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ZX Spectrum 48K £7.50
Written by Neil Mottershead, Simon Brattel and

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traditional role playing gallies where 100 design the scenario.

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Invasion of the Body Snatchas
Rommel's Revenge
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Halls of the Things
The Dungeon Master

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Written by Martin H. Smith



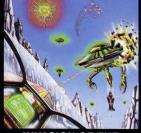
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Written by Martin Horsley.

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ZX Spectrum 48K

66 50

Written by Simon Brattel and Neil Mottershead.

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Sinclair Programs is published monthly by ECC Publications Ltd.

All departments 01-359 3525

London N1 4AQ

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,

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

© Copyright 1984 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

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

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

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

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



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RETTERS

Depth Charge

I AM WRITING in connection with the Depth Charge program listed in the October edition. I found that the number of depth charges remaining decreases only when the target is hit which, with respect to the authors, does not seem right. With the alteration and addition of two lines it can be remedied. Add: 421/LET/CH/=/CH-1/422/ PRINT/AT/2,9;CH/Change/ lines/425/and/5016/to/read:/ 425/IF/FEET/=/W/THEN/ GOTO/5000/5016/PRINT/ AT/3,9;H/

I might add that I found the game very entertaining and novel in its format. In the four weeks since I started computing I have not had much experience of the various magazines available but of those I have seen Sinclair User and Sinclair Programs are far and away the best. If that standard is normal I can look forward to a full and entertaining hobby

Keith Trim. Bridlington, E. Yorks.

ZX-81 Pokes

I HAVE compiled a list of POKEs and calls to the ROM which all ZX-81 users should find helpful when they are programming. They

RAND USR 963. Clears the program area.

RAND USR 3086. Scrolls the screen up one line. RAND USR 681. In FAST mode, prevents the report code from being displayed at the end of a program.

RAND USR 0. Clears the program area and RAMTOP. RAND USR 836. In FAST mode, loads a program and stops if it is self-starting. RAND USR 3292. Equiv-

alent to STOP. Poke 16510,0. Makes the first program line uneditable. Poke 16389,68. Sets up a minimal display file for 16K

RAND USR 3875. Equivalent to FAST. RAND USR 1476. Equiv-

alent to EDIT. RAND USR 930. Equivalent

to BREAK. RAND USR 757. In FAST mode, saves a program with-

out a name. RAND USR 2955. Equivalent to the ',' in a PRINT

statement

I have also discovered that, by pressing the 'SHIFT', 'V', and 'B' keys together, you achieve a result equivalent to 'BREAK'. By POKEing 16509,99 you achieve an effect similar to the NEW command on the BBC microcomputer. Your program will cease to function but can be returned to normal by POKEing 16509,0.

For 16K users, you can speed the SLOW mode considerably POKEing 16389,76. Be warned, however, that will result in you losing a great deal of your memory.

For almost all of the POKEs and calls listed, the size of your ZX-81 memory does not matter; in the two calls where it does, I have stated that it is for 16K users.

Gary Slinger, aged 13, Lincoln.

Better Slalom

I AM WRITING to say, first, about Richard Denton's program Scrambler, that I beat his score by 2,570. I scored 4,248 and would like to know if anyone can beat that. Second, about Steve Richards' program Slalom, I achieved a score of 6,231 but anyone can improve that by going to the far right-hand side in which no markers travel. The way to solve this is to change line 20 from:

PRINT RND*30;'T' to 20 PRINT AT 10. RND*31;'T

That would then prevent anyone cheating. Another point is that, if you go too far left, the cursor keys will operate backwards while, if you go too far right, report error 'B' will appear. To solve this the following may be typed-

81 IF A>31 THEN LET A = A - 1

91 IF A<0 THEN LET A = A + 1

Another point is if reactions are not very fast, you can change line 20 from: 20 PRINT AT RND*31;'T' to

20 PRINT AT your number between 10 and RND*31:'T'

That will give you an advance warning. I would also like to suggest how to make your soundless ZX-81 bleep. All you do is type 'FAST' new line 'RAND USR 823' new line.

> Gerald Shield. Chester-le-Street.

Inverse Spaces

I HAVE Sinclair Programs delivered monthly and have tried a number of the simpler programs and they have all worked well. In the last few months I have tried the bigger programs such as Ouasimodo, Slalom and Chopper Squad and I have discovered a problem concerning inverse

Although you mention those at the front of the magazine vou do not mention how to get an inverse space. Your magazine is brilliant at the moment but I can program only about half of the Spectrum programs correctly because the rest contain inverse

Could you enlighten me on this point, so that your magazine would become the highlight of the month in our household?

Michael Heaton. Egerton. Bolton.

· As explained in the graphics instructions at the front of the magazine each month, inverse characters are produced on the Spectrum by pressing CAPS SHIFT and INVERSE VID-EO, followed by the required character; and on the ZX-81 by going into graphics mode and pressing the required character. On both machines, when printing is black on a white background, an inverse space (isb) is a black square.

Werewolf's Lair

IN THE OCTOBER edition in the game Werewolf Lair a few mistakes were made. The peeks which make sure that you or the monster do not go through the walls of the maze are set up for the wrong graphics. To solve this you can either change all the graphic Hs in the maze plot to graphic As or change the 8 in lines 370, 570 and 630 to 136. With the second method you must also change the graphic As in lines 90 and 290 to graphics Hs.

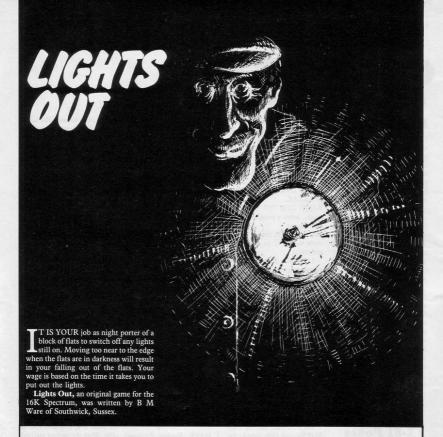
I managed a high score of

Tom Liptrot. Burscough. Lancashire.

Worm Record

IN Sinclair Programs, October, 1983, Stephen Harris said he had scored a new record 151,105 on the Worm game. Recently I scored 176,400, which is a new record. I completed stage seven successfully and reached it a second time.

> Peter Clarke, Solihull. W. Midlands.



5 BORDER 5: PAPER 5: CLS 10 GO SUB 500 .

15 RESTORE

20 FUR n=0 TO 7: READ r: PUKE USR "A"+n,r: NEXT n

30 DATA BIN 10011001 DATA BIN 01011010: DATA BIN 00111100: DA TA BIN 00011000: DATA BIN 100110 01 DATA BIN 11111111: DATA BIN 00000000 DATA BIN 00000000

40 FOR n=0 TO 7: READ r: PUKE SR "B"+n,r: NEXT n

50 DATA BIN 00000000 DATA BIN 00010000: DATA BIN 00111000: DA TA BIN 01111100: DATA BIN 111111 DATA BIN 11111111 DATA BIN 11111111: DATA BIN 11111111

60 LET t=0: LET l=0: LET ti=0 70 LET z=19: LET y=15 75 PRINT AT 20.0, INK 4,"(32*

5:32*98)"

80 FOR n=20 TO 5 STEP -1: PRIN T AT n.9; INK 1;"(24*1*)": NEXT n: PRINT AT 4,10; INK 1;"(10*193

90 IF SCREENS (2,9)=""" THEN LET t=t+1: LET l=1+1: BEEP .007 .20

95 IF 1=192 THEN GO TO 300 100 PRINT AT z,y; INK 1;"(98)": LET z=z+(INKEY#="6" AND z(20)-(INKEY#="7" AND z>5>: LET y=y+(IN KEY#="8")-(INKEY#="5")

110 PRINT AT 0,0) INK 1; "WAGE:"
;t;AT 0,10; INK 1; "TIME:";INT ti JAT 0,21; INK 1; "LIGHTS: "; 1: LET ti=ti+.2

115 IF 9=8 OR 9=21 THEN GO TO 200

120 BEEP 0.007,30 130 GO TO 90

200 FOR n=z TO 20: PRINT AT n.9 INK 1; "a"; AT n-1, y; " " BEEP 0 .01,10: NEXT n 205 LET t=t-t;

210 PRINT AT 0,0;" "JAT 0,20) INT L WAGE 220 PRINT AT 4,8, "ANOTHER GO (4

230 IF INKEYS="4" THEN CLS : G O TO 15

240 IF INKEY#="n" THEN CLS : S

250 GO TO 230

.7 and 8.

300 FOR M=1 TO 2' FOR n=-10 TO
10' BEEP .01'n' NEXT n' FOR n=10
TO -10 STEP -1' BEEP .01'n' NEX T n' NEXT M

310 LET t=t+50: LET 1=0: CLS : GO TO 70

500 PRINT AT 0,9, "LIGHTS OUT !" AT 0.9; OVER 1;" 510 PRINT " Your job as a t Porter is to run around the b lock of flatsswichting any light s out that are still on. Move around the flats with keys 5,6

But watch out you m ay fall out of the flats if you move to far to the edge. Your w 198 15 deducted by the tim e you take

Putting all lights

PRESS ANY KEY."
520 IF INKEY#="" THEN GO TO 52 0

530 CLS · RETURN 540 SAVE "lights out" LINE 5

SOFTFOCUS

New this month. Softfocus will be a regular feature, providing short reviews of the newest software for the Sinclair computers. This month the focus is on the way ahead for software.

LATE last year, programs produced for the Spectrum Christmas market pointed the way for software in 1984. Ant Attack by Ouicksilva and Android 2 by Vortex both included stunning animated graphics routines, setting a new standard for other programmers.

Artic Computing has now produced Bear Bovver for the 48K Spectrum, a shining example of animated graphics, which are used in an arcade-style game. Satan's Pendulum by Minatron Com-



puting (48K) also includes animated sequences and, for keen programmers, gives a guide to how they were produced in the accompanying booklet.

While such excellent original software is being produced, software houses which cling to versions of Space Invaders and Pac-man are looking more and more outdated. The Romik Galactic Trooper and 3D Monster Chase are competent and bug-free games but do not have sufficient new ideas to make them attractive in 1984.

Realistic screen displays are becoming more and more common. Wheelie, from Microsphere for the 48K Spectrum, sends the player hurtling past obstacles and through caverns in search of the ghost rider. In the program, crash sequences are very graphic and tend towards the tasteless, while in Deathchase from Micromega-16K Spectrum-the view from a motorcycle is shown in realistic detail but the death of another rider is not depicted at all.

Problems as to how players should be made to suffer for the misdeeds of their on-screen persona, whether they should watch deaths in graphic detail or miss them completely, are resolved in the new Automata game for the 48K Spectrum, Pi-Eved. The hero, the Pi-man, wanders from pub to pub, drinking beer and avoiding obstacles. Wandering into other buildings for safety results in the telling of very bad jokes, a fate far worse for the player than any graphics representation could be.

With programs such as the Legend Valhalla (48K) and Melbourne House Hobbit (48K) on sale, other adventures fade into insignificance. The Island, produced by Virgin Games for the 48K Spectrum, is an enjoyable adventure, with added sound effects and short games contained in it. Demon Lord by Javlin Software is an enormous adventure, made up of four 48K adventures on two separate cassettes. Pictures are given, in painstaking detail, of each location, but the vocabulary is small, making it extremely difficult and very frustrating to play.

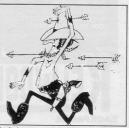
Computer magazines receive a constant stream of letters enquiring about software other than games for computers. Mansfield Park and Nineteenth Century England, both by Sussex



Software for the 48K Spectrum, act as secondary-school-level revision aids. Their subjects are those suggested by the titles and each subject is divided into different areas, for which questions and detailed answers are given on which the user can be tested.

New ZX-81 games, so plentiful a year ago, are becoming rarer and rarer. Contrast Software has produced Fort Apache, a 16K strategy game, in which the player takes the part of a general with 300 men to command. laying seige to an Apache fort. It is a game involving thought and forward planning rather than fast reactions.

Cyborg Wars, by Stratagem Cybernetics, is a more complex 16K strategy game involving up to four players in an imaginary galactic conflict between four nations of androids. The game relies



more strongly on the instruction booklet than could be expected from a computer program but it is a carefullythought-out and exciting game.

Three games for the ZX-81 are included on the cassette accompanying the book ZX-81/TS-1000 Programming for Young Programmers, published by McGraw Hill. Bomb Run, written in machine code for the 1K ZX-81, is a version of the popular City Lander type of program in which the player must bomb buildings from an aircraft to avoid running into them.

Mazer, also for the 1K ZX-81, is a simple maze game in which the aim is to avoid the ghost for as long as possible. More complicated is Golems, on the same cassette, for the 16K ZX-81, a strategy and fantasy adventure in which the aim is to outwit the Lord of the Black Tower.

More detailed reviews of all these games, together with their respective Gilbert Factors, can be found in Sinclair



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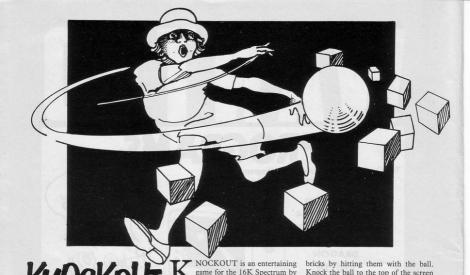
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REWARD



Mark Birch, aged 14, of Kid- when you have cleared a sheet of bricks derminster, Worcestershire. Using your and you will receive a bonus before six lives you have to clear the screen of advancing to another sheet. LET hi=0: LET l=5: LET sh=1 2 DATA "a",255,129,129,129,12

9,129,129,255,"b",0,24,36,66,66, 36,24,0 3 DATA "c",3,6,12,25,51,102,2 04,248,"d",255,0,0,255,0,0,0,0,"

e",192,96,48,152,204,102,51,31 4 DATA "f",123,142,156,185,24 3,102,204,248,"9",222,113,57,157 ,207,102,51,31,"h",24,36,66,195, 231,126,60,0

6 RESTURE 2

3 FOR f=1 TO 8: READ as FOR 9=0 TO 7: READ a: POKE USR a#+9; a: NEXT 9: NEXT F

9 GO SUB 9000

10 LET s=0

20 LET b=INT ((RND*10)*2)+1: L ET x=20: LET y=b: LET ud=-1: LET ln=i

21 LET x1=x: LET 91=9

30 LET as="cde"

40 LET b%="<u>aaaaaaaaaaaaaaaaaaa</u> aaaaaaaaaa."

50 PLOT 2,2: DRAW 0,171: DRAW 251,0: DRAW 0,-171: DRAW -251,0: PLOT 4,4: DRAW 0,167: DRAW 247, 0: DRAW 0:-167: DRAW -247:0

60 FUR f=2 TO 3: PRINT AT (.1) INK 2) bs: NEXT f: FOR f=6 TO 8: PRINT AT fold INK 106#: NEXT fo FUR f=10 TO 12: PRINT AT f,1; 1 NK INT (RND#2)+1;6#: NEXT P

68 PRINT AT 0,25; "lives") 1

69 PRINT AT 0,10; "SCORE"

70 PRINT AT x1,91)" ")AT x,9) INK 3; "b"; AT 20, b; INK 0; a\$

72 PRINT AT 20,6;"

74 LET b=b+(INKEYs="8")-(INKEY 第="5")

75 LET 6=6+(INKEY=="9")*2-(INK EY#="4")*2

76 IF b>=29 THEN LET b=28

77 IF b<=0 THEN LET b=1

80 LET x1=x: LET 91=9: PRINT A T 20,6) INK 0;a\$

90 LET x=x+ud: LET y=y+lm 91 IF s=(sh*2400) AND x<=1 THE

GO TO 7000 95 IF 94=0 THEN LET In=1: LET

4=9

96 IF 9>=31 THEN LET In=-1: L ET 9=29

97 IF x<=0 THEN LET wd=1: LET x=2

98 IF x=21 THEN GO TO 5000

100 IF ATTR (x, y)=59 THEN GO T 0 110

102 IF ATTR (x,9)<>56 THEN LET s=s+10: PRINT AT 0,16;s;AT x1,4 1)" ")AT x,9) INK 3)"b": BEEP .1 ,20: LET ud=ud*-1

103 IF x=20 AND y=6 THEN LET U d=-1: LET lr=-1: PRINT AT x1,91; " ")AT x, y) "f": BEEP .1, 10: IF R ND>.85 THEN LET x=x-1

104 IF x=20 AND y=b+1 THEN ud=-1: PRINT AT x1,91;" ";AT x,

```
9;"h": BEEP .1,10: IF RND).85 TH 7075 FOR 9=1 TO 10: BEEP b(9),a(
EN TLET X=X-1
 105 IF x=20 AND y=6+2 THEN LET 7076 BEEP 2.0
 " ";AT x,9;"9": BEEP .1,10: IF
RND>.85 THEN LET x=x-1
1000 GO TO 70
5000 REM DROP !!!
5010 PRINT AT 17,7; FLASH 1; "dro 8888 STUP
Pred one !!!"
5020 FUR f=1 TU 5: BEEP .5,10: 8 9002 BEEP .1,10
EEP . 2,0 NEXT f
5000 LET 1=1-1: PRINT AT 0,30; F
5040 IF 1<0 THEN GO TO 6000 ;"8 = slow right";AT 6,15;"9 = f
5050 PRINT AT 17,7;"
5652 GO TO 5666
5055 GO TO 9000
5060 GO TO 68
6000 REM end
6010 PRINT AT 10,1; FLASH 1; BR1 Points."
CHT 1; 1NK 1; PAPER 7;" . . . . . . . . . . . . . . . .
he end
6020 IF s<=h1 THEN GO TO 6100
6030 INPUT "what is your name ?"
了竹事
6040 LET hi=s
6100 CLS
6110 PRINT AT 10,0; "atoday's hig 9040 PRINT AT 20,0; "Press enter
hest score is ";hi' INK 2; "ait
was scored by ";m$'' INK 1; "Pres 9041 BEEP .1,18
s any key to restart game"
6120 IF INKEY$<>"" THEN GO TO 6
6130 IF INKEY#="" THEN GO TO 61
6140 IF INKEY$K>"" THEN GO TO 6
146
6150 CLS : LET 1=5: LET s=0: GO
TU 10
7000 DATA 0,12,10,7,7,7,5,3,0,0
7001 LET sh=sh+1
7010 DATA .4,.4,.65,.4,.4,.2,.1,
.11.21.4
7020 DIM a(10) DIM b(10)
7021 PRINT AT 6,10; FLASH 1; "You
did it !";AT 9,12; 1NK 1; FLASH BEEP b(f),a(f): NEXT f: NEXT 9
SH 17"G A S P ! !"
7030 RESTORE 7000: FOR f=1 TO 10
: READ a: LET a(f)=a: NEXT f
7040 RESTORE 7010: FOR f=1 TO 10 9093 FOR f=1 TO 4: BEEP .3,8: NE
: READ a: LET b(f)=a: NEXT f
7050 FOR f=1 TO 3: FOR 9=1 TO 10 NEXT f: BEEP .1,8: BEEP .1,10: B
BEEP b(9),a(9): NEXT 9: NEXT f EEP .1,8: DEEP .1,6: BEEP .1,3:
7060 BEEP 1,0
7070 FOR f=1 TO 2: FOR 9=1 TO 10
: BEEP b(9),(a(9))+3: NEXT 9: NE
XT f
```

9): NEXT 9 ud=-1: LET lr=1: PRINT AT x1.91 7077 CLS : PRINT AT 10,10; FLASH 1) "GET READY ..." 7080 FOR f=1 TO 250: NEXT f 7090 CLS 7091 GO TO 20 9000 CLS : REM instructions 9010 PRINT AT 2,0;" """ << < > >>" LASH 1)1+1: PRUSE 180: PRINT AT 9011 BEEP .1,10 8,30; FLASH 1)1: PAUSE 180: IF 1 9020 INK 2: PRINT AT 5,0;"4 = fa >=0 THEN PRINT AT 0,30:1 st left"'"5 = slow left";AT 5,15 ast right" 9021 BEEP .1,10 5051 LET x=19: LET y=b: LET ud=- 9023 PRINT: INK 1; "cde"; INK 0; " = your base"' INK 3;" b"; INK 0;" = the ball"' INK 2;"asa"; I NK 0;" = the walls" 9024 BEEP .1,10 9025 PRINT INK 0; "Each a = 10 9026 BEEP .1,10 9030 INK 0: PRINT AT 14,0;" The object of the game is to hit a 11 of the bricks out of thewalls .when all out/knock the ball to the top of the screen." 9031 BEEP .1,10 to start": INPUT is 9050 DATA 10,22,10,8,6,3,6,8,10 9060 DATA .1,.1,.3,.3,.3,.3,.3,.3,. 3,.3 9061 DIM a(100): DIM b(100) 9062 RESTORE 9050: FOR f=1 TO 9: READ as LET a(f)=as NEXT f 9063 RESTORE 9060: FOR f=1 TO 9: READ a: LET b(f)=a: NEXT f 9070 DATA 11,11,11,11,11,11,13,1 9071 RESTORE 9070: FOR f=10 TO 1 7: READ a: LET a(f)=a: NEXT f: F OR f=10 TO 17' LET b(f)=,3' NEXT 4 9096 FUR 9=1 TO 2: FUR f=1 TO 9: 1;"W 0 W";AT 15,8; INK 2; FLA 9091 FOR f=10 TO 18: BEEP b(f),a (f): NEXT f 9092 FOR f=1 TO 9: BEEP b(f)/a(f)): NEXT f XT f: FOR f=1 TO 2: BEEP .3,10: BEEP .1,1' BEEP 1,3 9098 FOR f=1 TO 200: NEXT f 9899 CLS 9100 RETURN

ABF

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1 CLS

5 LET POS=INT (RND*5): LET X= 0: LET score=0: LET shots=20: LE T h=0: FOR n=USR "a" TO USR "c"+ 7: POKE n.RND*255: NEXT n

10 FOR a=0 TO 31-4 20 PRINT AT Pos, a; " (194-193-9

30 PRINT AT 21,x;" (193:198:19

40 LET x=x+(INKEY#="8" AND x<2 5)-(1NKEY#="5" AND x>0) 50 IF INKEY#="0" THEN GO SUB 199

55 PRINT AT 14,27; "score"; AT 1 5,29; score; AT 17,27; "shots"; AT 1 8,30; shots; " 60 NEXT

70 PRINT AT Pos,31-4;" LET Pos=INT (RND#5): GO TO 10: 100 FOR z=20 TO Pos+1 STEP -13 PRINT AT 2,x+2;"!";AT z+1,x+2;"

: LET a=a+.5: IF a>=28 THEN LE T a=0: PRINT AT Pos, 28; 105 PRINT AT Pos, 3," (194:193:9 7)": NEXT z

Tim IF SCREENS (Pos.x+2)()" " T HEN PRINT AT Pos.x-1; "aaaaaa": LET score=score+(5-Pos)*10: FOR V=0 TO 10: BEEP .001,30: NEXT V IFT het

120 LET shots=shots-1: IF shots =0 THEN GO TO 150 130 IF h=1 THEN LET h=0: PRINT AT Pos, 0;

": LET a=RND#20: GO T

135 PRINT AT Pos+1,0,"

140 PETURN 150 PRINT AT 10,12,"GAME OVER" 160 PRINT AT 15,29;score;AT 18,30;"00": BEEP 1,10: RUN

PIDER SHOOT is a simple but fast beginners' program for the 16K Spectrum. Shoot at the spiders as they scurry across the screen. You have 20 shots to eliminate as many spiders as possible. Use keys 5 and 8 to move left and right and 0 to shoot. Submitted by Darren McSweeney of Barrow-in-Furness, Cumbria.





0 20





TAR BLAST, submitted by Neil Smith of Bromley, Kent, is a beginners' program for the 16K Spectrum. Guide your spaceship round the screen, avoiding your trail and the exploding stars. Use key Z to move left, X to move right, J to move down and I to move up.

18 POKE 23658.8: LET H=8 20 LET S=0 30 BORDER 0: PAPER 0: INK 7: C

40 PLOT 0,0: DRAW 255,0: DRAW

0,175: DRAW -255,0: DRAW 0,-175 50 LET X=120: LET Y=86 60 PLOT X, Y

70 LET A=INT (RND*253)+2 80 LET B=INT (RND*173)+2

90 PLOT A.B

100 LET AS=INKEYS 110 IF A\$<>"Z" AND A\$<>"X" AND A#K>"J" AND A#K>"I" THEN GO TO 170

120 IF AS="2" THEN LET X=X-1: IF POINT (X-1,Y)=1 THEN GO TO 1 90

130 IF A = "X" THEN LET X=X+1: IF POINT (X+1,Y)=1 THEN GO TO 1 90

140 IF AS="J" THEN LET Y=Y-1: IF POINT (X,Y-1)=1 THEN GO TO 1 90

150 IF 8 = "I" THEN LET Y=Y+1: IF POINT (X,Y+1)=1 THEN GO TO 1 99

160 LET S=S+1 170 IF S>H THEN LET H=S: BEEP .005,10

175 BEEP .005,45

180 GD TO 60 190 CLS : PRINT "Bad luck you h it one of the", "exploding stars.

200 PRINT AT 4,4; "But you did &

core 210 PRINT AT 10,4, "The high sco re is "th

220 PRINT AT 21,0; "Press any ke 220 PRINT HT 21,0,"Pr 9 to Play again." 230 PAUSE 0: PAUSE 0 240 CLS : GO TO 20



DRAWER

OHN LITTLE of Dumfriesshire, Scotland submitted Pattern Drawer for the 16K Spectrum. The program demonstrates the power of the Spectrum graphics commands in three colourful routines, including one which draws a moire pattern.

1 INK 0: BURDER 7: PAPER 7: C

10 PRINT AT 0.0; "Press the app ropriate letter. After any rou time, Pressing r will return y ou to this menu."

30 PRINT AT 5,0; "(a)receeding rectangle ",,"(b)moire Patterns ",,"(c)tw

40 IF INKEY#="" THEN GO TO 40 50 IF INKEY#="a" THEN GO SUB 300

51 IF INKEYS="b" THEN GO SUB

52 IF INKEY#="c" THEN GO SUB

60 GO TO 1 100 CLS 101 LET 1=1

101 LET 1=1 120 LET x=0: LET x1=255: LET y=

130 PLOT OVER 1/x/9 DRAW OVE

R 1; INK 1:X1,9: LET 9=941: LET X1=X1-6: LET X=X+3: IF 9(=175 AN D X1)-255 THEN GO TO 130 140 LET 1=1+1: IF 1(7 THEN GO TO 120

150 CLS 160 PRINT FLASH 1;AT 11,2;" PR ESS R TO RETURN" 190 IF INKEY#<>"r" THEN GO TO

190 199 RETURN 200 CLS

201 LET 1=1 205 LET x=0: LET x1=175 210 PLOT x.0: DRAW INK i)x1,17 5: PLOT 0,x: DRAW INK i)175,x1 220 LET x1=x1-8: LET x=x+4: IF x<=175 THEN GO TO 210 225 FOR r=0 TO 87 STEP 8: INK 7

-i: CIRCLE UVER 1:87.87, r: NEXT r 230 IF i<=6 THEN LET 1=1+1: GO

230 IF 10=6 THEN LET 1=1+1: GO TO 205 260 PRINT FLASH 1:AT 11:0:"

PRESS R TO RETURN"
290 IF INKEY®<>"" THEN GO TO
290
290 PETIEN

300 LET x=0: LET y=0: LET x1=25 5: LET x2=0 LET x3=-255: LET x4 -0: LET y1=0: LET y2=175: LET y3 =0: LET y4=-175

320 PLOT x,9: INK 1: DRAW OVER 1;x1,91: DRAW OVER 1;x2,92: DR AW OVER 1;x3,93: DRAW OVER 1;x 4,94

330 LET x=x+2: LET y=y+2: LET x 1=x1-4: LET x3=x3+4: LET y2=y2-4 : LET y4=y4+4: IF y<=175 THEN G O TO 320

935 LET i=i+1: IF i=6 THEN GO TO 348

336 GU TU 310 340 CLS

345 INK 0 360 PRINT FLASH 1;AT 11;0;" PRESS R TO RETURN " 390 IF INKEY#K>"r" THEN GO TO

399 RETURN

1 REM Programme: FRE-BYTE For: 48k Spectrum

3 REM This programme Provides an estimate of the amount of spare RRM available for programming.

4 REM The 'REM' statements should be omitted, and the data statements may be combined on one line.

5 REM The data elements are

set out as machine code instructions.

6 REM To use it enter: "PRINT USR 65356"

10 CLEAR 65355 20 FOR n=65356 TU 65366 30 READ a: PUKE n.a 40 NEXT n

50 DATA 205,26,31 60 DATA 42,178,92

70 DATA 237,66 80 DATA 68

90 DATA 77 100 DATA 201

100 DITTI LO

FREE BYTE

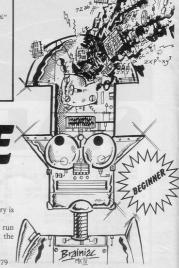
REE BYTE, written by Mrs F J
Tew of Ipswich, Suffolk, provides
an estimate of the amount of spare
RAM available for programming. Load
the program and then RUN and ENTER. Type NEW to remove the Basic
program and then put in your own

program. To find how much memory is left, type PRINT USR 65356.

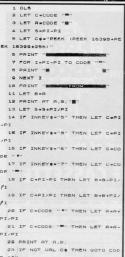
The program may be altered to run on the 16K machine by replacing the first two lines with:

10 CLEAR 32568

20 FOR n = 32569 TO 32579









RIFTING through space, you see an apparently deserted space station and decide to investigate. Once aboard, your only escape is to find your ship in the shuttle bay. You will have opportunities to fight monsters, jump gaps and find money en route. Make decisions by pressing 1 for first choice, or yes, and by pressing 2 for second choice, or no.

After entering the program listing, enter the following as direct commands: DIM A\$ (3,6)

LET T=0

The game must then be started by entering GOTO 1. To re-start the game enter the last three commands again and start with GOTO 1.

LET A\$ (1)="ROBOT"

LET A\$ (2)="ALIEN"

LET A\$ (3)="DALEK"

LET J=20

LET S = 20

Mini Adventure was written for the 1K ZX-81 by Russell Wooberry of Farnham, Surrey.

25 PRUSE 4E4

24 PRINT AT PI-PI, PI; "CRASHED

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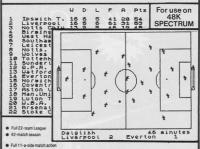


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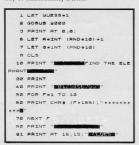
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Find the Elephant was written for the 16K ZX-81 by Piers Pettman, aged 12, of Amersham, Bucks.





FIND THE ELEPHANT

```
1040 RUN
 92 PRINT AT 17,15;"
                              212 IF C=2 THEN GOTO 3000
 23 PRINT AT 19,15;"
                                    220 IF N138 THEN PRINT "UP"
                                                                       2000 PRINT "
                                                                                        FIND THE ELE
                          .
 94 PRINT AT 19,18;
                                    230 IF N1 (A THEN PRINT TAB 16;"
                                                                       PHANT
                                                                       2010 PRINT
 9% FOR Gat TO M
                                   DOUN"
 98 PRINT AT 17,0; "GUESS :"; G
                                    240 IF NOB THEN PRINT TAB 16; "L
                                   EFT ..
 99 PPINT AT 6,15; "ENTER THE"
                                                                       2040 PRINT "DO YOU WANT: "
100 PRINT ST S. 15: "LETTER OF"
                                    250 IF NOB THEN PRINT THE 16: "R
                                                                       2050 PRINT
110 PRINT AT 10,15; "YOUR GUESS"
                                   IGHT"
                                                                       2070 PRINT TAS 5; "1 EASY CLUES"
                                    250 NEXT G
                                                                       2050 PRINT
120 INPUT LE
130 IF LEN L++>1 THEN GOTO 120
                                    300 PPINT AT 6,15; "YOU DIDNT FI
                                                                       2000 PRINT THE S: "2 DIFFICULT CL
140 IF CODE LES47 OF CODE LEGGE
                                   ND"; AT 5,15; "THE ELEPHANT"; AT 10
                                                                       UNA
                                                                       2100 PRINT
THEN GOTO 120
                                   .15: "IN 5 GOES"
                                    301 LET N1=8
144 PRINT AT 19,0; "LETTER: "; L.
                                                                       2110 PRINT "PRESS THE APPROPRIATE
150 PRINT AT 8.15: "NUMBER OF"
                                    302 LET NeB
                                                                        KMY"
                                    309 PRINT AT 12,15; "IT WAS AT "
                                                                       2111 PRINT
170 IF LEN NE (>1 THEN GOTO 160
                                   ; CHR# (A+37); ","; N
                                                                       2130 IF INKEYS="1" THEN GOTO 217
180 IF CODE NS>37 OR CODE NS<28
                                    340 GOTO 1003
THEN GOTO 160
                                    400 STOR
                                                                       2140 IF INKEYS - "2" THEN GOTO 215
190 LET NEUAL NE
                                   1000 PRINT AT 5,15; "CORRECT, IT";
191 PRINT AT 21,0; "NUMBER: "; NE
                                   AT 8,15; "UAS "; CHR# (N1+37); ",";
                                                                       2145 OOTO 2120
                                                                       2150 PRINT "DIFFICULT CLUES"
194 PRINT AT 6.15:"
                                   N
                                   1001 PRINT AT 10,15; "YOU FOUND T
                                                                       2160 LET C-2
                                   HE"
195 PPINT AT 8,15:"
                                                                       2151 FOR F-1 TO W
                                   1002 PRINT AT 12,15; "ELEPHANT IN
                                                                       2162 NEXT F
196 PRINT AT 10.15:"
                                   "; AT 14,15; G; " GOES"
                                                                       2165 RETURN
                                   1003 PRINT AT 17.16: "PRESS": AT 1
                                                                       2170 PRINT "ERSY CLUES"
197 PRINT ST 17.16:"
                                   5.16:" AZK
                                                                       2180 LET C=1
198 PRINT AT 18.16:"
                                   1010 PRINT RT N1+4 N+1: "+"
                                                                       2100 PATHON
200 LET N1=CODE L$-37
                                   1015 IF INKEY$ (>"" THEN GOTO 103
                                                                       3000 PRINT ABS (N1-A); " . " . ABS (N
                                                                       -83
202 PPINT AT N1+4,N+1; "%"
                                  0
210 IF N1=A AND N=B THEN GOTO 1
                                   1020 PRINT AT N1+4 N+1: "0"
                                                                       3010 QUTO 251
ppo
                                   1021 GOTO 1010
                                                                       4000 SAUE "ELEPHANE
211 PRINT ST 17.16:
                                   1030 015
                                                                       4010 PUN
```

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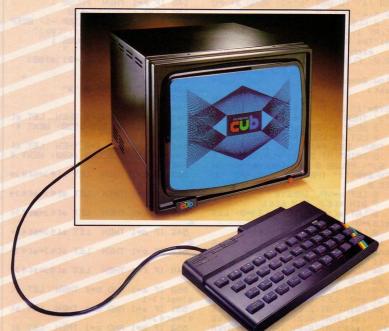
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BOWLING

1 LET n#="": LET ha=0: PAPER 0: BORDER 0: INK 6: CLS : FOR n= USR "a" TO USR "b"+7: READ a: PO KE ma: NEXT n 2 CLS : PRINT AT 0,10; "BOWLIN G";AT 1,10;"(7*193)";AT 2,5; INK 4; "The game has 10 rounds each containing 2 balls"; AT 10,0; FLASH 1;" SELECT LEVEL (1= slow 2=medium fast) " PAUSE 0 IF IN KEY##"1" OR INKEY##"2" OR INKEY# ="3" THEN GO TO 4 3 BEEP 1,-20: GO TO 2 4 LET P=(VAL INKEY\$)*2: IF P= 2 THEN LET P=1: POKE 23560,13

5 PRINT AT 20,5; "PLAYERS (1 t 6 6)": PAUSE 0: IF INKEY#>"6" OR INKEY#4"1" THEN BEEP 1,-20: GO TO 5

6 LET U. VAL INKEYS

7 DIM 4(6): DIM 8(6)

8 LET s(1)=0: LET s(2)=0: LET s(3)=0: LET s(4)=0

9 LET s(5)=0: LET s(6)=0 10 PRINT AT 15,3; "Press f to s

hoot the ball": PAUSE 50

11 GO SUB 2000

94 FOR r=1 TO 10: FOR 9=1 TO u 95 CLS : LET J=0: LET 9=0: LET a=0: LET b=0: LET c=0: LET d=0:

LET e=0: LET f=0

96 PRINT AT 2,2; INK 2; "PLAYER 1: ")s(1); AT 4,2; INK 4; "PLAYER 2: "15(2)1AT 6,2) INK 6: "PLAYER 3: ")s(3))AT 8,2) INK 5; "PLAYER 4: ";s(4);AT 10,2; INK 7; "PLRYE R 5: "18(5); AT 12,2; INK 3: "PLAY ER 6: "15(6)

97 PRINT AT 17,2; INK 2; BRIGH T 1) "ROUND: "ir

99 PRINT AT 0,0; "BOWLING"; AT 1 ,0;"(7*i93)"

100 PLOT 159,0: DRAW 0,175

110 PLOT 248,0: DRAW 0,175

111 PRINT AT 15,0; "HIGH: ";hs;"

by:";AT 16,0;n#

112 PRINT AT 2*4,1; "*"

115 INK 6: LET y=0: LET x=0 120 PRINT AT 1,22; "(93:SP:94:SP

19a:sp:9a)";AT 3,23;"(9a:sp:9a:s

P:9a)";AT 5,24;"(9a:sP:9a)";AT 7 , 25; "(9a)" 125 FOR w=1 TO 2: PAUSE 25

130 FOR n=21 TO 29: PRINT AT 21 n;"(9b)": PRINT AT 21, n-1;" ": IF PEEK 23560=102 THEN GO TO 50

135 IF P=1 THEN PAUSE 1

140 NEXT n: FOR n=28 TO 21 STEP -1: PRINT AT 21, m; "(9b)": PRINT AT 21, n+1;" ": IF PEEK 23560=10

2 THEN GO TO 500

145 IF P=1 THEN PAUSE 1

150 NEXT n: GO TO 130 500 FOR m=20 TO 0 STEP -1: BEEP

.01.20: PRINT AT m.n; "(9b)"

505 IF P=1 THEN PAUSE 1 510 PRINT AT m+1, n; "

515 GO SUB (3000+(n-21)*100)

520 NEXT M

530 PRINT AT 0,21,"

538 PRINT AT 2*4,0;"*" 539 POKE 23560,13

540 NEXT W

541 IF 9=1 AND J=1 THEN LET SC 4)=s(4)+30: GD SUB 1500: NEXT 4:

NEXT r 542 IF 9=1 AND J=0 THEN LET SC

9)=s(4)+15: GO SUB 1600: NEXT 4 NEXT r 543 IF a=1 THEN LET s(4)=s(4)+

544 IF b=1 THEN LET s(9)=s(9)+

3

545 IF C=1 THEN LET s(q)=s(q)+

546 IF d=1 THEN LET s(4)=s(4)+

547 IF e=1 THEN LET s(q)=s(q)+

548 IF f=1 THEN LET s(4)=s(4)+

550 IF a=1 AND b=1 THEN LET SC

9)=s(9)-1 551 IF a=1 AND c=1 THEN LET SC

4)=s(4)-1

552 IF b=1 AND c=1 THEN LET s(q)=s(q)-3

553 IF b=1 AND d=1 THEN

9)=8(9)-1 554 IF c=1 AND e=1 THEN LET SC

9)=\$(9)-1

555 IF cm1 AND dm1 THEN LET SC

4)=s(4)-3

556 IF d=1 AND e=1 THEN LET SC q) = s(q) - 3

557 IF d=1 AND f=1 THEN

q)=s(q)-1 558 IF e=1 AND f=1 THEN LET SC

9)=6(9)-1 659 LET J=0

660 BEEP .25,0: BEEP .25,1: BEE P .5,2: NEXT 4

LET SC

LET SC

670 NEXT n 680 GO TO 9000 1500 BEEP .25,-9: BEEP .25,-2: B EEP .25,2 BEEP .25,5 BEEP .25, 9: BEEP .25,-2: BEEP .25,7: BEEP .25,5: BEEP :25,9: BEEP .25,-2: BEEP .25,1: BEEP .25,7: BEEP .2 5,7: BEEP .25,1: BEEP .25,7: BEE P .25,4: BEEP .25,7: BEEP .25,-2 : BEEP .25,4: BEEP .25,5: BEEP . 25,7: BEEP .25,-2: BEEP .25,4: B EEP .25,5: BEEP .25,2 1501 RETURN 1600 GO SUB 1500: RETURN 2000 GO SUB 2300: BEEP .375,2: P AUSE 6.25: GO SUB 2300: BEEP .25 ,2: PAUSE 6.25: 2099 RETURN 2100 BEEP .125,9: BEEP .125,8: B EEP .125,9: BEEP .125,8: BEEP .1 25,9: BEEP .125,4: BEEP .125,7: BEEP .125,5: BEEP .25,2: PAUSE 6 .25: BEEP .125,-6: BEEP .125,-2: BEEP .125,2: BEEP .25,4: PAUSE 6.25 2101 RETURN 2300 GO SUB 2100: BEEP .125,-2: BEEP .125,1: BEEP .125,4: BEEP 25,5: PAUSE 6.25: BEEP .125,-2: GO SUB 2100: BEEP .125,-4: BEEP .125,5: BEEP .125,4: RETURN 3000 RETURN 3100 IF a=1 THEN RETURN 3110 LET a=1 3120 RETURN 3200 IF b=1 THEN RETURN 3210 IF m=1 THEN PRINT AT m, 22; ": LET b=1 3220 RETURN 3300 IF C=1 THEN RETURN 3310 IF m=3 THEN PRINT AT m, 23) 3320 IF m=1 THEN PRINT AT m, 22; " : LET C=1 3330 RETURN 3400 PRINT AT m, 22;" 3401 IF m=1 AND w=1 THEN LET J= 3405 IF m=1 THEN LET w=2: LET 9 =1 3410 RETURN 3500 IF d=1 THEN RETURN 3510 IF m=3 THEN PRINT AT m, 24; 3520 IF m=1 THEN PRINT AT m, 24; ": LET d=1 3530 RETURN 3600 IF e=1 THEN RETURN 3610 IF m=1 THEN PRINT AT M, 26;



P TO SIX players can take part.

In Bowling Alley, written for the 16K Spectrum by Erik Van Gorp of Belgium. Each game consists of 10 rounds, with each player having two shots per round. There are three skill levels, 1 to 3, level 1 being the slowest. Use key "F" to roll each bowl.

3800 RETURN 9000 PAUSE 100: CLS : PRINT AT 1 0,10; "Game over" 9005 PAUSE 100 9010 FOR n=1 TO 6: IF s(n) hs TH EN LET hs=s(n): GU SUB 9500 9011 NEXT n 9100 GO TO 2 9500 IF s(n)>=s(1) AND s(n)>=s(2) AND s(n)>=s(3) AND s(n)>=s(4) AND s(n) > = s(5) AND s(n) > = s(6) TH EN LET n#="": PRINT AT 20,0;"Yo ur name(max.12 tokens)Player ";n : INPUT na: IF LEN na>12 THEN G O TO 9500 9501 RETURN 9990 DATA 24,24,24,60,126,126,12 6,126,60,126,255,255,255,255,126 ,60 9999 SAVE "bowling" LINE 1: CO T 0 9999

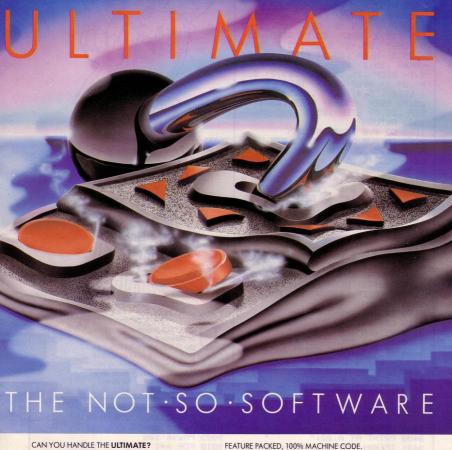
": LET @=1

3700 IF f=1 THEN

RETURN

3620 RETURN

3710 LET f=1



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	Iranz Am
1	Atic Atac

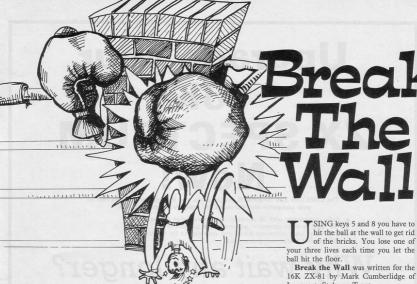
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Jet Pac - Expanded VIC 20

Ultimate Play The Game is a trade name of Ashby Computers and Graphics Ltd., The Green, Ashby de la Zouch, Leicestershire, Tel (0530) 411485. Dealer enquiries welcome.



	-M	Longport, Stoke-on-Trent.
4	FOR A=1 TO 100	65 LET F=F+(INKEY\$="9" AND F <2
5	NEXT A	9) - (INKEY#="5" AND F>1)
6	CLS	90 LET A=A+D
7	FAST	100 LET B=B+C
8	LET M=3	110 IF B=20 AND F+1=A THEN LET
9	LET S=0	c=-I
10	FOR A=0 TO 20	115 IF B=20 AND F+2=A THEN LET
20	PRINT AT A,0;"#";AT A,31;"#"	c= -1
30	NEXT A	116 IF B=1 THEN LET C=1
31	FOR J=0 TO 6 STEP 2	117 IF A=30 THEN LET D=-1
32	FOR K=0 TO 31	118 IF A=1 THEN LET D=1
33	PRINT AT J,K;"M"	119 IF B=21 THEN LET M=M-1
34	NEXT K	120 IF B=21 THEN PRINT AT E,F;"
35	NEXT J	na munioene
36	FOR G=1 TO 5 STEP 2	121 IF B=21 THEN GOTO 55
37	FOR H=1 TO 30	130 IF 8=20 AND F+1<>A THEN GOTO 70
38	PRINT AT G,H;"%"	131 IF 8=20 AND F+2 ()A THE
39	NEXT H	N GOTO 70
40	NEXT G	175 IF B=6 THEN LET 5=5+1
50	SLOW	178 IF M=0 THEN GOTO 200
.55	LET A=INT (PND *30) +2	180 GOTO 70
56	LET B=1 OTJ DWH3XA	200 PRINT "SCORE="; S
57	LET C=1	210 PRINT AT 11,1;"DO YOU WANT
58	LET D=-1	ANOTHER GO (Y/N) ?"
59	LET E=20	220 INPUT As
60	LET F=15	225 CL5
70	PRINT AT B,A;"0";AT B,A;" "	230 IF A\$="Y" THEN GOTO 1
80	PRINT AT E,F;" "	240 IF As="N" THEN LIST

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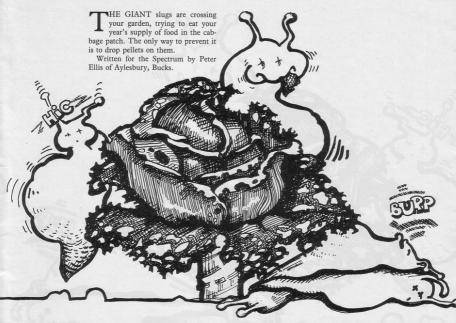
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WH SMITH



5 LÉT PS="SPECTRUM": INK 7: APER 0: BRIGHT 1: BORDER 1: CLS 10 GO SUB S000 20 CLS : GO SUB 7000 30 GO TO 9000 40 PRINT #1; "Press any key to continue' 50 PRUSE 0 60 LET hs=0 76 INK 2: PAPER 6: BURDER 4: C BURDER 6: REM set up 80 PRINT AT 0,0; INK 3; "(9k 91 9m:9n)" 90 PRINT AT 1,0, 1NK 3;"SHED" 100 PRINT AT 2.0; INK 3;"(4*98) 110 FOR n=0 TO 31 120 PRINT AT 3, n; INK 1; PAPER 5,"(9e)" 130 NEXT T 131 PRINT AT 0,18; "Slu9s alive= 132 PRINT AT 0,7; "Score= "

140 FOR n=0 TU 31 150 PRINT AT 21, m; INK 4; "(9))" 160 NEXT n 170 LET v=0: LET lp=0: LET z=1: LET p=1: LET m=16 180 FOR s=26 TO 0 STEP -1 190 LET as=INKEYS 200 IF #="m" AND P=1 THEN LET s=s+1: GO SUB 9500

210 IF as="P" THEN LET z=1 220 IF a#="9" THEN LET Z=-1 230 IF P=1 AND z=1 THEN LET m\$ " (<u>9d</u>) " 240 IF P=1 AND z=-1 THEN LET m

#=" (9c) " 250 TF P=0 AND z=1 THEN LET m# =" (9b) " 260 IF P=0 AND z=-1 THEN LET m

270 LET m=m+z+(m=4)-(m=29) 280 IF m=4 THEN LET P=1 285 PRINT AT 2,5;" ";AT 2,30;"

290 PRINT AT 2,m; INK 1;m\$
300 PRINT AT 20:s; INK 2;"(9f:9

9:9h:91) " 310 LET as=INKEYs 320 IF as="m" AND P=1 THEN GO SUB 9500

330 IF as="P" THEN LET z=1 340 IF as="9" THEN LET z=-LET z=-1 350 IF P=1 AND z=1 THEN LET ms " (9d) " 360 IF P=1 AND Z=-1 THEN LET M

#=" (9G) " 370 IF P=0 AND z=1 THEN LET m#

=" (9b) " 380 TF P=0 AND Z=-1 THEN LET M 9=" (9a) " 390 LET m=m+z+(m=4)-(m=29)

400 IF m=5 THEN LET P=1 410 PRINT AT 2,m; INK 1,m\$ 420 NEXT &

430 LET 1P=1P+1: PRINT AT 0,31; 10

440 IF 1P=3 THEN GO TO 8500

450 GO TO 180 6998 PAUSE 0 6999 STOP

7000 PRINT TAB 5; INK 4; PAPER 2 " SLUG ATTACK "

7010 PRINT 7020 PRINT " You must kill the s lugs before"' bage Patch" "they cross the cab

use:-"/>" 7030 PRINT '" >=left"'" =ri9ht"/" <m>=drop Pellets"

7040 PRINT '" Once you have droped a Pellet"' "you must run back to the SHED "'' to get another

slu9 Pellet" 7050 PRINT "" But you are very e nergetic and"'"keep running at

twice the slu9s"''"speed ' 7060 RETURN 8000 REM title

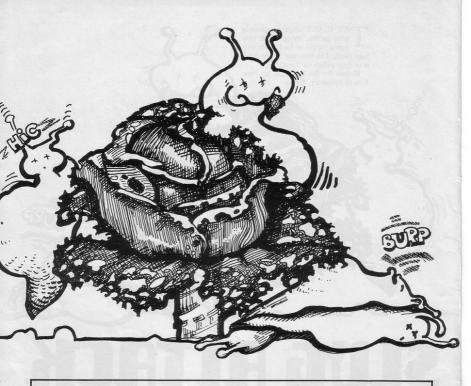
8010 FOR n=1 TO 5

8020 PLOT 37,160+n: DRAW -5,-020 +(2*n)),PI

8030 PLOT 32,135+n: DRAW -5,-(20 +(2*n)),-PI 8040 NEXT n

8050 FOR n=1 TO 5 8060 PLOT 50+n,160: DRAW 0,-65 8070 PLOT 50,95+n: DRAW 20,0 8080 NEXT n

8090 FOR n=1 TO 5 8100 PLUT 80+n, 150: DRAW 0, -55:



8110 NEXT n 8120 FOR n=1 TO 5 8130 CIRCLE 142,120,11+n 8150 PLOT 153+n, 120: DRAW 0,-25: DRAW -22-(2*n),0,-PI 8160 NEXT n 8170 PRINT AT 16,16; "ATTACK" 8200 FOR n=1 TO 5 8210 CIRCLE 230,10,n 8220 PLOT 230,20: DRAW -n,50: DR AW 2*n,0,-PI 9230 PLOT 230,20: DRAW n,50 8240 NEXT n 8280 PRINT #1; "Press any key to continue" 8290 PAUSE 0 8300 FOR n=0 TO 23 8310 RANDOMIZE USR 3280 8320 PRINT AT 21,70; "* SLUGS *" 8325 PAUSE 10 8330 NEXT n 8335 PAUSE 50 8340 RETURN 8500 CLS 8510 IF V>hs THEN LET hs=v INP UT "Your name";P# 8528 PRINT'" You starved becaus e the slugs "'"have eaten all y our food"''"But you did score "; vi" Points"'" v;" Points"'" The highest score is"'" ";hs;" by ";ps 8530 PRINT #1; "Press any key to Play again" 8535 FOR n=0 TO 50: NEXT n 8540 PAUSE 0

DRAW 30-(2*n),-2,PI: DRAW 0,50

8542 INK 7: PAPER 0: BRIGHT 1: B URDER 1: CLS 8545 CLS 9550 GO SUB 8000 8555 CLS 8560 GO SUB 7000 8570 PRINT #1; "Press any key to continue" 8580 PAUSE 0 8590 GO TO 70 9000 RESTORE 9070: FOR n=1 TO 15 9010 REBD 45 9020 FOR f=0 TO 7 9030 READ a. 9040 POKE USR as+f,a 9050 NEXT F 9060 NEXT n 9062 GO TO 40 9065 REM man < 9.54 9075 REM man >

9055 REM man \
9075 REM man \
9075 REM man \
9075 REM man \
9075 REM man \
90860 DATA "b".112,112,96,124,112,
112,72,100
9085 REM man carry \
9080 DATA "c".14,14,6,126,110,14,
18,54
9055 REM man carry \
9080 DATA "c".12,112,96,126,110,14,
18,54

9100 DATH "d",112,112,96,126,118, 112,72,190 9105 REM floor 9110 DATH "e",239,239,239,15,240, 247,247,247,247 9115 REM slu9 9120 DATH "f",0,64,32,31,31,55,6

9155 REM cabbase 9160 DATA "J",0,16,56,124,254,25 5,126,60 9165 REM shed 9170 DATA "k",0,0,0,0,3,15,63,25 5

9180 DATH "1",3,15,63,255,255,25 5,255,255 9198 DATH "m",192,248,252,255,25 5,255,255,25 9280 DATH "n",0,8,0,8,192,248,25 2,255 9285 REM Pellet 9210 DATH "0",0,8,0,24,24,0,0,0

9210 DATH "O",0,8,9,24,24,0,0,0 9500 REM kill slug 9510 FOR wm4 TO 20 9520 PRINT AT Mu,m+1) INK 2;" " 9530 BEEP .005,w 9540 PRINT AT Mu,m+1)" " 9550 PRINT AT Mu,m+1)" "

9560 IF m+1=s UR m+1=s+1 CR m+1= s+2 UR m+1=s+3 THEN PRINT RT 120 s> FLASH 1; INK 2; PAPER 4; "GE 199-0h-0;" BEEP 1.50 PRINT R 20,s;" "LET v=v+s: PRINT R T 0.13; V LET P=0 CU TU 180 9570 LET P=0 9760 RETURN PASSWORD

10 CLS | PRINT "Password?" 20 INPUT LINE P# 30 IF P#<>"something" THEN RA NDUMIZE USR 1000

NDUMIZE USR 1000 40 BURDER 0: PAPER 0: 1NK 0: L OAD "" 50 STOP

60 SAVE "Password?" LINE 10

ITH computer pirates being mentioned frequently, a growing number of simple program protection devices are being submitted to Sinclair Programs.

Password is a short routine to be entered at the beginning of a program. Those who enter CAPS SHIFT and 6 when the password is requested will be able to continue with the program. Other entries will mean that the program has to be re-loaded.

Written for the Spectrum by B Poulton of Stonehouse, Gloucestershire.



VOICE SOUND

(OACH

HNHLYSER

SE YOUR Spectrum and cassette recorder to produce patterns of your voice or any other sound on a television screen. Enter the program, connect your cassette recorder and Spectrum via the EAR sockets, and a visual representation of the sounds played on the cassette recorder will appear on the screen.

Voice Sound Analyser was written by Michael Fiernan of Loanhead, Midlothian.

2 IF PEEK 23760<25 THEN GU S US 9000 9 CLS 10 FOR n=0 TO 255 20 LET 1=USR 23760 21 LET 4=PEEK 23600 23 IF a>=175 THEN LET a=174 24 IF INKEYS="C" THEN GO TO 9

25 IF a=0 THEN GU TO 20 30 PLOT n.87 40 DRAW 0.a/2: DRAW 0.-a 50 NEXT n: GO TO 9

9800 FOR f=23760 TO 23784 9805 RERD a. POKE fa. NEXT f 9810 DATA 33.56.92.82.0.119.6.25 5.219.250.254.255.40.1.52.16.247 .201.0.0.0.0.0.0.0





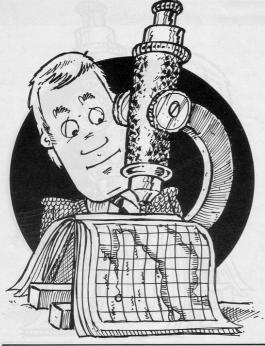
THE PROGRAM of the month is an educational program written for the 16K ZX-81 by William Turner, aged 12, of Staunton, Gloucester. He produced the maps with which he has had for some months. The program starts with a map of Great Britain and its surrounding countries.

By pressing "L" a dot will flash the aid of the Print 'n' Plotter film to pinpoint London, "E" will show Edinburgh, "B" Belfast and "C" Cardiff. "2" will give a map of London, "3" of Cardiff, "4" Belfast and "5" a map of Edinburgh. Press "1" to return

2 PRINT AT 10.11;"	170 PRINT AT 15,7;"
AT 11,12;"G.B.MAR";AT 12,11;"	";AT 15,29;"L""
Harmonia .	180 PRINT AT 17,8;"
3 PAUSE 4E4	P
4 CL5	190 PRINT AT 18,14;" "*********
5 GOTO 310	T 18,26;" Lange "
8 CLS	200 PRINT AT 19,14;"
10 PPINT AT 0,20;" " A"; AT 0, 028	
; "	210 PRINT AT 20,13;"
20 PRINT AT 1,25;"	
30 PRINT AT 2,25;"	220 PRINT AT 21,12; " "; AT 21
40 PRINT AT 3,28;"	22;"
50 PRINT AT 4,14;" = ***"; AT 4,	230 PRINT AT 0,0; "THIS IS A MAR
28; "[188]"	OF"; AT 1,0; "ENGLAND, WALES, "; AT
. 60 PRINT AT 5,14;" - ";AT 5,	2,0; "SCOTLAND, IRELAND, "; AT 4,0;
28; "	FANCE, SUEDEN, "; AT 3,0; "BELGIUM, H
70 PRINT AT 6,13;" ** ** AT	OLLAND, "; AT 5,0; "DENMARK AND"; AT
6,26;"	6,0; "GERMANY."
80 PRINT AT 7,15;" ####";AT 7,	250 IF INKEYS "L" THEN PRINT AT
29; "	19,20;"¶";AT 19,20;"■";AT 9,0;"
90 PRINT AT 5,15;"	LONDON"; AT 9,0;"
100 PRINT AT 9,14;" " ";AT 9,	360 IF INKEYS *"E" THEN PRINT AT
31) "="	11,18;""";AT 11,18;""";AT 9,0;"
110 PRINT AT 10,11;" ";AT	EDINBURGH"; AT 9,0;" "
10,30;" =="	270 IF INKEYS "" THEN PRINT AT
120 PRINT AT 11,9;"	11,13;"¶";AT 11,13;"∰";AT 9,0;"
AT 11,30;" ""	BELFAST"; AT 9,0;" "
130 PRINT AT 12,9;"	260 IF INKEY ."C" THEN PRINT AT
;AT 12,30;""	18,16;"F";AT 18,16;"E";AT 9,0;"
140 PRINT RT 13,5;"	CARDIFF"; AT 9,0;" "
■";AT 19,31;"■"	290 IF INKEY = "1" THEN GOTO 480
150 PRINT RT 14,9;"	
1";AT 14,01;"■"	291 IF INKEY # "2" THEN GOTO 709
160 PRINT AT 15,5;"	
m";AT 15,31;"m"	292 IF INKEY = "3" THEN GOTO 959

```
70 PRINT AT 16,7;"
";AT 15,29;"
80 PRINT AT 17,8;"
   .
90 PRINT AT 18,14;"
18,26;"
00 PRINT AT 19,14;"
10 PRINT AT 20,13;"-
20 PRINT AT 21,12;" " ; AT 21
30 PRINT AT 0,0; "THIS IS A MAP
F"; AT 1,0; "ENGLAND, WALES, "; AT
0; "SCOTLAND, IRELAND, "; RT 4,0; "
NCF, SWEDEN, "; AT 3,0; "BELGIUM, H
LAND, "; AT 5,0; "DENMARK AND"; AT
G: "GERMANY."
50 IF INKEYS .. 'L THEN PRINT AT
9,20;"¶";AT 19,20;"■";AT 9,0;"
NDON"; AT 9,0:"
BO IF INKEYS = "E" THEN PRINT AT
1,18;""";AT 11,18;""";AT 9,0;"
INBURGH"; AT 9,0;"
70 IF INKEYS "" THEN PRINT AT
1,13;"¶";AT 11,13;"∏";AT 9,0;"
LFAST"; AT 9,0;"
50 IF INKEYS="C" THEN PRINT AT
8,16;"F"; AT 18,16; "B"; AT 9,0;"
RDIFF"; AT 9,0;"
90 IF INKEY ."1" THEN GOTO 480
91 IF INKEYS="2" THEN GOTO 709
```

293	IF IN	KEY	4	THE	N GOT	0 128
9						
294	IF IN	KEY		THE	N GOT	0 187
9						
300	GOTO	250				
310	PRINT	AT	10,1	1;"		-
350	PRINT	AT	11,1	1;"	HELL	.0 "
330	PRINT	AT	12,1	1; "4		-
340	PRINT	AT	14,1	1;"	I AM	1 "
350	PRINT	AT	15,1	1;"	YOUR	
360	PRINT	AT	16,1	1;"	RIEND	LY"
370	PRINT	AT	17,1	1;"	BICUN	
350	PRINT	AT	20,6	; "WH	AT IS	YOUR
NAME	2"					
392	INPUT	A.				
400	PRINT	AT	20,6	.,	YOUR	NAME
IS	"	AT	21,1	1;8		
410	PAUSE	45				
420	CLS					
430	PRINT	AT	0,5;	"IN	THE P	OLLOW
ING P	MAP"; A	1	, 5; "Y	on 0	AN PE	ESS L
,E,C	AND B	S A	2,5	; "TC	MAKE	SOME
THIN	HAPP	"NE				
435	PRINT	AT	5,5)	"YOL	CAN	ALSO
PRES	5"; AT 1	5,9	"2,3	,4 F	ND 5.	44
435	PRINT	AT	8,9;	"0 -T	HE Q.	B MAP
900						
440	PRINT	AT	11,8	; "IF	YOU	GET B
ORED	THEN"	AT	12,1	Ø; "F	RESS	1."
445	PRINT	AT	21,4	; "PR	E55 F	NY KE
Y TO	START	•				
450	PAUSE	45				



450 PRINT AT 9,0;"ARE YOU"; AT 1	
0,0;"BORED"; AT 11,0; A\$;"?"	7
490 PRINT RT 12,0;"Y OR N ?"	7
495 INPUT B\$	7
500 IF B = "N" THEN GOTO 8	7
510 IF Bs="Y" THEN GOTO 530	RT
520 GOTO 495	7
530 CL5	7
540 PRINT AT 11,5; "HAUE YOU HAD	7
ENOUGH "; A&; " ?"	7
550 PRINT AT 12,15; "Y DR N ?"	AK
550 IF INKEYS="N" THEN GOTO 581	7
570 IF INKEYS="Y" THEN GOTO 584	
BY IT INCIDE THE GOTO OUR	**
580 GOTO 560	7
551 PRINT AT 9,0;" ";AT 1	8;
Ø,0;" ";AT 11,0;" "	7
562 CL5	3
583 GOTO 480 ·	7
564 CL5	,1
590 PRINT AT 11,12;"(12 401)	-
"	9
500 PRINT AT 12,15; "	ø,
510 IF INKEYS="N" THEN GOTO 540	-
520 IF INKEY ="Y" THEN GOTO 540	VICENS.
530 GOTO 510	12
540 CL5	8
550 PRINT RT 11,11;" ACCOUNT "; RT	AT
12,11;A0	8
550 PRUSE 4E4	8
670 CLS	.5
580 PRINT "PRESS ANY KEY TO STO	. 8

```
90 PAUSE 4E4
 00 CLS
 01 STOP
 00 DL 8
 18 PRINT AT 1,9;" LUTON AIRPO
 ";AT 1,29;" [";AT 0,25;"LAKE"
 20 PRINT AT 2,20;"-4"
 30 PRINT AT 3,28;"-""
 40 PRINT AT 4,25;" -
 50 PRINT AT 5,9;" - L
 60 PRINT AT 5,30;" . AT 6,9;"
 F - M &"; AT 6,23; " ""; AT 6,27;
  70 PRINT AT 7,9;" | - ";AT 7,1
  "...."; AT 7,25; " ...."
 80 PRINT AT 8,9;"4"; AT 8,21;"1"
  AT 8,25;" .....
 90 PRINT AT 9,0;"##### 1",AT 9
 4; "C ,"; AT 9,20; " "; AT 9,24; "
 00 PRINT AT 10,3;"# # .U"; AT 1
 9;"1.H";AT 10,14;"
  10 PRINT AT 11,0;"
 - AND AL --
 20 PRINT AT 12,5;"
  ,18;" F";AT 12,25;"
 30 PRINT AT 13.8:"
  13.30: "="
  40 PRINT AT 14,9;" ---
 50 PRINT AT 15,13;"
 160 PRINT AT 19,1; "#=R.THAMES"
 870 PRINT AT 20,1; "C=CENTRE OF
LONDON"
```

```
880 PRINT AT 15,1; "HeHEATHROU"
 890 PRINT AT 17,1; "W=WINDSOR"
 900 PRINT RT 0.0: "****** : RT 1.
0; "LONDON"; AT 2,0; "******"
 910 IF INKEYS "1" THEN GOTO 920
 915 GOTO 970
 920 PRINT AT 15,25; "ARE YOU": AT
 16,25; "BORED ?"
 930 IF INKEYS "Y" THEN GOTO 540
 940 IF INKEYS="N" THEN GOTO 950
 945 GOTO 930
 950 CL5
 950 GOTO 710
 970 IF INKEYS "" THEN GOTO 5
 971 IF INKEYS "3" THEN GOTO 989
 972 IF INKEY = "4" THEN GOTG 128
 973 IF INKEY . " THEN GOTO 158
 980 GOTO 910
 989 CLS
 990 PRINT RT 0,14; "Ber. SEVERN";
AT 0,31;"m"
1000 PRINT AT 1,30;"-#"
1010 PRINT AT 2,20; "GLOUCESTERME
1020 PRINT AT 3,11; "WALES"; AT 3,
29:"-101 "
1030 PRINT AT 4.28:"
1040 PRINT AT 5,28;"""
1050 PRINT AT 6.28:"""
1050 PRINT AT 7,3;"M"; AT 7,25;"M
-
1070 PRINT RT 8,0; " SURNSER
"; AT 8,25; "#"
1000 PRINT RT 9,0;" - ";RT 9
, 15; "NEWPORT MM
1090 PRINT AT 10,5;" AT 10,1
1100 PRINT AT 11,0;"
11,15;" . B. W. BRISTOL"
1110 PRINT AT 12,0;"
                        CAR
DIFFE.
1120 PRINT AT 13,0;"
; AT 13,15;" DOM
1130 PRINT ST 14.0:"
; AT 14,17; " ...."
1140 PRINT AT 15,0;"
# 15,25; "BATH"
PESTOL W"
HONNEL MI
ENGLAND"
1180 PRINT AT 19,0;"
                       ", AT 19
, 13; "
1190 PRINT AT 20,0;"#"
1200 PRINT AT 21,0;"&": AT 21,19;
  BRIDGEWATER
```

1910 PRINT AT 0,0; "******"; AT 1 ,0; "CAPDIFF"; AT 2,0; "******* 1920 IF INKEY := "1" THEN GOTO 123 1225 GOTO 1278 1230 PRINT AT 20,3; "ARE YOU"; AT 21,3; "BORED 7" 1240 IF INKEY ."N" THEN GOTO 989 1250 IF INKEY#="Y" THEN GOTO 840 1250 GOTO 1240 1970 IF INKEY = "0" THEN GOTO B 1271 IF INKEY = "2" THEN GOTO 709 1272 IF INKEY = "4" THEN GOTO 128 1273 IF INKEYS = "5" THEN GOTO 158 1280 GOTO 1220 1289 CLS 1290 PRINT AT 0,2;" AT 0,18; 1300 PRINT AT 1,19;" 1310 PRINT AT 2,0;" "LONDONDARY"; AT 2,19;" 1320 PRINT AT 3,19; "THE MENGLAND 1330 PRINT AT 4,7; "N. IRELAND"; AT 4,20;" 1340 PRINT AT 5,20; "* 1350 PRINT AT 5,21; "M 1350 PRINT AT 7.21:"M MM 1370 PRINT AT 8,11; "m"; AT 8,22; " 1380 PRINT RT 9,11;" ", RT 9, 1390 PRINT AT 10,11;" RT 10,

20; " 1400 PRINT AT 11,11; "**** ; AT 11, 18;" #""; AT 11,25;" 1410 PRINT AT 12,10;" AT 1 2,18;" - -1490 PRINT AT 13,0;" "; AT 13,10 :" BELFAST": AT 13.22:"M. MAN

1430 PRINT AT 14,1;" "; RT 14,12

;"""; AT 14,23;"# ## 1440 PRINT AT 15,2;" ";AT 15,23

1450 PRINT AT 16,3;" -"; AT 16,2 3;"M Ness

1460 PRINT AT 17,8;" . "; AT 17,99

1470 PRINT AT 18,6;"1"; AT 18,22;

1450 PRINT AT 19,6; "%BOUNDARY"; A T 19,24; "NOTES NOTES OF THE PARTY OF THE PA

1490 PRINT AT 20,6;" 1"; AT 20,20; 1500 PRINT AT 21,1; "EIRE " ; AT

1501 PRINT AT 5,0; "*******"; AT 6

.O: "BELFAST" 1502 PRINT AT 7.0; "*******

EXCENSION ** 1650 PRINT AT 11,3;"# # LOCH";A T 11,16; "DUNFERMINE-MONEY"; AT 13

1550 GOTO 1530

1570 GOTO 1510

,27) ". "; RT 2,31; "-"

""; AT 6,30; """""

-": AT 5 .20: "LOCH"

1640 PRINT AT 7,6: "LOCH"

, 23; "DUNDEE"

1889 CLS

3660

1560 IF INKEYS="0" THEN GOTO 8

1561 IF INKEY := "2" THEN GOTO 709

1562 IF INKEY :"3" THEN GOTO 959

1563 IF INKEYS="5" THEN GOTO 158

1591 PRINT AT 1,12; "W"LOCH"; AT 1

1592 PRINT AT 2,11; "-E TAY"; AT 2

1600 PRINT AT 3,10; """; AT 3,27;

1610 PRINT AT 4,15; "PERTH --

1620 PRINT AT 5,0; "MLOCH"; AT 5,9

1630 PRINT AT 5,1; "AWE"; AT 5,23;

1650 PRINT AT 8,1;"-";AT 8,6;"E.

1550 PRINT AT 9,0;""";AT 9,6;"K 1810 IF INKEYS "" THEN GOTO 8 1811 IF INKEYSH"2" THEN GOTO 709 1812 IF INKEYS="3" THEN GOTO 989

1813 IF INKEY = "4" THEN GOTO 128

1700 PRINT AT- 13,3; "M

1710 PRINT AT 14,3;" # # "; AT 14

1720 PRINT AT 15,3;"HORE"; AT 15,1

1730 PRINT AT 16,23;" ##"; AT 17,

0; "無 職"; AT 17,9; "W "; AT 17,24;

1740 PRINT AT 18,0; "MMM"; AT 18.8

1750 PRINT AT 0,0;"*******";AT 1,0; "EDINBURGH"; AT 2,0; "*****

1755 PRINT AT 19,1; "", AT 19,9;

1760 IF INKEYSH"1" THEN GOTO 177

1770 PRINT AT 20,25; "ARE YOU"; AT

1780 IF INKEYS="Y" THEN GOTO 540

1790 IF INKEYSH"N" THEN GOTO 158

"; AT 18,23; "EDINBURGH"

- WOCKER-"; AT 20,1; "BMS"; AT 20,7; "GLASGOU WELL"; AT 21,0; "m

3,18;"8 -

a;"PTH

...

. .

.17:"0"

Meen; AT 1

1920 GOTO 1760

1765 GOTO 1810

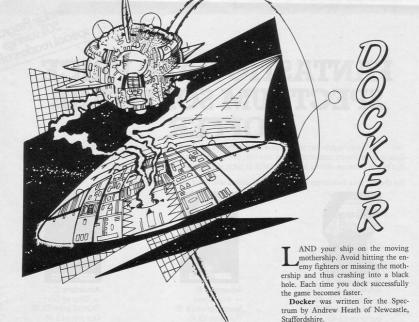
21,25; "BORED ?

1500 GOTO 1780

ATTION OF THE PERSON OF THE PE '1530 IF INKEYS="Y" THEN GOTO 540 1690 PRINT AT 12,3; "# "W LOMOND 1540 IF INKEYS="N" THEN GOTO 125 "" AT 12,26; "EN. SER

ARINE"; AT 9,22; "m BREN "" 1510 IF INKEY \$="1" THEN GOTO 182 1570 PRINT AT 10,22; "**** 1515 GOTO 1560 1620 PRINT AT 8,0; "ARE YOU"; AT 9 0; "BORED ?" .16: "F"

36



10 BORDER 0: PAPER 0 100 FUR f=USR "a" TU USR "h"+7 110 READ at PUKE that NEXT f

111 DATA 255,129,129,129,129,12 9,129,255

112 DATA 7,8,17,32,68,65,144,12 E

113 DATA 224,16,136,4,34,130,9,

114 DATA 0,0,1,3,7,63,127,255 115 DATA 0,0,128,192,224,252,25 4,255

116 DRTR 3,3,7,15,31,63,127,255 117 DRTR 192,192,224,240,248,25 ,254,255

118 DATA 195,195,219,255,219,21 9,195,195

119 LET t=50: LET sc=0 120 INK 7: PRINT AT 0,0; "OBJECT to land docking ship on mother ship. You have 50 counts to cl ear each Phase. 6 Phases to clear .The quicker you do it, the more Points.Keys:4-left:P-right:2 or 0-thrust: If you thrust in emerge ncy you get 5 counts added to yo

ur time." 122 PRINT AT 13.5; FLASH 1; "PRE SS ANY KEY" - PRUSE 0

123 INPUT "Do you want to Play, (Y/N)") 9事 124 IF 9\$="Y" OR 9\$="9" THEN C

GO TO 250 125 IF 9\$="N" OR 9\$="n" THEN S

126 IF 9\$<>"9" OR 9\$<>"Y" OR 9\$ <>"n" OR 9\$<>"N" OR 9\$<>"Yes" OR 9\$<>"YES" OR 9\$<>"no" OR 9\$<>"N

O" THEN GO TO 123 200 LET t=50: LET sc=0 250 LET m=.5

260 LET P=1

280 IF P>6 THEN GO TO 303 300 PRINT AT 10,1; "Get ready fo

Phase ";P;AT 12,5;" Press any key": PAUSE 6: CLS : LET a=21: LET s=INT (RND*25): IF sk3 THEN LET s=5

301 FOR f=0 TO 21 PRINT AT f.0) INK 2)"333" PRINT AT f.29) IN K 2)"333" NEXT f

303 IF P>6 THEN CLS PRINT AT 10,1; "Well done, you have beaten the computer at its own 9ame
with a score of "isc: GO TO 118
305 LET z=0: LET x=1NT (RND*25)
: IF x<3 THEN LET x=5

310 PRINT BT a.s. INK 7, "d(2*98

315 BEEP m, 10 320 LET s=s+1 330 PRINT AT A, 5-1,"

340 PRINT AT a.s. INK 7; "dK 2*98

350 IF \$>24 THEN LET \$=3. PRIN T AT 21,24; 400 IF t<10 THEN PRINT AT 0,9,

510 PRINT AT z,x; INK 7; "f9" 520 | FT 7=7+1

530 PRINT AT z-1,x," " 540 PRINT AT z,x, INK 7,"fg 560 PRINT AT 0,15,"SCORE=");

600 IF x<3 UR x>26 THEN CLS : BEEP .10,6: PRINT AT 11,10; "UNSU REFP CCESSFUL"; AT 12,5; "YOU SMASHED I NTO A WALL"; AT 15,6; "SCORE=")sc:

GO TO 9900 1000 IF INKEY#="4" THEN LET x=x -1: PRINT AT z,x+1;" "JAT Z,XJ

INK 7; "f9" 1100 IF INKEY\$="P" THEN LET x=x +1: PRINT AT z,x-1;" "JAT ZJXJ

INK 7,"f9" 1200 IF INKEY#="0" OR INKEY#="2" THEN LET z=z-1: PRINT AT z+1.x; INK 6;"bc";AT z,x; INK 7;"f9": LET t=t-5 1500 LET t=t-1: PRINT AT 0,3;"TI

1600 IF to THEN CLS : PRINT AT 10,10,"OUT OF TIME";AT 11,10;"S CORE=";sc: PRUSE 0: GO TO 9900

2000 IF ±>20 THEN CLS ' PRINT A T 10,5; "MISSION UNSUCCESSFUL"; AT 12,5; "YOU WENT TO THE BLACK HOL E";AT 13,5; "SCORE=")sc: GO TO 99 00

2010 PRINT AT 7,7,"" IF z=7 AND x=7 OR z=7 AND x=6 THEN GO TO 9990

2020 PRINT AT 15.6; "h" : IF z=15 AND x=6 OR z=15 AND x=5 THEN GO TO 9990

2030 PRINT AT 10,15; "h": IF z=10 AND x=15 OR z=10 AND x=14 THEN GO TO 9990

2040 PRINT AT 4,18,"h": IF z=4 A ND x=18 OR z=4 AND x=17 THEN GO TO 9990

2050 PRINT AT 7,24) "h" : IF z=7 A ND x=24 UR z=7 AND x=23 THEN GO 9990

2060 PRINT AT 12,23,"h": IF z=12 AND x=23 OR z=12 AND x=22 THEN GO TO 9990

2070 PRINT AT 16,18; "h" : IF z=16 AND x=18 OR z=16 AND x=17 THEN GO TO 9990

3000 IF x=s+1 AND z=20 UR x=s AN D z=20 OR x=s+2 AND z=20 OR x+1= s AND z=20 THEN BEEP .1,10: PRI NT AT 10,10, "SUCCESSFUL" LET ME m-.1: LET P=P+1: LET sc=sc+t: LE T t=50 CLS : GO TO 300 9000 GO TO 310

9900 PAUSE 0: PAUSE 0: CO TO 119 9990 CLS: BEEP .1.5: PRINT AT 1 9.2: "YOU SMASHED IN TO AN ENEMY" ;AT 11.15; "FIGHTER";AT 15.15; "S CORE=")sc: PAUSE 0: PAUSE 0: GO

TO 119

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N.B. We regret this offer applies to U.K. readers only. Allow 28 days for delivery. Orders must be received by 31st March 1984. Offer applies while stocks last.

Date

Remember. You must order at least two cassettes — any combination — to qualify for this special offer. Please add 50p post and packing (irrespective of size of order).

ESTROY VADER ships as you hurtle through space in pursuit of them. Move with the normal cursor keys and fire using 9. Written for the Spectrum by Lloyd Maddock of north London.



10 LET x=10: LET y=10: LET i=0 LET J=0

15 LET t=0 20 LET 9=25

25 LET as="PHANTOM": LET P=10 26 BORDER 7: PAPER 0: INK 7

30 LET score=0

40 FOR c=0 TO 7: READ b: POKE USR "b"+c/b: NEXT c: DATA 226,50 ,250,254,30,26,242,226

41 FOR d=0 TO 7: READ c: POKE USR "c"+d.c: NEXT d: DATA 32,23,

15,95,31,15,39,136

42 FOR e=0 TO 7: READ d: POKE USR "d"+e,d: NEXT e: DATA 4,232, 240,250,248,240,228,17

43 FOR C=0 TO 7' READ a: POKE USR "a"+c.a: NEXT c: DATA 71,76, 95,127,120,88,79,71

45 LET b=0

46 PRINT AT 8,1; "DESTRUY VADERuse normal key s for movein9 and 9 to fire.

s ships as you space in

destrory vader hurtle through Pursuit . you start with

255 laser shots.

level1=handest

47 PRINT AT 20,0; "Press any ke y to continue"

49 PRUSE 0: CLS

50 PRINT AT 10,10; "enter level (1-3)": INPUT c: CLS

55 IF c<1 OR c>3 THEN GO TO 5

60 PLOT 0,175: DRAW 7,-7: DRAW 241,0: DRAW 7,7: DRAW -7,-7: DR AW 0,-161: DRAW 7,-7: DRAW -7,7: DRAW -241,0: DRAW -7,-7: DRAW 7 ,7: DRAW 0,161

70 PLOT 0,175: DRAW 255,0: DRAW 0,-175: DRAW -255,0: DRAW 0,17

80 INK 7

100 PRINT AT x,9;" "

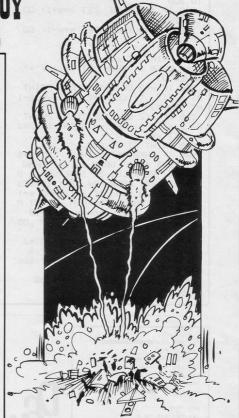
103 IF t=10 THEN GO SUB 510 104 IF t=10 THEN GO TO 110

105 LET e=1NT (RND*25)

106 IF e=19 THEN LET t=10: GO SUB 500 110 IF INKEY\$="5" THEN LET y=y

110 IF INKET%="5" | HEN LE| 9=9

120 IF INKEYS="8" THEN LET y=y+1



130 IF INKEY#="6" THEN LET x=x+1

140 IF INKEYS="7" THEN LET X=X

142 IF x>19 OR x<2 THEN PRINT AT x,9;" ": LET x=2: LET y=16+I NT (RND*3)

143 IF 9<2 OR 9>28 THEN PRINT AT x,9;" ": LET 9=16+INT (RND*3): LET x=2

144 IF INKEY#="" AND x<2 THEN LET x=x+1

145 IF b<>c THEN LET b=b+1: GO TO 205

150 LET a=INT (RND*4)

160 IF a=1 THEN LET y=y-1: GO TO 200: 170 IF a=2 THEN LET y=y+1: GO

TO 200 180 IF a=3 THEN LET x=x+1: GO TO 200 190 IF a=4 THEN LET x=x-1: GO TO 200 200 LET b=1 205 PRINT AT x, y; "ab" 210 OVER 1: PRINT AT 11,16; "+": OVER 0 220 IF x<2 OR x>19 THEN PRINT AT x, y; " ": LET x=2: LET y=16-I NT (RND#3) 230 IF 9K2 OR 9>28 THEN PRINT AT X,43" ": LET y=16-INT (RND#3): LET x=2 235 PRINT AT 21,8;" 240 IF INKEY#="9" THEN LET 9=9 -1: PLOT 48,0: DRAW 84,84: DRAW 84,-84: BEEP .01,2: INVERSE 1: D RAW -84,84: DRAW -84,-84: INVERS E 0: GO SUB 600: IF x=11 AND y=1 6 OR x=11 AND y=15 THEN PRINT A T x,y;"cd": LET score=score+10: LET 9=9+2: BEEP .05,1: BEEEP .05, 2: BEEP .05,3: PRINT AT x,9)" " : LET x=2: LET y=INT (RND*19)+1 245 PRINT AT 21,1; "lasers=";9 246 PRINT AT 21,11; "score="; sco

247 IF 9K=0 THEN GO TO 1000

250 GO TO 100

500 LET i=x: LET J=9 510 PRINT AT 1, j; " " 512 LET J=9 520 IF ik20 THEN LET 1=i+1 530 IF i=20 THEN LET 9=9-2: LE T t=0: BEEP .01,3: BEEP .01,2: B EEP .01,1: RETURN 540 PRINT AT 1, j;"!" 550 RETURN 600 IF i=11 AND J=16 THEN LET score=score+5: LET t=0: PRINT AT 1, j;" ": BEEP .01,5: LET i=0: L ET J=0 610 RETURN 1010 CLS : PRINT AT 0,0; "your sc ore was"; score 1015 BEEP .5,5: BEEP .5,4: BEEP .5,3: BEEP .5,2: BEEP .5,1: BEEP 1,-1 1020 IF score >P THEN CLS : PRIN T AT 0,1; "enter your name for hi 9h score": LET P=score: INPUT as 1030 CLS : PRINT AT 10,1;a\$;" HA S THE HIGH SCORE=";P 1040 PRINT AT 21,0; "do you want to Play again? y/n": INPUT l\$ 1050 IF 15="9" THEN CLS : LET s core=0: LET 9=25: GO TO 60 1060 IF 1s="n" THEN STOP





OUR CARDS are displayed on the screen. As each one is turned over, the player must guess

value than the card preceding it. Aces to predict all three turns of the card are high and a pair of cards results in a loss for the player. One or two turns are

correctly.

Devil Cards, for the 1K ZX-81, is whether it will be of a higher or lower easy to guess but it is devilishly difficult by Andrew Guilfoyle of Liverpool.



```
current when values are given for the
                                                                                    other two.
                                      310 DRAW -10,0
  2 BURDER 6
                                                                                  540 IF 9$="C" OR 9$="c" THEN G
10 PLOT 200,150
20 DRAW -150,0
                                      320 PLOT 115,30
                                                                                 O TO 1080
                                                                                  550 IF 9$<>"" THEN GO TO 500
                                      330 DRAW 0,35
 30 DRAW 0,-50
                                      340 DRAW 20,0
                                                                                 1000 CLS | INPUT ; "PLEASE ENTER
VOLTAGE IN VOLTS ";A
 40 DRAW -10.0
                                      350 DRAW 0,10
                                                                                 T IN AMPS "JB

1020 PAUSE 50: LET C=A/B: CLS :
 50 DRAW 0,-20
                                       360 DRAW 20,0
 60 DRAW 20,0
                                       370 DRAW 0,-20
 70 DRAW 0,20
                                                  -20,0
                                      380 DRAW
80 DRAW -20,0
                                      390 DRAW 8,10
                                                                                 PRINT AT 10,2; "USING OHM'S LAW T
          50,80
 90 PLOT
                                      400 PLOT 155,65
100 DRAW 0,-50
                                      410 DRAW 20,0
                                                                                                         JCJ" OHM'S"
110 DRAW 75,0
                                      428 DRAW 0.-35
                                                                                 1030 PAUSE 500: GU TU 500
1040 CLS: INPUT; "PLEASE ENTER
RESISTANCE IN OHM'S";A
                                      430 PRINT AT 8,3; "AMMETER"
440 PRINT AT 11,14; "VOLTMETER"
120 DRAW 5,10
130 DRAW
                                                      7,22) "BATTERY"
149 DRAW
          5,20
                                      450 PRINT AT
                                                                                 1050 INPUT ; "PLEASE ENTER CURREN
150 DRAW 5,-20
                                      460 PRINT AT 20,15, "RESISTUR"
                                                                                 T IN AMP'S
160 DRAW 5,20
                                      470 PRINT AT 9,26,"+"
                                                                                 1060 PAUSE 50: LET C=A*B: CLS
170 DRAW 5,-20
                                      480 PRINT AT 12,26;"-"
                                                                                 PRINT AT 10,2; "USING DHM'S LAW THE RESULT IS
180 DRAW
          5,20
                                      481 PRINT AT 0,10, "OHM'S LAW"
190 DRAW 5,-10
                                      490 PAUSE 500
                                                                                 "(C)" VOLT'S"

1070 PAUSE 500: GU TO 500

1000 CLS : IMPUT )"PLEASE ENTER
VOLTAGE IN VOLT'S "/A

1090 IMPUT .""
200 DRAW 35,0
                                      500 LET 9#=INKEY#
210 DRAW 0,50
                                      505 CLS
220 DRAW 10,0
                                      510 PRINT AT 10.0; WHAT DO YOU
    DRAW
                                     WANT TO FIND
                                                             (A)RESISTANC
                                                                                 TOGG INPUT; "PLEASE ENTER RESIST
ANCE IN OHM'S",B
2000 PAUSE 50: LET C=A/B: CLS
PRINT AT 10,2; "USING OHM'S LAW T
240 PLOT 200,90
                                                             (b) VOLTAGE
250 DRAW -5,0
                                                             (C)CURRENT"
260 DRAW 10,0
                                      INPUT 95
270 PLOT 200,90
                                      520 IF 9$="A" OR 9$="a" THEN G
                                                                                 HE RESULT IS
280 DRAW 8,60
                                     O TO 1000
290 PLUT 200,89
                                      530 IF 9$="B" OR 9$="b" THEN G
                                                                                                        ")C)" AMP'S"
300 DRAW 5.0
                                     O TO 1040
                                                                                 2010 PRUSE 500: GO TO 500
```

Learning Box

Competition Over £450 prizes to be won



Here's your opportunity to enhance your Sinclair ZX Spectrum by winning these valuable peripherals, worth over £350.

The Sinclair ZX Spectrum Interface 1 and an Epson RS232 interface for connection with computer peripherals.

The Epson RX 80T printer, unsurpassed for reliability, takes everything from a label to an A4 letter size sheet. Prints at 100 characters per second and has a 3 million character memory.

There are also 10 runners-up prizes. Each will receive a LEARNING BOX computer software package, designed specifically for children up to 8, and for use on the Sinclair ZX Spectrum.

Answer the questions below, by ticking the appropriate box. Then complete the tie breaker sentence to the best of your ability.

All entries must be received by 31 July 1984. The judges will be Bob Osborne, Educational Director of Hutchinson Publishing, and Bart Ullstein, Marketing Controller, Learning Box.

The overall winner will receive the Sinclair peripherals, the 10 runners-up a LEARNING BOX of their choice.

Competition Rules

- 1. The competition is open to UK residents
- only.

 2. Employees of those companies involved in the promotion, their agents and families are excluded from entry.

 3. Each entry must be on an official entry

- must be taken as specified on the entry
- they wish providing each one is on a separate entry form.

 8. Entries which do not comply with these
- B. Entries which do not comply with these rules will be disqualified.

 Competition, BW House, 11 West Street, London WCZH SNF.

 S. No corporates ken or responsibility for any loss of damage whatever arising out of the competition. Proof of potning of entries will not be excepted as proof of delivery.

 B. Entries which do not comply with these rules will be disqualified.

 9. No correspondence may be entered into and the judge's decision on all matters and the long to the competition on the life final.

 Some of the competition of the competi

How many Learning Box programs are there?	2	4	6	8
How may items in each Learning Box?	1	4	8	20
How many keys on a Sinclair ZX Spectrum?	27	41	68	95
How many Learning Box programs are for kids up to 6?	4	8	10	12
Now complete this sentence in no m	ore than 1	0 words (II	N BLOCK C	APITALS)
LEARNING BOX HELPS CHILD	REN TO.			
LEARNING BOX HELPS CHILD TO: Learning Box Competition London WC2H 9NF.		House,	11 West	Street,
TO: Learning Box Competition		House,	11 West	Street,



Arrow Publications 17-21 Conway Street London W1P 6JD · Created by Five Ways Software



177 PRINT AT K,31)"(1SP)" 25 LET N#="(9w)" 180 NEXT K 38 LET Ms="(gr)" 190 PRINT AT 18, I; "(99:96:9t)" 40 LET P#="(i%:2*96)" 200 PRINT AT A,B)P\$ 50 PRINT "(32*isp)" 210 LET B=B+1 60 PRINT AT 19,0;5\$ 215 PRINT AT A, B-1; " " 65 PRINT AT 1,9; "PARACHUTE DIV (14*9s)" 70 PRINT AT 3,0;" INFRUNT OF YOU IS A HIGH CLIFF WHICH YOUR PLANE IS GOING TO CRA SH INTO, THERE IS NO WAY FOR Y OU TO GET PASS THE CLIFF. BELOW 240 CLS YOU IS THE SEA AND A TINY LIFE BURT. THE ONLY CHANCE TO SA 260 GOTO 3000 VE YOURSELF IS TO VE YOURSELF IS TO DIVE OUT OF THE PLANE AND OPEN YOUR PARACHU 0 TE AND LAND ON THE LIFE BOAT. IF 280 GOTO 200 YOU FALL INTO THE SEA YOU WILL 300 REM FALL BE EATEN BY SHARKS YOU HAVE 10 1000 LET C=A DIVES.GOOD LUCK CONTROLS: 1=D 1001 LET D=B IVE OUT 2=0 PEN PARACHUTE (5=L,8=R) TO BE USE AFTER YOU OPEN THE PAR ACHUTE." 80 PRINT AT 21,5; "PRESS ANY KE 1030 LET C=C+1 Y TO START"

90 IF INKEY#="" THEN GOTO 90

110 FOR F=10 TO 1 STEP -1

220 IF B>28 THEN PRINT AT 10,2; "OUT OF TIME YOU HAVE CRASHED YOU ARE DEAD..HA..HA..HA... PRESS ANY KEY TO CONTINUE..." 230 IF BK29 THEN GOTO 270 235 IF INKEY#="" THEN GOTO 235 245 LET SC=SC-20 270 IF INKEY#="1" THEN GOTO 100 1010 PRINT AT C.D.N\$;AT C-1,D;" 1020 IF INKEY#="2" THEN GOTO 108 1035 IF C=17 AND D=I+1 THEN GOTO 1040 IF C=18 THEN GOTO 1200 1070 GOTO 1010

100 CLS

1080 LET Z=C 1090 PRINT AT C.D. H#; TAB D.M#; AT C-1,D;" ";AT C-1,D-1;" ";AT C-1 ,D+1;" " 1100 PRINT AT C,D-1;" ";AT C,D+1 1130 LET C=C+1 1140 IF C=17 AND D=I+1 THEN GOTO 1150 LET D=D+(INKEY#="8")-(INKEY 事="5") 1160 IF C=18 THEN GOTU 1200 1170 GOTO 1090 1200 LET X=0 1210 PRINT AT 18,X; "(9t:99)" 1220 LET X=X+1 1230 PRINT AT 18,X-1;" " 1240 IF X=D THEN GOTO 1250 1245 GOTO 1210 1250 PRINT AT 10,0; "YOU GOT EATE N BY SHARK BAD LUCK" 1255 PAUSE 200 1260 CLS 1265 LET L=L-1 1266 IF L=0 THEN GOTO 4000 1270 NEXT F 2000 PRINT AT 17, I+1; Ms 2010 LET SC=SC+Z+7 2900 NEXT F

2999 REM LIVES

2 INPUT I

30 NEXT 0 35 LET 1=0 40 DIM B(32) 50 LET A=11 60 FOR Y=0 TO 31 70 LET B(Y+1)=A 80 LET X=INT (RND*3)-1

100 LET 8=8+V 110 NEXT Y 120 LET Z=12 130 FOR P=0 TO 31 135 FOR S=0 TO I 136 NEXT S

HEN GOTO 999

180 NEXT P 200 PRINT "EXCELLENT" 210 PAUSE 500 220 GOTO 1

OUT OF 325 1005 PAUSE 500 1008 (1.3 1010 GOTO 1

3 LET T=I*10

HARDEST.



3000 LET L=L-1 3005 IF L=0 THEN GOTO 4000 3010 NEXT F 4000 CLS 4005 PRINT 8T 14,10; "SCORE: "; SC 4010 PRINT ST 15,10; "9amelover" 4030 PRINT AT 16,3, "PRESS ANY KE Y TO PLAY AGAIN" 4040 IF INKEY#="" THEN GOTO 4040 4050 CLS 4060 LET SC=0 4070 LET L=3 4080 GOTO 100 4090 STOP 4100 SAVE "PARACHUTE DIVe" 4110 RUN

1 PRINT "WHICH LEVEL?(1 TO 10 10 FOR Q=0 TO 21 20 PRINT AT Q,0;"(32*1sp)"

90 PRINT AT A,Y;" ";AT A+1,Y;" 137 IF Z(B(P+1) OR Z)B(P+1)+2 T 140 PRINT AT Z,P;"(9a)" 150 IF INKEY#="7" THEN LET Z=Z-160 IF INKEY#="6" THEN LET Z#Z+

NARROW tunnel appears on the screen. Move through it Lusing key 6 to move down and key 7 to move up.

Mole was written for the 16K ZX-81 by Nicholas Austin of Leamington Spa, Warwickshire.

999 PRINT "HARD LUCK" 1000 PRINT "YOU WENT",P, "PLACES

Albina di name di name

It's a monster...

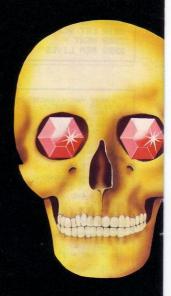
...and it's waiting for you

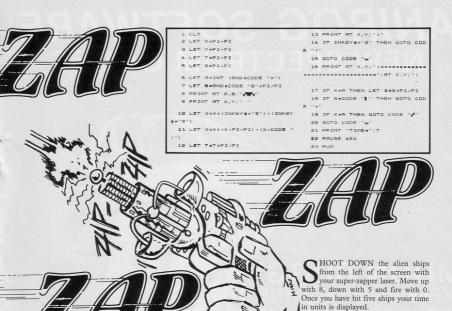
ENTER THE CATACOMBS...
HUNT THE TREASURE...
AVOID THE TRAPS...
WATCH OUT FOR SKULL!

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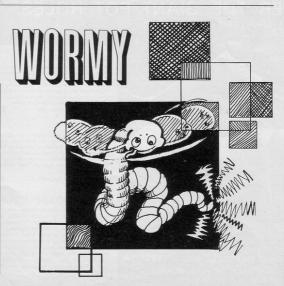




OU CONTROL a hyperactive worm trapped in an electrified box. Hitting the walls of your box or your tail results in death. Move using cursor keys 5 to 8 and survive for as long as possible.

Wormy was written for the 16K ZX-81 by John Taylor of Stafford.

```
1 FOR A=VAL "0" TO VAL "15",
2 PRINT HT (I) VAL "0") "(18P")
AT A:VAL "15", "(18P)" "AT VAL "0"
A:VAL "15", "(18P)" "AT VAL "0"
A:VAL "15", "AT VAL "15", "A; "(18P)"
3 NEXT 
2 LET 0=VAL "1"
20 LET 0=VAL "0"
21 LET 0=VAL "0"
22 LET 7" "VAL "5"
30 PRINT HT N.B)
37 IF PEEK (PEEK 16398+256*PEE 
X 16399 X:05 THEN COTO 108
30 PRINT "3"
39 PRINT "4" N.B)
40 IF INKEY$="6" THEN LET 0=0
41 IF PK:04 THEN LET 0=0
43 IF INKEY$="6" THEN LET 0=1
44 IF INKEY$="6" THEN LET 0=1
45 IF OX-05 THEN LET 0=1
45 IF OX-05 THEN LET 0=1
45 IF OX-05 THEN LET 0=1
49 LET B=B+0
51 LET 5=5+1
60 COTO 36
110 PRINT S
```



Zap Zap was written for the 1K ZX-81 by Russell Wooberry of Farnham, Surrey. The best time so far is 36, set by

Andrea Wooberry.



MOON BUGGY EXPERIENCE ALL THE TARK OF THE ARCADE GAME AS YOUR PATROL CRAFT MANOEUVRES OVER THE GIANT POT HOLES

48K KEYBOARD AND JOYSTICK £5.95

XENO II

A game for the arcadians with four screens. After landing your craft on Xeno and avoiding the asteroid belt, you have to fight your way through three sets of maze manned by robots with lethal firing power and hunter instincts. The third stage requires the destruction of the alien craft dropping plasma bombs. KB/JS 16K/48K £5.95

KONG

All the fun of the arcade game brought to life with animated graphics. Fireballs, ladders, lifts and rolling barrels provide fun for the whole family. Enjoy the collapse of Kong's lair when you have finally rescued the damsel in the fourth screen. Hall of fame and demo mode are included.

B/JS 16K/48K £5.9

GALACTIC ABDUCTORS

A stunning action packed game with superb large animated graphics. Giant Space Hawks whirl and weave in intricate patterns as they drop their deadly homing mines which will destroy your base on contact. While you are busy defending yourself the Hawks will feed on your helpless population returning only their skulls. All M.C. game complete with high score table that will blow your mind with its graphics and sound effects.

16K/JSK 16K/JSK 55.95

MISSILE DEFENCE

Brings the well known arcade game to life on the Spectrum screen in glorious colours. Defend your cities from the missile attack and smart bombs. 10 skill levels. KB/JS 16K/48K £5.95

SLAP DAB

An exciting game based on the arcade game Painter which combines fast action with strategy. Glant insects hiding under the old paint surface are released by your paint brush. You require fast action and quick thinking to outwit them and finish the panel. The game is 100 percent machine code and Hi-RES. Graphics also includes Hi-score and running score.

16K/JS 16K/JS 5.95

FROGRUN

Popular arcade game. All machine code with brilliant colour graphics and sound effect. Features include snakes, crocodiles, lady frogs, turtles, cars, lorries and logs.

KB/JS 16K/48K £5.95

TINY TOT'S SEVEN

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YDROCARBONS is an educational program designed to test your knowledge of the hydrocarbons C1H4 to C8H16. It can be used either as a test program or it will draw the hydrocarbons and give their chemical formulae.

Written for the 16K ZX-81 by James Prince of Haddington, East Lothian.

- 5 GUSUB 9000 10 PRINT TAB 8: "HYDROCAPBONS" 20 PRINT TAB 5; "-----30 PPINT AT 4,0; "DO YOU WANT I NSTRUCTION ? (Y /N) " 40 IF INKEYSH"Y" THEN GOTO 400 50 IF INKEYS .. "N" THEN GOTO 40 U" LET TER
- 65 CLS 70 PRINT AT 19.0:"MONTHE MINISTER OF STREET

85 PRINT AT 21,12; H\$ (A) 90 FOR F=0 TO 50 92 NEXT P 95 FOR F-9 TO 17 100 PRINT AT F,0;" 110 NEXT F 120 INPUT U 130 PRINT AT 1,0;US 150 IF U.="5" THEN PRINT AT 1,0 . "YOUR SCORE IS ";T 160 IF UB="Q" THEN STOP 170 IF U#="D" THEN GOTO 500 180 IF USE"N" THEN PRINT BS (A) 185 IF US="N" THEN GOTO 80 190 IF U. "S" THEN GOTO 90

00 LET REINT (RND+15) +1

195 LET D:=C:(TO Y) 197 LET HERUS+DE 200 IF U. B. (A) THEN GOTO 230 210 PRINT "NO . THAT IS WRONG T BY AGRIN

199 LET THLEN US

193 LET Y=7-I

220 0070 90 230 PRINT "GOOD WORK THAT IS RI GHT BUT TRY THIS ONE" 240 LET T=T+1 250 0010 50 400 CL5 405 PRINT TAB 5; "HYDROCARBONS" 410 PRINT TAB 5; "-----420 PRINT AT 3,0; "THIS PROGRAM WILL TEST YOU ON HYDROCARBONS UP TO OCTANE AND OCTENE

430 PRINT "YOU WILL BE GIVEN A NAME AND YOUWILL HAVE TO GIVE TH E FORMULA OF"

440 PRINT "IT. ALSO ""S""WILL D ISPLAY HOW MANY YOU HAVE GOT RIGHT ""O""WILL"

450 PRINT "OLT RID OF THE PROGR AM ""D"" WILL DRAW THE STRUCTURE AND ""N"" WILL NAME THE STRUCTU RE FOR YOU."

560 PRINT 570 PRINT "HIT ANY KEY TO START

500 IF INKEYS -" THEN GOTO 500 590 COTO 60

SOO IF A=1 THEN PRINT AT 5,13;" H* : AT 6,15, "1": AT 7,11; "H-C-H": A 5,13;"I";AT 9,13;"H"

610 IF A=2 THEN PRINT AT 8,12;" H H"; AT 6,12; "I I"; AT 7,10; "H-C-C-H"; AT 5,12; "I I"; AT 9,12; "H H"

620 IF A=3 THEN PRINT AT 5,7;"H H H"; AT 6,7; "I I I"; AT 7,5; "H-C *C-C-H"; AT 8,7; "I I I"; AT 9;7; "H H H"

630 IF 8=4 THEN PRINT AT 5,7;"H H H H"; AT 5,7; "I I I I"; AT 7,5; "H-C-C-C-C-H"; AT 8,7; "I I I I"; A T 9.7: "H H H H"

640 IF A=5 THEN PRINT AT 8,7;"H W H H H"; AT 6,7; "I I I I I"; AT 7,5;"H-C-C-C-C-H";AT 8,7;"I I I I I"; AT 9,7; "H H H H H"

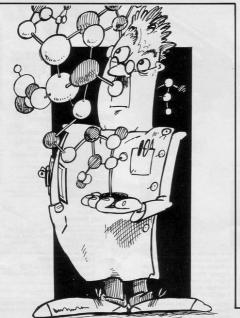
550 IF A=6 THEN PRINT AT 5,7;"H H H H H H"; AT 5,7; "I I I I I I" ;AT 7,5;"H-C-C-C-C-C-H";AT 8,7 ;"I I I I I I "; AT 9.7;"H H H H H

550 IF A=7 THEN PRINT AT 5,7;"H H H H H H H"; AT 6,7; "I I I I I I I"; AT 7,8; "H-C-C-C-C-C-C-H"; AT 8,7;"I I I I I I I"; AT 9,7;"H

670 IF A=6 THEN PRINT AT 5,7:"H H H H H H H H"; AT 6,7; "I I I I I I I I"; AT 7,5; "H-0-0-0-0-0-0 -C-H": AT 8,7; "I I I I I I I": AT 9,7; "H H H H H H H"

680 IF A=9 THEN PRINT AT 7,10;" H-c=c-H"; AT 8,12; "I I"; AT 9,12; "

590 IF A=10 THEN PRINT AT 5.11: 'H"; AT 6,11; "I"; AT 7,5; "H-C=C-C-



H"; AT 8,7; "I I I"; AT 9,7; "H H H"

700 IF A=11 THEN PRINT AT 5,11; "H H"; AT 6,11; "I I"; AT 7,5; "H-C= C-C-C-H"; AT 8,7; "I I I I"; AT 9,7

710 IF A=12 THEN PRINT AT 5,11; "H H H": AT 6.11: "I I I": AT 7.5: " H-C=C-C-C-H"; AT 8,7; "I I I I ": AT 9.7: "H H H H H"

720 IF A=10 THEN PRINT AT 5,11; "H H H H"; AT 6,11; "I I I I"; AT 7 ,5;"H-C=C-C-C-C-H";AT 8,7;"I I I I I I"; AT 9,7; "H H H H H H"

730 IF A=14 THEN PRINT AT 5,11; "H H H H H"; AT" 6, 11; "I I I I I"; AT 7.5; "H-C+C-C-C-C-C-H"; AT 5, 7;"I I I I I I";AT 9,7;"H H H H H H H'

740 IF 8=15 THEN PRINT AT 5,11; "H H H H H H"; AT 6,11; "I I I I I"; AT 7,5; "H-C=C-C-C-C-C-C-H" ;AT 8,7;"I I I I I I I";AT 9,7;" HH H H H H H H

750 GOTO 90

760 SAVE "HYDROCARBONE" 770 RUN

9000 DIM H# (15,7)

9010 LET H\$ (1) ="ETHANE"

9020 LET Hs (2) ="METHANE"

9030 LET H# (3) ="PROPANE" GRAR LET HE (4) ="BUTRNE"

9050 LET H\$ (5) ="PENTANE

9050 LET H: (6) ="HEXANE"

9070 LET Hs (7) ="HEPTANE"

9080 LET H# (8) ="OCTANE"

9090 LET HS (0) ="ETHENE" 9100 LET Hs (10) -"PROPENE

9110 LET He (11) ="BUTENE"

9120 LET H\$ (12) ="PENTENE"

9130 LET H# (13) ="HEXENE"

9140 LET H\$ (14) ="HEPTENE"

9150 LET H\$ (15) ="OCTENE"

9200 DIM B\$ (15,7)

9210 LET 5\$(1) ="C1H4"

9220 LET B: (2) ="C2H6"

9230 LET Bs (3) ="C3H8" 9240 LET Bs(4) ="C4H10"

9250 LET Bs (5) ="C5H12"

9250 LET B\$ (6) ="C6H14"

9270 LET 58(7) ="07H16" 9280 LET B\$ (8) ="C8H18"

9990 LFT Bs(9) ="C2H4"

9300 LET 5\$(10) ="C3H5"

9310 LET B\$ (11) ="C4H6" 9320 LET 88 (12) ="C5H10"

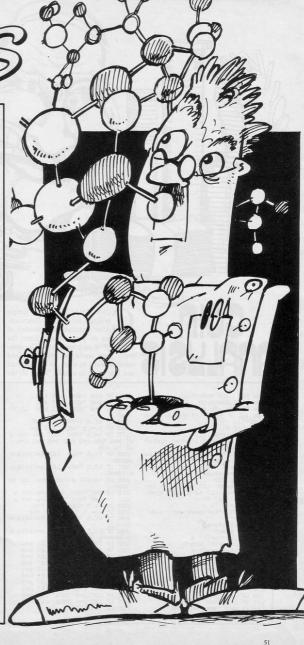
9330 LET B\$(13) ="C6H12"

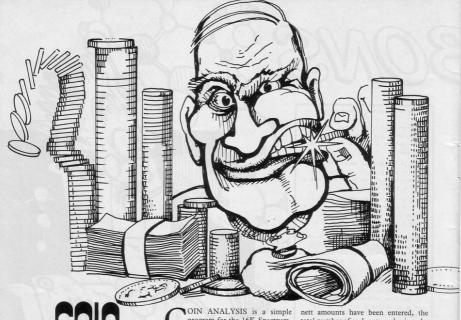
9340 LET Bs (14) ="C7H14"

9350 LET BS(15) ="C8H16"

9370 LET Cs="

9360 PETUPN





program for the 16K Spectrum. After inputting the number of employees on your payroll, insert the nett wage of each employee. The computer then works out the notes and coins required to make up that amount and lists them in a table. When all the

LET h=0: GO TO

total number of each note and coin to be issued is listed.

Written by M J Cooper of Aldershot, Hampshire, it is a program which may be of particular interest to anyone responsible for the payroll of a small

```
20 REM CUIN ANALYSIS
                                          143 IF t=0 THEN LET f=0
144 IF t=0 THEN LET 9=0
  30 PUKE 23609,50
  40 FOR N=1 TO 8
50 INK 3: PRINT AT 8+N,8: "COIN
                                          145 IF t=0 THEN
                                          490
 ANALYSIS"
  SS NEXT N
  60 PRUSE 100: CLS
70 INK 0: INPUT ; "Enter number
 of employees ..
 100 PRINT AT 8,0; "Enter Nett Wa
9e when the screen clears and en
ter the next figure when column
has been Printed"
 110 PAUSE 200: CLS
115 LET ta=0: LET tb=0: LET tc=
   LET td=0: LET te=0: LET tf=0:
 LET to=0: LET th=0
 125 FOR m=1 TO n
126 INPUT : "Employee nett wage
 127 LET ta=ta+a
 128 LET h=a/5
 129 LET tb=tb+INT b
 130 LET c=a-INT b*5
 131 LET tc=tc+INT c
 132 IF C=0 THEN
                   LET e=0
 133 IF C=0 THEN
                    LET f=0
 134 IF c=0 THEN
                    LET 9=0
 135 IF C=0 THEN
                    LET h=0
 136 IF CER THEN
                    LET d=0 GO TO
 490
 140 LET t=c-INT c
 141 IF t=0 THEN
                    LET d=0
```

LET e=0

```
150 IF t<.5 THEN LET d=0
 160 IF t>=.5 THEN LET d=1
175 IF t=.5 THEN LET d=1 AND I
NT e=0 AND f=0 AND 9=0 AND h=0
GO TO 490
 200 IF t(.5 THEN LET e=(t*10)+
.00001
 201 IF t>.5 THEN LET e=(t*10)-
4.99999
 205 IF t=(INT e)/10 THEN GO TO
 126
210 IF d=1 THEN LET y=e-INT e
211 IF d=0 THEN LET y=e-INT e
220 IF y<.5 THEN LET f=0
230 IF y>=.5 THEN LET f=1
 240 IF y<.5 THEN LET z=(y*10)+
.000001
250 IF y>.5 THEN LET z=(y*10-5
>+.000001
260 IF INT 780
                  THEN
                        LET h=0
265 IF
         INT Z=0 THEN
                        LET 9=0
 270 IF
         INT z=1
                  THEN
                        LET h=1
 275 IF
        INT z=1
                  THEN
                        LET 9=0
280 IF INT z=2
                  THEN
                        LET 9=1
         INT z=2
                  THEN
                        LET h=0
290 IF INT z=3
                  THEN
                        LET 9=1
     IF INT z=3
300
                  THEN
                        LET h=1
310 IF INT z=4
                        LET 9=2
                  THEN
315 IF INT z=4
                 THEN
                        LET h=0
```

482 LET td=td+d

```
484 LET te=te+INT e
486 LET tf=tf+f
488 LET tg=tg+g
 490 PRINT ; INK 4; "Wages £5
    50P 10P 5P 2P 1P"
                                       PRIN
T "£";a;"
NT c;" "id;"
" t;e;" "ih
                        "; INT b;"
 492 IF LEN STR# a=2 THEN PRINT
"E";a;" ";INT b;" ";INT

"," ";d;" ";INT e;" ";f;"
C;"
"'' "''' "'h
 "6";a;" ";INT b;" ";INT c;" "id;" ";INT e;" ";F;" "
"£";a;;"
" ";d;"
'' ";h
 494 IF LEN STR# a)=4 THEN PRIN
                 "; INT b; " "; INT c; "; INT e; " ; INT e; " ; f; " ";
     ";d;"
";h
 496 PRINT "
 498 NEXT m
 500 PRINT "f";ta; "=total nett w
 510 PRINT TAB 8; tb; "=total £5"
 520 PRINT TAB 8;tc;"=total f1"
 530 PRINT TAB 8;td;"=total 50p"
 540 PRINT
               TAB 8; te; "=total 10p"
 550 PRINT TAB 8;tf; "=total 5p"
```

142 IF t=0 THEN

TAB 8; t9; "=total 2P"

TAB 8; th; "=total 1P"

560 PRINT

570 PRINT

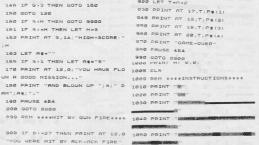
800 STUP

OU ARE in the Lancaster and have to blow up the dams using the "6" to release the bomb. Each bomb bounces three times before exploding, so make sure you release it in good time for it to hit the dam.

Gibson's Revenge was written for the 16K ZX-81 by J Burnett of Camelford, Cornwall.







1050 PRINT "M

901 PRINT AT 12,8+1;"

910 LET PS="FF

115 POINT OF 9 A. "

115 PRINT AT 3,0;"

117 PRINT AT 4,0;"

M: " ; D&

8+2:" ."

130 LET B=B+1

145 PAUSE 10

118 PRINT AT 5,2; "SCORE: "; 5; AT

5,14; "HIGH-SCORE: "; H; AT 7,15; "DA

120 PRINT AT 12,6;" ... "; AT 13

140 IF INKEYS="6" THEN GOSUB 80

122 IF 5 - 28 THEN GOTO 900



		· Machine Control	
-	9459 XX	men	
1050	PRINT	Sychological Annual Con-	NAME AND ADDRESS OF THE OWNER, WHEN
and some	WHEN Y	OKAL"	
1090	PRINT	· CERCINIONS DISCASSION	A STATE OF THE PARTY OF THE PAR
NAME AND ADDRESS OF	- Charles	1984''	
1100	PRINT	50000+0000000000000000000000000000000	
	-	600 ··	
1110	PRINT	**	
	-	3639	
1111	PRINT	** 200000000000000000000000000000000000	DAM-BUSTER
5	200	MER "	
1112	PPINT	** 54000000000	INSTRUCTIO
N5		2001	
	PRINT	**2509988	
		2011	
1114	PRINT	" 1500000	
	100	MERCENNI CO	
1115	PRINT	**200	
1116	PRINT	****	
		- 11	10 mg
	PRINT		
	PRINT		-
	PRINT		
	PPINT		Laur
2,20	P. Miles		
11:30	PRINT	"PRESS AN	KEY"
	PAUSE	4E4	
1145			
	PRINT		
-			Statement with the same
1151	PRINT	- 100	
	100000	-	
1159	PRINT	-10 %	INSTRUCTIO
NS			NAME OF THE OWNER.
	PRINT		
1154	PRINT		
1155	PRINT	-	
-	_		
1160	PRINT	_	ARE IN THE
1165	PRINT	" LAN	NCASTER AND
YOU			
	PRINT	"M IHAG	JE TO JUDGE
UHEN			
	PRINT	"B 1 TO	DROP THE BO

1180	PRINT "	SEAS PRINT "
		SESS PRINT "
	PRINT " THE BOMB BOUNC	
ES		8570 PRINT "
1190	PRINT " THPEE TIMES	mm "
	1	3530 PRINT
1105	PRINT "	8590 PRINT " IN IN I
LAB		. I can be set in the fixed state to
	• •	SSSS PRINT "
	PRINT " USE"" 6""TO DRO	
P BC	MB I W"	- Hara do Harriga I (o La-Xalada) e
1210	PRINT "M	5596 PRINT "
_		***
1000	PRINT "	8697 PRINT " E E E E E
		8598 PRINT "
1230	PRINT "M &	ODAS BRINI
	5 B*	
1240	PRINT "	8599 PRINT
	N 8"	8600 PRINT "YOU HIT THE ";D:" D
1250	PRINT "	AM"
		5510 FOR Q=1 TO 15
WE BE		5620 PRINT AT 19,8;" ""; AT 20,8;"
1595	PRINT " MANAGEMENT OF THE PRINT " MANAGEMENT OF THE PRINT " MANAGEMENT OF THE PRINT	";AT 21,A;"
- Section	The state of the s	
	PAUSE 4E4	3630 PRINT AT 19,A;"#";AT 20,A;"
1267	CLS	W"; AT 21,8;"W"
1270	GOTO 99	8635 NEXT 0
	REM ****PLANE MOVE****	8640 LET G=G+1
	PRINT AT 13,8+2;" "	8700 LET 3=5+1
		8710 GOTO 99
	FOR C=14 TO 19	
	PRINT AT 12,8;""	8720 GOTO 5595
8030	LET B=B+1	8750 FOR C=0 TO 18
8040	PRINT AT C,8+3;"."	8760 PRINT AT C,0;"
8045	PRINT AT C-1,8+2;" "	**
	NEXT C	8770 NEXT C
	FOR C=15 TO 15 STEP -1	8799 PRINT AT 0,0;
		SSOO PRINT " ME ME MAN"
	PRINT AT 12,5;""	SSIO PRINT " B M M M MANAGE
	LET B=B+1	
8888	PRINT AT C,8+3;"."	8820 PRINT " N N N N N N N N N N N N N N N N N N
8090	PRINT AT C+1, B+2;" "	8810 PRINT "
8099	NEXT C	5940 PRINT " MM M M M
	FOR C=16 TO 19	8845 PRINT
	PRINT AT 12,8;"	8850 PRINT " 1000 N N N
3120	LET B=B+1	8855 PRINT " M M M M
8130	PRINT AT C,8+3;"."	SSES BATMI W W W W.
	PRINT AT C-1,8+2;" "	
	NEXT C	3860 PPINT " MOM M M M
8150	FOR C=18 TO 17 STEP -1	
	IF 8:+27 THEN GOTO 900	5865 PRINT "
	PRINT AT 12,8;""	
	LET B-B+1	8870 PRINT " NO 1 1 1 1
	PRINT AT C,8+3;"."	SASO PRINT
	PRINT AT C+1,8+2;" "	
3199	NEXT C	SSSS PRINT " MAN N N N N N N N N N N N N N N N N N N
8200	FOR C+15 TO 19	THE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN THE PERSON NAMED IN COLUMN TWO IS NAMED IN TWO IS NAMED IN
	IF B>=27 THEN GOTO 900	9539 PRINT " # # # #
	PRINT AT 12,8;"	THE THE THE PARTY OF THE PARTY OF THE
	LET B=B+1	3890 PPINT "
	PRINT RT 0,8+3;"."	
	PRINT AT C-1,8+2;" "	S891 PRINT " B B B B
3249	NEXT C	•
5250	IF 8+3=8 AND C=20 THEN GOTO	8892 PRINT " # # # ##
85		Marie 17 August 19 August
3260	IF B+3 <> A AND C=20 THEN GOT	8893 LET G=G+1
0		8694 GOTO 99
	The state of the s	8900 PRINT AT 21,0; "ANOTHER GAME
	STOP	(Y/N)"
	FOR C=0 TO 15	
8510	PRINT AT C.0;"	9910 INPUT G\$
	ж.	9919 IF G#="Y" THEN LET G=0
8520	NEXT C	8920 IF G:"Y" THEN GOTO 2
	PRINT RT 0,0)	8930 CL5
	PRINT " N N N N	8940 PRINT AT 10,10;" TO 100
11		Date.
		9900 REM ****SRUE****
8555	PRINT " M M M M M	
		9901 STOP
8550	PRINT " N N N N	9995 SAUE "GIBSONS REVENGE"
		9999 GOTO 1

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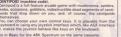
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ESTORE : CLS 2 D1M m(30) 3 DIM n(30) 4 DIM o(30) 5 DIM P(30) 6 DIM 4(30) 7 DIM r(30) 9 LET J=0 10 DIM a\$(30,15) 11 DIM c\$(30,15): DIM d\$(30,15 20 DIM b\$(30,16) 30 DIM ×(30) 40 DIM 9(30)

43 PRINT : PRINT "INSTRUCTIONS
": PRINT "You are the leader of band of weird charact a small ers, whose Job is to eliminate a group of evil creatures who ar and destroying everyt e killing their Path. You have f hing in ound them in the arena of vulca fight them one by one n and you The computer chooses

coresponding to your

first and then you enter in the number

INK 0: PAPER 7: BORDER 7: R choice. You both start off wi th 30 creatures and the fir st Party to be killed off looses

44 PRINT #0;RT 0;0; INK 4;"Pre ss and key": IF INKEY=="" THEN POKE 0;RND: GO TO 44 45 INPUT "": PRINT "Your cleri

c and Priest can turn the undead (mummy,skeleton,9houland the zo mbie) if they are lucks.

off with 8 experience Points but if you kill a strong creature w ith a weaker creature so sain Po ints (you loose Pointsfor the re verse) good luck

You stant

50 FOR a=1 TO 30

60 READ a#(a): READ c#(a): READ
D c: LET f=0
72 READ m(a): LET o(a)=c: READ 9(a): FOR b=1 TO c

90 LET f=f+INT (RND#8)+1: NEXT

b: LET x(a)=f: NEXT a 110 DATA "Minotaur", "9ored",7,1 6,2, "Giant rat", "bit",1,4,8

120 DATA "Gremlin", "speared", 1, 8.5. "Ghoul", "touched", 3,6,2 130 DATA "Hydra", "bit", 5,30,5,"

Manticore", "clawed and bit", 6,24 ,6, "White dragon", "froze", 7, 24, 4

"Rcolste" "thumped",1,6,9
140 DRTR "Troll","bit and clawe
d",6,22,4,"09re","clubbed",5,8,8
"Cyclops" "thumped ",15,38,2
150 DRTR "salamander","scortche d",8,16,2,"Goblin","wounded",1,8 ,6

160 DATA "Skeleton", "maced", 1, 6.8

170 DATA "Zombie", "hit", 3,8,8, "Giant scorpion", "stung", 4,24,2 180 DATA "Urc", "sliced", 2,6,7," Mummy", "Paralysed", 4,24,6, "Hob9o blin", "hit", 3,8,6, "Lizard man", "

thumPed",4,8,5 198 DATA "Hell hound", "burnt",4,18,4,"Chimera", "hit",9,38,4 195 DATA "Wavern", "stung and bu d",2,8,7, "Bone Golem", "mutilated ",8,24,2

200 DATA "Hill giant", "squashed

7OU ARE the leader of a small band of weird characters and it is your job to wipe out a group of murderous evil creatures. The enemy creatures are trapped in the arena of Vulcan and are ready to fight you one by one. Attack the enemy using your hill dog and kill the offending salamander using your unicorn.

Arena of Vulcan, a 48K Spectrum adventure game, was written by Jolyon Ralph of London SW19.

,8,16,4, "Bu9bear", "stabbed", 3,8 ,5, "Gargoyle", "fanged",4,16,5, "H arpy", "charmed and bit",3,7,12

210 DATA "Stirge", "drunk", 1, 3, 1 221 FOR a=1 TO 30 230 READ 68(a): READ d8(a)

231 READ c.d 233 LET f=0

234 READ n(a): LET P(a)=c: READ

240 FOR b=1 TO c 250 LET f=f+INT (RND*d)+1: NEXT

270 LET y(a)=f

280 NEXT a 290 DATA "Warlord", "slashed", 5, 8,10,0, "Priest", "maced",6,4,4,6 310 DATA "Assassin", "stabbed", 4 4,6,7, "Unicorn", "horned", 3,8,8,

320 DATA "Mad dog", "bit", 5,8,6, 5, "Storm giant", "electrocuted", 1 5,8,48,2

330 DATA "Gnome", "hit", 1,8,6,5, "Elf", "sliced", 4,6,8,2, "Fighter" "chopped", 2, 10, 8, 3, "Theif", "sta ,1,4,8,7

350 DATA "Owl bear", "hugged", 5, 8,24,5, "Werebear", "hugged", 6,8,2

360 DRTA "Roc", "Pecked", 6,8,22, 4. "Cleric", "bartised", 2,6,6,2 370 DATA "Dwarf", "cut", 1,8,8,6, "Halfling", "sliced",6,6,8,-2 380 DATA "Hobbit", "slashed", 1,6

,6,2, "Centaur", "knocked",4,8,20,

390 DATA "Hippogriff", "Pecked" 3,8,22,5, "Dwarven hero", "chopped .7.8.8.9

400 DATA "Super-hero", "sliced", 8,8,10,-1, "Master theif", "stabbe

410 DATA "Brass dragon", "breath ed on",8,8,30,2,"Pegasus","bit", 2,8,16,6

420 DATA "Giant hawk", "Pecked", 3,9,6,6, "Blink dog", "9nawled",4, 8.6.2

430 DATA "Lawful goblin", "struc ".1.8.8.7 440 DATA "Giant weasel", "bit", 4

.8.8.7. "Bard", "sun9 to",3,4,6,6, "Druid", "sickeled",4,6,4,5 500 LET V=INT (RND#30)+1

501 IF x(v) <=0 THEN GO TO 500 502 PRINT : PRINT 520 PRINT "The computer chooses

") INVERSE 1; as(v); EVEL "JO(V)

530 PRINT BRIGHT 1,"YOU HAVE:"
535 PRINT "NO NAME LE H.P.

540 FOR a=1 TO 30 545 LET n#=b#(a)

550 IF 9(a)>0 THEN PRINT a)" " " : BT 21 ,23,9(a)

560 NEXT

570 INPUT "Your Choice?";a 576 IF a>30 OR a<1 OR INT a<>a

THEN GO TO 570 580 IF v(a)<=0 THEN PRINT PAP ER 3) INK 9; FLRSH 1; "He's dead(Nice tryl)": GO TO 570 585 LET n##b#(a): FOR 9#16 TO 2

STEP -1: IF n#(q)=" " n#=n#(TO q-1): NEXT q THEN LET 586 LET os=as(v): FOR 4=15 TO 2 STEP -1: IF os(q)=" " THEN LET

0\$=0\$(TO 9-1): NEXT 4 587 LET P\$=c\$(v): FOR 9=15 TO 2 STEP -1: 1F P\$(4)=" " THEN LET P\$=P\$(TO 4-1): NEXT 4

588 LET 4\$=d\$(a): FUR 4=15 TU 2 " THEN LET STEP -1: IF 4\$(4)=" 99=9\$(TU 9-1): NEXT 9 590 LET t=q(v): LET u=0-P(a): L

ET z=20-t+u 600 IF v=4 OR v=14 OR v=15 OR v =18 THEN GO TO 9000

610 LET w=INT (RND*20)+1 620 LET ff=1: IF w>z THEN PRIN F PAPER 6;"Your ";n\$;" ";9\$;" h "Jo#: LET w=INT (RND*n(a))+1: PRINT "He's taken ";w;" Points of damage!": BEEP ff,6: PRINT :

LET x(v)=x(v)-w: IF x(v)<=0 THEN PRINT FLASH 1;"THE ";o#;" IS PRINT DEAD". LET k=5+(<0<y>-P(a))*5).
PRINT "you ";("9ain" AND k>=0);(
"loose" AND k<0);" ";ABS k;" Points". LET j=j+k; GU TU 690 630 LET t=r(a): LET u=o(v): LET

u=6-u 640 LET z=20-t+u

660 LET W=INT (RND*20)+1 670 IF w>z THEN PRINT PAPER 5 "His ":04;" ":P4;" your ":n4: L 1"H15 ET W=INT (RND*m(v))+1: PRINT "90 "jns;" has taken "jw;" Points

of damage!": BEEP ff,5: PRINT LET y(a)=y(A)-w' IF y(a)(=0 THE N PRINT FLASH 1;"YOUR "; m\$;" I S DEAD" | GO TO 690 680 GO TO 590

690 LET C=0

700 FOR a=1 TO 30: IF x(a)>0 TH EN LET C=1 710 NEXT a

720 IF c=0 THEN GO TO 9500 730 LET c=0: FOR a=1 TO 30: IF 9(a)>0 THEN LET C=1 735 NEXT a

740 IF c=1 THEN GO TO 500 ₩#(1)="Y" THEN GO TO 1

760 STOP 9000 IF a<>14 AND a<>2 THEN GO TO 618

9010 PRINT PAPER 4; "TURN CREATU RE OF THE UNDERWORLD": LET O=INT (RND#12)

9020 IF a>8 THEN LET x(v)=0: PR INT PAPER 6) "You have turned hi "jos' "and you get 50 Points":

LET J=J+50: GO TO 690 9025 IF o =8 THEN PRINT PAPER 5, "But he carries on"

9030 GO TO 610 9500 PRINT " " INK 3 PAPER 6; FLASH 1; "YOU WON"

9510 IF J(=0 THEN PRINT INK 4) PAPER 2) FLASH 1, "YOU MINDLESS MURDERER'

9515 IF J>0 AND J<100 THEN PRIN INK 3) PAPER 6) FLASH 1) "YOU LUCKY PERSUN"

9516 IF J>=100 THEN PRINT 1) PAPER 5) FLASH 1) "YOU CORAGEO US HERO!

9520 DIM W#(1): INPUT "another 9 ame? "/w#: IF w#(1>="9" OR w#(1) ="Y" THEN GO TO 1 9730 LET c=0: FOR a=1 TO 30: IF y(a)>0 THEN LET c=1

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See 48/80 FORTH for another angle.

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The manual provides both the normal The manual provides both the normal technical definitions of the language, and an outstanding brief thing docuction for the beginner. Each tabe god so includes a superp EDITOR program to give you full control of the 16 (48k) or 32 (80k) disk screen.

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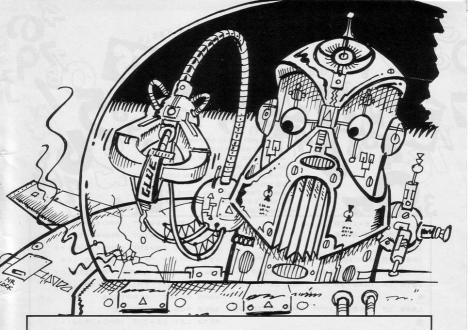
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stellar cargo spaceship. Your object is to find and patch a leak in out of power.

OU ARE a robot on an inter- the hull of the ship and to kill five aliens who have sneaked in, before you run

Oxygen Alert was written for the 16K ZX-81 by Colin Hunniford of Berkhamsted, Hertfordshire.

```
";AT 9,16;"W";"123456789X"( TO L
  40 5100
                                  200 PRINT AT 8,0; "CENTS THE
                                                                  5);"....."( TO 10-LB);"%";R
  50 PRINT
                   an erea
                                  210 DIM A$(10,10)
                                                                  T 10,16;"
P .. .
                   ....
                                  220 LET As (1) ---
                                                                   595 GOSUB 1400
F 134
                    WILLY
                                  230 LET A$(2) -" ...
                                                                   600 PRINT AT Y+9,X; "*"
  -1 1"
                                  240 LET A$(3) ="
                                                                   505 GOSUB 1300
  60 PRINT
                                  250 LET A$ (4) ="#
                                                                   610 PRINT AT 13,16; "BOUGHT TOM
  70 PRINT "
                      OFF
                                  250 LET 88 (5) ."
                                                                  理";AT 14,16;"融";"123456789X"( TO
                      DIED
                                  270 LET As(6) ="8 8
                                                                   INT (PP/9));"....."( TO 10
                     I I be best I
                                  280 LET 88(7) ="
                                                                  -INT (PP/9));"欄";AT 15,16;"
 .
                                  290 LET As(8) =" | | | | | |
 80 PRINT ".
                                  300 LET A$(9) =" | | | | | | | | |
                                                                 520 PRINT AT 18,16; "MANDAMENTARY
                                  屋"; AT 19,16; "W"; "123456789X"( TO
 90 PRINT ,," YOU ARE A ROBOT
                                  320 PRINT "
                                                                   5P1;"....."( TO 10-5P);"@"
ON AN INTER- STELLA CARGO S
                                  330 FOR I=1 TO 10
                                                                  ; AT 20,15;"
      SHIP .
             YOU HAVE BEEN SE
                                  940 PRINT "["+R$(I)+" ["
                                                                   600 IF AB(Y, X) =" " THEN LET T=0
NT TO FIND AN OXYGEN LEAK IN TH
                                  350 NEXT I
                                                                   640 IF RS(Y, X) ="M" THEN LET T=1
E HULL OF THE SPACE SHIP."
                                  350 PRINT "B
                                                                   650
                                                                        IF AS (Y, X) ="0" THEN LET TEZ
100 PRINT ,," TO MOVE ABOUT Y
                                  370 LET LB=10
                                                                        PRINT AT 21,0; "HERE IS ",
                                                                   660
OU MUST TYPE NORTH, SOUTH, EAS
                                  380 GOTO 430
                                                                   (" NOTHING" AND THO: ("AN ALIEN"
T OR WEST. TO GET RID OF UNWANT
                                  390 LET Y=INT (RND+10+1)
                                                                   AND T=1); ("THE LERKAGE HOLE" AN
ED ALIENS YOU TYPE, SHOOT, AND T 400 LET X=INT (RND+10+1)
                                                                  D T=2)
O BUNG UP THE HOLE YOU MUST TYP 410 IF AS(Y,X) COCHES O THEN GOT
                                                                   670 GUSUS T#100+1000
E ,SEAL ."
                                0 390
                                                                   690 IF SP=10 THEN GOTO 2000
 110 PRINT , , "ENAME HE NAT"
                                  420 RETURN
                                                                   700 INPUT 5:
 120 IF INKEYS ()"" THEN GOTO 120
                                  4:00 00508 300
                                                                   710 IF BOW" THEN GOTO 700
                                  440 LET A$(Y,X) ="0"
                                                                   720 IF LEN BE-1 THEN GOTO 750
 198 IF INKEYS "" THEN GOTO 198
                                450 FOR I=1 TO 5
                                                                   700 IF 8$( TO 2) ="SH" THEN GOTO
                         460 GOSUB 390
                                                                    1500
                                  470 LET 8$ (Y, X) ="M"
                                                                   748 IF 55 ( TO 2) ="SE" THEN GOTO
 140 CL5
                                  480 NEXT I
                                                                   2300
 150 PRINT "MENTERS
                                  490 GOSUB 390
                                                                   750 IF T=1 THEN GOTO 2100
                                  SOO LET PRESO
                                                                   760 IF Bs (1) ="N" OR Bs (1) ="E" O
 160 FOR I =1 TO 6
                                  510 LET 5P=0
                                                                  R 56(1) ="W" OR 56(1) ="5" THEN GO
 170 PRINT AT 1,0; " "; TAB 31; " ."
                                  520 SLOW
                                                                  TO 780
180 NEXT I
                                  580 GOSUB 1300
                                                                   778 GOTO 2200
 198 PRINT "
                                  780 LET Y1=Y+(Bs(1)="S" AND Y(1
```



```
0) - (Bs (1) ="N" AND Y>1)
                                1320 NEXT I
                                                                 1920 GUSUB 1400
 790 LET X1=X+(B$(1) *"E" AND X<1
                                                                 1930 PRINT AT 21,0; "YOU HAVE BEE
                               1330 RETURN
                               1400 PRINT AT 21,0;" N DESTROYED"
0) - (Be(1) ="W" AND X>1)
300 IF AS(Y1,X1) >CHRS 127 THEN
                                                                 1940 STOP
                                                                 2000 PRINT AT 2,5; -----
COTO 950
                                1410 PETURN
810 PRINT AT Y+9,X; CHR# 0
                              1500 TF TANA THEN GOTO 1500
                                                                 AAREST S.S. FILL &
                                                                 LITTLE TORT 4,5; T. WELL . I
820 LET YeY1
                                1510 IF LB<1 THEN GOTO 1700
                       1520 IF PP (2 THEN GOTO 1500
830 LET X=X1
                                                                 """ AT 5,5;"
840 LET PP#PP-1 1830 PRINT RT 2,10;" P. A. L. L. "
850 IF NOT PP THEN GOTO 1880
                                          AT 3,10; "F. FILTI."
                                                                2010 GOSUB 1400
                                        AT 4,10; "LET IT I'L";
                                                                2020 PRINT AT 21,0; "YOU HAVE 500
998 ROTO $98
1000 PRINT AT 2,7; "LIA TIIT
                                         AT 5,10;"
                                                                RED 100 PER CENT"
MIN'S
          AT 3,7; "1911 | 1911
                                1540 LET LB=LB-INT (RND+(3 RND L
                                                                2030 STOP
                                                                2100 GOSUB 1400
131-77
          AT 4,7;" | 150 | 1 | 146
                                B>2)+1)
                                1545 LET PP=PP-9
1150
                                                                2110 PRINT AT 21,0; "WHAT ABOUT T
1010 RETURN
                                1550 LET T=0
                                                                 HE BLIEN ?"
1100 005115 1300
                              1560 LET A$ (Y, X) =CHR$ 0
                                                                 2120 GOTO 700
                          1570 LET SP=SP+1
1105 PRINT AT 2,12;"
                                                                2200 GOSUB 1400
          AT 3,12;""";
                                1580 60505 1300
                                                                 2210 PRINT AT 21,0; "UNKNOWN ENTR
          AT 4,12;""";
                               1590 GOTO 590
          AT 5,12;" .....
                                1500 GOSUB 1400
                                                                2220 GOTO 700
1110 FOR I=0 TO 5
                                1610 PRINT AT 21,0; "NO MONSTERS
                                                                2300 GOSUB 1400
1120 PRINT AT 5,12;"
                                TO SHOOT HERE"
                                                                 2310 IF PP (2 THEN GOTO 1800
1130 IF VAL "16514"-VAL "9" THEN
                                1620 PETURN
                                                                 2020 00505 1300
1140 PRINT AT 5,12;"-"
                                1700 GOSUB 1400
                                                                 2332 PRINT AT 2,9;"- -- -- --
1150 NEXT I
                                1710 PRINT AT 21,0; "NO MORE LASE
                                                                P. ...
                                                                           AT 3,9;" - F FI F
1150 RETURN
                                R BOLTS, ALIEN WINS."
                                                                1 1";
                                                                           AT 4,9; ". Ib-IIb-
                                                                ■"; AT 5,9;"■"
1200 GOSUB 1300
                                1720 PAUSE SOO
1730 GOTO 1900
                                                                 2340 PPINT AT 21,0; "YOU HAVE SEA
          AT 2,12;" " ";
                                1800 GOSUS 1400
                                                                LED THE LERK . UELDONE "
          AT 3,12; "----";
                                1810 PRINT AT 21,0; "NOT ENOUGH P
                                                                2350 LET A$(Y,X) =CHR$ 0
          AT 4,12;"
                                OUER LEFT"
                                                                2360 LET 5P-5P+5
          AT 5,12:"-
                                1820 PAUSE 500
                                                                9370 | FT 00-00-9
                        " 1900 GOSUB 1300
          AT 6,12;" ..
                                                                 2080 PAUSE 500
1998 PETURN
                                1910 PRINT AT 2,10; "F.F.A.F.";
                                                                2390 GOTO 590
1300 FOR I=1 TO 6
                                         AT 3,10;" IF THE : 3400 SAUE "ALERS"
1310 PRINT RT 1,1;"
                                          AT 4,10;" - 1 1 -
                                                                2500 PUN
```



20 GOSUB 9000 3015 LET C7=INT (RND*9999) +1 1000 CLS 3020 LET C8=INT (RND #9999) +1 1005 PRINT "WOULD YOU LIKE TO SE 3030 PRINT "FIRST PRIZE", C4 F THE POSSIBLE STRIKES?" 3040 PRINT "SECOND PRIZE" . C7 1010 IF INKEYS="N" THEN GOTO 200 3050 PRINT "THIRD PRIZE", CS 3055 PRINT "STARTERS" 1020 IF INKEYS (>"Y" THEN GOTO 20 3050 FOR J=1 TO 11 6 3070 LET C5=INT (RND #7000) +1 1030 IF INKEY = "" THEN GOTO 1010 3075 PRINT CS, 1500 PRINT "POSSIBLE FOUR DIGI 3080 IF A7=C5 THEN GOTO 5400 S STRIKE" 3085 NEXT J 1510 FOR I=1 TO 25 3090 PRINT ,"CONSOLATION" 1520 PRINT "*". 4000 FOR U=1:TO 10 1525 NEXT I 4010 LET C6=INT (RND +9800) +1 1550 LET P=INT (RND #9999) +1 4020 PRINT C6, 1555 LET P1=INT (RND +8000) +1 4200 IF 87=C6 THEN GOTO 6500 1550 PRINT . P. P1 4300 NEXT J 1570 PRINT AT 21,0; "PRESS A LETT 4310 IF A7=C7 THEN GOTO 6000 ER" 4315 IF A7=C4 THEN GOTO 6030 1580 IF INKEY = "" THEN GOTO 1580 4320 IF A7=C8 THEN GOTO 6600 CLS 5005 PAUSE 100 2010 PRINT "YOU BETS, PLEASE" 5010 LET E=E-B 2020 INPUT B 5012 IF E . O THEN GOSUB 7000 2030 IF B(1 OF B()INT B THEN GOT 5013 CLS 02026 5015 PRINT "YOUR BANKROLL IS NOW 2035 PRINT "ALL BETS ARE ";臣 2040 PRINT "YOUR NUMBER IN FOUR 5020 LET ISH" ER TRY??? DIGITS "; 5025 PRINT AT 21,0; IS 2050 INPUT 67 5030 LET Is=Is(2 TO)+Is(1) 2050 PRINT A7 5040 IF INKEY # "Y" THEN GOTO 200 3000 PRINT "INTERNATION OF THE PROPERTY OF THE 0 [基础间面图:"

ANOTH

5043 IF INKEYS="" THEN GOTO 5025 6605 CLS 5065 IF INKEY \$ (> "Y" THEN GOSUB 7 6610 LET E=E+ (8 +500) 600 5520 GOTO 5015 5000 CLS 7000 CLS 6005 PRINT "YOU STRUCK SECOND PR 7007 PRINT AT 11,12; "GAME OVER" IZE." 7009 PRINT AT 21,0; "YOU END WITH 5007 LET E=E+8*500 #":E 5015 GOTO 5015 7100 STOP 5030 CLS 9000 PRINT AT 2,0:" 6040 PRINT "YOU STRUCK FIRST PRI (河南南岛)" 9010 PRINT AT 4,0; "PRIZES FOR \$1 5045 LET E=E+(B*2000) .00 BET"; AT 6,0; "FIRST PRIZE-\$20 00" 6050 GOTO 5015 6400 CLS 9020 PRINT AT 8,0; "SECOND PRIZE-6405 PRINT "YOUR STRUCK A STARTE \$1,000"; AT 10,0; "THIRD PRIZE-\$50 R" 0" 9040 PRINT AT 12,0; "STARTERS-\$25 6410 LET E=E+(250+B) 6420 GOTO 5015 9050 PRINT AT 14,0; "CONSOLATION-6500 CLS \$50" 6505 PRINT "YOU STRUCK A CONSOLA 9060 PRINT AT 18,0; "PRESS NEWLIN TION" E WHEN READY" 9070 IF INKEY :" THEN GOTO 9070 6510 LET E=E+(B+60) 9080 RETURN 6520 GOTO 5015 6600 PRINT "YOU STRUCK THIRD PRI 9900 SAUE "FOUR DIGITM"



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Or will you get bovvered?

Or get the cocktail?

Will you ever reach the 8th round?



Come to that, will you ever work out the scoring system?

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This is 'ZIGGY', shown above, in his exploratory capsule

THE PYRAMID

THE PYRAMID is an arcade style game which has a very adventurou

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

The Pyramid is inhabited by a total of 60 weird 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'll no doubt invert your pickname.

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 ch

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 wist the more information is gathered to enable you to discover the secret numbers of the pyramid. The puzzle won't take you days to solve, it will probably take you a few months.

DOOMSDAY CASTLE

DOOMSDAY CASTLE consists of a labyrinth of 74 complexly interconnected Halls and Passages where you will meet a whole host of adversaries serving the infinitely evil Scarthax, the Garthroog, the Orphacs, the phenomenally nasty Googly Bird and the Urks which manifest themselves in over fifty unbelievably weird and wonderful guises.

Scarthax has scoured the Universe to bring together the six ancient score of lifeforce. United in Doomsday Castle they are being used to wield an irresistable power over the cosmos, emanating waves of corruption through every galaxy.

To save the Universe, you must battle your way through the Castle to find and collect the six stones and use their force against Scarthax to destroy Doomsday Castle, hopefully escaping yourself before the final catachymic explosion.

The task is not easy (saving the Universe never is)] and it will tak, you many games to unfold the structure of Doomsday Castle and discover the locations of the ancient stones.

The addictive arcade style action will keep you coming back to play but the overall challenge should still keep you occupied for months.

FANTASY SOFTWARE is available from W.H.SMITHS, JOHN MENZIES, BOOTS, LASKYS, GREENS, RUMBELOWS, SPECTRUM GROUP, COMPUTERS FOR ALL and all other good software retailers.

The Pyramid at £5.50 and Doomsday Castle at £6.50 from

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