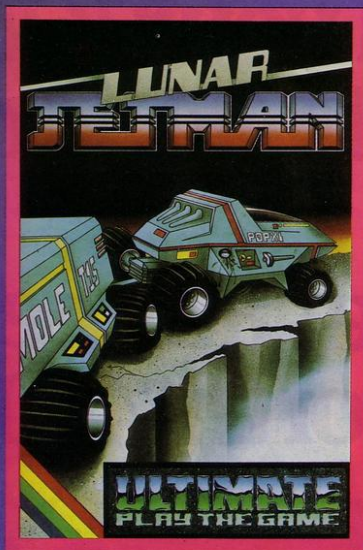
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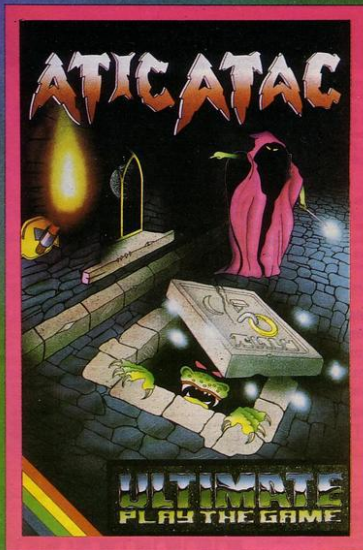
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| <input type="checkbox"/> COOKIE | <input type="checkbox"/> JET PAC |
| <input type="checkbox"/> ATIC ATAC | <input type="checkbox"/> PSSST |
| <input type="checkbox"/> JET PAC (8K Expanded VIC 20) | |

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48K ZX Spectrum

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Then all you need to do is LOAD our specially written 48K guide program, 'Beyond Horizons', and your 48K computer will guide you through its memory.

With no need to labour through manuals.

This will save you time, because we all know how easy it is to get lost with memory maps.

SP80 Paged Memory Extension — £46

This ingenious device gives a 16K Spectrum two memory banks of 32K each and a massive total of 80K of RAM.

It can be used as a standard 48K machine, but pages can be switched by software instructions within your program. The SP80 is not recommended for absolute beginners unless used with 48/80 FORTH.

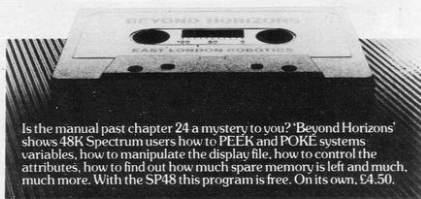
Fitting, power consumption and Sinclair add-on compatibility are identical to the SP48.

Fit and Test service at our premises £3, by registered post £7.

48/80 FORTH — £14.95

This new FORTH compiler/editor is the latest, best and most complete version of FIG-FORTH for the Spectrum. Each tape includes both a 48K version and an 80K version. (Don't forget that an SP48 can be part exchanged for an SP80).

48/80 FORTH gives you the speed of machine code with the programming simplicity of BASIC, and is ideal for games-writing. Unlike other FORTH versions, all the Spectrum's excellent graphics commands are



Is the manual part chapter 24 a mystery to you? 'Beyond Horizons' shows 48K Spectrum users how to PEEK and POKE systems variables, how to manipulate the display file, how to control the attributes, how to find out how much spare memory is left and much, much more. With the SP48 this program is free. On its own, £4.50.

retained, and sound is still available using BEEP. Cassette handling routines are also included.

48/80 FORTH includes a separate FORTH editor which uses part of RAM as if it were disc. The 48K version allows a 16K "RAM disc", and the 80K version a massive 32K "RAM disc".

48/80 FORTH comes with a comprehensive user manual covering both compiler and editor.

ZX Slowloader — £10

This classic piece of software loads ZX81 BASIC programs and arrays straight onto your Spectrum, ready for SAVEing and EDITing. It can do in a few minutes what would normally take weeks of keyboard time.

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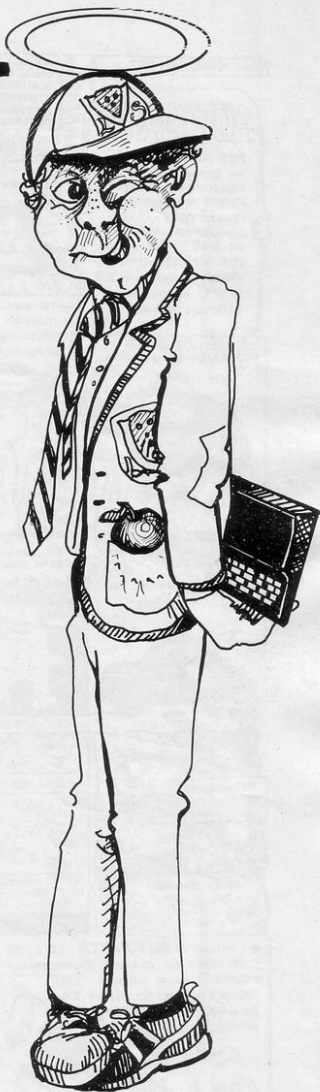
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TEACHER'S PET



```

60 CLS
70 PRINT AT 3,2:"THIS PROGRAM
WILL "
90 PRINT AT 7,0:"1-CHANGE MARK
S INTO PERCENTAGES"
90 PRINT
100 PRINT "2-PLACE MARKS IN ORD
ER"
110 PRINT
120 PRINT "3-GIVE A GRAPH ON SC
REEN"
130 PRINT
140 PRINT "4-EXIT FROM PROGRAM"
150 PRINT AT 19,0:"TYPE IN YOUR
OPTON"
160 INPUT A
170 IF A<1 OR A>4 THEN GOTO 160
180 IF A=1 THEN GOTO 200
185 IF A=2 THEN GOTO 400
190 IF A=3 THEN GOTO 600
195 IF A=4 THEN GOTO 800
197 STOP

200 REM ****PERCENTAGE TO MARK**
210 CLS
215 PRINT "TYPE IN TOTAL MARK"
217 INPUT TOTAL
218 PRINT
220 PRINT "TYPE IN NUMBER OF MA
RKS YOU WISH
          TO CONV
ERT"
230 INPUT A
240 IF A<1 OR A>40 THEN GOTO 23
0
250 DIM N%(A,15)
255 DIM M(A)
260 DIM P(A)
260 FOR B=1 TO A
270 PRINT AT 6,0:"TYPE IN PUPIL
S NAME"
280 INPUT N%(B)
290 PRINT AT 11,0:N%(B)
300 PRINT AT 6,0:"TYPE IN MARK
"
310 INPUT M(B)
320 PRINT AT 11,17:M(B)
340 LET P(B)=(M(B)/TOTAL)*100
350 PRINT AT 11,23:P(B)
360 NEXT B
370 PAUSE 100
380 PRINT "DO YOU WANT A COPY O
F THIS INFO"
385 INPUT A#
390 IF A#="Y" THEN GOTO 392
391 RUN
392 LPRINT AT 0,4:"TOTAL MARK="
,TOTAL:AT 3,0:" NAME
MARK PERCENT"
393 FOR B=1 TO A
394 PRINT
395 LPRINT AT 0,0:N%(B):AT 0,18
M(B):AT 0,25:P(B)
396 NEXT B
397 RUN
400 REM ****SORT INTO ORDER****
405 CLS
410 PRINT "TYPE IN NUMBER OF CA
NDIDATEZ"
415 INPUT Z
420 IF Z<1 OR Z>40 THEN GOTO 41
5
425 DIM N%(Z,15)
430 DIM P(Z)
435 FOR A=1 TO Z
440 PRINT AT 5,0:" TYPE IN NAM
E"
440 INPUT N%(A)
445 PRINT AT 5,0:" TYPE IN MAR
K"
445 INPUT P(A)
446 NEXT A
448 LET N=Z
449 LET A#0
450 LET B#0
455 LET C#0
460 LET S#0
461 LET T#=""
463 LET A#A+1
464 IF A#N THEN GOTO 520
465 LET B#A+1
470 LET C#C+1
475 IF P(A)>P(B) THEN GOTO 495
480 LET B#B+1
485 IF B#N THEN GOTO 463
490 GOTO 470
500 LET S#P(A)
501 LET T#N%(A)
505 LET P(A)=P(B)
506 LET N%(A)=N%(B)
510 LET P(B)=S
511 LET N%(B)=T#
515 GOTO 475
520 REM ****PRINT IN ORDER****
521 CLS
522 PRINT "NAME";"MARK"
523 PRINT "-----";"-----"
525 FOR I=1 TO Z
530 PRINT
535 PRINT N%(I),P(I)
540 NEXT I
545 PRINT
550 PRINT "DO YOU WANT A COPY O
F THIS INFO"
555 INPUT A#
560 IF A#="N" THEN RUN
565 IF A#<>"Y" THEN RUN
570 LPRINT "NAME";"MARK"
575 LPRINT "-----";"-----"
580 FOR I=1 TO Z
585 LPRINT
590 LPRINT N%(I),P(I)
595 NEXT I
597 RUN
600 REM ****PRODUCE GRAPH*****
603 DIM K(10)
605 CLS
607 LET B=1
608 LET MAX#0
609 DIM M(10)
610 FOR A=1 TO 10
620 PRINT AT 1,1:"HOW MANY PUP
LS SCORED BETWEEN ";AT 2,13:B;"
TO ";A*10
625 INPUT M(A)
627 LET B#B+10
628 IF M(A)>MAX THEN LET MAX#M(A)
630 NEXT A
635 PAUSE 100
640 CLS
645 FOR A=1 TO 10
650 PRINT M(A):TAB 4;"(9B)";
655 FOR J=0.01 TO M(A) STEP MAX
/25
660 PRINT "(9d)";
665 NEXT J
670 NEXT A
675 NEXT A
680 PAUSE 100
685 PRINT AT 15,0:"DO YOU WANT
A COPY"
690 INPUT A#
695 IF A#<>"Y" THEN GOTO 60
700 COPY
705 GOTO 60
800 CLS
805 STOP
9098 SAVE "MARK.s"
9999 RUN

```

CHANGE examination marks into percentages, place the marks in order, and have a graphical representation of them. **Teacher's Pet** for the 16K ZX-81 will do it all for you. It was written by Alan Richmond of Golborne, Cheshire.

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 PAT CIGAR
IT'S YOU!!



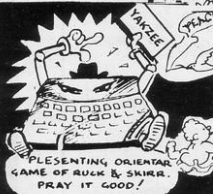
WHAT IS THIS, THE STAMPEDE SEASON? WE'RE BEING TRAMPLED! ...THIS TRIP FOR 2 FINISHES WITH A LEISURELY CRUISE HOME ON THE GEEZ!



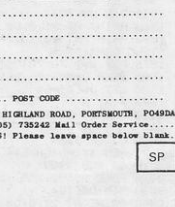
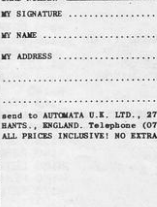
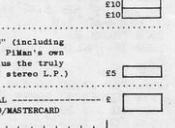
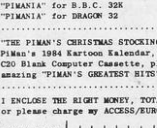
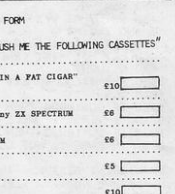
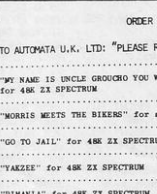
I THINK THAT MUST BE THE LAST OF THEM NOW...



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



YAK ZEE

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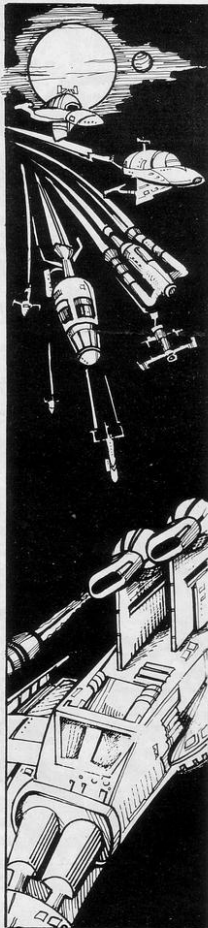
```

10 POKE 23658,0
20 GO SUB 4000: REM GRAPHICS
30 LET C=CHR$ 144
35 LET B=CHR$ 145
40 LET G=CHR$ 146
45 BORDER 0: PAPER 0: CLS
50 PRINT AT 1,0: PAPER 6: FLAS
H 1:"SCROLLVADERS"
60 PRINT AT 10,10: PAPER 6: B
70 PRINT AT 15,1: PAPER 6:" DU
YOU WANT INSTRUCTIONS? Y/N "
80 PAUSE 0
90 IF INKEY#="Y" THEN GO SUB
3500
100 BORDER 5: PAPER 6: CLS
110 DIM V(2): DIM H(2)
120 LET V(1)=1: LET H(1)=6
130 DEF FN T<>=INT ((65536+PEEK
23674+256*PEEK 23673+PEEK 23672
)>50)
140 LET SC=0: LET Z=1
150 DIM M<>
200 GO SUB 3000: REM TIMING
210 GO SUB 2500: REM 1ST GAME
220 GO SUB 2000: REM 2ND GAME
300 REM **MAIN LOOP**
310 IF SCREEN# <V(1),H(1)>M#
AND INKEY#="0" THEN PRINT AT V(
1),H(1):M: GO SUB 400
320 PRINT AT V(1),H(1)): FLASH 1
: M#
330 PAUSE 4: PRINT AT V(1),H(1)
: INVERSE 1 AND Z=0: M#
340 LET H(1)=H(1)+INKEY#="0" A
ND H(1)<31)-INKEY#="5" AND H(1)
>0)
350 LET V(1)=V(1)-1: IF V(1)<-2
1 THEN LET V(1)=21
360 IF Z=0 AND FN T<>50 THEN
GO TO 1000
370 IF FN T<>60 AND Z=1 THEN
GO TO 1500
380 GO TO 310
400 REM **ERASE/SCORE**
410 IF Z=1 THEN LET SC=SC+500
420 IF Z=0 THEN LET SC=SC+1000
430 FOR N=45 TO 15 STEP -5
440 BEEP .15,N
450 NEXT N
460 PRINT AT V(1),H(1)): INVERSE
1 AND Z=0: M#
470 LET V(1)=INT (RND*10)
480 LET H(1)=INT (RND*31)
490 RETURN
1000 REM **END GAME**
1010 CLS
1020 IF SC<10000 THEN PRINT AT
8,10: INVERSE 1:"WELL DONE!"
1030 IF SC<10000 THEN PRINT AT
8,3: INVERSE 1:"NOT GOOD ENOUGH!"
1040 PRINT AT 10,5: INVERSE 1:"Y
OUR SCORE WAS....": FLASH 1: SC
1050 PAUSE 100
1060 PRINT AT 15,6: PAPER 6:" A
MOTHER GOT? Y/N "
1070 PAUSE 0
1080 IF INKEY#="Y" THEN GO TO 1
00
1090 STOP
1500 REM **3RD GAME**
1510 BORDER 0: PAPER 6: CLS
1520 GO SUB 3000
1530 POKE 23632,255
1540 LET Z=0
1550 DIM D$(704)
1560 PRINT AT 21,0: D$
1570 PRINT AT 10,10: FLASH 1:"GE
TTING DARK!"
1575 FOR N=1 TO 704 STEP 25
1580 BEEP .005,15: BEEP .01,30
1590 LET D$(N)=B$
1600 NEXT N
1610 PRINT INVERSE 1: BRIGHT 1:
D$
1620 GO TO 310
2000 REM **2ND GAME**
2010 GO SUB 3000
2020 POKE 23632,255
2030 DIM D$(704)
2040 PRINT AT 21,0: D$
2050 PRINT AT 10,10: FLASH 1:"RA
IDERS COMING!"
2060 FOR N=1 TO 704 STEP 20
2070 BEEP .001,25: BEEP .005,35
2080 LET D$(N)=B$
2090 NEXT N
2100 PRINT D$
2110 RETURN
2500 REM **1ST GAME**
2510 LET V(2)=INT (RND*10)
2520 LET H(2)=INT (RND*31)
2530 PAUSE 10
2540 FOR N=1 TO 4
2550 PRINT AT V(2),H(2):M#
2560 BEEP .05,N*6
2570 NEXT N
2580 PRINT AT V(2),H(2):M#
2590 FOR N=1 TO 35
2600 PRINT AT V(1),H(1): FLASH 1
: M#
2610 PAUSE 2.5: PRINT AT V(1),H(
1):M#
2620 LET H(1)=H(1)+INKEY#="0" A
ND H(1)<31)-INKEY#="5" AND H(1)
>0)
2630 LET V(1)=V(1)-INKEY#="7" A
ND V(1)>0)+INKEY#="6" AND V(1)<
21)
2640 IF V(1)=V(2) AND H(1)=H(2)
THEN GO SUB 2700
2650 NEXT N
2660 IF FN T<>60 THEN RETURN
2670 GO TO 2510
2700 LET SC=SC+100
2710 FOR N=30 TO 5 STEP -5
2720 PRINT AT V(1),H(1): BRIGHT
1: FLASH 1: INK 2: C$
2730 BEEP .05,N
2740 NEXT N
2750 PAUSE 25
2760 PRINT AT V(1),H(1):M#
2770 RETURN
5000 REM **TIMING**
3010 FOR N=23672 TO 23674
3020 POKE N,0
3030 NEXT N
3040 RETURN
3500 REM **INSTRUCTIONS**
3510 CLS
3520 PRINT AT 1,0: INK 7:"AT FIR
ST YOU MUST MOVE TO""COVER THE
SPOT WHERE THE""RAIDERS DISAPPE
AR""USE KEYS": PAPER 1: (5) (
6) (7) (8)
3525 PRINT AT 8,10: PAPER 6:"***
*"
3530 PRINT AT 10,0: INK 7:"WHEN
THE RAIDERS GROUP YOU MUST""ATT
ACK BUT THIS TIME FIRE""OTHERWIS
E THEY JUST DISAPPEAR""USE KE
YS": PAPER 1: (5) (6) & (8): PA
PER 0:"TO MOVE & FIRE"
3540 PRINT AT 19,10: PAPER 6: FL
ASH 1:"GOOD LUCK!"
3550 PRINT AT 21,1: INK 7:"PRESS
ANY KEY TO CONTINUE"
3560 PAUSE 0
3570 RETURN
4000 REM **GRAPHICS**
4010 FOR A=1 TO 3
4020 READ G$
4030 FOR B=0 TO 7
4040 READ F$
4050 POKE USR G$+B,F$
4060 NEXT B
4070 NEXT A
4080 DATA "A",255,60,126,231,231
,126,60,255
4090 DATA "B",255,102,255,24,36,
66,129,129
4100 DATA "C",145,0,36,0,145,0,3
6,145
4110 DIM E$(9)
4120 DATA 127,32,68,46,82,65,78,
68,83
4130 FOR N=1 TO 9
4140 READ C
4150 LET E$(N)=CHR$(C)
4160 NEXT N
4170 RETURN

```

SCROLLVADERS

DAVID RANDS of Harrington, Beds, has written *Scrollvaders*, a three-part game. At first, the raiders appear on reconnaissance missions and you have to cover the position quickly where they disappeared: Next they advance *en masse* and you have to fire accurately before they take cover. Finally, on a night mission, you have to eliminate as many raiders as you can. 48K Spectrum.



fantasy

SOFTWARE

THE PYRAMID is an arcade style game which has a very adventurous feel to it.

The Pyramid contains 120 chambers on 15 levels. In order to get from one chamber to another you must fight off the indigenous aliens to collect an energised crystal which will neutralize the force field guarding the two exits.

The Pyramid is inhabited by a total of 60 wierd and exotic alien types, all of which are beautifully animated. You will meet a whole variety of demons, droids, insects and monsters, with a sprinkling of the more unusual, the extra-terrestrial tweezers, galactic strawberry, cosmic claw, mutant eye, plus a whole host of entities that defy rational description. You will no doubt invent your own nicknames.

You proceed to explore the Pyramid from top to bottom with the difficulty generally increasing with the depth of level. Depending on the choice of exit from each chamber you are likely to have a different game every time you play.

Apart from the challenge of trying to achieve the highest score possible the pyramid contains a number puzzle to solve. The more chambers you successfully visit the more information is gathered to enable you to discover the secret numbers of the pyramid. The puzzle won't take you a few days to solve, it will probably take you a few months.



This is 'ZIGGY'. He is shown above in his exploratory capsule and is a true representation of the on screen graphics. You have total control over his movements as you explore the many chambers of 'THE PYRAMID'.

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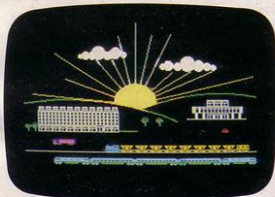
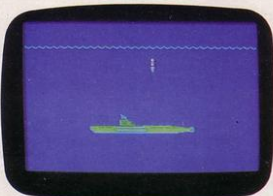
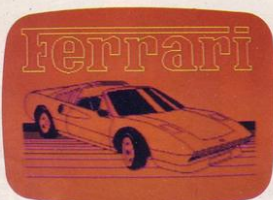
THE PYRAMID

Compatible with all leading joysticks.

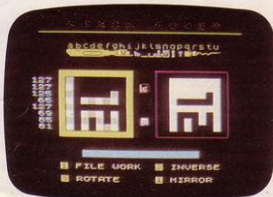
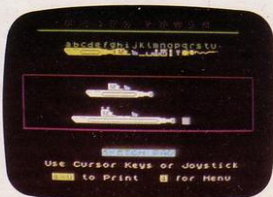
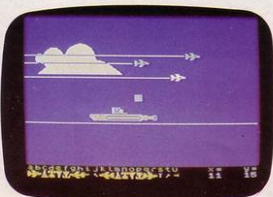
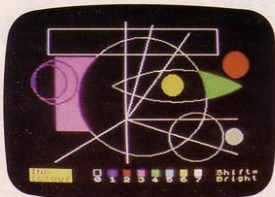
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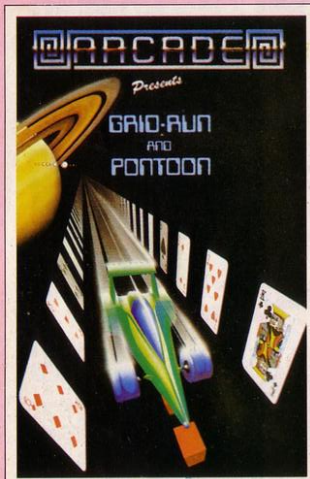
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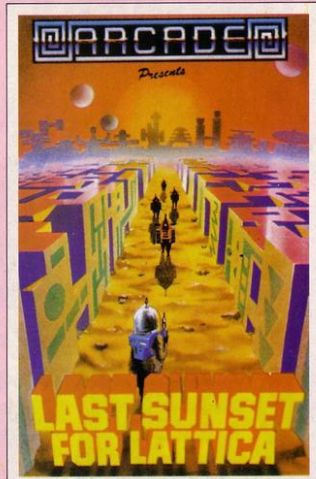
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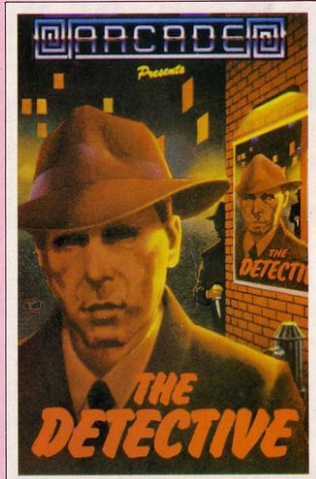
THE ARCADE COLLECTION



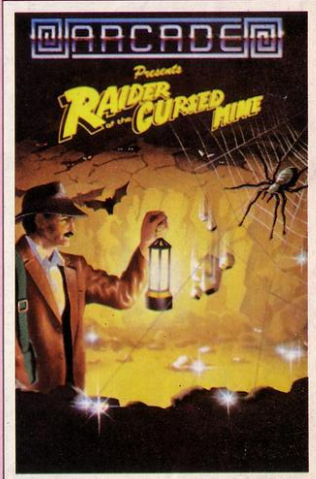
GRID-RUN is a high resolution, fast machine code game using the spectrum sound and colour to the full. Set in a maze you must avoid oncoming android cars bent on your destruction. Bonus car every 10,000 points. "Famous Five" hall of fame, increasing speed and difficulty. There is even a hold button to get your breath back. **PONTOON** included on side B absolutely free. Pontoon has full graphical representations of all the cards including King, Queen, Jack, "Intelligent" play of aces, and full analysis of results at end of each game. REF. GRID.



LAST SUNSET FOR LATTICA (Original) is a true graphical adventure game in real time. Your aim is to defuse a bomb hidden somewhere in a highly complicated maze avoiding many well armed androids along the way. Extra lives are there for the taking, so are the keys to take you to the next level and all the while time is running out for the little Planet of Lattica. REF. SUN.



THE DETECTIVE (Original) You thought it was just another "Take the secrets from a Safe and Run" job but the mob thought differently. They will try everything to stop you, the time, 4 madmen, lasers, bombs, dynamite, daggers, barrels, blister bombs, crates, helicopters, jets and fourteen other levels do not get you, you might just make it. Opening the safe has its pitfalls too. Fast moving, m/c game with excellent graphics and sound. A very addictive game. REF. DET.



RAIDER OF THE CURSED MINE (Original) Greed drove you down into the old diamond mine, sheer determination and luck is the only way out again. Lits help you, so do lamps, and diamonds can be worth a fortune but beware of the evils that lurk deep in the mine. Trills who throw boulders at you, spiders who bat you, ghosts who show no mercy and bats who steal things, add to this a time bonus and you have an exciting Arcade quality game. Reach level 32 and escape to the big outside world. REF. RAID.

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CARD

```

1 CLS : PRINT AT 10,7: FLASH
1) BRIGHT 1:"PRESS BREAK TO BELI
N": LET a$=INKEY$
2 PUKE USR 1306,1
3 LET a$=INKEY$
4 IF a$=" " THEN GO TO 7
5 GO TO 3
6 LET x=0: LET y=0
7 GO SUB 3700
8 BORDER 4: PAPER 7: CLS
9 REM @ 1963 PAUL JONES
11 LET P=0
12 LET x=0: LET y=0: LET f=0:
GO TO 14
13 CLS : LET P=5
14 CLS : PRINT AT 0,2:"WINS"/A
T 0,19:"LOSSES"
15 BRIGHT 0
16 PRINT AT 0,7;w;AT 0,26;x
17 LET v=0
18 PRINT AT 10,3:"DEALING"
20 LET a=39
30 FOR i=7 TO 40
40 PLOT 1,a
50 NEXT i
60 FOR i=55 TO 96
70 PLOT 1,a
80 NEXT i
90 FOR i=103 TO 144
100 PLOT 1,a
110 NEXT i
120 FOR i=151 TO 192
130 PLOT 1,a
140 NEXT i
150 FOR i=199 TO 240
160 PLOT 1,a
170 NEXT i
175 IF a=104 THEN GO TO 190
180 LET a=a+65: GO TO 30
190 FOR n=7 TO 201 STEP 40
200 PLOT n,39: DRAW 0,64
205 PAUSE 20
210 NEXT n
220 FOR n=40 TO 240 STEP 40
230 PLOT n,39: DRAW 0,64
240 NEXT n
245 IF P>2 THEN GO TO 325
250 FOR n=0 TO 7: READ k: PUKE
USR "a"+n,k: NEXT n
260 DATA BIN 00011000,BIN 00111
100,BIN 01111110,BIN 11111111,BI
N 11111111,BIN 01111110,BIN 0011
1100,BIN 00011000
270 FOR n=0 TO 7: READ k: PUKE
USR "b"+n,k: NEXT n
280 DATA BIN 00011000,BIN 00111
100,BIN 00111100,BIN 11011011,BI
N 11111111,BIN 11011011,BIN 0001
1000,BIN 00111100
290 FOR n=0 TO 7: READ k: PUKE
USR "c"+n,k: NEXT n
300 DATA BIN 00011000,BIN 00111
100,BIN 01111110,BIN 11111111,BI
N 11111111,BIN 01011010,BIN 0001
1000,BIN 00011000
310 FOR n=0 TO 7: READ k: PUKE
USR "d"+n,k: NEXT n
320 DATA BIN 01001000,BIN 11011
110,BIN 11111110,BIN 01111100,BI
N 01111100,BIN 00111000,BIN 0011
1000,BIN 00010000
321 FOR n=0 TO 7: READ k: PUKE
USR "e"+n,k: NEXT n
322 DATA BIN 01011110,BIN 01010
010,BIN 01010010,BIN 01010010,BI
N 01010010,BIN 01010010,BIN 0101
0010,BIN 01011110
323 LET P=P+2
325 INK 1
330 FOR i=12 TO 43 STEP 2
340 PLOT 1,44: DRAW 0,56
350 NEXT i
360 FOR i=60 TO 91 STEP 2
370 PLOT 1,44: DRAW 0,56
380 NEXT i
390 FOR i=108 TO 139 STEP 2
400 PLOT 1,44: DRAW 0,56
410 NEXT i
420 FOR i=156 TO 187 STEP 2
430 PLOT 1,44: DRAW 0,56
440 NEXT i
450 FOR i=204 TO 235 STEP 2
460 PLOT 1,44: DRAW 0,56
470 NEXT i
475 PRINT AT 10,3:" "
480 LET c=0
490 LET m=1
495 LET w=RND*12
500 RANDOMIZE i: GO TO INT (RND*
3)+510
510 LET s$="a": GO TO 1001+w
511 LET s$="b": GO TO 1001+w
512 LET s$="c": GO TO 1001+w
513 LET s$="d": GO TO 1001+w
1001 PRINT AT 9,m: BRIGHT 1:"2
":AT 10,m: " :s$:" :AT 11,m

```

CARD GAMBIT, for the 48K Spectrum, will give you some idea of how good you are at playing games of chance and guessing the outcome before an event occurs.

At the end of the game, in which you have to guess whether the value of a card is higher or lower than the previous one, you will be told how well you fared. That depends on your win/lose ratio.

The program was sent by Paul Jones of Tuffley, Gloucestershire.

GAMBIT



```

j"      "JAT 12,mj"      "JAT 13,m
j"      "JAT 14,mj"      "JAT 15,m
j"      "j$@j" "JAT 16,mj"  2"i G
0 TO 5000
1002 PRINT AT 9,mj BRIGHT 1;"3
"JAT 10,mj" "j$@j" "JAT 11,m
j"      "JAT 12,mj" "j$@j" "JAT
13,mj" "JAT 14,mj" "JAT
15,mj" "j$@j" "JAT 16,mj" "JAT
3"i GO TO 5000
1003 PRINT AT 9,mj BRIGHT 1;"4
"JAT 10,mj" "j$@j" "j$@j" "JAT
11,mj" "JAT 12,mj" "JAT
13,mj" "JAT 14,mj" "JAT
15,mj" "j$@j" "JAT 16,mj" "JAT
4"i GO TO 5000
1004 PRINT AT 9,mj BRIGHT 1;"5
"JAT 10,mj" "j$@j" "j$@j" "JAT
11,mj" "JAT 12,mj" "JAT
13,mj" "j$@j" "JAT 14,mj" "JAT
15,mj" "j$@j" "j$@j" "JAT
16,mj" 5"i GO TO 5000
1005 PRINT AT 9,mj BRIGHT 1;"6
"JAT 10,mj" "j$@j" "j$@j" "JAT
11,mj" "JAT 12,mj" "JAT
13,mj" "j$@j" "j$@j" "JAT 14,mj
"JAT 15,mj" "j$@j" "j$@j"
"JAT 16,mj" 6"i GO TO 5000
1006 PRINT AT 9,mj BRIGHT 1;"7
"JAT 10,mj" "j$@j" "j$@j" "JAT
11,mj" "JAT 12,mj" "JAT
13,mj" "j$@j" "j$@j" "JAT 14,mj
"j$@j" "JAT 15,mj" "j$@j" "j$
@j" "JAT 16,mj" 7"i GO TO 50
00
1007 PRINT AT 9,mj BRIGHT 1;"8
"JAT 10,mj" "j$@j" "j$@j" "JAT
11,mj" "JAT 12,mj" "j$@j"
"JAT 13,mj" "j$@j" "j$@j" "JAT
14,mj" "j$@j" "j$@j" "JAT 15,mj" "j$@
j" "j$@j" "JAT 16,mj" 8"i GO
TO 5000
1008 PRINT AT 9,mj BRIGHT 1;"9"j
$@j" "j$@j" "JAT 10,mj" "JAT
11,mj" "j$@j" "j$@j" "JAT 12,mj
"j$@j" "JAT 13,mj" "j$@j" "j
$@j" "JAT 14,mj" "JAT 15,mj"
"j$@j" "j$@j" "JAT 16,mj" 9"i
GO TO 5000
1009 PRINT AT 9,mj BRIGHT 1;"t"j
$@j" "j$@j" "JAT 10,mj" "j$@j"
"JAT 11,mj" "j$@j" "j$@j" "JAT
12,mj" "JAT 13,mj" "j$@j" "j
$@j" "JAT 14,mj" "j$@j" "JAT 1
5,mj" "j$@j" "JAT 16,mj"
t"i GO TO 5000
1010 PRINT AT 9,mj BRIGHT 1;"J
"JAT 10,mj" "j$@j" "JAT 11,m
j" (95)j(95) "JAT 12,mj" (95)k(9
5) "JAT 13,mj" C "JAT 14,mj" (
95)k(95) "JAT 15,mj" "j$@j" "J
AT 16,mj" j"i GO TO 5000
1011 PRINT AT 9,mj BRIGHT 1;"Q"j
$@j" "JAT 10,mj" q "JAT 11,m
j" (95)k(95) "JAT 12,mj" (95)E(9
5) "JAT 13,mj" (95)E(95) "JAT 14
,mj" (95)n(95) "JAT 15,mj" (95)
(95) "JAT 16,mj" "j$@j" Q"i GO
TO 5000
1012 PRINT AT 9,mj BRIGHT 1;"K"
"JAT 10,mj" "j$@j" "JAT 11,m
j" (95)k(95) "JAT 12,mj" (95)l(9
5) "JAT 13,mj" n "JAT 14,mj" (
95)k(95) "JAT 15,mj" "j$@j" "J
AT 16,mj" K"i GO TO 5000
1013 PRINT AT 9,mj BRIGHT 1;"A
"JAT 10,mj" "JAT 11,mj" "
JAT 12,mj" "JAT 13,mj" "
j$@j" "JAT 14,mj" "JAT 15,m
j" "JAT 16,mj" A"i GO TO
5000
5000 IF C<>0 THEN GO TO 5006
5001 PRINT AT 6,2;"DO YOU WISH T
O CHANGE"JAT 7,2;" YOUR BASE CAR
D V"j"
5002 LET Z$=INKEY$ IF Z$="y" TH
EN GO TO 495
5003 IF Z$="n" THEN PRINT AT 6,
2;"
"JAT 7,2;"
" GO TO 5006
5004 LET c=c+1
5005 GO TO 5002
5006 PRINT AT 6,2;"
"JAT 7,2;"
"
5007 IF v=5 THEN GO TO 5525
5008 IF n=25 THEN GO TO 7000
5009 LET z$=INKEY$
5010 PRINT AT 19,2;"H/L"
5013 IF t=5 THEN GO TO 5500
5015 IF z$="h" THEN PRINT AT 18
,15;"HIGHER" GO TO 5500
5020 IF z$="l" THEN PRINT AT 18
,15;"LOWER" GO TO 6000
5400 GO TO 5000

```

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SP12



```

5500 LET s=RND*12
5503 IF u+s=w*2 THEN GO TO 9000
5505 IF w>s THEN GO TO 5520
5510 IF w<s THEN LET w=s: LET m
m=m+6: GO TO 500
5520 PRINT AT 2,12: BRIGHT 1:"BA
D LUCK":AT 4,1:"THE NEXT CARD IS
NOT HIGHER": PAUSE 50
5521 IF f=5 THEN GO TO 9500: PR
INT AT 19,2: FLASH 1: BRIGHT 1:"
PRESS R TO REPLAY"
5522 LET x=w+1
5523 IF x+y=5 THEN LET f=5
5524 LET w=5: LET m=m+6: LET w=s
: GO TO 500
5525 BEEP 0.3,-20: BEEP 0.3,-21:
BEEP 0.3,-22: BEEP 0.3,-23
5526 IF f=5 THEN BEEP 0.6,-20:
PAUSE 100: GO TO 9500
5527 LET z=INKEY
5530 IF z="r" THEN GO TO 13
5535 PRINT AT 19,2: FLASH 1: BRI
GHT 1:"PRESS R TO REPLAY"
5540 GO TO 5527
6000 LET s=RND*12
6003 IF u+s=w*2 THEN GO TO 9000
6005 IF w<s THEN GO TO 6020
6010 IF w>s THEN LET w=s: LET m
m=m+6: GO TO 500
6020 PRINT AT 2,12: BRIGHT 1:"BA
D LUCK":AT 4,1:"THE NEXT CARD IS
NOT LOWER": PAUSE 50
6021 PRINT AT 19,2: FLASH 1: BRI
GHT 1:"PRESS R TO REPLAY"
6022 LET x=w+1
6023 IF x+y=5 THEN LET f=5: GO
TO 500
6024 LET w=5: LET m=m+6: LET w=s
: GO TO 500
6025 IF f=5 THEN BEEP 0.6,-20:
GO TO 9500
6027 LET z=INKEY
6030 IF z="r" THEN GO TO 13
6040 GO TO 6025
7000 PRINT AT 2,6: BRIGHT 1: FLA
SH 1:"CONGRATULATIONS"
7005 LET v=w+1
7010 GO TO 9000
9000 BEEP 0.3,0
9001 BEEP 0.2,2
9002 BEEP 0.2,4
9003 BEEP 0.4,5
9004 BEEP 0.3,0
9005 BEEP 0.2,5
9006 BEEP 0.2,4
9007 BEEP 0.2,5
9008 BEEP 0.2,7
9009 BEEP 0.2,2
9010 PAUSE 1: BEEP 0.2,2
9011 BEEP 0.3,4
9012 BEEP 0.3,5
9013 BEEP 0.4,9
9014 BEEP 0.2,7
9015 BEEP 0.2,7
9016 BEEP 0.2,5
9017 BEEP 0.2,5
9018 BEEP 0.2,4
9019 BEEP 0.2,2
9020 BEEP 0.2,4
9021 BEEP 0.5,5
9030 IF x+y=5 THEN GO TO 9500
9050 GO TO 13
9500 CLS
9510 IF v=0 THEN PRINT AT 10,10
: FLASH 1: BRIGHT 1:"PATHETIC"
9515 IF v=1 THEN PRINT AT 10,10
: FLASH 1: BRIGHT 1:"POOR"
9520 IF v=2 THEN PRINT AT 10,10
: FLASH 1: BRIGHT 1:"AVERAGE"
9530 IF v=3 THEN PRINT AT 10,10
: FLASH 1: BRIGHT 1:"GOOD"
9540 IF v=4 THEN PRINT AT 10,10
: FLASH 1: BRIGHT 1:"EXCELLENT"
9550 IF v=5 THEN PRINT AT 10,10
: FLASH 1: BRIGHT 1:"VERY LUCKY"
9600 PAUSE 300: GO TO 12
9700 BORDER 1: INK 7: PAPER 1: C
LS
9710 PRINT AT 2,5:"PLAY YOU CARD
S RIGHT"
9715 PRINT AT 1,3:"*****
*****"
9720 PRINT AT 3,3:"*****
*****"
9730 PRINT AT 5,0:" YOU MUST DEC
IDE WHETHER THE NEXT CARD IN
THE LINE IS HIGHER OR LOWER THAN
THE PRECEDING ONE IF YOU MANAG
E TO REVEAL ALL 5 CARDS A WIN W
ILL BE DISPLAYED AT THE TOP OF TH
E SCREEN, HOWEVER IF YOU FAIL WHIC
H IS MORE THAN LIKELY A LOSS
IS DISPLAYED. ONCE YOU HAVE
COMPLETED YOUR 5 GAMES YOUR EF
FORTS WILL BE GRADED FROM P
ATHETIC TO EXCELLENT. Y
OU ALSO ARE GIVEN THE CHOICE OF
ALTERING YOUR BASECARD"
9740 PRINT AT 13,4:"GOOD LUCK! <
YOU'LL NEED IT!"
9750 PRINT AT 20,2: FLASH 1:"PRE
SS ANY KEY TO CONTINUE"
9760 PAUSE 0
9763 CLS
9765 PRINT AT 10,1:"P.S. IF A PA
IR IS TURNED UP":AT 11,6:"THE CO
MPUTOR WILL ":AT 12,6:"DECIDE
WHETHER OR NOT":AT 13,6:"TO LET
YOU CONTINUE"
9767 PRINT AT 20,2: FLASH 1:"PRE
SS ANY KEY TO CONTINUE"
9769 PAUSE 0
9770 INK 0
9775 CLS
9780 RETURN

```


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YOUR GO-CART is speeding recklessly towards the village pond, without brakes. Your only hope is to guess the correct letter—the computer will tell you whether your choice is too low or too high. You have 10 attempts before your ducking in **Duck Pond**, written for the 1K ZX-81 by 13-year-old Robin Timpson of Wellingborough, Northamptonshire.

DUCK POND

```

1 REM "DUCK POND"
3 LET Y=11
5 CLS
10 LET X=INT (RND*26)+38
20 FOR I=1 TO 10
30 PRINT AT 3,0;"ROUND ";I
40 PRINT "ENTER THE LETTER"
50 INPUT Z$
55 LET V=CODE Z$
60 IF V<X THEN PRINT "TOO LOW"
70 IF V>X THEN PRINT "TOO HIGH"
"
90 IF V=X THEN GOTO 160
110 FOR F=1 TO 50
120 NEXT F
130 CLS
132 PRINT AT 0,Y;" ";TAB 0;"(3*
9d,9*kisp)";AT 0,Y;"< io >"
134 LET Y=Y-1
136 IF I=10 THEN GOTO 145
140 NEXT I
145 PRINT AT 1,Y;"< io >";AT 0,
Y-1;"(9y)";TAB 2;"< 9t >"
147 PRINT ",,,"
150 PRINT "splash YOU HAVE LAN
DED IN THE DUCK-POND"
155 GOTO 170
160 PRINT "YOU HAVE SURVIVED GE
TTING WET"
170 PRINT "ANOTHER GO (Y/N)?"
180 INPUT A$
190 IF A$="Y" THEN RUN
200 PRINT "THANK YOU FOR PLAYIN
G"

```


PONG



should be played by expert players only. When the game is RUN, wait until the title page is displayed before pressing any key. Written by Claus Jensen of Vaerloese, Denmark.

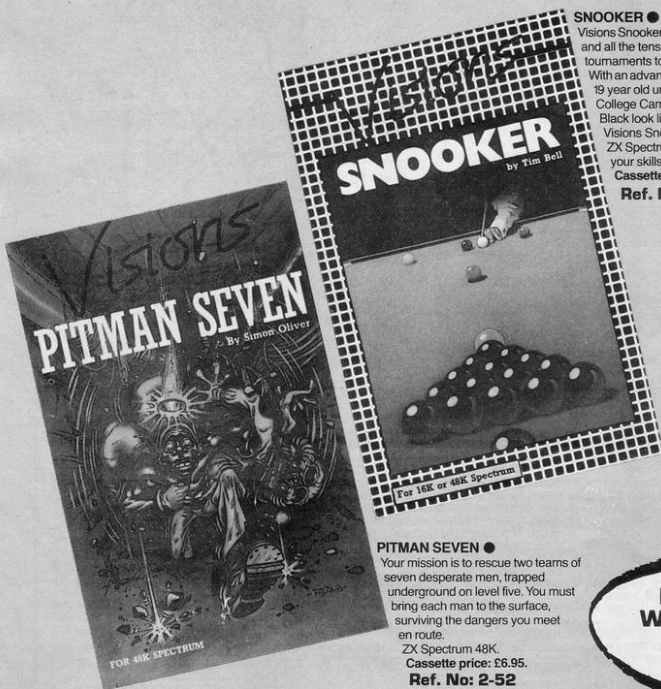
```
THEN STOP
440 GO TO 410
1000 PRINT "Initializin@...."
1010 RESTORE : LET a=31744 : LET
c=0
1020 READ h@ : LET n=1
1030 LET hi=CODE h@(n)-48 : IF hi
>9 THEN LET hi=n-1-7
1040 LET h2=CODE h@(n+1)-48 : IF
h2>9 THEN LET h2=n-2-7
1050 POKE a,16Xhi+h2 : LET c=c+PE
EK a : LET a=a+1 : LET n=n+2
1060 IF a=31744+469 THEN PRINT "
Section #1 loaded" : LET a=32256
1070 IF a=32256+277 THEN PRINT "
Section #2 loaded" : LET a=USR "a
"
1080 IF a=USR "a"+489 THEN PRINT
"Section #3 loaded" : GO TO 1110
1090 IF n>LEN h# THEN GO TO 1020
1100 GO TO 1030
1110 IF c=79688 THEN PRINT "Init
ialization ok" : PAUSE 100 : RETURN
N
1120 PRINT FLASH 1;"WARNING" : F
LASH 0 : There is an error in
one or more of the DATA state-
ments. Do not try to execute the
Program, since this may cause a
System Crash. : STOP
1130 DATA "3A05BFE1428A01FEFDE
D40CB4020013CFE01280A01FEFBE
D40C
B4020013D3205B3A0259FE1428A01F
```

```
EBFED40CB4020013CFE01280A01FEFDE
D40CB4020013D3205B3A045921085B9
632045B3A055B21095B6632055B0D210
053A015B210059B6E28"
1140 DATA "47474FCB36CB36CB36CB2
1CB21CB21CB21DD09DDCCB296DDC
80096DDCB2896DD21005B3A05B47FC
B36CB36CB36CB21CB21CB21CB210
0B9DDCCB2806DDCB006DDCB200632019
B0211F5B3A05B21025B6E2047474FC
B36CB36CB36CB21CB21"
1150 DATA "CB21CB21CB21DD09DDCBE
096DDCB0096DDCB2896DD211F5B3A025
B474FCB36CB36CB36CB21CB21CB21CB2
1CB21DD09DDCCB2806DDCB006DDCB200
632035B21005B3A065B474FCB36CB36C
B36CB21CB21CB21CB21CB21093E0047F
B075B4F09CB9521005B"
1160 DATA "3A045B474FCB36CB36CB3
8CB21CB21CB21CB21093E00473A0
55B4F09CB063A045B32065B3A055B928
75B3A055BFE002004015200CFE1F200
401400C9FE01200521005B1087FE1E2
04621025B3A04395B5FCB7F2802E44F
E002B17FE012613FE02"
1170 DATA "282C7B21085B06FE01260
6FEFF2802181D3A085B08FE00280ACB7
F28043FEF18023E013208B3A095B04
43205B3A045BFE0200401FE15200B9D
05B0E4432005B010000C9"
1180 DATA "210F5B7E2322005B6F3CC
82600292929ED48365C093E0832045B3
A055B3205B3A0A5B32065B3E0932055
```

```
B7E322825B0732655B3A055B3020323
A045B3020183A085B473A0C5B4F3A05
B18520FC320A5B2A005BC3037E32045
83A0D5B473A095B0032"
1190 DATA "095B2A025BC3207E32805
B3A0C8B473A095B32075B3A05B4FC5C
DA47E313079B3C32075B020F13A085
B3C32085B85200D3A065C3307E00402
010009402013A085CEFF473A0D5CA04
73A085B6E6F86F3A075BFE0D01F1F1FE
61F67BC1CC81DCB1CCB"
1200 DATA "1DCB1CC81D3E50B4673A0
E33C6B0773A075B47E607F64067701F1
F1FE619B467701717E608F3A065B471
F1F1FE619B467701717E608F3A065
009461A21065B0C462603B012C92FB02
12C9"
1210 DATA "3F3F3F3F3F3F3F3F3F3F3F
CF3CF3CF3CF3CF3F3F3F3F3CF3CF3CF
7F7F7F7F7F3C3CF3F3F3F3F3F3F3F3F
FFFFFFFF3C3CF3F3F3F3F3F3F3F3F3F3F
7F7F7F7F7F3C3CF3F3F3F3F3F3F3F3F
7F7F7F7F7F0007E7E7E7E7E7E7E7E7E7E
7F7F7F7F0007E7E7E7E7E7E7E7E7E7E"
2000 LET xx=(255-8X)XLEN P#0/2
2010 POKE 23306,xx : POKE 23307,
x : POKE 23308,xx : POKE 23309,xx :
POKE 23310,x
2020 LET u=LEN P# : FOR n=1 TO u :
POKE 23310+n,CODE P*(n) : NEXT n
: POKE 23311,u,255
2030 LET u=USR 32256 : RETURN
```

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CAROL produces a picture of a Christmas tree, complete with candles and presents, on the screen of a 16K or 48K Spectrum. It will then play as many verses as you choose of either Jingle Bells or Good King Wenceslas.

Carol was written by R C Musket of Perranporth, Cornwall.

The large X in line 3000 is a graphic A, the rectangles in line 3030 and the following lines are graphic Bs. The parcels in lines 3010 and 3020 are graphic Cs.

```

410 NEXT F
420 RETURN
500 REM BELLS
510 INPUT ;"Number of verses";a
520 IF a=0 THEN RETURN
530 IF a<0 THEN GO TO 510
540 FOR f=1 TO a
550 BEEP .5,4: BEEP .5,4: BEEP
1,4
560 BEEP .5,4: BEEP .5,4: BEEP
1,4
570 BEEP .5,4: BEEP .5,7: BEEP
.5,0 BEEP .5,2
580 BEEP 2,4
590 BEEP .5,5: BEEP .5,5: BEEP
.5,5 BEEP .5,5
600 BEEP .5,5: BEEP .5,4: BEEP
.5,4 BEEP .5,4
610 BEEP .5,4: BEEP .5,2: BEEP
.5,2 BEEP .5,4
620 BEEP 1,2: BEEP 1,7
630 BEEP .5,4: BEEP .5,4: BEEP
1,4
640 BEEP .5,4: BEEP .5,4: BEEP
1,4
650 BEEP .5,4: BEEP .5,7: BEEP
.5,0 BEEP .5,2
660 BEEP .5,4
670 BEEP .5,5: BEEP .5,5: BEEP
.5,5 BEEP .5,5
680 BEEP .5,5: BEEP .5,4: BEEP
.5,4 BEEP .5,4
690 BEEP .5,7: BEEP .5,7: BEEP
.5,5 BEEP .5,2
700 BEEP 2,0
710 NEXT F
720 RETURN
999 STOP
1000 DATA BIN 11000001,BIN 01100
011,BIN 00110110,BIN 00011100,B1
N 00011100,BIN 00110110,BIN 0110
0011,BIN 11000001
1100 DATA BIN 00001000,BIN 00011
100,BIN 00011100,BIN 00011100,B1
N 00011100,BIN 00011100,BIN 0001
1100,BIN 00011100
1200 DATA BIN 11110111,BIN 11110
111,BIN 11110111,BIN 0,BIN 11110
111,BIN 11110111,BIN 11110111,B1
N 11110111
2300 FOR F=0 TO 7: READ A: POKE
USR "a"+F,A: NEXT F
2100 FOR F=0 TO 7: READ A: POKE
USR "b"+F,A: NEXT F
2200 FOR F=0 TO 7: READ A: POKE
USR "c"+F,A: NEXT F
2210 RETURN
3000 FLASH 1: INK 2: PAPER 4: PR
INT AT 0,13: "X": PAPER 6: PRINT
AT 12,0: "A": AT 12,31: "A": FLASH
0
3010 PAPER 0: PRINT AT 20,5: "c c
c c c c c c c"
3020 PAPER 0: PRINT AT 19,5: "c
c c c c c"
3030 PRINT AT 10,7: INK 1: "b"
3040 PRINT AT 10,19: INK 1: "b"
3050 PRINT AT 8,9: INK 2: "x"
3060 PRINT AT 8,19: INK 2: "x"
3070 PRINT AT 6,9: INK 7: "b"
3080 PRINT AT 6,17: INK 7: "b"
3090 PRINT AT 2,11: INK 6: "+"
3100 PRINT AT 2,15: INK 6: "+"
3110 PRINT AT 4,16: INK 3: "b"
3120 PRINT AT 4,10: INK 3: "b"
3130 PAPER 4: PRINT AT 5,13: INK
1: "x"
3140 PAPER 4: PRINT AT 4,12: INK
1: "x"
3150 PAPER 4: PRINT AT 4,14: INK
7: "x"
3160 PAPER 4: PRINT AT 9,15: INK
1: "x": AT 9,11: "x"
3170 PAPER 4: PRINT AT 11,13: IN
K 7: "x"
3180 PAPER 4: PRINT AT 7,15: INK
6: "x": AT 7,10: "x"
3190 PAPER 4: PRINT AT 11,17: IN
K 2: "x": AT 11,9: "x"
3330 RETURN

```

```

10 GO SUB 1000:
20 INK 7: BURDER 0: PAPER 0
30 LLS
35 INK 4
40 PRINT
50 PRINT "(12Xsp;95;1sp;195)"
55 PRINT "(12Xsp;0X1sp)"
60 PRINT "(11Xsp;95;3X1sp;195)"
65 PRINT "(11Xsp;5X1sp)"
70 PRINT "(10Xsp;95;5X1sp;195)"
75 PRINT "(10Xsp;7X1sp)"
80 PRINT "(9Xsp;95;7X1sp;195)"
85 PRINT "(9Xsp;9X1sp)"
90 PRINT "(8Xsp;95;9X1sp;195)"
95 PRINT "(8Xsp;11X1sp)"
100 PRINT "(7Xsp;95;11X1sp;195)"
105 PRINT "(7Xsp;13X1sp)"
106 INK 6
107 GO SUB 3000
108 PAPER 0
110 FOR f=1 TO 20
120 INK 6: PRINT AT f,13: "(2Xis
P)"
125 INK 3: PRINT AT f,0: "(1sp)"
:AT f,31: "(1sp)"
130 NEXT f
140 INK 7: PRINT AT 4,0: "MERRY"

```

```

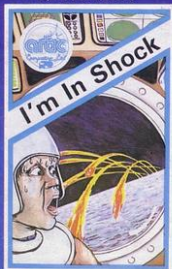
:AT 4,22: "CHRISTMAS"
150 INPUT ;"Carrol 1 OR 2?";a
160 IF a=1 THEN GO SUB 500
170 IF a=2 THEN GO SUB 200
180 GO TO 150
200 REM king
210 INPUT ;"Number of verses";a
220 IF a=0 THEN RETURN
230 IF a<0 THEN GO TO 210
235 FOR f=1 TO a
240 BEEP .5,9: BEEP .5,9: BEEP
.5,9 BEEP .5,11
250 BEEP .5,9: BEEP .5,9: BEEP
1,4
260 BEEP .5,6: BEEP .5,4: BEEP
.5,6 BEEP .5,8
270 BEEP 1,9: BEEP 1,9
280 BEEP .5,9: BEEP .5,9: BEEP
.5,9 BEEP .5,11
290 BEEP .5,9: BEEP .5,9: BEEP
1,4
300 BEEP .5,6: BEEP .5,4: BEEP
.5,6 BEEP .5,8
310 BEEP 1,9: BEEP 1,9
320 BEEP .5,16: BEEP .5,15: BEE
P .5,13: BEEP .5,11
330 BEEP .5,13: BEEP .5,11: BEE
P 1,9
340 BEEP .5,6: BEEP .5,4: BEEP
.5,6: BEEP .5,8
350 BEEP 1,9: BEEP 1,9
360 BEEP .5,4: BEEP .5,4: BEEP
.5,6 BEEP .5,8
370 BEEP .5,9: BEEP .5,9: BEEP
1,11
380 BEEP .5,16: BEEP .5,15: BEE
P .5,13: BEEP .5,11
390 BEEP 1,9: BEEP 1,16
400 BEEP 2,9

```

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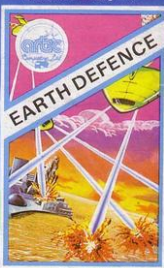
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