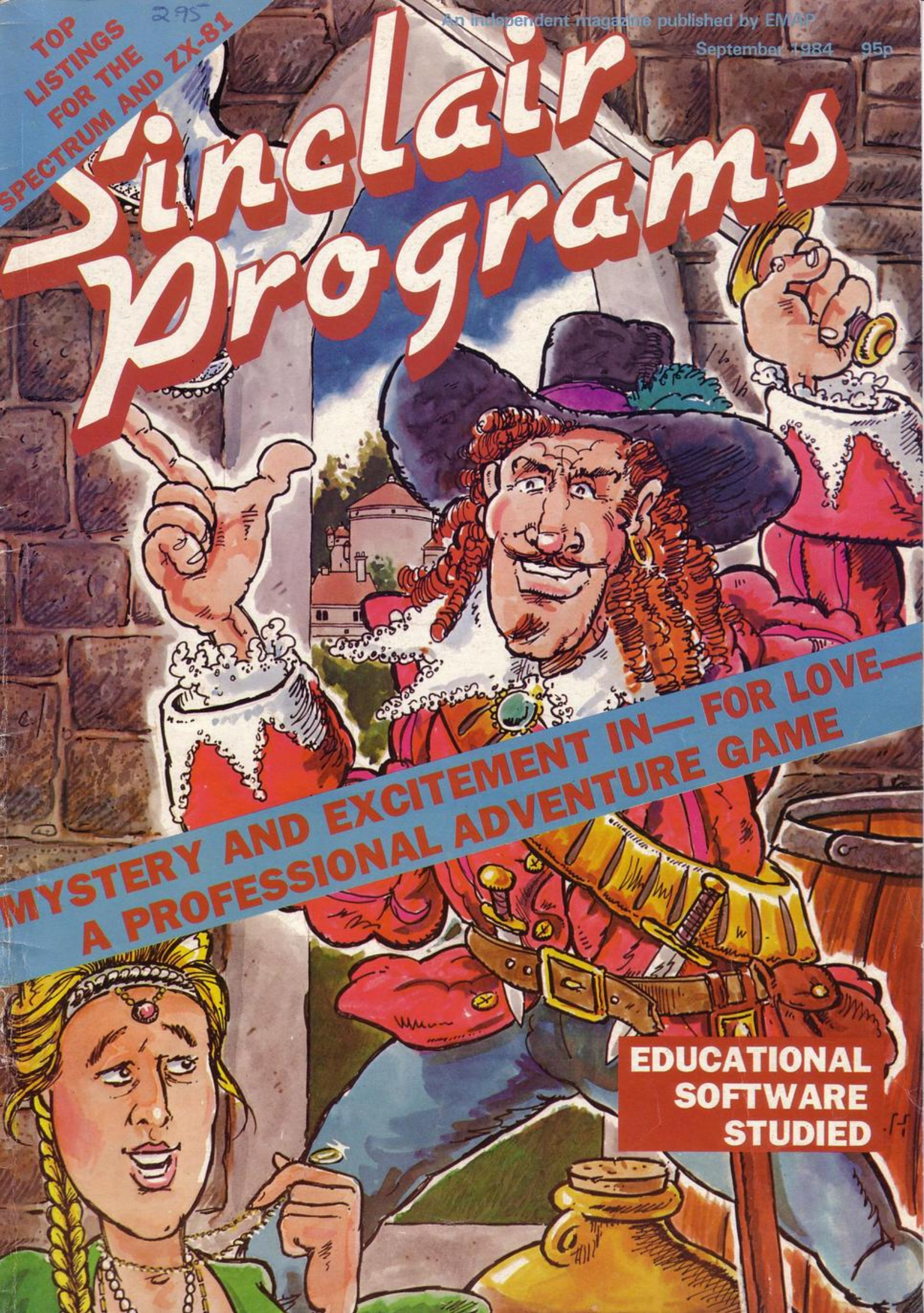


295
TOP
LISTINGS
FOR THE
SPECTRUM AND ZX-81

An independent magazine published by EMAP

September 1984 95p



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Sinclair Programs is published
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Computer Publications.

Telephone 01-430 1200

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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

All subscription enquiries:
Magazine Services,
EMAP Business and Computer
Publications,
Priory Court,
30-32 Farringdon Lane,
London EC1
Telephone 01-251 6222

Cover Design—Ivan Hissey

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

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

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

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

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



FOR LOVE

ESCAPE FROM the mansion with a ruby and gold bar to prove your worthiness to the father of the woman you love. There is a time limit by which you have to eat the fruit of life and this is approximately forty minutes.

For Love was written for the 48K Spectrum by Mark Chapman, of Bracknell, Berks.

```
10 LET LLIFE=1: LET LIFE=2000:
  BORDER 6: PAPER 7: INK 0: GO SU
  B 1000: POKE 23658,8: DIM R(2):
  DIM O(30): DIM C(5): DIM D(10,2)
```

```
20 RESTORE 9050: LET R(1)=1: F
  OR F=1 TO 30: READ D(F): NEXT F
```

```
30 LET L=0: LET EN=0: LET N=0:
  LET E=0: LET S=0: LET W=0: LET
  U=0: LET D=0: GO SUB (R(1)*10)+1
  000: LET H=0
```

```
40 FOR F=1 TO 30: IF D(F)=R(1)
  THEN GO TO 60
  50 NEXT F: GO TO 90
  60 IF H=0 THEN PRINT INK 1:
  "YOU ALSO SEE:"
```

```
70 LET H=1: RESTORE 9040
  80 FOR G=1 TO F: READ C$: NEXT
  G: PRINT C$: GO TO 50
  90 LET T=1: PRINT AT 18,0:"J-
  ": LET A$=""
  94 IF LLIFE=0 THEN GO TO 100
```

```
95 IF FN A(>)LIFE THEN GO TO
  9950
  100 FOR G=1 TO 100: LET B$= INK
  EY$: IF B$ <> "" THEN GO TO 11
  0
```

```
105 NEXT G: GO TO 94
  110 BEEP .01,10: IF CODE B$=12
  THEN GO TO 160
  120 IF CODE B$=13 AND A$ <> ""
  THEN GO TO 200
  130 IF CODE B$=13 THEN GO TO
  100
  135 IF LEN A$>29 THEN GO TO 1
  00
```

```
140 LET A$=A$+B$: PRINT AT 18,
  T;B$;"-"
  145 IF INKEY$ <> "" THEN GO
  TO 145
```

```
150 LET T=T+1: GO TO 100
  160 IF A$="" THEN GO TO 100
  170 LET T=T-1: LET A$=A$( TO T-
```

```
1)
  180 PRINT AT 18,T;"-"
  185 IF INKEY$ <> "" THEN GO
  TO 180
  190 GO TO 100
  200 LET D$="": LET FF=1: CLS :
  PRINT ">"; INK 1;A$: IF A$( LEN
  A$) <> "." THEN LET A$=A$+"."
```

```
210 RESTORE 9000: FOR F=FF TO
  LEN A$
  220 IF A$(F)=" " OR A$(F)="." T
  HEN GO TO 240
  230 NEXT F: GO TO 290
  240 IF A$(FF TO F-1)=" THEN G
  O TO 230
  250 LET B$=A$(FF TO F-1): FOR G
  =1 TO 40: READ C$
  260 IF C$=B$ THEN GO TO 280
  270 NEXT G: LET FF=F+1: GO TO 2
  10
```

```
280 RESTORE 9010: FOR H=1 TO G:
  READ C: NEXT H: LET D$=D$+ STR$
  C: LET FF=F+1: GO TO 210
  290 RESTORE 9020: FOR F=1 TO 37
  : READ C$
  300 IF C$=D$ THEN GO TO 330
  310 NEXT F
  320 PRINT "THERE IS NO SUCH CO
  MMAND.": GO TO 90.
```

```
330 GO TO (F*100)+3000
  1000 CLS : PRINT INK 2;" FOR
  THE LOVE OF A GIRL"
  1005 PRINT "HELLO.YOU HAVE FAL
  LEN DEEPLY INLOVE WITH A RICH GI
  RL BUT AS YOUARE POOR,YOU HAVE B
  EEN SET A TASK TO PROVE YOUR
  LOVE."
```

```
1006 PRINT "YOU MUST FIND A RUB
  Y AND A GOLDBAR AND THEN ESCAPE
  FROM THE MANSION OF DOOM.GOOD
  LUCK AND HAPPY ENDINGS."
```

```
1007 PRINT "TO ELLEN BY MARK
  CHAPMAN": PAUSE 1000: GO SUB 9
  930: CLS : RETURN
```

```
1010 PRINT "YOU ARE STANDING A
  T THE MANSIONDOOR.IT IS VERY BIG
  AND IT LOOKSHEAVY.FOUR LARGE ST
  EEL BOLTS HOLD THE DOOR FIRML
  Y SHUT.FACINGNORTH,AWAY FROM THE
  DOOR,IS A FLIGHT OF STAIRS.CO
  RRIDORS GO EAST AND WEST."
```

```
1015 LET W=21: LET E=2: LET N=11
  8: RETURN
```

```
1020 PRINT "YOU ARE IN A LONG
  EAST/WEST CORRIDOR.A DOUBLE D
  OOR IS IN THENORTH WALL."
  1024 IF D(1,2)=1 THEN GO SUB 30
```

Pro Printout

```
00
  1025 LET E=4: LET W=1: IF D(1,2)
  =1 THEN LET EN=119
```

```
1026 RETURN
  1030 PRINT "YOU ARE AT THE NOR
  TH END OF A HALLWAY.A DOUBLE DO
  OR IS PROPPEDOPEN.EXITS ARE NORT
  H AND SOUTH."
```

```
1034 IF D(2,2)=1 THEN GO SUB 30
  00
```

```
1035 LET N=19: LET S=119: RETURN
  1040 PRINT "YOU ARE IN A LONG
  EAST/WEST CORRIDOR.A DOOR IS
  IN THE SOUTH WALL."
```

```
1044 IF D(2,2)=1 THEN GO SUB 30
  00
```

```
1045 LET E=6: LET W=2: IF D(2,2)
  =1 THEN LET EN=5
```

```
1046 RETURN
  1050 PRINT "YOU ARE IN A CLOAK
  ROOM WITH A WASHROOM AND TOILET
  .A DOOR IS THE EXIT."
```

```
1055 LET L=4: RETURN
  1060 PRINT "YOU ARE AT A JOINI
  NG OF THE CORRIDORS.YOU CAN G
  O WEST,SOUTH OR NORTH."
```

```
1065 LET W=4: LET N=16: LET S=7:
  RETURN
```

```
1070 PRINT "YOU ARE AT A TURNI
  NG IN THE CORRIDOR.YOU CAN GO
  NORTH OR EAST."
```

```
1073 LET E=122
  1074 IF D(3,2)=1 THEN LET EN=8
```

```
1075 LET N=6: RETURN
  1080 PRINT "YOU ARE STANDING I
  N A GUEST ROOM WHERE PARTIES
  WERE HELD. EXITS ARE WEST AND
  NORTH."
```

```
1085 LET W=7: LET N=9: RETURN
```

```
1090 PRINT "YOU ARE IN AN OPEN
  BALLROOM. EXITS ARE NORTH AND
  SOUTH."
```

```
1095 LET N=10: LET S=8: RETURN
```

```
1100 PRINT "YOU ARE IN A GALLE
  RY.PICTURES STILL HANG FROM THE
  WALLS.THE GALLERY IS VERY LONG
  AND THIN. EXITS ARE NORTH,WES
  T AND SOUTH."
```

```
1105 LET N=12: LET W=11: LET S=9
  : RETURN
```

```
1110 PRINT "YOU ARE IN A SHORT
  CORRIDOR. TWO DOORS ARE IN TH
  E WALLS."
```

```
1113 IF D(5,2)=1 THEN PRINT "
  THE DOOR TO THE NORTH IS OPEN."
```

```
1114 IF D(4,2)=1 THEN PRINT "
  THE DOOR TO THE SOUTH IS OPEN."
```

```
1115 LET E=10: IF D(5,2)=1 THEN
  LET N=14
```

```
1116 IF D(4,2)=1 THEN LET S=13
```

```
1117 RETURN
```

```
1120 PRINT "YOU ARE IN A GAME
  ROOM AND THE STUFFED HEADS OF GA
  ME HANG ON THE WALL.EXITS ARE
  SOUTH AND WEST."
```

```
1125 LET W=15: LET S=10: RETURN
```

```
1130 PRINT "YOU ARE IN A STUDY
  .A DESK IS INTHE CENTRE OF THE R
  OOM AND A FEWCHAIRS ARE ARRANGED
  AROUND IT."
```

```
1135 LET L=11: LET N=11: RETURN
```

```
1140 PRINT "YOU ARE IN A LIBRA
  RY.TALL BOOK SHELVES LINE THE RO
  OM WITH MANY BOOK STILL UPON THE
  M."
```



```

1145 LET L=11: LET S=11: RETURN
1150 PRINT " YOU ARE IN A SMALL
HALLWAY.A DOOR IS IN FRONT OF
YOU AND THE HALLWAY CARRIES ON
TO THE SOUTH AND EAST."
1154 LET E=12: GO SUB 3000: LET
S=120: LET EN=18: RETURN
1160 PRINT " YOU ARE AT THE END
OF THE CORRIDOR BUT A DOOR
IS IN THE WALL.EXIT SOUTH."
1165 LET LIFE=2000: GO SUB 3000:
LET EN=17: LET S=6: RETURN
1170 PRINT " YOU ARE IN A PARLO
UR BUT IT IS EMPTY.I SUGGEST YOU
LEAVE QUICK AS IT SMELLS IN HER
E."
1175 LET LIFE= FN A()+10: LET L=
16: RETURN
1180 PRINT " YOU ARE IN AN OLDE
R CHILDS PLAY ROOM."
1185 LET L=15: RETURN
1190 PRINT " YOU ARE AT THE END
OF THE CORRIDOR.A DOOR IS
IN THE WEST WALL.EXITS ARE SOUT
H."
1195 LET S=3: GO SUB 3000: LET E
N=20: RETURN
1200 PRINT " YOU ARE IN A LOUNG
E.THE ROOM IS BIG AND LOOKS VE
RY COSY."
1203 IF D(10,2)=1 THEN LET D=76
1204 IF D(10,2)=1 THEN LET EN=7
6
1205 LET L=19: RETURN
1210 PRINT " YOU ARE IN A LONG
EAST/WEST CORRIDOR.A DOOR IS
IN THE SOUTH WALL."
1214 IF D(6,2)=1 THEN GO SUB 30
00
1215 LET E=1: LET W=23
1216: IF D(6,2)=1 THEN LET EN=2
2
1217 RETURN
1220 PRINT " YOU WALK INTO THE
ROOM AND THE DOOR SWINGS SHUT BE
HIND YOU.YOU LOOK AROUND TO NOTI
CE SKELETONS OF THE LAST PEOPLE
TO ATTEMPT THE QUEST."
1221 PRINT " YOU TRY THE DOOR B
UT IT WILL NOT MOVE.IT LOOKS A
S IF THE SAMEPERIL HAS COME YOUR
WAY."
1225 GO TO 9960

```

```

1230 PRINT " YOU ARE IN A LONG
EAST/WEST CORRIDOR.A DOOR IS
IN THE SOUTH WALL."
1235 GO SUB 3000: LET E=21: LET
W=25: LET EN=24: RETURN
1240 PRINT " YOU ARE IN THE KIT
CHENS.A STOVEIS STILL WARM AND A
SAUCEPAN IS ON IT."
1245 LET L=23: RETURN
1250 PRINT " YOU ARE AT THE JOI
NING OF THE CORRIDORS.YOU CAN G
O NORTH,EAST OR SOUTH."
1255 LET S=26: LET N=27: LET E=2
3: RETURN
1260 PRINT " YOU ARE AT THE TOP
OF A FLIGHT OF STEPS AND A CORR
IDOR GOES NORTH."
1265 LET D=36: LET N=25: RETURN
1270 PRINT " YOU ARE IN A SHORT
NORTH/SOUTH CORRIDOR.A DOOR IS
IN THE EAST WALL."
1275 GO SUB 3000: LET EN=28: LET
N=29: LET S=25: RETURN
1280 PRINT " YOU ARE IN THE DIN
ING ROOM.A LONG TABLE IS IN TH
E ROOM BUT THE WALLS ARE BARE."
1285 LET L=27: RETURN
1290 PRINT " YOU ARE IN A SHORT
NORTH/SOUTH CORRIDOR.A DOOR IS
IN THE EAST WALL."
1295 LET N=31: LET S=27: GO SUB
3000: LET EN=30: RETURN
1300 PRINT " YOU ARE IN A WASHR
OOM WITH A TOILET.IT SMELLS HO
RRIBLE."
1305 LET L=29: RETURN
1310 PRINT " YOU ARE IN A TURNI
NG IN THE CORRIDOR.YOU CAN GO
EAST OR SOUTH."
1315 LET S=29: LET E=32: RETURN
1320 PRINT " YOU ARE IN A TURNI
NG IN THE CORRIDOR.YOU CAN GO
WEST OR SOUTH."
1325 LET S=33: LET W=31: RETURN
1330 PRINT " YOU ARE AT THE END
OF A VERY SHORT CORRIDOR.A DO
OR IS IN THE WEST WALL.EXIT TO T
HE NORTH."
1335 LET N=32: GO SUB 3000: LET
EN=34: RETURN
1340 PRINT " YOU ARE IN A SEWIN
G ROOM.ALL LOOKS TO BE IN A WO

```

```

RKING STATE."
1345 LET L=33: RETURN
1350 PRINT " YOU ARE IN THE BRO
OM CUPBOARD. EXIT UP."
1355 LET U=118: RETURN
1360 PRINT " YOU ARE AT THE BOT
TOM OF SOME STEPS IN A BASEMENT
.THIS ROOM ISFULL OF JUNK.A DOOR
IS THE EXIT."
1365 LET U=26: LET L=37: GO SUB
3000: RETURN
1370 PRINT " YOU ARE IN A BASEM
ENT CORRIDOR.THE CORRIDOR GOES N
ORTH AND TWO DOORS ARE TO THE WE
ST AND EAST."
1371 IF D(7,2)=0 THEN PRINT "ON
LY THE WEST DOOR IS OPEN."
1372 IF D(7,2)=1 THEN PRINT "BO
TH DOORS ARE OPEN."
1373 IF D(7,2)=1 THEN LET E=38
1375 LET N=39: LET W=36: RETURN
1380 PRINT " YOU ARE IN A WORKS
OP.TOOLS HANGFROM THE WALLS."
1385 LET L=37: RETURN
1390 PRINT " YOU ARE AT A CROSS
-ROADS."
1395 LET N=45: LET E=40: LET W=4
2: LET S=37: RETURN
1400 PRINT " YOU ARE AT THE END
OF A CORRIDOR.A DOOR IS
IN THE NORTH WALL.YOU CAN EXIT W
EST."
1405 LET W=39: GO SUB 3000: LET
EN=41: RETURN
1410 PRINT " YOU ARE IN A SMALL
ROOM WITH NEXT TO NO LIGHT BU
T YOU SEE SOME WRITING ON THE
WALL."
1415 LET L=40: RETURN
1420 PRINT " YOU ARE AT THE END
OF A CORRIDOR.TWO DOORS
ARE OPEN AND A FUNNY SMELL COMES
FROM ONE.THE DOORS ARE NORTH AND
SOUTH."
1425 LET S=43: LET N=44: LET E=3
9: RETURN
1430 PRINT " THE ROOM IS FILLED
WITH FRUIT."
1435 LET L=42: RETURN
1440 PRINT " THE ROOM IS FILLED
WITH FRUIT."
1445 LET L=42: RETURN
1450 PRINT " YOU ARE IN A NORTH
/SOUTH CORRIDOR.A DOOR IS
IN THE WEST WALL."
1455 LET N=47: LET S=39: GO SUB
3000: LET EN=46: RETURN
1460 PRINT " YOU ARE IN A ROOM
WITH BROKEN FURNITURE."
1465 LET L=45: RETURN
1470 PRINT " YOU ARE AT THE NOR
TH END OF A CORRIDOR.A DOOR IS
IN THE WEST WALL."
1475 GO SUB 3000: LET EN=49: RET
URN
1480 PRINT " YOU ARE ON A LANDI
NG.STEPS GO DOWN TO THE SOUTH A
ND NORTH."
1485 LET LIFE=2000: LET S=53: LE
T N=54: RETURN
1490 PRINT " YOU ARE IN A WINE
ROOM.BOTTLES OF IT ARE ON THE SH
ELVES.GLASSESOF WINE ARE ON A TR
AY."
1495 LET L=47: RETURN
1500 PRINT " YOU ARE IN A CELL
LIKE ROOM.ALLTHE WALLS ARE BARE.
EXITS ARE EAST OR NORTH."
1505 LET E=51: LET N=53: RETURN
1510 PRINT " YOU ARE IN A CIRCUI
LAR ROOM. A BIG HOLE IS ABOVE
YOU."
1515 LET LIFE=2000: LET N=52: LE
T W=50: RETURN
1520 PRINT " YOU ARE IN A DUSTY
ROOM.YOU ARECHOKING ON IT SO LE
AVE FAST."
1525 LET LIFE= FN A()+10: LET S=
51: LET L=51: RETURN
1530 PRINT " STEPS GO UP AND A

```



DOOR IS TO THE SOUTH."
1535 LET S=50: LET U=48: RETURN

1540 PRINT " YOU ARE IN A SMELL
Y ROOM.EYES ARE LOOKING AT YOU.
THINK QUICK AND MOVE EAST OR SO
UTH."

1545 LET LIFE= FN A()+10: LET E=
55: LET S=48: RETURN

1550 PRINT " YOU ARE IN A PHOTO
GRAPHERS DARK ROOM.A BOOKSHE
LF LOOKS OUT OF PLACE IN THE ROO
M."

1555 LET LIFE=2000: LET E=54: LE
T L=54: RETURN

1560 PRINT " THE WALL CLOSES."

1565 LET R(1)=119: GO TO 2190
1570 PRINT " THE BOOKSHELF MOVE
S BACK."

1575 LET R(1)=55: GO TO 1550
1580 PRINT " YOU ARE IN A SECRE
T ROOM BEHINDTHE BOOKCASE."

1585 LET L=57: RETURN

1590 PRINT " YOU ARE IN A BEDRO
OM.THE WALLS ARE BRIGHTLY DECORA
TED AND IT ALL LOOKS VERY COMF
ORTABLE."

1595 LET L=60: RETURN

1600 PRINT " YOU ARE IN A CORRI
DOR.THE SOUTHS A DEAD END BUT D
OORS ARE IN THE EAST AND WEST S
IDES.EXIT IS TO THE NORTH."

1605 LET N=63: LET E=61: LET W=5
9: RETURN

1610 PRINT " YOU ARE IN SPARE B
ED BEDROOM FOR IMPORTANT GUEST
S.A FOUR POSTER BED LOOKS VE
RY ELEGANT. A DOOR IS THE EXIT
BUT ANOTHER DOOR GOES EAST."

1615 LET E=62: LET L=60: LET W=6
0: RETURN

1620 PRINT " YOU ARE IN THE GUE
STS PRIVATE BATHROOM.THE DOOR I
S THE EXIT."

1625 LET W=61: LET L=61: RETURN

1630 PRINT " YOU ARE AT A TURNI
NG IN THE PASSAGE.A DOOR IS I
N THE WEST WALL.EXITS ARE EAST
AND SOUTH."

1635 GO SUB 3000: LET EN=64: LET
S=60: LET E=67: RETURN

1640 PRINT " YOU ARE IN A BEDRO
OM.A FOLDAWAYBED IS AGAINST THE
WALL."

1645 LET L=63: RETURN

1670 PRINT " YOU ARE ON AN EAST
/WEST LANDINGWITH AN OPEN DOOR T
O THE SOUTH."

1675 LET W=63: LET E=123: LET EN
=68: LET S=68: RETURN

1680 PRINT " YOU ARE IN A SITTI
NG ROOM FOR THE GUESTS OWN USE.
THE FLOOR IS CARPETED STILL AND
WARM."

1685 LET L=67: LET N=67: RETURN

1690 PRINT " YOU ARE ON AN EAST
/WEST LANDINGWITH A DOOR TO THE
SOUTH."

1695 LET W=123: LET E=71: GO SUB
3000: LET EN=70: RETURN

1700 PRINT " YOU ARE IN A BEDRO
OM WITH BARE WALLS.IT IS DAMP AN
D COLD."

1705 LET L=69: RETURN

1710 PRINT " YOU ARE AT A CROSS
ING IN THE LANDING.EXITS ARE N
ORTH,SOUTH, EAST AND WEST."

1715 LET N=72: LET S=80: LET W=6
9: LET E=77: RETURN

1720 PRINT " YOU ARE OUTSIDE A
DOOR.EXIT TO THE SOUTH."

1725 LET S=71: GO SUB 3000: LET
EN=73: RETURN

1730 PRINT " YOU ARE IN A BEDRO
OM.A WARDROBEIS IN ONE CORNER."

1734 IF D(8,2)=0 THEN LET EN=74

1735 LET L=72: RETURN

1740 PRINT " YOU ARE INSIDE THE
WARDROBE.IT IS EMPTY.EXITS ARE

EAST AND WEST"

1745 LET E=73: LET W=75: RETURN
1750 PRINT " YOU ARE IN A SMALL
ROOM HIDDEN THROUGH THE WARDROB
E."

1755 LET L=73: RETURN

1760 PRINT " YOU ARE IN HOLE UN
DER THE FLOOR"

1765 LET U=110: RETURN

1770 PRINT " YOU ARE OUTSIDE A
DOOR.EXIT TO THE WEST."

1775 LET W=71: GO SUB 3000: LET
EN=78: RETURN

1780 PRINT " YOU ARE IN A BEDRO
OM.THE ROOM IS BARE AND LIFELES
S."

1785 LET L=77: RETURN

1800 PRINT " YOU ARE AT THE BOT
TOM OF SOME STAIRS.EXITS ARE UP
AND EAST."

1805 LET U=99: LET E=71: RETURN
1810 PRINT " YOU ARE IN A MAIDS
ROOM.THE BEDIS TIDY AND THE ROO
M IS VERY NEAT."

1815 LET L=88: RETURN

1820 PRINT " YOU ARE IN A MAIDS
ROOM WHICH IS VERY UNKEMPT."

1825 LET L=87: RETURN

1830 PRINT " YOU ARE IN A BUTTL
ERS ROOM.A MIRROR HANGS ON THE
WALL."

1840 LET L=86: RETURN

1850 PRINT " YOU ARE AT A TURNI
NG IN THE LANDING.EXITS ARE E
AST AND SOUTH"

1855 LET E=102: LET S=86: RETURN
1860 PRINT " YOU ARE ON A LONG
NORTH/SOUTH LANDING.A DOOR IS I
N THE WEST WALL."

1865 LET EN=83: LET N=85: LET S=
87: GO SUB 3000: RETURN

1870 PRINT " YOU ARE ON A LONG
NORTH/SOUTH LANDING.DOORS ARE T
O THE EAST AND WEST.BOTH ARE O
PEN."

1875 LET E=91: LET W=82: LET N=8
6: LET S=88: RETURN

1880 PRINT " YOU ARE AT A TURNI
NG IN THE LANDING.A DOOR IS I
N THE WEST WALL.EXITS ARE NORT
H AND EAST."

1885 LET N=87: LET E=89: GO SUB
3000: LET EN=81: RETURN

1890 PRINT " YOU ARE OUTSIDE A
DOOR.EXITS TOTHE WEST."

1895 LET W=88: GO SUB 3000: LET
EN=94: RETURN

1910 PRINT " YOU ARE IN THE COO
KS SLEEPING QUARTERS."

1915 LET L=87: RETURN

1920 PRINT " YOU ARE IN THE LAU
NDRY ROOM BUTTHERE IS NO LAUNDRY
TO BE SEEN. A WASHING BOARD IS
ON THE FLOOR AND IS VERY BROKEN."

1925 LET L=99: RETURN

1940 PRINT " YOU ARE IN THE SER
VANTS ROOM.ITIS EXTREMELY TIDY A
ND NOTHING LOOKS OUT OF PLACE."

1945 LET L=89: RETURN

1970 PRINT " YOU ARE IN THE MUS
IC STORE ROOMBUT IT IS EMPTY OTH
ER THAN THICKDUST."

1975 LET L=98: LET N=98: RETURN

1980 PRINT " YOU ARE IN THE MUS
IC ROOM.A MUSIC STAND IS UP W
ITH MUSIC ON IT.AN OPEN DOOR IS
SOUTH."

1985 LET EN=97: LET W=99: LET S=
97: LET L=99: RETURN

1990 PRINT " YOU ARE AT THE TOP
OF THE STAIRS.A LANDING GO
ES NORTH AND OPEN DOORS ARE EAST
AND WEST."

1995 LET D=80: LET W=92: LET E=9
8: LET N=100: RETURN

2000 PRINT " THE LANDING GOES N
ORTH,SOUTH AND EAST, AND A DOO
R IS IN THE WEST WALL."

2005 LET N=102: LET S=99: LET E=
104: GO SUB 3000: LET EN=101: RE
TURN

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2010 PRINT " YOU ARE IN THE TUT
ORS SCHOOL ROOM.A SUM IS ON TH
E BOARD.THE SUM IS 13+15 ALL MU
LTIPLIED BY 100."

2015 LET L=100: RETURN

2020 PRINT " YOU ARE IN A TURNI
NG ON THE LANDING.YOU MAY GO
WEST OR SOUTHAND A DOOR IS TO TH
E EAST."

2025 LET W=85: LET S=100: GO SUB
3000: LET EN=103: RETURN

2030 PRINT " YOU ARE IN THE TUT
ORS ROOM.A DOOR IS OPEN TO THE
EAST."

2035 LET L=102: LET EN=106: LET
E=106: RETURN

2040 PRINT " YOU ARE OUTSIDE TH
REE OPEN DOORS.EXITS ARE WES
T.THE DOORS ARE NORTH,EAST AND
SOUTH."

2045 LET W=100: LET E=111: LET N
=108: LET S=112: RETURN

2060 PRINT " YOU ARE IN THE TUT
ORS PRIVATE BATHROOM.THE EXIT I
S THE DOOR."

2065 LET L=103: RETURN

2080 PRINT " YOU ARE IN THE NAN
NIES ROOM.A DOOR IS TO THE EAST
AND SOUTH.A CRADDLEROCKS BACK
AND FORTH."

2085 GO SUB 3000: LET E=110: LET
S=104: LET L=104: LET EN=110: R
ETURN

2100 PRINT " YOU ARE THE THE NA
NNIES BEDROOMWHICH IS SMALL AND
LOVING.A RUG IS ON THE FLOOR."

2105 LET L=108: LET W=108: RETUR
N

2110 PRINT " YOU ARE IN A YOUNG
CHILDS PLAY-ROOM.SOME TOYS ARE
STILL ON THE FLOOR."

2115 LET L=104: LET W=104: RETUR
N

2120 PRINT " YOU ARE IN A SMALL
ROOM WITH CHILDRENS PAINTINGS
ON THE WALL."

2125 LET L=104: LET N=104: RETUR
N

2130 PRINT " THERE ARE FOUR WAY
S.NORTH,EAST,SOUTH AND WEST."

2135 LET N=114: LET S=116: LET W
=117: LET E=115: RETURN

2140 PRINT INK 3;" YOU WALK IN
TO THE ROOM AND THE DOOR SHUTS.T
HE WALLS STARTS TO LAUGH AND TH
EN SCREAM.MIRRORS REFLECT YOUR
IMAGE AND BEND IT. THE LIGHT BL
INDS YOU AND THE SCREAM INJUR
ES YOUR EARS. THE DOOR HA
S SHUT ON YOUR FATE."

2145 GO TO 9980

2150 PRINT INK 2;" RUN WEST !"
: LET LIFE= FN A()+5: LET LLIFE=
1: LET W=113: GO TO 90

2160 PRINT " A LONG SLIDE IS IN
FRONT OF YOUAND IT GOES DOWN TO
THE GROUND. OUTSIDE,PEOPLE ARE
GATHERING ANDAS YOU APPEAR,EVERY
ONE CLAPS BUTHAVE YOU WON?"

2165 PRINT " YOU SLIDE DOWN TO T
HE GROUND. NOW YOU MUST GIVE TH
E RUBY AND THE GOLD BAR TO ELLE
NS FATHER. EVERYTHING STILLS."

2166 PAUSE 600: LET D\$="RUBY": G
O SUB 7000: IF H=6 THEN PRINT "

" OH DEAR!YOU DO NOT HAVE A RUBY
.WHAT WILL YOU DO ? WELL IT WILL
NOT BE TO MARRY ELLEN.YOU HAVE
FAILED YOUR QUEST.": GO TO 9980

2167 LET D\$="GOLD BAR": GO SUB 7
000: IF H=6 THEN PRINT " OH DE
AR!YOU HAVE FAILED YOUR QUEST

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BECAUSE YOU DO NOT HAVE A GOLD B
AR.WELL YOU COULD ALWAYS TRY AG
AIN.": GO TO 9980
2168 CLS : PRINT INK 1;" YOU HA
VE CONQUERED YOUR QUEST. ELLEN R
UNS TOWARDS YOU WITH HER ARMS OP
EN WIDE TO RECEIVE YOU. HER FAT
HER IS PLEASED.LONG LIVE YOU BOT
H."
2169 BEEP .9,-5: BEEP .5,0: PAUS
E 1: BEEP .15,0: BEEP 1,0: PAUSE
2: BEEP .9,-5: BEEP .5,2: PAUSE
1: BEEP .15,-1: BEEP 1,0: PAUSE
2: BEEP .9,-5: BEEP .5,0: PAUSE
1: BEEP .15,4: BEEP .5,7: PAUSE
1: BEEP .15,4: BEEP .9,0: PAUSE
2: BEEP .9,-5: BEEP .5,2: PAUSE
1: BEEP .15,-1: BEEP 1,0: PAUSE
10: GO TO 2169
2170 PRINT INK 2;" YOU FALL DOW
N A HOLE IN THE FLOOR.YOU GRA
B THE EDGE AND HOLDYOURSELF UP.
SUDDENLY A F
OOT APPEARS.IT IS BIG AND UNFRI
ENDLY AND STAPS ON YOUR HANDS."
2175 PRINT INK 1;" YOU FALL TO
YOUR DEATH.": GO TO 9980
2180 PRINT " YOU ARE AT THE BOT
TOM OF SOME STAIRS.A STAR SHAPE
D HOLE IN THEBANISTER IS CURIOUS
.EXITS ARE UPAND SOUTH."
2185 LET U=123: LET S=1: RETURN
2190 PRINT " YOU ARE IN A LONG
THIN HALLWAY THAT GOES NORTH AND
SOUTH.THE WEST WALL HAS PICTU
RES ON IT ANDTHE EAST WALL IS BA
RE.YOU FIND IT STRANGE !"
2195 LET N=3: LET S=2: RETURN
2200 PRINT " YOU ARE IN A CONSE
RVATORY.SOME SCULPTURES DECORATE
THE ROOM."
2205 LET L=15: LET N=15: RETURN
2220 PRINT " YOU ARE IN A ROOM
WITH A DOOR AT THE OTHER END.TH
E CONVEYER BELT TO REACH THE D
OOR IS GOING IN THE WRONG DIRECT
ION.THERE IS A BUTTON TO STOP
THE CONVEYERBELT ON THE WALL BU
T IT IS OUT OF REACH.EXITS ARE
WEST."
2225 LET W=7: RETURN
2230 PRINT " YOU ARE AT THE TOP
OF SOME STAIRS.A LANDING GO
ES EAST AND WEST."
2235 LET E=69: LET W=67: LET D=1
18: RETURN
2260 PRINT " YOU ARE ON A LEDGE
IN THE HOLE.MUCH HIGHER UP IS A
NOTHER HOLE."
2264 IF R(2)=3 THEN PRINT " A
ROPE HANGS DOWN."
2265 RETURN
2310 RETURN
3000 PRINT " THE DOOR IS OPEN."
: RETURN
3100 IF N=0 THEN GO TO 3130
3110 LET R(1)=N
3120 GO TO 30
3130 PRINT INK 2;"YOU CAN NOT
GO IN THAT DIRECTION"
3140 GO TO 90
3200 IF E=0 THEN GO TO 3130
3210 LET R(1)=E
3220 GO TO 30
3300 IF S=0 THEN GO TO 3130
3310 LET R(1)=S
3320 GO TO 30
3400 IF W=0 THEN GO TO 3130
3410 LET R(1)=W
3420 GO TO 30
3500 IF U=0 THEN GO TO 3130
3510 LET R(1)=U
3520 GO TO 30
3600 IF D=0 THEN GO TO 3130
3610 LET R(1)=D
3620 GO TO 30
3700 RESTORE 9040: FOR F=1 TO 30
: READ C$: IF LEN A$- LEN C$-1<
1 THEN GO TO 3715

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3710 IF C$=A$( LEN A$- LEN C$ TO
LEN A$-1) AND D(F)=R(1) THEN
GO TO 3720
3715 NEXT F: GO TO 3770
3720 FOR G=1 TO 5
3730 IF C(G)=0 THEN GO TO 3750
3740 NEXT G: PRINT INK 2;"YOU
CARRY TOO MUCH.": GO TO 90
3750 LET D(F)=0: LET C(G)=F
3760 PRINT " O.K": GO TO 90
3770 PRINT INK 3;"I CAN NOT SE
E IT !": GO TO 90
3800 REM DROP
3810 FOR F=1 TO 5: RESTORE 9040:
FOR G=1 TO C(F): READ C$: NEXT
G
3820 IF LEN A$- LEN C$<1 THEN
GO TO 3840
3830 IF A$( LEN A$- LEN C$ TO L
EN A$-1)=C$ THEN GO TO 3850
3840 NEXT F: GO TO 3870
3850 LET C(F)=0: LET D(G-1)=R(1)
3860 GO TO 3760
3870 PRINT INK 3;"YOU ARE NOT
CARRYING IT !": GO TO 90
3900 IF B$="LADDER" THEN GO TO
3950
3910 LET D$="MOULD": GO SUB 7000
: IF H=6 THEN GO TO 5790
3920 LET D$="GREEN LIQUID": GO S
UB 7000: IF H=6 THEN GO TO 5790
3930 PRINT INK 1;" YOU HAVE MA
DE A STAR FROM THE MOULD.": LET
D$="MOULD": GO SUB 7000: LET C(
H)=3: LET D$="GREEN LIQUID": GO
SUB 7000: LET C(H)=0: GO TO 90
3950 LET D$="WOOD": GO SUB 7000:
LET N=H: IF H=6 THEN GO TO 579
0
3960 LET D$="NAILS": GO SUB 7000
: LET S=H: IF H=6 THEN GO TO 57
90
3970 LET D$="HAMMER": GO SUB 700
0: LET W=H: IF H=6 THEN GO TO 5
790
3980 PRINT INK 1;" YOU HAVE A
LADDER.": LET C(N)=0: LET C(S)=0
: LET C(W)=0: LET C(W)=2: GO TO
90
4000 IF R(1)=11 THEN GO TO 4050
4010 IF R(1)=37 THEN LET D$="BL
UE KEY": GO SUB 7000
4020 IF H=6 THEN PRINT " YOU N
EED THE CORRECT KEY.": GO TO 90
4030 IF R(1)=37 THEN PRINT " T
HE DOOR LOCKS.": LET D(7,2)=0: L
ET D(7,1)=0: GO TO 90
4040 IF R(1) <> 37 THEN GO TO 5
790
4050 LET D$="RED KEY": GO SUB 70
00: IF H=6 THEN PRINT " YOU NE
ED THE CORRECT KEY.": GO TO 90
4060 PRINT " THE DOOR LOCKS.":
LET D(5,2)=0: LET D(5,1)=0: GO
TO 90
4100 IF R(1) <> 24 THEN GO TO 5
790: IF B$ <> "SOAP" THEN GO TO
5790
4110 LET D$="SOAP": GO SUB 7000:
LET F=H: IF H=6 THEN GO TO 579
0
4120 GO SUB 7020: LET N=H: IF H=
6 THEN GO TO 5790
4130 GO SUB 7020: IF H=6 THEN G
O TO 5790
4140 PRINT INK 1;" THE SOAP ME
LTS INTO A GREEN LIQUID.": LE
T C(N)=0: LET C(F)=0: LET C(H)=4
4150 GO TO 90
4400 FOR F=1 TO LEN A$-3: IF A$
(F TO F+3)="STAR" THEN GO TO 44
20
4410 NEXT F: GO TO 5790
4420 IF R(1) <> 118 THEN GO TO
5790
4430 IF B$ <> "HOLE" THEN GO TO

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5790
4440 LET D$="STAR": GO SUB 7000:
IF H=6 THEN GO TO 5790
4450 LET C(H)=0: PRINT " THE ST
AR FITS NEATLY INTO THE HOLE.SU
DDENLY THE STAIRS OPEN AND A R
OOM IS REVEALED.YOU WALK IN.": L
ET R(1)=35: GO TO 30
4500 IF B$="DOOR" THEN GO TO 45
70
4510 IF B$="WARDROBE" THEN GO T
O 4550
4520 IF B$ <> "SESAME" THEN GO
TO 5720
4530 IF R(1) <> 48 AND R(1) <> 1
19 THEN GO TO 5720
4540 IF R(1)=119 THEN LET D(9,1
)=1: PRINT " THE WALL OPENS LIK
E A DOOR TO REVEAL A LANDING I
N THE WALL.": LET R(1)=56: LET E
N=48: GO TO 90
4545 IF R(1)=48 THEN LET D(9,1)
=1: PRINT " THE WALL OPENS LIKE
A DOOR TO REVEALING THE HALLWA
Y.": LET R(1)=56: LET L=119: LET
EN=119: GO TO 90
4550 IF R(1) <> 73 THEN GO TO 5
720
4560 PRINT " THE WARDROBE OPENS
.": LET EN=75: LET D(8,1)=1: GO
TO 90
4570 IF R(1) <> 110 AND R(1) <>
2 AND R(1) <> 4 AND R(1) <> 7 AN
D R(1) <> 11 AND R(1) <> 21 AND
R(1) <> 37 THEN GO TO 5720
4579 IF R(1)=11 AND D(4,2)=1 THE
N GO TO 4584
4580 IF R(1)=2 THEN LET D(1,2)=
1: LET EN=119: GO SUB 3000: GO T
O 90
4581 IF R(1)=4 THEN LET D(2,2)=
1: LET EN=5: GO SUB 3000: GO TO
90
4582 IF R(1)=110 AND D(10,1)=1 T
HEN LET D(10,2)=1: LET D=76: LE
T EN=76: GO SUB 3000: GO TO 90
4583 IF R(1)=11 THEN LET D(4,2)
=1: LET EN=13: GO SUB 3000: GO T
O 90
4584 IF R(1)=11 AND D(5,1)=1 THE
N LET D(5,2)=1: LET EN=14: GO S
UB 3000: GO TO 90
4586 IF R(1)=21 THEN LET D(6,2)
=1: LET EN=22: GO SUB 3000: GO T
O 90
4587 IF R(1)=37 AND D(7,1)=1 THE
N LET D(7,2)=1: GO SUB 3000: GO
TO 90
4588 IF R(1)=37 AND D(7,1)=0 THE
N PRINT " THE DOOR IS LOCKED."
: GO TO 90
4589 IF R(1)=11 AND D(5,1)=0 THE
N PRINT " THE DOOR IS LOCKED."
: GO TO 90
4590 PRINT INK 2;" YOU CAN NOT
OPEN IT.": GO TO 90
4600 IF R(1)=98 AND B$="MUSIC" T
HEN GO TO 4650
4610 IF B$ <> "LOCKET" THEN GO
TO 5790
4620 LET D$="GOLDEN LOCKET": GO
SUB 7000: IF H=6 THEN GO TO 579
0
4630 PRINT INK 1;" THE WRITING
IS TOO SMALL.": GO TO 90
4650 PRINT INK 3;"THE NOTES AR
E:C,E,F,A."
4660 GO TO 90
4700 LET D$="MAGNIFYING GLASS":
IF B$="MOP" THEN LET D$=B$
4705 GO SUB 7000: IF H=6 THEN G
O TO 5790

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4710 IF B$="MOP" AND R(1)=122 TH
EN PRINT " YOU STRETCH OUT WIT
H THE MOP AND MANAGE TO PUSH T
HE BUTTON. THE CONVEYOR BELT ST
OPS MOVING.": LET D(7,2)=1: LET
E=8: GO TO 90
4720 LET D$="GOLDEN LOCKET": GO
SUB 7000: IF H=6 THEN GO TO 579
0
4730 IF B$="GLASS" THEN PRINT "
IT SAYS:~ TO REACH A HIDDEN
LANDING,FIND A PLACE BARE AND
STRANGE,SHOUT OPEN SESAME,AND
YOUR LUCK WILL CHANGE.~": GO TO
90
4790 GO TO 5790
4800 IF B$="FRUIT" AND R(1)=43 T
HEN CLS: PRINT INK 4;" YOU E
AT THE FOOD AND FEEL GOOD.BUT SU
DDENLY YOU FELL DIZY AND YOUR
HEAD SPINS.YOU JUMP AND JERK U
NTIL YOU FALL TO THE FLOORIN A H
EAP.YOU HAVE FAILED YOUR QUEST.
": GO TO 9960
4810 IF B$="FRUIT" AND R(1)=44 T
HEN PRINT " YOU EAT THE FOOD A
ND FEEL GOOD.YOU START TO FEEL A
S IF LIFE COULD BE MORE ENJOY
ABLE FROM NOWON.LIFE FOR YOU WIL
L BE EXTENDEDUNLESS YOU MAKE SOM
E MISTAKE.": LET LLIFE=0: GO TO
90
4820 PRINT INK 1;" YOU CAN NOT
EAT THAT.": GO TO 90
4900 LET D$="ROPE": GO SUB 7000:
IF H=6 THEN GO TO 5790
4905 IF R(2)=0 THEN PRINT " YO
U THROW THE ROPE AND IT DOES NOT
CATCH ANYTHING.": GO TO 90
4910 LET D$="GRAPLING IRON": GO
SUB 7000: IF H=6 THEN RETURN
4920 IF R(2)=1 AND R(1) <> 126 T
HEN PRINT " YOU THROW THE ROPE
BUT IT DOES NOT CATCH ANYTHING.
": GO TO 90
4930 IF R(2)=1 AND R(1)=126 THEN
PRINT " YOU THROW THE ROPE AN
D THE IRONCATCHES ONTO SOMETHING
SAFE.": LET D$="ROPE": GO SUB 7
000: LET R(2)=3: LET C(H)=0: LET
D$="GRAPLING IRON": GO SUB 7000
: LET C(H)=0: GO TO 90
5000 IF R(1)=11 THEN GO TO 5050
5010 IF R(1)=37 THEN LET D$="BL
UE KEY": GO SUB 7000
5020 IF H=6 THEN PRINT " YOU N
EED THE CORRECT KEY.": GO TO 90
5030 IF R(1)=37 THEN PRINT " T
HE DOOR UNLOCKS.": LET D(7,1)=1:
GO TO 90
5040 IF R(1) <> 37 THEN GO TO 5
790
5050 LET D$="RED KEY": GO SUB 70
00: IF H=6 THEN PRINT " YOU NE
ED THE CORRECT KEY.": GO TO 90
5060 PRINT " THE DOOR UNLOCKS."
: LET D(5,1)=1: GO TO 90
5100 IF B$="WINE" AND R(1)=49 TH
EN PRINT " THE WINE IS COOL AN
D REFRESHINGAS IT SLIDES DOWN YO
UR THROAT.ITALL SEEMS WELL WHEN
SUDDENLY YOUBLACK OUT.": PAUSE 5
00: LET R(1)=20: CLS: PRINT "
YOU WAKE TO FIND YOURSELF ON T
HE SETEE.": GO TO 90
5110 PRINT INK 1;" YOU CAN NOT
DRINK THAT.": GO TO 90
5200 IF R(1) <> 51 THEN GO TO 5
790
5210 LET D$="LADDER": GO SUB 700
0: IF H=6 THEN GO TO 5790
5220 PRINT INK 1;" YOU CLIMB O
N TO A LEDGE.THE LADDER FALLS
AWAY.A LONG WAY UP IS A HOLE.":
LET R(1)=126: LET C(H)=0: GO TO
90
5300 GO TO 5400
5399 STOP
5400 IF EN=0 THEN GO TO 5420

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5410 LET R(1)=EN: GO TO 30
5420 PRINT INK 2;" YOU CAN NOT
USE ENTER OR IN.": GO TO 90
5500 GO TO 5600
5600 IF L=0 THEN GO TO 5620
5610 LET R(1)=L: GO TO 30
5620 PRINT INK 2;" YOU CAN NOT
USE LEAVE OR OUT.": GO TO 90
5700 IF B$="RUG" THEN GO TO 575
0
5710 IF B$="BOOKSHELF" THEN GO
TO 5730
5715 IF R(1)=10 AND B$="PICTURES
" THEN GO TO 5791
5720 PRINT INK 2;" YOU CAN NOT
DO THAT.": GO TO 90
5730 IF R(1) <> 55 THEN GO TO 5
790
5740 LET EN=58: LET R(1)=57: PRI
NT " THE BOOKSHELF MOVES TO REV
EAL A HIDDEN ROOM.": GO TO 90
5750 IF R(1) <> 110 THEN GO TO
5790
5760 PRINT " THE RUG MOVES TO R
EVEAL A TRAP DOOR IN THE FLOOR."
5770 LET D(10,1)=1: GO TO 90
5790 PRINT INK 2;" YOU CAN NOT
DO THAT.": GO TO 90
5791 PRINT " BEHIND ONE PICTURE
IS A SAFE BUT IT HAS A COMBIN
ATION LOCK. ENTER THE COMBINATI
ON IF YOU KNOW IT.": GO TO 90
5799 STOP
5800 CLS: PRINT "REMEMBER THER
E ARE FOUR PARTS TOTHE SAVING."
5810 SAVE "ELLEN1" DATA 0()
5820 SAVE "ELLEN2" DATA R()
5830 SAVE "ELLEN3" DATA C()
5840 SAVE "ELLEN4" DATA D()
5850 PRINT " D.K."
5860 GO TO 90
5900 CLS: PRINT "LOADING:START
TAPE PLAYING"
5910 LOAD "ELLEN1" DATA 0(): LOA
D "ELLEN2" DATA R(): LOAD "ELLEN
3" DATA C(): LOAD "ELLEN4" DATA
D()
5920 GO TO 5850
6000 GO TO 30
6100 PRINT INK 1;"YOU ARE CARR
YING:"
6110 LET H=1: FOR F=1 TO 5: IF C
(F)=0 THEN GO TO 6140
6120 LET H=0
6130 RESTORE 9040: FOR G=1 TO C(
F): READ C$: NEXT G: PRINT INK
3:C$
6140 NEXT F: IF H=1 THEN PRINT
INK 2;"NOTHING."
6150 GO TO 90
6200 IF R(1)=24 THEN PRINT "
TRY HEATING SOMETHING?"
6210 IF R(1)=118 THEN PRINT "
PUT A STAR IN THE HOLE."
6220 IF R(1)=51 THEN PRINT " T
RY USEING SOMETHING TO CLIMB UP
THROUGH THE HOLE"
6230 PRINT " HAVE YOU MADE A MO
ULD YET?"
6280 IF R(1) <> 51 AND R(1) <> 1
18 AND R(1) <> 24 THEN PRINT "
I DON'T HAVE ANY OTHER IDEAS."
6290 GO TO 90
6300 LET D$="ROPE": GO SUB 7000
6310 LET D$="GRAPLING IRON": GO
SUB 7000
6320 IF H=6 THEN GO TO 5790
6330 LET R(2)=1
6340 PRINT " D.K.": GO TO 90
6400 IF R(1) <> 126 OR R(2) <> 3
THEN GO TO 5790
6410 PRINT " YOU CLIMB UP THE R
OPE TO THE TOP.": LET R(1)=113
: GO SUB 2130: GO TO 90
6500 GO TO 4400
6600 IF R(1) <> 34 THEN GO TO 5
790

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6605 FOR F=1 TO 5: LET D$="SHEET
": GO SUB 7000: IF H=6 THEN GO
TO 5790
6610 NEXT F
6620 PRINT " YOU HAVE MADE A RO
PE BUT YOU WILL NOT BE ABLE TO
DROP IT !": LET C(1)=1: FOR F=2
TO 5: LET C(F)=0: NEXT F: GO TO
90
6700 IF R(1)=10 THEN PRINT INK
1;" THE SAFE OPENS AND A GOLD
BAR FALLS OUT.THE SAFE DISAPEAR
S.": LET O(14)=10: GO TO 90
6710 PRINT " WHAT WAS THAT FOR
?": GO TO 90
7000 FOR H=1 TO 5
7010 RESTORE 9040: FOR G=1 TO C(
H): READ C$: NEXT G: IF C$=D$ TH
EN RETURN
7020 NEXT H: RETURN
8999 STOP
9000 DATA "N","E","S","W","NORTH
","EAST","SOUTH","WEST","UP","DO
WN","U","D","TAKE","DROP","MAKE"
,"LOCK","HEAT","TIE","ROPE","PUT
","OPEN","READ","USE","EAT","THR
OW","UNLOCK","DRINK","CLIMB","IN
","ENTER","OUT","LEAVE","MOVE","
SAVE","LOAD","LOOK","LIST","INVE
NTORY" 9005 DATA "HELP","2800"
9010 DATA 1,2,3,4,1,2,3,4,5,6,5,
6,7,8,9,10,11,12,13,14,15,16,17,
18,19,20,21,22,23,24,25,26,27,28
,29,30,31,31,32,33
9020 DATA "1","2","3","4","5","6
","7","8","9","10","11","12","13
","14","15","16","17","18","1913
","20","21","22","23","24","25",
"26","27","28","29","30","31","3
2","1213","2213","1423","913","3
3"
9040 DATA "ROPE","LADDER","STAR"
,"GREEN LIQUID","BOOK","CIGAR BO
X","NAILS","HAMMER","WOOD","GOLD
EN LOCKET","SHEET","SHEET","SHEE
T","GOLD BAR","SHEET","SHEET","S
HEET","SHEET","MOULD","SHEET","M
OP","RUBY","GRAPLING IRON","BLUE
KEY","RED KEY","MAGNIFYING GLAS"
9050 DATA 0,0,0,0,14,13,38,38,46
,59,61,64,70,65,78,81,82,83,111,
111,35,76,75,14,58,18,38,5,30,10
6
9930 DEF FN A()=((65536* PEEK 23
674+256* PEEK 23673+ PEEK 23672)
/50)
9940 POKE 23674,0: POKE 23673,0:
POKE 23672,0: RETURN
9950 IF R(1)=54 THEN CLS: PRIN
T " THE EVIL EYES BELONGED TO A
BIGWIDOW SPIDER.THEY CRAWL TOWA
RDS YOU AS IF THEY HAVE NOT GOT
A BODY.ITS MOUTH OPENS ON YOU
AND ITS DEADLY FANGS SINK INTO Y
OUR ARM.THE POISON ACTS QUICKLY
AND YOU ARE DEAD."
9960 IF R(1)=17 THEN CLS: PRIN
T INK 4;" YOU ARE TOO SLOW.THE
SMELL WAS A DEADLY GAS AND YOU
HAVE DIED BECAUSE OF IT."
9970 IF FN A()>2000 THEN CLS:
PRINT INK 4;" YOU HAVE NOT EA
TEN THE FRUIT OFLIFE AND HAVE CO
NSEQUENTLY DIED."
9980 PRINT INK 1;" UN
LUCKY"
9990 FOR F=1 TO 30: BEEP .01,F:
NEXT F: FOR F=30 TO 1 STEP -1: B
EEP .01,F: NEXT F: FOR F=1 TO 30
STEP 2: BEEP .01,F: NEXT F: FOR
F=30 TO 1 STEP -2: BEEP .01,F:
NEXT F: GO TO 9990
9999 CLEAR: SAVE "FOR LOVE" LIN
E 1

```


A NEW, IMPROVED ZX81 KEYBOARD AT THE SAME OLD PRICE. £9.95.



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DOTTY THE KANGAROO

YOU PLAY THE part of Dotty the kangaroo who has been put on a course to test his intelligence and physical ability. Work out the way to escape from each room, but first jump onto the red blocks as doing this will show you where the exit is. When you have completed the course you start again only, this time, strange things happen. As you jump onto the blocks they may disappear and leave you stranded in mid-air. If you are agile you will be able to jump to the nearest block to avoid certain death in the shark-filled waters below.

The Kangaroo was written for the 16K Spectrum by Ian McTavish, aged 14, who is a pupil of Bristol Grammar School, Shirehampton, Bristol. McTavish, a former ZX-81 owner has had his Spectrum since March and this is the first program he has written.



Sub-routines

1-18	Set up user-defined graphics and variables
20-90	Set up screen and display instructions
100-150	Print background room graphics
155-160	Print foreground room graphics
490-640	Bounce loop
700-730	Red block routine
2100-2150	Test one graphics
2200-2250	Test two graphics
2300-2350	Test three graphics
2400-2450	Test four graphics
2600-2700	Next phase
5000-5070	Lose life

Variables

Graphics: q="room" block	
i,j=kangaroo	
x,y	Kangaroo co-ordinates
e,r	Kangaroo co-ordinates for testing
1	Test number (1-4)
sc	Score
men	Lives left

qw	Phase flag (0=first, 1=second)
q	Bounce count (q=2, three character bounce)
KX,KY	Character location above red block
a	Read variables for user-defined graphics
n,l	Loop counters

General Notes

- 1 Line 80 is redundant as it contains one PAUSE too many.
- 2 Lines 87 and 5040 are redundant as they serve the same function as the following PAUSES.
- 3 Line 510 contains two IFs. This works, but is not good programming technique. A better form would be: IF first condition THEN GOTO line containing second IF and LET statements.
- 4 If you find the game too difficult as it stands try giving the kangaroo more bounce by increasing q to 3 in line 510.
- 5 PRINT statements such as line 70 should be PRINT'.

SET UP 1

Introduction and instructions

Set up user-defined graphics, sc, 1 and men

```
1 REM Dotty the kangaroo
2 LET qw=0
3 LET a$="I"
5 DATA 255,129,129,129,129,12
9,129,255
10 FOR n=0 TO 7: READ a: POKE
USR "q"+n,a: NEXT n
12 DATA 24,24,16,60,48,120,136
,4
14 FOR n=0 TO 7: READ a: POKE
USR "i"+n,a: NEXT n
16 DATA 24,24,8,60,12,30,17,32

18 FOR n=0 TO 7: READ a: POKE
USR "j"+n,a: NEXT n
20 BORDER 2: PAPER 0
25 CLS
30 PRINT AT 1,7: FLASH 1: INK
6;"Dotty The Kangaroo"
40 INK 7: PRINT AT 4,0;"Imagi
ne yourself as a kangaroo. You h
ave been captured by the mad K
ing and put on a course to test
your intelligence and your physi
cal ability."
50 PRINT : PRINT
60 PRINT "You must work out th
e way to getthrough each room.":
PRINT : PRINT "The only way to
survive is....": PRINT : PRINT "
To complete the course."
70 PRINT : PRINT : PRINT "USE
KEYS 5 for left 8 for right"
80 PAUSE 0
86 PAUSE 0: CLS : PRINT : PRIN
T "Ps...you might find it easier
to get out if you jump on the
red block."
87 IF INKEY$ <> "" THEN GO
TO 87
88 PAUSE 0
90 LET sc=0: LET l=1: LET men=
3
```

SET UP 2

Print room graphics without jump block.
Initialise x and y

```
100 LET y=17: LET x=2
110 CLS
120 PRINT "TEST NO.":1;" men
": FOR i=1 TO men: PRINT : INK
3;"I": NEXT i: PRINT " SCORE="
: INK 4;sc;" "
130 INK 6: PRINT AT 21,0;"QQQQ
QQQQQQQQQQQQQQQQQQQQQQQQQQQ": A
T 20,0;"QQQQQ": PAPER 1;"
": PAPER 0;"QQQ
": AT 19,0;"QQQQQ": PAPER 1;"
": PAPER 0;"
QQQ": AT 18,0;"QQQQQ
QQQ"
140 PRINT AT 1,0;"QQQQQQQQQQQQ
QQQQQQQQQQQQQQQQQQQQQQ": FOR i=2 T
O 17: PRINT AT i,0;"Q": AT i,31
;"Q": NEXT i
150 BEEP .4,-34: PAUSE 4: BEEP
.4,-30: PAUSE 4: BEEP .4,-26: PA
USE 4: BEEP .4,-18: PAUSE 2: BEE
P .8,-22: FOR i=1 TO 4: PAUSE 2:
BEEP .2,(-22-2*i): NEXT i
```

MAIN 1

If all four tests complete THEN call NEWPHASE, otherwise call TEST 1, where l=1 to 4.

```
155 IF l=5 THEN GO TO 2600
160 GO SUB 2000+1*100
```

MAIN 2

Set up test co-ordinates for kangaroo (e=x, r=y)
IF kangaroo in water (y>19) THEN call LOSELIFE

IF kangaroo on a block then call bounce count (q=2)
AND IF new phase (qw=1) AND random number (1-10)=1 THEN erase block below and print new block at random co-ordinates (y=1-18, x=2-28)
IF kangaroo descending (q=-1) THEN jump to MAIN3
Decrement r and q (ascending)

```
490 LET e=x: LET r=y
500 IF y>19 THEN GO TO 5000
510 IF SCREEN$ (y+1,x) <> " "
THEN LET q=2: IF qw=1 AND INT
(RND *10)=1 THEN PRINT AT y+1
,x;" ": PRINT AT INT (RND *18
)+1, INT (RND *27)+2;"Q"
520 IF q=-1 THEN GO TO 600
530 LET r=r-1
540 LET q=q-1
560 BEEP (q+1)/100,-20
```

MAIN 3

Turn kangaroo to face left or right.
Scan keyboar and update test x co-ordinate (e=e+key 8-key 5)
IF through hold (e>31) THEN increment test number (l=l+1)
update score, jump to SETUP 2.
Erase old kangaroo.
If r,e impossible then jump to MAIN 4
IF descent (q=-1) AND nothing below (null character) THEN increment r.
r,e are O.K. so set x=e, y=r

```
600 IF INKEY$ ="8" THEN LET a
$="I"
601 IF INKEY$ ="5" THEN LET a
$="J"
602 LET e=e+( INKEY$ ="8")-( IN
KEY$ ="5")
603 IF e>31 THEN LET l=l+1: LE
T sc=sc+1*2: GO TO 100
604 PRINT AT y,x;" "
605 IF SCREEN$ (r,e) <> " " TH
EN GO TO 630
610 IF SCREEN$ (r+1,e)="" AND
q=-1 THEN LET r=r+1
615 LET y=r: LET x=e
```

MAIN 4

Print new kangaroo
IF on red block THEN call OPEN

```
630 PRINT AT y,x: INK 3;a$
635 IF y=ky AND x=kx THEN GO S
UB 700
640 GO TO 490
```

Jump to MAIN 1

OPEN

Erase two blocks in right hand wall
Update score
Erase red block
Re-set kx,ky (=0)

```
700 PRINT AT 15,31;" ": AT 14,
31;" "
710 BEEP .01,30: BEEP .02,10
720 LET sc=sc+1
725 PRINT AT y+1,x: INK 6;"Q":
LET ky=0: LET kx=0
730 RETURN
```

TEST 1

Print the jump blocks
Set location of character position
above red blocks: ky=9, kx=9

```
2100 PRINT AT 15,7;"QQQQQ": AT
10,7;"QQ": PAPER 2;"Q": PAPER 0;
"QQ"
2105 PRINT AT 13,1;"QQQQQ": AT 1
3,17;"QQQ"
```

```
2140 LET ky=9: LET kx=9
2150 RETURN
```

TEST 2

As in TEST 1 ky=13, kx=1

```
2200 PRINT AT 14,1: PAPER 2;"Q"
: PAPER 0;"Q"
2210 FOR i=9 TO 29 STEP 5: PRINT
AT 19-i/5,i-1;"QQ": AT 11+i/5,
i-2;"Q": NEXT i
2220 LET ky=13: LET kx=1
2250 RETURN
```

TEST 3

As in TEST 1 ky=3, kx=1

```
2300 PRINT AT 4,1: PAPER 2;"Q":
PAPER 0;"QQQ"
2310 FOR i=1 TO 6: PRINT AT 20-
i*3,i*4;"QQ": AT (i*3)+2,(i*4)+3
;"QQ": NEXT i
2320 LET ky=3: LET kx=1
2350 RETURN
```

TEST 4

As in TEST 1 ky=3, kx=5

```
2400 FOR i=9 TO 24 STEP 5: PRINT
AT 19,i;"Q": AT 20,i;"Q": NEXT
i
2410 FOR i=1 TO 3: PRINT AT i*5
,1;"Q": IF i>1 THEN PRINT AT (
i*5)-2,4;"Q"
2420 NEXT i
2430 PRINT AT 4,5: PAPER 2;"Q"

2440 LET ky=3: LET kx=5
2450 RETURN
```

NEWPHASE

Re-set test number (l=1)
Update score
Print new phase warning
Set new phase flag (qw=1)
Add bonus life (men=men+1)
Jump to SETUP 2

```
2600 LET l=1
2610 LET sc=sc+5
2630 FOR i=-30 TO 30: BEEP .01,i
: NEXT i
2640 PRINT AT 10,10: FLASH 1;"
AMAZING ! ": FOR i=1 TO 500: NEX
T i: PRINT : PRINT "but the evil
king has decided totry the expe
riment again just to make sure
of the results."
2650 FOR i=30 TO -30 STEP -1: BE
EP .01,i: NEXT i
2660 PAUSE 350
2670 PRINT : PRINT "you might fi
nd some differences"
2680 PAUSE 150
2690 LET qw=1
2695 LET men=men+1
2700 GO TO 100
```

LOSELIFE

Decrement lives (men=men-1)
Print men (and why one life lost)
If any lives left THEN jump to SETUP 2
Print score
Re-run program

```
5000 FOR i=1 TO 5: BEEP .2,i*5:
BEEP .1,i*2: NEXT i
5010 LET men=men-1
5020 CLS
5030 PRINT AT 7,0;"you have jus
t found out that thewater is ful
l of kangaroo eating S H
A R K S !"
5035 PRINT : PRINT : PRINT men;"
lives left"
5040 IF INKEY$ <> "" THEN GO
TO 5040
5045 PAUSE 0
5050 IF men>0 THEN GO TO 100
5060 PRINT : PRINT "You scored:
":sc
5070 FOR i=1 TO 100: NEXT i: RUN
```


excalibur

COLLECT the swords scattered about the castle of Camelot. There is a time limit on each screen and you must watch for the dreaded diamonds and the magic doors

which Merlin has put down to trap you. **Excalibur** was written for the 16K Spectrum by Leigh Howetts, of Deeping St James, Peterborough.

```
5 POKE 23658,8: POKE 23609,10
: BORDER 6: PAPER 0: INK 7: CLS
```

```
10 FOR F=0 TO 47: READ A: POKE
USR "A"+F,A: NEXT F
20 DATA 136,255,34,255,136,255
,34,255,126,129,189,165,165,189,
129,126,7,13,25,178,100,104,240,
168
```

```
30 DATA 60,102,195,129,129,195
,102,60,24,60,118,251,251,118,60
,24,66,66,66,126,66,66,66,66
```

```
35 LET HI=0: LET H$="NOBODY":
60 SUB 1000: LET A=1: GO SUB 400
0
```

```
40 LET LEV=0: LET MON=15: LET
DEL=0: LET LI=3: LET SC=0
```

```
45 CLS: LET TIME=100: LET SW=
0: LET X=1: LET Y=17
```

```
50 PRINT AT 0,0: INK 5;"AAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAA"
```

```
60 PRINT AT 18,0: INVERSE 1;"
AAAAAAAAAAAAAAAAAAAAAAAAAAAA"
```

```
70 FOR F=0 TO 18: PRINT AT F,
0: INK 5;"A": NEXT F: PRINT AT
```

```
17,0: INK 5;"(ig8)"
80 FOR F=4 TO 17: PRINT INK 5
```

```
: AT F,4;"A": AT F,3: INK 2;"F":
NEXT F: PRINT AT 3,3: INK 2;"F"
```

```
85 FOR G=3 TO 12: PRINT AT G,
5: INK 2;"F": NEXT G: FOR G=10 T
D 17: PRINT AT G,6: INK 2;"F":
NEXT G
```

```
90 FOR F=0 TO 15: PRINT AT F,
8: INK 5;"A": NEXT F
```

```
95 PRINT AT 11,20: INK 5;"AAA
AB": AT 9,16: INK 4;"AAAAA": AT
7,12: INK 5;"AAAAA"
```

```
100 PRINT AT 15,9: INK 5;"AAAA
AAAAAAAAAAAAAAAAAAAA"
```

```
105 BRIGHT 1: PRINT AT 17,3;"C
": AT 3,4;"C": AT 10,24;"C": AT
8,20;"C": AT 6,16;"C": AT 3,18;"
C": AT 3,26;"C": AT 9,30;"C": BR
IGHT 0
```

```
110 FOR F=10 TO 17: PRINT AT F
,22: INK 2;"F": NEXT F: FOR F=8
TO 14: PRINT AT F,18: INK 2;"F"
```

```
: NEXT F: FOR F=6 TO 14: PRINT
AT F,14: INK 2;"F": NEXT F
```

```
115 FOR F=0 TO 17: PRINT AT F,
31: INK 5;"A": NEXT F
```

```
120 FOR F=3 TO 15: PRINT AT F,
10: INK 2;"F": NEXT F
```

```
130 PRINT AT 4,11: INK 5;"AAAA
AAAAAAAAAAAAAAAAAAAA"
```

```
140 FOR F=3 TO 15: PRINT AT F,
28: INK 2;"F": NEXT F: PRINT AT
10,29;"AA"
```

```
150 IF LEV >= 1 THEN PRINT AT
14,12: INK 5;"A": PRINT AT 9,1
7;" "
```

```
155 IF LEV >= 2 THEN PRINT AT
3,16: INK 5;"A": AT 11,21;" ":
AT 5,14: INK 2;"F": AT 4,14: INK
2;"F": AT 3,14: INK 2;"F"
```

```
160 IF LEV >= 3 THEN PRINT AT
17,7: INK 5;"A": AT 14,8: INK 0
;" "
```

```
170 IF LEV>3 THEN LET LI=LI+1
```

```
200 LET D=0: PRINT AT Y,X: INK
7: FLASH 1;"B": PAUSE 10: PRINT
AT Y,X: FLASH 1;"D": PAUSE 10
```

```
210 PRINT AT 21,1;"SC=";SC;"
LIVES=";LI;" TIME="; INT TIME;"
LEV=";LEV+1;" "
```

```
220 IF INKEY$="P" AND ATTR (
Y,X+1) <> 5 THEN LET X=X+1: PRI
NT AT Y,X-1;" "
```

```
230 IF INKEY$="O" AND ATTR (
Y,X-1) <> 5 THEN LET X=X-1: PRI
NT AT Y,X+1;" "
```

```
240 IF ATTR (Y-1,X)=2 AND INK
EY$="Q" THEN LET Y=Y-1: BEEP .
007,Y: PRINT AT Y+1,X: INK 2;"F"
```

```
245 IF ATTR (Y+1,X)=2 AND INK
EY$="A" THEN LET Y=Y+1: BEEP .
007,Y: PRINT AT Y-1,X: INK 2;"F"
```

```
250 IF SCREEN$ (Y+1,X)=" " THE
N LET Y=Y+1: BEEP .05,Y: PRINT
AT Y,X: FLASH 1;"B": AT Y-1,X;"
": LET D=D+1: GO TO 410
```

```
260 IF ATTR (Y-1,X)=20 THEN G
O SUB 6000
```

```
270 IF ATTR (Y,X+1)=71 OR ATT
R (Y,X-1)=71 THEN RANDOMIZE US
R 32529: LET SC=SC+100: LET SW=S
W+1: PRINT AT Y,X+1;" ": AT Y,X
-1;" "
```

```
280 PRINT AT 17,MON: INK 6;"E"
: PRINT AT 17,MON-1;" ": IF MON
=25 THEN LET MON=15: PRINT AT
17,25;" "
```

```
285 IF X=0 AND Y=17 AND SW=8 TH
EN LET LEV=LEV+1: LET SC=SC+100
0: GO SUB 2000: GO TO 45
```

```
290 IF ATTR (Y,X+1)=6 OR ATTR
(Y,X-1)=6 THEN GO SUB 6000
```

```
300 PRINT AT 19,0: INK del;"(1
1*ig8:iE:iC:iA:iL:iI:iB:iU:iR
:12*ig8)"
```

```
310 IF TIME-.5 <= 0 THEN GO TO
6000
```

```
320 IF SW=8 THEN PRINT AT 17,
0: FLASH 1;" "
```

```
390 IF DEL=2 THEN PRINT AT 17
,8;" ": AT 16,8;" ": AT 4,24;" "
: AT 15,27;" ": BEEP .01,-10
```

```
395 IF DEL=4 THEN PRINT AT 17
,8: PAPER 2: INK 4;"(g5)": AT 16
,8;"(g5)": AT 4,24;"(g5)": AT 15
,27;"(g5)": LET DEL=0: BEEP .01,
0
```

```
400 LET TIME=TIME-.3: LET MON=M
ON+1: LET DEL=DEL+1: GO TO 200
```

```
410 IF SCREEN$ (Y+1,X) <> " "
THEN RANDOMIZE USR 32529
```

```
415 IF D >= 6 THEN GO SUB 6000
: GO TO 450
```

```
420 GO TO 250
```

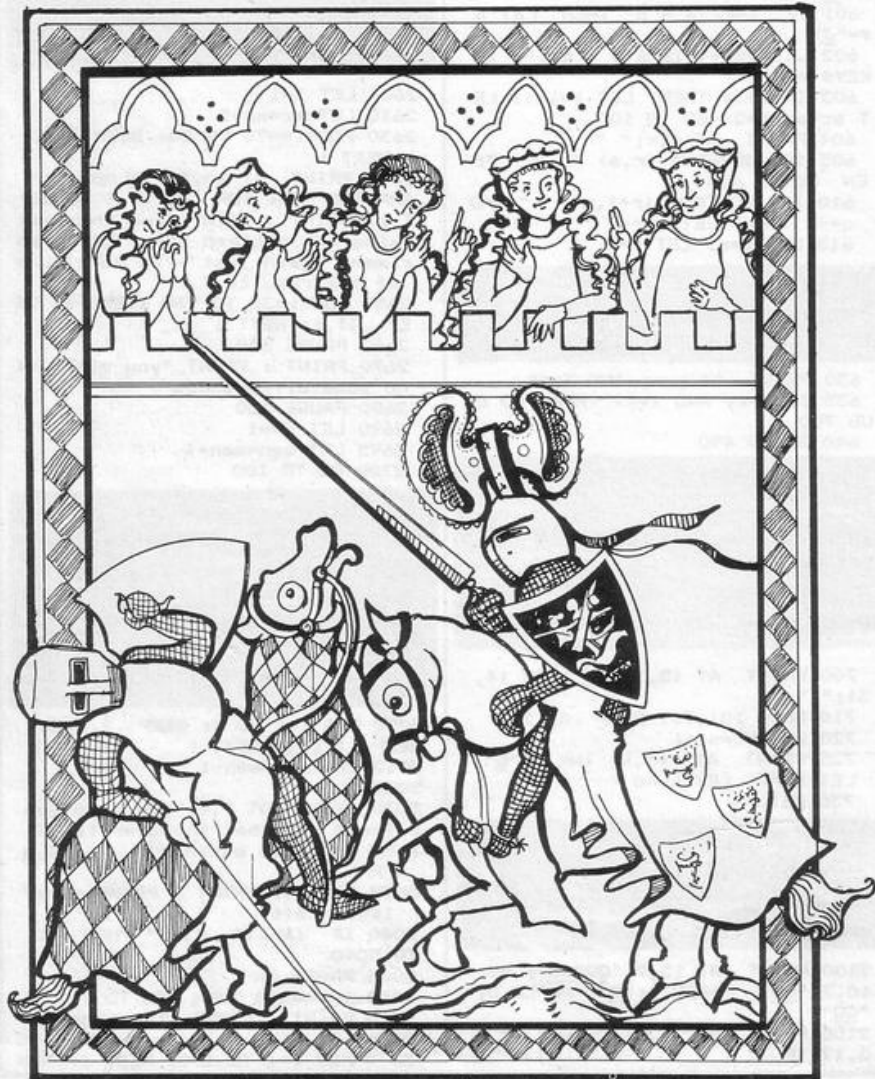
```
1000 RESTORE 1000: FOR F=32500 T
O 32555: READ A: POKE F,A: NEXT
F
```

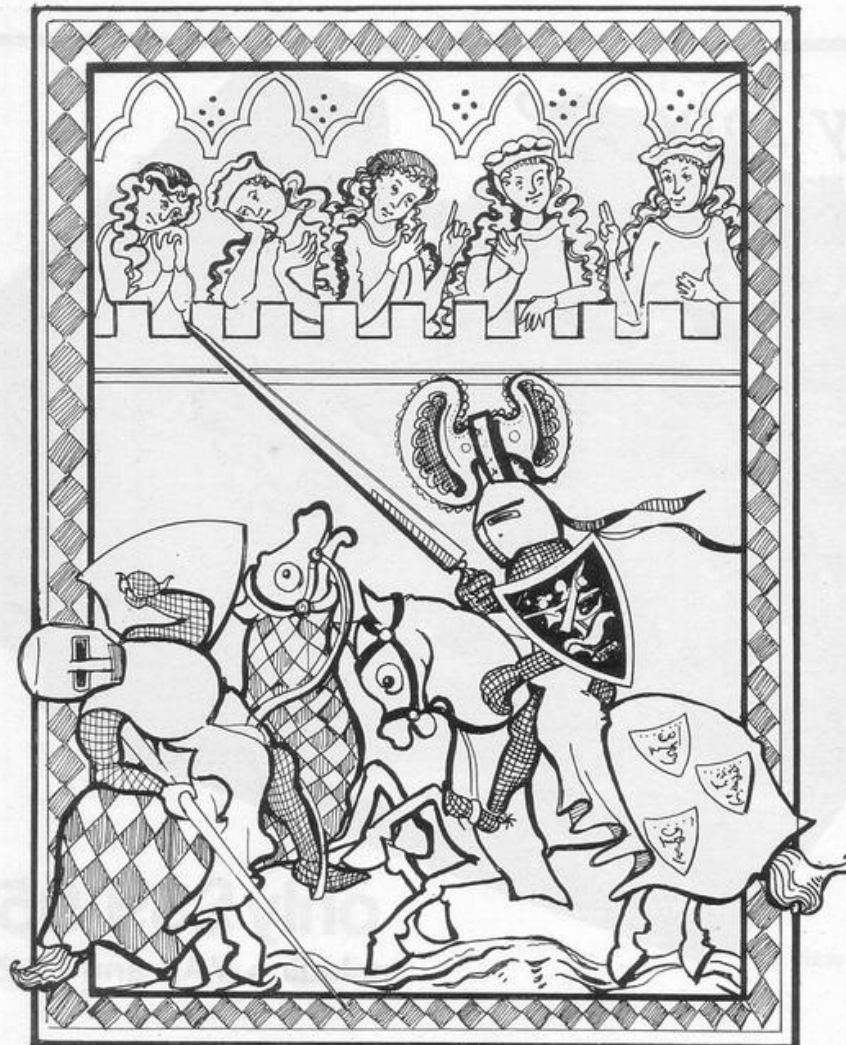
```
1010 DATA 6,4,197,33,15,1,17,2,0
,229,205,181,3,225,17,16,0,167,2
37,90,125,254,255,32,237,193,16,
230,201
```

```
1020 DATA 0,6,1,197,33,0,3,17,1,
0,229,205,181,3,225,17,16,0,167,
237,82,32,240,193,16,233,201
```

```
1100 RETURN
```

```
2000 PRINT AT 8,10:"WELL DONE !
": AT 10,8:"LEVEL ";LEV;" COMPLE
TE"
```





```

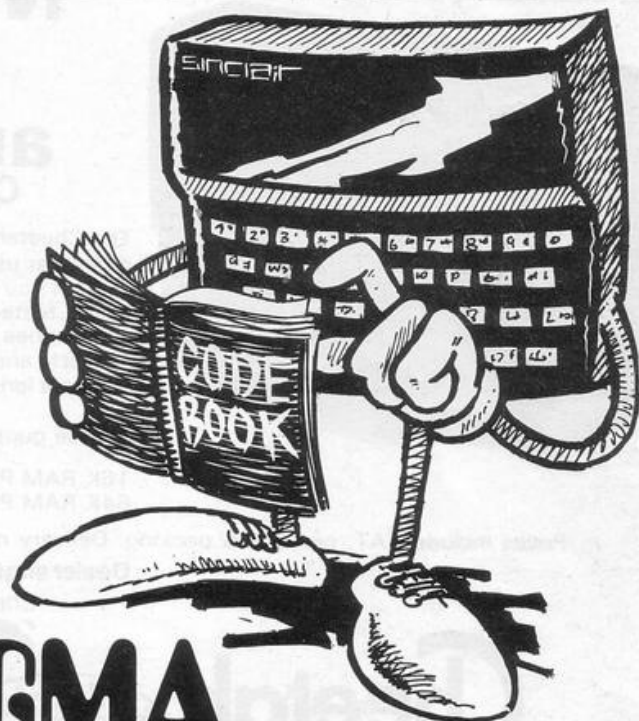
2005 FOR F=-1 TO -4 STEP -1: FOR
E=1 TO 4: BEEP .1,F: BEEP .1,6:
BEEP .1,13: BEEP .1,14
2020 IF INKEY$="" THEN NEXT E
: NEXT F: GO TO 2005
2030 RETURN
3010 PRINT AT 9,11: FLASH 1;"GA
ME OVER"
3015 BEEP 1,9: BEEP 1,5: BEEP .5
,4: BEEP .5,7: BEEP .5,5: BEEP .
5,-3: BEEP 2,2
3020 IF SC>HI THEN INPUT "PLEAS
E ENTER YOUR NAME:"; LINE H$: LE
T HI=SC: IF LEN H$>8 THEN GO T
O 3020
3030 PAUSE 100: CLS
4000 BRIGHT 1: LET A=A+1: IF A >
= 6 THEN LET A=0
4010 PRINT AT 4,1: INK A+4;"THI
S IS THE GAME OF~EXCALIBUR~"" Y
OU "; FLASH 1;"B"; FLASH 0"" MUS
T COLLECT UP ALL OF THE SWO
RDS SCATTERED ABOUT THE CAS
TLE OF CAMLOTT."
4020 PRINT INK A+3;" YOU HAVE
THREE LIVES AND A TIME LIM
T.WATCH OUT FOR THE DREADED D
IAMOND E AND THE MAGIC DOO
RS THAT MERLIN HAS PUT DOWN
TO TRAP YOU."
4025 PRINT INK A;" USE KEYS:O,P
:Q,A"
4030 PRINT AT 20,4: INK A+3;"HI
GHSCORE=";HI;" BY ";H$
4100 PRINT AT 2,1: INVERSE 1: I
NK a;" EXCALIBUR
"
4110 RANDOMIZE USR 32500: RANDO
MIZE USR 32529: IF INKEY$=""
THEN GO TO 4000
4120 BRIGHT 0: CLS : GO TO 40
6000 FOR F=1 TO 4: RANDOMIZE US
R 32500: NEXT F: LET SC=SC-100:
LET LI=LI-1: LET SW=0
6010 IF LI=0 THEN GO SUB 3010
6020 CLS : GO TO 45

```

```

1 SAVE "CODE MACHINE"
10 PRINT "THIS IS A CODE
MACHINE"
20 PRINT "ENTER CODE NUMBER
(1-65535)"
30 PRINT "
"
40 LET A=14
45 LET C$=""
50 LET US=INKEY$
60 IF US="" THEN GOTO 50
65 IF US=CHR$ 116 THEN GOTO 11
70 PRINT AT 2,A:CHR$ (CODE US+
128)
80 LET C$=C$+US
90 LET A=A+1
100 GOTO 50
110 LET N=VAL C$
120 PRINT "DO YOU WANT TO ENCOD
E OR DECODE?"
130 PRINT "
"
135 LET C$=""
137 LET A=13
140 LET US=INKEY$
150 IF US="" THEN GOTO 140
160 IF US=CHR$ 116 THEN GOTO 20
170 PRINT AT 4,A:CHR$ (CODE US+
128)
175 LET C$=C$+US
180 LET A=A+1
190 GOTO 140
200 RAND N
210 PRINT "PLEASE ENTER YOU
R MESSAGE"
220 PRINT "
"
230 INPUT M$
240 PRINT M$
250 PRINT "MESSAGE REA
DY"
260 FOR F=1 TO LEN M$
270 IF M$(F)="" THEN GOTO 350
280 LET CO=CODE M$(F)
290 IF C$(1)="E" THEN LET CO=CO
-(INT (RAND*20))
300 IF C$(1)="D" THEN LET CO=CO
+(INT (RAND*20))
310 LET M$(F)=CHR$ CO
320 PRINT M$(F);
330 NEXT F
340 PRINT "
"
350 IF INKEY$="" THEN GOTO 380
360 CLS
400 GOTO 2

```



ENIGMA

A PROGRAM for budding spies, moles and all members of secret societies. Choose a code number between one and 65535. Your ZX-81 will then encode a message for you. Once this has been done, send the message and code number to your accomplice, and the message can be de-

coded on another ZX-81 with the same program. Keep your code number safe and your enemies will spend weeks searching through the permutations before they can decode your letter.

Enigma was written for the 16K ZX-81 by Robert Street of Belper, Derbyshire.

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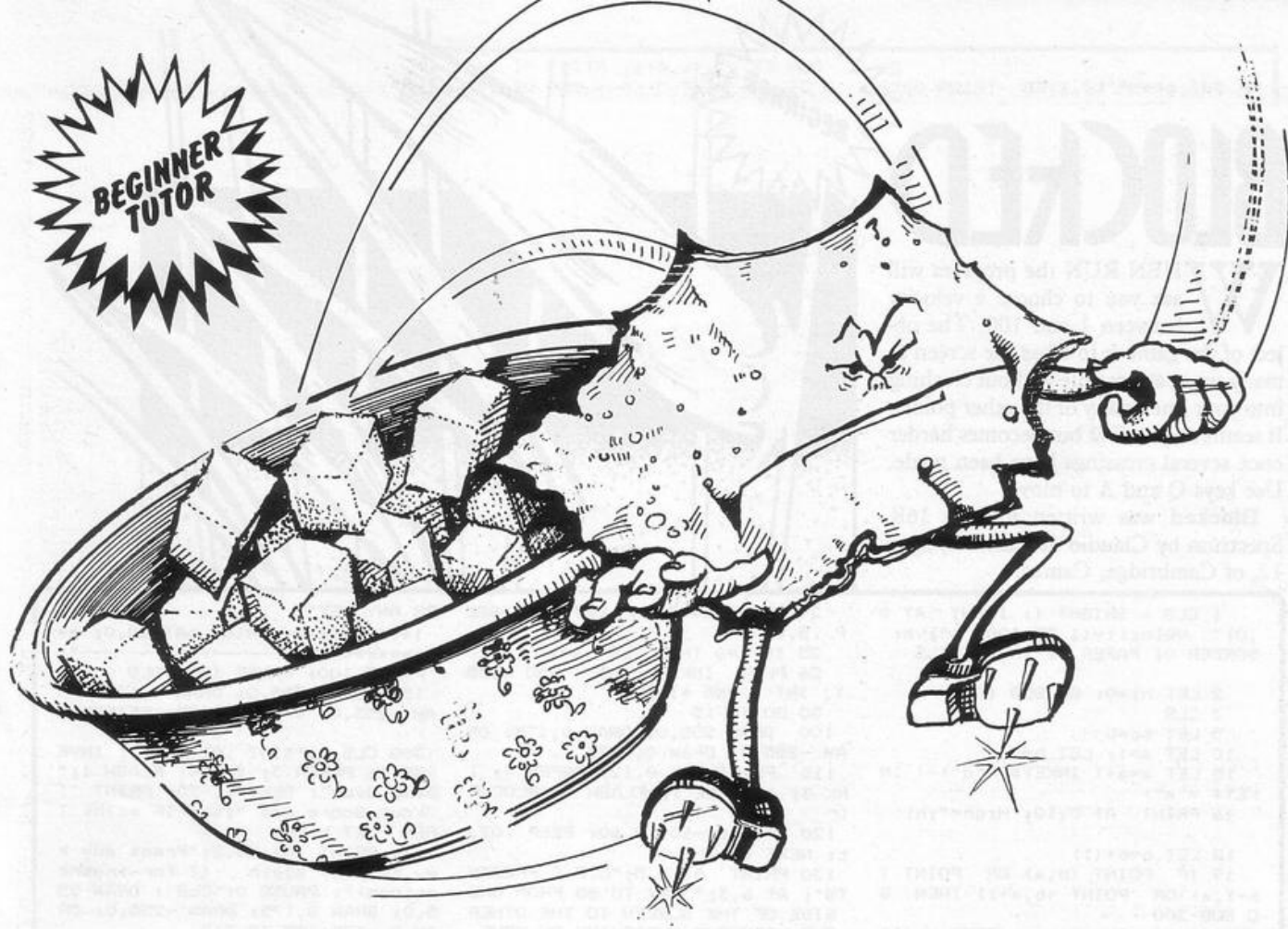
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KILLER CORNFLAKE

THE OBJECT of **Killer Cornflake** is to collect as many sugar lumps as possible and place them on the score in the dish. You will be pursued by a Killer Cornflake as it attempts to crunch you. After typing-in the program, enter LET A=PI/PI and LET X=VAL "20". Use GOTO 1 to play.

Written for the 1K ZX-81 by Scott Burgess, aged 15, of High Green, Sheffield.

Main code

1-5 Set up variables — SETUP
8-10 Program management — MAIN
26-27 Program management — MAIN
14-17 Computer control — FLAKE
19-25 Player control — SPOON

Variables/Characters used

A,B Y,X co-ordinates of spoon
X,Y Y,X co-ordinates of flake
Note reversal of conventional X,Y notation.
S Sugar count
E Dummy variable used for exit
Graphics variables
X\$ Sugar lump — "gh" or ""
Graphics character
"O" Spoon
"I" Flake
"gy" Dish/bowl
"gt" Dish/bowl

For the purpose of describing how the program works "module" names have been given to the different sections of the program. These have no programming significance, but are the ones which might have been used in stage four of a structured approach as described in **Program Tutor** this month.

SET UP sets up the variables. A=1 and X=20 must also be added before the program is executed. GOTO 1 is therefore used to avoid clearing these when the program is executed. Practically, this retains vertical separation between spoon and flake, with only horizontal separation restored to its original value.

MAIN prints the graphics for the spoon, flake, sugar, dish and sugar bowl. x\$ is used for the sugar or lack of it in the sugar bowl, and not for the sugar being carried by the spoon. Call FLAKE, call SPOON. If SPOON=FLAKE that is, if A=X, and B=Y, then print CRUNCH and exit. If there is no sugar in the sugar bowl that is, if x\$="", then print SPOON=SUGAR. Clear screen. Jump to main.

FLAKE controls movement left, right, up and down by comparing the values of X and Y, A and B.

SPOON checks whether spoon=sugar in bowl or, in Basic, whether A=15 and B=25. If so x\$="" is set for erase. It also checks whether sugar=dish or, in Basic, whether A=5, B=4 and x\$="". If these are all true, the sugar count is increased by one and x\$ is changed to x\$="(gh)" to print the sugar in the bowl. Finally the keyboard is scanned and the co-ordinates A and B are altered accordingly.

```

1 REM K
2 LET Y=VAL "30"
3 LET X$=""
4 LET S=PI-PI
5 LET B=PI/PI
6 PRINT AT A,B-1;"O" AT X,Y
7 AT 5,2;"I" AT 5,3;"gh" AT
16,23;"SUGAR"
9 IF A=X AND B=Y THEN PRINT A
T A,B-1;"CRUNCH"
10 IF X$="" THEN PRINT AT A,B;
""
14 IF X>A THEN LET X=X-VAL "2"
15 IF X<A THEN LET X=X+VAL "3"
16 IF Y>B THEN LET Y=Y-VAL "3"
17 IF Y<B THEN LET Y=Y+VAL "2"
19 IF A=VAL "15" AND B=VAL "25"
THEN LET X$=""
20 IF A=VAL "5" AND B=VAL "4"
AND X$="" THEN LET S=S+PI/PI
22 IF A=VAL "5" AND B=VAL "4"
AND X$="" THEN LET X$=""
24 LET A=A+VAL "2"*(INKEY$="5"
AND A<21)-VAL "2"*(INKEY$="7" A
NO A>PI/PI)
25 LET B=B+VAL "3"*(INKEY$="8"
AND B<VAL "31")-VAL "3"*(INKEY$
="5" AND B>PI/PI)
26 CLS
27 GOTO 8

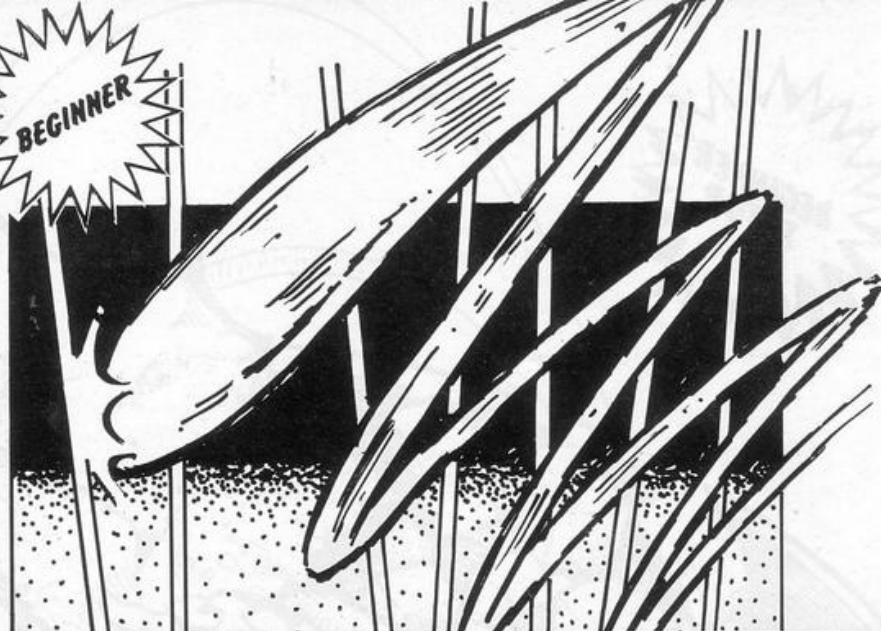
```


BLOCKED

BEGINNER

WHEN RUN the program will ask you to choose a velocity between 1 and 100. The object of the game is to cross the screen as many times as possible without crashing into your line or any of the other points. It seems easy at first but becomes harder once several crossings have been made. Use keys Q and A to move.

Blocked was written for the 16K Spectrum by Claudio de Castilho, aged 12, of Cambridge, Cambs.



```
1 CLS : BRIGHT 1: INPUT AT 0
,0;" Velocity(1 TO 100) ";ve:
BORDER 0: PAPER 0: INK 7: CLS
```

```
2 LET hi=0: GO SUB 100
3 CLS
5 LET sc=0
10 LET a=1: LET b=1
15 LET a=a+( INKEY$ ="q")-( IN
KEY$ ="a")
16 PRINT AT 0,10;"High=";hi
```

```
18 LET b=b+(1)
19 IF POINT (b,a) OR POINT (
b+1,a) OR POINT (b,a+1) THEN G
O SUB 300
20 PLOT INK 4;b,a: BEEP ve/10
00, (a*2)/10
21 IF a=175 THEN LET a=174
23 LET sc=sc+1: PRINT AT 0,0;
"Score=";sc
```

```
24 IF b=254 THEN LET b=1: BEE
P .5,0
25 IF a=0 THEN LET a=1
26 PLOT INK 6; INT ( RND *255
), INT ( RND *175)
30 GO TO 15
100 DRAW 255,0: DRAW 0,175: DR
AW -255,0: DRAW 0,-175
110 PRINT AT 0,12; PAPER 4; I
NK 3; INVERSE 1; FLASH 1;"BLOCKE
D"
120 FOR t=-60 TO 60: BEEP .02,
t: NEXT t
130 PRINT AT 3,5;"C.F.C PRESEN
TS"; AT 6,3;" TRY TO GO FROM ONE
SIDE OF THE SCREEN TO THE OTHER
ONE WITH OUT CHRASHING ON YOUR
LINE OR ON THE OTHERS POINTS IN
THE SCREEN. IT SEEMS TO BE EASY
BUT IT GETS HARDER. READY?THE
KEYS ARE 'Q','A'; AT 20,8;"PRE
```

```
SS ANY KEY"
140 PAUSE 0: PRINT AT 20,0;"**
*****NOW-----":
PAUSE 100: PAUSE 100: CLS
150 DRAW 255,0: DRAW 0,175: DR
AW -255,0: DRAW 0,-175: RETURN
```

```
300 CLS : PRINT AT 10,10; INVE
RSE 1; PAPER 3; INK 4; FLASH 1;"
Game Over": BEEP 1,-20: PRINT "
Your Score was ";sc: IF sc>hi T
HEN LET hi=sc
310 PRINT AT 20,2;"Press any k
ey to play again (I for instro
ctions)": PAUSE 0: CLS : DRAW 25
5,0: DRAW 0,175: DRAW -255,0: DR
AW 0,-175: GO TO 315
315 IF INKEY$ <> "i" THEN GO
TO 3
320 GO SUB 100: GO TO 3
500 RUN
```



COCKPIT

BEGINNER

LINE UP your sights with the approaching alien and fire your laser using "0". If you allow the alien to pass it will take one of your fuel tanks. Once all your fuel tanks have been taken you will be left drifting in space.

Cockpit was written for the 16K Spectrum by James Newall, aged 11, of Killamarsh, near Sheffield.

```
5 BORDER 4: PAPER 0: INK 7: C
LS
10 GO SUB 1000
15 LET s=0: LET l=3
20 LET x= INT ( RND *30): LET
y=15: LET a=17: LET b=0
25 PRINT AT 0,0;"SCORE=";s;"
FUEL TANKS=";l
30 PRINT AT a,b;"A": LET aa=a
: LET bb=b
35 BEEP .003,10
40 PRINT AT y,x;"+"
45 LET yy=y: LET xx=x
50 LET y=y+( INKEY$ ="6" AND y
<21)-( INKEY$ ="7" AND y>5)
60 LET x=x+( INKEY$ ="8")-( IN
KEY$ ="5")
65 IF INKEY$ ="0" THEN GO SU
B 200
70 IF x<0 THEN LET x=30
80 IF x>30 THEN LET x=0
```

```
90 LET b=b+2: IF b=30 THEN PR
INT AT a,30;" ": LET b=0: LET a
=a+1: IF a=21 THEN GO TO 500
100 PRINT AT yy,xx;" "; AT aa,
bb;" "
110 GO TO 25
200 PLOT 0,175: DRAW INK 2;x*8
,-y*8
205 BEEP .05,5
210 IF y=a AND x=b THEN LET s=
s+10: FOR n=10 TO 40: BEEP .01,n
: NEXT n: CLS : GO TO 20
220 CLS : RETURN
500 LET l=l-1
510 FOR n=49 TO 56: BEEP .01,n:
NEXT n
520 IF l>0 THEN CLS : GO TO 20
530 BEEP RND ,s/10
540 PRINT AT 10,10;"ALL FUEL L
OST"; AT 11,10;"(GAME OVER)"
550 INPUT "ANOTHER GO(Y/N)";a$
560 IF a$="y" OR a$="Y" THEN R
UN
570 STOP
1000 FOR n=0 TO 7
1010 READ a: POKE USR "a"+n,a:
NEXT n
1020 DATA 36,126,219,255,90,102,
```

```
0,0
1030 PRINT AT 2,7; INVERSE 1;"S
INCLAIR PROGRAMS"; INK 2; AT 4,1
2;"PRESENT"
1035 FOR n=0 TO 20: BEEP .01, IN
T ( RND *55): NEXT n
1040 PRINT AT 10,12; INVERSE 1;
"COCKPIT"
1045 PRINT AT 10,11; FLASH 1;"(
ig5)"; AT 10,19;"(g5)"; AT 11,11
;"(ig17*ig3;ig2)"; AT 9,11;"(ig
4:7*g3;g7)"
1050 PRINT PAPER 4; AT 15,4;"PR
ESS ANY KEY TO PLAY"; INK 1; PA
PER 6; AT 17,3;"OR SPACE FOR INS
TRUCTIONS"
1060 IF INKEY$ =" " THEN GO TO
1060
1070 IF INKEY$ =" " THEN GO SU
B 1100
1080 PAUSE 0: CLS : RETURN
1100 CLS : PRINT "Controls are:"
: PRINT : PRINT " 5 6 7 8 0": PR
INT " < d ^ > FIRE"
1105 FOR n=10 TO 40: BEEP .01,n:
BEEP .01,n-2: NEXT n
1110 PRINT : PRINT " A=10 POINTS
"
1120 PRINT : PRINT "PRESS ANY KE
Y": PAUSE 0: CLS : RETURN
```


ALIEN TROOPSHIP

EARTH is being invaded by a fleet of alien troopships. They appear one at a time and if one descends far enough it will land and deploy its warriors over the surface of Earth. To prevent them doing so you have to launch a missile using any key

and guide it using keys Z and M.

Alien Troopship was written for the 1K ZX-81 by Barry Bayley of Telford, Shropshire. To play with a RAM pack connected, enter POKE 16389,68 and NEW before LOADING.

```
10 LET S=NOT PI
20 LET C=INT PI
30 GOTO CODE "2"
40 PRINT AT X,Y;"<>"
50 LET S=S+SGN PI
60 LET X=INT (RND*CODE "2")+CO
70 LET Y=INT (RND*CODE "2")+CO
80 LET B=CODE "+"
90 IF S=VAL "20" THEN GOTO VAL
100 CLS
110 PRINT AT X,Y;"<>";AT B,(C
AND C>0) "+"
120 IF C=ABS Y+1 AND ABS (X-B)<
=1 THEN GOTO 25
130 IF INKEY$="" OR B<21 THEN
LET B=B-3
140 IF INKEY$="Z" AND C>0 THEN
LET C=C-4
150 IF INKEY$="M" AND C<31 THEN
LET C=C+4
160 IF Y=0 OR Y=-28 THEN GOTO 4
200 LET Y=Y-2
210 GOTO 100-20*(B<0)
220 IF X=CODE "=" THEN GOTO VAL
230 CLS
240 PRINT AT CODE "+",C;"+"
250 FOR B=Y-SGN Y TO Y-SGN Y+CO
260 PRINT AT CODE "+",B;"*"+
NEXT B
270 PRINT AT CODE "2",NOT PI;"
EARTH CONQUERED" AND S(X)+("ENEM
Y REPULSED" AND S=CODE "="),S;"
ALIENS DESTROYED"
```



YOUR RADAR and damage gauge will be shown at the bottom of the screen and you can see your ship in perspective. The enemy can be seen on your radar and must be avoided using keys 5 and 8 for left

and right, as you will be shot if you do not move. You have three lives and the game ends if these are used.

Megatron Run was written for the 16K ZX-81 by Anthony Skraga of Gosport, Hants.

MEGATRON RUN

```
5 REM "SPR"
10 LET SC=0
20 LET HI=0
30 LET L=3
40 LET C=5
50 FOR I=1 TO 21
60 PRINT AT I,0;"
70 NEXT I
80 PRINT AT 13,0;"
90 PRINT AT 14,0;"
100 PRINT AT 16,5;"HITS";HI;"
110 LET SC=SC+1
120 PRINT AT 14,L;"A"
130 PRINT AT 9,C;"
140 PRINT AT 10,C;"
150 PRINT AT 11,C;"
160 IF L+1=C+2 THEN GOTO 1000
170 LET K=INT (RND*2+1)
180 IF K=1 AND L>1 THEN LET L=L-1
190 IF K=2 AND L<14 THEN LET L=L+1
200 IF INKEY$="5" AND C>1 THEN
LET C=C-1
210 IF INKEY$="8" AND C<11 THEN
LET C=C+1
220 GOTO 90
1000 LET Q=INT (RND*2+1)
1010 IF Q=1 THEN GOTO 200
1020 PRINT AT 11,C+2;"*";AT 11,C+2;"
1030 LET HI=HI+1
1040 IF HI=3 THEN GOTO 2000
1050 GOTO 200
2000 PRINT AT 9,C;"
2010 PRINT AT 10,C;"
2020 PRINT AT 11,C;"
2030 PRINT AT 3,5;"SCORE";SC;"
2040 FOR I=0 TO 110
2050 NEXT I
2060 CLS
2070 GOTO 5
2080 SAVE "SPR"
2090 RUN
```




NINE STOP

THE CURSOR runs quickly along a series of numbers. Test your reactions by pressing "S" to stop it on the number nine.

Nine Stop was written for the 1K ZX-81 by Brian Forsyth of Kirkaldy, Fife.

BEGINNER

```

1 LET A=0
2 CLS
10 PRINT AT 0,0;"123456789"
15 GOSUB 110
20 PRINT AT 0,0;"123456789"
25 GOSUB 110
30 PRINT AT 0,0;"123456789"
35 GOSUB 110
40 PRINT AT 0,0;"123456789"
45 GOSUB 110
50 PRINT AT 0,0;"123456789"
55 GOSUB 110
60 PRINT AT 0,0;"123456789"
65 GOSUB 110
70 PRINT AT 0,0;"123456789"
75 GOSUB 110
80 PRINT AT 0,0;"123456789"
85 GOSUB 110
90 PRINT AT 0,0;"123456789"
100 LET A=1
101 GOSUB 110
105 GOTO 1
110 IF INKEY$="S" AND A=1 THEN
PRINT "WELL DONE"
111 IF INKEY$="S" AND A=0 THEN
PRINT "BAD LUCK"
112 IF INKEY$="S" THEN PAUSE 10
113 RETURN
    
```

ELECTRICITY BILL

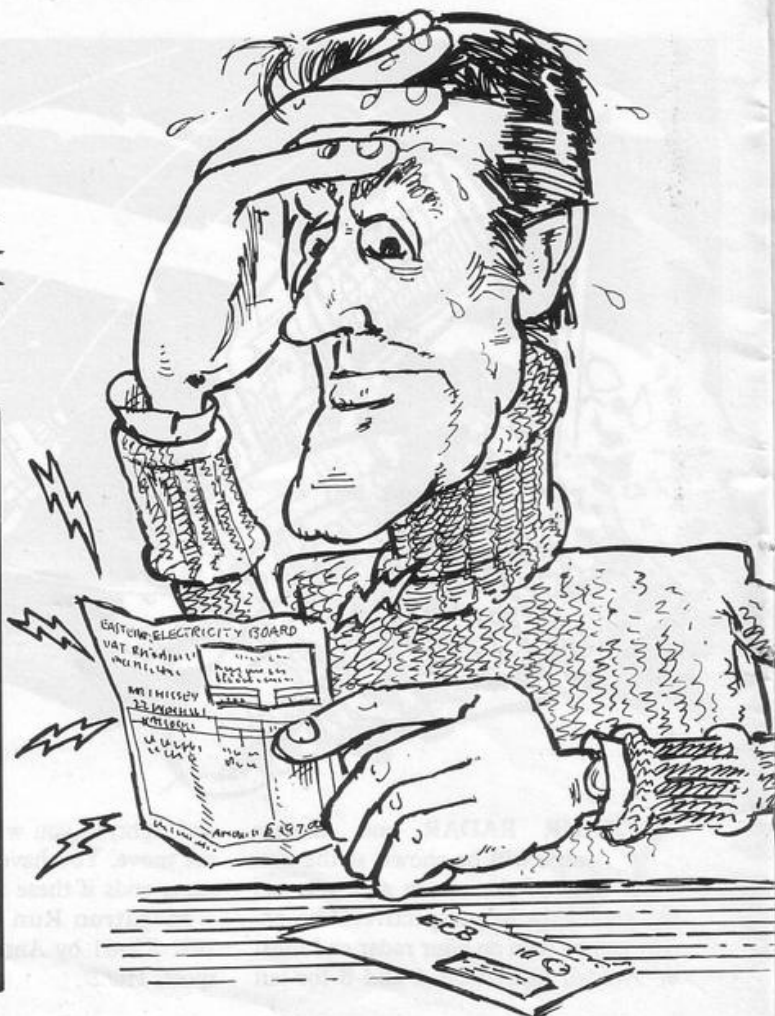
MAKE sure that you are not being charged too much for electricity with **Electricity Bill** for the 1K ZX-81. Input the price per unit and the numbers on your meter and your ZX-81 will tell you what your bill should be.

Written by Brian Forsyth of Fife, Scotland.

BEGINNER

```

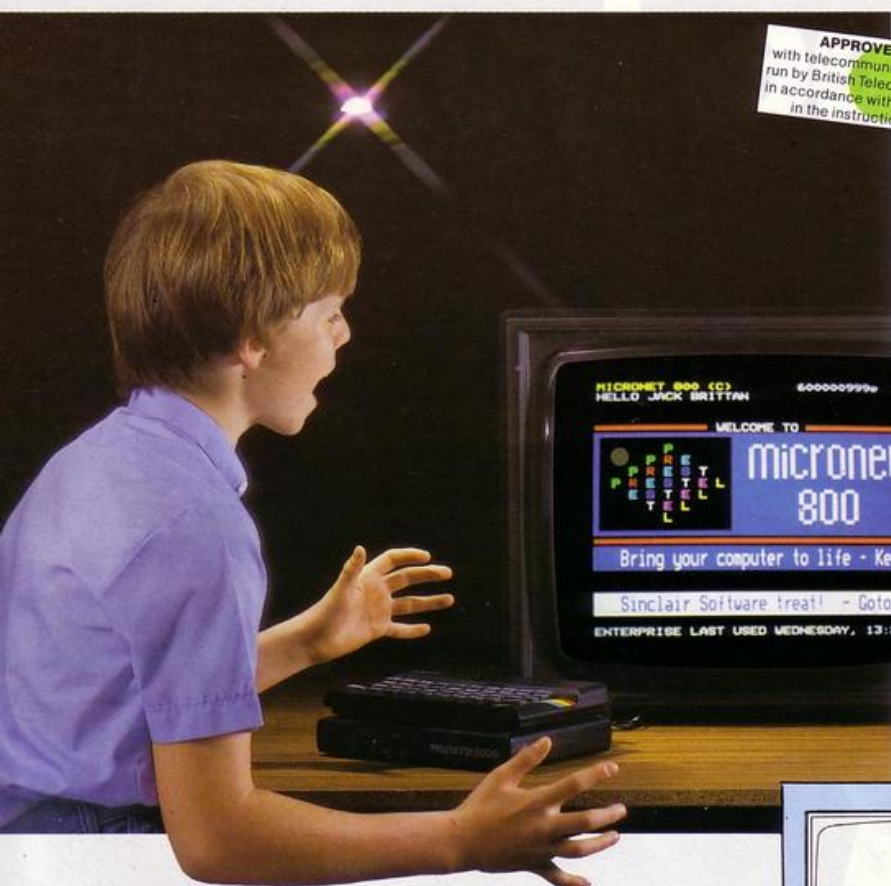
10 PRINT AT 0,6;"ELECTRICITY A
COUNT"
20 PRINT "INPUT PREVIOUS READI
NG"
30 INPUT L
40 PRINT "INPUT PRESENT READIN
G"
50 INPUT T
60 PRINT "INPUT PRICE (PENCE)
PER UNIT FOR FIRST SET OF UNITS"
70 INPUT P1
80 PRINT "INPUT NUMBER OF UNIT
S AT THAT PRICE"
90 INPUT N
100 PRINT "INPUT PRICE (PENCE)
PER UNIT FOR REMAINING UNITS"
105 INPUT P2
110 IF T<L THEN PRINT "MISTAKE
IN READINGS"
120 LET U=T-L
130 IF U>N THEN PRINT "E";N*P1/
100+(U-N)*P2/100
140 IF U<N THEN PRINT "E";U*P1/
100
    
```



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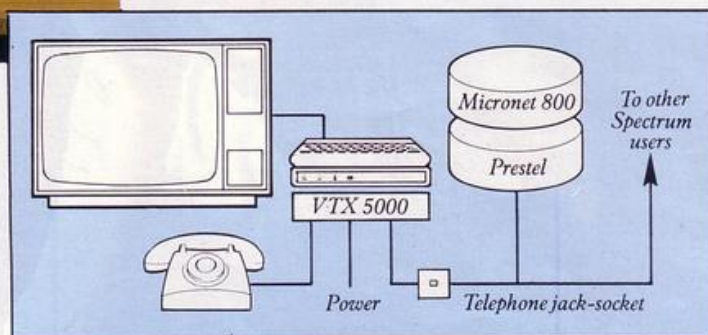
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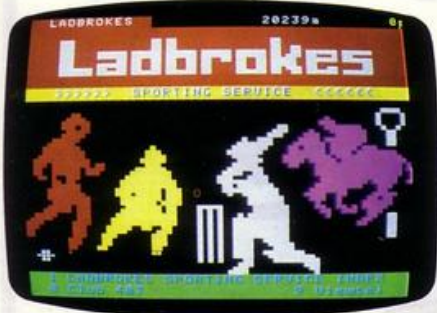
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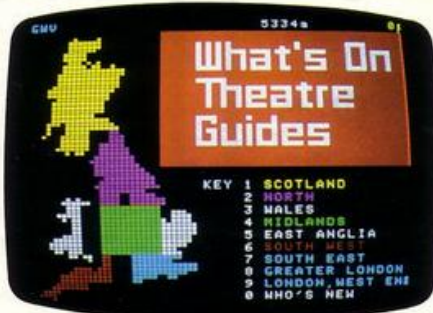
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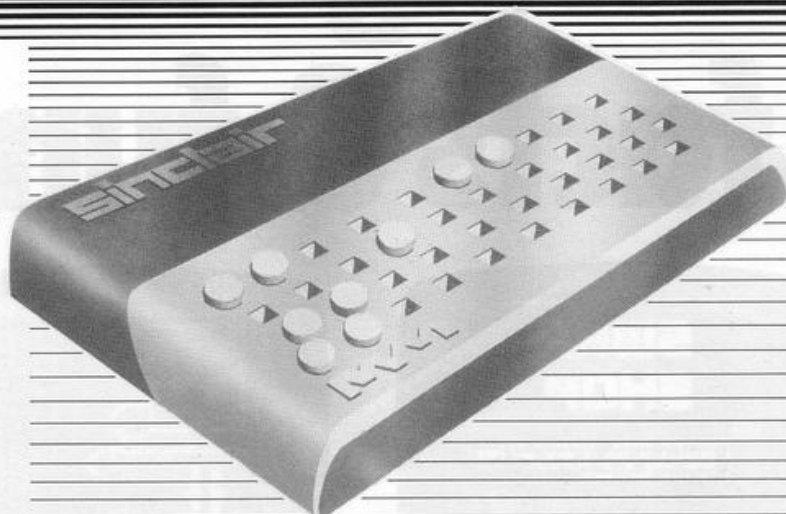
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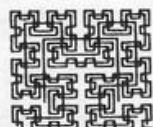
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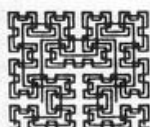
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FOLLOWER

```

1 BEEP .1,41: SAVE "Follower"
LINE 2: FOR n=30 TO 40: BEEP .1
,n: NEXT n: GO TO 1
2 RESTORE : BORDER 0: PAPER 0
: INK 7: CLS
10 OVER 0: FOR N=USR "A" TO
USR "D"+7
20 READ A: POKE N,A: NEXT N
30 DATA 1,1,1,1,1,1,1,255,128,
128,128,128,128,128,128,255,255,
1,1,1,1,1,1,1,255,128,128,128,12
8,128,128,128
40 PRINT AT 20,0: FLASH 1:"Pr
ess any key to play 'Follower'"

50 RESTORE 50: FOR Z=1 TO 17:
READ A,B
55 IF INKEY$ <> "" THEN GO
TO 90
60 IF Z/2= INT (Z/2) THEN PRI
NT AT 5,7:"F O L L O W E R "
GO TO 70
65 PRINT AT 5,7:"F O L L O W
E R "
70 BEEP A,B: NEXT Z: GO TO 50

80 DATA .5,15,.2,15,.2,8,.2,15
,.1,15,.5,20,.5,15,1,8,.5,15,.2,1
5,.2,8,.2,15,1,15,.3,24,0,0,.2,2
2,1,22
90 DIM O(10): DIM P(10)
95 BORDER 1: PAPER 1: CLS
100 FOR n=0 TO 254 STEP 16: PLO
T n,0: DRAW 0,160: NEXT n
110 FOR n=0 TO 168 STEP 16: PLO
T 0,n: DRAW 240,0: NEXT n
120 PRINT AT 0,0:" A B C D E F
G H I J K L M N O"
130 FOR N=2 TO 20 STEP 2: PRINT
AT N,30+(N <> 20): OVER 1:N/2:
NEXT N
140 FOR N=1 TO 10
150 LET A=( INT ( RND *10))*2:
LET B=( INT ( RND *15))*2
155 LET OA=A: LET OB=B
160 OVER 1
170 FOR G=1 TO N
190 LET A=A+(( INT ( RND *3)-1)
*2)
200 LET B=B+(( INT ( RND *3)-1)
*2)
210 IF A<2 THEN LET A=2
220 IF A>20 THEN LET A=20
230 IF B<0 THEN LET B=0
240 IF B>28 THEN LET B=28
250 IF A=OA AND B=OB THEN GO T
O 190
255 PRINT INK ( RND *4)+3: AT
A,B:"(2*ig8)": AT A+1,B:"(2*ig8)
"
257 FOR D=1 TO 50: NEXT D
258 PRINT AT A,B:"(2*ig8)": AT
A+1,B:"(2*ig8)"
259 LET O(G)=A: LET P(G)=B
260 NEXT G
270 LET OA=A: LET OB=B
280 NEXT G
290 LET A=2: LET B=0: LET OA=A:
LET OB=B
300 FOR G=1 TO N
310 PRINT INK 6: AT A,B:"AB":
AT A+1,B:"CD"
320 LET A=A+(( INKEY$ ="6" AND
A<20)-( INKEY$ ="7" AND A>2))*2:
LET B=B+(( INKEY$ ="8" AND B<28)
-( INKEY$ ="5" AND B>0))*2
330 PRINT AT OA,OB:"AB": AT OA
+1,OB:"CD"
340 LET OB=B: LET OA=A
350 IF INKEY$ = CHR$ 13 THEN
GO TO 400
370 GO TO 310
400 IF A=O(G) AND B=P(G) THEN
GO TO 450
410 BEEP .5,14: BEEP .5,16: BEE

```

```

P .5,12: BEEP .5,0: BEEP 2,7
420 PRINT BRIGHT 1: OVER 0: AT
0,0:"WRONG - YOU SHOULD BE HERE
:- "
430 PRINT AT O(G),P(G):***: A
T O(G)+1,P(G):***
440 FOR F=1 TO 220: NEXT F: GO
TO 1000
450 BEEP .05, RND *60
455 NEXT G
460 NEXT N
1000 BORDER 7: PAPER 7: INK 1: C
LS
1010 PRINT "You scored ";n;". Wh
ich classes ""you as:"
1020 PRINT AT 5,10:"a pilchard.
": AT 7,10:"a prune.": AT 9,10:"
a Wally.": AT 11,10:"a Brian.":
AT 13,10:"average.": AT 15,10:"b
etter than average.": AT 17,10:"
good.": AT 19,10:"brilliant.": A
T 21,10:"a cheat."
1030 IF n=6 THEN LET n=5
1040 FOR t=5 TO 21 STEP 2: PRINT
AT t,7:">": FOR s=1 TO 20: NEX
T s: PRINT AT t,7:">": NEXT t

1050 IF RND >.4 THEN GO TO 104
0
1060 FOR t=5 TO ((n+2)*2)-1 STEP
2: PRINT AT t,7:">": FOR s=1 T
O 20: NEXT s: PRINT AT t,7:">":
NEXT t

```

FOLLOW the sequence of squares as shown by the computer. A coloured square is moved round the grid and you must then position a cursor on each of the squares. When you are on a square indicated by the computer you should press ENTER. Use keys 5, 6, 7 and 8 to play.

Follower was written for the 16K Spectrum by Steven Bennett of Loughborough, Leics.

```

1070 PRINT AT ((n+2)*2)-1,7:" >
="
1080 INPUT "Do you want to play
again? (Y/N)": LINE t$: IF t$="y
" OR t$="Y" THEN RUN
1090 RESTORE 1090: FOR n=1 TO 11
: READ a,b: BEEP a,b: NEXT n
1100 DATA .2,1,.09,-60,.1,-4,.1,
-4,.1,-4,.4,-3,.58,-4,.1,-60,.3,
0,.09,-60,.2,1
1110 OVER 0: CLS
1120 PLOT 10,10: DRAW 10,0: DRAW
0,25, PI : DRAW 0,25, PI : DRAW
-10,0: DRAW 0,-50
1130 PLOT 50,10: DRAW 0,25: DRAW
12,25: DRAW -12,-25: DRAW -12,2
5
1140 PLOT 70,10: DRAW 25,0: DRAW
-25,0: DRAW 0,25: DRAW 20,0: DR
AW -20,0: DRAW 0,25: DRAW 25,0
1150 FOR n=1 TO 21: LET l=USR 3
582: NEXT n
1160 BEEP .005,0: GO TO 1160

```



NIGHTMARE PARK

IT IS growing dark, and you must make your way home across the maze-like paths of **Nightmare Park**. Many have entered the park and never returned, and those brave souls who have made their way through have told tales of being transported to other

places where they have been faced by pits of lions, herds of stampeding animals and other fearsome sights. If you dare enter the park, use cursor keys 5, 6, 7 and 8 to move.

Written for the 16K ZX-81 by James Harrower of Skelmersdale, Lancashire.

```

1 REM 0000000000000000000000000000
2 GOTO 7000
3 CLS
10 LET DF=PEEK 16396+256*PEEK
16397
20 LET XX=DF+334
25 IF PEEK 16540=201 THEN GOTO
71
30 LET A$="042 012 064 017 033
080 025 006 022 035 126 254 118
040 009 079 157 237 082 121 119
025 024 241 016 239 201"
40 FOR A=16514 TO 16540
50 POKE A,VAL A$( TO 3)
60 LET A$=A$(5 TO )
70 NEXT A
80 LET ANSWER=0
90 DIM M(20)
100 FOR N=0 TO 21
110 PRINT AT N,0;"
120 NEXT N
130 PRINT AT 10,3;"
140 PRINT AT 11,23;"
150 PRINT AT 9,3;"
160 PRINT AT 8,3;"
170 PRINT AT 7,3;"
180 PRINT AT 6,3;"
190 PRINT AT 5,3;"
200 PRINT AT 4,3;"
210 PRINT AT 11,3;"
220 PRINT AT 12,3;"
230 PRINT AT 13,3;"
240 PRINT AT 12,25;"
250 PRINT AT 14,25;"
260 PRINT AT 15,15;"
270 FOR N=1 TO INT (RND*5)+2
280 POKE XX,13
290 LET A$=INKEY$
300 POKE XX,135
310 IF A$="8" THEN LET XX=XX+1
320 IF PEEK XX=128 THEN LET XX=
XX-1
330 IF A$="5" THEN LET XX=XX-1
340 IF PEEK XX=128 THEN LET XX=
XX+1
350 IF A$="6" THEN LET XX=XX+33
360 IF PEEK XX=128 THEN LET XX=
XX-33
370 IF A$="7" THEN LET XX=XX-33
380 IF PEEK XX=128 THEN LET XX=
XX+33
385 IF XX=DF+393 THEN GOTO 6000
390 NEXT N
400 LET GOTO=INT (RND*5)+1
410 LET GOTO=GOTO+1000
420 GOTO GOTO
1000 CLS
1010 PRINT "INPUT THE ANSWER"
1020 FOR N=1 TO 15 STEP 2
1030 LET M(N)=INT (RND*8)+1
1040 PRINT AT 10,N;M(N)
1045 IF N<15 THEN PRINT AT 10,N+
1;"+"
1050 LET ANSWER=ANSWER+M(N)
1060 NEXT N
1070 FOR N=1 TO 55
1080 NEXT N
1090 PRINT AT 10,0;"
1100 INPUT A
1110 IF A=ANSWER THEN GOTO 1200
1120 PRINT AT 0,0;"W R O N G . Y
OU ARE DEAD"
1130 FOR N=1 TO 40
1140 NEXT N
1150 GOTO 1
1200 PRINT AT 0,0;"C O R R E C T
1210 FOR N=1 TO 40
1220 NEXT N
1230 GOTO 80
2000 CLS
2010 PRINT AT 0,0;"
2020 PRINT AT 19,0;"
2025 PRINT AT 21,5;"=EXIT"
2030 FOR N=1 TO 20
2040 PRINT AT N,0;"
2050 NEXT N
2060 LET A=DF+625
2070 POKE A,13
2100 FOR N=1 TO 3
2110 PRINT AT (RND+17)+1,(RND+29
+1,"
2120 NEXT N
2130 POKE A,0
2140 LET A$=INKEY$
2150 IF A$="8" THEN LET A=A+1
IF PEEK A=128 THEN LET A=A-
1
2160 IF A$="5" THEN LET A=A-1
2165 IF PEEK A=128 THEN LET A=A+
1
2170 IF A$="6" THEN LET A=A+33
2175 IF PEEK A=128 THEN LET A=A-
33
2180 IF A$="7" THEN LET A=A-33
2185 IF PEEK A=128 THEN LET A=A+
33
2190 IF PEEK A=136 THEN GOTO 250
2200 IF PEEK A=8 THEN GOTO 2300
2210 GOTO 2090
2300 CLS
2310 PRINT "YOU ARE DEAD"
2320 FOR N=1 TO 45
2330 NEXT N
2340 GOTO 1
2500 CLS

```





```

2510 PRINT "THAT WAS A CLOSE ONE"
2520 FOR N=1 TO 45
2530 NEXT N
2540 GOTO 80
2550 CLS
2560 LET X=DF+147
2570 LET Y=X
2580 LET A=DF+594
2590 FOR N=1 TO 200

```

```

3105 POKE Y,0
3120 LET @=USR 16514
3130 IF PEEK X=189 THEN GOTO 350
3140 POKE X,59
3150 LET @=INT (RND*29)
3160 LET C=INT (RND*29)
3170 IF N<=177 THEN POKE A+B,189
3180 IF N<=177 THEN POKE A+B+1,1
3190
3200 IF N<=177 THEN POKE A+C,189
3210 IF N<=177 THEN POKE A+C+1,1
3220
3230 LET Y=X
3240 LET X=X+2*(INKEY$="8" AND X<DF+163)-2*(INKEY$="5" AND X>DF+163)
3250 NEXT N
3260 GOTO 3600
3270 CLS
3280 PRINT "YOU ARE DEAD"
3290 FOR N=1 TO 45
3300 NEXT N
3310 GOTO 1
3320 CLS
3330 PRINT "WHAT SKILL"
3340 FOR N=1 TO 45
3350 NEXT N
3360 GOTO 80
3370 CLS
3380 PRINT "INPUT THE DEN YOU THINK THE LIONS ARE NOT IN."
3390 LET CH=INT (RND*3)+1
3400 FOR N=8 TO 12
3410 PRINT AT N,3;" "
3420 AT N,15;" "
3430 NEXT N
3440 INPUT C
3450 IF C=4 THEN GOTO 4060
3460 FOR N=8 TO 12
3470 PRINT AT N,3;" "
3480 IF N=10 AND CH=1 THEN PRINT AT N,3;"LION"
3490 NEXT N
3500 FOR N=8 TO 12
3510 PRINT AT N,15;" "
3520 IF N=10 AND CH=2 THEN PRINT AT N,15;"LION"
3530 NEXT N
3540 IF C=CH THEN GOTO 4500
3550 CLS
3560 PRINT "YOU HAVE BEEN SAVED"
3570 FOR N=1 TO 45
3580 NEXT N
3590 GOTO 80
3600 CLS
3610 PRINT "YOU HAVE BEEN EATEN BY THE LIONS"
3620 FOR N=1 TO 45
3630 NEXT N
3640 GOTO 1
3650 CLS
3660 PRINT AT 0,0;"FIND THE RIGHT KEY (A-Z) BEFORE YOU GET CRUSHED. WATCH THE SCREEN TO SEE WHAT KEY TO PRESS."
3670 FOR N=1 TO 10
3680 NEXT N
3690 LET KEY=INT (RND*25)+38
3700 LET Z1=INT (RND*18)+3
3710 LET Z2=RND*31
3720 PRINT AT Z1,Z2;CHR$ KEY
3730 PRINT AT Z1,Z2;" "
3740 LET TI=2
3750 PRINT AT 21,15;"$ "
3760 PRINT AT TI,0;" "
3770
3780 IF INKEY$=CHR$ KEY THEN GOTO 5100
3790 IF TI=21 THEN GOTO 5500
3800 LET TI=TI+1
3810 GOTO 5040
3820 CLS
3830 PRINT AT 0,0;"YOU WERE LUCKY"
3840
3850 FOR N=1 TO 45
3860 NEXT N
3870 GOTO 80
3880 CLS
3890 PRINT "YOU HAVE BEEN CRUSHED"
3900
3910 FOR N=1 TO 45
3920 NEXT N
3930 GOTO 1
3940 CLS
3950 PRINT AT 0,5;"PARK AVENUE"
3960 PRINT AT 2,0;"YOU ARE A VERY CLEVER PERSON YOU HAVE GOT THROUGH THE PARK."
3970 PRINT AT 5,0;"DO YOU WANT TO PLAY AGAIN (Y/N)"
3980 IF INKEY$="Y" THEN GOTO 3
3990 IF INKEY$="N" THEN STOP
4000 GOTO 6040
4010 CLS
4020 PRINT AT 0,5;"PARK AVENUE"
4030 PRINT AT 2,0;"YOU ARE IN A PARK AND YOU MUST TRY TO GET THROUGH THE PARK. BUT ON THE WAY YOU HAVE TO PASS SOME OBSTACLES. YOU COMPLETE THESE TO GET THROUGH THE PARK. IF YOU DONT THEN YOU GET THROUGH THE OBSTACLE THEN YOU ARE BACK TO THE BEGINNING OF THE PARK."
4040 PRINT AT 12,0;"YOU USE THE CURSOR KEYS TO MOVE IN ALL THE OBSTACLES AND IN THE PARK."
4050 PRINT AT 17,0;"DO YOU WANT TO PLAY (Y/N)"
4060 IF INKEY$="Y" THEN GOTO 3
4070 IF INKEY$="N" THEN STOP
4080 GOTO 7050
4090 STOP
4100 SAVE "PARK"
4110 RUN

```


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12th
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8th September 1984

THE improvements to *Sinclair Programs* continue this month with the addition of **Pro-Printout**. Each month *Sinclair Programs* will publish a program listing which is professional in both style and content.

These programs have been commissioned from the authors of the best and most successful programs printed in *Sinclair Programs* last year. First program to be printed in the **Pro-Printout** series is **For Love** by Mark Chapman. **For Love** is a complete adventure set in a large mansion from which the player must escape. It contains a large number of locations and problems so that even experienced players with the listing in front of them will find this a difficult game to complete.

Once you have completed the adventure, the listing of **For Love** shows how adventure games of your own can be developed. Some features included within the game are: a help option, a time limit, and a limit to the amount of directions in which a player can move without certain objects.

ZX-81 owners will see that *Sinclair Programs* contains fewer programs for their machine than usual. This change does not reflect a change in our commitment to the ZX-81, but a lack of response from ZX-81 owners. Programs printed in the magazine are those submitted by readers, and when we do not receive ZX-81 programs we have no choice but to devote more space to the Spectrum.

If you would like to submit a program to *Sinclair Programs* please complete the form below and sent it, together with cassette and accompanying letter, to the address given. We pay for each program published.

*from
The Editor*

Das Program ist kaput

HAVING recently acquired a second-hand Spectrum, I have very belatedly also come into possession of the October 1983 edition of your magazine. I was very interested to see the **German Tester** program on page 33. It is a very good idea, but what a pity it is marred by so many mistakes.

The two biggest howlers are in line 250, where the example for indicating an umlauted vowel is based on an **e**, whereas only **a**, **o** and **u** are ever umlauted; and in lines 1010 and 1510, where the omission of one word from each list means that "der Apotheker" (chemist) is translated as "apple tart". There are several other spelling mistakes, both in the English and German data lists.

Since the correct use of capital letters is essential in the German language, I have entered all the data in capital and lower case, instead of in capitals only. It is then necessary to delete POKE 23658,8 from line 460.

Instead of the awkward arrangement for denoting umlauts, I have made use of user-defined graphics for this purpose, thus:

```
35 GOSUB 799
240. . . " " "To represent an
umlaut, for lower" " "case
letters use GRAPHICS
mode" " "of the letter to be
modified." " "For capitals:
GRAPHICS B=B
```

```
GRAPHICS C=C
GRAPHICS D=D"
799 REM UMLAUT ROUTINE
800 FOR x=USR "a" TO
USR "d"+7:READ a:
POKE x,a: NEXT x
810 FOR x=USR "o" TO
USR "o"+7:READ a:
POKE o,a: NEXT x
820 FOR x=USR "u" TO
USR "o"+7:READ a:
POKE u,a: NEXT x
825 RETURN
830 DATA 36, 0, 56, 4, 60,
68, 58, 0
840 DATA 36, 60, 66, 66,
126, 66, 66,0
850 DATA 36, 60, 66, 66,
66, 66, 60, 0
860 DATA 36, 66, 66, 66, 66,
66, 66, 60, 0
870 DATA 36, 0, 24, 36, 36,
36, 24, 0
880 DATA 36, 0, 36, 36, 36,
36, 24, 0
```

No doubt it can be done more simply, but I am only a beginner. There remains the problem of a computer which is too stupid to understand that there is more than one answer to the majority of translation questions.

**Peter Beale,
Bulford, Salisbury.**

Jet Set end

I AM writing to inform you that I have finally finished **Jet Set Willy**, collecting 83 objects through 60 stages. When you reach the bedroom, Willy walks automatically from the bedroom to the bathroom and then

sticks his head in the toilet, wagging his legs in the air. The sound continues and, believe it or not, that is all that happens.

**John Shields,
Hayes, Middlesex.**

K-Tel program

THANK YOU very much for the copy of the review of our Spectrum game **Sorcery**, appearing in your July edition. I would also like to extend my thanks for your review of **It's Only Rock 'n' Roll**. However, I am at pains to point out that I believe this release is accredited to K-Tel and not Virgin.

**Jeremy Cook,
Commercial Director,
Virgin Games**

Sabre Wulf

I HEREBY state that I believe myself to be the first person to complete **Sabre Wulf** from Ultimate Play the Game. With a score of 112 820 on July 7th, 1984 I collected all four pieces of the amulet and entered the cave. I finished with 8 lives remaining, and 72%.

The way to complete this game is to make a map of all 256 screens, and mark all clearings where the amulet could be. Clearings with huts count. I found 32 such clearings, including the start and an odd-shaped clearing near the start. Then visit each of the clearings in turn, and hope for some luck.

If you have not bought this game then do so, for it is another winner from Ultimate.

**James Sheahan,
Camberley, Surrey.**

Please complete this form and enclose it with any program which you send to us for possible publication.

To: Sinclair Programs, 67 Clerkenwell Road, London EC1R 5BH

I enclose Program(s) for the.....computer.

I guarantee that each programme submitted is my own original work.

Signed

Name.....

Address.....

Can your Spectrum teach you anything?

THE SPECTRUM has great potential as an educational machine. When programmed correctly it knows all the right answers, it is never impatient and it combines the fun of a games computer with serious lessons. It is, therefore, not surprising that more and more educational programs are being produced.

The problem, for teachers and pupils, is that these programs are, in many cases, being produced for the wrong reasons. Some manufacturers believe that the current enthusiasm for computer games cannot last, and that when the last games company goes under the educational companies will be selling more than ever before. Other manufacturers believe that the Spectrum will sell better and that they, therefore, will have a wider market, if parents see it as an educational machine which will be good for their children.

Software written for these reasons, rather than by teachers who need it, suffers from various flaws. Simple games such as Hangman, which would no longer sell in their own right, are marketed under the dubious claim that they are educational. Programs are presented as being suitable for young children simply because older children find them boring. There is a general inability to understand how children learn, and what they are capable of doing at different ages.

Higher standards

At the other end of the educational range the standard is much higher. Programs aimed at O-level and A-level students achieve their aims well, and the programmers seem to have a much clearer idea of what they are doing. General interest educational programs, that is those aimed not at pupils but at those studying a subject by choice, are also of a high standard, perhaps because they are written by people who are, themselves, enthusiasts.

The **Clever Clogs** range of programs is produced by Argus Press Software for children aged from three to ten years old. **Ships** is aimed at children from three upwards and is intended to teach shape recognition to this age group.

There are some points which even

What can we learn from the Spectrum? We review the educational software on the market.

those who have not met a three year-old since they were three themselves would consider essential to a program catering for this age group. Do not include long words. In fact, do not include words at all, as the vast majority of three year olds cannot read. Error trap the program so that pressing the wrong key does not result in the program stopping, or in an unexpected result. Make all shapes bright and bold, and avoid confusing ambiguities.



Ships falls down on every one of these points. For a start, there are a large amount of written instructions, including words such as "rectangle". Glaringly obvious at the beginning of the program is "Let's", written without the apostrophe. The program is in Basic, and is not error-trapped, so pressing the wrong keys could quickly break a child out of the program. When shapes do appear to be identified they are very small, and so arranged that it is not immediately clear whether you are supposed to be identifying these small shapes, or the pattern which they are forming.

Next from **Clever Clogs** is **Sam Safety**, for children aged five and up-

ward. This program is designed to teach road safety. The aim is to guide your character around town, crossing roads safely, and picking up prizes where possible. To keep your prize you must identify a road sign correctly. The animation makes this an enjoyable way of



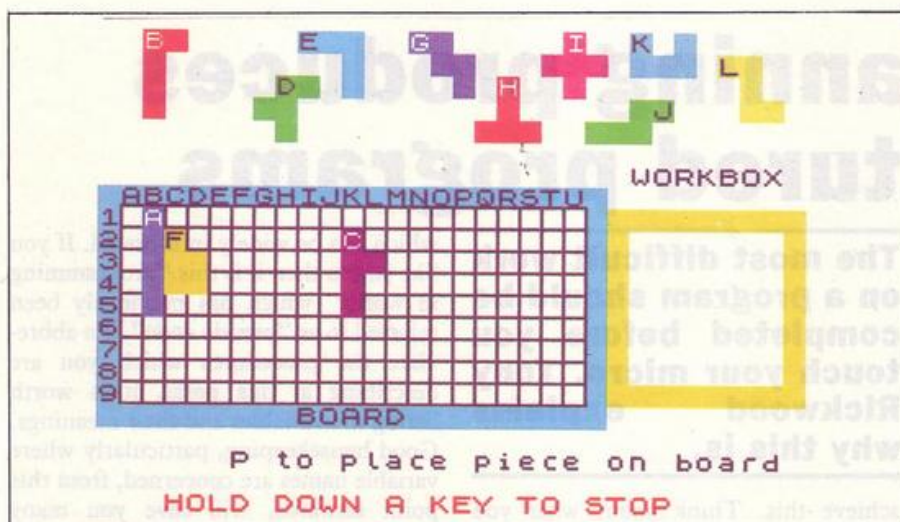
learning road safety, although it is extremely slow and the machine-code action promised on the cover fails to materialise. It would be important, though, to impress upon children that the aerial views shown on screen should be identified with real traffic lights, subways and bridges.

Pitched too high

The questions on road signs appear to be pitched at a rather older age group than 5+, for knowledge of road signs is likely to be of little use to children until they can ride bicycles on the road. The way in which the questions are presented is probably not the best way of teaching recognition of these signs. Multiple choice questions are fair enough, but when some of the answers are amusing, it is all too easy to remember the wrong, but amusing answer, and forget the correct answer.

Music, also in the **Clever Clogs** range, is aimed at seven year olds and over. It falls down, as do all music programs for the Spectrum, firstly because the Spectrum's BEEPs have very little to do with good music and, secondly, because the Spectrum keyboard is not sufficiently like that of a piano to make simulation practicable. The program allows tunes to be played or composed, but all but the most enthusiastic computer users would learn more by spending time with a tin whistle and manuscript paper.

Blockbluster, which is aimed at children of seven upwards, is the most enjoyable program in the **Clever Clogs** range. A variety of different shapes are



displayed on the screen, and these must be put together to form a rectangle. Shapes can either be placed as they are, reversed or turned around.

Children can also complete a simple general knowledge test in order to see a possible solution to the puzzle. Strangely, the questions used in this test seem to be aimed at children of a lower age than those who will be reading the instructions for the program. Children who can read words such as "initial" in the program introduction are likely to have little difficulty in answering questions such as "2+2+1".

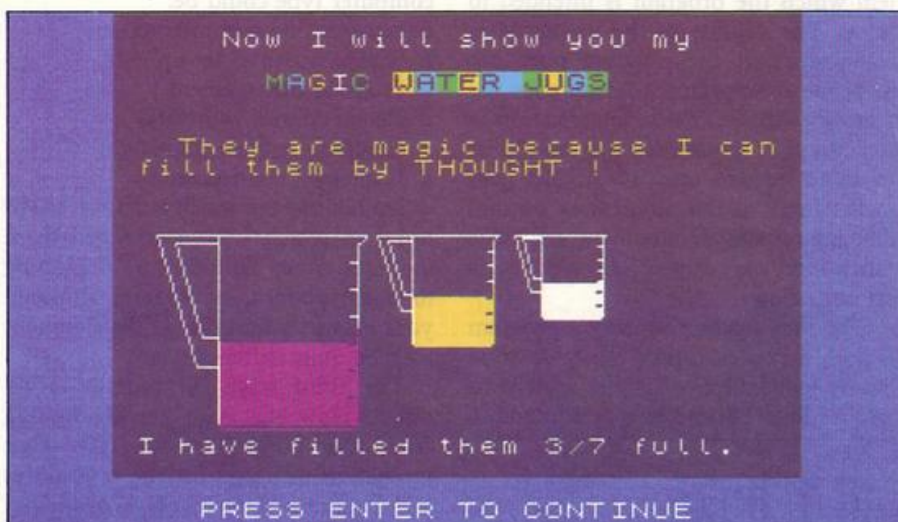
Fun to Learn is produced by Shards Software for children aged between 6 and twelve. It is menu-driven, and divided into five different sections. The first provides a series of letters to be counted, the second produces an anagram to be unscrambled, the third performs simple calculations, the fourth is a form of hangman, and the fifth a codebreaker game.

Very slow-moving

The program as a whole is very slow-moving, and demands that the user press keys frequently. The graphics are very limited. More importantly, each section is a simple program, none of which is particularly well presented. The worst presented is the calculator section, in which very simple calculations are presented in a long winded and unconventional way which would probably confuse most children.



Fractions 1 from Kemsoft forms an introduction to the learning of fractions. It explains fractions clearly, if rather briefly, and then moves on to worked examples and test questions illustrated by clear graphics. The program is clearly designed to be used at home or in a classroom where there is a teacher or parent present to help in cases of confusion. Again, the program is slow-moving, especially in the production of graphics. It is also written in Basic, and therefore easy for a pupil to break into



or stop.

Penguin Study Software produce a range of programs for studying the Shakespearean plays. These must be used in conjunction with a copy of the plays in book form, and form a large data base in which various sections can be cross-referenced. In each program there are a large number of headings, covering both characters and themes within the play, which can be used.

Under each heading are a group of references to the play, and comments upon it. Information provided can be combined by the user in a variety of different ways, to show interrelationships between characters and themes

which would not normally be obvious.

This range of cassettes make excellent use of the Spectrum as database, and would provide opportunity for study at home for those studying Shakespeare for O or A level. They provide clear, precise help in essay writing, without acting as a crib.

While many educational programs are aimed at those in schools or colleges, a significant amount of them are aimed at enthusiasts who wish to study a subject in their spare time. An example of this is **The Complete Machine Code Tutor**, which is produced by New Generation Software. The two cassettes contained in this package have different programs on each side, and are subdivided into a series of lessons designed to teach machine code to complete beginners.

Each lesson contains text covering one area of machine code, and then a worked example which can be viewed as many times as the student wishes and also changed by the student in order to check that the concept explained has been fully understood.

Machine code is a difficult subject which cannot be learned in the abstract, as trying out examples at every stage is

essential. For this reason the Machine Code Tutor is good, for it takes the student steadily through a course.

Despite the importance of worked examples, there is also a very large amount of text to be studied in any machine code course. None but the most enthusiastic computer buffs can claim to enjoy reading large amounts of text from the Spectrum screen, but reading from the screen is just what you are required to do in this program. It is to be hoped that later editions of the Machine Code Tutor will contain an accompanying booklet, which can be studied in conjunction with the information displayed on screen.

Careful planning produces well-structured programs

THE FIRST article in this series highlighted some of the problems which the new programmer will experience in the vitally important planning stage of program writing. A few suggestions were made about the use of "flowcharts" and "pseudo-code" to help you to bridge the formidable gulf between concept and program.

If you are still the unconverted type who cannot resist the temptation to start keying-in code on impulse then read on, and lock away your computer if necessary. This is much more about pencil, paper and common sense than computing until we reach the stage of trying a worked example. It is never too late to return to basics and reappraise your methodology.

A definition of a structured program is one which has a clearly visible structure which relates closely to the problem which the program is intended to solve. The validity of the definition is self-evident: if the program does not solve the appropriate problems then the reasons will be more apparent in a structured program than they would be in an amorphous one. This really goes to the heart of the problem as testing, de-bugging and development are made much more easy if you follow the rules set out below.

The first stage in writing a program is problem specification. Write down as briefly as possible what you want your end result to be, and how you intend to

The most difficult work on a program should be completed before you touch your micro. Tony Rickwood explains why this is.

achieve this. Think about what you have written for a while. It may be that you will arrive at a better solution, or that you will change your mind about the end result.

Stage two involves dividing your program into distinct and manageable parts so that you can begin to think about detail. A breakdown into "modules" describes this well because we can imagine ourselves constructing the building blocks to be assembled later. For example, a breakdown of an arcade game of the conventional player versus computer type could be:

- a Introduction and instructions
- b Screen/variables set-up
- c Program management
- d Player control routine(s)
- e Computer control routine(s)
- d Game/end continuation

Do not pay too much attention to the order in which I have arranged these modules. They do follow a "beginning to end" pattern, of course, although your priorities for order of development may be quite different.

The third stage is program breakdown. Now that you are descending from your bird's eye view, take each module in turn and list the procedures and routines to be used. We are not particularly concerned with identification of individual sub-routines at this point, although it may well be that some modules will represent self-contained sub-routines in the final configuration, but only with the elemental tasks to be accommodated. For example, module b taken a stage further might look like this:

- a Set up screen colours
- b Clear screen
- c Initialize variables
- d Print graphics

Stage four entails programming in words. We are still not programming in the sense of using either machine and/or language orientated commands, although we can, if we wish, use those

which can be widely interpreted. If you like jargon then it is this "programming in words" which has previously been referred to as "pseudo code". To abbreviate the procedures which you are describing at this point, it is worth listing the variables and their meanings. Good housekeeping, particularly where variable names are concerned, from this point onwards, will save you many problems later.

```
100 REM Module 1 - Set Up
120 FOR y=1 TO 4: READ a$: FOR
n=0 TO 7: READ x: POKE USR a$+n,
x: NEXT n: NEXT y
130 DATA "a",192,192,192,192,19
2,192,255,255
135 DATA "b",0,0,0,0,0,0,255,25
5
140 DATA "c",3,3,3,3,3,3,255,25
5
145 DATA "d",60,126,255,255,255
,255,126,60
148 BORDER 1: PAPER 5: INK 0: C
LS
150 PRINT AT 0,10;"(iC:ig8:iA:i
g8:iT:ig8:iC:ig8:iH)""Use keys
1 and 0 to move bucket left and
right and see how many balls yo
u can catch (out of 10)""
155 INPUT "Difficulty (1 = hard
:10 = easy)?:";d
160 IF d<1 OR d>10 THEN GO TO
155
165 LET score=0: LET a$="ABC":
LET bb=14
180 CLS : PRINT AT 0,0: PAPER 6
;"SCORE ";AT 0,21;"BALL NO.
"
190 PRINT AT 21,bb;a$
200 REM Module 2 - Program Mana
gement
210 FOR n=1 TO 10
215 LET ba=INT (RND*29)+1
220 PRINT PAPER 6;AT 0,30;n
225 FOR y=1 TO 20
230 GO SUB 300
235 GO SUB 400
240 NEXT y
245 IF ba=bb+1 THEN LET score=
score+1: FOR x=60 TO 0 STEP -1:
BEEP .01,x: NEXT x
250 PRINT PAPER 6;AT 0,7;score
255 NEXT n
260 GO TO 500
300 REM Module 3 - Bucket
302 IF NOT INKEY$="0" AND NOT I
NKEY$="1" THEN RETURN
305 PRINT AT 21,bb;" "
310 IF INKEY$="1" AND bb>0 THEN
LET bb=bb-1
320 IF INKEY$="0" AND bb<29 THE
N LET bb=bb+1
325 PRINT AT 21,bb;a$
330 RETURN
400 REM Module 4 - Ball
410 PRINT AT y,ba;"D"
415 BEEP d/100,y
420 PRINT AT y,ba;" "
430 RETURN
500 REM Module 5 - end
510 PRINT #1;"Would you like an
other go?": PAUSE 0
520 IF INKEY$="y" THEN GO TO 1
48
525 IF INKEY$="n" THEN STOP
530 GO TO 520
```

```
100 REM SETUP
105 LET O=PI/PI
110 LET Z=PI/PI
115 LET SC=Z
120 LET BB=VAL "14"
200 REM PROGRAM MANAGEMENT AND B
ALL CONTROL
210 FOR N=0 TO VAL "10"
215 LET BA=INT (RND*VAL "29")+0
220 FOR Y=0 TO VAL "20"
225 CLS
230 PRINT AT Y,BA;"0"
235 GOSUB VAL "300"
240 PRINT AT Y,BA;" "
245 NEXT Y
245 IF BA=BB+0 THEN LET SC=SC+0
250 NEXT N
255 PRINT "SCORE= ";SC;" /10 BAL
LS"
260 GOTO VAL "400"
300 REM BUCKET
305 PRINT AT VAL "21",BB;" "
310 IF INKEY$="1" AND BB>Z THEN
LET BB=BB-1
320 IF INKEY$="0" AND BB<VAL "2
9" THEN LET BB=BB+0
325 PRINT AT VAL "21",BB;" "
330 RETURN
400 REM GAME END
410 PRINT AT 0,0;"WOULD YOU LIK
E ANOTHER GO?"
420 PAUSE 454
430 IF INKEY$="Y" THEN GOTO 100
440 IF INKEY$="N" THEN STOP
450 GOTO 410
```


Again, taking our set-up module to stage four, our program in words might look something like this:

Set up user-defined graphics

Clear screen

Set up M,N co-ordinates (player)

Set up P,Q co-ordinates (computer)

Jump to program management module (PROG MAN)

The variable list and labels used to identify modules such as PROG MAN will remove the need for the comments included in brackets.

It may help you to follow a few guidelines to implement this stage:

1. There should normally be a one to one relationship between these Pascal-like statements and the statements in the particular high-level language (e.g. Basic) to be used.
2. Use "Call (module label)" rather than GOSUB, and "Jump to (module label)" rather than GOTO.
3. For a loop terminated by a conditional GO TO, use "Repeat" at beginning of loop and "Until (condition)" at loop end. Use FOR and NEXT for a specific number of repetitions. Indent the statements between loop start and loop end.
4. IF...THEN...is also almost universal, though the condition to be tested, and the result, can be described more intelligibly than they would be within a program.
5. No need to use LET as, for example, $z = z + 1$ would be more universal.

Finally you are ready to start programming. You may be wondering what has happened to the dreaded flow-chart. You will be pleased to learn that you will not need to draw one. If you have carried out stage four thoroughly you would be wasting time by drawing the logic which has been adequately described in words. Armed with your "program in words" you should not have too many problems in keying-in code directly, assuming that you are reasonably familiar with your machine and its Basic commands and functions.

One last piece of advice before the worked example. Having descended from top to bottom, through the four stages, go back through stages two, three and four to ensure that there is no overlap between modules. If several of them contain similar procedures then you can save time and RAM by incorporating them into a different module.

Problem Specification

The player is to control the position of a "bucket" (graphics A, B and C for Spectrum and graphics W, 6 and Q for ZX-81). The computer will drop balls from a random x co-ordinate at the top of the screen. Graphic D is to be used

for the ball on the Spectrum and "O" on the ZX-81. Score is reported as the number of catches out of 10. Game terminates or continues in response to "Another Go?" prompt. Keys 0 and 1 are to be used for control. Note: to avoid repeatedly referring to the two machines I have used "*" to denote Spectrum only.

Program breakdown

- 1 Set up
 - 2 Program management
 - 3 Bucket control — player
 - 4 Ball control — computer
 - 5 Game end/continuation
- The order for module analysis will be 1,3,4,2,5.

Module breakdown

Set up:

- a Set up graphics
- b Set up colours*
- c Clear screen
- d Title and instructions*
- e Input difficulty*
- f Initialize variables
- g Print graphics

Bucket:

- a Erase "old" bucket
 - b Scan keyboard
 - c Draw "new" bucket
- Ball:
- a Print "new" ball
 - b Time delay (difficulty)*
 - c Erase "old" ball

Prog Man:

- a Randomize ball position
 - b Call bucket
 - c Call Ball \times 20 rows
 - d Check if ball in bucket
 - e Update score
- Repeat a to e for ten balls

Game End:

- a Offer another go
- b Restart if wanted
- c Otherwise stop

Program in words

Firstly, variables summary

Graphics as stated

bb=x co-ordinate of bucket

ba=x co-ordinate of ball

a\$=ga+gb+gc*

d=difficulty (1 to 10)

n=ball number (1 to 10)

y=row number (0 to 20)

score (sc for ZX-81)

O=PI/PI=1 to save RAM — ZX-81 only

Z=PI-PI=0 to save RAM — ZX-81 only

Set up:

Set up user-defined graphics*

Set border, screen, ink*

Print title and instructions*

Input d*

Score=0, a\$=ga+gb+gc,bb=14*

Print score, level, ball number*

Bucket:

IF (not keys 1 or 0) THEN return*

Erase a\$

IF (Key 1 and bb) LH border THEN
bb=bb-1

IF (Key 0 and bb) RH border THEN
bb=bb+1

PRINT a\$ (gw, g6, gq for ZX-81)

Ball:

PRINT gd ("O" for ZX-81)

Time delay on d (BEEP)*

Erase gd

Prog Man:

For n=1 TO 10

ba=random column number

Print n

FOR y=1 to 20

call BUCKET

call BALL

NEXT y

IF ba=bb+1 THEN score=score+1

Print score

NEXT n

Game End:

"Do you want another go?"

Repeat

Scan keyboard

If "n" THEN STOP

Until "y"

Jump to SET UP

(after UDG set up)*

The Basic code for this program is shown in figures one and two for Spectrum and ZX-81 respectively.

Note how line numbers have been grouped to suit the module numbers e.g. lines 200 to 299 have been reserved for PROG MAN code. This explains why I kept my original module numbering: the program listing is always easier to follow if you place the PROG MAN module immediately after SET UP, though it was easier to develop BUCKET and BALL first. It also eliminated the jump that would be necessary if the coding followed the order of development, for if module two became module four, then module one would contain a GOTO 400.

Incidentally, if you are planning a much bigger program then reserve line numbers by the thousand. Your program will not occupy more memory if it uses bigger line numbers.

A couple of points for ZX-81 users:

1) The missing conditional return from BUCKET if no key is pressed (see stage four) is cosmetic insofar as it only stops the bucket flashing when the player is not moving it.

2) I have amalgamated BALL with PROG MAN to save memory and to improve efficiency by eliminating a GOSUB. Unlike the Spectrum application you have no time delay related to level of difficulty.

Hero forced to watery grave by evil bubbles

ZX-81 owners were astonished by the high-res graphics in Forty Niner. Rocket Man takes the ZX-81 one step further.

VERY, very rarely a product appears on the software market which is an absolute must for everyone who can use it. **The Hobbit** was one such program, **Jet Set Willy** was another. Until now, though, ZX-81 owners have had to sit on the sidelines and try not to be too disappointed with the programs produced. Now Software Farm have produced **Rocket Man**; complete with high-resolution graphics, animated characters and multiple levels. Eat your heart out, Spectrum users.

The graphics are astounding. "Why are you running the Spectrum on a black and white television?" was the question asked of the *Sinclair Programs* reviewer while **Rocket Man** was running.

The game involves collecting fuel packs from the various platforms on the right of the screen by running, climbing and jumping. When sufficient have been collected you can jump into your rocket and jet to the left of the screen where there are diamonds to be collected. The main problem is the bouncing balloon which chases you, with the sole intention of drowning you in the sea below. Once all the diamonds have been collected it is possible to move onto the next level.

If you only buy one ZX-81 program in your life, this is the one to choose. **Rocket Man** is produced by Software Farm, 155 Whiteladies Road, Clifton, Bristol BS8 2RG and costs £5.95.

Match Point

THE PSION sales team have a problem to combat with **Match Point**, which has nothing to do with the quality of the program. It is simply that, until now, tennis programs on the Spectrum have been very bad and experience leads Spectrum owners to be wary.

These fears, though, are totally unjustified. **Match Point** is an excellent game which puts most sport simulations

into the shade, and places other tennis simulations firmly at the bottom of a large scrap heap.

The animation is excellent, and an extra dimension is added by a shadow beneath the tennis ball. Flicker-free characters move smoothly across the screen, and the only flaws in the realism occur when players are changing ends



of court, a process which is best passed over as quickly as possible.

Options allow you to play in the quarter-finals, semi-finals or finals at Wimbledon, and long hours of practice will be needed before any player beats the computer in the final. Forehands, backhands, carefully angled shots and speed are all present as they would be in a real game.

Definitely another winner for Psion, **Match Point** is marketed by Sinclair Research Ltd and costs £7.95.

Cavelon

WHEN WILL we see the end of the maze game? Surely, by now, every conceivable way of moving around a maze, avoiding some things, and collecting others has been tried. The graphics change, the game remains the same.

Cavelon sees a knight wandering around a six-level castle, avoiding other knights who shoot to kill and collecting fragments of the doors through which escape can be made to other levels. In case of emergency, grasping the sword



Excalibur will kill all knights on screen for a limited period of time but, of course, this option is not available all the time.

Cavelon is well-produced, difficult and challenging. However, buried in your software collection you probably already have several games very like it.

Produced by Ocean Software Ltd, Ralli Building, Stanley Street, Manchester; cost £5.90.

Star Trader

IN MANY games there are sections of the action on which players do not wish to spend too much time. **Star Trader** from Bug-Byte fails to recognise this. So much time is spent eating, sleeping, buying food and staring out of your window as you travel through space, that it is hard to summon enthusiasm for any aspect of the game.

Star Trader casts the player as a merchant trading between planets. Goods can be bought on one planet and sold on another, pirates must be bought



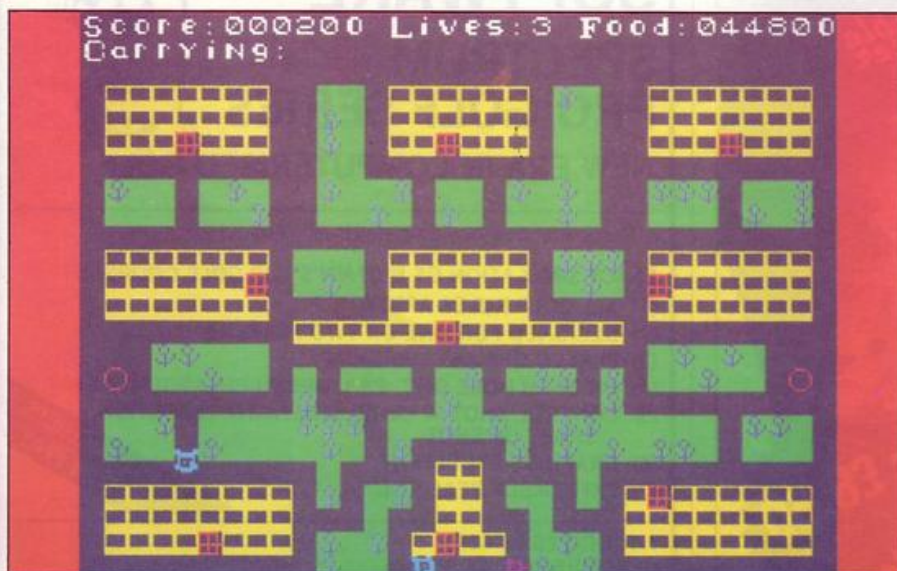
off or shot down, and the tax inspector must be avoided. These actions are all too familiar from other games, and the addition of graphics and a complex range of connections between the economies of the planets does not hide this.

Star Trader is produced by Bug-Byte Ltd, Mulberry House, Canning Place, Liverpool; and costs £6.95.

Les Flics

CONTROLLING a "Pink character with a tail" you must avoid Inspector Cleudeau, Kaolin and Les Flics in order to steal the diamond.

The plot of **Les Flics** is simple enough, although it is explained in appalling mock-French. The game, though, is more complicated. First of all you rush round town, avoiding the po-



lice cars, and then you enter buildings, collect the objects there, avoid the other characters, use the objects collected at the appropriate times, and steal the diamond.

The main problem is that the uses of the objects are not explained. Some of these become apparent very quickly, while others remain totally obscure. There can be little more infuriating in a game than being able to enter every building, holding all possible objects, but not having any idea what to do to win.

Les Flics is produced by P.S.S., 452 Stoney Stanton Road, Coventry; and costs £6.95.

Gatecrasher

GATECRASHER presents the player with a series of gateways and a series of collection points, with a maze in between. The aim is to drop barrels through the gateways at the top, so that they will roll through the maze and finish in each one of the collection points beneath. Dropping two barrels into the same collection point will result in both disappearing.

The problem is that the maze contains several levers which affect the part of the barrel and which change direction each time they are hit. It makes the game into a kind of super-Rubik cube puzzle for, as fast as one lever is knocked in the correct direction, another is knocked out of place. There are seven levels in which the mazes become progressively difficult.

This kind of obsessively difficult puzzle is best provided in a small form, as was the cube, so that it can be played at an idle moment. The lack of change on the screen and the necessity for planning the results of each move with your eyes make it an eye-

straining game. It is a clever idea but it does not work well as a computer game.

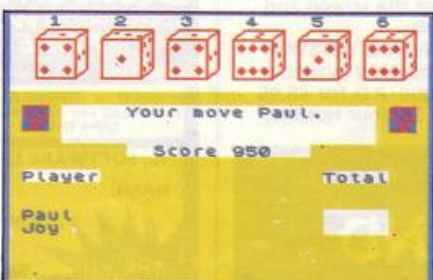
Produced for the 48K Spectrum by Quicksilver, 13 Palmerston Road, Southampton, costing £6.95.

Rainy Day

CHEAP software cassettes are a mixed blessing. They bring pre-recorded software within the reach of many more computer owners but they also tend not to be good programs, and to offer much less value for money than do expensive cassettes.

C.C.S. have brought out a range of cassettes called Charlie Charlie Sugar, each one of which costs £2.99. They are adequate games but, in most cases, are simply carefully developed versions of programs which most *Sinclair Programs* readers will have seen before.

Rainy Day includes three different games. Codebreaker is a version of Mastermind which involves discovering the combination which will open the safe before the time limit runs out. Reaction tester, as the name implies, tests your reactions, although keeping your finger on the "S" key all the time allows you to give the impression of super-fast reactions. Puzzle unit challenges the user to unscramble a jumbled picture.



Dix Mille is a dice game at which you can play the computer or your friends. The aim is to score ten thou-

sand, and various combinations of dice produce different scores. It is neatly laid out and looks good, but surely anyone wishing to save money would simply buy six dice and play the game without the computer?

Both cassettes are adequate, although far from spectacular. They are produced by C.C.S. Ltd, 14 Langton Way, London SE3 and cost £2.99 each.

Gilsoft Adventures

GILSOFT has demonstrated its faith in its adventure designer program, **The Quill**, by producing a series of adventures which have been written with its help. Each adventure is excellent and there is great variety in the series.

Africa Gardens is set in a haunted hotel, where voices can be heard in the next room but people can never be seen. Each unnerving location is described in depth and certain sections are illustrated. It is largely an adventure of exploration in which objects found help with movement to other locations.

Mindbender runs along very different lines. The player begins in an office notable only for its lack of interest. One movement, though, sends the bemused player into an intricate Welsh adventure.

Barsak the Dwarf demonstrates the ability of *The Quill* to set a time limit on an action. Soon after the game begins the player becomes hungry and must find a jar of pickles before starving. Once that problem has been overcome, thirst rears its ugly head. Again, it is a good adventure but it does not reach the standard of **Castle Blackstar**, to which it is remarkably similar.

Diamond Trail is possibly the tightest-written adventure on the market. Every object has a use and every location must be visited at least once. Once again, hunger sets in early and there is also a homicidal maniac chasing you with a gun.

Another problem is that taking certain objects results in your being arrested. Can you survive to eat the hamburger, let alone solve the quest? One difficulty occurs late in the game. The author has been unfairly sneaky inside the railway station and once you are there you have almost finished the adventure. Save the game before presenting your ticket or you may find yourself having to repeat the entire adventure.

All in all, an excellent series of very different adventures, produced by Gilsoft, 30 Hawthorn Road, Barry, South Glamorgan, price £5.95 each.

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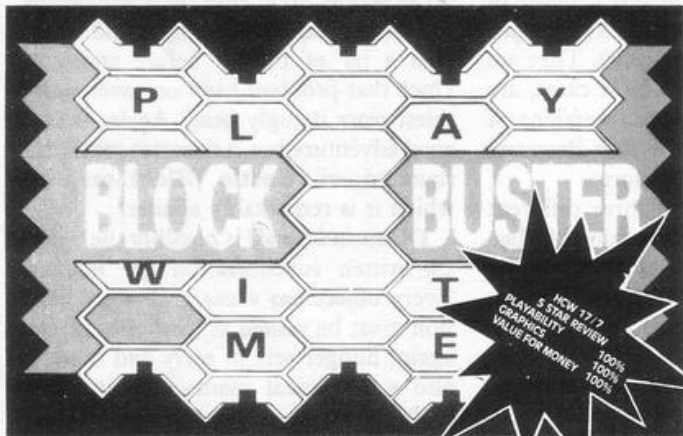
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ROMAN NUMERALS

WHEN RUN, Roman Numerals gives you the option of listing Roman numerals or of testing yourself on the conversion of Arabic to Roman numerals and vice versa. If you give an incorrect answer you will be told by how much you failed, what the Arabic or Roman number you entered was, and the correct answer. The program deals with numbers above 0 and below 3,500.

Written for the 16K Spectrum by Andrew Gemmell, aged 14, of Edenbridge, Kent.

```

1 POKE 23658,255
2 PAPER 0: BORDER 0: INK 7
3 CLS : LET CH=0: LET GG=0
4 PRINT "Press Y to list Roman
numerals and to list their va
lues or any other key to test yo
urself:"
5 PAUSE 4e4
6 IF INKEY$="Y" THEN GO S
UB 2000
7 IF CH=0 THEN CLS
8 LET c$="": LET total=0: DI
M z$(1000): DIM v$(1000): DIM n(
1000)
9 PRINT : PRINT "Press:": PRI
NT "1)For tests of Arabic-Roman
or 2)For conversions of Roman-
Arabic Numerals"
10 PAUSE 4e4: IF INKEY$="2"
THEN GO SUB 2500
11 IF INKEY$ <> "1" THEN CL
S : BEEP .05,2: GO TO 11
12 IF CH=0 THEN CLS
13 INPUT "What number do you w
ant to try to put into Roman(En
ter 0 for a random choice)?" : tn
14 CLS : IF tn=0 THEN LET tn=
INT ( RND *3500)+1
15 IF tn>4500 OR tn<0 THEN PR
INT "Not possible:": BEEP 5,3: R
UN
16 PRINT "Enter Roman Figure f
or ";tn;":": INPUT r$: CLS
17 FOR I=1 TO LEN R$
18 RESTORE
19 READ Z$(I): READ V$(I): REA
D N(I)
20 IF N(I)=0 THEN GO TO 400
21 IF Z$(I) <> R$(I TO I) THEN
GO TO 50
22 LET C$=C$+V$(I)

```

```

80 NEXT I
90 FOR i=1 TO LEN c$
95 LET c$=c$+" "
100 IF c$(i TO i)<c$(i+1 TO i+1
) THEN LET total=total+(n(i+1)-
n(i)): LET i=i+1: NEXT I: GO TO
210
110 LET total=total+n(i)
200 NEXT i
210 IF total>4500 THEN CLS : P
RINT "Answer not possible:": BEE
P 1,2: RUN
220 PRINT "Your first no. was "
;tn;":": PRINT "The Arabic Equiv
alent of ": PRINT R$; " is ";tota
l
230 IF total=tn THEN PRINT : P
RINT "Well Done!": FOR G=1 TO 5:
FOR F=0 TO 7: BORDER F: BEEP .0
2,F: NEXT F: NEXT G: BORDER 0: G
O TO 300
231 BEEP .5,-5: BEEP 1,-10
235 IF total=tn THEN LET c=t
otal-tn: GO TO 240
236 LET c=tn-total
240 PRINT : PRINT "You are ";c;
" out:"
245 LET GG=1
246 LET A=TN
247 RESTORE 4000
250 GO SUB 3010
260 PRINT : PRINT "The correct
Roman figure of ";tn: PRINT "is:
": PRINT : PRINT b$
300 INPUT "Again";y$
310 IF y$="N" THEN STOP
320 RUN
400 CLS
410 PRINT "The Roman Number:- "
;R$
420 PRINT "contains a digit dif
ferent to that of any Roman di
git"

```

```

430 PRINT "PLEASE TRY AGAIN!"
440 GO TO 300
2000 CLS
2005 PRINT
2006 INK 6
2010 FOR f=1 TO 7
2020 READ a$,b$,a
2030 PRINT a$; " = ";a
2040 NEXT f
2041 PRINT
2045 INK 7
2046 PRINT "Press any key:"
2050 PAUSE 4e4
2055 LET CH=1
2060 RETURN
2080 DATA "I","a",1,"V","b",5,"X
","c",10,"L","d",50,"C","e",100,
"D","f",500,"M","g",1000
2090 DATA "","","",0
2500 RESTORE 4000
2510 CLS
3000 INPUT "Enter Arabic Numeral
? ":a
3010 IF A<0 OR A>3500 THEN CLS
: PRINT "Not Possible!": PAUSE 4
E4: RUN
3020 LET b$=""
3030 FOR f=1 TO 15000
3040 READ a$,b
3050 IF a >= b THEN LET b$=b$+a
$: LET a=a-b: RESTORE 4000
3060 IF A <> 0 THEN NEXT f
3061 IF GG=1 THEN RETURN
3065 CLS
3070 PRINT "The Roman Number is
";b$
3090 GO TO 300
4000 DATA "M",1000,"CM",900,"D",
500,"CD",400,"C",100,"XC",90,"L",
50,"XL",40,"X",10,"IX",9,"V",5,
"IV",4,"I",1
4010 RETURN

```

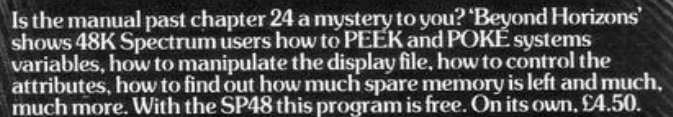

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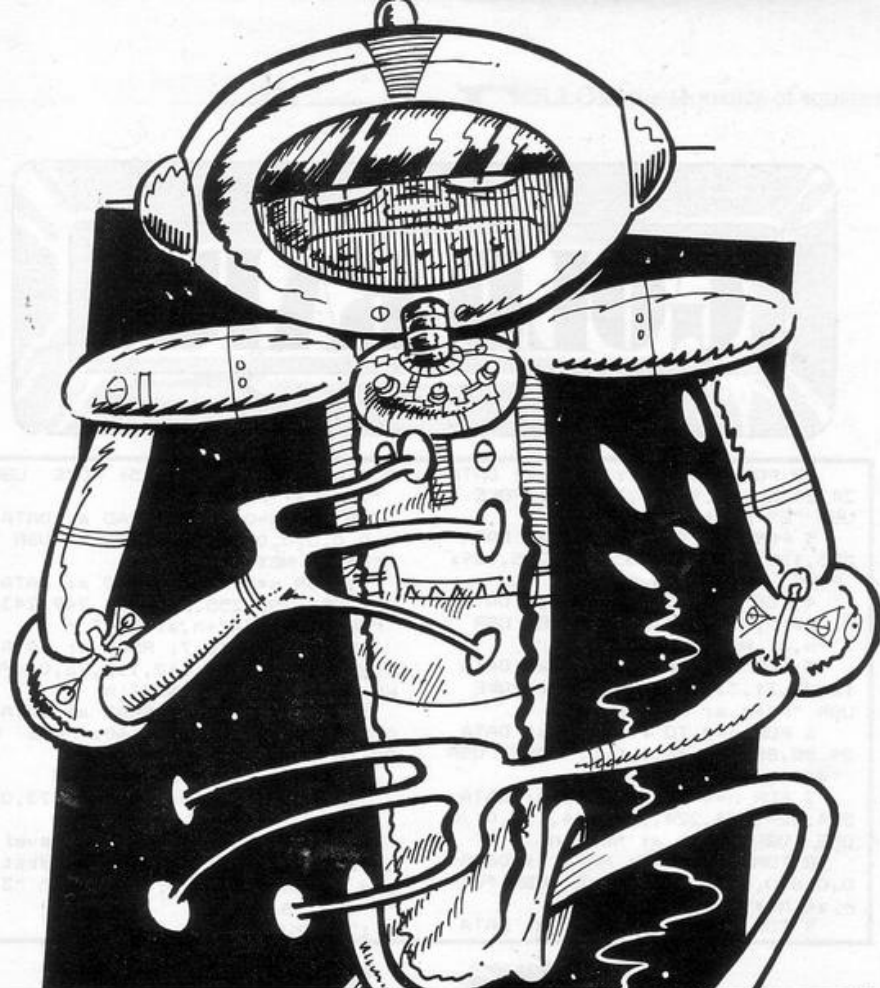
Is the manual past chapter 24 a mystery to you? 'Beyond Horizons' shows 48K Spectrum users how to PEEK and POKE systems variables, how to manipulate the display file, how to control the attributes, how to find out how much spare memory is left and much, much more. With the SP48 this program is free.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



ARGON

YOU CONTROL a laser station protecting a moon base from the dreaded Zorgothons. Position your laser gun and destroy the Zorgothons before they inflict irreparable damage on your fuel tank.

Argon was written for the 16K Spectrum by David Gossner of Wakefield, W. Yorks.



```

10 REM Argon
20 GO SUB 900
30 GO SUB 700
35 GO SUB 800
40 GO SUB 300
45 GO SUB 100
50 IF ht <> 1 THEN GO SUB 100
70 PRINT INK 5; OVER 0; AT 19
,6;po; " "; AT 19,25;sc; AT 20,6;
12; AT 20,15;tno; AT 20,25;ki
80 IF po<0 THEN GO TO 600
90 GO TO 40
100 LET uxo=ux: LET uyo=uy
101 LET u$= INKEY$
105 IF u$="" THEN RETURN
106 IF u$="0" OR u$="1" THEN G
O TO 150
107 IF u$<"5" OR u$>"8" THEN R
ETURN
110 LET ux=ux+(u$="8" AND ux<29
)-(u$="5" AND ux>2)
120 LET uy=uy+(u$="6" AND uy<13
)-(u$="7" AND uy>2)
125 IF ux=uxo AND uy=uyo THEN
RETURN
130 PRINT INK 7; AT uyo,uxo;"A
"; INK 6; AT uy,ux;"A": LET po=p
o-1: BEEP .005,20-uy: RETURN
150 INK 5: LET po=po-10
155 LET lz=lz+1: LET lcx=ux*8+4
: LET lcy=(21-uy)*8+4
160 FOR n=1 TO 2: BEEP .04,6: B
EEP .02,12: PLOT 8,56: DRAW lcx-
8,lcy-56: PLOT 247,56: DRAW lcx-
247,lcy-56: INK 7: NEXT n
175 INK 6: FOR n=1 TO 2: PRINT
AT uy,ux-1;">G<": BEEP .03,24:
INK 7: NEXT n
180 IF NOT (uy=ty AND ux >= tx
-df AND ux<tx+df+ LEN t$) THEN
INK 5: RETURN
200 OVER 1: LET ht=0: LET ki=ki
+1: LET sc=sc+100- LEN t$*10
210 FOR n=1 TO 4: PRINT AT uy-
1,ux-1;"\F/": AT uy,ux-1;"FGF":
AT uy+1,ux-1;"\F/": BEEP .1,36:
BEEP .05,6: INK 7: NEXT n: LET h
t=1
220 RETURN
300 IF ht=1 THEN GO TO 360
302 LET tyo=ty: LET txo=tx
305 LET u$=t$: LET tx=tx+1
310 IF ty >= 12 THEN LET tc=-1
311 IF ty <= 4 THEN LET tc=1
312 LET ty=ty+tc+(INT (RND *2
) AND ty<24)-(INT (RND *2) AND
ty>3)
315 LET t$="": LET t$=("B" AND
tx<9)+("CD" AND tx >= 9 AND tx<1
8)+("CED" AND tx >= 18)
330 PRINT INK 4; AT tyo,txo;u$
; AT ty,tx;t$: BEEP .02,-12
343 IF ty>8 AND RND <.7 AND ((
tx>16 AND tx<21) OR tx=24) THEN
INK 2: FOR m=1 TO 2: FOR n=-1 T
O 2: PLOT tx*8+12,175-(ty*8)-12:
DRAW n*3,-40: BEEP .003,30: NEX
T n: INK 7: PRINT INK 6; AT 21,
0;"(ig8:iP:iO:iW:iE:iR:ig8:iL:iO
:iS:iS:ig8)" : LET po=po-9: NEXT
m 355 IF tx <= 27 THEN RETURN
360 PRINT INK 7; AT ty,tx;t$:

```

```

LET tno=tno+1: LET tx=2: LET ty=
7+ INT (RND *6): LET tc=1: LET
ht=0
375 LET t$="B"
380 PRINT INK 4; AT ty,tx;t$
385 RETURN
600 FOR n=0 TO 74: INK n/10: BE
EP .06,n-50: PRINT AT 10,8;"- M
ISSION ENDED -": NEXT n
640 FOR n=0 TO 74: BORDER 7-n/1
0: BEEP .05,n-20: NEXT n
680 INPUT INK 6; TAB 6;"ANOTHE
R MISSION? ";u$
685 IF u$="n" THEN GO TO 9999
690 RESTORE : GO TO 30
700 INPUT INK 2;"Difficulty?:
0(hard) or 1:";r$: IF r$ <> "0"
THEN LET r$="1"
705 LET df= VAL r$
710 LET ux=10: LET uy=10
715 LET uxo=ux: LET uyo=uy
720 LET tx=4: LET ty=2: LET txo
=tx: LET tyo=ty: LET tc=1
730 LET po=999: LET sc=0: LET k
i=0: LET lz=0: LET ht=0
740 LET t$="B": LET tno=1
750 FOR n=USR "a" TO USR "g"+
7
760 READ d: POKE n,d: NEXT n
770 RETURN
780 DATA 255,129,0,0,0,129,129,
255,0,0,0,24,36,255,36,0
786 DATA 0,0,2,7,9,255,9,2,0,0,
32,224,144,255,144,64,112,32,210
,255,126,255,126,189
790 DATA 16,88,16,8,230,0,20,16
,149,88,40,231,82,20,74,145
800 BORDER 0: PAPER 0: INK 7
805 OVER 0: CLS
810 PLOT 3,26: DRAW 247,0: DRAW
0,144: DRAW -247,0: DRAW 0,-144
811 LET gy=34: LET gc=6
812 FOR n=1 TO 6: PLOT 5,gy
813 DRAW 243,0: LET gc=gc-1: LE
T gy=gy+gc: NEXT n
815 FOR n=1 TO 70: INK 2+ RND *
6: PLOT 10+ RND *230,70+ RND *90
: DRAW RND ,0: NEXT n: INK 7
820 LET gc=1: LET gy=54
821 FOR n=5 TO 247: LET gy=gy+g
c+ INT (RND *3)-1: PLOT n,gy: D

```

```

RAW.0,-(RND *(gy-55) AND gy>54)
822 IF RND <.1 THEN LET gc=-g
c
823 IF gy>61 THEN LET gc=- INT
(RND *2.5)
824 IF gy<54 THEN LET gc= INT
(RND *2.5)
826 NEXT n
828 PRINT INK 5; AT 15,1;"(ig2
)"; AT 15,30;"(ig1)"
830 FOR m=0 TO 60 STEP 20
832 IF m=40 THEN NEXT m
834 FOR n=38 TO 51: PLOT 140+m,
n: DRAW 20,0,.7: NEXT n: DRAW -2
0,0,.7: NEXT m
850 FOR n=1 TO 5: CIRCLE INK 4
;23,140,n: NEXT n: OVER 1
870 PRINT INK 6; AT uy,ux;"A"
880 PRINT AT ty,tx;"B"
885 PRINT AT 19,0;"POWER": AT
19,19;"SCORE": AT 20,0;"LAZER":
AT 20,12;"NO": AT 20,19;"KILLS"
890 BEEP 1,9: RETURN
900 BORDER 7: PAPER 7: INK 0
905 OVER 0: CLS
910 PRINT AT 0,11;"- ARGON -"
915 PRINT AT 3,2;"You control
a laser station"" protecting a
moon base from"" the dreaded
ZORGOTHONS"
930 INPUT "More...";r$: CLS
940 IF r$="n" THEN RETURN
950 PRINT "You use up your limi
ted amount""of POWER, firing th
e lazer,"""and moving the tracki
ng sights."
955 PRINT "The base is shield
ed by an""energy field.""This a
lso takes power to sustain""Eve
ry time the base is hit,"""power
is lost."
960 PRINT "When your power is
exhausted,"""the mission ends.."
965 PRINT ""CONTROLS:"""5 to
move left,""8 to move right"
970 PRINT ""6 to move down,""7
to move up""0 or 1 to fire"
985 RETURN
9999 BRIGHT 0: FLASH 0: OVER 0:
INK 0: BORDER 7: PAPER 7

```


GOLD BARS

COLLECT as many **Gold Bars** as possible on your journey to reach the bag of diamonds. You must decide whether it is safe to collect a bar or whether you should go straight up the ladders to the diamonds. If you take too long the elephant will reach the diamonds before you do and the game will end.

Written for the 16K Spectrum by
Neil Beck of Drumchapel, Glasgow.

```
2 FOR n=0 TO 7: READ a: DATA
24,24,60,90,90,24,36,102: POKE
USR "E"+n,a: NEXT n
3 FOR n=0 TO 7: READ a: DATA
255,129,255,129,255,129,255,129:
POKE USR "R"+n,a: NEXT n
4 FOR n=0 TO 7: READ a: DATA
0,0,0,0,0,0,124,254: POKE USR "
T"+n,a: NEXT n
5 FOR n=0 TO 7: READ a: DATA
15,27,31,31,31,31,25,120: POKE
USR "P"+n,a: NEXT n
6 FOR n=0 TO 7: READ a: DATA
24,88,88,120,48,0,0,0: POKE USR
"S"+n,a: NEXT n
7 FOR n=0 TO 7: READ a: DATA
224,224,224,224,224,224,192,0: P
OKE USR "F"+n,a: NEXT n
8 FOR n=0 TO 7: READ a: DATA
0,0,0,0,0,3,7,15: POKE USR "U"+
n,a: NEXT n
9 FOR n=0 TO 7: READ a: DATA
```

```
0,0,0,0,0,224,243,255: POKE USR
"I"+n,a: NEXT n
10 FOR n=0 TO 7: READ a: DATA
0,0,0,0,0,0,224,248: POKE USR "
O"+n,a: NEXT n
11 FOR n=0 TO 7: READ a: DATA
252,254,255,255,253,253,249,243:
POKE USR "A"+n,a: NEXT n
12 FOR n=0 TO 7: READ a: DATA
112,112,112,112,112,112,96,0: PO
KE USR "D"+n,a: NEXT n
13 FOR n=0 TO 7: READ a: DATA
0,8,24,24,60,126,126,60: POKE U
SR "G"+n,a: NEXT n
14 PAPER 3: BORDER 3: CLS
15 POKE 23672,0: POKE 23673,0

16 PRINT AT 0,0:"Enter level
of difficulty 1 is the hardest
and so on": AT 2,0:"1." "2." "3."
"4." "5."
17 INPUT q
```

```
18 IF q>5 OR q<1 THEN GO TO 1
7
19 CLS : REM Screen Display
20 LET s=0
22 FOR n=4 TO 20 STEP 3
25 FOR m=0 TO 31
30 PRINT INK 0; INVERSE 1; AT
n,m;"X"
35 LET er=3: LET ec=27: LET t=
0
40 NEXT m: NEXT n
42 LET d=18: LET a=15
45 LET l= INT ( RND *28)+2
46 LET h= INT ( RND *28)+2: PR
INT AT d,h; INK 6;"I"
47 LET r=d-1
49 IF d=6 THEN LET l=4
50 PRINT AT r+1,l;"R": AT r,l
;"R": AT r-1,l;"R"
55 PRINT INK 7; AT d,a;" E "

56 IF d=3 AND a=3 THEN GO TO
300
57 IF ec=3 THEN GO TO 400
58 PRINT BRIGHT 1; INK 7; AT
3,3;"G"

59 PRINT AT 21,22; INK 7;"SCO
RE ";s
60 IF INKEY$="p" AND a<29 TH
EN LET a=a+1: PAUSE 5
62 PRINT AT 0,11;"GOLD BARS"

63 IF t >= q THEN LET ec=ec-2
: POKE 23672,0: POKE 23673,0: BE
EP .1,-20

65 IF NOT ec <= 1 THEN PRINT
AT er-2,ec;"UID "; AT er-1,ec
; INK 0;"P(ig)A "; AT er,ec; I
NK 0;"SDF "
69 REM Movement
70 IF INKEY$="o" AND a>1 THE
N LET a=a-1: PAUSE 5
75 IF INKEY$="1" THEN IF l=
a+1 THEN IF d>3 THEN LET d=d-3
: PRINT AT d+3,l;"R": PRINT AT
d+3,a;" "; AT d+3,a+2;" ": IF d
>4 THEN GO TO 45
76 IF a+1=h THEN BEEP .1,10:
LET h=40: LET s=s+150
200 LET t= INT ( PEEK 23672+256
* PEEK 23673)/50
220 GO TO 50
290 REM Bonus
300 FOR n=0 TO 20: BEEP .1,n: N
EXT n: LET s=s+500: PRINT AT 11
,12; BRIGHT 1; FLASH 1;"BONUS!=5
00": PAUSE 200: IF q>3 THEN LET
q=q-1.5: CLS : GO TO 22
310 IF q >= 2 THEN LET q=q-.5:
CLS : GO TO 22
320 LET q=q-.25: CLS : GO TO 22

390 REM End Game
400 PAUSE 200: CLS : PRINT AT
10,3; BRIGHT 1; FLASH 1;"GAME OV
ER ANOTHER GAME (Y/N)": AT 8,12;
"SCORE ";s
410 IF INKEY$="y" THEN GO TO
14
420 IF INKEY$="n" THEN STOP
430 GO TO 410
```



THE KEY TO PROFESSIONAL GAMES DESIGN ON THE SPECTRUM 48K

THE GAMES LANGUAGE OF THE 80'S!

Now, without any knowledge of machine code, you can write fast, smooth, professional, totally original games and market them **without paying royalties**. Even if you have already mastered machine code, we believe that the time and problems saved by writing in **White Lightning's** FORTH—based high level language could revolutionise commercial games writing for years to come.

IDEAL IDEAL is an Interrupt Driven Extendible Animation sub-Language. Once you have mastered IDEAL's easy to learn set of over 80 commands and just a little FORTH, you will be ready to produce arcade-quality games even if you don't know machine code. Up to 255 Sprites, each with its own user-defined dimensions can be moved around the screen (or memory), scrolled, spun, reflected enlarged or inverted with amazing speed and smoothness. Operations are possible between screen windows, Sprites and Sprite windows. Sprites can even stretch across several screens, so those difficult scrolling landscapes that form the basis of so many games are easy to achieve. Sinclair's own sound and graphics commands such as CIRCLE, DRAW and BEEP are fully supported, and there are some unique collision detection facilities.

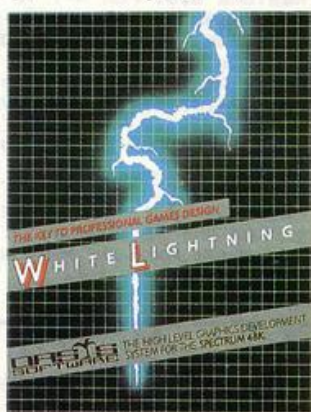
MULTI-TASKING Because **White Lightning** uses interrupts, you can effectively run two programs at once. This means of course, that games like Space Invaders and Defender can be written without complex timing calculations. So while one

WHITE LIGHTNING

program smoothly scrolls the landscape, the second animates the other characters. This is undoubtedly one of White Lightning's most powerful features.

MARKETING AND PORTABILITY Although **White Lightning** uses an integer FORTH as its host language, programs can be written in a combination of BASIC, FORTH, IDEAL and machine language. What is more, programs written in FORTH/IDEAL will be highly portable between the Spectrum and implementations under development for other popular micros. When it comes to marketing your completed games, there's no problem either. In fact Oasis themselves will offer to market outstanding software.

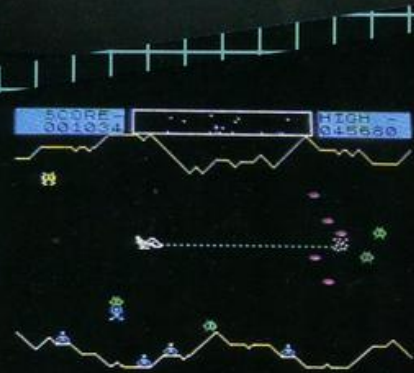
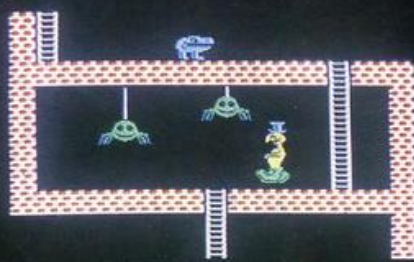
SPRITE DESIGN **White Lightning**, comes complete with a separate 20K program for developing the Sprites used in the main system. Not only can you use this to design your own Sprites from scratch, it also comes complete with 168 pre-defined characters covering games like Asteroids, Pac-Man, Assault Course, Defender, Space Invaders, City Bomber, Lunar Lander, Frogger, Centipede, Donkey Kong and many, many, more. These characters are ready to use or can be enhanced. And Sprites can be saved to tape between editing sessions before being finally loaded into the main program.



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System for the
SPECTRUM 48K.....

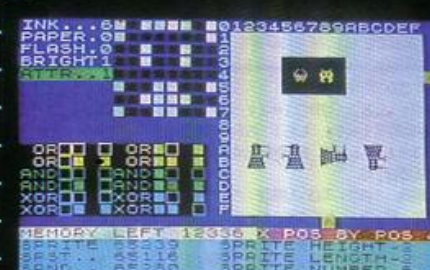
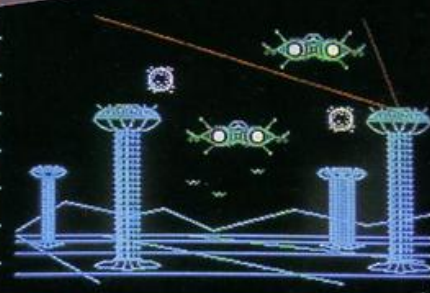
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in a SPIN

IN A SPIN is a game for two players written for the 16K Spectrum by G. P. Grandin of Reading, Berkshire. The players enter their names, their stake and the number they wish to choose. The computer then shows them

the numbers on which they can win and spins a disc. If a player has a winning number the money is awarded accordingly. This continues until one or both players run out of money.

```

1 RESTORE 30
5 LET CO=0: LET ODD1=1: LET O
DD2=1: LET RANGE1=1: LET RANGE2=
1: LET RANGE3=1: LET RANGE4=1
10 POKE 23658,8
20 FOR F=USR "A" TO USR "C"+7:
READ A: POKE F,A: NEXT F
30 DATA 255,129,129,129,129,12
9,129,255,255,128,128,128,128,12
8,128,255,255,1,1,1,1,1,1,255
40 FOR N=1 TO 41: READ A,B,C
50 PRINT OVER 1: AT A,B: CHR$ C
: AT A,B:N
60 IF N>=10 THEN PRINT AT A,B
: CHR$ 145: CHR$ 146: AT A,B: OVER
1:N
65 NEXT N
70 DATA 1,1,144,1,3,144,1,5,14
4,1,7,144,1,9,144,1,11,144,1,13,
144,1,15,144,1,17,144,1,19,145,1
,22,145,1,25,145,1,28,145,3,28,1
45,5,28,145,7,28,145,9,28,145
80 DATA 11,28,145,13,28,145,15
,28,145,17,28,145,19,28,145,21,2
8,145,21,25,145,21,22,145,21,19,
145,21,16,145,21,13,145,21,10,14
5,21,7,145,21,4,145,21,1,145,19,
1,145,17,1,145,15,1,145,13,1,145

```

```

,11,1,145,9,1,145,7,1,145,5,1,14
5,3,1,145
90 GO TO 200
100 RESTORE 70: FOR N=1 TO 41:
READ A,B,C
105 LET PA=RDND*2+.35
106 IF PA<.5 AND CO>1 AND N>=10
THEN PRINT AT A,B: PAPER 4: IN
K 1: FLASH 1: CHR$ 145: CHR$ 146: A
T A,B:N: LET CO=0: GO TO 400
107 IF PA<.5 AND CO>1 AND N<10
THEN PRINT PAPER 4: INK 1: FLA
SH 1: AT A,B: CHR$ C: OVER 1: AT A,
B:N: LET CO=0: GO TO 400
108 IF PA<.5 AND CO<=1 THEN LE
T PA=.5
110 IF N>=10 THEN PRINT AT A,B
: FLASH 1: PAPER 2: CHR$ 145: CHR$
146: AT A,B:N: PAUSE PA: PRINT A
T A,B: FLASH 0: PAPER 7: CHR$ 145
: CHR$ 146: AT A,B: OVER 1:N
130 PRINT OVER 1: PAPER 2: FLA
SH 1: AT A,B: CHR$ C: AT A,B:N: PAU
SE PA: PRINT AT A,B: FLASH 0: OV
ER 1: PAPER 7: CHR$ C: AT A,B:N
140 NEXT N
150 LET CO=CO+1
160 GO TO 100

```

```

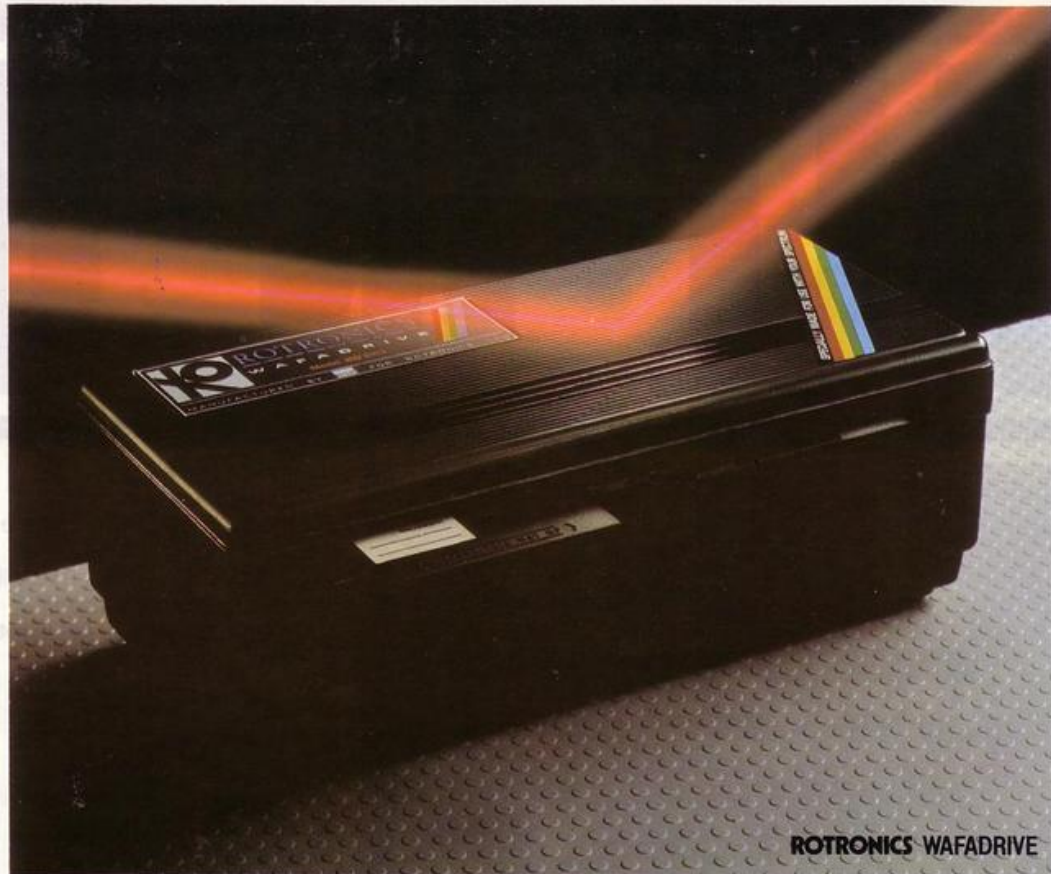
200 INPUT "NAME OF PLAYER 1 =":
P$
210 INPUT "NAME OF PLAYER 2 =":
L$
220 LET M1=100: LET M2=100
230 GO SUB 600
231 PRINT AT 3,4:P$: " HAS £":M1
: AT 5,4:L$: " HAS £":M2
240 INPUT "PLAYERS 1 STAKE=":ST
AKE1
245 IF STAKE1>M1 THEN GO TO 24
0
250 INPUT "PLAYERS 2 STAKE=":ST
AKE2
255 IF STAKE2>M2 THEN GO TO 25
0
257 LET M1=M1-STAKE1: LET M2=M2
-STAKE2
260 INPUT "PLAYER 1 NUMBER=":GU
1
265 IF GU1>41 OR GU1<1 THEN GO
TO 260
270 INPUT "PLAYER 2 NUMBER=":GU
2
275 IF GU2>41 OR GU2<1 THEN GO
TO 270
280 IF GU1>2 AND GU1<40 THEN L
ET RANGE1=GU1+2: LET RANGE2=GU1-
2
290 IF GU2>2 AND GU2<40 THEN L
ET RANGE3=GU2+2: LET RANGE4=GU2-
2
300 IF GU2<2 THEN LET RANGE3=G
U2+4: LET RANGE4=GU2
310 IF GU1<2 THEN LET RANGE1=G
U1+4: LET RANGE2=GU1
320 IF GU1>40 THEN LET RANGE2
=GU1-4: LET RANGE1=GU1
330 IF GU2>40 THEN LET RANGE4
=GU2-4: LET RANGE3=GU2
350 PRINT AT 7,4:P$: "=":STAKE1:
" STAKE": AT 9,4:L$: "=":STAKE2:
" STAKE"
360 PRINT AT 11,4:P$: " RANGE=":
RANGE1: " TO ":RANGE2: AT 13,4:L$:
" RANGE=":RANGE3: " TO ":RANGE4
380 GO TO 100
400 IF N<=RANGE1 AND N>=RANGE2
THEN LET M1=M1+STAKE1+(STAKE1*O
DD1): GO SUB 800
410 IF N<=RANGE3 AND N>=RANGE4
THEN LET M2=M2+STAKE2+(STAKE2*O
DD2): GO SUB 800
420 PAUSE 100: FOR N=3 TO 19: P
RINT AT N,4: "
": NEXT N
430 IF M1<=0 OR M2<=0 THEN GO
TO 450
440 GO TO 230
450 IF M1<=0 AND M2<=0 THEN CL
S: PRINT "BAD LUCK BOTH OF YOU.
YOU BOTH LOST": GO
TO 460
451 IF M2<=0 THEN CLS: PRINT
"BAD LUCK ":L$: " YOU LOST": PRIN
T "WELL DONE ":P$: " YOU WON #":
M1
452 IF M1<=0 THEN CLS: PRINT
"BAD LUCK ":P$: " YOU LOST": PRIN
T "WELL DONE ":L$: " YOU WON #":
M2
460 INPUT "ANOTHER GO ?":W$
470 IF W$="Y" THEN RUN
480 IF NOT W$="Y" THEN STOP
600 RESTORE 610: FOR N=4 TO 14
STEP 2: READ DATA: PRINT AT N,4:
CHR$ 145: " ": CHR$ 146: AT N,5:
"1:": DATA: NEXT N
610 DATA 1,2,4,6,8,10
615 RESTORE 610: FOR N=1 TO INT
(RDND*7): READ ODD1: NEXT N: RES
TORE 610: FOR M=1 TO INT (RDND*7)
: READ ODD2: NEXT M
620 PRINT AT 18,4:"PLAYER 1=":
"1:": ODD1: PRINT AT 19,4:"PLAYER
2=": "1:": ODD2
630 PAUSE 150: FOR N=4 TO 19: P
RINT AT N,4: "
": NEX
T N: RETURN
800 PRINT AT 18,6:"WELL DONE YO
U WON": FOR N=1 TO 255: OUT 132,
N: BEEP .00175,RDND*65: NEXT N: P
RINT AT 18,6: "
"
810 RETURN

```




How much would you expect to pay for a dual 128K fast access storage system for your Spectrum that included Centronics and RS232 interfaces and free word processing software as standard?

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TOURIST RATES

THERE ARE 26 countries from which to choose, and each has its own code. Enter your chosen country code and the computer will display the country and currency. You will then be asked to INPUT the amount of money you have and this will be converted to the foreign currency. To change the exchange rates alter the DATA statements for array a.

Tourist Rates was written for the 16K Spectrum by Nicholas Stein, aged 12, of Bromley, Kent.

```

10 DIM a(26): DIM a$(26,11): D
IM b$(26,10)
20 FOR b=1 TO 26
30 READ a(b)
40 NEXT b
50 FOR c=1 TO 26
60 READ a$(c)
70 NEXT c
80 FOR d=1 TO 26
90 READ b$(d)
100 NEXT d
110 FOR e=1 TO 26
112 IF e/4>6 THEN INK 1: BORDE
R 1: GO TO 120
115 INK INT e/4: BORDER INT e
/4
120 PRINT e,a$(e)
130 NEXT e
140 INPUT "Enter your choice of
country":b
142 IF b/4>6 THEN INK 1: BORDE
R 1: GO TO 150
145 INK INT b/4: BORDER INT b
/4
150 IF b>26 OR b<1 THEN GO TO
140
155 CLS
160 PRINT a$(b),a(b),b$(b)

```

```

170 INPUT "How many pounds (ste
rling) have you got? #":f
180 PRINT "#":f;"=":a(b)*f;" ";
b$(b)
185 PAUSE 0: CLS
190 GO TO 110
1000 DATA 1.53,26,76.4,1.77,13.7
5
1010 DATA 7.94,11.39,148.5,4.2,3
6.75
1020 DATA 1.22,267,2305,319,.6,2
.12
1030 DATA 10.65,190,2.02,203.75
1040 DATA 11.06,3.06,450,1.38
1050 DATA 3.72,182
1060 DATA "Australia","Austria",
"Belgium","Canada","Denmark"
1070 DATA "Finland","France","Gr
eece","Holland","Iceland","Eire"
1080 DATA "Israel","Italy","Japa
n","Malta","N Zealand","Norway"
1090 DATA "Portugal","S Africa",
"Spain","Sweden","Switzerland"
1100 DATA "Turkey","USA","W Germ

```

```

any","Yugoslavia"
1110 DATA "Dollars","Schillings",
"Francs","Dollars","Kroner","Ma
rkka"
1120 DATA "Francs","Drachma","Gu
ilders","Kronor","Punts","Shekel
s"
1130 DATA "Lire","Yen","Pounds",
"Dollars","Kroner","Escudos","Ra
nd"
1140 DATA "Pesetas","Kronor","Fr
ancs","Lira","Dollars","Marks","
Dinars"
1145 STOP
1150 SAVE "T Rates"

```


TURTLE HOP

THE OBJECT OF the game is to reach the other side of the river by jumping on the backs of the turtles. If you jump onto a turtle as it goes under the water you will fall off and drown. To play the game save the graphics program and main program separately. Then load the graphics program and RUN it. After OK appears, type NEW and enter and then load the second part. Use RUN 5 to start the program and then both programs can be saved using GOTO 9999.

Turtle Hop was written for the 48K Spectrum by Andrew Broadhead of Wakefield, W. Yorks.



```

10 FOR x=USR "a" TO USR "u"+
7
20 READ g
30 POKE x,g
40 NEXT x
100 DATA 63,31,1,1,7,0,0,0,248,
240,224,192,128,0,0,0
110 DATA 15,15,15,31,63,127,0,0,
224,224,192,128,0,0,0
120 DATA 240,248,252,252,126,62
6,0,0,0,0,0,1,7,31,127
130 DATA 0,1,31,127,255,255,255
255,0,252,255,255,255,255,2
55
140 DATA 0,0,192,240,252,255,25
5,255,0,0,0,0,0,0,192,240
150 DATA 0,0,0,0,0,3,15,29,61,131
127,63,63,255,255,255,255
160 DATA 255,255,255,255,255,25
2,240,240,15,15,9,9,31,60,127,15
170 DATA 240,240,144,144,248,60
254,240,30,30,30,30,126,126,126
0
180 DATA 120,120,120,120,126,12
6,126,0,0,15,15,15,63,63,0
190 DATA 0,240,240,240,252,252,
252,0,1,3,7,15,31,63,127,255
200 DATA 128,192,224,240,248,25
2,254,255

```

```

2 REM Turtle Hop 48K Spectrum
3 LOAD "Graphics" CODE
5 LET hi=0
9 LET sc=0: LET sh=1: LET li=
3
10 LET l$="1": LET r$="0"
11 LET x=8: LET y=0
40 LET start=0
50 LET move=0
100 GO SUB 9900: REM intro
110 GO SUB 9800: REM instructs
120 GO SUB 9000: REM screen
130 GO SUB 5000: REM turtle mo
ve
150 GO SUB 6000: REM man movem
ent
160 GO SUB 3000: REM replace t

```

```

urtle
170 GO TO 130
2999 REM replace turtle
3000 IF move <> 1 THEN RETURN
3010 LET move=0
3020 PRINT AT 11,(v*7)-5; PAPER
5; INK 3;" FGHIJ"
3030 PRINT AT 12,(v*7)-5; PAPER
1; INK 4;"KL(3*ig8)MB"
3040 PRINT AT 13,(v*7)-5; PAPER
1; INK 4;"ABCD E"
3050 RETURN
3399 REM lost all lives
3400 PRINT AT 8,0; INK 0; PAPER
5;"
Game over
3410 RESTORE 9986: FOR g=1 TO 11
: READ a,b: BEEP a/2,b: NEXT g
3420 IF sc>hi THEN LET hi=sc
3430 LET sc=0: LET sh=1: LET li=
3
3435 LET X=8: LET Y=0
3436 LET start=0
3440 GO TO 110
3999 REM lose life

```

```

4000 PRINT AT 8,10; FLASH 1; IN
K 0; PAPER 7;"LOSE A LIFE"
4020 RESTORE 9986: FOR g=1 TO 11
: READ a,b: BEEP a/2,b: NEXT g
4030 LET li=li-1
4032 IF li=0 THEN GO TO 3400
4035 LET x=8: LET y=0
4036 LET start=0
4040 GO TO 120
4999 REM turtle movement
5000 LET a=1-(sh/10)
5010 LET v=INT ( RND *4)+1
5020 IF RND >a THEN GO TO 5040
5030 RETURN
5040 PRINT AT 11,(v*7)-5; PAPER
5; INK 0;"
5041 LET move=1
5045 FOR f=12 TO 13
5050 PRINT AT f,(v*7)-5; PAPER
1;"
5060 NEXT f
5065 BEEP .1,0
5070 RETURN
5499 REM reach other side
5500 IF y=30 AND start=0 THEN G
O TO 5600

```




```

6015 IF ATTR (x+3,y) <> 43 AND
y <> 30 AND y <> 0 THEN GO TO 6
160
6020 RETURN
6100 IF y=30 THEN RETURN
6105 PRINT PAPER 8; AT x,y; " "
; AT x+1,y; " "; AT x+2,y; " "
6110 IF y=0 THEN LET y=y+5: GO
TO 6130
6120 IF y=26 THEN LET y=y+4: GO
TO 6130
6125 LET y=y+7
6127 BEEP .5,12
6130 PRINT INK 2; PAPER 5; AT x
,y; INK 2;"RS"; AT x+1,y; INK 7;
"NO"; AT x+2,y; INK 2;"PQ"
6140 IF ATTR (x+3,y) <> 43 THEN
GO TO 6155
6145 LET sc=sc+10
6146 PRINT AT 1,0; PAPER 7; INK
1;sc
6150 RETURN
6155 IF y=30 OR y=0 THEN GO TO
5500
6160 FOR x=8 TO 16
6170 PRINT INK 2; PAPER 8; AT x
-1,y; " "; AT x,y; INK 2;"RS"; A
T x+1,y; INK 7;"NO"; AT x+2,y; I
NK 2;"PQ"
6180 BEEP .1,-x-20
6190 NEXT x
6200 GO SUB 4000
6600 IF y=0 THEN RETURN
6610 PRINT PAPER 8; AT x,y; " "
; AT x+1,y; " "; AT x+2,y; " "
6620 IF y=5 THEN LET y=y-5: GO
TO 6650
6630 IF y=30 THEN LET y=y-4: GO
TO 6650
6640 LET y=y-7
6650 GO TO 6127
8998 STOP
8999 REM SCREEN
9000 BORDER 5: CLS
9010 PRINT INK 2; PAPER 7; AT 0
,0;"SCORE SHEET LIVES H
IGH "
9015 PRINT PAPER 7; AT 1,0;,,
9020 PRINT INK 1; PAPER 7; AT 1
,0;sc; AT 1,11;sh; AT 1,20;li; A
T 1,27;hi
9030 FOR g=2 TO 10
9035 PRINT AT g,0; PAPER 5;,,
9040 NEXT g
9042 PRINT AT 3,11; INK 0; PAPE
R 5;"TURTLE HOP"
9045 FOR g=11 TO 19
9050 PRINT AT g,0; PAPER 1;,,
9052 PRINT INK 2; AT g,0;"(2*ig
8)"; AT g,30;"(2*ig8)"
9055 NEXT g
9071 INK 2: PAPER 1
9075 PRINT AT 14,2;"U"; AT 14,2
9;"T"
9076 PRINT AT 15,2;"(ig8)U"; AT
15,28;"T(ig8)"
9077 PRINT AT 16,2;"(2*ig8)U";
AT 16,27;"T(2*ig8)"
9078 PRINT AT 17,2;"(3*ig8)U";
AT 17,26;"T(3*ig8)"
9079 PRINT AT 18,2;"(4*ig8)U";
AT 18,25;"T(4*ig8)"
9080 PRINT AT 19,2;"(29*ig8)"
9090 PRINT INK 2; PAPER 5; AT x
,y; INK 2;"RS"; AT x+1,y; INK 7;
"NO"; AT x+2,y; INK 2;"PQ"
9100 FOR g=2 TO 23 STEP 7
9110 PRINT AT 11,g; INK 3; PAPE
R 5; " FGHIJ"; AT 12,g; PAPER 1;
INK 4;"KL(3*ig8)MB"; INK 4; AT
13,g;"ABCD E "
9120 NEXT g
9130 RETURN
9698 STOP
9699 REM define keys
9700 POKE 23658,8
9701 PAUSE 5: PAUSE 5: PAUSE 5:
PAUSE 5
9705 BORDER 1: PAPER 1: INK 7: C

```

```

LS
9710 PRINT AT 3,5;"Press the ke
y to move:"
9720 PRINT AT 7,8;"LEFT"
9725 LET l$= INKEY$: IF l$="" T
HEN GO TO 9725
9730 PRINT AT 7,15;l$
9740 PRINT AT 11,7;"RIGHT"
9745 LET r$= INKEY$: IF r$="" O
R r$=l$ THEN GO TO 9745
9750 PRINT AT 11,15;r$
9760 PRINT FLASH 1; AT 18,3;"Pr
ess any key to continue."
9770 PAUSE 10: PAUSE 10: PAUSE 0
9799 REM instructs
9800 BORDER 5: PAPER 5: INK 0: C
LS
9810 PRINT AT 1,11;"TURTLE HOP"
9820 PRINT AT 3,0;" Direct the
turtle hopper from one side of
the river bank to the other b
y jumping onto the turtles' ba
cks while they are at the surf
ace."
9830 PRINT " If one of them duck
s and your hopper is still on
the turtle then you are in for
an early, and very cold, bath
!!!"
9840 PRINT " You score ten point
s for each successful jump tha
t you make and hundred points
if you can reach the other sid
e."
9850 PRINT " You may define the
keys you use for left and
right by pressing ~D~."
9860 PRINT " Otherwise use ~~~;
l$; ~~~ to move left and ~~~;
r$; ~~~ for right."
9870 PRINT #1; FLASH 1; " Press ~
D~ or ~S~ to start game "
9880 IF INKEY$ ="s" OR INKEY$
="S" THEN RETURN
9885 IF INKEY$ ="d" OR INKEY$
="D" THEN GO TO 9700
9890 GO TO 9880
9899 REM intro
9900 BORDER 6: PAPER 6: CLS
9905 PRINT
9908 FOR g=1 TO 5
9910 PRINT AT 0,11; INK 0;"TURT
LE HOP"
9920 NEXT g
9925 FOR g=17 TO 19: PRINT PAPE
R 7; AT g,0;,, NEXT g
9930 PAPER 7: PRINT AT 17,1; IN
K 1;"RS"; AT 18,1; INK 2;"NO"; A
T 19,1; INK 4;"PQ"
9940 FOR g=24 TO 3 STEP -1
9945 PAPER 7: INK 3
9950 PRINT AT 17,g;" FGHIJ "
9952 PRINT AT 18,g;"KL(3*ig8)MB
"
9955 PRINT AT 19,g;"ABCD E "
9960 BEEP .1,g
9970 NEXT g
9975 PRINT AT 17,3;" "
9976 PRINT AT 18,3;" "
9977 PRINT AT 19,3;" "
9980 PRINT AT 17,1;"(ig2:ig1)";
AT 18,1;"(g7:ig4)"; AT 19,1;"(g
5:ig5)"
9985 RESTORE 9986: FOR g=1 TO 11
: READ a,b: BEEP a/2,b: NEXT g
9986 DATA 1,7,.66,7,.33,7,1,7,.6
6,10,.33,9,.66,9,.33,7,.66,7,.33
,.6,2,7
9990 PRINT AT 21,5; INVERSE 1;"
PRESS ANY KEY TO START"
9991 FOR g=1 TO 100: BEEP .01,g/
2: IF INKEY$ <> "" THEN RETUR
N
9995 NEXT g
9996 PRINT AT 21,0,,
9997 GO TO 9930
9999 SAVE "Turtle Hop" LINE 1: S
AVE "Graphics" CODE USR "a",21*
8

```

```

5510 IF y=0 AND start=30 THEN G
O TO 5700
5520 GO TO 130
5600 LET start=30
5610 LET sc=sc+100
5620 BEEP 1,40
5625 LET sh=sh+1
5630 GO TO 120
5700 LET start=0
5710 LET sc=sc+100
5720 BEEP 1,40
5725 LET sh=sh+1
5730 GO TO 120
5999 REM man movement
6000 IF INKEY$ =r$ THEN GO TO
6100
6010 IF INKEY$ =l$ THEN GO TO
6600

```


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MERVIN THE MOUSE

YOU CONTROL a launch pad at the bottom of the screen and must manoeuvre it to catch Mervin the Mouse. When Mervin hits the launch pad he catapults into the cheese at the top of the screen. Mervin has five lives and you gain one point for each piece of cheese he eats.

Mervin the Mouse was written for the 16K Spectrum by Phillip and Collin McCabe of Stockport, Cheshire.

```

1 REM MERVIN THE MOUSE
4 BORDER 0: PAPER 0: INK 5: C
LS
5 REM reading data
6 FOR n=USR "a" TO USR "e"+
6: READ k: POKE n,k: NEXT n
7 GO SUB 9000: LET hi=0: LET
c=0: LET s=0: LET a=1: LET b=1

9 REM printing screen display
10 BORDER 0: PAPER 0: INK 5: C
LS
15 IF s>hi THEN LET hi=s: CLS
16 LET s=0: LET q=5: LET c=0

20 PLOT 8,168: DRAW 239,0
30 PLOT 8,167: DRAW INK 5;0,-
167
35 PLOT 247,167: DRAW INK 5;0
,-167
45 FOR n=2 TO 8
55 PRINT AT n,2: INK 6; BRIGH
T 1;"AAAAAAAAAAAAAAAAAAAAAAAAA
A": NEXT n
59 REM main program
60 LET n=15: LET x=20: LET y=
INT ( RND *10)+5: LET dx=x: LET
dy=y
65 IF y>28 OR y<3 THEN GO SUB
150
70 IF x<2 THEN LET a=-a
75 IF SCREEN$ (x,y) <> " " TH
EN GO SUB 125
80 IF x>20 AND (y=n+1 OR y=n+2
OR y=n+3) THEN LET a=-a: BEEP
.008,10: LET y=y+1
85 PRINT AT dx,dy;" "; AT x,y
;"B": LET dx=x: LET dy=y
90 PRINT AT 21,n: INK 3; BRIG
HT 1;" CDE "
95 LET n=n+( INKEY$ ="0" AND n
<= 26)-( INKEY$ ="1" AND n>0)

100 IF INKEY$ ="9" THEN PAUSE
0
105 LET x=x-a: LET y=y+b
110 IF x>21 THEN GO TO 165
115 PRINT AT 0,3;"SC=";s; AT 0
,13;"HI=";hi; AT 0,22;"MICE=" ;q

120 GO TO 65
125 BEEP .008,20
130 PRINT AT dx,dy;" "; AT x,y
; INK 5;"B"
135 IF level=2 THEN LET a=-1

140 IF x<11 THEN LET s=s+1: LE
T c=c+1
141 IF c=loop THEN GO TO 500

145 RETURN
150 BEEP .008,30
155 LET b=1-2*(y>28 OR y<2)
160 RETURN
165 PRINT AT 0,22;"MICE=" ;q
170 LET q=q-1
171 PAUSE 2
175 FOR u=0 TO 6: FOR d=6 TO 0
STEP -1: BEEP .009,u: BEEP .009,
d: NEXT u: NEXT d
176 IF q <> 0 THEN GO TO 185

```

```

179 REM new game routine
180 IF q<1 THEN FOR z=1 TO 6:
PRINT AT 10,6: INK 5; FLASH 1;"
GAME OVER"; AT 12,4;"ENTER SKILL
LEVEL 1-2": FOR d=40 TO 0 STEP
-5: BEEP .009,d: NEXT d: NEXT z:
LET a=1: LET b=1
181 IF INKEY$ ="1" THEN LET 1
oop=196: LET level=1: CLS : GO T
O 10
182 IF INKEY$ ="2" THEN LET 1
oop=196: LET level=2: CLS : GO T
O 10
183 IF INKEY$ <> "" THEN GO
TO 181
184 GO TO 181
185 LET m= RND
190 PRINT AT 21,0;"
"
195 LET a=1
200 LET b=-b*(m<0.5)+b*(m >= 0.
5)
205 GO TO 60
209 REM data and initialisation

210 DATA BIN 00011000, BIN 001
11100, BIN 01111110, BIN 1111011
1, BIN 11111111, BIN 11011111, B
IN 01111110, BIN 001111100
215 DATA BIN 110000011, BIN 110
11011, BIN 01111110, BIN 0101101
0, BIN 01111110, BIN 01100110, B
IN 01111110, BIN 001111100
216 DATA BIN 011000000, BIN 011
00011, BIN 11100111, BIN 1111111
1, BIN 11111111, BIN 11100111, B
IN 01100000, BIN 01100000
217 DATA BIN 01111110, BIN 111
11111, BIN 11100111, BIN 1010010
1, BIN 10111101, BIN 11100111, B
IN 11111111, BIN 00100100
218 DATA BIN 00000110, BIN 110
00110, BIN 11100111, BIN 1111111
1, BIN 11111111, BIN 11100111, B
IN 00000110, BIN 00000110
229 REM save routine
300 SAVE "MERVIN-" LINE 1
400 REM printing new sheet
500 LET a=1: LET b=1: LET c=0:
FOR j=1 TO 40: PRINT AT 11,10;
FLASH 1; INK RND *6;"NEXT SHEET
": BEEP .008,j: NEXT j: CLS : GO
TO 20
8999 REM printing instructions f

```

```

or game
9000 PRINT BRIGHT 1; INK 6;"---
--- MERVIN ON THE MOON -----"

```

```

9010 PRINT BRIGHT 1; INK 6;"Yo
u control a launch pad (CDE) at
the bottom of the screen and wh
en you catch Mervin you get a po
int. You also get a point when Me
rvin eats some cheese."

```

```

9015 INK 4
9020 PRINT BRIGHT 1;"The idea
of the game is to help MERVIN th
e mouse to eat as many chunks of
cheese from the moon as possib
le. He has a pair of Rocket Bo
osters on his back to help him
get to the moon but they only
hold enough fuel for one journ
d at the bottom of the screen to
catch mervin to refuel hi
s rocket boosters for another j
ourney."

```

```

9025 PRINT BRIGHT 1;"When you r
each 196 you go on to another pl
anet."

```

```

9030 POKE 23692,255
9040 PRINT #0; FLASH 1; BRIGHT 1
; INK 6;" PRESS ANY KEY TO BE
GIN "

```

```

9050 IF INKEY$ =" " THEN GO TO
9050
9060 IF INKEY$ <> "" THEN FLA
SH 0: GO TO 9100
9070 GO TO 9050
9100 CLS : PRINT "" BRIGHT 1; I
NK 6;"You use keys
1=left
0=right
9=pause

```

to control the launch pad"

```

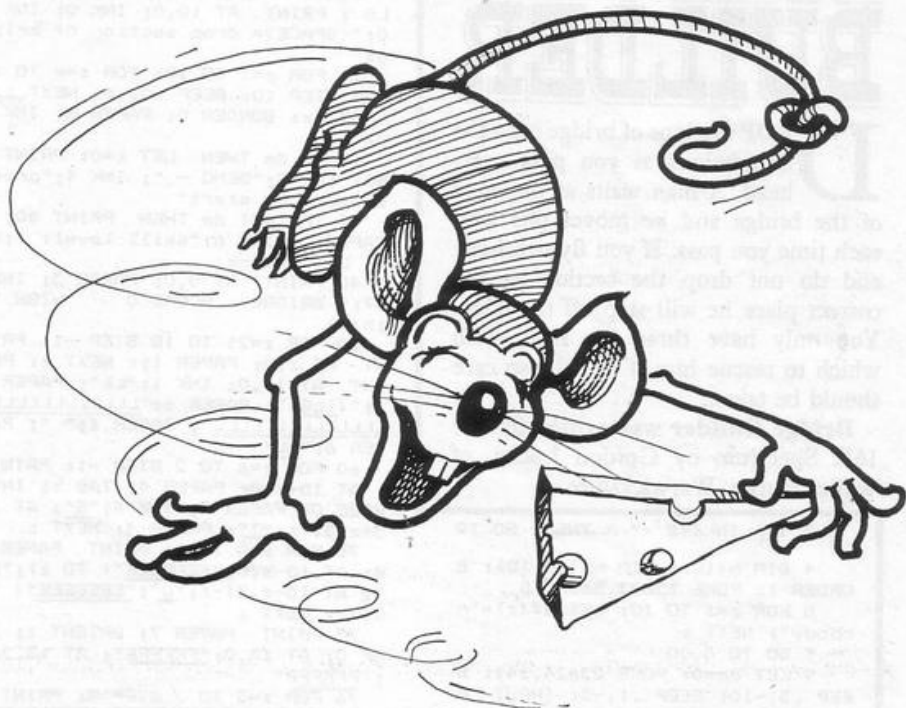
9105 PRINT "" BRIGHT 1; FLASH 1
; INK 4;" ENTER SKILL LEVEL
1-2 "

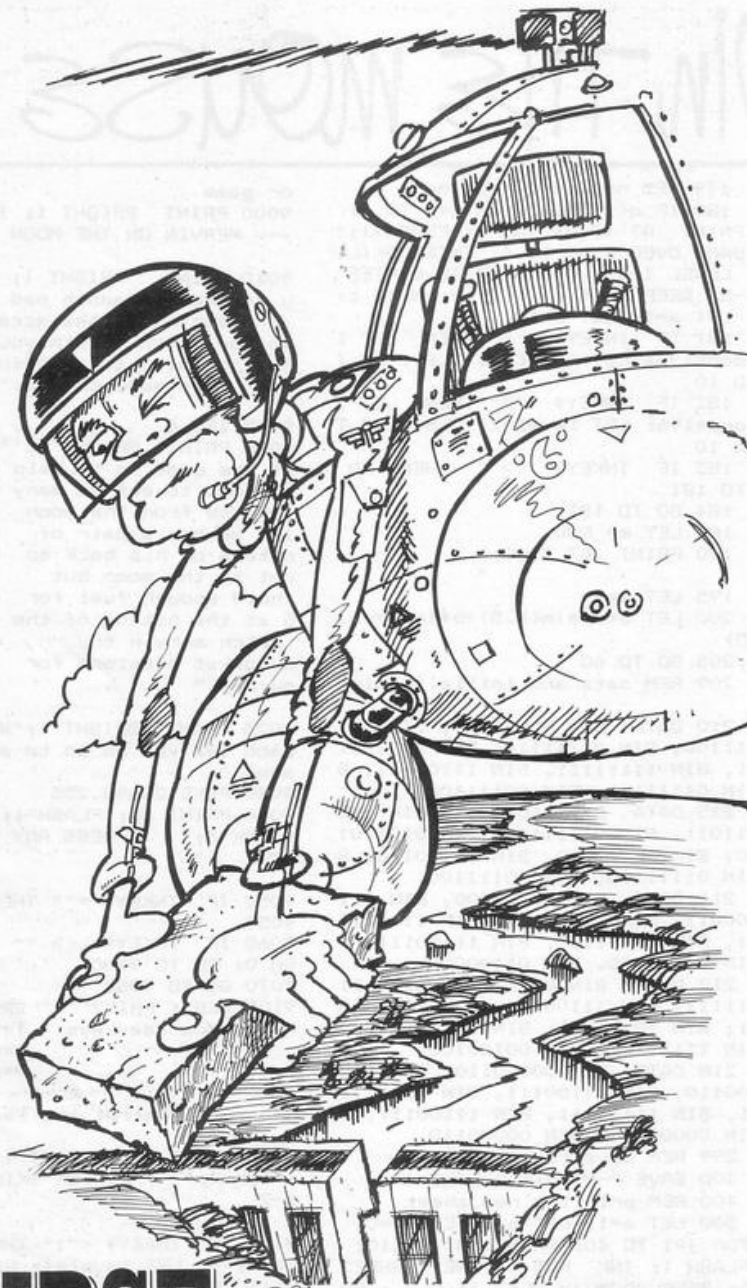
```

```

9110 IF INKEY$ ="1" THEN LET 1
oop=196: LET level=1: RETURN
9115 IF INKEY$ ="2" THEN LET 1
oop=196: LET level=2: RETURN
9120 GO TO 9110

```





BRIDGE BUILDER

DRop sections of bridge onto the foundations as you pass overhead. A man waits at the edge of the bridge and he moves one step each time you pass. If you fly overhead and do not drop the section in the correct place he will step off the edge. You only have three life belts with which to rescue him if he falls so care should be taken.

Bridge Builder was written for the 16K Spectrum by Gordon Locke, of Wellesbourne, Warwickshire.

```

2 IF INKEY$ = " " THEN GO TO
9
4 DIM h(10): DIM h$(10,10): B
ORDER 1: POKE 23693,56: CLS
5 FOR z=1 TO 10: LET h$(z) = "n
obody": NEXT z
7 GO TO 4000
9 LET dm=0: POKE 23624,141: B
EEP .3,-10: BEEP .1,-3: INPUT A

```

```

T 0,0:"skill level? (1-10) 10=ha
rd""?":k: BORDER 1
10 IF NOT dm THEN PAPER 5: C
LS : PRINT AT 10,0: INK 0: INK
0:"<SPACE>= drop section of brid
ge"
11 FOR x=1 TO 10: FOR z=x TO x
+50 STEP 10: BEEP .01,z: NEXT z:
NEXT x: BORDER 0: PAPER 6: INK
0: CLS
12 IF dm THEN LET k=0: PRINT
#0: INK 5:"DEMO - ": INK 4:"pres
s space to start"
14 IF NOT dm THEN PRINT #0:
PAPER 1: INK 6:"skill level: ":k
: LET k=11-k
40 PRINT AT 0,0: PAPER 3: INK
7:" BRIDGE SCORE 0 HIGH "
: h(1)
50 FOR z=21 TO 18 STEP -1: PRI
NT AT z,0: PAPER 1: NEXT z: PR
INT AT 17,0: INK 1:"LL": PAPER
1: (ig8): PAPER 6:"LLLLLLLLLLLL
LLLLLLLLLLLL": PAPER 1: "": PA
PER 6:"LL"
60 FOR z=6 TO 2 STEP -1: PRINT
AT 15+z,0: PAPER 4: TAB z: INV
ERSE 0: PAPER 8: INK 4:"S": AT 1
5+z,31-z:"I": PAPER 4: NEXT z
70 FOR z=0 TO 4: PRINT PAPER
8: AT 18-z,0:"EEEEEE"( TO z):"D
": AT 18-z,31-z:"U": "EEEEEE"( T
O z): NEXT z
75 PRINT PAPER 7: BRIGHT 1: I
NK 0: AT 13,0:"FFFFFF": AT 13,26
:"FFFFFF"
76 FOR z=3 TO 7 STEP 2: PRINT

```

```

AT z,27:"MNO": NEXT z
80 LET n=5: LET s=0
81 LET lv=3
82 FOR z=1 TO n-1: PRINT AT 1
1,z:" I": AT 12,z:" H": NEXT z

83 IF n=25 THEN GO TO 1000
84 LET d=1: LET h=0
85 INK 0
100 FOR a=29 TO 0 STEP -1
110 PRINT AT 10,a:"AB "
119 FOR j=1 TO k
120 IF d=1 THEN IF INKEY$ = "
" THEN GO TO 200
121 NEXT j
122 IF dm THEN GO SUB 2: IF a=
n THEN IF RND >.1 THEN GO SUB
200
130 NEXT a
135 PRINT AT 10,0:" "
137 IF h=n THEN PRINT AT 11,n
:" I": AT 12,n:" H": LET n=n+1:
LET s=s+ INT ((11+k)/2)+(k=10):
PRINT AT 0,16: PAPER 3: INK 7:s
: GO TO 83
140 GO TO 300
190 STOP
200 LET d=0: IF a <> n THEN LE
T 1=16
210 IF a=n THEN LET 1=13
220 IF a<n OR a>24 THEN LET 1=
12
250 FOR z=12 TO 1
260 PRINT AT z,a+1:"E": AT z-1
,a+1:" "
270 NEXT z: PRINT AT 1,a+1: PA
PER 7:"E"
275 IF a <> n AND (a>n AND a<25
) THEN PRINT AT z-1,a+1:" "
276 LET h=a
280 GO TO 130
320 PRINT AT 11,n:" ": AT 12,n
:" ": AT 11,n+1:"I": AT 12,n+1
:"H"
340 FOR z=1 TO 5
355 BEEP .1,50: PRINT AT 11,n+
1:"I": AT 12,n+1:"H"
357 BEEP .1,0: PRINT AT 11,n+1
:"K": AT 12,n+1:"J"
360 NEXT z
377 PRINT AT 11,n+1:" ": AT 12
,n+1:" "
378 PRINT AT 15,n+1:" ": AT 16
,n+1:"K"
380 PRINT AT 15,n+1:"HELP!": F
OR z=1 TO 5: PRINT AT 16,n+1:"I
": BEEP .1,0: PRINT AT 16,n+1:"
K": BEEP .1,10: NEXT z: PRINT A
T 15,n+1:" "
385 LET lv=lv-1
386 IF lv=-1 THEN GO TO 2000

387 GO SUB 900
390 PRINT INK 2: PAPER 6: FLAS
H 1: AT 10,8:lv:" LIFE-BELT": "S"
AND lv <> 1: " LEFT"
395 FOR x=1 TO 10: FOR z=x TO x
+50 STEP 10: BEEP .01,z: NEXT z:
NEXT x
397 PRINT AT 10,8,, AT 15,n+2:
" ": AT 16,n+1:" "
398 FOR z=0 TO 4: PRINT PAPER
8: AT 18-z,31-z:"U": "EEEEEE"( T
O z): NEXT z: PRINT PAPER 7: BR
IGHT 1: INK 0: AT 13,26:"FFFFFF"

399 GO TO 82
900 INK 2: LET d=3+(lv*2)
905 PRINT AT 15,n+1:" "

910 FOR z=27 TO n+1 STEP -1
920 PRINT PAPER 8: AT d,z: INK
2:"MNO"
922 PRINT AT d,z:" "
925 BEEP .01,z
930 NEXT z
935 FOR z=d TO 1 STEP -1: PRINT
AT z,n+1:" P ": NEXT z
940 FOR z=d TO 16
950 PRINT AT z,n+1:"MNO": AT z
-1,n+1:" "
955 BEEP .01,z
960 NEXT z
965 FOR z=15 TO 1 STEP -1:
967 PRINT AT z,n+1:"MQO": AT z
+1,n+1:" "
968 BEEP .01,z
969 NEXT z: FOR z=n+1 TO 0 STEP

```



```

-1: PRINT AT 1,z;"MQD ": NEXT
z
970 FOR z=2 TO 12: PRINT AT z,
0;"MQD"; AT z-1,0;"P ": BEEP .0
1,z: NEXT z
980 PRINT AT 11,0; INK 0;"I "
" H ": FOR z=9 TO 1 STEP -1: PR
INT AT z,0;"MNO" " : NEXT z

985 PRINT AT 1,0;" "
990 INK 0: RETURN
1000 FOR z=25 TO 30: PRINT AT 1
1,z;"I"; AT 12,z;"H": BEEP .01
,z: NEXT z
1001 INK 1: PRINT AT 11,31;" ";
AT 12,31;" "
1010 FOR z=0 TO 29: BEEP .001,33
: PRINT INK 1; AT 12,z;"50 poin
ts for completing bridge"(z+1);"
CG": NEXT z
1020 PRINT AT 12,29;"ge "
1030 PRINT FLASH 1; AT 12,0; OV
ER 1; INK 8,,; FOR z=1 TO 5: LET
s=s+1: PRINT FLASH 1; PAPER 1;
INK 7; AT 16,30; BEEP .01,-z:
NEXT z: PRINT PAPER 3; INK 7; A
T 0,16;s
1040 PRINT AT 12,0,,; PRINT AT
13,6; TAB 26;
1100 LET n=5: GO TO 82
3000 LET n=n+1: FOR z=17 TO 20

3010 PRINT PAPER z-16; INK 7; A
T 15,10;"GLUG!!"; PAPER 8; AT z-
1,n;" "; AT z,n;"I"; AT z+1,n;"J
": BEEP .1,22-z

3015 PRINT PAPER 1; AT z,n; INK
7;"K": BEEP .1,21-z
3020 NEXT z
3030 BEEP .1,48: BEEP .1,36: BEE
P .1,24: BEEP 1,12: BEEP .2,0:

3040 PRINT AT 20,n; PAPER 1; IN
K 7;"I"
3050 PRINT AT 10,11; INK 1;"GAM
E OVER"; AT 10,11;"DEMO" AND dm

3060 FOR z=1 TO 300: NEXT z

```

```

3070 CLS
3080 IF dm THEN GO TO 4000
3100 FOR z=1 TO 10
3110 IF s <= h(z) THEN NEXT z:
GO TO 4000
3120 PRINT "you have got one of
today's"" highest scores. plea
se enter."" your name."
3135 LET c=21: LET z$="?ABCDEFGH
IJKLMNOPQRSTUVWXYZ!.-+*#"
3137 LET h$(10)="" : LET z$=z$+z$
: PRINT AT 11,16;"^"; AT 10,16;
PAPER 4;" "; PAPER 7; AT 15,10;
""
3140 FOR z=1 TO 10
3142 PRINT AT 15,10+z; PAPER 7;
INK 5; FLASH 1;" "
3160 PRINT AT 10,0; PAPER 6;z$(
c TO c+26)
3170 PAUSE 0: LET c=c+( INKEY$ =
"8")-( INKEY$ ="5"): IF c>34 THE
N LET c=1
3172 IF c<1 THEN LET c=34
3173 IF INKEY$ = CHR$ 13 THEN
GO TO 3190
3175 IF INKEY$ ="0" THEN LET h
$(10,z)=z$(c+16): PRINT PAPER 7
; AT 15,11;h$(10): FOR x=1 TO 50
STEP 10: BEEP .01,x: NEXT x: NE
XT z: GO TO 3190
3180 GO TO 3160
3190 LET h(10)=s: PRINT AT 15,1
1; FLASH 1; INK 2; PAPER 6;h$(10
)
3200 LET f=0
3210 FOR z=1 TO 9
3215 BEEP .005,z
3220 IF h(z)<h(z+1) THEN LET t=
h(z+1): LET h(z+1)=h(z): LET h(z
)=t: LET a$=h$(z+1): LET h$(z+1)
=h$(z): LET h$(z)=a$: LET f=f+1
3230 NEXT z
3240 IF f=1 THEN GO TO 3200
4000 CLS : PRINT INK 0;"R R R
R R R R R R R R R R"; PAPE
R 1; INK 7;" TODAY'S HIGHEST
SCORES "" ON BRIDGE FA
LL "
4010 FOR z=1 TO 10: PRINT AT z+
4,5;h(z); TAB 18;h$(z): NEXT z
4020 PRINT AT 20,5; FLASH 1; IN

```

```

K 2;"PRESS <SPACE> TO START"
4030 FOR o=1 TO 5: FOR z=1 TO 7
4040 FOR x=1 TO 10: PRINT AT x+
4,5; PAPER z; INK 9; OVER 1; TAB
29; IF INKEY$ =" " THEN GO T
O 9
4050 NEXT x: NEXT z: NEXT o
4070 LET dm=1: GO TO 10
9900 FOR z= USR "a" TO USR "u"+
7: READ x: POKE z,x: NEXT z
9902 DATA 127,2,31,55,103,103,63
,31
9904 DATA 240,1,131,255,255,240,
224,192
9906 DATA 0,0,15,28,63,63,63,12
9908 DATA 255,138,140,136,240,16
0,192,128
9910 DATA 255,136,x,x,255,136,x,
x
9912 DATA 255,x,x,x,153,189,219,
153
9914 DATA 0,x,128,192,252,x,x,48

9916 DATA 153,24,24,28,22,18,226
,131
9918 DATA 0,x,60,90,126,24,60,21
8
9920 DATA 24,x,x,x,60,102,195,12
9
9922 DATA 0,x,60,90,126,153,126,
24
9924 DATA 195,231,255,x,x,x,x,x
9926 DATA 15,63,124,224,x,124,63
,15
9928 DATA 255,x,0,x,x,x,255,x
9930 DATA 240,252,62,7,7,62,252,
240
9932 DATA 52,44,36,36,52,44,36,3
6
9934 DATA 60,90,126,24,60,218,25
5,x
9936 DATA 121,103,97,97,121,102
9938 DATA 224,x,240,x,248,252,25
4,255
9940 DATA 7,7,15,15,31,63,127,25
5
9942 DATA 255,72,40,16,7,4,2,1
9998 SAVE "BRIDGE" LINE 9999: SA
VE "udg" CODE USR "a",21*8
9999 LOAD "" CODE USR "a": RUN

```

SCREEN BLAST

```

10 CLEAR USR "A"-201
20 CLS : PRINT " This progra
m demonstrates a series of
short machine code routi
es:"
30 GO SUB 9000
40 PRINT " (i1) 'EXPLODE':A
sound routine which makes a
good explosion. "
50 FOR n=1 TO 4: RANDOMIZE USR
EXPLODE: PAUSE 50: NEXT n
60 PRINT " (i2) 'Scroll left
':Scrolls screen left 8
pixels with wrap-around"
70 FOR n=1 TO 3: RANDOMIZE USR
left: NEXT n
80 PAUSE 1: PAUSE 100
90 PRINT " (i3) &Scroll right'
:Scrolls screen right wit
h wrap-around"
100 FOR n=1 TO 3: RANDOMIZE USR
right: NEXT n
110 PAUSE 1: PAUSE 100
120 PRINT " (i4) 'Scroll up'
:Scrolls screen up,clearing b
ottom line."
130 FOR n=1 TO 10: RANDOMIZE US
R up: NEXT n
140 PAUSE 1: PAUSE 100
150 PRINT AT 8,0;" (i5) 'Scro
ll down':Scrolls screen
down 1 line,clearing top lin
e"
160 FOR n=1 TO 3: RANDOMIZE USR
down: NEXT n
170 PAUSE 1: PAUSE 100
180 PRINT " (i6): 'Clear':

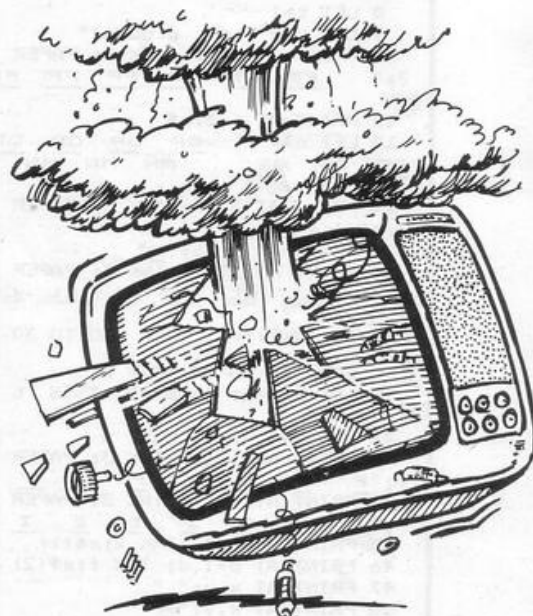
```

```

Clears left-hand
screen.Used in
n with 'Left'
' to avoid
d."
190 FOR n=1 TO 3: RANDOMIZE USR
left: NEXT n: PAUSE 100
200 RANDOMIZE USR clear
210 FOR n=1 TO 30: RANDOMIZE US
R left+USR clear: NEXT n
8999 STOP
9000 LET UP=USR "A"-200
9010 LET DOWN=UP+4
9020 LET LEFT=DOWN+55
9030 LET RIGHT=LEFT+12
9040 LET CLEAR=RIGHT+12
9050 LET EXPLODE=CLEAR+14

9060 FOR N=UP TO EXPLODE+25: REA
D A: POKE N,A: NEXT N
9070 DATA 205,254,13,201
9080 DATA 33,255,86,6,24,14,224,
17,32,0,237,82,126,25,119,43,13,
32,247,14,32,17,32,7,237,82,126,
25,119,43,13,32,247,16,226,33,0,
64,17,224,0,14,8,6,32,54,0,35,16
,251,25,13,32,245,201
9090 DATA 33,1,64,17,0,64,1,254,
23,237,176,201
9100 DATA 33,253,87,17,254,87,1,
254,23,237,184,201
9110 DATA 33,0,64,17,32,0,6,192,
54,0,25,16,251,201
9120 DATA 33,255,75,17,205,255,6
2,255,211,254,68,4,16,254,62,0,2
11,254,68,4,16,254,25,56,237,201
9130 RETURN

```



SCREEN BLAST demonstrates a series of short machine code routines. The first of these gives an explosion and sound effect, while "left", "right", "up" and "down" are scrolling routines. There is a "clear" routine which clears the left-hand column of the screen and is used in conjunction with "left" and "right" to avoid wrap round.

Written for the 16K Spectrum by Simon Wallis of Richmond, N. Yorks.

PLAYING THE part of **Hewbert the Egg Thief** you must try to steal seven eggs on each level in as little time as possible. Each time an egg is collected the storm clouds will move down and you will be sent back to the middle of the screen. On the second level the helicopter will become an eagle and the storm clouds will become a convoy of helicopters. All of these objects must be avoided. Use cursor keys to move, and collect eggs by sliding down the ropes.

Written for the 16K Spectrum by Mark Mitchell of Barry, S. Glamorgan.



Hewbert THE EGG THIEF

```

1 GO SUB 9000: INPUT "Level ?
"; LINE t$: PAPER 7: BORDER 7:
INK 0: CLS : LET r$=" R T S R S
T R S T R S "
2 LET i=2: DIM y$(2,4): LET y
$(1)=" JK ": LET y$(2)=" BC ":
DIM x$(2,2): LET x$(1)=" GH": LET
x$(2)=" DE "
3 LET f=0: LET n=0
4 LET k=0: LET s=100
5 LET x=6: LET y=16
6 LET b=0: LET d=0
7 LET p=0
8 LET t=1
9 LET k$="the clouds!"
11 PRINT AT 19,0: INK 3: PAPER
7: " FF FF FF FF FF FF
FF "
12 PRINT AT f,2;r$
13 LET n$=" OP OP OP OP
OP OP OP MN MN MN MN
MN MN MN "
14 PRINT AT 20,0: INK 2: PAPER
7;n$
20 PRINT AT 6,16;"A"
25 PRINT AT 19,0: INK 3: PAPER
7:" LL LL LL LL LL LL
LL "
30 IF INKEY$="" THEN GO TO 30
40 FOR l=3 TO 28 STEP 2
41 LET b=b+1: IF b>=21 THEN L
ET b=0
42 FOR p=0 TO t: NEXT p
43 PRINT AT 18,3: INK 3: PAPER
7:" F F F F F F F F "
44 PRINT AT 19,3: INK 3: PAPER
7:" I I I I I I I I "
45 PRINT AT b,d: INK 2;x$(1)
46 PRINT AT b+1,d: INK 1;x$(2)
47 PRINT AT x,y: " "
50 PRINT AT x,y;"A"
55 PRINT AT x,y: " "
60 PRINT AT 17,1;y$(1)
97 FOR p=0 TO t: NEXT p
100 LET x=x-(INKEY$="7" AND x>2
)+(INKEY$="6" AND x<19)
110 LET y=y-(INKEY$="5" AND y>2
)+(INKEY$="8" AND y<29): PRINT A
T x,y;"A"
115 IF SCREEN$(x,y)<>" " THEN
GO TO 6000
120 IF y=2 AND INKEY$="5" THEN
LET k=3: GO TO 5000
130 LET r$=r$(2 TO )+r$(1)

```

```

132 PRINT AT f,2;r$
200 IF x>17 THEN GO SUB 7000
300 PRINT AT 0,0:"Time left=";I
NT s: " ": LET s=s-.5: IF s<=0 TH
EN LET k=5: GO TO 5000
310 IF s=30 THEN PRINT AT f,2;
"
": LET f=f+1
800 PRINT AT 17,1+1;y$(2)
810 IF SCREEN$(x,y)<>" " THEN
GO TO 6000
895 NEXT 1
897 PRINT AT 17,29;" "
898 PRINT AT 18,0: INK 2;x$(1)
900 GO TO 40
5000 IF k=2 AND x=17 THEN LET k
$="the Irish helicopter"
5005 IF k=5 THEN LET k$="the ti
me"
5010 IF k=3 THEN LET k$="the
bird"
5015 IF k=4 THEN LET k$="the
clouds"
5017 IF k<>1 OR k<>2 OR k<>3 THE
N LET k=4
5020 FOR a=0 TO 40: BEEP .005,a:
NEXT a: CLS : PAUSE 0
5030 INK 7: PAPER 0: BORDER 0: C
LS
5050 PRINT AT 0,0:"WHOOOPS!You we
re killed by ";k$
5060 PRINT "Score
";n;" eggs in the
time of ";s
5070 PRINT "seconds."
5890 BORDER 7: PAPER 7: INK 0
5900 PAUSE 0: RUN
6000 IF SCREEN$(x,y)<>"F" OR SC
REEN$(x,y)<>"I" THEN LET k=2
6010 IF k=3 THEN LET k=3: GO TO
6020
6015 IF k=2 THEN LET k=2: GO TO
6020
6017 LET k=1
6020 GO TO 5000
7000 IF y=3 OR y=7 OR y=11 OR y=
15 OR y=19 OR y=23 OR y=27 THEN
LET k=1: GO TO 7010
7001 RETURN
7010 PRINT AT 20,y+1;" "
7020 PRINT AT 21,y+1;"OU"
7025 PRINT AT 17,2;"
": LET n=n+1
7027 PRINT AT f,2;"

```

```

7028 IF n=7 OR n=14 THEN GO TO
8000
7030 LET x=7: LET f=f+1: IF f=7
THEN LET k=4: GO TO 5000
7040 GO TO 40
8000 PAPER 0: BORDER 0: INK (INT
(RND*4)+2): CLS : PAUSE 0
8010 BEEP 1,50: PRINT "Well you'
ve been lucky so far, but I wou
ldn't recon on your chances n
ext time..."
8020 PAUSE 0: PAPER 7: BORDER 7:
INK 0: CLS : LET t=t-1
8022 LET y$(1)=" GH": LET y$(2)=
" DE "
8023 LET x$(1)="(2*IGB)": LET x$
(2)="(2*IGB)": LET i=4
8024 LET r$=" JK JK JK BC
JK BC JK "
8025 GO TO 3
9000 FOR d=USR "a" TO USR "u"+7:
READ e: POKE d,e: NEXT d
9010 DATA 60,24,255,24,24,36,36,
102
9020 DATA 63,2,63,79,79,63,136,1
27,224,0,236,242,242,236,64,240
9030 DATA 7,29,103,137,8,8,28,42
,224,184,230,145,16,16,56,84
9040 DATA 48,40,24,48,40,24,48,4
0
9050 DATA 7,125,135,137,8,8,28,4
2,224,190,225,145,16,16,56,84
9060 DATA 24,48,40,24,56,16,0,0
9070 DATA 255,2,63,79,79,63,136,
127
9080 DATA 248,0,236,242,242,236,
64,240
9090 DATA 16,32,16,32,16,32,16,3
2
9100 DATA 4,68,63,31,31,15,7,0
9110 DATA 32,34,252,248,248,240,
224,0
9120 DATA 0,0,0,0,1,2,2,4,0,0,0,
0,128,64,64,32
9140 DATA 0,64,63,31,31,15,7,0
9150 DATA 62,126,126,252,255,254
,22,0
9160 DATA 48,118,255,255,15,31,3
2,0
9170 DATA 24,60,126,255,255,126,
60,24
9180 DATA 0,2,252,248,248,240,22
4,0
9999 RETURN

```


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SP/9/84



FOREST MAZE

COLLECT ALL the green bushes and the blue bonus plants in the **Forest Maze** of death. There are no ghosts chasing you but there are other hazards to face. Once you choose a particular path you move at high speed until a different movement key is pressed. If you hit any of the walls you will lose one of four lives and a cross will be erected on that spot. To alter the speed of the game change the BEEP statement in line 31.

Written for the 16K Spectrum by Tim Carter of Shrewsbury, Salop.

```

1      REM FOREST MAZE
2      CLEAR 32570: GO SUB 59
3      REM INITIALIS
E
4      LET D=0: LET SC=0: LET L=4:
   BORDER 6: PAPER 6: GO SUB 63
5      LET B=999: LET P$="C": POKE
23658,8: LET C=0: GO SUB 47
6      LET X=10: LET X1=10: LET Y=
13: LET Y1=13: LET D=0
7      PRINT AT Y,X: INK 0:P$
8      IF INKEY$="" THEN GO TO 8
9      REM MAIN LOOP
10     IF C=1 THEN PRINT AT Y,X:
   BRIGHT 1:"X": LET C=0: GO TO 12
11     PRINT AT Y,X: " "
12     LET K$=INKEY$
13     IF K$="" THEN GO TO 19
14     IF K$="Z" THEN LET P$="D"
15     IF K$="X" THEN LET P$="C"
16     IF K$="P" THEN LET P$="O"
17     IF K$="L" THEN LET P$="Q"
18     IF K$="O" THEN GO SUB 41
19     IF P$="D" THEN LET X1=X-1
20     IF P$="C" THEN LET X1=X+1
21     IF P$="O" THEN LET Y1=Y-1
22     IF P$="Q" THEN LET Y1=Y+1
23     LET B=B-1: PRINT AT 6,28:B;
   " "
24     IF D=255 THEN PRINT AT 13,
22: FLASH 1: INK 3: PAPER 6:"BO
   NUS": AT 14,24: FLASH 0:B: LET S
   C=SC+B: FOR A=0 TO 40: POKE MC+7
   ,0: POKE MC+16,29: LET M=USR MC:
   NEXT A: LET L=L+2: GO TO 5
25     IF ATTR (Y1,X1)=50 THEN GO
   TO 34
26     IF ATTR (Y1,X1)=113 THEN L
   ET SC=SC+50: POKE MC+7,100: FOR

```



```

A=0 TO 10: LET M=USR MC: PAUSE 5
: NEXT A
27 IF ATTR (Y1,X1)=51 THEN LE
T X1=2: LET Y1=11
28 IF ATTR (Y1,X1)=112 THEN L
ET C=1
29 IF ATTR (Y1,X1)=49 THEN LE
T X1=2: LET Y1=10: POKE MC+7,0:
LET M=USR MC
30 IF ATTR (Y1,X1)=52 THEN LE
T SC=SC+5: LET D=D+1: POKE MC+16
,28: POKE MC+7,230: LET M=USR MC
: POKE MC+16,29: PRINT AT 2,28;S
C
31 PRINT AT Y1,X1: INK 0;P$: B
EEP .007,5: LET Y=Y1: LET X=X1
32 GO TO 10
33 REM LOSE A LI
FE
34 PRINT AT Y,X: FLASH 1;P$: P
OKE MC+16,28: POKE MC+7,200: FOR
A=0 TO 10: LET M=USR MC: OUT 25
4,A: NEXT A: BORDER 1: PRINT AT
Y,X: BRIGHT 1:"X": POKE MC+16,29
: LET L=L-1: FOR A=0 TO 100: NEX
T A
35 FOR A=1 TO L: PRINT AT 4,A+
27:"X": NEXT A: LET P$="X"
36 IF L=0 THEN GO TO 39
37 LET X=10: LET Y=13: LET X1=
10: LET Y1=13: GO TO 7
38 REM GAME OVER
39 PRINT AT 4,27:"X": PRINT A
T 10,22: FLASH 1:"GAME":AT 10,27
:"OVER": POKE MC+16,29: FOR A=5
TO 255 STEP 5: POKE MC+7,A: LET
M=USR MC: NEXT A: FOR A=0 TO 400
: NEXT A: GO TO 4
40 REM PAUSE MOD
E
41 PRINT AT Y1,X1;P$: FOR A=0
TO 100: NEXT A
42 FOR A=0 TO 500
43 BORDER 2: BORDER 6: BORDER
4: BORDER 1
44 IF INKEY$<>" " THEN PRINT A
T Y1,X1:"X": RETURN
45 NEXT A: GO TO 42
46 REM DRAW MAZE
47 BORDER 1: PAPER 6: INK 0: C
LS : IF L>4 THEN LET L=4
48 FOR D=2 TO 19: PRINT AT 1,D
: INK 2;"X":AT 20,D:"X":AT D,1:"
X":AT D,20:"X": INK 4;AT D,2:"X"
*****: NEXT D
49 INK 1: BRIGHT 1: PRINT AT 2
,2:"X":AT 2,19:"X":AT 19,2:"X":A
T 19,19:"X": BRIGHT 0: INK 3
50 PRINT AT 10,1:"!":AT 11,1:"
!": INK 1;AT 10,20:">":AT 11,20:
">": OVER 1;AT 10,20:"-":AT 11,2
0:"-": OVER 0
51 INK 2: PRINT AT 1,1:"X":AT
1,20:"X":AT 20,1:"X":AT 20,20:"X"
:AT 10,10:"X":AT 11,10:"X"
52 PRINT AT 9,1:"X":AT 12,1:"X"
:AT 9,20:"X":AT 12,20:"X":AT 14
,8:"X":AT 15,8:"X":AT 16,8:
"X":AT 17,8:"X":AT 15,13:"X":AT
16,13:"X":AT 17,13:"X"
53 PRINT AT 16,10:"X":AT 4,8:
"X":AT 4,13:"X":AT 5,8:"X":AT 5,
13:"X":AT 6,8:"X":AT 6,13:"X":AT
7,8:"X":AT 5,10:"X"
54 PRINT AT 12,5:"X":AT 13,5:
"X":AT 14,5:"X":AT 15,4:"X":AT
16,4:"X":AT 12,15:"X":AT 13,16:
"X":AT 14,16:"X":AT 15,16:"X"
55 PRINT AT 16,17:"X":AT 5,4:"
X":AT 6,4:"X":AT 7,5:"X":AT 8,5
:"X":AT 9,5:"X":AT 4,2:"X":AT 4
,19:"X":AT 14,2:"X":AT 14,19:"X"
:AT 5,17:"X":AT 6,16:"X":AT 7,1
6:"X":AT 8,16:"X":AT 9,15:"X"
56 INK 0: PRINT AT 2,22:"SCORE
":SC;AT 4,22:"LIVES":AT 6,22:"B
ONUS ":B: FOR A=1 TO L: PRINT AT
4,A+27:"X": NEXT A
57 PRINT AT 16,23: PAPER 4:"P:
UP ":AT 17,23:"L:DOWN ":AT 18,

```

```

23:"Z:LEFT ":AT 19,23:"X:RIGHT":
AT 20,23:"O:PAUSE": RETURN
58 REM GRAPHICS
& M.CODE
59 FOR A=USR "A" TO USR "P"+7:
READ B: POKE A,B: NEXT A
60 DATA 60,66,151,136,136,135,
66,60,60,66,233,17,17,225,66,60,
36,102,165,153,161,129,66,60,60,
66,129,133,153,165,102,36,3,15,2
8,55,106,125,202,173,192,112,184
,108,150,110,203,85,214,201,118,
109,50,29,14,3,171,83,174,182,20
4,120,240,192,255,181,203,179,20
5,181,203,255,24,60,118,90,239,2
19,181,219,240,188,86,187,239,86
,188,240,15,61,106,221,247,106,6
1,15,219,181,219,239,90,118,60,2
4,0,8,28,54,28,8,0,0,195,102,60,
44,52,60,102,195,24,24,126,24,25
,90,189,126
61 LET MC=32570: FOR V=MC TO M
C+20: READ E: POKE V,E: NEXT V:
DATA 58,72,92,15,15,15,30,0,243,
211,254,238,16,67,16,254,29,32,2
46,251,201: RETURN
62 REM INSTRUCTI
ONS
63 LET A$=".....
.....FOREST MAZE.....
... SINCLAIR PROGRAMS.....S
EPTEMBER 1984.....
.KEYS TO USE:.....Z= LEFT.....
X= RIGHT.....P= UP.....L= DOWN
.....O= PAUSE.....**
** PRESS ANY KEY TO PLAY ****"
64 CLS : LET B$="(11*IG8:iF:iD
:iR:iE:iS:iT:ig8:iM:iA:iZ:iE:10*
ig8)": GO SUB 67
65 LET B$="(3*ig8) 000 BY TI
M CARTER 000 (3*ig8)": GO SUB 6
7
66 LET B$="(13*ig8:ig8:i1:i
9:i8:i4:13*ig8)": GO SUB 67: PLO

```

```

T 0,168: DRAW 255,0: DRAW 0,-25:
DRAW -255,0: DRAW 0,25: GO TO 6
8
67 LET D=D+1: FOR B=1 TO 31: P
RINT AT D,0: INK 2;B$(32-B TO ):
BEEP D/100,B: NEXT B: RETURN
68 INK 0: PRINT AT 5,0:" THIS
IS NOT JUST THE NORMAL PAC-MA
N GAME IN WHICH YOU HAVE TO DEF
EAT THE GHOSTS.";" " IN THIS N
EW VERSION THERE ARE NO GHOSTS,E
ASY YOU MAY THINK BUTYOU CAN'T
STOP MOVING AND IF YOUHIT ANY OF
THE RED BRICK WALLS IN THE FOR
EST MAZE YOU WILL DIE.";" " YOU
R OBJECT IS TO COLLECT ALL THE G
REEN BUSHES ["; INK 4;"X": INK 0
;"J AND THE BLUE BONUS PLANTS
["; INK 1;"X": INK 0;"J. ALSO Y
OU CAN USE A ONE-WAY HIDDEN TUNN
EL AT THE EDGE OF THE MAZE."
69 FOR A=1 TO 255 STEP 10: BEE
P .0025,35: BEEP .007,0: POKE MC
+16,29: POKE MC+7,255-A: LET M=U
SR MC: PRINT 0;AT 0,0: PAPER 7:
INK 2;A$( TO 32): LET A$=A$(2 T
O)+A$(1): IF INKEY$<>" " THEN F
OR Z=0 TO 52.5 STEP 2.5: LET M=U
SR 3582: BEEP .01,Z: NEXT Z: RET
URN

```

70 NEXT A: GO TO 69

9000	REM GRAPHICS
A= 0 B= 0 C=	
D= 0	E= 0 F= 0 G=
H= 0	I= 0 J= 0 K=
L= 0	M= 0 N= 0 O=
P= 0	
9010 REM	SAVE "FOREST MAZE" LIN
E1	





DRACULA'S CASTLE

YOU ARE trapped in the castle of death and your only hope of survival is to collect a cross from the top of the castle. Beware of the closed doors, as Dracula may be hiding

behind them, and watch for the vampire bats and hidden trapdoors.

Dracula's Castle was written for the 16K ZX-81 by Robert Campbell of Wemyss, Fife.

```

30 LET H=0
40 CLS
50 GOSUB 9000
55 LET S=0
60 CLS
70 GOSUB 8000
80 REM ROOM 1

100 LET X=19
110 LET Y=27
120 PRINT AT X,Y;"■"
130 IF INT (RND*5)=0 THEN GOSUB
140 IF INKEY$="1" THEN GOSUB 30
150 IF INKEY$="0" THEN GOSUB 35
160 IF Y=11 THEN GOTO 400
165 LET S=S+10
170 GOTO 120
200 LET R=INT (RND*3)+1
210 IF R=1 THEN LET D=12
220 IF R=2 THEN LET D=17
230 IF R=3 THEN LET D=22
240 IF INKEY$="1" THEN GOSUB 30
250 IF INKEY$="0" THEN GOSUB 35
260 PRINT AT 16,D;" 0 ";TAB D;"
270 IF D=12 AND Y>11 AND Y<15 OR
D=17 AND Y>15 AND Y<20 OR D=22
AND Y>21 AND Y<25 THEN GOTO 700
280 FOR F=1 TO 5
290 NEXT F
300 PRINT AT 16,D;"■■■";TAB D;"
310 RETURN
320 IF Y=11 THEN RETURN
330 LET Y=Y-1
340 PRINT AT X,Y;"■";AT X,Y+1;"
350 RETURN
360 IF Y=27 THEN RETURN
370 LET Y=Y+1
380 PRINT AT X,Y;"■";AT X,Y-1;"
390 RETURN
400 FOR N=19 TO 13 STEP -1
410 PRINT AT N,Y;"■"
420 FOR F=1 TO 5
430 NEXT F
440 PRINT AT N,Y;" "
450 LET Y=Y-1
460 NEXT N
470 REM ROOM 2
480 LET Y=13
490 LET Y=7
500 PRINT AT X,Y;"■"
510 GOSUB 600
520 IF INKEY$="1" THEN GOSUB 65
530 IF INKEY$="0" THEN GOSUB 70
540 IF Y=22 THEN GOTO 800
545 LET S=S+10
550 GOTO 500
600 LET RB=INT (RND*10)+9
610 FOR N=10 TO 13
620 PRINT AT N,RB;"U";AT N,RB+2
630 IF INKEY$="1" THEN GOSUB 65
635 IF INKEY$="0" THEN GOSUB 70
640 PRINT AT N,RB;" " ;AT N,RB+2
642 NEXT N
645 IF Y=RB OR Y=RB+2 THEN GOTO
7000
647 RETURN
650 IF Y=7 THEN RETURN
660 LET Y=Y-1
670 PRINT AT X,Y;"■";AT X,Y+1;"
680 RETURN
700 IF Y=22 THEN RETURN
710 LET Y=Y+1
720 PRINT AT X,Y;"■";AT X,Y-1;"
730 RETURN
740 FOR N=13 TO 8 STEP -1
750 PRINT AT N,Y;"■"
760 FOR F=1 TO 3
770 NEXT F
780 PRINT AT N,Y;" "
790 LET Y=Y+1
800 NEXT N
810 REM ROOM 3
820 LET X=8
830 LET Y=25
840 PRINT AT X,Y;"■"
850 GOSUB 1100
860 IF INKEY$="1" THEN GOSUB 12
870 IF INKEY$="0" THEN GOSUB 12
880 IF Y=10 THEN GOTO 1300
890 LET S=S+10
900 GOTO 850
910 LET R=INT (RND*10)+10
920 PRINT AT 9,R;"■"
930 IF INKEY$="1" THEN GOSUB 12
940 IF INKEY$="0" THEN GOSUB 12
950 IF R=Y THEN GOTO 6000
960 FOR F=1 TO 10
970 NEXT F
980 PRINT AT 9,R;"■"
990 RETURN
1000 IF Y=10 THEN RETURN
1010 LET Y=Y-1
1020 PRINT AT X,Y;"■";AT X,Y+1;"
1030 RETURN
1040 IF Y=25 THEN RETURN
1050 LET Y=Y+1
1060 PRINT AT X,Y;"■";AT X,Y-1;"
1070 RETURN
1080 FOR N=8 TO 4 STEP -1

```



```

1310 PRINT AT N,Y;" "
1320 FOR F=1 TO 3
1330 NEXT F
1340 PRINT AT N,Y;" "
1350 LET Y=Y-1
1360 NEXT N
1370 REM SMOOTOP
1380 LET X=4
1390 LET Y=3
1400 PRINT AT X,Y;" "
1410 IF INKEY$="1" THEN GOSUB 15
80
1420 IF INKEY$="0" THEN GOSUB 15
50
1430 IF Y=21 THEN GOTO 5500
1435 LET S=S+10
1440 GOTO 1400
1500 IF Y=9 THEN RETURN
1510 LET Y=Y-1
1520 PRINT AT X,Y;" " AT X,Y+1;" "
1530 RETURN
1550 IF Y=21 THEN RETURN
1560 LET Y=Y+1
1570 PRINT AT X,Y;" " AT X,Y-1;" "
1580 RETURN
5500 FOR N=1 TO 30
5510 NEXT N
5520 CLS
5530 LET S=S+100
5540 PRINT "WELL DONE, YOU HAVE
MADE IT TO THE ROOF AND COLLECT
ED THE CROSS... BUT IT IS G
ETTING DARK AGAIN AND YOU WILL H
AVE TO SURVIVE ANOTHER NIGH
T..." AT 21,0;" PRESS NEULINE
TO START"
5540 IF INKEY$(<CHR$ 118 THEN GO
TO 5540
5550 CLS
5560 GOTO 60
6000 FOR N=1 TO 30
6010 NEXT N
6020 CLS
6025 LET S=S-150
6030 FOR N=0 TO 15
6040 PRINT AT N,23;"A"
6050 NEXT N
6060 PRINT AT 15,21;"SPLAT-"
6070 PRINT AT 4,0;"YOU FELL THRO
UGH..." AT 5,0;"A HIDDEN TRAPDOOR"
6080 GOTO 7500
7000 FOR N=1 TO 30
7010 NEXT N
7020 CLS
7025 LET S=S-150
7030 FOR N=0 TO 15
7040 PRINT AT 4,N;" "
7050 FOR F=1 TO 2
7060 NEXT F
7070 PRINT AT 4,N;" "
7080 FOR F=1 TO 2
7090 NEXT F
7100 NEXT N

```

```

7110 PRINT AT 4,15;" O " TAB 15;
" " TAB 15;" " TAB 15;" "
7120 PRINT AT 7,0;" DRACULA GOT Y
OU"
7500 PRINT AT 9,0;" BETTER LUCK N
EXT TIME" AT 21,0;" PRESS NEU
LINE TO TRY AGAIN"
7503 IF S<0 THEN LET S=0
7505 PRINT AT 16,0;" SCORE=";S
7506 IF S>H THEN LET H=S
7507 PRINT AT 18,0;" HI-SCORE=";H
7510 IF INKEY$(<CHR$ 118 THEN GO
TO 7510
7520 GOTO 55
8000 PRINT AT 1,2;" " AT 1,2
5;" " AT 2,2;" " AT 2,2
5;" " AT 3,3;" " AT 3,3
5;" " AT 4,3;" " AT 4,26;" "
8010 PRINT AT 5,5;" " AT 9,3;" "
" " AT 14,3;" "
" " AT 20,3;" "
8020 FOR N=5 TO 19
8030 PRINT AT N,3;" " AT N,28;" "
8040 NEXT N
8050 PRINT AT 6,4;" " AT 7,4;" "
" " AT 8,4;" " AT 10,26;" "
" " AT 11,26;" " AT 12,24;" "
" " AT 13,26;" " AT 15,4;" "
" " AT 16,4;" " AT 17,4;" "
8060 FOR N=16 TO 18
8070 PRINT AT N,12;" "
8080 NEXT N
8090 PRINT AT 2,22;" " AT 3,22;" "
" " AT 4,22;" "
8100 RETURN
9000 CLS
9010 LET A$="*****WELCOME T
O DRACULA'S CASTLE.....DEEP IN
THE HEART OF PENNSYLVANIA LIES
A CASTLE OF DEATH.....YOU ARE
TRAPPED IN THE CASTLE AND YOUR O
NLY HOPE OF SURVIVAL IS TO REACH
THE ROOF AND COLLECT THE CROSS
.....USE KEYS (1) TO MOVE LE
FT AND (8) TO MOVE RIGHT.....BE
WARE OF CLOSED DOORS BEHIND WHIC
H DRACULA MAY BE HIDING AND OF
H VAMPIRE BATS AND THE HIDDEN T
RAPDOORS.....PRESS NEULINE TO
START*****"
9020 PRINT AT 3,4;" " AT 3,2
0;" " AT 4,4;" " AT 4,20;" "
0;" " AT 5,5;" " AT 5,21;" "
9030 FOR N=6 TO 14
9040 PRINT AT N,5;" "
9050 NEXT N
9060 PRINT AT 6,6;" " AT 6,22;" "

```



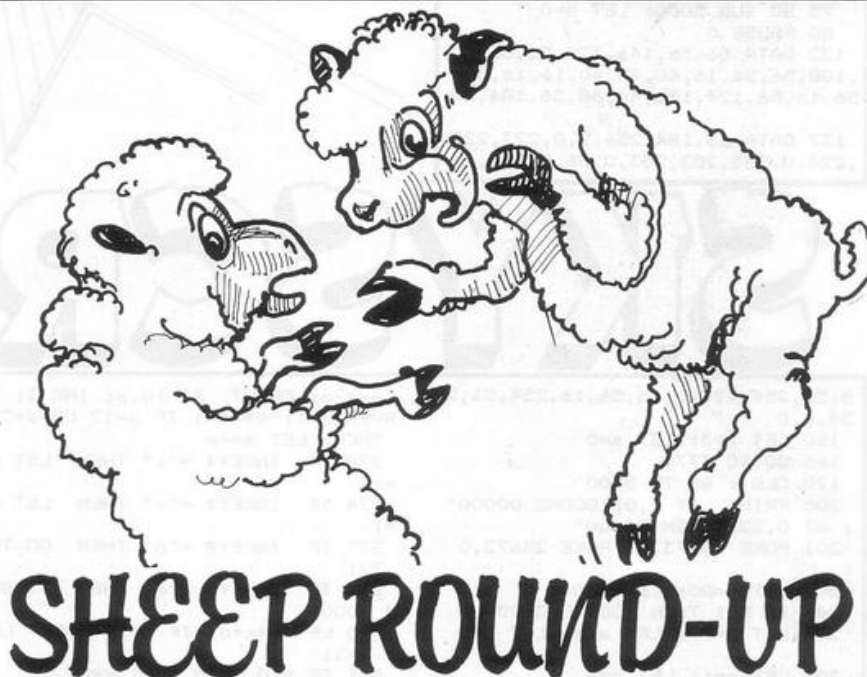
```

" " AT 9,6;" " AT 9,22;" "
9070 FOR N=10 TO 14
9080 PRINT AT N,12;"IIIII"
9090 NEXT N
9100 PRINT AT 7,9;" "
9110 LET X=1
9120 PRINT AT 7,9;"A$(X TO X+10)"
9130 LET X=X+1
9140 IF X=409 THEN GOTO 9110
9145 IF INKEY$=CHR$ 118 THEN RET
URN
9150 GOTO 9120
9500 SAVE "DRACULA"
9510 CLS
9520 RUN

```

ROUND-UP the sheep using keys 5 and 8 to move the dog. When you think you have the dog in the right place press "0" to send the sheep into the pen. If the sheep misses the pen a point will be deducted, otherwise different points are given for chasing the sheep into a particular part of the pen.

Sheep Round-up was written for the 1K ZX-81 by Jessica Irwin of Beeston, Leeds.



```

100 LET S=1
110 PRINT AT 0,8;" "
120 PRINT AT 2,8;" "
200 LET X=20
210 LET Y=INT (RND*30)+1
220 PRINT AT X,Y;" "
300 IF INKEY$="8" AND Y<30 THEN
LET Y=Y+1
310 IF INKEY$="5" AND Y>1 THEN
LET Y=Y-1
320 IF INKEY$="0" THEN GOTO 405
400 GOTO 220
405 FOR A=1 TO 18
407 IF X<20 THEN PRINT AT X,0;"

```

```

410 PRINT AT X-1,Y;"0"
420 LET A=INT (RND*2)+1
430 LET X=X-1
440 IF A=1 THEN LET Y=Y+1
450 IF A=2 THEN LET Y=Y-1
460 NEXT A
510 IF Y<0 THEN LET S=S-1
520 IF Y>19 THEN LET S=S-1
530 IF Y=9 AND Y<=19 THEN LET
S=S+1
540 PAUSE 100
550 PRINT "YOUR SCORE = ";S
560 PAUSE 100
570 CLS
580 GOTO 100

```


THE BUILDER climbs an unfinished skyscraper in an attempt to reach the lift at the top. If he reaches the lift it will carry him to the next screen. The score depends on the time taken and the number of screens completed.

Skyskrape was written for the 48K Spectrum by A Sherwood of West Bromwich, West Midlands.

```

2 CLS : RESTORE
3 PRINT AT 0,0; INVERSE 1; "
  SKYSKRAPE

4 LET u=-18: GO SUB 5000
32 PRINT AT 2,0; "THE BUILDER
CLIMBS THE UNFINISHED S
KYSKRAPE IN AN ATTEMPT TO R
EACH THE LIFT AT THE TOP,BUT
A COLLISION OR A HIGH FALL WI
LL LOSE A LIFE."

36 PRINT "IF HE REACHES THE L
IFT IT WILL CARRY HIM TO THE NE
XT SCREEN. THERE ARE 4 DIFFERE
NT SCREENS."

37 PRINT "YOUR SCORE DEPENDS
ON THE NUMBEROF SCREENS COMPLETE
D AND THE TIME TAKEN FOR EACH
SCREEN."

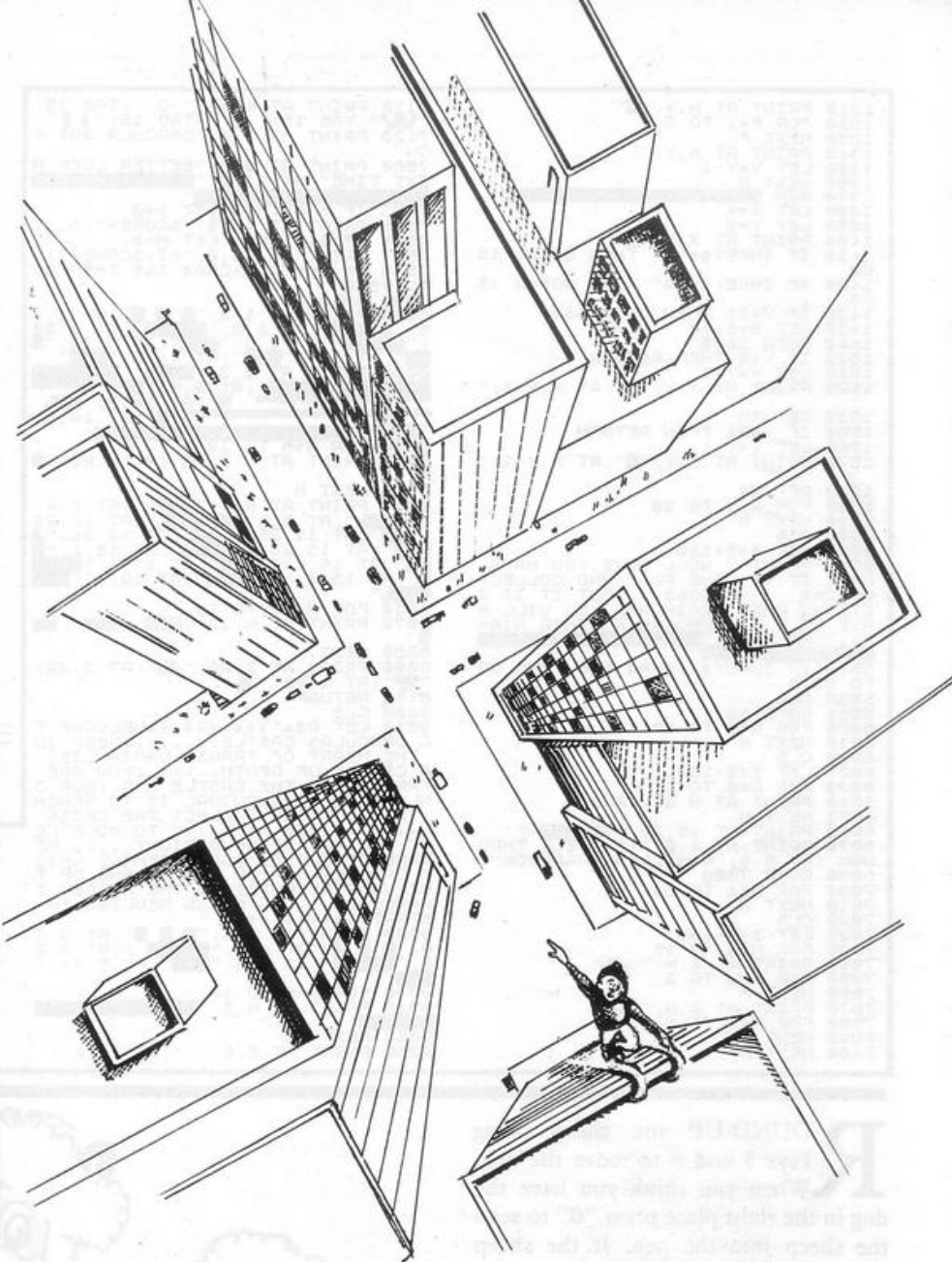
39 FOR i=0 TO 6: FOR j=0 TO 7:
READ w: POKE USR CHR$ (144+i)
+j,w: NEXT j: NEXT i
62 PRINT AT 16,7; "LEFT
Z"; AT 17,7; "RIGHT
X"; AT 18,7; "JUMP M
"; AT 19,7; "WAIT Hold down N"

70 PRINT AT 21,0; INVERSE 1; "
PRESS A KEY

75 GO SUB 5000: LET h=0
80 PAUSE 0
132 DATA 56,56,146,124,56,56,40
,108,56,56,16,40,40,40,16,16,56,
56,16,56,124,186,40,68,56,184,80

137 DATA 63,184,254,2,0,223,223
,223,0,253,253,253,0,56,58,20,24

```



SKYSKRAPE

```

8,58,254,128,0,56,56,16,254,56,2
54,0,0
160 LET l=3: LET s=0
165 GO TO 3770
170 CLS : GO TO 8000
200 PRINT AT 0,0; "SCORE 00000"
; AT 0,22; "HIGH 00000"
201 POKE 23673,0: POKE 23672,0

203 LET y=20: LET x=0
205 IF 1<1 THEN GO TO 3600
208 LET a=17: LET m=1: LET k=0

209 LET r=1: LET q=6
210 PRINT AT y,x; "A"; AT 3,0;
FLASH 1; INK 2; "(ig8)"
213 PRINT AT 10,17; "

214 PRINT AT 16,6; "

220 PRINT INK 2; AT 0,16; "A";
FLASH 1;1: LET d=-1
226 IF s>h THEN LET h=s
229 PRINT AT 0,11- LEN STR$ s
; AT 0,32- LEN STR$ h;h
240 GO SUB 5000
260 LET k=k+1: IF k=2 THEN LET
k=0: PRINT AT 10,a; " : LET

```

```

a=a+m: PRINT AT 10,a; INK 1; I
NVERSE 1; "####": IF a=17 OR a=23
THEN LET m=-m
270 IF INKEY$ ="z" THEN LET d
=-1
274 IF INKEY$ ="x" THEN LET d
=1
277 IF INKEY$ ="n" THEN GO TO
321
290 IF INKEY$ ="m" THEN GO SU
B 3000
320 LET x=x+d: IF x>31 THEN LE
T x=31
321 IF x<0 THEN LET x=0
330 IF y=3 AND x<2 THEN GO TO
3700
340 IF POINT (x*8,(22-y)*8-1)=
1 THEN PRINT AT y,x-d; " : GO
TO 3800: REM CRASH
342 PRINT AT y,x-d; "
351 PRINT AT y,x; "B"
352 BEEP .002,45
360 IF POINT (x*8,(21-y)*8-1)=
0 THEN GO TO 3500
420 LET q=q+r
425 PRINT AT 16,q-r; "
430 PRINT AT 16,q; INK 2; INVE
RSE 1; "///"

```

```

440 IF q=6 OR q=13 THEN LET r=
-r
450 IF d=1 THEN PRINT AT y,x;
"E": GO TO 456
455 PRINT AT y,x; "D"
500 BEEP .002,40: GO TO 250
3002 PRINT AT y,x; "G"
3005 BEEP .02,0
3010 FOR i=1 TO 2: PRINT AT y,x
; OVER 1; "G": LET y=y-1: LET x=x
+d
3020 IF x>31 THEN LET x=31
3022 IF x<0 THEN LET x=0
3030 PRINT AT y,x; OVER 1; "G"

3035 BEEP .02,i*5: NEXT i
3044 BEEP .02,15
3045 IF POINT (x*8,(21-y)*8-1)=
1 THEN RETURN : REM LANDED OK

3050 FOR i=2 TO 1 STEP -1: PRINT
AT y,x; OVER 1; "G": LET y=y+1:
LET x=x+d
3060 IF x>31 THEN LET x=31
3062 IF x<0 THEN LET x=0
3070 PRINT AT y,x; OVER 1; "G"
3071 BEEP .02,i*5
3073 IF POINT (x*8,(21-y)*8-1)=

```



```

1 THEN RETURN : REM LANDED OK
3077 IF x>0 AND x<31 THEN IF P
OINT ((x+d)*8,(21-y)*8-1)=1 THEN
PRINT AT y,x;" ": GO TO 3400
3080 NEXT i: BEEP .02,0
3099 RETURN
3420 LET l=1-1
3430 FOR i=1 TO 40: BEEP .005,10
3435 PRINT AT y,x; OVER 1;"A"
3440 NEXT i: GO TO 200
3502 LET c=0
3505 PRINT AT y,x;" ": LET y=y+
1
3515 LET c=c+1: IF c>9 THEN GO
TO 3400
3520 IF y>20 THEN BEEP .2,-10:
GO TO 202
3535 IF POINT (x*8,(21-y)*8-1)=
1 THEN PRINT AT y,x;"A": GO TO
250
3539 PRINT AT y-1,x;"A": BEEP .
15,20-c: PRINT AT y-1,x;" "
3540 PRINT AT y,x;"C"
3550 BEEP .15,20-c: GO TO 3504
3600 PRINT AT 6,8; FLASH 1;" AL
L LIVES LOST "
3610 BEEP 5,-50: RESTORE 6000: G
O TO 160
3700 LET t= INT ((256* PEEK 2367
3+ PEEK 23672)/50)
3703 LET s=s+50: PRINT AT 3,1;
INK 2; FLASH 1;" TIME ";t;"s "
: GO SUB 5000: GO SUB 5000
3705 IF t<100 THEN LET s=s+100-
t
3710 FOR y=6 TO 40 STEP 2
3712 PRINT AT y/2-1,0;" "
3715 PRINT AT y/2,0; BRIGHT 1;
INK 2;"(ig8)"
3720 BEEP .01,40-y: PAUSE 5
3730 BEEP .01,39-y: PAUSE 5
3760 NEXT y
3770 FOR i=40 TO 10 STEP -5: PAP

```

```

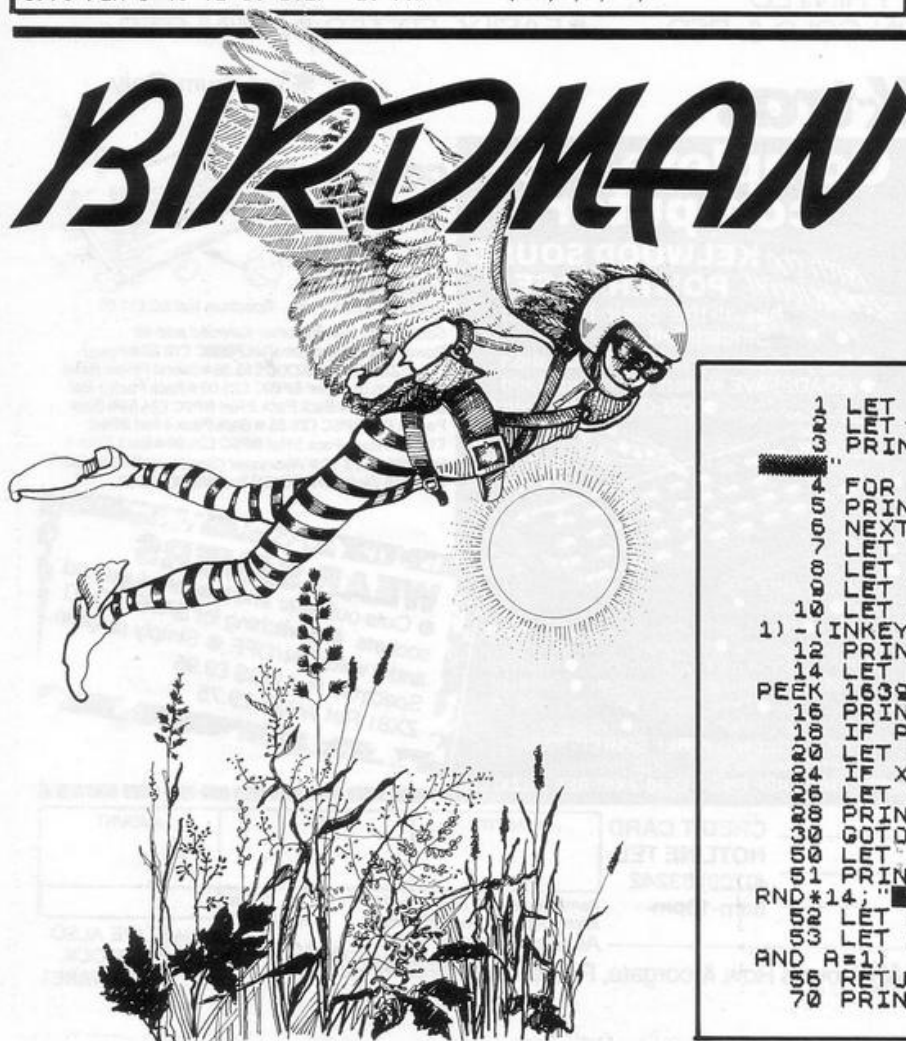
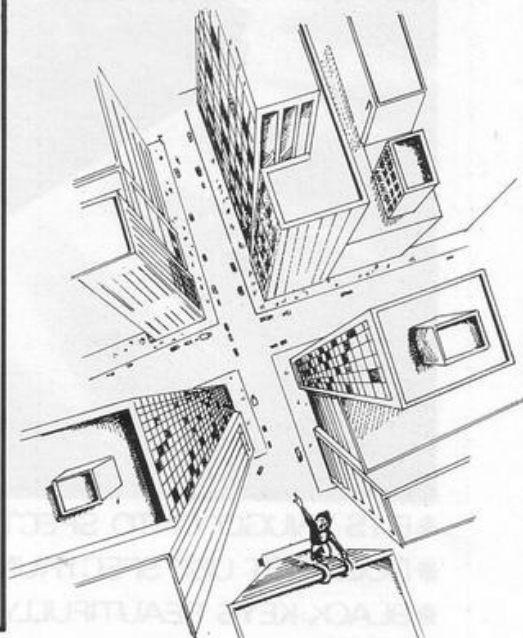
ER 1: BORDER 1: CLS : BEEP .005,
i: PAPER 7: BORDER 7: CLS : BEEP
.005,i: NEXT i: GO TO 170
3820 LET l=1-1
3830 FOR i=1 TO 40: BEEP .005,10
3835 PRINT AT y,x-d; OVER 1;"A"
3840 NEXT i: GO TO 200
5000 IF u>40 THEN LET u=-10
5010 FOR i=1 TO 3: BEEP .03,u: B
EEP .03,u+5: BEEP .03,u+10: BEEP
.03,u+15: NEXT i: LET u=u+8: RE
TURN
6030 DATA 4,0,7,4,28,4,5,16,5,6,
7,5,6,18,7,6,28,4,8,0,6,8,31,1,1
0,9,7,10,28,4,11,4,9,12,0,3,14,0
,2,14,17,4,14,30,2,16,0
6040 DATA 5,16,16,6,16,25,7,18,3
0,2,20,5,1,20,15,1,20,26,6,21,0,
8,21,11,8,21,21,3,21,26,6,0,0,0
6060 DATA 4,0,4,4,15,5,4,22,4,5,
0,7,5,9,4,5,28,4,7,31,1,9,8,3,9,
12,4,9,28,4,10,3,3,10,29,3,11,0,
2,13,0,1,13,7,1,14,7,5,15,0,5,15
6061 DATA 16,3,15,22,6,17,29,3,1
9,30,2,20,4,1,20,8,1,20,14,5,20,
26,1,21,0,12,21,15,3,21,23,9,0,0
,0
6080 DATA 4,0,7,5,28,4,6,4,3,6,1
9,5,7,5,5,7,13,4,7,31,1,9,28,2,9
,31,1,10,11,5,11,13,2,12,0,4,12,
7,7,13,9,4,13,29,3,14,0,1,14,9,4
6081 DATA 15,23,3,15,30,2,16,0,5
,16,16,6,17,29,3,19,8,2,19,30,2,
20,5,6,20,14,4,20,23,1,21,0,12,2
1,18,10,21,29,3,0,0,0
6090 DATA 4,0,3,5,20,11,6,3,5,6,
18,8,8,6,4,8,11,6,8,28,2,9,30,2,
13,27,3,11,31,1,12,0,4,12,6,2,12
,9,5,13,18,3,13,9
6091 DATA 2,13,24,3,14,0,1,16,1,
4,16,16,5,17,22,4,17,29,3,19,6,6
,19,30,2,20,16,3,21,0,6,21,16,3,
21,23,6,0,-1,0

```

```

8000 READ j: READ m: READ i
8004 IF m=-1 THEN RESTORE 6000
8005 IF i=0 THEN PAPER 7: INK 0
: GO TO 173
8006 IF m=0 OR m+i=32 THEN PAPE
R 7: INK 0: GO TO 8008
8007 PAPER INT ( RND *2)+5: INK
INT ( RND *4)
8010 FOR f=0 TO i-1
8020 PRINT AT j,m+f;"E": NEXT f
8040 GO TO 8000

```



YOU PLAY the part of a birdman with strapped-on wings. Fly round the course, being careful not to fly off the edge. To achieve this you must fly into the blocks that you will encounter, as so doing will change your direction of flight. Use keys 6 and 7 to move up and down.

Birdman was written for the 1K ZX-81 by Luuk Hilhorst of Holland.

```

1 LET S=0
2 LET A$=""
3 PRINT AT 12,0;" "
4 FOR F=1 TO 10
5 PRINT AT RND*11,RND*14;"■"
6 NEXT F
7 LET A=1
8 LET X=5
9 LET Y=5
10 LET Y=Y+(INKEY$="6" AND Y<1
1)-(INKEY$="7" AND Y>0)
12 PRINT AT Y,X;
14 LET P=PEEK (256*PEEK 16399+
PEEK 16398)
16 PRINT A$
18 IF P=128 THEN GOSUB 50
20 LET F=X
24 IF X<0 OR X>15 THEN GOTO 70
26 LET X=X+A
28 PRINT AT Y,F;" "
30 GOTO 10
50 LET S=S+1
51 PRINT AT Y,X;" ";AT RND*11,
RND*14;"■"
52 LET A=A*-1
53 LET A$=("("<" AND A=-1)+(">"
AND A=1)
56 RETURN
70 PRINT AT 0,0;"SCORE:";S

```


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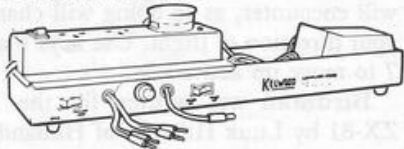


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