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SIXTY PROGRAMS for the SINCLAIR ZX SPECTRUM



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Introduction

This book was born of the conviction that it was high time a listings collection offered real value for money. You have in your hands as complete a software library as can be crammed into close on three hundred pages. We have pulled out all the stops to offer you as varied, innovative and exciting selection of programs as possible. There are arcade action games for those of you whose fingers naturally twitch around the cursor control keys, tactical games for the more cerebrally inclined, genuinely novel games as well as classics of the genre, quizzes, tests of your mental agility, party games and a leavening of utility and educational programs. In short, for the price of a single cassette we've put together a collection of sixty fully-developed programs which have been exhaustively tested before being dumped straight to the printer. This ensures the accuracy of the listings, so all you have to do is to get your eager fingers flashing across the keyboard and faithfully reproduce the programs on your screen.

A few words about the listings themselves. We have introduced what we hope will prove to be a useful innovation to differentiate the user-defined graphics from the rest of the code. Each time a user-defined graphic appears in a program it is printed italic capitals; e.g. *A*. This will hopefully ensure that the Earth will be attacked by fully-fledged aliens rather than bewildering fleets of capital 'A's! We should also point out that in order to get as many programs as possible into the book we have extended the line of the listings to forty-five characters, as opposed to the thirty-two characters of the Spectrum screen. This simply means that you should take extra care over the spaces to ensure that you get the displays right.

Finally, we would like to extend our thanks to the team of converters and checkers without whom this project would not have been possible. Their selfless devotion to accuracy inspired us to slave over hot keyboards into the midnight hour.

So now it's up to you. A quick glance through the contents pages reveals that the Earth is being threatened by anything from an alien invasion fleet to a vampire cat! As usual, you are our only hope, so get to the keyboard and go get 'em!

Minelay

Minelay is a maze game in which your hero runs about collecting golden eggs and avoiding the deadly mines which are scattered randomly about the maze. A fiendish little 'minelayer' scuttles around the screen in hot pursuit. Contact with this persistent creature results in instant death. Here is the good news. A number of axes are dotted around the playing area which the player can pick up and carry around. Each axe can be used both to break through maze walls and also to fend off direct attacks by the minelayer.

```
   1 RANDOMIZE : BORDER 0: PAPER 0: INK 7: CL
S
   5 REM @ P.Stanley (21.3.83)
  10 GO SUB 9000
  15 LET hs=0
  20 GO TO 6030
  50 BEEP .1,-10
  55 LET li=3
  60 PRINT AT 0,13;"BB     Hi-score ";hs
 100 PRINT AT y1,x1;" "; INK 6;AT y,x;a$: LET
 y1=y: LET x1=x
 110 LET x=x+(IN 57342=254)-(IN 57342=251): L
ET y=y+(IN 65278=253)-(IN 64510=254)
 120 LET a=ATTR (y,x): IF SCREEN$ (y,x)=" " T
HEN  GO TO 700
 122 IF a=7 THEN  IF a$="C" THEN  GO TO 5000
 125 IF a=7 THEN  LET y=y1: LET x=x1
 130 IF a=70 THEN  BEEP .01,20: LET sc=sc+10:
 PRINT  INK 7;AT 0,6;sc: IF sc/500=INT (sc/50
0) THEN  PRINT AT 0,12+li; FLASH 1;"B": FOR g
=1 TO 5: BEEP .2,-30: NEXT g: PRINT AT 0,12+l
i;"B": LET li=li+1
 140 IF a=5 THEN  GO TO 6000
 150 IF a=68 THEN  BEEP .1,10: LET a$="C"
 700 PRINT AT my,mx;" ": IF RND>sk THEN  PRIN
T AT my1,mx1; INK 5;"F"
 705 LET my1=my: LET mx1=mx
 710 LET my=my+(.5 AND my<y)-(.5 AND my>y): L
ET mx=mx+(.5 AND mx<x)-(.5 AND mx>x)
 715 IF ATTR (my,mx)=6 THEN  GO TO 6000
```

```
 720 PRINT AT my,mx; INK 5; BRIGHT 1;"D"
 940 IF RND<.2 THEN  PRINT AT RND*18+2,RND*28
+1; INK 6; BRIGHT 1;"£": IF RND>.9 THEN  PRIN
T  INK 4; BRIGHT 1;AT RND*18+2,RND*28+1;"G"
 999 GO TO 100
5000 IF y=1 OR y=21 OR x=0 OR x=30 THEN  GO T
O 125
5005 FOR f=50 TO 0 STEP -5: BEEP .02,f: NEXT
f
5010 LET a$="B"
5030 GO TO 130
5500 PRINT AT 0,12+li;" ": PRINT AT y,x;" ":
LET y=2: LET x=1
5600 LET my=INT (RND*11)+10: LET mx=INT (RND*
18)+12: GO TO 100
6000 PRINT AT my,mx;" ": LET my=INT (RND*11)+
10: LET mx=(RND*18)+12: LET my1=my: LET mx1=m
x: IF a$="C" THEN  LET a$="B": FOR f=0 TO 40
STEP 5: BEEP .04,f: NEXT f: GO TO 700
6005 PRINT AT y1,x1;" ": FOR f=1 TO 7: FOR g=
7 TO 0 STEP -1: PRINT  INK g;AT y,x;"B": BEEP
 .02,g*f: NEXT g: NEXT f
6007 LET li=li-1: IF li<>0 THEN  GO TO 5500
6010 FOR g=0 TO 60: NEXT g
6020 CLS : PRINT AT 5,8; INVERSE 1;"G A M E
O V E R"
6025 PRINT AT 8,9; INK 5; BRIGHT 1;"You score
d ";sc
6026 IF sc>hs THEN  LET hs=sc: PRINT ''" Well
 done- A new high-score!!": GO TO 6030
6027 PRINT ''"       The high-score is ";hs
6030 PRINT  INK 6''''"  Press 1 for a hard ga
me, or 2         for an easier game."
6040 IF INKEY$<>"1" AND INKEY$<>"2" THEN  GO
TO 6040
6045 LET sk=(.7 AND INKEY$="1")+(.85 AND INKE
Y$="2")
6050 CLS
7000 FOR f=1 TO 21: PRINT AT f,0;"A";AT f,30;
"A": NEXT f
7010 FOR f=1 TO 29: PRINT AT 1,f;"A";AT 21,f;
"A": NEXT f
7020 FOR g=1 TO (7 AND sk=.85)+(14 AND sk=.7)
: LET s=RND*28: LET f=s+RND*10: LET x=INT (RN
```



```
D*9)*2+1: IF f>29 THEN  LET f=29
7030 FOR y=s TO f: PRINT AT x,y;"A"
7040 NEXT y
7050 LET s=RND*17+2: LET f=s+RND*10: LET x=IN
T (RND*14)*2+2: IF f>20 THEN  LET f=20
7060 FOR y=s TO f: PRINT AT y,x;"A": NEXT y:
NEXT g
7390 FOR f=1 TO 20
7400 LET y=RND*18+2: LET x=RND*28+1
7410 IF SCREEN$ (y,x)="" THEN  GO TO 7400
7420 PRINT  BRIGHT 1; INK 6;AT y,x;"£": NEXT
f
7500 FOR f=1 TO 10
7510 LET y=RND*18+2: LET x=RND*28+1
7520 IF SCREEN$ (y,x)="" THEN  GO TO 7510
7540 PRINT  INK 5;AT y,x;"F": NEXT f
7550 FOR f=1 TO 5: PRINT AT RND*18+2,RND*28+1
; INK 4; BRIGHT 1;"G": NEXT f
7800 LET y=2: LET x=1: LET y1=y: LET x1=x: LE
T a$="B"
7840 LET my=INT (RND*11)+10: LET mx=INT (RND*
18)+12: LET my1=my: LET mx1=mx
7850 LET sc=0: PRINT AT 0,0;"Score ";sc
7999 GO TO 50
9000 FOR f=USR "a" TO USR "g"+7: READ g: POKE
 f,g: NEXT f
9010 DATA 24,36,66,153,153,66,36,24,28,28,73,
62,8,28,20,54
9020 DATA 220,220,73,126,72,92,20,54,195,36,2
4,36,126,90,129,0
9030 DATA 0,0,0,12,62,126,62,12,0,0,8,73,42,2
8,62,127
9040 DATA 4,14,6,12,24,48,96,0
9500 PRINT  INK 0;AT 0,0;" _ _ ___ _ _ ___
_   _  _ _  _ _  _  _ _ _    _  _ _ _ _
 _ _  _  _ _ ___  _  ___  _  _ _  _  _ _
_   _  _ _  _   _ _ ___ _ _ ___  ___ _ _
 _"
9600 FOR f=0 TO 4: PRINT  INK 5;AT f,0; BRIGH
T 1;"D": FOR g=1 TO 31
9610 PRINT AT f,g-1; OVER 1; INK 0; BRIGHT 1;
"D"; INK 5;"D"
9620 IF SCREEN$ (f,g-1)="_" THEN  PRINT  INK
2; PAPER 7;AT f,g-1;"F"
```

```
9630 BEEP .04,(g+f)/3
9640 NEXT g: PRINT AT f,31;" ": NEXT f
9645 PLOT 16,173: DRAW 3,-10: DRAW 4,10: P
 80,173: DRAW 7,-28
9650 PRINT '"Move about the maze picking u
golden eggs, avoiding the mines & also the
ne-layer."
9700 PRINT  INK 6'"If you pick up an axe y
can   destroy the maze walls, mines,   and
e mine-layer."
9750 PRINT '"You begin with 3 liyes, but a
extra life is given every 500   points."
9800 PRINT  INK 6'" Q.....UP            Z.....
DOWN"' INK 5'" I.....LEFT          P....RIGHT"
9900 INPUT "Press ENTER to start...";a$
9910 IF INKEY$="" THEN  GO TO 9910
9920 CLS
9999 RETURN
```


Fall Guy

This is a game for two, in which each player directs a small figure down a vertical maze so that it can drop through a hole in the moving floor at the bottom. The figure is manoeuvred through the maze by directing markers up and down the outer walls and shifting horizontal sections of the maze to the left or right, allowing the figures to drop through to lower levels. The trick is to alter the internal pattern of the maze in order to move your own figure without at the same time opening up advantages for the opposition.

```
   1 BORDER 0: PAPER 0: INK 7: CLS
   2 REM @ PAUL STANLEY 1983
   5 GO SUB 9000
  15 INPUT "Please enter your names.        F
irst, the player on the left:",b$: INPUT "And
 now the player on the right:"'c$
  17 PRINT AT 10,10;"PLEASE WAIT"
  20 GO SUB 8000
  30 GO SUB 7000
  40 LET y=INT (RND*19)+2: LET y1=INT (RND*19
)+2
  42 LET g=7: LET g1=24: LET f=1: LET f1=1
  44 LET w$=" AAAAAAAAAAAAAAAAAA"
  45 FOR i=10 TO 30: BEEP .07,i: NEXT i
  50 PRINT  INK 3;AT y,4;"C"; INK 6;AT y1,27;
"D"
  60 PRINT  BRIGHT 1; INK 3;AT f,g;"B"; INK 6
;AT f1,g1;"B"
  70 IF SCREEN$ (f+1,g)=" " THEN  PRINT AT f,
g;" ": LET f=f+1: PRINT AT f,g; BRIGHT 1; INK
 3;"B": BEEP .01,10
  73 IF SCREEN$ (f+1,g)="0" THEN  FOR i=3 TO
9: BEEP .01,i*5: NEXT i: PRINT AT f,g;" "; BR
IGHT 1; INK 6;AT 1,7;"B": LET f=1: LET g=7
  75 IF SCREEN$ (f1+1,g1)=" " THEN  PRINT AT
f1,g1;" ": LET f1=f1+1: PRINT AT f1,g1; BRIGH
T 1; INK 6;"B": BEEP .01,20
  76 IF SCREEN$ (f1+1,g1)="0" THEN  FOR i=3 T
O 9: BEEP .01,i*5: NEXT i: PRINT AT f1,g1;" "
; BRIGHT 1; INK 6;AT 1,24;"B": LET f1=1: LET
```

```
g1=24
  77 IF f=21 OR f1=21 THEN  GO TO 5000
  80 IF IN 63486=253 AND y>2 THEN  PRINT AT y
,4;" ": LET y=y-1
  85 IF IN 61438=254 AND y1>2 THEN  PRINT AT
y1,27;" ": LET y1=y1-1
  90 IF IN 65022=254 AND y<20 THEN  PRINT AT
y,4;" ": LET y=y+1
  95 IF IN 49150=253 AND y1<20 THEN  PRINT AT
 y1,27;" ": LET y1=y1+1
 100 IF IN 64510=254 THEN  GO SUB 1000
 105 IF IN 57342=253 THEN  GO SUB 2000
 110 IF IN 64510=253 THEN  GO SUB 1100
 115 IF IN 57342=254 THEN  GO SUB 2100
 200 LET w$=w$(2 TO )+w$(1): PRINT AT 21,6; I
NK 4;w$
 999 GO TO 50
1000 LET i=y-1: IF y=f THEN  IF g=6 THEN  IF
a$(i,2)<>" " THEN  RETURN
1001 IF y=f1 THEN  IF g1=6 THEN  IF a$(i,2)<>
" " THEN  RETURN
1002 LET a$(i)=a$(i,2 TO )+a$(i,1)
1005 IF y=f THEN  IF a$(i,g-5)<>" " THEN  LET
 g=g-1
1007 IF y=f1 THEN  IF a$(i,g1-5)<>" " THEN  L
ET g1=g1-1
1010 PRINT AT y,6;a$(i): RETURN
1100 LET i=y-1: IF y=f THEN  IF g=25 THEN  IF
 a$(i,19)<>" " THEN  RETURN
1101 IF y=f1 THEN  IF g1=25 THEN  IF a$(i,19)
<>" " THEN  RETURN
1102 LET a$(i)=a$(i,20)+a$(i, TO 19)
1105 IF y=f THEN  IF a$(i,g-5)<>" " THEN  LET
 g=g+1
1107 IF y=f1 THEN  IF a$(i,g1-5)<>" " THEN  L
ET g1=g1+1
1110 PRINT AT y,6;a$(i): RETURN
2000 LET i=y1-1: IF y1=f1 THEN  IF g1=6 THEN
 IF a$(i,2)<>" " THEN  RETURN
2001 IF y1=f THEN  IF g=6 THEN  IF a$(i,2)<>"
 " THEN  RETURN
2002 LET a$(i)=a$(i,2 TO )+a$(i,1)
2005 IF y1=f1 THEN  IF a$(i,g1-5)<>" " THEN
LET g1=g1-1
```



```
2007 IF y1=f THEN  IF a$(i,g-5)<>" " THEN  LE
T g=g-1
2010 PRINT AT y1,6;a$(i): RETURN
2100 LET i=y1-1: IF y1=f1 THEN  IF g1=25 THEN
  IF a$(i,19)<>" " THEN  RETURN
2101 IF y1=f THEN  IF g=25 THEN  IF a$(i,19)<
>" " THEN  RETURN
2102 LET a$(i)=a$(i,20)+a$(i, TO 19)
2105 IF y1=f1 THEN  IF a$(i,g1-5)<>" " THEN
LET g1=g1+1
2107 IF y1=f THEN  IF a$(i,g-5)<>" " THEN  LE
T g=g+1
2110 PRINT AT y1,6;a$(i): RETURN
5000 IF f=21 THEN  LET y=f: LET x=g: LET ink=
3
5002 IF f1=21 THEN  LET y=f1: LET x=g1: LET i
nk=6
5005 LET w$="BE": LET c=1: FOR g=0 TO 16: PRI
NT AT y,x; BRIGHT 1; INK ink;w$(c): LET c=(c=
2)+(2 AND c=1): FOR i=1 TO 3: BEEP .02,i: NEX
T i: NEXT g
5006 FOR f=0 TO 31: PRINT AT 18,f;" ";AT 19,f
;" ";AT 20,f;" ";AT 21,f; INK 2;" ": NEXT f
5007 FOR f=2 TO 28 STEP 2: PRINT  INK 5;AT 19
,f-1;" ";AT 20,f;"B": BEEP .1,10: PAUSE 5: PR
INT AT 20,f;" "; INK 5;AT 19,f+1;"£": BEEP .1
,20: PAUSE 5: NEXT f
5010 CLS : LET w$=(b$ AND f=21)+(c$ AND f1=21
): IF f=21 AND f1=21 THEN  GO TO 5050
5020 PRINT  INK 4;AT 5,0;"Well done ";w$;"!"
5030 PRINT  INK 6''"You were the best Fall Gu
y!!"
5040 GO TO 5100
5050 PRINT  INK 4;AT 5,0;"The result was a dr
aw."' INK 6''"You both did equally well."
5100 PRINT ''"Press ""X"" to quit the program
."' INK 5'"Press ""1"" for the same course."'
 INK 4'"Press ""2"" for a new course."
5110 IF INKEY$="x" THEN  STOP
5120 IF INKEY$="1" THEN  GO TO 5500
5130 IF INKEY$="2" THEN  CLS : PRINT AT 10,10
;"PLEASE WAIT": GO TO 20
5140 GO TO 5110
5500 CLS : FOR f=1 TO 19: LET i=INT (RND*20)+
```

```
1: LET a$(f)=a$(f,i TO )+a$(f, TO i): NEXT f
5600 GO TO 30
7000 CLS : FOR f=1 TO 19: PRINT AT f+1,6;a$(f
): NEXT f
7010 FOR f=2 TO 21: PRINT  INK 2; PAPER 4;AT
f,5;"A";AT f,26;"A": NEXT f
7020 FOR f=5 TO 26: PRINT  INK 2; PAPER 4;AT
1,f;"A": NEXT f
7030 PRINT AT 1,7;" ";AT 1,24;" ";AT 21,16;"
"
7040 PRINT  BRIGHT 1; INK 3;AT 0,0;b$; INK 6;
AT 0,(32-LEN c$);c$
7999 RETURN
8000 DIM a$(19,20): FOR f=1 TO 19
8010 FOR g=1 TO 20: LET a$(f,g)=" ": IF RND>.
5 THEN  LET a$(f,g)="A"
8015 IF RND<.02 THEN  LET a$(f,g)="O"
8020 NEXT g: NEXT f
8090 RETURN
9000 FOR f=USR "a" TO USR "e"+7: READ g: POKE
 f,g: NEXT f
9010 DATA 170,85,170,85,170,85,170,85
9020 DATA 24,24,255,60,60,90,66,195
9030 DATA 8,12,250,137,250,12,8,0
9040 DATA 16,48,95,147,95,48,16,0
9050 DATA 153,219,126,60,60,126,219,129
9500 PRINT  INK 0;AT 17,0;"  aaa  a  a   a
  aa a  a a a   a   a a a   a    a  a a a a
   aaa aaa a   a    a  a  a  a    a   a a a
  a    a a a  a  a    a   a a aaa aaa   aa  a
a   a"
9540 FOR f=3 TO 7: FOR g=0 TO 31
9550 IF SCREEN$ (f+14,g)="a" THEN  PRINT  INK
 f;AT f+14,g;"B"
9555 BEEP .06,f*2+g
9560 NEXT g: NEXT f
9570 FOR f=1 TO 17: POKE 23692,255: PRINT AT
21,31;"  ": FOR g=20 TO 30: BEEP .005,g: NEXT
 g: NEXT f
9580 PRINT  INK 4;AT 6,0;"A Game For 2 Player
s Who Have ToGuide Their Man To The Bottom Of
The Grid Before Their Opponent."
9590 PRINT  INK 5'"Avoid The Mines (O), For L
andingOn One Of These Will Send You  Right T
```



```
o The Top Again."
9600 PRINT  INK 6'"CONTROLS: UP  DOWN  LEFT
RIGHT"
9610 PRINT '"PLAYER 1:  2    A     Q      W"
9620 PRINT  INK 4'"PLAYER 2:  Ø    L     O
   P"
9630 PRINT '"Press Any Key To Continue....":
PAUSE Ø
9640 FOR f=1 TO 20: POKE 23692,255: PRINT AT
21,31;"  ": FOR g=20 TO 30: BEEP .005,g: NEXT
 g: NEXT f
9650 RETURN
```

Tug-of-War

Tug-of-War is a two player game consisting of a canyon with a rope stretched across the top, held by a team of three figures on either side. A small UFO flies overhead and each player takes turns in dropping a parachute from it, attempting to land on a target which appears lower down the screen in a random position. Every time a parachutist hits the target, the opposing team is pulled further towards the edge of the canyon and if a man topples over the precipice, the team is weakened. The winner is the player who succeeds in pulling all the opposing team over the edge of the canyon.

```
   1 BORDER Ø: PAPER Ø: INK 7: CLS
   5 GO SUB 9ØØØ
  1Ø GO SUB 8ØØØ
  2Ø GO SUB 7ØØØ
1ØØØ PRINT AT 14,t;" ": LET t=INT (RND*28)+2:
 PRINT AT 14,t;" "
1Ø5Ø FOR f=Ø TO 3Ø: PRINT AT Ø,f;" I"
1Ø6Ø IF INKEY$="a" THEN  GO TO 2ØØØ
1Ø65 BEEP ta,25
1Ø7Ø NEXT f: GO TO 3ØØØ
2ØØØ FOR g=Ø TO 14
2Ø1Ø PRINT  INK 4;AT g,f+1;"J"
2Ø2Ø BEEP .Ø5,g
2Ø25 PRINT AT g,f+1;" "
2Ø3Ø NEXT g
2Ø4Ø IF f+1<>t THEN  GO TO 3ØØØ
21ØØ LET xa=xa-1: LET xb=xb-1: FOR f=2Ø TO 3Ø
: BEEP .Ø1,f: NEXT f
211Ø PRINT AT 14,t;" "
22ØØ PRINT  INK 2;AT 16,xa;a$(1);" ";AT 17,xa
;a$(2);" "; INK 6;AT 16,xb;b$(1);" ";AT 17,xb
;b$(2);" "
221Ø PLOT (xa+LEN a$(1))*8,41: DRAW (xb-xa-LE
N a$(1))*8-1,Ø
2220 IF ATTR (18,xb)=3 THEN  GO TO 3ØØØ
2225 LET u=16: PRINT AT 16,18;" ";AT 17,18;"
": GO SUB 6ØØØ
2230 IF tb=.Ø2 THEN  DIM b$(2,4): LET b$(1)="
```



```
EFEF": LET b$(2)="GHGH"
2232 IF tb=.ØØ2 THEN  DIM b$(2,2): LET b$(1)=
"EF": LET b$(2)="GH"
2233 IF tb=.ØØØ2 THEN  LET w=1: GO TO 65ØØ
2235 LET tb=tb/1Ø
2237 LET xb=xb+2
2240 PRINT  INK 2;AT 16,xa;a$(1);"  ";AT 17,x
a;a$(2);"  "; INK 6;AT 16,xb;b$(1);"  ";AT 17
,xb;b$(2);"  "
2250 PLOT (xa+LEN a$(1))*8,41: DRAW (xb-xa-LE
N a$(1))*8-1,Ø
2260 GO TO 3ØØØ
3ØØØ PRINT AT 14,t;" ": LET t=INT (RND*28)+2:
 PRINT AT 14,t;" "
3Ø5Ø FOR f=3Ø TO Ø STEP -1: PRINT AT Ø,f;"I "
3Ø6Ø IF INKEY$="1" THEN  GO TO 4ØØØ
3Ø65 BEEP tb,25
3Ø7Ø NEXT f: GO TO 1ØØØ
4ØØØ FOR g=Ø TO 14
4Ø1Ø PRINT  INK 5;AT g,f;"J"
4Ø2Ø BEEP .Ø5,g
4Ø25 PRINT AT g,f;" "
4Ø3Ø NEXT g
4Ø4Ø IF f<>t THEN  GO TO 1ØØØ
41ØØ LET xa=xa+1: LET xb=xb+1: FOR f=2Ø TO 3Ø
: BEEP .Ø1,f: NEXT f
42ØØ PRINT  INK 2;AT 16,xa-1;" ";a$(1);AT 17,
xa-1;" ";a$(2); INK 6;AT 16,xb-1;" ";b$(1);AT
 17,xb-1;" ";b$(2)
421Ø PLOT (xa+LEN a$(1))*8,41: DRAW (xb-xa-LE
N a$(1))*8-1,Ø
4220 IF ATTR (18,xa+LEN a$(1)-1)=3 THEN  GO T
O 1ØØØ
4225 LET u=14: PRINT AT 16,13;" ";AT 17,13;"
": GO SUB 6ØØØ
4230 IF ta=.Ø2 THEN  DIM a$(2,4): LET a$(1)="
ABAB": LET a$(2)="CDCD"
4232 IF ta=.ØØ2 THEN  DIM a$(2,2): LET a$(1)=
"AB": LET a$(2)="CD"
4233 IF ta=.ØØØ2 THEN  LET w=2: GO TO 65ØØ
4235 LET ta=ta/1Ø
4240 PRINT  INK 2;AT 16,xa;a$(1);AT 17,xa;a$(
2); INK 6;AT 16,xb;b$(1);AT 17,xb;b$(2)
4250 PLOT (xa+LEN a$(1))*8,41: DRAW (xb-xa-LE
```

```
N a$(1))*8-1,0
4260 GO TO 1000
6000 FOR f=16 TO 20: PRINT  INK 5;AT f,u;"KL"
; INK 3;AT f+1,u;"MN"
6010 BEEP .1,10-f
6020 PRINT AT f,u;"  ";AT f+1,u;"  "
6025 NEXT f
6030 RETURN
6500 FOR f=0 TO 7: PRINT AT 2,2; INK f;"WELL
DONE PLAYER ";W;"! YOU WON!": FOR g=1 TO 8: B
EEP .04,g*f: NEXT g: NEXT f
6600 PRINT AT 5,2; INK 5;"PRESS ANY KEY TO PL
AY AGAIN."
6700 PAUSE 0: PAUSE 0: CLS : GO TO 20
7000 INK 3: FOR f=0 TO 31: PLOT 0,f: DRAW 106
+RND*5,0: NEXT f
7010 FOR f=0 TO 31: PLOT 255,f: DRAW -(106+RN
D*5),0: NEXT f
7012 PLOT 0,31: DRAW 111,0: PLOT 255,31: DRAW
 -110,0
7015 INK 7
7017 DIM a$(2,6): DIM b$(2,6)
7020 LET a$(1)="ABABAB": LET a$(2)="CDCDCD":
LET b$(1)="EFEFEF": LET b$(2)="GHGHGH"
7030 LET xa=7: LET xb=19
7040 PRINT  INK 2;AT 16,xa;a$(1);AT 17,xa;a$(
2); INK 6;AT 16,xb;b$(1);AT 17,xb;b$(2)
7050 PLOT (xa+LEN a$(1))*8,41: DRAW (xb-xa-LE
N a$(1))*8-1,0
7060 LET ta=.02: LET tb=ta: LET t=0
7300 RETURN
8000 FOR f=USR "a" TO USR "n"+7: READ g: POKE
 f,g: NEXT f
8010 DATA 24,52,62,60,24,31,255,15,0,0,0,0,0,
248,255,240,15,7,7,3,0,0,0,0,0,128,192,224,11
2,24,12,7
8020 DATA 0,0,0,0,0,31,255,15,24,44,124,60,24
,248,255,240,0,1,3,7,14,24,48,224,240,224,224
,192,0,0,0,0
8030 DATA 0,129,66,36,102,255,126,60,16,124,2
54,0,16,56,16,40
8040 DATA 1,195,101,55,27,15,7,3,128,195,166,
236,152,240,224,192,3,3,3,7,14,28,184,112,192
```



```
,192,192,224,112,56,29,14
8100 RETURN
9000 PRINT "     TUG________OF________WAR"
9005 PRINT  INK 3'"  B Y  P A U L  S T A N L
E Y   "
9006 PLOT 0,151: DRAW 255,0: DRAW 0,24: DRAW
-255,0: DRAW 0,-24
9010 PRINT  INK 6'"A simple game for 2 player
s who have to win at tug-of-war, not  by stre
ngth, but by reactions."
9020 PRINT  INK 4'"A UFO will fly across the
top ofthe screen and a target will     appear
at the bottom. Player 1  can parachute out on
to the       target by pressing ""A"", and
 player 2 with ""L"""
9030 PRINT  INK 6'"If the parachutist lands o
n the target you will pull the other  team. I
f any men fall down the  canyon that team wil
l find it   harder to win"
9040 PRINT  INVERSE 1;AT 21,3;"PRESS ANY KEY
TO START": PAUSE 0: CLS : RANDOMIZE : RETURN
```

Horse Race

Horse race is a racing and betting game for any number of players in which six horses race across the screen. At the beginning of the game you can choose how many races there will be at the meeting.

Before the start of each race the betting form is displayed, complete with the tipsters odds on each runner. The odds are a fairly accurate reflection of each horse's potential.

Starting with £200, each player may bet on one horse in each race and the winner is the player who ends up with the largest amount of money at the end of the meeting. If you want the rules to allow cheating then players who lose all their money may have the option of accepting the offer of an additional £50, otherwise they are out of the game.

```
   1 RANDOMIZE : BORDER 7: PAPER 7: INK 0: CL
S : GO SUB 7000: CLS
   2 INPUT "How many races would you like   t
here to be at this meeting?  ";races
   3 INPUT "How many punters are there?",a
   4 DIM p(a): FOR c=1 TO a
   5 LET p(c)=200
   6 NEXT c
  10 GO SUB 9000
  20 CLS : GO SUB 1999
 100 FOR c=2 TO 12 STEP 2
 105 PRINT  INK c/2;AT c,0;c/2;" A"
 106 PRINT AT c-1,2;"■"
 107 NEXT c
 108 PLOT 251,170: DRAW 0,-102
 109 PRINT AT 13,2;"■": PRINT AT 0,31; OVER 1
;"o"
 110 LET a$="FINISH": FOR c=1 TO 6: PRINT AT
13+c,31;a$(c): NEXT c
 115 FOR c=163 TO 67 STEP -16: PLOT 24,c: DRA
W 227,0: NEXT c
 120 GO SUB 1000
1000 BEEP .5,0: PRINT AT 14,0;"READY": BEEP .
5,6: PRINT AT 14,0;"STEADY": BEEP .5,12: PRIN
T AT 14,0;"GO    ": BEEP .5,18: PRINT AT 14,0
;"  "
1001 LET ge=0: DIM x(6): FOR c=1 TO 6: LET x(
c)=2: NEXT c
1002 FOR c=1 TO 6
1004 BEEP .03,-20: BEEP .03,-30
1005 LET x(c)=x(c)+(f(c)=1 AND RND<.8)+(f(c)=
2 AND RND<.77)+(f(c)=4 AND RND<.74)+(f(c)=8 A
ND RND<.71)+(f(c)=16 AND RND<.68)+(f(c)=32 AN
D RND<.65)
1006 PRINT  INK c;AT c*2,x(c)-1;" A"
1008 IF x(c)=31 THEN  LET ge=1
1009 BEEP .03,-20: BEEP .03,-30
1015 NEXT c
1020 IF ge=1 THEN  GO TO 1050
1040 GO TO 1002
1050 DIM h(6): LET many=0: FOR c=1 TO 6
1052 IF x(c)=31 THEN  LET many=many+1: LET h(
many)=c
1053 NEXT c
1054 IF many=1 THEN  LET winner=h(1): GO TO 1
090
1055 PRINT AT 20,0;"There is a photo-finish b
etween these horses:  "
1056 PRINT AT 21,15;h(1);"  ";h(2);"  ";
1057 IF many=3 THEN  PRINT ;h(3);
1058 IF many=4 THEN  PRINT ;"  ";h(4)
1060 FOR c=1 TO 300
1065 NEXT c
1067 LET er=INT (RND*4)+1
1070 LET winner=h(er)
1071 IF winner=0 THEN  GO TO 1067
1075 IF RND<.33 THEN  LET g$="a short head":
GO TO 1079
1076 IF RND<.4 THEN  LET g$="a neck": GO TO 1
079
1077 LET g$="1 length"
1079 PRINT AT 20,0;"                          "
1080 PRINT AT 20,1;"The winner is ";winner;"
who won by": PRINT AT 21,1;g$
1081 PAUSE 130
1082 CLS
1085 GO TO 1100
1090 PRINT AT 20,1;"The winner is ";winner;"
```

```
who won by ": PRINT " ";INT (RND*3)+2;" lengt
hs."
1095 PAUSE 130: CLS
1100 FOR r=1 TO a
1101 IF p(r)=0 THEN  LET r=r+1: GO TO (1101 A
ND r<a+1)+(1130 AND r=a+1)
1105 IF e(r)=winner THEN  LET p(r)=p(r)+b(r)*
f(winner): GO TO 1115
1110 LET p(r)=p(r)-b(r)
1115 IF p(r)<=0 THEN  GO TO 8000
1117 IF e(r)<>winner THEN  GO TO 1125
1120 CLS : PRINT AT 10,4;"Well done punter ";
r;" !"'"Your horse won and you now have £";p(
r): PAUSE 0: GO TO 1130
1125 CLS : PRINT AT 10,4;"Bad luck punter ";r
;" !"'"Your horse did not win, and so  you no
w have £";p(r): PAUSE 0
1130 NEXT r
1150 GO TO 20
1999 LET races=races-1: IF races=-1 THEN  GO
TO 6000
2000 DIM f(6): FOR c=1 TO 6: LET f(c)=2^(INT
(RND*6)): NEXT c
2020 PRINT "The tipsters reckon the betting:"
2025 FOR c=1 TO 6: PRINT  INK c; PAPER (7 AND
 c<4)+(0 AND c>3);AT 2*c,2;"HORSE ";c;"     ";
f(c);":1"
2026 IF f(c)=1 THEN  PRINT  INK c; PAPER (0 A
ND c>3)+(7 AND c<4);AT 2*c,13;"EVENS"
2029 NEXT c
2030 DIM e(a): DIM b(a): FOR f=1 TO a
2031 IF p(f)=0 THEN  LET f=f+1: GO TO (2031 A
ND f<a+1)+(2050 AND f=a+1)
2032 PRINT AT 14,1;"Punter ";f;" :": PRINT '"
You have £";p(f);".        ": PRINT "How much
would you like to bet?"
2033 INPUT b(f): IF b(f)>p(f) THEN  GO TO 203
3
2034 IF b(f)<>INT (b(f)) THEN  GO TO 2033
2035 PRINT '"On which horse is this to be
placed?"
2036 INPUT e(f)
2037 IF e(f)<1 OR e(f)>6 THEN  GO TO 2036
2038 PRINT AT 17,0;"
                    "
```



```
2039 PRINT AT 19,0;"
                    "
2040 NEXT f
2050 CLS : RETURN
6000 PRINT "THE MEETING IS NOW FINISHED"
6010 FOR f=1 TO a
6015 IF p(f)=0 THEN  LET f=f+1: GO TO (6015 A
ND f<a+1)+(6040 AND f=a+1)
6020 PRINT '"Punter ";f;" finishes with £";p(
f)
6030 NEXT f
6040 PRINT  INVERSE 1;'"Press any key to play
 again.': PAUSE 0: RUN
7000 PRINT '''"     ■ ■ ■■■ ■■■ ■■■ ■■■
      ■ ■ ■ ■ ■ ■ ■   ■                  ■■■ ■ ■
 ■■■ ■■■ ■■                 ■ ■ ■ ■ ■■    ■ ■
            ■ ■ ■■■ ■ ■ ■■■ ■■■"
7010 PRINT '''"       ■■■  ■  ■■■ ■■■
       ■ ■ ■ ■ ■   ■                    ■■■ ■
■■ ■   ■■                  ■■  ■ ■ ■   ■
            ■ ■ ■ ■ ■■■ ■■■"
7020 PRINT '''A gambling game for the whole
          family"'''        @  Paul Stanley"
: PAUSE 300: RETURN
8000 CLS : PRINT AT 5,0;"Tut Tut! Punter ";r;
", you have": PRINT "run out of money."
8005 PRINT : PRINT "I must therefore not let
you betany more."
8010 PRINT '"However, if your rules are to
allow cheating, if you press "; INVERSE 1;"C"
;: PRINT ;" Iwill give you £50 more."
8020 PRINT "Otherwise press "; INVERSE 1;"X";
 INVERSE 0;" and I will     cancel you from th
e game"
8030 IF INKEY$="x" OR INKEY$="X" THEN  LET p(
r)=0: GO TO 8050
8040 IF INKEY$="c" OR INKEY$="C" THEN  LET p(
r)=50: GO TO 8050
8045 GO TO 8030
8050 CLS : GO TO 1130
9000 FOR c=USR "a" TO USR "a"+7: READ v: POKE
 c,v: NEXT c
9001 DATA 16,BIN 00011011,18,254,62,BIN 01100
110,BIN 10101010,34
9999 RETURN
```

Championship Boxing

Although we say it ourselves, this program is very close to being a masterpiece. Let's face it, you're never going to make it into the ring, but the hours you spend keying-in programs amount to a great deal of repressed aggression. So here's your chance to take on the boxing champions of the world without stirring from your armchair. The program offers you a bird's eye view of a boxing ring and the opportunity to go three rounds with an opponent of your choice. You only score points if you manage to connect with the head, and a KO is possible if your strategy's slick enough.

```
   1 BORDER 5: PAPER 6: INK 0: CLS
   2 REM @ P.STANLEY
   5 LET s1=0: LET s2=s1
   8 GO SUB 7000
  10 GO SUB 9000
  15 LET round=1
  20 GO SUB 9500
  30 GO SUB 9550
  62 PRINT AT 17,2;round
  63 BEEP .25,0: BEEP .25,0
  65 LET y=2: LET x=7: LET y1=y: LET x1=x
  70 LET g=23: LET f=17: LET f1=f: LET g1=g
  90 LET tm=3: LET ts=2
  95 LET e=0
 100 PRINT AT y1,x1;"  ";AT y1+1,x1;" ";AT y1
+2,x1;"  "; INK 2;AT y,x;"AC"; PAPER 0;AT y+1
,x;"D"; PAPER 6;AT y+2,x;"EG": LET y1=y: LET
x1=x
 120 PRINT AT f1,g1;"  ";AT f1+1,g1+1;" ";AT
f1+2,g1;"  ";AT f,g;"HI"; PAPER 7;AT f+1,g+1;
"D"; PAPER 6;AT f+2,g;"JK": LET f1=f: LET g1=
g
 130 LET ts=ts-2: IF ts=0 THEN  LET tm=tm-1:
LET ts=60: IF tm=-1 THEN  GO TO 8500
 150 PRINT AT 17,27;tm;":";("0" AND ts<10);ts
 400 IF IN 64510=254 THEN  GO SUB 1000
 410 IF IN 57342=254 THEN  GO SUB 1100
 450 IF g=x+1 THEN  IF RND>sk THEN  GO SUB 20
00
```



```
 500 LET y=y+(IN 61438=239 AND y<17)-(IN 6143
8=247 AND y>2)
 510 LET x=x+(IN 61438=251 AND x<22)-(IN 6348
6=239 AND x>7)
 550 LET f=f+INT (RND*2.5)-INT (RND*2.5)+(f<y
)-(f>y)
 553 IF f<2 THEN  LET f=2
 555 IF f>17 THEN  LET f=17
 560 LET g=g+INT (RND*2.5)-INT (RND*2.5)+(g<x
+2)-(g>x+2)
 563 IF g<x+1 THEN  LET g=x+1
 565 IF g>23 THEN  LET g=23
 570 IF NOT e THEN  IF x>20 THEN  LET e=1
 580 IF e THEN  LET e=e-(e-1 AND x<20)+1: IF
e=10 THEN  GO SUB 3000
 690 BEEP .01,-20
 700 GO TO 100
1000 PRINT  INK 2;AT y,x+1;"BC": BEEP .1,20
1010 PRINT  INK 2;AT y,x+1;"C "
1020 IF y=f+1 AND x=g-1 THEN  LET s1=s1+1: BE
EP .04,0: PRINT AT 8,2;s1
1030 IF s1=k2 THEN  GO TO 6000
1090 RETURN
1100 PRINT  INK 2;AT y+2,x+1;"FG": BEEP .1,20
1110 PRINT  INK 2;AT y+2,x+1;"G "
1120 IF y=f-1 AND x=g-1 THEN  LET s1=s1+1: BE
EP .04,0: PRINT AT 8,2;s1
1130 IF s1=k2 THEN  GO TO 6000
1190 RETURN
2000 IF f<y THEN  GO TO 2100
2010 PRINT AT f,g-1;"HB": BEEP .1,30
2020 PRINT AT f,g-1;" H"
2030 IF f=y+1 THEN  LET s2=s2+1: BEEP .04,0:
PRINT AT 8,28;s2
2035 IF s2=k1 THEN  GO TO 6500
2040 RETURN
2100 PRINT AT f+2,g-1;"JF": BEEP .1,30
2110 PRINT AT f+2,g-1;" J"
2130 IF f=y-1 THEN  LET s2=s2+1: BEEP .04,0:
PRINT AT 8,28;s2
2135 IF s2=k1 THEN  GO TO 6500
2140 RETURN
3000 PRINT AT y1,x1;"  ";AT y1+1,x1;" ";AT y1
+2,x1;"  "
```

```
3010 FOR x=19 TO 12 STEP -1: LET x1=x
3020 PRINT AT y1,x1; INK 2;"AC";AT y1+2,x1;"£
G";AT y1+1,x1; PAPER 0; INK 2;"D"; PAPER 6;"
"; PAPER 2; INK 6;"D"; PAPER 6;"D";AT y1,x1+2
; INK 4;"I ";AT y1+2,x1+2;"K "
3022 BEEP .02,0
3025 NEXT x
3030 PRINT AT y1,x1+2;" ";AT y1+1,x1+2;" ";AT
 y1+2,x1+2;" "
3040 LET e=0: RETURN
6000 PRINT AT f,g;"RHI";AT f+2,g;"TJK"; INK 2
;AT f+1,g;"S"; INK 0;"■■"; INK 6; PAPER 3;"D"
6010 PRINT  FLASH 1;AT 1,7;"WELL BOXED- A K.O
.": BEEP .2,-20
6020 GO TO 6600
6500 PRINT AT y,x-1; INK 2;"ACO";AT y+2,x-1;"
£GQ"; INK 6; PAPER 2;AT y+1,x-2;"D"; PAPER 6;
 INK 2;"■■"; INK 4;"P"
6510 PRINT AT 1,7; FLASH 1;"BAD LUCK- A K.O.
!"
6600 FOR f=1 TO 200: NEXT f
6620 CLS : IF k1=s2 OR s2>s1 THEN  GO TO 6700
6630 PRINT "Well done ! You beat ";b$;" in",r
ound;" rounds."
6640 PRINT  INK 3'"The result in points was "
;s1,"for you, and ";s2;" for ";b$
6650 PRINT  INK 2'"I suggest you try a toughe
r      opponent."
6660 GO TO 6780
6700 PRINT "Bad luck ! You were beaten in ";r
ound,"rounds."
6710 PRINT  INK 3'"The result in points was "
;s1,"for you, and ";s2;" for ";b$
6740 PRINT  INK 2'"I suggest you try a weaker
       opponent."
6780 PRINT "Here's your choice:": RESTORE 750
0: PRINT : FOR f=1 TO 10: READ a$: PRINT f;".
..";(" " AND f<>10);a$: NEXT f
6790 INPUT  INK 7; PAPER 0;"Enter your oppone
nt's number or 0 if you've had enough.      ";
x
6800 IF x=0 THEN  STOP
6810 CLS : RESTORE 7500: FOR f=1 TO x: READ a
$: NEXT f: LET b$=a$(1 TO 6): PRINT "OK - You
```



```
 shall fight ";b$: PRINT  INVERSE 1' INK 3'"P
RESS ANY KEY TO START THE BOUT."
6820 PAUSE 0: CLS
6830 LET s1=0: LET s2=s1: LET sk=(11-x)/12: L
ET k2=10+x+INT (RND*6): LET k1=16-x+INT (RND*
10): GO TO 15
7000 RESTORE 7500
7100 PRINT AT 10,0;"Enter your name(up to 6 l
etters)": INPUT c$: IF LEN c$>6 THEN  GO TO 7
100
7200 CLS
7500 DATA "Henry Hopeless","Arnold Awful","Ni
gel No-Good","Philip Fair","Andrew Average","
Roger Right-Hook","Brian Brick-Wall","Simon S
uper","Edward Excellent","Flynn Fantastic"
7510 PRINT  INVERSE 1;"    C H A M P I O N S
H I P                B O X I N G           ";
INVERSE 0;"          @ PAUL STANLEY"
7520 PRINT  INK 3'"So you want to be a champi
on do you?  If so this is the game foryou.";
INK 2'"Which opponent do you wish to   fight
first?"
7530 PRINT : FOR f=1 TO 10: READ a$: PRINT  I
NK 1;f;"...";("." AND f<>10);a$: NEXT f
7540 INPUT x: IF x<1 OR x>10 THEN  GO TO 7540
7545 LET sk=(11-x)/12
7546 LET k2=10+x+INT (RND*6): LET k1=16-x+INT
 (RND*10)
7550 RESTORE 7500: FOR f=1 TO x: READ a$: NEX
T f: LET b$=a$(1 TO 6)
7560 CLS : PRINT "Very well, your opponent wi
ll be";a$' INK 2'"Each bout you fight is only
 3   rounds. Move about the ring with5-8, and
 punch with Q(left hand)and P(right hand). No
te that youcan move and punch at the same  ti
me."
7570 PRINT ' INK 1;"Only punches to the head
score  and K.O.s are possible."
7580 PRINT ' INVERSE 1;"PRESS ANY KEY TO STAR
T THE BOUT.": PAUSE 0: CLS
7590 RETURN
8500 PRINT AT 17,27;"0:00"
8505 BEEP .25,0: BEEP .25,0
8510 LET round=round+1: IF round=4 THEN  LET
round=3: GO TO 6620
```

```
8520 PRINT AT 21,0;"Prepare to fight the next
 round."; INK 6; PAPER 0;AT 2,7;"D";AT 19,24;
"D": FOR i=1 TO 20
8525 LET y=y-(y>2): LET x=x-(x>7)
8530 PRINT AT y1,x1;"  ";AT y1+1,x1;" ";AT y1
+2,x1;"  "; INK 2;AT y,x;"AC"; PAPER 0;AT y+1
,x;"D"; PAPER 6;AT y+2,x;"£G": LET y1=y: LET
x1=x
8535 LET f=f+(f<17): LET g=g+(g<23)
8540 PRINT AT f1,g1;"  ";AT f1+1,g1+1;" ";AT
f1+2,g1;"  ";AT f,g;"HI"; PAPER 7;AT f+1,g+1;
"D"; PAPER 6;AT f+2,g;"JK": LET f1=f: LET g1=
g
8542 IF ATTR (2,7)=50 THEN  IF ATTR (19,24)=4
8 THEN  GO SUB 9550: FOR f=-1 TO 2: PRINT AT
y1+f,x1;" ": NEXT f: PRINT AT 21,0;"
                          ": GO TO 62
8545 BEEP .1,-18: NEXT i
9000 RESTORE 9010: LET f=0: LET g=255: FOR y=
USR "a" TO USR "t"+7: READ x: POKE y,x: NEXT
y
9010 DATA f,63,127,g,g,252,254,254,f,g,g,g,g,
f,f,f,28,254,254,254,254,28,f,f
9020 DATA 195,129,f,f,f,f,129,195,254,254,252
,g,g,127,63,f,f,f,f,g,g,g,g,f
9030 DATA f,f,28,254,254,254,254,28,56,127,12
7,127,127,56,f,f
9035 DATA f,252,254,g,g,63,127,127,f,f,56,127
,127,127,127,56,127,127,63,g,g,254,252,f
9045 DATA 66,129,157,165,165,94,66,60,60,60,2
4,24,60,126,g,g,108,108,108,40,40,40,40,108
9050 DATA 28,30,15,15,31,62,126,252,248,240,2
40,224,224,240,240,248,252,126,62,31,15,15,30
,28
9060 DATA 56,120,240,240,248,124,126,63,31,15
,15,7,7,15,15,31,63,126,124,248,240,240,120,5
6
9100 RETURN
9500 INK 4: FOR f=0 TO 7 STEP 2: PLOT 55-f,15
-f: DRAW 0,145+2*f: DRAW 145+2*f,0: DRAW 0,-2
*f-145: DRAW -2*f-145,0: NEXT f
9510 PRINT  INK 3; BRIGHT 1;AT 1,6;"■";AT 1,2
5;"■";AT 20,6;"■";AT 20,25;"■"
9520 INK 0
```



```
9525 PRINT AT 4,0;c$;AT 4,26;b$
9530 PRINT AT 6,0; INK 2;"POINTS"; INK 0;AT 6
,26;"POINTS"; INK 3;AT 15,0;"ROUND";AT 15,27;
"TIME"
9540 PRINT AT 8,2;s1;AT 8,28;s2
9545 RETURN
9550 LET y1=16: LET x1=9: RESTORE 9560: FOR f
=1 TO 4: READ y,x
9560 DATA 0,1,-1,0,0,-1,1,0
9570 FOR e=1 TO 12: PRINT AT y1,x1;"L";AT y1+
1,x1;"M";AT y1+2,x1;"N"; PAPER 2; INK 7;AT y1
-1,x1;round
9580 BEEP .06,-45
9585 IF e=12 THEN  FOR o=25 TO 35: BEEP .005,
o: NEXT o: FOR o=1 TO 20: NEXT o: FOR o=35 TO
 25 STEP -1: BEEP .005,o: NEXT o
9590 PRINT AT y1,x1;" ";AT y1+1,x1;" ";AT y1+
2,x1;" ";AT y1-1,x1;" "
9600 LET y1=y1+y: LET x1=x1+x: NEXT e: NEXT f
9610 RETURN
```

Motocross

Motocross consists of two games. In the first a motorcycle races across the screen from left to right, continues down through several levels, and must leap over obstacles placed in its path.

In the second game, Stunt-Cycle, the motorcycle leaps over a line of buses and must be landed on the other side without loss of control. After each successful leap the number of buses is increased.

```
  1 BORDER 0: PAPER 0: INK 7: CLS
  5 LET hs=1e4: LET wr=4
 10 GO SUB 9000
 13 GO SUB 9100
 15 CLS
 20 GO SUB 3000
 22 BEEP .2,20
 25 POKE 23674,255: POKE 23673,255: POKE 236
72,255
 30 PRINT AT y,x; BRIGHT 1;" A"
100 FOR f=1 TO s: NEXT f
200 LET x=x+1: IF x=31 THEN  PRINT AT y,31;"
 ": LET x=0: LET y=y+5: IF y=25 THEN  GO TO 2
000
250 IF SCREEN$ (y,x+1)="" THEN  GO SUB 1000
270 IF IN 49150=247 THEN  GO TO 1020
300 LET s=s+(1 AND IN 65022=251)-(1 AND IN 6
5022=254): IF s<1 THEN  LET s=1
900 GO TO 30
1000 IF IN 49150=247 THEN  GO TO 1500
1020 LET c=144: FOR f=x TO 30: PRINT AT y,f;
BRIGHT 1;" ";CHR$ c: LET c=c+(c<147)-(3 AND c
=147): BEEP .1,-30: NEXT f
1030 CLS : PRINT "Bad Luck! You crashed.": GO
 TO 9200
1500 PRINT AT y,x;" ";AT y-1,x+1; BRIGHT 1;"A
"
1510 FOR f=10 TO 15: BEEP .02,f: NEXT f
1520 PRINT  BRIGHT 1;AT y-1,x+1;" ";AT y,x+2;
"A": LET x=x+2: RETURN
2000 LET t1=(65536*PEEK 23674+256*PEEK 23673+
PEEK 23672)/48: LET t=(INT (t1*100))/100
2005 CLS
2010 PRINT AT 1,0;"Your Time Was ";t;" Second
s."
2020 IF t<hs THEN  PRINT  INK 4'"That Is A Ne
w Fast Time!": LET hs=t
2030 PRINT  INK 5'"The Best Time Is ";hs;" Se
conds."
2040 GO TO 9200
3000 FOR g=21 TO 6 STEP -5: PRINT AT g-1,RND*
20+6; INK 6;"£";AT g-1,RND*20+6;"£": FOR f=0
TO 31: PRINT  INK 2;AT g,f;" ": NEXT f: NEXT
g
3300 LET y=5: LET x=0: LET s=20
3450 RETURN
5000 LET buses=5: CLS
5010 LET y=5: LET x=0: LET s=10
5015 PRINT AT 0,11;buses;" BUSES"
5020 GO SUB 7500
5030 PRINT AT y,x; BRIGHT 1;" A"
5100 FOR f=1 TO s: NEXT f
5200 LET x=x+1: IF x=31 THEN  PRINT AT y,31;"
 ": LET x=0: LET y=y+5
5250 IF SCREEN$ (y,x+1)="" THEN  GO TO 6000
5300 LET s=s+(1 AND INKEY$="d")-(1 AND INKEY$
="a"): IF s<1 THEN  LET s=1
5400 GO TO 5030
6000 PRINT AT y,x;" "; BRIGHT 1;AT y-1,x+1;"A
": BEEP s/100,1
6020 PRINT  BRIGHT 1;AT y-1,x+1;" ";AT y-2,x+
2;"A": BEEP s/100,1: NEXT f
6030 LET x=x+2: FOR f=x TO (x+20-s): BEEP s/1
00,1: PRINT  BRIGHT 1;AT y-2,f;" A": NEXT f
6040 PRINT AT y-2,f;" "; BRIGHT 1;AT y-1,f+1;
"A": BEEP s/100,1
6050 IF ATTR (y,f+1)<>6 THEN  GO TO 6200
6060 FOR x=f+1 TO 30: PRINT AT y-1,x; BRIGHT
1;" A"
6065 BEEP s/100,(y=20)-(55 AND y=21)
6070 IF SCREEN$ (y,x+1)=" " THEN  PRINT AT y-
1,x+1;" ": LET y=y+1
6080 NEXT x
6085 CLS : LET buses=buses+1
6090 GO TO 5010
```

```
6200 PRINT AT y-1,f+1;" ": LET c=144: FOR x=f
+1 TO 31: BEEP .1,-20: PRINT AT y,x; BRIGHT 1
;" ";CHR$ c: LET c=c+(c<147)-(3 AND c=147): N
EXT x
6210 CLS : PRINT AT 0,0;"You Failed In Your A
ttempt At ";buses'"Buses."
6240 IF buses-1>wr THEN  PRINT  INK 5'"Howeve
r, Your Successful Jump   Over ";buses-1;" Bu
ses Is A New World"'"Record!!!!": LET wr=buse
s-1
6270 PRINT  INK 6'"The World Record Is ";wr;"
 Buses."
6290 GO TO 9200
7500 FOR f=21 TO 6 STEP -5: FOR g=0 TO 31: PR
INT  INK 3;AT f,g;" ": NEXT g: NEXT f
7510 PRINT  INK 6;AT 20,4;"F";: FOR f=1 TO bu
ses: PRINT  INK 2; BRIGHT 1;"G";: NEXT f: PRI
NT  INK 6;"HIJ"
7550 RETURN
9000 RESTORE 9010: FOR f=USR "a" TO USR "j"+7
: READ g: POKE f,g: NEXT f
9010 DATA 32,62,50,254,152,90,231,66
9020 DATA 2,119,82,92,124,242,23,26
9030 DATA 66,231,90,25,127,76,124,4
9040 DATA 88,232,79,62,58,74,238,64
9050 DATA 0,0,0,0,0,32,112,248
9060 DATA 1,3,7,15,31,63,127,255
9070 DATA 126,66,126,126,66,126,126,36
9080 DATA 224,252,255,255,255,255,255,255,0,0
,128,240,254,255,255,255,0,0,0,0,0,192,248,25
5
9090 RETURN
9100 LET a$="MOTOCROSS": PRINT AT 21,11;a$: F
OR f=1 TO 9: FOR g=20 TO 0 STEP -1: BEEP .001
,f*3+30: PRINT AT g,f+10;a$(f);AT g+1,f+10;"
": NEXT g: NEXT f
9105 FOR f=0 TO 30: BEEP .04,-28: PRINT  INK
6;AT 2,f;" A";: NEXT f: PRINT AT 2,31;" "
9110 PRINT AT 2,0;"This Program Consists Of T
wo    Motorbike Games."
9120 PRINT  INK 6'"For ""Moto-cross"", jump w
ith J   only when you reach the obstacle"
9130 PRINT  INK 5'"For both programs, acceler
```



```
ation and deceleration are possible   by hold
ing A or D."
9200 PRINT  INK 4'"Press the key which corres
ponds to what you want to do."
9210 PRINT  INK 6'"1...Moto-cross"' INK 5'"2.
..Stunt-cycle"' INK 7'"3...Exit from the prog
ram"
9220 IF INKEY$="1" THEN  GO TO 15
9230 IF INKEY$="2" THEN  GO TO 5000
9240 IF INKEY$="3" THEN  STOP
9250 GO TO 9220
```

Critical Path Analysis (48K)

Even if critical path analysis does not exactly excite you, this program can be used to find the longest or shortest route through a large maze. As dimensioned, it will handle a network of up to 50 nodes or junctions, each of which may have up to 5 outlets. The joining links can represent distance or time and the program will list all possible paths, or the longest path, or the one with most nodes. Loop back conditions are automatically rejected by the program. Draw your own network on paper and enter the separate link details in the DATA LINES 1000 onwards. Then press the key sit back and watch the computer display the path analysis.

```
  10 REM *CRITICAL PATH ANALYSIS          @198
3 MICHAEL BEWS                for 48k Spectrum
  20 DIM a$(50,5): DIM b$(50,5): DIM g$(30):
DIM n$(30): DIM p$(30,20): DIM p(30): DIM t(3
0)
  21 LET K=0
  25 GO TO 500
  29 REM **READ NETWORK DATA
  30 READ e
  40 FOR x=1 TO e
  50 READ a,b,c
  60 FOR y=1 TO 5
  70 IF b$(a)(y)=" " THEN  LET b$(a)(y)=CHR$
(33+b): LET n$(a)=CHR$ (CODE n$(a)+1): GO TO
90
  80 NEXT y
  90 FOR y=1 TO 5
 100 IF a$(a)(y)=" " THEN  LET a$(a)(y)=CHR$
(33+c): GO TO 120
 110 NEXT y
 120 NEXT x
 125 READ a: IF a<>-1 THEN  PRINT "Check sum
error": STOP
 127 PRINT "  DATA Check OK"
 130 INPUT "ENTER start node ";s: LET n=s: IF
 s<1 THEN  GO TO 130
 135 PRINT : PRINT AT 20,0;"Enter ""-1"" to s
```



```
ee ALL possible             paths."
 140 INPUT "finish node ";f: IF f>0 THEN  LET
 n$(f)=" "
 142 IF f>e OR f=0 OR f=s OR f<-1 THEN  GO TO
 140
 143 PRINT AT 20,0;"
                                    ";AT 20,5;"
WAIT PLEASE"
 145 LET p=1: LET h$=n$
 150 LET p$(p)(1)=CHR$ (33+n)
 160 IF n$(n)=" " THEN  GO TO 300
 165 LET g$(n)="1"
 170 LET h=CODE h$(n)-32
 175 IF g$(CODE b$(n)(h)-33)<>" " THEN  GO TO
 430
 180 FOR x=1 TO LEN p$(p): IF p$(p)(x)=" " TH
EN  LET p$(p)(x)=b$(n)(h): GO TO 185
 182 NEXT x
 185 LET t(n)=p(p): LET p(p)=p(p)+CODE (a$(n)
(h))-33
 190 LET n=CODE b$(n)(h)-33
 200 GO TO 160
 300 LET v=1: LET g=0
 301 FOR x=LEN p$(p) TO 1 STEP -1
 305 IF p$(p)(x)=" " THEN  GO TO 320
 306 LET g$(CODE p$(p)(x)-33)=" "
 307 IF g=0 AND p$(p)(x)<>CHR$ (f+33) AND f>0
 THEN  LET v=0
 310 LET g=1: IF CODE h$(CODE (p$(p)(x))-33)>
33 THEN  GO TO 400
 320 NEXT x
 325 IF v=0 THEN  LET p$(p)="
                ": LET p=p-1
 330 PRINT AT 8,0;0$;AT 8,0;: LET j=0: LET u=
0: LET r=0: LET tp=0: FOR x=1 TO p
 335 FOR y=1 TO LEN p$(x): IF p$(x)(y)=" " TH
EN  GO TO 350
 340 PRINT CODE p$(x)(y)-33;",";: NEXT y
 350 PRINT " * ";p(x): IF p(x)>j THEN  LET j=
p(x): LET k=x
 355 LET tp=tp+1: IF y-1>r THEN  LET r=y-1: L
ET u=x
 360 NEXT x
 362 LET f$=STR$ f: IF f<0 THEN  LET f$="end"
```

```
 365 PRINT "                                        "
: PRINT "No. of paths ";s;" to ";f$;" = ";tp
 366 PRINT : PRINT "Path No. ";u;" has most n
odes.(";r;")"
 368 PRINT "Path No. ";k;" is longest.(";j;")
"
 370 STOP
 400 LET n=CODE p$(p)(x)-33: LET h$(n)=CHR$ (
CODE h$(n)-1): LET q$=p$(p): LET p=p+v: LET p
$(p)( TO x)=p$(p-v)( TO x): LET p$(p)(x+1 TO
)="                                        ": LET p(p
)=t(n)
 405 FOR y=x+1 TO LEN q$: LET z=CODE q$(y)-33
: IF z<1 THEN  GO TO 160
 410 LET h$(z)=n$(z)
 415 NEXT y
 420 GO TO 160
 430 PRINT "Loop-back error.": PRINT : FOR l=
1 TO LEN p$(p)-1: IF CODE p$(p)(l)-33<1 THEN
 GO TO 450
 440 PRINT CODE p$(p)(l)-33;"-";: NEXT l
 450 PRINT CODE b$(n)(h)-33: PRINT : PRINT "P
lease correct data error.": PRINT : GO TO 330
 499 STOP
 500 BORDER 5: PAPER 5: INK 1
 505 LET O$="                ": FOR X=1 TO 5: L
ET O$=O$+O$: NEXT X
 510 CLS : PRINT ; INVERSE 1;"CRITICAL PATH N
ETWORK ANALYSIS "; INVERSE 0
 520 INK 0: PRINT : PRINT "CRITICAL PATH NETW
ORKS CAN BE   APPLIED WHEREVER SEVERAL INTER-
 DEPENDENT ACTIVITIES NEED TO BE    CARRIED O
UT IN A SPECIFIED   SEQUENCE TO ACHIEVE A FIN
AL GOAL"
 530 PRINT : PRINT "THE GOAL MIGHT BE THE COM
PLETION OF A LARGE PROJECT OR, MORE    SIMPLY
, ARRIVAL AT A DISTANT    METRO STATION BY TH
E SHORTEST           POSSIBLE ROUTE"
 540 PRINT : PRINT "THIS PROGRAM IS SUITABLE
FOR USEIN EITHER CASE.";
 550 PRINT " A DEMONSTRATION NETWORK IS SHOWN
 AND THE PROGRAM WILL TRACE OUT ALL POSSIBLE
     PATHS THROUGH THE NETWORK,     INDICATIN
G THE LONGEST AND           SHORTEST ROUTES."
```



```
 560 PRINT ; INVERSE 1;AT 21,9;"PRESS <ENTER>
"; INVERSE 0
 570 INPUT x$
 600 PAPER 7: INK 0: CLS : PLOT 11,131: DRAW
23,32
 610 DRAW 160,0: DRAW 42,-16
 620 PLOT 11,131: DRAW 48,16: DRAW 176,0
 630 PLOT 11,131: DRAW 72,0: DRAW 24,16: DRAW
 112,0
 640 PLOT 11,131: DRAW 32,-10: DRAW 80,0: DRA
W 32,10
 650 PLOT 60,147: DRAW 24,16
 660 PLOT 132,164: DRAW 16,-16: DRAW 8,-16: D
RAW 8,-16
 670 DRAW 72,32: REM  DRAW -40,0
 680 PLOT 200,132: DRAW -48,0
 700 PRINT  INVERSE 1;AT 1,4;"4";AT 1,10;"5";
AT 1,16;"6";AT 1,23;"11";
 710 PRINT  INVERSE 1;AT 5,1;"1";AT 3,7;"2";A
T 3,13;"3";AT 3,18;"7";AT 3,28;"12";
 720 PRINT  INVERSE 1;AT 5,19;"8";AT 5,24;"10
";AT 7,20;"9";
 730 PRINT AT 2,2;"4";AT 1,7;"1";AT 1,13;"1";
AT 1,19;"7";AT 1,26;"3";
 740 PRINT AT 3,4;"2";AT 3,10;"3";AT 3,15;"5"
;AT 3,22;"11";AT 5,6;"4";AT 5,21;"3";AT 4,27;
"9";AT 6,23;"2"
 745 PRINT AT 2,8;"3";AT 2,16;"2"
 750 PRINT AT 4,18;"0";AT 6,19;"3";AT 6,11;"1
1"
 800 PRINT AT 8,0;"Nodes "; INVERSE 1;"1"; IN
VERSE 0;" represent the commence- ment of act
ivities, (represented by the joining lines).
The linelengths might represent a number of d
ays or weeks required to   complete an activi
ty."
 810 PRINT : PRINT " Activities can progress
in one direction only and the program  will r
eject a network having a  loop-back condition
.";
 820 PRINT " Each activity progresses in the
direction  entered in the program DATA statem
ents."
 830 PRINT AT 21,13; INVERSE 1;"PRESS <ENTER>
```

```
"; INVERSE 0
 840 INPUT X$
 850 PRINT AT 8,0;O$;AT 21,18;"          ";
 860 PRINT AT 9,0;"The zero (0) length betwee
n node "; INVERSE 1;"7"; INVERSE 0;" and "; I
NVERSE 1;"8"; INVERSE 0;" indicates the exist
ence of a restraint which prevents  activitie
s at node "; INVERSE 1;"8"; INVERSE 0;" from
commencing until activities "; INVERSE 1;"3";
 INVERSE 0;"to"; INVERSE 1;"7"; INVERSE 0;
 870 PRINT " and  "; INVERSE 1;"6"; INVERSE 0
;"to"; INVERSE 1;"7"; INVERSE 0;" are complet
e."
 880 PRINT : PRINT : PRINT ; INVERSE 1;"PRESS
 <ENTER>"; INVERSE 0;
 890 INPUT X$
 900 GO TO 30
1000 REM **FLOW CHART DATA****
1005 REM **number of connecting
  lines
1010 DATA 18
1015 REM **start node, finish                no
de, line length
1050 DATA 1,4,4
1060 DATA 1,2,2
1070 DATA 1,3,4
1080 DATA 1,8,11
1090 DATA 2,3,1
1100 DATA 2,5,3
1110 DATA 3,7,5
1120 DATA 4,5,1
1130 DATA 5,6,1
1140 DATA 6,7,2
1150 DATA 6,11,7
1160 DATA 7,8,0
1170 DATA 7,12,11
1180 DATA 8,9,3
1190 DATA 8,10,3
1200 DATA 9,10,2
1210 DATA 10,12,9
1220 DATA 11,12,3
1230 DATA -1
```


Chomper

This is an interesting variation of a game we caught sight of in an arcade a while back. It's got a maze, power pills, a ghost and things that go chomp in the night. Enjoy!

```
   1 BORDER 0: PAPER 0: INK 7: CLS
   2 REM @ P.STANLEY
   4 GO SUB 9000
   5 LET hs=0
  10 LET m=0: LET sc=0: LET li=3
  20 GO SUB 8000+m
 100 IF INKEY$="8" THEN  IF ATTR (y,x+1)<>4 T
HEN  LET x=x+1: LET p$="M"
 110 IF INKEY$="5" THEN  IF ATTR (y,x-1)<>4 T
HEN  LET x=x-1: LET p$="O"
 120 IF INKEY$="6" THEN  IF ATTR (y+1,x)<>4 T
HEN  LET y=y+1: LET p$="P"
 130 IF INKEY$="7" THEN  IF ATTR (y-1,x)<>4 T
HEN  LET y=y-1: LET p$="Q"
 150 IF SCREEN$ (y,x)="*" THEN  BEEP .2,20: L
ET r=1: BORDER 2: LET df=-df: LET dg=-dg
 180 IF SCREEN$ (y,x)="." THEN  PRINT AT y1,x
1;"M": LET sc=sc+1: LET c1=c1+1: PRINT AT 0,6
;sc: BEEP .005,30: IF c1=c THEN  GO TO 7000
 190 IF y=11 THEN  LET x=x+(30 AND x=1)-(30 A
ND x=31)
 192 LET p=x: LET q=y: IF r THEN  LET p=31-x:
 LET q=21-y: LET r=r+1: IF r=50 THEN  BEEP .2
,-10: BORDER 0: LET r=0
 200 PRINT AT y1,x1;" "; INK 6;AT y,x;p$
 210 LET y1=y: LET x1=x
 400 IF y=f AND x=g THEN  GO TO 6000+(500 AND
 r)
 500 LET f1=f: LET g1=g: LET g=g+dg: LET f=f+
df
 520 IF ATTR (f,g)=4 THEN  GO TO 1000
 600 IF f1<>q AND NOT df THEN  IF ATTR (f1+(f
1<=q)-(f>q),g1)<>4 THEN  GO TO 1010
 610 IF g1<>p AND NOT dg THEN  IF ATTR (f1,g1
+(g1<=p)-(g1>p))<>4 THEN  GO TO 1200
```

```
 800 IF f=11 THEN  LET g=g+(30 AND g=1)-(30 A
ND g=31)
 810 PRINT  OVER 1;AT f1,g1;"R";AT f,g;"R"
 850 IF y=f AND x=g THEN  GO TO 6000+(500 AND
 r)
 999 GO TO 100
1000 IF NOT dg THEN  GO TO 1200
1010 IF NOT df THEN  LET df=(f1<=q)-(f1>q): L
ET dg=0: LET g=g1: LET f=f1+df
1020 IF ATTR (f,g)=4 THEN  LET df=-df: LET f=
f1+df
1030 GO TO 800
1200 LET dg=(g1<=p)-(g1>p): LET df=0: LET f=f
1: LET g=g1+dg
1210 IF ATTR (f,g)=4 THEN  LET dg=-dg: LET g=
g1+dg
1220 GO TO 800
6000 FOR f=1 TO 15
6010 PRINT AT y,x;"N": BEEP .05,f
6020 PRINT AT y,x;"P": BEEP .05,f+.25
6030 PRINT AT y,x;"O": BEEP .05,f+.5
6040 PRINT AT y,x;"Q": BEEP .05,f+.75
6050 NEXT f
6060 FOR f=1 TO 50: NEXT f
6065 PRINT AT y,x;" ": LET li=li-1: IF li>0 T
HEN  GO SUB 8200: GO TO 100
6070 CLS : PRINT AT 7,0;"You scored ";sc;" po
ints."
6080 IF sc>hs THEN  LET hs=sc: PRINT AT 10,0;
"Well done that's the new best   score!!!": G
O TO 6100
6090 PRINT AT 10,0;"The high-score is ";hs;".
"
6100 PRINT AT 13,0;"Press any key to play aga
in.": PAUSE 0: CLS : GO TO 10
6500 FOR f=1 TO 5: FOR g=2 TO 7: PRINT  INK g
;AT y,x;"S": BEEP .01,f*5+g: NEXT g: NEXT f
6550 BORDER 0: LET r=0
6600 LET sc=sc+50: PRINT AT 0,6;sc
6650 LET f=16: LET g=16: LET g1=g: LET f1=f
6660 LET dg=-1: LET df=0: PRINT  OVER 1; INK
5;AT f,g;"R"
6670 GO TO 100
7000 BORDER 0: CLS : PRINT AT 3,0;" ■    ■ ■
■■■■■ ■       ■       ■    ■ ■       ■
```



```
  ■       ■ ■■ ■  ■■■■    ■       ■       ■■
 ■■  ■          ■       ■       ■    ■  ■■■■■■
■■■■■■  ■■■■■■"
7010 PRINT AT 11,0;" ■■■■     ■■■■   ■    ■
■■■■■■ ■   ■   ■   ■  ■■   ■  ■        ■
■  ■    ■  ■ ■■ ■  ■■■■      ■    ■   ■    ■  ■
  ■■  ■       ■■■■      ■■■■    ■    ■  ■■■■■■"
7020 FOR f=-40 TO 40 STEP 4: BEEP .05,f: NEXT
 f
7030 FOR f=1 TO 150: NEXT f
7040 CLS : LET m=m+10: IF m=40 THEN  LET m=0
7050 GO TO 20
8000 PRINT AT 1,4;"HAAAAAAAAAAAAAAAAAAAAAAJ
      B                          B        B FALAE
 C FALAE C FALAE B        B   B   B   D   B
B   B        B C B C B C   C B C B C B"
8001 PRINT "    B B B B B B C B B B B B B
   B B D D B D B D B D D B B       B B     B
  B   B     B B        B GAAAAAI FAKAE GAAAAAI
 B    FAAI                        GAAE"
8002 PRINT "      FAAAAAAAAAAAAAAAAAE
FAAJ                         HAAE    B FAAALAAA
E C FAAALAAAE B        B     B     B     B
 B        B FAE B C C D C C B FAE B"
8003 PRINT "    B     B B B   B B B     B
   B C FAI D GAAAI D GAE C B       B B
           B B        B GAAAAAAAAAAAAAAAAAAAI
 B        B                          B        GAAA
AAAAAAAAAAAAAAAAAAAI"
8004 GO TO 8100
8010 PRINT AT 1,4;"HAAAAAAAAAAAAAAAAAAAAAAJ
      B                          B        B HAAAJ
 C C C C C HAAAJ B        B B   B B B D B B B
  B B       B D C B B B   B B B C D B"
8011 PRINT "    B   B B B B C B B B B   B
   B FAI D B D B D B D GAE B       B       B
  B   B       B        B FAAAAAI FAKAE GAAAAAE
 B    FAAI                        GAAE"
8012 PRINT "      FAE FAAAE C FAAAE FAE
FAAJ           B           HAAE    B FAAAAAJ
C D C HAAAAAE B        B       B B   B B
 B       B FE FJ B GAAAI B HE FE B       B
  B B       B B     B        B FAE B D HAAAJ D
 B FAE B"
8013 PRINT "    B     B   B   B   B     B
```

```
   B FAAAI FAI C GAE GAAAE B        B
  B            B       GAAAAAAAAAAAKAAAAAAAAAA
AI"
8014 GO TO 8100
8020 PRINT AT 1,4;"HAAAAAAAAAAAAAAAAAAAAAAJ
      B                          B       B HAAE
FAAAE FAAAE FAAJ B        B B
  B B       B B HE FAAAE FAAAE FJ B B"
8021 PRINT "    B D B                B D B
   B   D  FE FE FE FE  D   B        B C
           C B       B GAAE FAAAE FAAAE FAAI
 B    FAAI                        GAAE"
8022 PRINT "       FAAE FAAAE FAAAE FAAE
FAAJ                        HAAE    B HAAE FAA
AE FAAAE FAAJ B        B D                  D
 B       B   C  FE FE FE FE  C   B"
8023 PRINT "    B C B                B C B
   B B GE FAAAE FAAAE FI B B        B B
            B B       B GAAE FAAAE FAAAE FAAI
 B       B                         B       GAAA
AAAAAAAAAAAAAAAAAAAI"
8024 GO TO 8100
8030 PRINT AT 1,4;"HAAAAAAAAAAAAAAAAAAAAAAJ
      B                          B       B C FJ
   HAAAJ    HAAE B       B B  B    B   B    B
    B       B B  B    D   D    B    B"
8031 PRINT "    B B FI               B    B
   B B       HAAAJ    B    B       B B
B   B    B    B       B D       D   D    GAAE
 B    FAAI                       GAAE"
8032 PRINT "       FAAE FE FAAAE FE FAAE
FAAJ                        HAAE    B C C C C
HAAAJ HE    C B       B B B B B B   B B     B
 B       B B D D B D   D B C   B B"
8033 PRINT "    B B     B       B D C B B
   B B     B HAAAJ B   D B B       B B     B
B   B B     B B       B D     D D   D D    FI
 B       B                         B       GAAA
AAAAAAAAAAAAAAAAAAAI"
8100 PRINT AT 2,5; INK 3;"*";AT 2,27;"*";AT 2
0,5;"*";AT 20,27;"*"
8105 LET c1=0: LET c=5: FOR f=2 TO 20: FOR g=
5 TO 27
8110 IF SCREEN$ (f,g)=" " THEN  PRINT AT f,g;
".": LET c=c+1
```



```
8120 NEXT g: NEXT f
8140 PRINT AT 11,1;" ...";AT 11,28;"... "
8200 LET x=16: LET y=5: LET y1=y: LET x1=x: L
ET r=0: LET p$="P"
8210 LET f=16: LET g=x: LET g1=g: LET f1=f
8220 LET dg=-1: LET df=0: PRINT  OVER 1; INK
5;AT f,g;"R"
8250 PRINT AT 0,0;"Score:";AT 0,17;"High-scor
e:";hs
8260 PRINT AT 0,11;"    ";AT 0,11;("N" AND li>
1)+(" N" AND li>2)
8999 RETURN
9000 RESTORE : FOR f=USR "a" TO USR "s"+7: RE
AD g: POKE f,g: NEXT f
9010 DATA 0,255,0,0,0,0,255,0,66,66,66,66,66,
66,66,66
9020 DATA 0,24,36,66,66,66,66,66,66,66,66,66,
66,36,24,0
9030 DATA 0,248,4,2,2,4,248,0,0,31,32,64,64,3
2,31,0
9040 DATA 66,65,64,32,32,24,7,0,0,7,24,32,32,
64,65,66
9050 DATA 66,130,2,4,4,24,224,0,0,224,24,4,4,
2,130,66
9060 DATA 66,129,0,0,0,0,255,0,0,255,0,0,0,0,
129,66
9070 DATA 60,126,255,255,255,255,126,60,60,12
6,240,224,224,240,126,60
9080 DATA 60,126,15,7,7,15,126,60,60,126,255,
231,195,195,66,0,0,66,195,195,231,255,126,60
9090 DATA 60,126,219,201,255,255,255,170,0,24
2,133,229,21,149,98,0
9510 INK 6: PLOT 152,173: DRAW 7,-7: DRAW 8,8
9520 PLOT 232,173: DRAW 15,-35
9525 PRINT ''"  @   P a u l   S t a n l e y"
9530 INK 7: PRINT ''"A standard pacman-type g
ame, ","complete with power-pills, whichwhen
eaten give you the chance ","to eat the ghost
."
9540 PRINT  INK 5''"Move with the cursor keys
 5-8."
9550 PRINT  INK 4''"Press any key to play..."
: PAUSE 0: CLS
9999 RETURN
```

Battleships

This is the traditional game of Battleships to be played against the computer. For anyone who hasn't come across the game before (does such a creature exist?), there are full instructions included in the listing. The winner is the first to destroy all six enemy ships, and there are levels of difficulty (1 or 2) which must be entered before battle can commence.

```
  1 OVER 0: BORDER 7: PAPER 7: INK 0: CLS
  2 REM @   PAUL  STANLEY
  5 POKE 23658,9
 10 GO SUB 9000
 15 GO SUB 7000
 20 GO SUB 8000
 50 LET Q=16: LET P=18
100 PRINT  OVER 1;AT Q,P;"+"
110 PRINT AT 18,0; PAPER 4;"              YOUR
MOVE            "
120 PRINT AT 20,0; INK 3;"Move your cross ab
out with 5-8. Fire by pressing 9."
130 PRINT  OVER 1;AT Q,P;"+"
140 IF INKEY$="6" THEN  LET Q=Q+1: IF Q=17 T
HEN  LET Q=5
150 IF INKEY$="7" THEN  LET Q=Q-1: IF Q=4 TH
EN  LET Q=16
160 IF INKEY$="8" THEN  LET P=P+1: IF P=30 T
HEN  LET P=18
170 IF INKEY$="5" THEN  LET P=P-1: IF P=17 T
HEN  LET P=29
180 IF INKEY$="9" THEN  GO TO 200
190 PRINT  OVER 1; INK 3;AT Q,P;"+"
195 BEEP .06,-10: GO TO 130
200 BEEP .05,30: PRINT AT Q,P; OVER 1;"+"
210 FOR F=1 TO 6
220 IF H(F)=0 AND Q=F(F) THEN  IF P=G(F) OR
P=G(F)+1 THEN  GO TO 250
230 NEXT F
240 GO TO 300
250 LET H(F)=1: FOR G=7 TO 0 STEP -1: PRINT
INK g;AT F(F),G(F);"RS"
260 FOR I=0 TO G*8 STEP G+1: BEEP .06,I: NEX
```



```
T I
 265 NEXT G
 270 LET sc1=sc1+1: IF sc1=6 THEN  GO TO 2000
 300 PRINT AT 18,0; PAPER 4;"              MY
MOVE            "; PAPER 7;AT 20,0;"
                                            "
 305 LET g=(INT (RND*12/SC))*SC+1: LET f=INT
(RND*12)+1
 320 IF c$(F,G)="X" THEN  GO TO 305
 330 LET c$(F,G)="X"
 350 LET y=f+4: LET x=g+3
 360 GO SUB 1000
 370 FOR i=1 TO 6
 376 IF Y=Y(I) THEN  IF X=X(I) OR X=X(I)+1 TH
EN  GO TO 400
 385 NEXT i
 390 GO TO 100
 400 FOR o=7 TO 0 STEP -1: PRINT AT y(i),x(i)
; INK o;"RS"
 420 FOR l=0 TO o*8 STEP o+1: BEEP .06,l: NEX
T l
 425 NEXT
 430 LET c$(Y(i)-4,X(i)-3)="X": LET c$(Y(i)-4
,X(i)-2)="X"
 440 LET SC2=SC2+1: IF SC2=6 THEN  GO TO 2100
 450 GO TO 100
1000 OVER 1: PRINT  INK 5;AT y-1,x-4;"■■■ ■■■
■ ";AT y,x-4;"■■■■■■■■■";AT y+1,x-4;"■■■ ■■■■
"
1005 BEEP .08,11
1010 PRINT AT y-1,x-4;"■■■ ■■■■ ";AT y,x-4;"■
■■■■■■■";AT y+1,x-4;"■■■ ■■■■ "
1020 PRINT  INK 5;AT y-1,x-3;"■■ ■■■ ";AT y,x
-3;"■■ ■■■■ ";AT y+1,x-3;"          "
1025 BEEP .085,9
1030 PRINT AT y-1,x-3;"■■ ■■■ ";AT y,x-3;"■■
■■■■ ";AT y+1,x-3;"          "
1040 PRINT  INK 5;AT y-1,x-3;"    A";AT y,x-
3;" ■ ■■B"
1045 BEEP .09,7
1050 PRINT AT y-1,x-3;"     A";AT y,x-3;" ■ ■
■B"
1060 PRINT  INK 5;AT y,x-2;"■C■D "
```

```
1065 BEEP .095,5
1070 PRINT AT y,x-2;"■C■D "
1080 PRINT  INK 5;AT y,x-1;"EFG"
1085 BEEP .1,4
1090 PRINT AT y,x-1;"EFG"
1100 PRINT  INK 5;AT y,x-1;"HI"
1105 BEEP .105,2
1110 PRINT AT y,x-1;"HI"
1120 PRINT  INK 5;AT y,x;"J"
1125 BEEP .11,0
1130 PRINT AT y,x;"J"
1135 OVER 0
1140 RETURN
2000 CLS : PRINT AT 4,0; INK 3;"WELL DONE ! Y
OU DESTROYED ALL   THE COMPUTER'S FLEET !!"
2050 GO TO 2200
2100 CLS : PRINT AT 4,0; INK 3;"BAD LUCK ! TH
E COMPUTER SUNK    ALL YOUR SHIPS !!"
2200 PRINT AT 8,0;"PRESS ANY KEY TO PLAY AGAI
N..."
2300 IF INKEY$="" THEN  GO TO 2300
2400 CLS : GO TO 20
3265 FOR I=1 TO 6: IF Y=Y(I) THEN  IF X=X(I)
THEN  GO TO 8210
7000 FOR Y=20 TO 4 STEP -4: LET X=27-Y: GO SU
B 1000: NEXT Y
7005 LET A$="BATTLESHIPS "
7010 PRINT AT 2,0;: FOR F=1 TO 5: FOR G=1 TO
13: PRINT  PAPER 6; INK RND*4;A$(G);: BEEP .1
,G+F*3: NEXT G: NEXT F
7020 PRINT AT 4,0;" "
7050 PRINT  PAPER 4'"   @   P A U L   S T A N
L E Y   "
7100 PRINT '''"Play the computer at battleship
s"
7110 PRINT  INK 4''"The winner is the first t
o      destroy all six enemy ships."
7120 PRINT  INK 3''"Full instructions are giv
en as  you proceed."
7130 PRINT  PAPER 4''"PRESS ANY KEY TO START
....     "
7140 IF INKEY$="" THEN  GO TO 7140
7150 CLS : RETURN
```



```
8000 INPUT "ENTER SKILL LEVEL (1-EASY OR    2
-HARD) ";SC
8005 IF SC<>2 AND SC<>1 THEN  GO TO 8000
8010 FOR f=5 TO 16: PRINT AT f,4;"KKKKKKKKKKK
L  KKKKKKKKKKL": NEXT f
8025 PRINT AT 0,0; PAPER 2; INK 7;"B  A  T  T
  L  E   S  H  I  P  S"
8030 PLOT 32,135: DRAW 95,0
8040 PLOT 144,135: DRAW 95,0
8050 FOR f=1 TO 12: PRINT AT f+4,2;CHR$ (64+f
): NEXT f
8060 FOR f=1 TO 9: PRINT  INK 2;AT 3,f+3;f: N
EXT f
8070 PRINT  INK 2;AT 3,13;"OPQ"
8080 PRINT AT 1,0; PAPER 5;"    YOUR SHIPS
   MY SHIPS    "
8100 PRINT  INK 3;AT 18,0;"You can place 6 sh
ips by typing ""D4"" (for example). Then pres
s  ENTER."
8200 DIM a$(3): DIM Y(6): DIM X(6): DIM H(6)
8206 FOR f=1 TO 6
8210 INPUT a$
8220 IF a$(1)<"A" OR a$(1)>"L" THEN  GO TO 82
10
8230 LET y=CODE a$(1)-60
8250 LET x=VAL a$(2 TO )+3
8260 IF x<4 OR x>14 THEN  GO TO 8210
8265 FOR I=1 TO 6: IF Y=Y(I) THEN  IF X=X(I)-
1 OR X=X(I) OR X=X(I)+1 THEN  GO TO 8210
8270 NEXT I
8280 PRINT  OVER 1;AT y,x;"MN"
8290 LET Y(F)=Y: LET X(F)=X
8300 BEEP .04,10
8310 NEXT f
8400 PRINT AT 18,0;"
   "
   "
8500 DIM F(6): DIM G(6)
8510 FOR F=1 TO 6
8610 LET Y=INT (RND*12)+5: LET X=INT (RND*11)
+18
8620 FOR G=1 TO 6
8630 IF Y=F(G) THEN  IF X=G(G) OR X=G(G)+1 OR
```

```
 X=G(G)-1 THEN  GO TO 8610
8640 NEXT G
8650 LET F(F)=Y: LET G(F)=X
8700 NEXT F
8720 DIM C$(12,12)
8740 LET sc1=0: LET sc2=0
8800 RETURN
9000 FOR y=USR "A" TO USR "S"+7: READ x: POKE
 y,x: NEXT y
9010 DATA 0,0,0,0,224,248,252,254,255,255,255
,255,254,252,248,224
9020 DATA 31,31,31,255,255,31,31,31,224,240,2
48,248,248,248,240,224
9030 DATA 0,63,63,63,63,63,63,0,0,63,63,255,2
55,63,63,0
9040 DATA 0,224,240,248,248,240,224,0,0,0,60,
63,63,60,0,0
9050 DATA 0,0,252,254,254,252,0,0,0,0,0,222,2
55,222,0,0
9060 DATA 128,128,128,128,128,128,128,255,129
,129,129,129,129,129,129,255
9070 DATA 0,2,34,59,63,255,127,0,0,0,32,48,12
0,126,124,0
9080 DATA 0,38,41,41,41,41,38,0,0,20,20,20,20
,20,20,0,0,76,82,68,72,80,94,0
9090 DATA 128,128,208,164,254,231,255,255,128
,128,136,151,200,174,252,255
9999 RETURN
```


Tanx

Tanx is a two player game in which two guns are placed on either side of a range of randomly generated hills. Each player takes turns in attempting to hit the gun on the other side by entering the angle and velocity of fire. The winner is the player with the highest score after a total of seven hits have been made. Your best chance of success is to use the smallest possible angle of elevation for a given velocity and, at higher speeds, it may be possible to fire through one of the hills.

```
   1 REM ------- T A N X -------
   2 REM --- @  PAUL STANLEY ---
   5 RANDOMIZE
  10 BORDER 0: INK 7: PAPER 0: CLS
  12 GO SUB 7000
  15 LET sc1=0: LET sc2=sc1
  20 GO SUB 9000
  30 LET c=0: GO SUB 8000
  35 IF RND>.5 THEN  LET c=c+1: GO SUB 700
  40 GO SUB 100
  44 LET c=c+1
  45 IF c=8 THEN  CLS : GO TO 30
  46 GO SUB 700
  47 LET c=c+1
  48 IF c=8 THEN  CLS : GO TO 30
  50 GO TO 40
 100 PRINT  FLASH 1;AT 21,12;"PLAYER 1": INPU
T "ENTER ELEVATION (0 TO 90)    ";a
 110 IF a>90 OR a<0 THEN  GO TO 100
 115 INPUT "ENTER VELOCITY (2 TO 10)    ";v
 120 IF v<2 OR v>10 THEN  GO TO 115
 121 LET s1=f1
 124 LET o1=f1
 130 LET max=100+5*v
 140 LET e=a/10
 160 FOR g=8 TO 255 STEP v
 175 IF s1>0 THEN  IF s1<175 THEN  IF g>10 TH
EN  IF POINT (g,s1)=1 THEN  LET k=g: BEEP .2,
0: BEEP .2,-15: GO TO 200
 177 IF s1>0 THEN  IF s1<175 THEN  PLOT g,s1
 180 LET s1=s1+(e AND g<max)-(e AND g>=max)
```

```
 190 LET e=e-(e/8 AND g<max)+(e/4 AND g>=max)
 191 NEXT g
 195 LET k=255
 200 LET s1=21.5-s1/8: IF (INT s1=q2 AND k>24
7) OR ATTR (q2,31)=71 THEN  GO TO 1000
 205 LET e=a/10: FOR g=8 TO 255 STEP v
 210 IF g=k THEN  RETURN
 220 IF o1>0 THEN  IF o1<175 THEN  PLOT  OVER
 1;g,o1
 230 LET o1=o1+(e AND g<max)-(e AND g>=max)
 240 LET e=e-(e/8 AND g<max)+(e/4 AND g>=max)
 250 NEXT g
 260 RETURN
 488 IF c=9 THEN  CLS : GO TO 30
 700 PRINT  FLASH 1;AT 21,12;"PLAYER 2": INPU
T "ENTER ELEVATION (0 TO 90)   ";a
 710 IF a>90 OR a<0 THEN  GO TO 700
 715 INPUT "ENTER VELOCITY (2 TO 10)   ";v
 720 IF v<2 OR v>10 THEN  GO TO 715
 721 LET s1=f2
 724 LET o1=f2
 730 LET max=155-5*v
 740 LET e=a/10
 760 FOR g=247 TO 0 STEP -v
 775 IF s1>0 THEN  IF s1<175 THEN  IF g<239 T
HEN  IF POINT (g,s1)=1 THEN  LET k=g: BEEP .2
,0: BEEP .2,-15: GO TO 800
 777 IF s1>0 THEN  IF s1<175 THEN  PLOT g,s1
 780 LET s1=s1+(e AND g>max)-(e AND g<=max)
 790 LET e=e-(e/8 AND g>max)+(e/4 AND g<=max)
 791 NEXT g
 795 LET k=0
 800 LET s1=21.5-s1/8: IF (INT s1=q1 AND k<8)
 OR ATTR (q1,0)=71 THEN  GO TO 2000
 805 LET e=a/10: FOR g=247 TO 0 STEP -v
 810 IF g=k THEN  RETURN
 820 IF o1>0 THEN  IF o1<175 THEN  PLOT  OVER
 1;g,o1
 830 LET o1=o1+(e AND g>max)-(e AND g<=max)
 840 LET e=e-(e/8 AND g>max)+(e/4 AND g<=max)
 850 NEXT g
 860 RETURN
1000 PRINT AT q2,31;" "
1010 FOR f=1 TO 50: BEEP .002,RND*25: PLOT 25
```



```
5-RND*20,(21-q2)*8+RND*15: NEXT f
1030 LET sc1=sc1+1
1040 GO TO 2500
2000 PRINT AT q1,0;" "
2010 FOR f=1 TO 100: BEEP .002,RND*25: PLOT 0
+RND*20,(21-q1)*8+RND*15: NEXT f
2030 LET sc2=sc2+1
2040 GO TO 2500
2500 CLS : PRINT AT 10,5;"PLAYER 1 HAS ";sc1;
" POINT";("S" AND sc1<>1);AT 13,5;"PLAYER 2 H
AS ";sc2;" POINT";("S" AND sc2<>1)
2510 IF sc1+sc2=7 THEN  PRINT AT 16,8; FLASH
1;"G A M E  O V E R"; FLASH 0;AT 19,2;"PRESS
ANY KEY TO PLAY AGAIN": PAUSE 0: CLS : LET sc
1=0: LET sc2=sc1: GO TO 30
2520 PAUSE 200: CLS : GO TO 30
7000 LET q1=0: LET q2=10: LET e=21: LET v=31:
 FOR f=21 TO 1 STEP -1
7010 PRINT  INK 4;AT f,q1;"T";AT f,q2; INK 5;
"A"; INK 6;AT f,e;"N"; INK 7;AT f,v;"X"
7020 BEEP .03,f
7025 IF f>1 THEN  PRINT AT f,q1;" ";AT f,q2;"
 ";AT f,e;" ";AT f,v;" "
7030 LET q1=q1+.6: LET q2=q2+.2: LET e=e-.25:
 LET v=v-.65
7040 NEXT f
7050 PRINT "The 2 players take it in turn toe
nter the angle and velocity at which they wan
t to fire to try  and hit their opponent."
7060 PRINT "The shells must be fired over  t
he hills but if you are lucky  your shell may
 be able to go  through a hill (particularl
y at the higher speeds.)"
7070 PRINT "The winner is the player who hash
it his opponent the most after a total of 7 h
its have been made"
7075 PRINT "To stand the best chance of  h
itting your opponent try to  use the smalle
st possible angle of elevation."
7077 PRINT "The flashing caption at the  b
ottom of the screen indicates  whose go it is
."
7080 PRINT "PRESS ANY KEY TO START"
7090 PAUSE 0: CLS : RETURN
```

```
8000 LET q=18-RND*13
8010 FOR f=2 TO 29
8020 FOR g=21 TO q STEP -1
8030 PRINT  INK 3; PAPER 5;AT g,f;"C"+("CC" A
ND f=29);AT g,f-2;("CC" AND f=2)
8040 NEXT g
8050 LET q=q+RND*4-RND*4
8060 IF q<3 THEN  LET q=4+RND*2
8065 IF q>20 THEN  LET q=20
8070 NEXT f
8100 FOR f=1 TO 21
8110 IF SCREEN$ (f,0)<>" " THEN  PRINT  INK 4
;AT f-1,0; BRIGHT 1;"A"
8114 IF SCREEN$ (f,0)<>" " THEN  LET f1=(21-f
)*8+16: LET q1=f-1: GO TO 8116
8115 NEXT f
8116 FOR f=1 TO 21: IF SCREEN$ (f,31)<>" " TH
EN  PRINT  INK 4;AT f-1,31; BRIGHT 1;"B"
8117 IF SCREEN$ (f,31)<>" " THEN  LET f2=(21-
f)*8+16: LET q2=f-1: RETURN
8120 NEXT f
9000 FOR f=USR "a" TO USR "c"+7: READ g: POKE
 f,g: NEXT f
9010 DATA 0,1,2,60,56,255,255,127,0,128,64,60
,28,255,255,127
9020 DATA 170,85,170,85,170,85,170,85
9100 RETURN
```


Defend

Yet again the Earth is under attack from the Alien hordes, and as always the fate of humanity is in your hands. This time the aggressors are out to capture humanoids for their debauched cloning experiments, and the ever cooperative humans have gathered on the (randomly generated) hillsides to watch the action. So it's all down to you. You must shoot down the Alien craft with your powerful laser before it can lay its hands on the populace. Failing that, you have a chance of shooting it down once it has the human in tow, but be warned: if the Alien craft is too high, the humanoid loses its life and you lose points. And never forget — Aliens invariably bite back!

```
  1 REM Defend
  2 REM @ PAUL STANLEY  1982
  3 RANDOMIZE : BORDER 0: INK 7: PAPER 0: CL
S
  4 LET hl=10
  5 LET li=2
  6 LET hs=0
  7 GO SUB 3000
 10 RESTORE : GO SUB 2000: GO SUB 1000
 15 GO SUB 1170: BEEP .1,0
 19 PRINT AT 21,8;"FUEL:";c$( TO 10-hl);AT 0
,14;"HI:";hs: PRINT  OVER 1;AT y,15;b$: PLOT
104,0: DRAW 80,0: DRAW 0,7: DRAW -80,0: DRAW
0,-7: IF li=2 THEN  PRINT AT 21,1; INK 3;"CD"
 20 PRINT  OVER 1; INK 5;AT b,a;"B";AT b+1,a
;a$
 21 PRINT AT 0,0;"Captures:";cap;AT 0,22;"Sc
ore:";sc;" "
 22 IF RND<.08 AND b<=1t THEN  GO SUB 500
 27 PRINT  OVER 1;AT b,a;"B";AT b+1,a;a$
 30 IF ATTR (b+2,a)=4 AND a$=" " THEN  LET a
$="A": LET c=c+1: LET m=1: PRINT AT b+2,a;" "
 37 IF m=1 THEN  LET b=b-INT (RND*3): GO TO
45
 40 IF SCREEN$ (b+2,a)=" " THEN  LET b=b+(IN
T (RND*2))
 42 IF SCREEN$ (b-1,a)<>" " THEN  LET m=1: L
ET c=c+1
```

```
  45 IF b<1 THEN  LET b=1
  47 IF c=8 OR b>17 THEN  CLS : GO SUB 1000:
GO TO 19
  50 LET a=a-1
  55 IF a=-1 THEN  LET a=31: LET m=0: IF a$="
A" THEN  LET cap=cap+1: BEEP .1,0: BEEP .1,12
: BEEP .1,0: BEEP .1,12: LET a$=" "
  56 PRINT  OVER 1;AT y,15;b$
  57 LET y=y+(IN 63486=254 AND y<=1t)-(IN 634
86=253 AND y>1)
  58 IF IN 61438=253 THEN  IF b$="CD" THEN  L
ET b$="£F": GO TO 60
  59 IF IN 61438=253 THEN  LET b$="CD"
  60 PRINT  OVER 1;AT y,15; INK 6;b$
  61 IF cap=3 OR h1=10 THEN  PRINT AT 0,9;cap
: GO TO 800
  66 IF IN 61438=254 THEN  GO SUB 100
  70 GO TO 20
 100 LET i=119*(b$="£F")+136*(b$="CD"): LET j
=(21-y)*8+3
 106 PLOT i,j
 110 IF b$="CD" THEN  BEEP .05,20: DRAW 90,0:
 BEEP .04,0: BEEP .03,-5: PLOT  OVER 1;i,j: D
RAW  OVER 1;90,0
 120 IF b$="£F" THEN  BEEP .05,20: DRAW -90,0
: BEEP .04,0: BEEP .03,-5: PLOT  OVER 1;i,j:
DRAW  OVER 1;-90,0
 121 IF y=b AND ((b$="CD" AND a>16 AND a<29)
OR (b$="£F" AND a<15 AND a>2)) THEN  GO TO 20
0+(100 AND a$="A")
 130 RETURN
 200 LET m=0: INK 6: PRINT AT b,a;"G": BEEP .
03,-10: PRINT AT b,a; INVERSE 1;"G": BEEP .03
,-16: PRINT AT b,a;"G": BEEP .03,-10: PRINT A
T b,a; INVERSE 1;"G": BEEP .05,-20: PRINT AT
b,a;"G": BEEP .03,-3: PRINT AT b,a;" ": INK 7
: LET b=1+INT (RND*14): LET a=31
 206 LET sc=sc+10
 215 LET a$=" "
 220 RETURN
 300 BEEP .02,-5: PRINT AT b,a;"G": BEEP .04,
-9: PRINT  INVERSE 1;AT b,a;"G": BEEP .04,-3:
 PRINT AT b,a;"G": BEEP .04,-10: PRINT AT b,a
;" "
```



```
 305 LET f=0: FOR d=b+1 TO 19
 310 PRINT AT d,a;"A": BEEP .02,d*2
 320 LET f=f+1
 325 PRINT AT d,a;" "
 330 IF SCREEN$ (d+1,a)<>" " THEN  GO TO 360
 350 NEXT d
 355 GO TO 380
 360 LET o=RND: IF o>.35 AND f>9 THEN  LET sc
=sc-(50 AND sc>=50)-(sc AND sc<50): FOR f=-30
 TO 0: PRINT AT d+1,a; INK RND*4+3;"G": BEEP
.03,f: NEXT f: PRINT AT d+1,a;" ": GO TO 372
 370 PRINT AT d+1,a; INK 4;"A"
 372 IF o<=.35 THEN  GO TO 400
 375 LET m=0
 380 LET a$=" ": LET a=31: LET b=INT (RND*14)
+1: RETURN
 400 FOR f=1 TO 4
 410 PRINT  INK 4;AT d+1,a;"A": BEEP .1,2: PR
INT  INK 4;AT d+1,a;" ";AT d,a;"A": BEEP .1,4
: PRINT AT d,a;" ": NEXT f
 420 PRINT AT d+1,a; INK 4;"A"
 430 PRINT  OVER 1;AT d-1,a-2;"I'M OK!";AT d,
a;"|": FOR f=0 TO 100: NEXT f: PRINT AT d-1,a
-2; OVER 1;"I'M OK!";AT d,a;"|": GO TO 375
 500 IF a>15 THEN  LET dir=-80: LET stx=a*8-1
 510 IF a<=15 THEN  LET dir=80: LET stx=a*8+8
 520 PLOT stx,(21-b)*8+3: BEEP .01,40: DRAW d
ir,0
 525 PLOT  OVER 1;stx,(21-b)*8+3: BEEP .01,20
: DRAW  OVER 1;dir,0
 530 IF b=y THEN  IF (a<27 AND dir=-80) OR (a
>4 AND dir=80) THEN  GO TO 560
 540 RETURN
 560 PRINT AT y,15; OVER 1;b$: LET a=15
 565 PLOT  OVER 1;120,(21-y)*8+3: DRAW  OVER
1;7,0
 570 FOR v=1 TO 6
 580 PRINT  INK 6;AT y+v/2,a+v;"C";AT y-v/2,a
+v;"D";AT y+v/2,a-v;"E";AT y-v/2,a-v;"F"
 590 BEEP .01,30-v
 600 PRINT AT y+v/2,a+v;" ";AT y-v/2,a-v;" ";
AT y+v/2,a-v;" ";AT y-v/2,a+v;" "
 610 NEXT v
 620 LET li=li-1
```

```
 630 IF li<>0 THEN  CLS : GO SUB 1000: GO TO
19
 800 FOR f=1 TO 2: RESTORE 8000: FOR a=1 TO 8
: READ b,y: BEEP b,y: NEXT a: NEXT f
 810 PRINT AT 10,7; FLASH 1;"G A M E  O V E R
": PRINT : PRINT : PRINT "   Press an
y key to try again"
 815 IF sc>hs THEN  LET hs=sc
 820 IF INKEY$<>"" THEN  CLS : GO TO 10
 825 GO TO 820
1000 LET hl=hl+1: LET y=50: LET x=0
1010 PLOT x,y
1020 LET a=RND*20: LET b=RND*20-RND*20
1030 LET x=x+a: LET y=y+b
1040 IF x>251 THEN  GO TO 1080
1050 IF y<10 OR y>60 THEN  LET x=x-a: LET y=y
-b: GO TO 1020
1060 DRAW a,b
1070 GO TO 1020
1080 FOR x=0 TO 24 STEP 3
1090 LET a=INT (RND*6)+x
1095 LET f=20
1100 FOR b=4 TO 21
1110 IF SCREEN$ (b,a)<>" " THEN  PRINT AT b,a
; INK 4;"A": LET b=b+2
1120 NEXT b: NEXT x
1121 FOR f=11 TO 17: FOR y=0 TO 31: IF SCREEN
$ (f,y)<>" " THEN  LET lt=f-1: GO TO 1130
1122 NEXT y: NEXT f
1130 LET y=5: LET c=0
1135 LET b$="CD"
1140 LET a=31: LET b=1
1150 LET a$=" ": LET c$="■■■■■■■■■■"
1160 LET m=0
1164 PRINT AT 21,1;"  "
1165 IF li=2 THEN  PRINT AT 21,1; INK 3;"CD"
1168 RETURN
1170 LET sc=0: LET cap=0: LET c=0
1182 LET hl=0: LET li=2
1200 RETURN
2000 FOR a=USR "a" TO USR "g"+7: READ b: POKE
 a,b: NEXT a
2010 RETURN
2020 DATA 28,28,8,62,8,8,20,34
2030 DATA 0,24,60,66,255,126,66,BIN 01100110
```



```
2040 DATA 0,0,199,BIN 11001100,255,255,3,0
2050 DATA 0,0,240,24,255,252,224,0
2060 DATA 0,0,15,24,255,63,7,0
2070 DATA 0,0,BIN 11100011,BIN 00110011,255,2
55,192,0
2080 DATA 196,9,BIN 10110000,6,208,74,145,BIN
 01100100
3000 FOR a=1 TO 30: PRINT AT RND*21,RND*26; I
NK RND*3+4;"DEFEND": BEEP .01,RND*10: NEXT a
3010 PAUSE 100: CLS
3020 PRINT "A fleet of aliens have managed  t
o get past defensive lines on  Earth. One by
one they fly in  with the sole intent of pic
king up Humanoids which have climbed to the t
op of the hills to see  what is happening."
3030 PRINT : PRINT "Your job is to prevent th
e fleetfrom capturing the Humanoids.  You ha
ve a powerful laser with  which to shoot down
 the aliens."
3040 PRINT : PRINT "CONTROLS ARE:
      1.....Down  2.....
.....Up  9.....Change
 direction  0.....Fire"
3041 PRINT : PRINT : PRINT  INVERSE 1;"Press
any key to continue": PAUSE 0
3045 CLS
3050 PRINT : PRINT "You have been defeated wh
en 3  Humanoids have been captured.": PRINT
: PRINT "It is alright to shoot at alienswhic
h are clutching a Humanoid  as long as he doe
s not fall too far (if he does you forfeit 50
  points)."
3060 PRINT "Note that only green Humanoids  a
re attractive to the aliens.": PRINT : PRINT
"Don't underestimate your enemy  invader, he
may have a trick up his sleeve.....": PRINT :
 PRINT "Every so often the computer willtake
you to a new location at  the expense of som
e of your fuelwhich if zero will end the game
.": PRINT : PRINT  INVERSE 1;"Press any key t
o continue": PAUSE 0
3065 CLS
3070 RETURN
8000 DATA .1,11,.1,11,.8,16,.05,11,.05,16,.05
,11,.05,16,1,20
```

Flying Bomb

The year is 1943. You are a wartime test-pilot under orders to conduct a series of tests on a powerful new flying bomb which, if it proves its mettle, could bring D-Day that much closer. Your instructions are to try out the new wonder weapon on a Nazi bunker (situated at the bottom right of your TV screen). You can only drop one bomb per run, and because you've never grappled with these devices before, it's going to take you a while to get the hang of the controls. But do your best. Your country is depending on you!

```
  10 PAPER 1: INK 7: BORDER 5
  15 LET SC=0
  20 LET PO=0: LET CR=0: LET DIST=270000: LET
 DC=DIST: LET TH=1000: LET D=0: LET H=4: LET
DK=D: LET HK=H: LET S=150
  40 GO TO 610
 100 CLS : PRINT  INVERSE 1;"FLYING BOMB"
 105 PRINT  INVERSE 1;AT 2,0;"SCORE:    ";AT 2
,6;SC
 110 PRINT  INVERSE 1;AT 0,14;"MLS TO TARGET:
    ";AT 1,18;"HEIGHT FT:     ";AT 2,18;"SPEED
 NTS:     "
 120 PRINT AT 18,0; PAPER 5;"
                "
 150 PRINT AT 20,0; PAPER 2;"USE'A&Z'KEYS FOR
 HEIGHT,'N&M'FORSPEED AND 'K' TO RELEASE BOMB
!  "
 170 PRINT  INK 3;AT 14,31;"£";AT 15,30;"F■";
AT 16,29;"F■■";AT 17,28;"F■■■"
 199 REM **MAIN ROUTINE
 220 PRINT  INVERSE 1;AT 1,28;"    ";AT 1,28;
INT ((17-H)*100-20)
 230 PRINT  INVERSE 1;AT 0,28;"    ";AT 0,28;
(27-D)/5
 240 PRINT  INVERSE 1;AT 2,28;"    ";AT 2,28;
S*2
 250 PRINT AT HK,DK;"  ";AT H,D; INK 4;"AB";:
 LET HK=H: LET DK=D
 300 LET A=PEEK 23556: IF A=255 THEN  GO TO 3
60
```



```
 305 IF A=77 THEN  LET S=S+5: IF S>195 THEN
LET S=195
 310 IF A=78 THEN  LET S=S-5: IF S<45 THEN  P
RINT AT 16,0; FLASH 1;"STALLED!": GO TO 850
 320 IF A=65 THEN  LET H=H-.1
 330 IF A=90 THEN  LET H=H+.1: IF H>16.8 THEN
  GO TO 750
 340 IF H<2.2 THEN  LET H=2.2
 350 IF A=75 THEN  PRINT  INK 4;AT HK,DK;"AC"
;: GO TO 500
 360 IF H>13 AND D>27 THEN  GO TO 780
 399 REM **MOVE CLOSER
 400 LET DC=DC-S: LET D=INT ((DIST-DC)/TH)
 405 IF D>30 THEN  GO TO 810
 410 GO TO 200
 500 REM **BOMB DROPPED
 510 LET Y=1: LET V=H+1: LET F=D+1: LET HK=V:
 LET DK=F
 530 LET X=Y*Y*(1-S/200)
 531 BEEP .01,-20
 535 LET V=V+X/40: LET F=F+Y/8
 550 IF V>15 AND F>28 THEN  GO TO 710
 570 IF V>18.5 OR F>31 THEN  GO TO 810
 575 PRINT AT HK,DK;" ";
 580 PRINT AT V,F;"D"
 585 LET HK=V: LET DK=F
 590 LET Y=Y+1: GO TO 530
 600 REM **initialisation
 610 FOR x=0 TO 7: READ a,b,c: POKE USR "A"+x
,a: POKE USR "B"+x,b: POKE USR "C"+x,c: NEXT
x
 620 FOR x=0 TO 7: READ a: POKE USR "D"+x,a:
NEXT x
 630 FOR x=0 TO 7: READ a: POKE USR "£"+x,a:
NEXT x
 640 FOR x=0 TO 7: READ a: POKE USR "F"+x,a:
NEXT x: GO TO 100
 699 REM ** WON GAME
 710 PRINT AT HK,DK;" ";
 720 PRINT AT 16,11; FLASH 1;"CONGRATULATIONS
!";
 725 LET SC=SC+1: PRINT  INVERSE 1;AT 2,6;SC
 730 PRINT  PAPER 7; INK 2; FLASH 1;AT 14,31;
"£";AT 15,30;"  ";AT 16,29;"    ";AT 17,28;"
```

```
  "
 735 FOR X=1 TO 10: BEEP .01,10: BEEP .01,+5:
 BEEP .01,15: NEXT X
 740 FOR X=1 TO 100: NEXT X: RESTORE : GO TO
20
 749 REM *DITCHED
 750 PRINT  INK 2;AT 16,11; FLASH 1;"DITCHED!
": GO TO 900
 779 REM **CRASH ON TARGET
 780 PRINT AT 16,11;"THAT'S CLEVER!": GO TO 7
30
 800 REM **LOST GAME
 810 PRINT AT HK,DK;"  "
 820 PRINT  INK 2; PAPER 6;;AT 16,11; FLASH 1
;" LOST! "
 830 GO TO 900
 840 REM *STALLED
 850 FOR X=H TO 17: PRINT  INK 4;AT X,D;"  ";
AT X+1,D;"AB": NEXT X
 900 FOR X=1 TO 10: BEEP .05,-10: BEEP .05,5:
 BEEP .05,-5: NEXT X
 910 FOR X=1 TO 100: NEXT X
 920 RESTORE : GO TO 20
 998 STOP
 999 REM plane
1000 DATA 192,0,0,64,0,0,127,248,248,26,175,1
75,15,254,254,0,190,0,0,127,0,0,190,0
1009 REM *bomb
1010 DATA 0,0,0,0,0,190,127,190
1019 REM dam
1020 DATA 64,64,64,64,64,64,64,255
1030 DATA 1,3,7,15,31,63,127,255
3999 STOP
4000 PAPER 7: INK 0: BORDER 7: CLS
8999 STOP
9000 FOR y=0 TO 7: INPUT a$: LET t=0: FOR x=1
 TO 8: LET t=t+2^(8-x)*VAL a$(x): NEXT x: PRI
NT t
9010 POKE USR "A"+y,t
9020 NEXT x: NEXT y
9030 PRINT "A"
```


Radiopower

This is a multi-player game, with each player running a radio station in competition with other players' stations. After registering your station you then get the choice of show presenters to hire. Some are high priced, some are cheap, and the expensive ones are better audience "draws". The choice of presenters will effect how well your station will produce the type of show you want, since the presenters near the beginning of the alphabet (Aardvark, Boulder, etc.) are great for talk shows and news, but no good for music. Those in the middle are OK for all sorts of shows in an average way, so that Jetsetter and Ricky Radio can handle general shows, with say 50% music but the ace DJs you need for a pop radio station are to be found near the end of the alphabet, and you need these for high percentages of music on your programs.

The percentage of music you are going to have on your station has to be entered, and this is followed by the number of radio cars you want to run, to be used for covering local events and thus typifying your community spirit.

Your station is funded by advertising, so you have to spend money on promotion, to get the populace listening, and hence make advertising on your station desirable.

The computer then displays the broadcast area for all the stations, spreading the call-sign of the stations over the map. Another annual review comes up and you get the chance to alter the composition of your station to get a greater edge. Play continues until someone conquers the airwaves over the South Coast, stations with no listeners dropping out of the game.

```
   1 REM      RADIOPOWER                        B
Y H. WALWYN                        FOR THE CBM 64

       CONVERTED                      FOR THE 48K S
PECTRUM                BY ANDY GREEN
  10 RESTORE : PRINT  PAPER 2; INK 6; FLASH 1
;" INITIALISING"; FLASH 0;" PLEASE WAIT.....
"
  20 POKE 23658,255: REM CAPS LOCK
  30 DIM I$(13): DIM H$(15): DIM G$(10): DIM
```

```
N$(25,15): DIM S$(25,15): DIM P(4,25): DIM T(
25,2): DIM T$(25,13): DIM S(25): DIM R(25)
  40 DIM B$(23,15): DIM M(23): DIM B(23): DIM
 N(23)
  50 FOR I=1 TO 23: READ B$(I),M(I),B(I): NEX
T I
  59 REM ** DATA FOR PRESENTERS'NAMES, QUALIT
Y RATING AND PRICE
  60 DATA "ARNOLD AARDVARK",1,50000
  61 DATA "BRIAN BOULDER",2,30000
  62 DATA "CLARA CUTHROAT",5,45000
  63 DATA "DINA DINAMICK",10,25000
  64 DATA "EDDIE EEL",15,10000
  65 DATA "FREDA FOOLISH",20,10000
  66 DATA "GERRY GULLIBLE",25,10000
  67 DATA "HARRY HATEFUL",30,15000
  68 DATA "IZZY IDLETALK",35,10000
  69 DATA "JOLLY JETSETTER",40,25000
  70 DATA "KING KNIFE",50,20000
  71 DATA "MOLLY MUD",50,10000
  72 DATA "NED NORMAL",50,20000
  73 DATA "POLLY PERSPEX",60,10000
  74 DATA "RICKY RADIO",65,25000
  75 DATA "SALLY SONIX",70,15000
  76 DATA "TOMMY TAPE",75,30000
  77 DATA "UNCLE USELESS",80,10000
  78 DATA "VICTOR VROOM",85,25000
  79 DATA "WALLY WETLOCK",90,10000
  80 DATA "XANDRA XEXY",95,40000
  81 DATA "YALE YESTERYEAR",98,45000
  82 DATA "ZOOT ZIEGLER",99,50000
 100 DIM D$(22,32)
 105 FOR I=1 TO 20: READ D$(I)
 106 NEXT I
 107 FOR I=1 TO 25: LET P(2,I)=100000: NEXT I
 109 DATA "++++++++++++++++++++++++++++++++"
 110 DATA "+           STOCKBRIDGE o        +"
 112 DATA "+SALISBURY o     WINCHESTER o    +"
 113 DATA "+                                +"
 116 DATA "+                      TWYFORD o  +"
 117 DATA "+      ROMSEY o           P/FLD o+"
 118 DATA "+        CHNDLRS/FORD o          +"
 119 DATA "+              EASTLEIGH o       +"
 120 DATA "+                 B/WALTHAM o    +"
```



```
 121 DATA "+F/BRIDGE o                      +"
 122 DATA "+        TOTTON o #              +"
 123 DATA "+                 ## o SOUTH/TON+"
 124 DATA "+                  ##WICKHAM o   +"
 125 DATA "+  LYNDHURST o      ##           +"
 126 DATA "+ RINGWOOD o         ##FAREHAM o+"
 127 DATA "+      B/HURST o     ####         +"
 128 DATA "+               #  ######        +"
 129 DATA "+C/CHURCH o##############P/MTH#o+"
 130 DATA "+o B/MTH########################+"
 131 DATA "++++++++++++++++++++++++++++++++"
 190 FOR I=1 TO 20: READ T(I,1),T(I,2): NEXT
I: REM ** READ IN  COORDINATES OF THE VARIOUS
 TOWNS
 191 DATA 3,23,4,11,4,27,6,28,7,13,7,30,8,21,
9,24,10,27,11,10,12,15
 192 DATA 13,20,14,28,15,13,16,11,16,30,17,14
,19,10,19,30,20,1
 193 FOR I=1 TO 20: READ T$(I): NEXT I: FOR I
=1 TO 20: READ S(I): NEXT I: REM ** READ IN P
LACE NAMES
 194 DATA "STOCKBRIDGE","SALISBURY","WINCHEST
ER","TWYFORD","ROMSEY","PETERSFIELD"
 195 DATA "CHANDLERS FORD","EASTLEIGH","BISHO
PS WALTHAM","FORDINGBRIDGE","TOTTON"
 196 DATA "SOUTHAMPTON","WICKHAM","LYNDHURST"
,"RINGWOOD","FAREHAM","BROCKENHURST"
 197 DATA "CHRISTCHURCH","PORTSMOUTH","BOURNE
MOUTH",1,3,4,2,2,2,1,2,1,1,1
 198 DATA 5,1,1,2,2,1,1,5,5
 199 REM ** DISPLAY MAP
 200 PAPER 4: BORDER 5: INK 0
 205 CLS : PRINT AT 2,0;
 210 FOR I=1 TO 20: PRINT  PAPER 2; INK 6;D$(
I): NEXT I
 250 FOR I=1 TO 25: IF N$(I,15)<>"*" THEN  GO
 TO 270
 260 PRINT AT T(I,1),T(I,2);  PAPER 3; INK 5;
S$(I,1)
 270 NEXT I
 300 PRINT AT 0,0; PAPER 6;"SPACE"; PAPER 4;"
 FOR AUDIENCE REACTION.     "; PAPER 5;"ENTER"
; PAPER 4;" TO SPEAK TO ME."
 310 LET A$=INKEY$: IF A$="" THEN  GO TO 310
```

```
 315 IF A$=" " THEN  GO TO 700
 317 IF A$<>CHR$ 13 THEN  GO TO 310
 320 GO SUB 5000
 698 GO TO 200
 699 REM ** GOSUB DISPLAY REACH ON MAP
 700 PAPER 3: BORDER 1: INK 6
 702 CLS : PRINT "HAS EVERYONE DONE THEIR ANN
UAL  PROGRAMME REVIEW?(Y,N)";
 703 LET A$=INKEY$: IF A$="" THEN  GO TO 703
 704 IF A$="N" THEN  PRINT A$: GO TO 200
 705 IF A$<>"Y" THEN  GO TO 703
 706 PRINT A$
 707 CLS : PAPER 4: BORDER 4: INK 0
 710 PRINT AT 2,0;: FOR I=1 TO 20: PRINT  PAP
ER 3;D$(I): NEXT I
 780 FOR I=1 TO 25: IF N$(I,15)<>"*" THEN  GO
 TO 795
 790 PRINT AT T(I,1),T(I,2); PAPER 5; INK 2;"
@"
 795 LET P(3,I)=0: NEXT I
 797 LET QQ=1
 800 LET PP=0: FOR I=1 TO 25
 810 IF N$(I,15)<>"*" THEN  GO TO 950
 815 IF P(1,I)*10<QQ THEN  GO TO 950
 820 LET PP=1
 825 LET PX=T(I,2): LET PY=T(I,1)
 830 LET DX=INT (RND*3)-1
 835 LET DY=INT (RND*3)-1
 840 LET K=CODE SCREEN$ (PY+DY,PX+DX)
 860 IF K=35 OR K=64 OR K=CODE S$(I) THEN  GO
 TO 930
 870 IF K=43 THEN  GO TO 825
 874 FOR M=1 TO 20: IF N$(M,15)<>"*" OR S$(M)
=S$(I) THEN  GO TO 876
 875 IF CODE S$(M,1)=K THEN  GO TO 880
 876 NEXT M: GO TO 900
 880 LET P(3,M)=P(3,M)-1
 885 FOR X=1 TO 5: PRINT AT PY+DY,PX+DX;"*"
 886 FOR Z=1 TO 50: NEXT Z: PRINT AT PY+DY,PX
+DX;" ": NEXT X
 900 PRINT AT PY+DY,PX+DX; PAPER 1; INK 6; FL
ASH 1;S$(I,1): BEEP .02,3
 904 LET PY=PY+DY: LET PX=PX+DX: LET P(3,I)=P
```



```
(3,I)+1
 910 GO TO 950
 930 LET PY=PY+DY: LET PX=PX+DX
 950 NEXT I
 960 LET QQ=QQ+1
 970 IF PP=0 THEN  GO SUB 9000: GO TO 1000
 980 GO TO 800
1000 PRINT AT 0,0;"THAT'S THE AUDIENCE REACH
AT THEMOMENT.": FOR Z=1 TO 75: NEXT Z: PRINT
AT 0,0;"PRESS SPACE FOR STATION DETAILS.
  "
1010 LET A$=INKEY$: IF A$<>" " THEN  GO TO 10
10
1100 REM
1114 FOR I=1 TO 20: IF N$(I,15)<>"*" THEN  GO
 TO 1118
1116 LET P(2,I)=P(2,I)+P(3,I)*1500
1117 BORDER 1: GO SUB 2000
1118 NEXT I
1122 PRINT "SPACE TO RETURN TO BASIC MAP"
1123 IF INKEY$<>" " THEN  GO TO 1123
1125 GO TO 200
2000 CLS : PRINT "----------------------------
-----"
2010 PRINT "RADIO ";S$(I)'"BASED IN ";T$(I)
2020 PRINT '"STATION MANAGER: ";N$(I)
2040 PRINT '"AUDIENCE FIGURES...";P(1,I);"%"
2050 PRINT "AUDIENCE APPRECIATION...";P(3,I)
2060 PRINT '"MONEY NOW AVAILIBLE...£";P(2,I)
2062 FOR J=1 TO 23: IF N(J)=I THEN  PRINT "PR
ESENTER...";B$(J)
2063 NEXT J
2070 PRINT "--------------------------------"
2080 PRINT "SPACE FOR MORE DETAILS"
2090 IF INKEY$<>" " THEN  GO TO 2090
2100 RETURN
4999 REM ** INPUT NEW MOVE
5000 GO SUB 9000: PRINT AT 0,0;"IS THIS A NEW
 STATION? (Y/N)"
5003 IF INKEY$<>"Y" AND INKEY$<>"N" THEN  GO
TO 5003
5004 IF INKEY$="Y" THEN  GO TO 5006
5005 GO TO 5030
5006 GO SUB 9000: PRINT AT 0,0;"WHAT IS YOUR
```

```
NAME PLEASE ?": INPUT  LINE H$: LET H$(15)="*
"
5008 GO SUB 9000: PRINT AT 0,0;"THE NAME OF Y
OUR STATION ? ": INPUT  LINE G$
5010 FOR I=1 TO 25: IF S$(I,1)=G$(1) THEN  GO
 TO 5013
5012 NEXT I: GO TO 5015
5013 PRINT AT 0,0;"SORRY BUT PLEASE CHOOSE AN
OTHER NAME": FOR I=1 TO 200: NEXT I: GO SUB 9
000: GO TO 5008
5015 GO SUB 9000
5020 PRINT AT 0,0;"RADIO:";G$'"MANAGER:";H$
5021 FOR I=1 TO 100: NEXT I: GO SUB 9000
5022 PRINT AT 0,0;"BASED IN WHICH TOWN?(PLEAS
E ","ENTER "; INVERSE 1;"FULL"; INVERSE 0;" P
LACE NAME)": INPUT  LINE I$
5023 GO SUB 9000: FOR I=1 TO 25: IF T$(I)=I$
AND N$(I,15)="*" THEN  GO TO 5026
5024 IF T$(I)=I$ THEN  GO TO 5028
5026 NEXT I: GO SUB 9000: PRINT AT 0,0;"SORRY
 BUT THAT PLACE IS NOT"'"AVAILABLE.": FOR I=1
 TO 100: NEXT I: GO SUB 9000: GO TO 5022
5027 RETURN
5028 PRINT AT 0,0;"OK. CONGRATULATIONS ON A N
EW    STATION OPENING. GOOD LUCK!"
5029 PRINT AT T(I,1),T(I,2); FLASH 1;"@": LET
 S$(I)=G$: LET N$(I)=H$: FOR I=1 TO 100: NEXT
 I: RETURN
5030 CLS : PRINT "ENTER YOUR NAME PLEASE:- ";
: INPUT  LINE H$
5038 FOR I=1 TO 25: IF N$(I, TO 14)=H$( TO 14
) THEN  GO TO 5050
5040 NEXT I: PRINT '"SORRY BUT I HAVE NO RECO
RD OF   THAT NAME": FOR I=1 TO 100: NEXT I
5045 RETURN
5055 CLS : PRINT "RADIO ";S$(I)'"OF ";T$(I)
5060 PRINT "STATION MANAGER..."'N$(I)
5070 PRINT "####################################"
5080 PRINT "MONEY AVAILABLE...£";P(2,I)
5090 PRINT "####################################"
5100 PRINT  INVERSE 1;"NO.    NAME
  PRICE   "'
5110 FOR J=1 TO 23: IF N(J)<>0 THEN  GO TO 51
30
```



```
5115 IF RND>.45 THEN  GO TO 5130
5120 POKE 23692,255: PRINT J;TAB 6;B$(J);"
";B(J)
5130 NEXT J
5150 PRINT "DO YOU WANT TO HIRE ONE? (Y/N)"
5151 POKE 23692,255: LET A$=INKEY$: IF A$<>"Y
" AND A$<>"N" THEN  GO TO 5151
5152 IF A$="N" THEN  GO TO 5165
5153 PRINT AT 20,0;"WHICH PRESENTER DO YOU WA
NT?"'"NUMBER...";
5154 GO SUB 8000
5155 LET B=VAL H$: IF B=100 THEN  GO TO 5165
5156 IF B>23 THEN  GO TO 5153
5157 PRINT A$: PRINT "YOU HAVE £";P(2,I)
5160 LET N(B)=I: PRINT 'B$(B);" JOINS"'"RADIO
 ";S$(I);" !!!"
5165 LET P=0
5170 PRINT "PRESENTERS ON STATION..."': LET B
=0: FOR J=1 TO 23: IF N(J)=I THEN  GO TO 5180
5175 NEXT J: GO TO 5195
5180 LET B=1: PRINT J;TAB 5;B$(J);TAB 25;B(J)
5185 LET P=P+B(J): GO TO 5175
5195 IF B=0 THEN  PRINT "NO SPECIAL PRESENTER
S ON STATION"
5200 PRINT '"YOUR WAGE BILL IS £";P
5202 IF P=0 THEN  GO TO 5300
5205 PRINT "DO YOU WISH TO FIRE ANY OF THEM?(
Y/N)"
5210 LET A$=INKEY$: IF A$<>"Y" AND A$<>"N" TH
EN  GO TO 5210
5220 IF A$="Y" THEN  GO TO 5230
5225 GO TO 5300
5230 PRINT "WHICH ONE...NO."
5231 GO SUB 8000: LET N=VAL H$
5232 IF N>23 THEN  GO TO 5231
5235 IF N(N)<>I THEN  GO TO 5300
5240 LET N(N)=0: LET P=P-B(N)
5250 PRINT B$(N);" LEAVES RADIO ";S$(I)
5300 LET P(2,I)=P(2,I)-P: IF P(2,I)<0 THEN  G
O TO 5320
5310 PRINT "--------------------------------"
5311 PRINT "YOU NOW HAVE £";P(2,I)
5315 GO TO 5350
5320 PRINT "YOU HAVE BANKRUPTED YOURSELF !"
```

```
5325 LET P(2,I)=P(2,I)+P
5330 PRINT '"THEREFORE YOU MUST FIRE ONE OF T
HEM...": GO TO 5165
5350 PRINT "--------------------------------"
5355 PRINT "WHAT PERCENTAGE OF YOUR OUTPUT  I
S GIVEN OVER TO MUSIC? (0-100)"
5357 GO SUB 8000: LET R=VAL H$
5360 PRINT "--------------------------------"
5365 PRINT '"RADIO CARS COST £10000 EACH."
5367 IF R(I)=0 THEN  GO TO 5370
5368 IF RND>.4 THEN  PRINT "ONE OF YOURS HAS
FALLEN APART": LET R(I)=R(I)-1
5370 PRINT "YOU HAVE ";R(I);" RADIO CARS, "'N
$(I)
5380 PRINT "HOW MANY MORE DO YOU WANT NOW?"
5381 GO SUB 8000
5382 LET PR=VAL H$: IF PR+R(I)=0 THEN  PRINT
"WHAT HAVE YOU GOT AGAINST RADIO CARS?"
5383 IF PR+R(I)>5 THEN  PRINT "COME ON NOW, N
O ONE NEEDS MORE  THAN 5.": GO TO 5380
5385 PRINT "YOU NOW HAVE ";PR+R(I);" RADIO CA
RS, "'N$(I)
5390 LET P(2,I)=P(2,I)-PR*10000
5400 IF P(2,I)<0 THEN  PRINT "NOT ENOUGH MONE
Y !!": LET P(2,I)=P(2,I)+PR*10000: GO TO 5380
5402 LET R(I)=R(I)+PR
5405 PRINT '"YOU HAVE £";P(2,I);" LEFT"
5410 PRINT "--------------------------------"
5415 PRINT '"HOW MUCH TO SPEND ON PROMOTOION?
": GO SUB 8000: LET PM=VAL H$
5420 LET P(2,I)=P(2,I)-PM: IF P(2,I)<0 THEN
PRINT "NO CASH!!!": LET P(2,I)=P(2,I)+PM: GO
TO 5415
5600 PRINT "--------------------------------"
5605 PRINT ''"OK. THANK YOU VERY MUCH "'N$(I)
5700 LET P1=PM*(1+RND)+R(I)*10000*(2+RND)+200
00*RND
5710 FOR J=1 TO 23: IF N(J)<>I THEN  GO TO 57
50
5720 LET PP=ABS (R-M(J))
5730 LET P1=P1+B(J)/10*(100-PP)
5750 NEXT J
5800 POKE 23692,255: PRINT '"YOUR PREVIOUS AU
DIENCE FIGURES  WERE...";P(1,I);"%"
```



```
5810 PRINT "--------------------------------"
5815 LET P1=INT (P1/10000)/10
5820 PRINT '"YOUR CURRENT AUDIENCE FIGURES
ARE...";P1;"%"
5830 IF P1>0 THEN  GO TO 5845
5835 INVERSE 1: PRINT '"I'M AFRAID THAT NO ON
E APPEARS  TO LISTEN TO YOUR STATION AND    "
5838 PRINT "THEREFORE YOU HAVE BEEN REMOVED "
5840 PRINT "FROM YOUR JOB !!!                "
5841 PRINT "RADIO ";S$(I);" IS          "
5842 PRINT  PAPER 2; INK 6; FLASH 1;"OFF THE
AIR "; FLASH 0;" SORRY ABOUT THAT,  BUT THAT'
S SHOW BUSINESS !!!     ": INVERSE 0
5843 LET S$(I)="": LET P(2,I)=10000: LET P(1,
I)=0: GO TO 5900
5845 LET P(1,I)=P1
5850 PRINT "--------------------------------"
5855 PRINT '"RADIO ";S$(I);" IS"
5860 PRINT '"STILL ON AIR..."'"YOUR AVAILABL
E MONEY IS"'"£";P(2,I)
5870 PRINT '"...WE SHALL HAVE TO SEE WHAT
HAPPENS TO YOUR REVENUE WHEN THENEW FIGURES A
RE TAKEN INTO"'"ACCOUNT."
5900 PRINT  INVERSE 1;"SPACE"; INVERSE 0;" TO
 RETURN TO MAP"
5910 IF INKEY$<>" " THEN  GO TO 5910
5920 RETURN
7999 STOP
8000 INPUT  LINE H$: FOR X=1 TO LEN H$: IF CO
DE H$(X)<48 OR CODE H$(X)>57 OR H$(X)=" " THE
N  GO TO 8000
8010 RETURN
9000 PRINT AT 0,0;"
                                        ": REM

64 Spaces
9010 RETURN
9998 STOP
9999 BORDER 7: PAPER 7: INK 0: CLS
```

Scuba

OK, so it's on with the face-mask and flippers and over the side with you. The idea is to catch as many fish as you can for supper. You're armed with a simple fish spear and you just have to swim within reach of your prey to catch it. The trouble is, there are some nasty looking sharks with their eyes on man meat, and whilst most of the time they seem quite content to live and let live, sharks have a reputation for being less than predictable! The only other serious problem facing you is that your tank only holds three minute's worth of oxygen, so every now and then you'll have to return to your raft for fresh supplies. The fish (and sharks) are programmed to change course at random and you will find it surprisingly hard to catch a fish once it is in a 'panicky' mood.

```
   1 REM          SCUBA
BY H. WALWYN                    FOR THE COMMODORE
 64
    CONVERTED FOR THE                    16/48K S
PECTRUM                      BY ANDY GREEN
   4 LET AIR=0
   5 POKE 23658,255: REM ** PUTSMACHINE INTO
CAPS-LOCK MODE
  10 LET Z$=""
  11 LET P=0
  20 GO SUB 9000
  25 GO SUB 5000
  27 GO SUB 3000
  30 REM T$() HOLDS CHARACTER    TYPE FOR FISH
/SHARK
  50 REM ** CHARACTER NUMBERS    ARE AS FOLLOW
S
  51 REM 1,2,3 ARE SHARKS
  52 REM 4,5,6 ARE FISH
  54 REM 7 IS THE SWIMMER
  60 REM X() AND Y() ARE SCREEN COORDINATES
  61 REM S$() HOLDS THE 12       CHARACTERS SE
E 5000-
  62 DIM X(7): DIM Y(7): DIM S$(12): LET S$="
!""#$%&'()*+,": REM DOUBLE QUOTES^^ AREINTENT
IONAL
  63 REM D() ARE FISH DEPTH      STEPS
  64 DIM D(6): DIM T$(6)
```



```
  65 REM M() ARE FISH MOVE STEPS
  66 DIM M(6)
  67 REM S() ARE FISH RANDOMISERVARIABLES
  68 DIM S(6): DIM U(6)
  80 REM U() ARE CHARACTER       COLOURS
  81 REM SHARKS ARE ALWAYS CYAN
  82 LET U(1)=5: LET U(2)=5: LET U(3)=5
  83 REM FISH ARE DIFFERENT COLOURS ...
  84 REM FISH (#4) IS RED
  85 LET U(4)=2
  86 REM FISH (#5) IS WHITE
  87 LET U(5)=7
  88 REM FISH (#6) IS YELLOW
  89 LET U(6)=6
  90 REM SWIMMER IS GREEN
  91 LET MC=4
  99 REM ** S=SWIMMER TYPE **
 100 GO SUB 4000
 120 REM ** FISH SETUP
 130 FOR K=4 TO 6
 135 LET S(K)=1
 140 LET X(K)=0: LET Y(K)=INT (RND*11+11): LE
T D(K)=INT (RND*3-1)
 165 NEXT K
 190 LET X(7)=23: LET Y(7)=4: LET S=1: LET T=
1
 210 LET K$=INKEY$
 211 PRINT  PAPER 0; INK 4;AT Y(7),X(7);" ":
IF Z$="-" THEN  PRINT AT Y(7),X(7);"-"
 219 LET AIR=AIR-1
 220 IF K$="X" THEN  GO TO 230
 221 IF T=1 THEN  LET AIR=180: GO TO 300
 222 IF K$="E" THEN  GO TO 240
 223 IF Y(7)<1 THEN  GO TO 300
 224 IF K$="F" THEN  GO TO 250
 226 IF K$="S" THEN  GO TO 260
 229 GO TO 300
 230 IF T=1 AND Y(7)>4 THEN  LET T=0: LET MC=
5
 232 LET Y(7)=Y(7)+1: IF S=12 THEN  LET S=11:
 GO TO 234
 233 LET S=12
 234 IF Y(7)>21 THEN  LET Y(7)=21
 236 GO TO 300
```

```
 240 LET Y(7)=Y(7)-1: IF S=12 THEN  LET S=11:
 GO TO 244
 242 LET S=12
 244 IF Y(7)<5 AND X(7)>20 AND X(7)<26 THEN
GO TO 248
 245 IF Y(7)<5 THEN  LET Y(7)=5
 246 GO TO 300
 248 LET X(7)=23: IF Y(7)<5 THEN  LET MC=3: L
ET T=1
 249 GO TO 300
 250 LET X(7)=X(7)+1: IF (S<5 AND S>2) THEN
LET S=11: GO TO 254
 251 IF S=1 THEN  LET S=2: GO TO 254
 252 LET S=1
 254 IF X(7)>31 THEN  LET X(7)=31
 258 GO TO 300
 260 LET X(7)=X(7)-1: IF S<3 THEN  LET S=12:
GO TO 264
 261 IF S=3 THEN  LET S=4: GO TO 264
 262 LET S=3
 264 IF X(7)<0 THEN  LET X(7)=0
 268 GO TO 300
 300 LET Z$=SCREEN$ (Y(7),X(7)): PRINT AT Y(7
),X(7); PAPER 0; INK MC;S$(S)
 320 IF CODE Z$>32 AND CODE Z$<45 THEN  GO TO
 330
 325 GO TO 400
 330 REM ** COLLISION OF SWIMMERAND ... ?!? O
BJECT HELD IN Z$
 333 FOR K=1 TO 6
 334 IF X(K)=X(7) AND Y(K)=Y(7) THEN  GO TO 3
45: REM DECIDE WHICHCREATURE THE SWIMMER HAS
       ENCOUNTERED
 340 NEXT K: GO TO 400
 345 IF K<4 AND S(K)=2 THEN  GO TO 615
 347 IF K<4 THEN  GO TO 340
 350 FOR L=1 TO 5: PRINT AT Y(K),X(K); OVER 1
; PAPER 0; INK U(K);" ": FOR M=1 TO 10: NEXT
M
 355 PRINT AT Y(K),X(K); OVER 1; PAPER U(K);
INK 0;" ": FOR M=1 TO 10: NEXT M: NEXT L
 360 PRINT AT Y(K),X(K); PAPER 0; INK MC;" "
 365 LET P=P+1
 370 LET X(K)=0: LET Y(K)=0
```



```
 380 LET S(K)=0
 400 REM FISH RANDOMISER
 410 LET R=INT (RND*100)+1: IF R>8 THEN  GO T
O 500
 415 IF R>6 THEN  LET R=R-3
 420 IF S(R)<>0 THEN  GO TO 450
 430 LET S(R)=1: IF RND>.5 THEN  GO TO 440
 434 LET X(R)=0: LET Y(R)=INT (RND*11+10)
 436 LET FS=5: LET M(R)=INT (RND*2+1): LET D(
R)=INT (RND*3-1)
 437 IF R<4 THEN  LET FS=7
 438 LET T$(R)=S$(FS): GO TO 500
 440 LET X(R)=31: LET Y(R)=INT (RND*11+10)
 446 LET FS=6: LET M(R)=-INT (RND*2+1): LET D
(R)=INT (RND*3-1)
 447 IF R<3 THEN  LET FS=9
 448 LET T$(R)=S$(FS): GO TO 500
 450 IF S(R)=1 THEN  GO TO 460
 455 LET S(R)=1: IF RND>.5 THEN  GO TO 436
 457 GO TO 446
 460 LET D(R)=INT (RND*9-4): LET M(R)=M(R)*2*
(INT (RND*3-1))
 470 LET S(R)=2: IF R<4 THEN  GO TO 480
 472 IF SGN M(R)=1 THEN  LET T$(R)=S$(5)
 474 IF SGN M(R)=-1 THEN  LET T$(R)=S$(6)
 475 GO TO 500
 480 IF SGN M(R)=1 THEN  LET T$(R)=S$(7)
 490 IF SGN M(R)=-1 THEN  LET T$(R)=S$(10)
 500 FOR K=1 TO 6: IF S(K)=0 THEN  GO TO 600
 510 PRINT AT Y(K),X(K); PAPER 0; INK 4;" ":
LET Y(K)=Y(K)+D(K): LET X(K)=X(K)+M(K)
 512 IF Y(K)<5 THEN  LET Y(K)=5
 513 IF Y(K)>17 THEN  LET Y(K)=17
 515 IF RND>.92 THEN  LET D(K)=INT (RND*3-1)
 520 IF X(K)<0 THEN  LET X(K)=31
 530 IF X(K)>31 THEN  LET X(K)=0
 590 PRINT  PAPER 0; INK U(K);AT Y(K),X(K);T$
(K)
 600 NEXT K: GO TO 700
 615 REM SWIMMER EASTEN
 625 PRINT  INVERSE 1;"EATEN BY A SHARK!!!"
 632 POKE 23606,0: POKE 23607,60: PRINT AT 0,
0; INVERSE 1;"NO FISH! YOU'RE THE SUPPER!"
 640 GO TO 820
 700 PRINT AT 0,0; INVERSE 1;"
```

```
    "
 705 PRINT AT 0,0; INVERSE 1;"FISH CAUGHT = "
;P: IF T=1 THEN  GO TO 200
 710 PRINT AT 1,0; INVERSE 1;"AIR LEFT =    ";
AIR
 720 IF AIR<=0 THEN  GO TO 800
 750 GO TO 200
 800 PRINT AT 0,0;"
      "
 805 PRINT P;" FISH BROUGHT BACK FOR SUPPER"
 810 PRINT "RAN OUT OF AIR..."
 820 PRINT "ANOTHER GO???"
 830 IF INKEY$<>"" THEN  GO TO 830
 840 IF INKEY$="" THEN  GO TO 840
 850 IF INKEY$="Y" THEN  RUN
 860 IF INKEY$="N" THEN  PRINT "THANKYOU FOR
PLAYING"' INVERSE 1;" S C U B A ": STOP
 870 GO TO 840
3000 POKE 23606,0: POKE 23607,60: REM SCUBA I
NSTRUCTIONS
3010 PAPER 0: INK 4: BORDER 0: CLS : PRINT TA
B 11;"S C U B A "'
3020 PRINT "You are a scuba diver on a raft a
bout to swim off and catch fishfor supper."
3050 PRINT '"HOLD DOWN..."'
3060 PRINT "S...To swim to the left"'"F...To
swim to the right"
3070 PRINT "E...To swim to the surface"
3080 PRINT "X..To swim to the bottom"
3100 PRINT '"You are armed with a hand spear
and you simply neeed to swim on top of a fish
 to catch it for   dinner."
3110 PRINT '"Beware of the sharks...they are
quite harmless but can suddenly open their mo
uths and then"'"become very nasty!"
3120 PRINT '"A spear won't help you against
sharks..."'"There's a max of 3  fish and 3
sharks in the sea at any one    time."
3180 PRINT '"Fish may suddenly change course
or speed if they become randomlypanicky."
3200 PRINT '"When you enter the water you"'"h
ave 180 units of air in your   tanks. You may
 return to the    raft as often as you like f
or   more air."
```



```
3210 PRINT ' INK 2;"A good diver will get at
least  20 fish!!!"
3250 PRINT  INVERSE 1'"    GOOD LUCK...ENTER
TO START  "
3260 LET Q=RND: IF INKEY$<>CHR$ 13 THEN  GO T
O 3260
3270 POKE 23606,96: POKE 23607,235: RETURN
4000 REM CLEAR SCREEN AND PRINT SEA
4010 BORDER 2: PAPER 0: INK 5
4020 CLS : FOR J=0 TO 3: PRINT AT J,0; INVERS
E 1;"                                "
4030 NEXT J
4060 INK 2: PRINT AT 4,20;"       "
4100 INK 4: PRINT AT 18,0;"      -       -
   -     -   "
4110 PRINT "    - ---   ----  -   --   ---  "
4120 PRINT "    ------ -----  -  ---  ----- "
4130 PRINT "   ----------------  -----------"
4900 RETURN
4999 REM ** DEFINED CHARACTERS  SUBROUTINE
5000 RESTORE : FOR K=0 TO 12: FOR J=0 TO 7: R
EM ** K-LOOP PICKS WHICH CHA-RACTER, J-LOOP P
ICKS THE RELE-  VANT BYTE
5008 READ A: POKE 60256+(K+33)*8+J,A: NEXT J:
 NEXT K
5009 RETURN
5010 REM ** >!< SWIMMER RIGHT 1
5020 DATA 0,0,221,63,220,7,0,0
5110 REM ** >"< SWIMMER RIGHT 2
5120 DATA 0,0,29,255,4,4,4,0
5210 REM ** >#< SWIMMER LEFT 1
5220 DATA 0,0,187,252,59,224,0,0
5310 REM ** >$< SWIMMER LEFT 2
5320 DATA 0,0,184,255,32,32,32,0
5410 REM ** >%< SMALL FISH RIGHT
5420 DATA 0,0,76,126,124,64,0,0
5510 REM ** >&< SMALL FISH LEFT
5520 DATA 0,0,50,126,62,2,0,0
5610 REM ** >'< SHARK RIGHT
5620 DATA 0,140,190,255,190,128,0,0
5710 REM ** >(< SHARK RIGHT OPEN     MOUTH
5720 DATA 0,140,191,254,191,128,0,0
5810 REM ** >)< SHARK LEFT
5820 DATA 0,49,125,255,125,1,0,0
5910 REM ** >*< SHARK LEFT OPEN      MOUTH
```

```
5920 DATA 0,49,253,127,253,1,0,0
6010 REM ** >+< SWIMMER LEFT    HAND UP
6020 DATA 88,88,124,60,60,40,40,40
6110 REM ** >,< SWIMMER RIGHT   HAND UP
6120 DATA 26,26,62,60,60,20,20,20
6130 REM ** >-< WEEDS
6140 DATA 60,124,60,60,255,255,60,60
8999 REM ** COPY CHARACTER SET  FROM ROM TO R
AM
9000 BORDER 0: PAPER 0: CLS : INK 4: IF PEEK
60256=255 THEN  GO TO 9060
9010 PRINT "WHEN THIS NUMBER->"'"REACHES ZERO
 THE GAME WILL BEGINSOON AFTER"
9020 FOR X=256 TO 1023: POKE 60000+X,PEEK (15
104+X)
9030 BORDER INT ((X-256)/100): PRINT AT 0,18;
1023-X;" ": BEEP .01,(X-256)/100
9040 NEXT X
9060 BORDER 0: BEEP .5,12: RETURN
```


Endings

Here's a textual game which is designed to make you delve the depths of your geographical knowledge. (And I do mean depths. Did you know that Ruteng was a town in Indonesia? Oh well . . .) Players must think of a geographical name which starts with the last letter of the name offered up by the player who went before. So it's you against the computer, who from time to time will try to cheat by offering you fictitious names. Challenge if you dare! Of course if you're pushed you can try to cheat too, but the computer may well challenge your entry.

```
   1 POKE 23658,255
   5 REM ENDINGS
  10 LET Q$=" "
  20 LET L5=0
  40 LET M1=0: LET M2=0
  50 DIM G$(130,11): DIM C(130): DIM X(130)
  60 BORDER 4: PAPER 4: INK 0: CLS
  69 PRINT  INVERSE 1;"CAPS LOCK"; INVERSE 0;
" MUST BE ON."
  70 PRINT "THERE IS A GAME OF GEOGRAPHY     '
ENDINGS' WHERE EACH PLAYER IN  TURN HAS TO NA
ME A COUNTRY,TOWN,"
  80 PRINT "MOUNTAIN,RIVER OR OTHER "
  90 PRINT "GEOGRAPHICAL PLACE-NAME WHICH   S
TARTS WITH THE "; INVERSE 1;"LAST LETTER"
 100 PRINT "OF THE PREVIOUS PLACE-NAME."
 110 PRINT : PRINT " I SHALL TAKE YOU ON...I
MAY    CHALLENGE YOU IF I DONT THINK   YOU AR
E GIVING ME A REAL PLACE  NAME."
 120 PRINT " IF YOU THINK I AM MAKING       S
OMETHING UP WHEN IT IS YOUR GO,PRESS <ENTER>
IF YOU CHALLENGE  MY NAME OR '*' IF YOU WISH
TO   CHALLENGE ME."
 130 PRINT " I SHALL LEARN AS WE GO.NO PLACE
NAME MAY BE USED MORE THAN ONCE"
 135 PAUSE 400
 165 LET N=1
 170 READ G$(N),C(N): IF G$(N, TO 3)="ZZZ" TH
EN  GO TO 1000
 180 LET N=N+1: GO TO 170
```

```
 199 REM DATA HAS NAME OF PLACE FOLLOWED BY L
ENGTH OF WORD
 200 DATA "AACHEN",6
 201 DATA "ABBEVILLE",9
 202 DATA "ACAPULCO",8
 203 DATA "ASIA",4
 204 DATA "AUSTRALIA",9
 205 DATA "AMERICA",7
 206 DATA "ANTARCTICA",10
 207 DATA "AMADI",5
 208 DATA "ARDLUI",6
 209 DATA "AVON",4
 210 DATA "AYR",3
 211 DATA "ATLANTIC",8
 212 DATA "ARLES",5
 213 DATA "ARNO",4
 214 DATA "BOLIVIA",7
 215 DATA "BALI",4
 216 DATA "BOTSWANA",8
 217 DATA "BELIZE",6
 218 DATA "BELGIUM",7
 219 DATA "BULGARIA",8
 220 DATA "BURY",4
 221 DATA "BAYEUX",6
 222 DATA "BRAZIL",6
 223 DATA "BIARRITZ",8
 224 DATA "BIU",3
 225 DATA "CAIRO",5
 226 DATA "CASPIAN",7
 227 DATA "CHAD",4
 228 DATA "CHILE",5
 229 DATA "LAS VEGAS",9
 230 DATA "CAMBRIDGE",9
 231 DATA "SWANSEA",7
 232 DATA "VICTORIA",8
 233 DATA "WEMBLEY",7
 234 DATA "WUHAN",5
 235 DATA "WHITCHURCH",9
 236 DATA "TOLEDO",6
 237 DATA "VERSAILLES",10
 238 DATA "LONDON",6
 239 DATA "YORK",4
 240 DATA "ZAIRE",5
 241 DATA "YOKOHAMA",8
```



```
 242 DATA "OSLO",4
 243 DATA "NYANGA",6
 244 DATA "QUITO",5
 245 DATA "PORTSMOUTH",10
 246 DATA "SCARBOROUGH",11
 247 DATA "SWITZERLAND",11
 248 DATA "SKOPJE",5
 249 DATA "NALUT",5
 250 DATA "QATAR",5
 251 DATA "RUTENG",6
 252 DATA "RAPID CITY",10
 253 DATA "SPAIN",5
 254 DATA "PEKING",6
 255 DATA "TOKYO",5
 256 DATA "RESOLUTION",10
 257 DATA "OLDHAM",6
 258 DATA "IONA",4
 259 DATA "ICELAND",7
 260 DATA "JAMESTOWN",9
 261 DATA "JOINVILLE",9
 262 DATA "ISCHIA",6
 263 DATA "JOMBANG",7
 264 DATA "KYOTO",5
 265 DATA "NAGASAKI",8
 266 DATA "LUNE",4
 267 DATA "MOBILE",6
 268 DATA "MONROVIA",8
 269 DATA "LANGON",6
 270 DATA "KHARTOUM",8
 999 DATA "ZZZ",3
1000 BORDER 5: PAPER 5: CLS : PRINT "PRESS AN
Y KEY TO START."
1010 PAUSE 0
1020 LET G$(N)="            ": LET C(N)=0
1030 PRINT "++++++++++++ENDINGS++++++++++++"
1040 PRINT : PRINT : PRINT " DO YOU WANT TO G
O FIRST?(Y/N)"
1050 LET A$=INKEY$: IF A$="" THEN  GO TO 1050
1060 LET P$=""
1070 IF A$="N" THEN  GO TO 2000
1080 IF A$="Y" THEN  GO TO 3000
1090 GO TO 1050
2000 REM COMPUTER GO
2010 LET B5=0: LET B$=""
```

```
2020 IF P$<>"" THEN  LET B$=P$(LEN P$)
2030 IF B$="" THEN  GO TO 2100
2032 IF RND>.1 THEN  GO TO 2200
2035 LET Q=INT (RND*(N-1))+1
2038 LET W=0
2040 IF L$<B$ THEN  LET Q=INT (Q*RND)
2042 IF L$<B$ THEN  LET Q=INT (Q/RND)
2044 LET L$=G$(Q,1): IF L$=B$ AND X(Q)<>1 THE
N  LET P$=G$(Q,C(Q)): GO TO 2500
2050 LET W=W+1: IF W>100 THEN  GO TO 2200
2060 GO TO 2040
2100 REM FIRST GO
2110 IF RND>.85 THEN  GO TO 2200
2115 LET Q=INT (RND*(N-1))+1
2120 IF X(Q)=1 THEN  GO TO 2115
2125 LET P$=G$(Q, TO C(Q))
2130 GO TO 2500
2200 REM COMPUTER MAKES ONE UP!!
2205 LET B$=Q$(1)
2210 IF B$="" THEN  LET B$=CHR$ (INT (RND*26)
+65)
2215 LET Q=INT (RND*N)+1
2220 LET L$=G$(Q,1)
2225 IF L$=B$ THEN  LET P$=G$(Q,INT (RND*3+1)
): GO TO 2240
2235 GO TO 2215
2240 LET Q=INT (RND*N)+1: LET R=3
2245 LET P$=P$+G$(Q,R TO R+(RND*3)+1)
2250 LET Q=INT (RND*N)+1
2255 LET P$=P$+G$(Q,11-(INT (RND*3)+1))
2256 IF P$(LEN P$)=" " THEN  LET P$=P$( TO LE
N P$-1): GO TO 2256
2257 LET P$=Q$(LEN Q$)+P$
2258 LET Q=LEN P$
2260 LET B$(1)=Q$(LEN Q$): LET L5=1: GO TO 25
00
2500 REM COMPUTER PRINTOUT NAME
2510 PRINT : PRINT P$
2520 LET A$=INKEY$: IF A$="" THEN  GO TO 2520
2530 IF CODE A$=13 THEN  GO TO 2800
2540 IF A$="*" THEN  GO TO 2700
2550 GO TO 2520
2700 REM COMPUTER CHALLENGED
2705 PRINT  FLASH 1; BRIGHT 1;" YOU DARE TO C
```



```
HALLENGE?"
2710 FOR J=0 TO 400: NEXT J
2720 IF L5=1 THEN  GO TO 2780
2730 PRINT "YOU ARE WRONG.MY NAME IS:": PRINT
 G$(Q)
2740 PRINT : PRINT "IF YOU DONT BELIEVE ME,LO
OK IT  UP!"
2750 LET M1=M1+1
2760 PRINT "THE SCORE IS ";M1;" TO ME AND  ";
M2;" TO  YOU."
2770 LET X(Q)=1: LET P$="": PRINT "YOU START
NEXT.....": GO TO 3000
2780 PRINT "I OWN UP...YOU ARE RIGHT.I MADE I
T UP!!!"
2790 LET M2=M2+1: LET P$="": PRINT "THE SCORE
 IS NOW ";M1;" TO ME   AND ";M2;" TO YOU.": P
RINT "I'LL START AGAIN.....": GO TO 2000
2800 REM COMPUTERS GO COMPLETE
2810 LET X(Q)=1: GO TO 3000
3000 INPUT Q$: IF Q$="" THEN  GO TO 3000
3020 IF P$="" THEN  GO TO 3100
3030 LET B$=P$(LEN P$)
3040 IF B$=Q$(1) THEN  GO TO 3100
3050 PRINT  INVERSE 1; BRIGHT 1;"ILLEGAL ENTR
Y......WRONG INITIALLETTER."
3060 GO TO 3000
3100 REM CHECKED AND O.K.
3110 FOR J=1 TO N
3120 IF G$(J)=Q$ AND X(J)=1 THEN  GO TO 3150
3130 IF G$(J)=Q$ THEN  LET X(J)=1: GO TO 3300
3134 NEXT J: GO TO 3200
3150 PRINT "NOT ACCEPTABLE...IT'S BEEN USED B
EFORE.": GO TO 3000
3200 REM DOES THE COMPUTER CHALLENGE
3210 IF RND>.5 THEN  GO TO 3230
3220 GO TO 3300
3230 BEEP .5,0: PRINT  INK 1;"CHALLENGE!"
3240 PRINT  INK 3;"I DON'T BELIEVE YOU."
3250 PRINT  INK 3;"NOW YOU WILL HAVE TO BE HO
NEST  BECAUSE IT IS NOT IN MY DATA    BANK."
3260 PRINT "IS IT A REAL PLACE(Y/N)?"
3270 LET A$=INKEY$: IF A$="" THEN  GO TO 3270
3280 IF A$="Y" THEN  GO TO 3500
3290 IF A$="N" THEN  GO TO 3600
```

```
3295 GO TO 3270
3300 LET P$=Q$: LET G$(N)=P$
3310 LET C(N)=1: LET X(N)=1: LET N=N+1
3320 GO TO 2000
3500 PRINT "OK..I BOW TO YOUR SUPERIOR      K
NOWLEDGE!!": LET M2=M2+1
3510 PRINT "THE SCORE IS NOW ";M2;" TO ME   A
ND ";M1;" TO YOU."
3520 LET P$=""
3530 PRINT "I'LL START NOW.......": GO TO 200
0
3600 PRINT "YOU ARE VERY HONEST.THANK YOU."
3610 LET M1=M1+1: PRINT "THE SCORE IS NOW ";M
1;" TO ME AND ";M2;" TO YOU."
3620 LET P$="": PRINT "YOU START NOW.....": G
O TO 3000
```


Snap

This is a program which puts your micro's graphics capabilities to good use. It's an educational exercise for the very young, designed to test their powers of observation. The computer generates a series of picture cards at the bottom of the screen — a bus, a train, a ship and so on — and then randomly reproduces selected cards at the top of the screen, and it's up to the players to match up the top picture with the letter representing the appropriate picture at the bottom of the screen.

```
  10 REM * HIGH RES.PICTURE SNAP              @
1983 MICHAEL BEWS
  15 POKE 23609,111
  20 BORDER 6: PAPER 5: INK 1
  25 LET TB=10000: LET Q$="ZXCVBNM": LET P=0:
 LET R=0: LET T=0
  30 DIM A(7,72)
  40 GO TO 600
  49 REM * HI RES SCREEN DISPLAY
  50 CLS : PRINT  PAPER 7; INK 1; INVERSE 1;"
HI-RES PICTURE SNAP @1983 M.BEWS"; INK 2;"TIM
E: ";TAB 13;"  CORRECT OUT OF:  ";AT 1,30;P;
  55 PRINT  INVERSE 1;AT 18,3;"Z";AT 18,7;"X"
;AT 18,11;"C";AT 18,15;"V";AT 18,19;"B";AT 18
,23;"N";AT 18,27;"M"
  60 FOR K=1 TO 7: FOR L=0 TO 7: FOR M=1 TO 9
  70 POKE USR CHR$ (143+M)+L,A(K,L*9+M)
  75 NEXT M: NEXT L
  80 LET Y=K*4-2
 100 PRINT  PAPER 7;AT 14,Y;"ABC";AT 15,Y;"DE
F";AT 16,Y;"GHI";
 120 NEXT K
 199 REM ** GAME DISPLAY ROUTINE
 210 PRINT AT 4,21;"        ";AT 6,14;"    ";AT
 7,14;"    ";AT 8,14;"    ";
 220 PRINT AT 20,0; PAPER 7; INK 2; INVERSE 1
;"PRESS THE CORRECT LETTER AS SOONAS YOU RECO
GNISE THE NEW PICTURE"
 230 LET N=1+INT (RND*7)
 240 FOR L=0 TO 7: FOR M=1 TO 9: POKE USR CHR
$ (143+M)+L,A(N,L*9+M): NEXT M: NEXT L
```

```
 250 LET X=200+INT (RND*500): FOR C=1 TO X: N
EXT X
 260 PRINT  PAPER 7;AT 6,14;"ABC";AT 7,14;"DE
F";AT 8,14;"GHI";
 265 LET TA=0
 270 LET A=PEEK 23556: IF A=255 THEN  LET T=T
+1: PRINT AT 1,6; PAPER 7; INK 2;T;: GO TO 27
5
 272 GO TO 280
 275 LET TA=TA+1: IF TA=200 THEN  GO TO 290
 277 GO TO 270
 280 IF A=CODE Q$(N) THEN  LET R=R+1: PRINT A
T 1,13; PAPER 2; INK 7;R: PRINT AT 4,21; INK
7; PAPER 4;"CORRECT";: GO TO 300
 290 PRINT  PAPER 2; INK 7;AT 4,21;"WRONG! ";
 300 LET P=P+1: PRINT AT 1,30; PAPER 2; INK 7
;P;
 310 IF P=10 THEN  GO TO 400
 320 FOR X=1 TO 200: NEXT X: GO TO 210
 399 REM *END OF GAME ROUTINE
 400 REM *END OF GAME ROUTINE
 410 IF TB>T THEN  LET TB=T
 420 PRINT AT 10,0; INK 7; PAPER 2;"YOU HAVE
";R;" CORRECT OUT OF 10 IN";AT 11,0;"TIME ";T
;". BEST TIME SO FAR ";TB;
 430 INPUT  FLASH 1;"PRESS<ENTER>FOR NEXT GAM
E";X$
 440 LET R=0: LET T=0: LET P=0
 450 PRINT AT 10,0;"
                                              ";
 460 PRINT  INK 7; PAPER 2;AT 1,6;"          "
;AT 1,30;"  ";
 470 GO TO 210
 598 STOP
 599 REM **INITIALISATION
 600 CLS : PRINT  PAPER 7; INK 1; INVERSE 1;"
HI-RES PICTURE SNAP @1983 M.BEWS"
 610 PRINT AT 2,9; PAPER 7; INK 4; FLASH 1;"I
NITIALISING"; FLASH 0; INK 1; INVERSE 1;AT 4,
0;"THIS PROGRAM ALLOCATES SEVERAL   HIGH RES0
LUTION PICTURES TO THE          'Z'-'M' KEYS.
         ";AT 9,0;"AFTER A SHORT DELAY, ONE P
ICTURE IS DISPLAYED AT THE CENTRE OF  THE SCR
```



```
EEN.   YOU MUST QUICKLY  PRESS THE CORRECT KE
Y TO SCORE. "
 620 FOR X=1 TO 7: FOR Y=1 TO 72: READ A(X,Y)
: NEXT Y: NEXT X
 650 GO TO 50
 998 STOP
 999 REM **ship
1000 DATA 0,0,0,0,0,8,15,255,224,0,0,0,3,128,
8,0,0,0,0,0,0,3,128,8,0,0,0,0,0,0,15,255,8,0,
0,0,0,0,0,15,255,8,0,0,0,0,0,0,63,255,252,0,0
,0,0,0,8,63,255,248,0,0,0,0,0,8,31,255,240,0,
0,0
1009 REM **helicopter
1010 DATA 0,0,0,0,7,128,0,255,252,0,0,0,0,12,
192,0,0,0,0,0,0,96,24,96,0,0,0,0,0,0,127,240,
112,0,0,0,0,0,0,111,255,224,0,0,0,0,127,240,3
,255,192,0,0,0,0,2,0,0,127,128,0,0,0,0,2,0,0,
6,4,0,0,0
1019 REM **bus
1020 DATA 0,0,0,0,0,0,60,1,224,0,0,0,63,255,2
52,24,0,192,0,0,0,36,16,84,0,0,0,0,0,0,36,16,
84,0,0,0,0,0,0,36,16,84,0,0,0,0,0,0,63,255,21
4,0,0,0,0,0,0,63,255,214,0,0,0,0,0,0,127,255,
214,0,0,0
1029 REM **railway engine
1030 DATA 0,0,0,12,3,128,7,131,192,0,0,0,12,1
95,128,3,1,128,0,0,0,31,255,128,0,0,0,0,0,0,3
1,255,240,0,0,0,0,0,0,31,255,240,0,0,0,0,3,24
0,31,255,240,0,0,0,0,2,128,15,255,240,0,0,0,1
2,2,128,31,255,240,0,0,0
1039 REM **car
1040 DATA 0,0,0,0,127,0,12,0,24,0,0,0,0,132,1
28,0,0,0,0,0,0,1,4,64,0,0,0,0,0,0,2,4,32,0,0,
0,0,0,0,127,255,255,0,0,0,0,0,0,63,255,255,0,
0,0,0,0,0,127,255,254,0,0,0,0,0,0,30,0,60,0,0
,0
1049 REM **tank
1050 DATA 0,0,0,64,3,0,51,51,48,0,0,0,64,255,
0,63,255,240,0,0,0,65,255,128,12,204,192,0,0,
0,67,0,255,0,0,0,64,0,0,79,255,192,0,0,0,64,0
,0,255,255,240,0,0,0,64,0,0,255,255,248,0,0,0
,64,0,0,127,255,252,0,0,0
1059 REM **clock
```

```
1060 DATA 0,0,0,9,64,144,8,66,16,0,0,0,8,32,1
6,8,24,16,0,0,0,8,16,16,8,0,16,15,255,240,10,
15,80,15,255,240,8,0,16,8,0,16,0,0,0,8,24,16,
8,0,16,0,0,0,8,66,16,9,0,144,0,0,0,8,0,16,8,0
,16,0,0,0
```


Paypackets

Anyone who runs a shop or small business will find this program something close to invaluable. It's Friday, you've worked out how much everyone is getting paid and the time has come to make up the wage packets. How many, of what note and what change are you going to need? Well, key this in and all your problems are solved. The program is relatively short, completely reliable and of course you don't have to own a business to use it. It will work with any sum — from thousands of pounds right down to the expenses for the local church fete, or individual small prizes for the children's party.

```
   1 REM      PAYPACKETS
    BY                                H. WALWYN
              FOR THE COMMODORE 64
                                        CONVERTED F
OR THE                  16/48K SPECTRUM
          BY ANDY GREEN
  10 REM C$(X,12)=NAME OF         CURRENCY
  12 REM CV(X)=CURRENCY VALUE INPOUNDS
  14 REM CA(X)=AMOUNT OF UNITS  REQUIRED OF T
HIS CURRENCY
  16 REM CB(X)=TOTAL AMOUNT OF  UNITS REQUIRE
D OF THIS CURRENCY
  18 DIM C$(11,12): DIM V(11): DIM A(11): DIM
 B(11)
  20 FOR J=1 TO 11: READ C$(J),V(J): NEXT J
  25 DATA "ONE PENCE",0.01,"TWO PENCE",0.02
  30 DATA "FIVE PENCE",0.05,"TEN PENCE",0.1,"
TWENTY PENCE",0.2
  40 DATA "FIFTY PENCE",0.5,"ONE POUND",1,"FI
VE POUND",5
  50 DATA "TEN POUND",10,"TWENTY POUND",20,"F
IFTY POUND",50
  60 LET SR=0: LET XX=0: LET D$=""
 100 PAPER 0: CLS : BORDER 1: INK 6
 150 GO SUB 500
 155 INK 6
 160 INVERSE 1: PRINT AT 2,0;"       ENTER FOR
 NEW PAYMENT      "
 165 PRINT " SPACE TO GIVE THE TOTAL AMOUNT "
```

```
 170 PRINT "    DELETE TO CANCEL ALL DATA    "
 180 INVERSE 0
 199 REM **GET AN INSTRUCTION   KEY
 205 LET XX=0: LET SR=1
 210 LET A$=INKEY$: IF A$="" THEN  GO TO 210
 220 IF A$=CHR$ 13 THEN  GO TO 300
 230 IF A$=CHR$ 12 THEN  RUN
 240 IF A$=" " THEN  GO TO 400
 250 GO TO 210
 300 LET PACKET=0: INK 3: PRINT AT 0,0; FLASH
 1;"CASH AMOUNT IN PACKET?";: GO SUB 9000: PR
INT " ";A$
 310 PRINT AT 0,0;"CASH AMOUNT IN PACKET ";A$
;" "
 320 LET A=VAL A$: LET A1=A
 330 LET PACKET=1: PRINT  FLASH 1;"NUMBER OF
PACKETS?   ";: GO SUB 9000: PRINT " ";A$
 340 PRINT AT 1,0;"NUMBER OF PACKETS ";A$;"
  "
 350 LET B=VAL A$: LET B1=B
 360 GO SUB 800
 370 CLS : GO TO 150
 399 REM ** TOTAL FIGURE
 410 LET XX=1
 420 CLS : GO TO 150
 499 REM ** PRINT OUT TABLE
 500 LET AT=0
 510 PRINT AT 5,0; INK 2;"------------------
-------------"
 525 PRINT  INK 5; BRIGHT 1;"CURRENCY";TAB 14
;"NO OF UNITS";TAB 26;"AMOUNT"
 530 PRINT
 535 FOR J=1 TO 12: INK 3: POKE 23692,255
 536 IF J<>12 THEN  GO TO 540
 537 PRINT TAB 21;"---------"
 538 PRINT TAB 14;"TOTAL:";
 539 LET A$=STR$ (AT): GO TO 580
 545 PRINT C$(J);
 550 LET C=LEN (STR$ (INT (A(J))))
 551 IF XX=1 THEN  LET C=LEN (STR$ (INT (B(J)
 ))
 559 IF XX=1 THEN  INK 4: PRINT TAB 22-C;B(J)
: GO TO 571
 560 INK 4: PRINT TAB 18-C;A(J);
```



```
 570 LET A$=STR$ (A(J)*V(J))
 571 IF XX=1 THEN  LET A$=STR$ (B(J)*V(J))
 574 IF XX=1 THEN  LET AT=AT+B(J)*V(J): GO TO
 580
 575 LET AT=AT+A(J)*V(J)
 580 LET D$="": LET N=0: FOR K=1 TO LEN A$
 590 LET B$=A$(K)
 600 IF B$=" " THEN  GO TO 650
 610 LET D$=D$+B$
 613 LET FL=0: FOR X=1 TO LEN D$: IF CODE D$>
47 AND CODE D$<58 THEN  LET FL=1
 614 NEXT X: IF FL=0 THEN  GO TO 620
 615 IF B$="." AND VAL D$<1 THEN  LET D$="0"+
D$
 620 IF B$="." THEN  LET N=1
 650 NEXT K
 660 IF N=0 THEN  LET D$=D$+".00": GO TO 700
 670 LET A=LEN D$: IF D$(A-1)="." THEN  LET D
$=D$+"0"
 690 REM ** STRING COMPLETE
 700 INK 5
 710 LET A=LEN D$
 720 PRINT TAB 30-A;D$
 730 NEXT J
 740 IF SR=0 THEN  GO TO 750
 741 IF XX=1 THEN  INK 4: PRINT  INVERSE 1;"T
HIS IS THE RUNNING TOTAL";AT 0,0;: GO TO 750
 742 IF XX=0 THEN  INK 6: PRINT '; INVERSE 1;
;B1;" X £";A1;
 750 RETURN
 800 REM ** CALCULATE A(X)
 810 LET X=0: LET A=A*100: FOR J=11 TO 1 STEP
 -1
 820 LET A(J)=0: IF X=1 THEN  GO TO 850
 830 IF (A-V(J)*100)<0 THEN  GO TO 850
 835 LET A=INT (A-INT (V(J)*100.0000001)): IF
 A=0 THEN  LET X=1
 836 REM ** PREVIOUS LINE        PREVENTS DECI
MAL PLACE OVERFLOW ERROR
 840 LET A(J)=A(J)+1: IF X=0 THEN  GO TO 830
 850 NEXT J
 860 FOR J=1 TO 10: LET A(J)=A(J)*B: NEXT J
 870 FOR J=1 TO 10: LET B(J)=B(J)+A(J): NEXT
J
```

```
 880 RETURN
8999 REM ** NON-CRASHABLE        NUMERIC INPUT
9000 INPUT  LINE A$: LET FL=0: LET FL2=0: LET
 DP=0
9005 IF A$="" THEN  GO TO 9000
9010 FOR X=1 TO LEN A$: IF CODE A$(X)=46 THEN
  LET FL2=FL2+1: LET DP=X
9020 IF (CODE A$(X)<48 OR CODE A$(X)>57) AND
CODE A$(X)<>46 THEN  LET FL=1
9030 NEXT X: IF LEN A$-DP<>2 OR FL OR FL2>1 O
R LEN A$>6 THEN  BEEP .5,-3: PRINT #1; FLASH
1;"PLEASE REINPUT": PAUSE 50: BEEP .02,12: GO
 TO 9000
9040 IF PACKET THEN  IF DP OR LEN A$>2 THEN
LET FL=1: GO TO 9030
9060 RETURN
```


Newmarket

This is another game with an equestrian flavour, except this time around you'll require the skills of a budding Lester Piggot. There are eight horses in the race, and two things will happen once you have decided which one you want to ride. Firstly, all the other horses will gallop off at the start, leaving you floundering at half speed. You soon discover that your mount is one of those creatures that only pulls its weight when the finishing line is in sight and then it will go twice as fast as anything else on four legs.

The second problem is that the other horses have a (cleverly computed) desire to crowd you out of the action. They will tend to close up in front of you and even steer straight at you from the side! There's no steward to protect you in this race, so aim for a gap in the field and hope you will be fast enough to avoid trouble. Any horses colliding with each other are flung randomly sideways and backwards, thus losing valuable speed. OK, you're under starter's orders . . .

```
  1 REM NEWMARKET ..... WALWYN
  2 REM HORSERACE GAME
  5 DIM a(7): DIM b(7): DIM x(7): DIM y(7):
 10 LET c=0
 15 BORDER 0
 20 PAPER 7
 25 INK 0
 30 LET slo=3: REM *factor to slow movement
s increased
 40 GO SUB 1000
 50 GO SUB 3000
 85 INK 0
 90 CLS
 92 FOR X=0 TO 6: INK x
 93 PRINT AT 2+X*3,0;STR$ (X+1);" DEF"
 94 NEXT X
 95 INK 0: FOR X=0 TO 21: PRINT AT X,30;" ":
NEXT X
 96 INK 0: PRINT AT 0,0;"  Controls  7=UP  6
DOWN        "
 97 INPUT "Select your horse 1-7   ";h$
 98 IF h$<"1" OR h$>"7" THEN  GO TO 97
```

```
  99 LET n=VAL (h$): LET acc=(20-ABS (4-n))/3
4
 100 LET k$=INKEY$: LET m=INT (RND*7+1)
 102 IF m=n THEN  GO TO 100
 105 IF k$="7" OR k$="6" THEN  LET m=n: GO TO
 150
 110 LET k$="7": IF RND>.5 THEN  LET k$="6"
 120 IF x(m)>x(n)-2 THEN  LET k$="7": IF y(n)
>y(m) THEN  LET k$="6"
 150 IF k$="7" THEN  LET y(m)=y(m)-1: IF y(m)
<1 THEN  LET y(m)=1
 160 IF k$="6" THEN  LET y(m)=y(m)+1: IF y(m)
>20 THEN  LET y(m)=20
 165 LET x(m)=x(m)-1/slo
 180 FOR i=1 TO 7
 185 LET j=INT (RND*4+1)
 190 IF i<>n THEN  GO TO 240
 200 IF c=0 THEN  LET j=j*acc: IF x(n)>9 THEN
  LET c=1
 205 IF c=1 THEN  BORDER 2: LET c=2
 210 IF c=2 THEN  LET j=j*2
 240 LET x(i)=x(i)+j/slo: IF x(i)>28 THEN  LE
T x(i)=28
 250 NEXT i
 400 LET crash=0
 410 FOR i=1 TO 7
 420 FOR j=i TO 7
 430 IF i=j THEN  GO TO 550
 440 IF y(i)<>y(j) THEN  GO TO 550
 450 IF ABS (x(i)-x(j))>3 THEN  GO TO 550
 460 LET d=1: IF b(i)>b(j) THEN  LET d=-1
 470 LET y(i)=y(i)-d
 475 LET y(j)=y(j)+d
 480 IF y(i)<1 THEN  LET y(i)=1
 490 IF y(i)>20 THEN  LET y(i)=20
 500 IF y(j)<1 THEN  LET y(j)=1
 510 IF y(j)>20 THEN  LET y(j)=20
 530 LET x(j)=x(j)-INT (RND*5+1 )/slo: IF x(j
)<2 THEN  LET x(j)=2
 540 LET crash=1
 550 NEXT j
 560 NEXT i
 570 IF crash=1 THEN  GO TO 400
 600 FOR i=1 TO 7
```



```
 610 PRINT AT INT b(i),INT a(i);"    "
 615 INK i-1
 618 LET h$="DEF": IF x(i)-INT (x(i))>.5 THEN
  LET h$="ABC"
 620 PRINT AT INT y(i),INT x(i);h$
 625 IF x(i)>=28 THEN  GO TO 5000
 630 LET a(i)=x(i)
 635 LET b(i)=y(i)
 640 NEXT i
 700 GO TO 100
1000  REM  **** Instructions ****
1010 CLS : PRINT AT 0,10;"NEWMARKET": PRINT
1020 PRINT "In this horse-race game, you"
1030 PRINT "ride any horse from 1 to 7."
1040 PRINT "You must steer a path avoiding "
1050 PRINT "the other horses since any horse"
1060 PRINT "in a collision with another will"
1070 PRINT "be blocked and forced sideways"
1080 PRINT "and backwards."
1090 PRINT : PRINT "'Easy', you might say..."
1110 PRINT "BUT your horse is a very s-l-o-w"
1120 PRINT "starter and will only run at "
1130 PRINT "speed after the screen border "
1135 PRINT "turns ";: PRINT  PAPER 2;"RED";:
PRINT ". This occurs when you"
1140 PRINT "have ridden a third of the way"
1150 PRINT "down the track, so you will "
1160 PRINT "always have other horses in "
1170 PRINT "front of you."
1171 PRINT AT 20,0;"   Press any key to conti
nue    "
1172 LET z$="": LET z$=INKEY$: IF z$="" THEN
 GO TO 1172
1175 CLS : PRINT AT 0,0;"To make it harder st
ill, all"
1177 PRINT "horses within 20 feet of you "
1180 PRINT "will attempt to block your path"
1182 PRINT "or crash into you!": PRINT
1185 PRINT "Push number 6 to move down the"
1187 PRINT "screen and number 7 to move up"
1190 PRINT "the screen. BEWARE: any course"
1192 PRINT "alteration will also reduce your"
1195 PRINT "speed!"
1197 PRINT
```

```
1200 PRINT "          Good Luck!              "
 : PRINT : PRINT "     Press any key to start
     "
1210 LET z$="": LET z$=INKEY$: IF z$="" THEN
 GO TO 1210
1220 RETURN
3000 REM ** set up horse graphic **
3005 FOR i=0 TO 7: READ gr
3010 POKE USR "a"+i,gr
3020 NEXT i
3105 FOR i=0 TO 7: READ gr
3110 POKE USR "b"+i,gr
3120 NEXT i
3205 FOR i=0 TO 7: READ gr
3210 POKE USR "c"+i,gr
3220 NEXT i
3305 FOR i=0 TO 7: READ gr
3310 POKE USR "d"+i,gr
3320 NEXT i
3405 FOR i=0 TO 7: READ gr
3410 POKE USR "e"+i,gr
3420 NEXT i
3505 FOR i=0 TO 7: READ gr
3510 POKE USR "f"+i,gr
3520 NEXT i
3900 DATA 0,0,0,12,3,3,5,10
3910 DATA 8,12,26,113,255,254,1,1
3920 DATA 0,128,224,144,192,128,64,32
3930 DATA 0,0,1,195,63,63,80,80
3940 DATA 128,196,174,153,252,224,20,34
3950 DATA 0,0,0,0,0,0,0,0
4000 REM ** set up screen positions **
4010 FOR q=1 TO 7
4020  LET a(q)=2: LET x(q)=2
4030  LET b(q)=q*3-1: LET y(q)=b(q)
4040 NEXT q
4050 RETURN
5000 REM *** winner ***
5005 PAPER i-1: INK (7*INT ((7-i)*2/7))
5010 IF i=n THEN  GO TO 5030
5015 PRINT AT 0,0;" The Winner....Horse Numbe
r ";i;"    "
5020 GO TO 5040
5030 PRINT AT 0,0;"      You won!  Well done
     "
5035 REM *flash*
5040 FOR q=1 TO 50
5045 PRINT AT y(i),x(i); FLASH 1;"DEF"
5050 NEXT q
5100 PRINT AT 21,0;"   Press any key to play
again  "
5130 LET z$="": LET z$=INKEY$: IF z$="" THEN
 GO TO 5130
5150 RUN
6000  REM ************************
6010 REM
6020 REM To alter the fortunes of the game tr
y the following:-
6030 REM vary slo in line 30
6040 REM vary the speed of your horse relativ
e to the others by changing j in lines 200-21
0
6050 REM alter the point at which the speed u
p takes place..e.g.x>8 in line 210
```

Holiday Expenses (48K)

Calculate all your currency needs for a trip through several countries. Approximate exchange rates are included for 19 currencies and you may enter others as you wish. Four currencies are handled at one time by the holiday costs and cross-rates pages and there are twelve holiday costs categories ranging from hotel bills to phone calls and gifts for the folk back home. Enter your anticipated costs in each of the four currencies, press a key and see the total in sterling.

```
  1 REM ********************************* D E
 F I N I T I V E ************
                HOLIDAY EXPENSES
  2 REM ***----------------
  3 REM ***
  4 REM ***
  5 REM ***
 10 REM ***HOLIDAY EXPENSES                  @1
983 MICHAEL BEWS
 15 POKE 23609,111
 20 BORDER 6: PAPER 7: INK 1
 25 LET E$="  1  5 10 20 50100500"
 30 DIM C$(12,5): DIM C(13,4): DIM N$(4,3):
DIM R(4)
 35 LET CF=0: LET TF=0: LET VF=0: LET N=1: L
ET CY=1: LET FG=0: LET T=0
 40 GO TO 600
 49 REM **RATES DISPLAY
 50 INK 0: CLS : PRINT  INVERSE 1;"       HO
LIDAY  EXPENSES         "
 60 PRINT "£STG";TAB 5;N$(1);TAB 12;N$(2);TA
B 19;N$(3);TAB 26;N$(4)
 70 PRINT AT 1,0; OVER 1;"_________________
_______________"
 80 FOR X=1 TO 7: LET Z$=E$(X*3-2 TO X*3): P
RINT AT X+1,0;Z$;"=";
 90 FOR Y=1 TO 4
100 LET Q$=STR$ (R(Y)*VAL Z$)
110 GO SUB 3000
120 PRINT AT X+1,Y*7-3;Q;
130 NEXT Y
```



```
140 NEXT X
150 PLOT 31,167: DRAW  INK 1; OVER 1;0,-63
160 PLOT 87,167: DRAW  INK 1; OVER 1;0,-63:
PLOT 143,167: DRAW  INK 1; OVER 1;0,-63: PLOT
199,167: DRAW  INK 1; OVER 1;0,-63
170 PRINT AT 9,0; INVERSE 1;" 1      2       3
     4       5    "
180 PRINT  INK 1;AT 20,0; INVERSE 1;"ENTER 2
COLUMN NUMBERS (eg 32)  TO DISPLAY CROSS-RAT
ES (";(N$(2));"/";(N$(1));")"
185 BEEP .1,10
189 REM *CROSS RATES CALCULATOR
190 INPUT  INK 1; INVERSE 1;"OR ENTER 'M' FO
R MENU";X$
200 IF X$="M" THEN  GO TO 850
205 IF X$="" THEN  GO TO 340
210 IF LEN X$<>2 THEN  GO TO 180
220 LET F=VAL X$(1)-1: LET S=VAL X$(2)-1
225 IF S<0 OR S>4 OR F<0 OR F>4 THEN  GO TO
180
230 IF S=0 THEN  LET Q=R(F): LET J$=N$(F): L
ET K$="STG": GO TO 260
235 IF F=0 THEN  LET Q=1/R(S): LET J$="STG":
LET K$=N$(S): GO TO 260
240 LET Q=R(F)/R(S)
250 LET J$=N$(F): LET K$=N$(S)
260 LET M=1
265 IF Q<.01 THEN  LET Q=Q*10: LET M=M*10: G
O TO 265
270 LET Q$=STR$ Q: GO SUB 3000
280 LET C=Q: PRINT AT 11,0; PAPER 6;S$;S$;S$
;S$;AT 11,0;" ";J$;TAB 11;K$;AT 11,0; OVER 1;
"________________"
290 FOR X=1 TO 7: LET Z=M*VAL E$(3*X-2 TO 3*
X)
300 LET Q=C*VAL E$(3*X-2 TO 3*X)
305 LET Q$=STR$ Q
310 GO SUB 3000
320 PRINT AT 11+X,1; PAPER 6;Q;TAB 9;"= ";Z
330 NEXT X
335 PLOT 0,88: DRAW  INK 2;0,-65: DRAW  INK
2;128,0: DRAW  INK 2;0,65: DRAW  INK 2;-128,0
: PLOT 64,88: DRAW  INK 2;0,-65
339 REM **CROSS RATES(ANY AMNT)
```

```
 340 PRINT AT 20,0;S$;AT 20,0; INK 2; INVERSE
 1;" ENTER ANY AMOUNT OF ";(J$);" OR ";(K$);"
 TO SEE EQUIVALENT.  eg ";(J$);"5000  "
 345 BEEP .1,20
 350 INPUT  INVERSE 1;"OR ENTER 'M'(MENU)";U$
 352 IF U$="M" THEN  GO TO 850
 355 IF LEN U$<4 THEN  GO TO 180
 360 IF U$( TO 3)=K$ THEN  LET Y=VAL U$(4 TO
): LET Q$=STR$ (Y*C/M): GO SUB 3000: LET X=Q:
 GO TO 390
 370 IF U$( TO 3)=J$ THEN  LET X=VAL U$(4 TO
): LET Q$=STR$ (X*M/C): GO SUB 3000: LET Y=Q:
 GO TO 390
 380 GO TO 180
 390 PRINT AT 12,16;" ";J$;TAB 25;K$;"    ";A
T 13,16;"                  ";AT 13,16;X;TAB 24;
Y; PAPER 6;AT 15,18;"Press'ENTER'to";AT 16,18
;"continue here."
 395 GO TO 180
 399 REM **COST SPREADSHEET
 400 CLS : PRINT  INVERSE 1;"       HOLIDAY
EXPENSES         "
 405 PRINT TAB 10;"M";TAB 16;"N";TAB 22;"O";T
AB 28;"P"
 410 PRINT "CHARGES";TAB 9;N$(1);TAB 15;N$(2)
;TAB 21;N$(3);TAB 27;N$(4)
 415 PRINT  OVER 1;AT 1,0;"_____________________
_____________"
 417 PRINT  OVER 1;AT 2,0;"_____________________
_____________"
 420 PLOT 59,167: DRAW  INK 1; OVER 1;0,-110
 430 PLOT 111,167: DRAW  INK 1; OVER 1;0,-110
: PLOT 159,167: DRAW  INK 1; OVER 1;0,-110: P
LOT 207,167: DRAW  INK 1; OVER 1;0,-110
 440 FOR X=1 TO 12: PRINT AT X+2,0;CHR$ (X+64
);">";C$(X): NEXT X
 445 FOR X=1 TO 12: FOR Y=1 TO 4: PRINT AT X+
2,2+6*Y;C(X,Y);: NEXT Y: NEXT X
 450 PRINT  OVER 1;AT 14,0;"_____________________
_____________"
 455 BEEP .1,10
 460 IF TF=1 THEN  LET TF=0: GO TO 560
 480 IF CF=0 THEN  GO TO 530
 495 LET CF=0
```



```
 500 PRINT AT 20,0; INVERSE 1;"ENTER CHARGE C
ODE LETTER TOGETHER WITH NEW NAME ( eg BTOURS
 )   "
 505 INPUT  INVERSE 1;"OR ENTER 'M' FOR MENU
";X$: IF X$="M" THEN  GO TO 850
 510 IF X$="" OR LEN X$<2 OR X$(1)<"A" OR X$(
1)>"L" THEN  GO TO 505
 520 LET C$(CODE X$(1)-64)=X$(2 TO ): FOR X=1
 TO 12: PRINT AT X+2,0;CHR$ (X+64);">";C$(X);
: NEXT X: GO TO 500
 530 PRINT AT 20,0; INVERSE 1;"TO ENTER A COS
T ITEM, ENTER ROW/COLUMN WITH AMOUNT   eg AM2
00   "
 535 INPUT  FLASH 1;"OR ENTER 'M' FOR MENU ";
X$: IF X$="M" THEN  GO TO 850
 537 IF X$="" THEN  GO TO 530
 540 IF X$(1)<"A" OR X$(1)>"L" OR X$(2)<"M" O
R X$(2)>"P" OR LEN X$<3 THEN  GO TO 530
 545 LET Q$=X$(3 TO ): GO SUB 3000: LET C(COD
E X$(1)-64,CODE X$(2)-76)=Q: PRINT AT CODE X$
(1)-62,2+6*(CODE X$(2)-76);Q
 550 BEEP .1,20
 555 GO TO 530
 559 REM **CALCULATE TOTAL COSTS
 560 BEEP .05,13: LET T=0: FOR X=1 TO 4: LET
C(13,X)=0: NEXT X: FOR X=1 TO 12: FOR Y=1 TO
4: LET C(13,Y)=C(13,Y)+C(X,Y): NEXT Y: NEXT X
 562 FOR X=1 TO 4: BEEP .05,25: IF C(13,X)=0
THEN  GO TO 564
 563 LET Q$=STR$ C(13,X): GO SUB 3000: LET C(
13,X)=Q
 564 NEXT X
 565 BEEP .1,20: PRINT AT 15,8;C(13,1);TAB 14
;C(13,2);TAB 20;C(13,3);TAB 26;C(13,4)
 567 BEEP .1,13: PRINT AT 15,0;"TOTALS";AT 16
,0;" RATE";AT 17,0;" £STG"
 570 FOR X=1 TO 4
 572 PRINT AT 16,1+6*X;R(X): LET Q$=STR$ (C(1
3,X)/R(X)): GO SUB 3000: PRINT AT 17,1+6*X;Q:
 LET T=T+Q
 574 NEXT X
 575 BEEP .1,1
 580 LET Q$=STR$ T: GO SUB 3000: PRINT AT 18,
14;"GRAND TOTAL=£";Q
```

```
 590 BEEP 1,1: INPUT  INVERSE 1;"PRESS<ENTER>
TO RETURN TO MENU";X$
 595 GO TO 850
 600 CLS : PRINT AT 0,7; PAPER 1; INK 7;"HOLI
DAY EXPENSES"
 605 LET S$="
                                ": LET B$=CHR
$ 8+CHR$ 8+CHR$ 8+CHR$ 8
 610 PRINT : PRINT " THIS PROGRAM WILL HELP Y
OU TO      CALCULATE YOUR APPROXIMATE      FORE
IGN CURRENCY NEEDS FOR A     TOUR THROUGH ONE,
 OR SEVERAL                  COUNTRIES."
 620 PRINT : PRINT "INTERNATIONAL EXCHANGE RA
TES ARE  ALWAYS BASED ON THE AMERICAN  DOLLAR
 RATE FOR EACH CURRENCY.  FOR EXAMPLE,THE STE
RLING/PESETAS RATE IS PRODUCED FROM THE STG/$
        AND $/PTS RATES."
 630 PRINT : PRINT "THE DIFFERENCE BETWEEN 'B
UYING' AND 'SELLING' PRICE FOR CURRENCY  NOTE
S OR TRAVELLERS' CHEQUES   REPRESENTS THE BAN
K'S 'PROFIT'     ON THE TRANSACTION. A SMALL
COMMISSION CHARGE IS ALSO OFTEN              AD
DED."
 635 BEEP .1,10
 640 INPUT  FLASH 1;"PRESS <ENTER>"; FLASH 0;
X$
 650 CLS : PRINT AT 0,7; PAPER 1; INK 7;"HOLI
DAY EXPENSES"
 660 PRINT : PRINT "  BECAUSE OF THE USUALLY
WIDE     'SPREAD' BETWEEN BUY AND SELL  QUOTED
 FOR TOURIST RATES, IT IS   ALMOST ALWAYS SAF
ER TO AVOID  MULTIPLE EXCHANGE TRANSACTIONS."
 665 PRINT : PRINT "TAKE ABOUT £5/10 OF SMALL
 DENOMINATION";B$;B$;B$;B$;CHR$ 8;CHR$ 8; OVE
R 1;"__________________"; OVER 0;" FOREIGN NO
TES FOR EACH   COUNTRY YOU WILL VISIT, FOR US
E ON ARRIVAL. IF YOU ARE DEPARTING  FROM A BI
G AIRPORT THESE ARE   USUALLY AVAILABLE FROM
A BANK         IN THE ARRIVALS";B$;B$; OVER 1;
"________"; OVER 0;" HALL"
 670 REM  PRINT : PRINT "  ALSO, SEVERAL CURR
ENCIES ARE  CHEAPER TO BUY BEFORE YOU LEAVE
HOME AND OTHERS ARE CHEAPER TO   BUY WHEN YOU
 ARRIVE AT YOUR             DESTINATION."
```



```
 680 PRINT : PRINT "THE FOLLOWING TOURIST RAT
ES ARE   INCLUDED ONLY AS A VERY ROUGH GUIDE.
  ACTUAL MARKET RATES WILL VARY, OFTEN QUITE
WILDLY, FROM            DAY TO DAY."
 685 BEEP .1,10
 690 INPUT  FLASH 1;"PRESS <ENTER>"; FLASH 0;
X$
 695 REM * INITIALISE CURRENCIES  AND HOLIDAY
 COST ITEMS
 700 FOR X=1 TO 4: READ N$(X): NEXT X
 705 FOR X=1 TO 4: READ R(X): NEXT X
 710 FOR X=1 TO 12: READ C$(X): NEXT X
 740 REM **** M E N U *******
 750 CLS : PRINT AT 0,7; PAPER 1; INK 7;"HOLI
DAY EXPENSES"
 760 PRINT : PRINT " THE PROGRAM IS IN 3 SECT
IONS:",,TAB 7;"1 RATES ENTRY";TAB 7;"2 CROSS
RATE CALCULATION";TAB 7;"3 HOLIDAY COSTS"
 770 PRINT : PRINT " FOUR CURRENCIES CAN BE H
ANDLED AT THE SAME TIME.  THE PRESENT 4ARE ";
 INVERSE 1;N$(1); INVERSE 0;","; INVERSE 1;N$
(2); INVERSE 0;","; INVERSE 1;N$(3); INVERSE
0;","; INVERSE 1;N$(4); INVERSE 0;". BUT YOU
MAY CHANGE THESE BY FOLLOWING THE
  PROMPTS"
 780 PRINT : PRINT "SELECT "; INVERSE 1;"CAPS
 LOCK"; INVERSE 0;" (CAPS SHIFT+2).THE CURSOR
 SHOULD ALWAYS BE A "; FLASH 1;"C"; FLASH 0;"
          DURING INPUT"
 790 PRINT : PRINT "CURRENCY CODES SHOULD ALW
AYS BE      THREE CAPITAL LETTERS"
 795 BEEP .1,10
 800 INPUT  INVERSE 1;"PRESS <ENTER> ";X$
 810 GO TO 1800
 850 CLS : PRINT AT 0,7; PAPER 1; INK 7;"HOLI
DAY  EXPENSES"
 855 PRINT AT 3,8;"* * M E N U * *"
 860 PRINT AT 7,3;"1  RATES TABLE (VIEW ONLY)
"
 870 PRINT AT 8,3;"2  CHANGE RATES/CURRENCIES
"
 880 PRINT AT 9,3;"3  CROSS RATES CALCULATION
S"
 890 PRINT AT 10,3;"4  HOLIDAY COSTS TABLE"
```

```
 892 PRINT AT 11,3;"5  CHANGE A COST CATEGORY
"
 895 PRINT AT 12,3;"6  CALCULATE TOTAL COSTS"
 900 BEEP .1,10: PRINT AT 14,7; INK 2; FLASH
1;"PRESS SELECTION"
 910 LET X=PEEK 23556: IF X=255 OR X<49 OR X>
54 THEN  GO TO 910
 920 IF X=49 THEN  LET VF=1: GO TO 1800
 930 IF X=50 THEN  GO TO 1800
 940 IF X=51 THEN  GO TO 50
 950 IF X=52 THEN  GO TO 400
 960 IF X=53 THEN  LET CF=1: GO TO 400
 965 IF X=54 THEN  LET TF=1: GO TO 400
 970 GO TO 850
1798 STOP
1799 REM ** Approx tourist rates
1800 CLS : PRINT  INK 2; PAPER 6; INVERSE 1;"
 APPROXIMATE TOURIST RATES £STG="; INVERSE 0
1805 LET X=27
1810 PRINT " US$  USA dollar";TAB X;"1.52"
1820 PRINT " CN$  CANADA dollar";TAB X;"1.87"
1830 PRINT " FFR  FRANCE franc";TAB X;"11.6"
1840 PRINT " BFR  BELGIUM(&Lux)franc";TAB X;"
76.5"
1850 PRINT " ITL  ITALY lire";TAB X;"2265"
1860 PRINT " SFR  SWITZERLAND franc";TAB X;"3
.22"
1870 PRINT " DMK  W.GERMANY D.mark";TAB X;"3.
84"
1880 PRINT " ASH  AUSTRIA schilling";TAB X;"2
7.0"
1890 PRINT " ESC  PORTUGAL escudo";TAB X;"154
"
1900 PRINT " SPA  SPAIN peseta";TAB X;"211"
1910 PRINT " HFL  HOLLAND guilder";TAB X;"4.3
0"
1915 PRINT " NKR  NORWAY krona";TAB X;"11.0"
1920 PRINT " IRP  IRELAND punt";TAB X;"1.22"
1930 PRINT " DRA  GREECE drachma";TAB X;"128"
1940 PRINT " MLT  MALTA pound";TAB X;"0.64"
1950 PRINT " YGD  YUGOSLAVIA dinar";TAB X;"12
7"
1960 PRINT " YEN  JAPAN yen";TAB X;"367"
1970 PRINT " AU$  AUSTRALIA dollar";TAB X;"1.
```



```
74"
1980 PRINT " NZ$  NEW ZEALAND dollar";TAB X;"
2.32"
1982 IF VF=1 THEN  PRINT AT 21,0; INVERSE 1;"
 PRESS <ENTER> TO RETURN TO MENU": BEEP .1,10
: INPUT X$: LET VF=0: GO TO 850
1985 FOR Y=1 TO 4
1990 PRINT AT 20,0; FLASH 1;"CURRENCY ";Y;" I
S ";N$(Y);". PRESS <ENTER> TO KEEP ";N$(Y);",
OR ENTER A NEW CODE"
1995 BEEP .1,10
2000 INPUT "CURRENCY ";(Y);" (";(N$(Y));")";X
$
2010 IF X$="" THEN  PRINT AT 20,0;S$;AT 20,0;
 INK 2; FLASH 1;" PRESS <ENTER> TO KEEP PRESE
NT  ";N$(Y);" RATE:";R(Y);", OR ENTER NEW RAT
E": GO TO 2040
2020 FOR X=1 TO 13: LET C(X,Y)=0: NEXT X
2025 LET N$(Y)=X$
2030 PRINT AT 20,0;S$;AT 21,0; INK 2; FLASH 1
;" ENTER THE NEW RATE FOR  ";N$(Y);"     "
2040 BEEP .1,15
2045 INPUT Q$: IF Q$="" THEN  GO TO 2070
2050 IF CODE Q$<48 OR CODE Q$>57 THEN  GO TO
2045
2060 GO SUB 3000: LET R(Y)=Q
2070 NEXT Y
2080 GO TO 850
2999 REM ** NUMBER CLEAN-UP
          ROUTINE
3000 LET Q=VAL Q$: IF Q<10 THEN  LET Q=(INT (
100*Q))/100: RETURN
3010 IF Q<100 THEN  LET Q=(INT (10*Q))/10: RE
TURN
3020 LET Q=INT Q
3030 RETURN
3999 REM ** INITIAL DATA
4000 DATA "FFR","SFR","US$","ITL"
4005 DATA 11.6,3.22,1.52,2265
4010 DATA "HOTEL","TOURS","BUS","MEALS","FOOD
","DRINK","LAUND","FUEL","POST","PHONE","GIFT
S","SUNDR"
```

Ambush

High resolution graphics make this forest scene something worth seeing! You are trapped by snipers hiding amongst the trees. Your only shelter is a low wall. Can you kill all the snipers before one of them succeds in shooting you.

```
  10 REM **SNIPER AMBUSH**                    @19
83 MICHAEL BEWS
  20 DIM P(5,5): DIM L(11,2): DIM S(5,2): DIM
 S$(2,2)
  30 LET TB=5000: LET TM=0: LET K$="000000000
0": LET MN=0: LET AI=0: LET FR=0: LET MX=80
  40 PAPER 4: INK 7: BORDER 1
  50 GO TO 600
 100 REM **KEYBOARD INPUT
 120 LET TM=TM+1: PRINT  INK 0; PAPER 6;AT 15
,28;TM
 125 LET A=PEEK 23556: IF A=255 THEN  GO TO 2
00
 130 IF A=65 THEN  PRINT AT 13,10;R$: LET MN=
1: GO TO 200
 140 IF A=90 THEN  PRINT AT 13,10;Q$: LET MN=
0: GO TO 200
 150 IF (A=66 AND MN=1) THEN  LET FR=1: GO TO
 200
 160 IF A=78 THEN  LET MX=MX-8: GO TO 200
 170 IF A=77 THEN  LET MX=MX+8: GO TO 200
 180 GO TO 120
 199 REM *ACTION ROUTINE
 210 IF MX<0 THEN  LET MX=0
 215 IF MX>220 THEN  LET MX=220
 220 IF FR=0 THEN  GO TO 300
 225 LET FR=0
 230 LET Y=23
 235 IF MX<42 THEN  LET Y=Y+32: GO TO 250
 240 IF MX<70 THEN  LET y=y+7: GO TO 250
 242 IF MX<124 THEN  LET Y=Y+8: GO TO 250
 244 IF MX<164 THEN  GO TO 250
 248 LET Y=Y-8
 250 REM *TRACERS AND SOUND
```



```
 255 PLOT  OVER 1,82,72
 260 DRAW  OVER 1;MX-60,Y
 262 FOR X=57 TO 53 STEP -1: BEEP .005,X: NEX
T X
 265 PLOT  OVER 1,82,72
 270 DRAW  OVER 1;MX-60,Y
 272 REM *CHECK FOR HIT
 275 IF MX>29 AND MX<35 AND K$(1)>"0" THEN  P
RINT AT 5,4;"RS"; INK 0; PAPER 4;"GH": LET K$
(6)="1": GO TO 290
 278 IF MX>61 AND MX<67 AND K$(2)>"0" THEN  P
RINT AT 8,8;"RS"; INK 0; PAPER 4;"GH": LET K$
(7)="1": GO TO 290
 280 IF MX>101 AND MX<107 AND K$(3)>"0" THEN
 PRINT AT 8,13;"RS"; INK 0; PAPER 4;"GH": LET
 K$(8)="1": GO TO 290
 282 IF MX>144 AND MX<155 AND K$(4)>"0" THEN
 PRINT AT 9,19;"RS"; INK 0; PAPER 4;"GH": LET
 K$(9)="1": GO TO 290
 285 IF MX>185 AND MX<195 AND K$(5)>"0" THEN
 PRINT AT 10,24;"RS"; INK 0; PAPER 4;"GH": LE
T K$(10)="1"
 289 REM *CHECK FOR WIN
 290 IF K$(6 TO 10)="11111" THEN  GO TO 850
 299 REM *SNIPER ROUTINE
 310 LET K=1+INT (RND*5)
 315 IF K$(K+5)="1" THEN  GO TO 120
 320 IF K$(K)="4" THEN  PRINT  INK 0; PAPER 4
 AT S(K,1),S(K,2);S$(2);
 330 IF K$(K)="5" OR (k$(k)="7" AND MN=0) THE
N  GO SUB 400
 340 LET K$(K)=CHR$ (CODE K$(K)+1)
 350 IF K$(K)>"7" THEN  PRINT  INK 0; PAPER 4
;AT S(K,1),S(K,2);S$(1);: LET K$(K)="0"
 360 GO TO 120
 399 REM *SNIPER FIRING
 405 LET N=1+INT (RND*P(K,4))
 410 LET NX=N-P(K,3)
 420 PLOT  OVER 1;P(K,1),P(K,2)
 425 DRAW  OVER 1;NX,-P(K,5)
 430 FOR X=50 TO 47 STEP -1: BEEP .005,X: NEX
T X
 435 PLOT  OVER 1;P(K,1),P(K,2)
 440 DRAW  OVER 1;NX,-P(K,5)
```

```
 445 IF MN=0 THEN  RETURN
 450 IF P(K,1)+NX>78 AND P(K,1)+NX<86 THEN  P
RINT AT 13,10;Q$;AT 15,9;P$;: GO TO 830
 460 RETURN
 598 STOP
 599 REM **INITIALISATION
 602 CLS : PRINT  INK 1; PAPER 7;"A M B U S H
   @1983 MICHAEL BEWS";AT 4,0;"YOU HAVE BEEN
AMBUSHED BY GUNMENIN A FOREST. THE ONLY SAFE
PLACE IS A LOW WALL BEHIND WHICH YOU TAKE COV
ER."
 603 PRINT AT 9,0; INK 1; PAPER 7;"YOU MUST T
RY TO KILL ALL GUNMEN  BY AIMING OVER THE TOP
 OF THE  WALL. BUT THE SNIPERS ARE QUITE GOOD
 SHOTS!";AT 16,0;"HOW LONG CAN YOU SURVIVE?..
....."
 608 LET f$=CHR$ 21+CHR$ 1+"
           "+CHR$ 21+CHR$ 0
 610 LET G$=CHR$ 21+CHR$ 1+"
             "+CHR$ 21+CHR$ 0
 615 FOR x=0 TO 7: FOR y=1 TO 9: READ a: POKE
 USR CHR$ (143+y)+x,a: NEXT y: NEXT x
 620 FOR x=0 TO 7: READ a,b: POKE USR "J"+x,a
: POKE USR "K"+x,b: NEXT x
 625 FOR X=1 TO 11: READ L(X,1): READ L(X,2):
 NEXT X
 630 FOR X=0 TO 7: READ A: POKE USR "L"+X,A:
NEXT X: LET W$="LLLLLLLLLLLLLLLLLLLLLLLLLLLLLL
LLL"
 640 LET t$="ABC"+f$+"DEF"+f$+"GHI"
 645 LET S$(1)="GH": LET S$(2)="JK"
 650 FOR X=0 TO 7: READ A: POKE USR CHR$ (156
)+X,A: NEXT X
 655 FOR X=0 TO 7: READ A,B: POKE USR "R"+X,A
: POKE USR "S"+X,B: NEXT X
 660 FOR X=0 TO 7: READ A,B: POKE USR "T"+X,A
: POKE USR "U"+X,B: NEXT X
 665 LET Q$=CHR$ 16+CHR$ 0+CHR$ 17+CHR$ 4+" "
+G$+"L"+G$+"M": LET P$="RS"
 670 LET R$=CHR$ 16+CHR$ 0+CHR$ 17+CHR$ 4+"T"
+G$+"U"+G$+" "
 675 FOR X=1 TO 5: READ S(X,1): READ S(X,2):
NEXT X
 680 FOR x=1 TO 5: FOR y=1 TO 5: READ P(X,Y):
```



```
 NEXT Y: NEXT X
 690 INPUT  INK 7; PAPER 2;"PRESS<ENTER>TO FI
ND OUT!!!";X$
 700 REM **PRINT SCENE**
 705 CLS : PRINT  PAPER 6; INK 1;"A M B U S H
   @1983 MICHAEL BEWS"
 707 FOR x=10 TO 26 STEP 4: PRINT  INK 0; PAP
ER 4;AT 1,x;t$: NEXT x
 710 FOR x=1 TO 11: PRINT  INK 0;AT L(X,1),L(
X,2);t$;: NEXT X
 715 FOR X=3 TO 11: PRINT AT L(X,1)+2,L(X,2)+
2; INK 6;"I";: NEXT X
 720 PRINT  INK 0;AT 15,0;T$;AT 17,3;T$
 730 PRINT  INK 0;AT 14,0;W$
 800 PRINT AT 13,10;Q$
 805 PRINT AT 15,23; INK 0; PAPER 6;"TIME:
 "
 810 PRINT AT 20,0; PAPER 2; INK 7;"SHOOT SNI
PERS AS THEY FIRE. KEYS'A&Z'(UP/DN)'N&M'(AIM)
 'B'(FIRE)"
 820 GO TO 100
 829 REM ** PLAYER SHOT!
 830 PRINT AT 20,0; PAPER 7; INK 2;"

          ";AT 20,0; FLASH 1;"YOU HAVE BEEN S
HOT! IN TIME:";TM;AT 21,0;"THIS IS THE SNIPER
 WHO SHOT YOU^"
 832 PRINT  INK 0; PAPER 4; FLASH 1;AT S(K,1)
,S(K,2);S$(2);
 835 BEEP .8,1: PAUSE 5: BEEP .5,1: PAUSE 2:
BEEP .3,1: BEEP .8,1: BEEP .5,4: PAUSE 2: BEE
P .4,3: PAUSE 2: BEEP .4,3: PAUSE 2: BEEP .5,
1: PAUSE 1: BEEP .8,1: PAUSE 4: BEEP .5,0: BE
EP 1,1
 840 GO TO 860
 849 REM *ALL SNIPERS DEAD
 850 IF TB>TM THEN  LET TB=TM
 855 PRINT AT 20,0; PAPER 7; INK 2;"

          ";AT 20,0; FLASH 1;"YOU SHOT ALL SN
IPERS IN TIME:";TM;AT 21,0;"BEST TIME SO FAR:
";TB
 857 FOR Y=1 TO 5: FOR X=1 TO 10: BEEP .05,X*
2: NEXT X: NEXT Y
```

```
 860 INPUT  INK 0; PAPER 7; FLASH 1;"PRESS <E
NTER> FOR NEXT GAME";X$
 870 LET MX=80: LET K$="000000000"
 880 LET TM=0: LET MN=0: LET FR=0
 890 GO TO 700
 998 STOP
 999 REM **tree
1000 DATA 3,15,0,127,255,252,0,60,8,3,255,192
,63,255,188,0,60,0,15,255,240,55,247,248,0,60
,138,15,255,248,31,63,248,0,60,40,126,255,126
,31,60,240,0,60,138,127,255,254,24,60,48,0,60
,162,255,255,252,0,60,0,0,60,160,127,223,252,
0,60,0,0,60,32
1009 REM * sniper
1010 DATA 0,252,63,252,2,124,3,252,0,124,1,25
2,1,124,3,60
1019 REM **tree PRINT AT FILE
1020 DATA 2,4,1,18,3,6,2,20,3,24,4,11,4,29,6,
10,6,15,7,21,8,26
1029 REM **WALL
1030 DATA 51,255,219,255,253,255,183,255
1039 REM **MAN CROUCHING
1040 DATA 249,113,113,33,255,113,123,219
1049 REM *MAN DOWN
1050 DATA 0,0,0,0,0,0,0,0,160,0,247,224,255,2
41,247,255
1059 REM *MAN STANDING
1060 DATA 248,115,113,255,115,251,118,255,38,
253,250,251,254,247,112,255
1069 REM *sniper print at file
1070 DATA 5,6,8,10,8,15,9,21,10,26
1079 REM *sniper firing coords
1080 DATA 47,127,10,50,54,79,110,39,70,37,119
,110,60,60,37,167,102,127,80,29,207,94,200,12
0,21
4000 BORDER 7: PAPER 7: INK 0: CLS
```


Numbers

If you're a Roman who doesn't understand numbers to base 3, then this is the program for you. Convert between binary, hexadecimal, decimal and Roman numerals, plus any other number systems (to different bases) you care to invent. 7 fingered aliens catered for!

```
  10 REM ** ROMAN NUMBERS                    @1
982 MICHAEL BEWS
  15 POKE 23609,111: POKE 23658,255
  20 BORDER 3: PAPER 1: INK 7
  25 DIM K(8): DIM A$(8): DIM C(25)
  30 GO TO 550
  35 GO TO 550
  39 REM **ROMAN NUMBERS
  40 LET L=5: CLS
  50 PRINT  PAPER 2;"ROMAN NUMBERS @1983 MICH
AEL BEWS"
  60 PRINT  PAPER 2;AT 2,0;"ENTER A COMPLETE
ROMAN NUMBER      EXAMPLE: MCMLXXXIV
  "
  65 PRINT  INVERSE 1;AT 21,0;"PRESS <ENTER>
TO RETURN TO MENU "
  70 INPUT "ROMAN NUMBER ";T$
  75 PRINT AT 20,0;"
      "
  80 IF T$="" THEN  GO TO 600
  90 PRINT AT L,0;"
     "; PAPER 6; INK 2;AT L,0;"ROMAN NUMBER:
 ";T$;
  95 FOR B=1 TO 3: BEEP .05,14: BEEP .05,17:
NEXT B
 100 FOR X=1 TO LEN T$
 110 LET C(X)=(1000 AND T$(X)="M")+(500 AND T
$(X)="D")+(100 AND T$(X)="C")+(50 AND T$(X)="
L")+(10 AND T$(X)="X")+(5 AND T$(X)="V")+(1 A
ND (T$(X)="I" OR T$(X)="1"))
 120 IF C(X)<1 THEN  PRINT AT 20,0;"    "; FLA
SH 1;" ";T$(X);" IS NOT A ROMAN NUMBER !!": G
O TO 65
 130 NEXT X
```

```
 180 LET T=0
 190 FOR X=1 TO LEN T$
 200 IF C(X+1)>C(X) THEN  LET C(X)=-C(X)
 210 LET T=T+C(X)
 220 LET C(X)=0
 230 NEXT X
 240 LET X=0: IF LEN T$>9 THEN  LET X=1
 250 PRINT  INK 2; PAPER 6;" = ";AT L+X,26;T;
" "
 255 FOR B=1 TO 3: BEEP .05,2: BEEP .05,10: N
EXT B
 260 LET L=L+2: IF L>20 THEN  INPUT  PAPER 2;
 INK 7;"PRESS<ENTER>TO RETURN TO MENU";X$: GO
 TO 600
 270 GO TO 70
 299 REM VARIABLE BASE CALCULATOR
 310 CLS : PRINT  INVERSE 1;"VARIBASE CALCULA
TOR @1983 M.BEWS"
 320 PRINT  INK 7; PAPER 2;AT 17,0;"CHOOSE AN
Y BASE BETWEEN 2 AND 24(Decimal equivalent).
WE SHALL  USE LETTERS 'A to N' FOR SYMBOLSREQ
UIRED AFTER 9 UP TO ONE LESS     THAN THE CHOS
EN BASE VALUE    "
 330 INPUT  INK 7; PAPER 0;"ENTER CHOSEN BASE
(2 to 24)";X$
 340 IF LEN X$<1 OR LEN X$>2 THEN  GO TO 330
 350 IF X$(1)<"0" OR X$(1)>"9" THEN  GO TO 33
0
 360 IF LEN X$=2 THEN  IF X$(2)<"0" OR X$(2)>
"9" THEN  GO TO 330
 370 IF VAL X$<2 OR VAL X$>24 THEN  GO TO 330
 375 LET B=VAL X$
 380 CLS : PRINT  INVERSE 1;"VARIBASE CALCULA
TOR @1983 M.BEWS"
 390 PRINT AT 2,0; PAPER 5; INK 1;"BASE:  ";A
T 2,5;B;AT 2,25;"Decimal";AT 3,25;"Equivt."
 395 LET X$="": IF B<10 THEN  LET X$=" "
 400 PRINT AT 4,0;X$;B;"G";X$;B;"F";X$;B;"E";
X$;B;"D";X$;B;"C";X$;B;"B";X$;B;"A";X$;B;"H:"
 410 LET KO=99999: IF B=3 THEN  LET KO=6560
 415 IF B=2 THEN  LET KO=255
 420 FOR X=1 TO 8: LET N=K(X): PRINT AT 4+X,2
5;"= ";N;AT 4+X,0;: GO SUB 445
 425 FOR Y=8 TO 1 STEP -1: PRINT TAB (25-Y*3)
```



```
;A$(Y);: NEXT Y
 430 NEXT X
 435 GO TO 480
 440 REM *MULTIBASE CALC SUBROUTINE
 445 FOR Z=1 TO 8: LET A$(Z)="": NEXT Z
 450 LET NA=N: FOR Z=1 TO 8
 455 LET I=INT (NA/B): LET A$(Z)=CHR$ (48+(NA
-B*I)+(7 AND (NA-B*I)>9))
 460 IF I>=B THEN  LET NA=I: NEXT Z
 465 LET A$(Z+1)=CHR$ (48+I+(7 AND I>9))
 470 RETURN
 479 REM *DECIMAL INPUT FOR CONVERSION
 480 PRINT  INK 7; PAPER 2;AT 19,0;"INPUT A D
ECIMAL NUMBER FOR                CONVERSION
TO BASE   ";AT 20,30;B
 485 PRINT  INVERSE 1;"OR PRESS<ENTER>TO RETU
RN TO MENU";
 490 INPUT  FLASH 1;"(BETWEEN 1 AND ";(KO);")
 ";X$
 495 IF X$="" THEN  GO TO 600
 500 FOR X=1 TO LEN X$: IF X$(X)<"0" OR X$(X)
>"9" THEN  GO TO 490
 505 NEXT X: LET N=INT (VAL X$): IF N<1 OR N>
KO THEN  GO TO 490
 510 GO SUB 440
 520 PRINT AT 13,0;"
       ";AT 13,0;
 530 FOR Y=8 TO 1 STEP -1: PRINT TAB (25-Y*3)
;A$(Y);: NEXT Y
 540 PRINT "  = ";N
 545 GO TO 480
 548 STOP
 549 REM *initialisation
 550 CLS : PRINT  INVERSE 1;"NUMBER SYSTEMS@1
983 MICHAEL BEWS"
 555 FOR x=0 TO 7: POKE USR "A"+x,32-32*INT (
x/5)+(64 AND X=1): NEXT x
 560 FOR x=1 TO 8: FOR y=0 TO 7: READ a: POKE
 USR CHR$ (144+x)+y,a: NEXT y: NEXT x
 570 FOR X=1 TO 8: READ K(X): NEXT X
 600 CLS : PRINT  INVERSE 1;"NUMBER SYSTEMS@1
983 MICHAEL BEWS"
 610 PRINT AT 2,0;"  THIS PROGRAM EXAMINES A
FEW     OF THE MANY COUNTING SYSTEMS   AND EN
```

```
ABLES YOU TO INVENT SOME            OF YOUR OW
N!  "
 620 PRINT AT 7,5; INVERSE 1;"        M E N U
       ";AT 9,5;"1   ROMAN NUMBERS      ";AT
 10,5;"2   DECIMAL SYSTEM     ";AT 11,5;"3
BINARY SYSTEM       ";AT 12,5;"4   HEXADECIMAL
       ";AT 13,5;"5   INVENT YOUR OWN!   "
 630 PRINT  INVERSE 1;AT 17,8;"SELECT KEY NUM
BER"
 640 LET A=PEEK 23556: IF A=255 THEN  GO TO 6
40
 645 BEEP .05,20
 650 IF A<49 OR A>53 THEN  GO TO 640
 660 IF A=49 THEN  GO TO 800
 665 IF A=49 THEN  GO TO 40
 670 IF A=50 THEN  GO TO 900
 680 IF A=51 THEN  GO TO 1100
 690 IF A=52 THEN  GO TO 1200
 700 IF A=53 THEN  GO TO 310
 799 REM *ROMAN EXPLANATION
 800 CLS : PRINT  PAPER 2;"ROMAN NUMBERS @198
3 MICHAEL BEWS"
 810 PRINT  INVERSE 1;AT 6,0;"      IN THE RO
MAN SYSTEM       "
 820 PRINT  INVERSE 1;"M=1000  D=500  C=100
L=50  X=10         V=5  AND  I=1          "
 840 PRINT  INK 2; PAPER 7;"A LOWER VALUE LET
TER COMING     IMMEDIATELY IN FRONT OF A HIGH
ERVALUE LETTER IS SUBTRACTED FROM THE TOTAL I
NSTEAD OF BEING ADDED     SO THAT LX=60 AND X
L=40    "
 850 INPUT  INK 7; PAPER 2;"PRESS <ENTER> ";X
$
 870 LET RF=1: GO TO 40
 899 REM *DECIMAL EXPLANATION
 900 CLS : PRINT  PAPER 2;"DECIMAL SYSTEM
     (Base 10)"
 910 PRINT : PRINT  INVERSE 1;"ORIGIN:  Ten f
ingers and thumbs          make it convenient
to           count in groups of ten!"
 920 PRINT : PRINT  INVERSE 1;"METHOD:  All c
ounting systems   need enough symbols to repr
esentthe count from zero up to one  less tha
n the base number. This means that symbols 0
```



```
1 2 3 4 5 67 8 9 are needed for DECIMAL.   Th
ere is no separate  symbol forthe BASE (Ten i
n the case of    Decimal),";
 930 PRINT  INVERSE 1;"  the BASE being repre
-sented by  1 0  to indicate  1   complete  g
roup of ten items,          plus 0 remainder.
    "
 940 INPUT  INK 7; PAPER 2;"PRESS <ENTER>  ";
X$
 950 CLS : PRINT  PAPER 2;"DECIMAL SYSTEM
     (base 10)"
 960 PRINT : PRINT  INVERSE 1;" '1 0 0'  ther
efore means ten   groups of ten and '1 0 0 0'
  is ten times ten groups of ten or  10 x 10
x 10  which is the same as 10C (10 to the pow
er of 3).  "
 970 PRINT : PRINT "10G 10F 10E 10D 10C 10B 1
0A 10H"
 980 PRINT "                    1   0   0   0"
 990 PRINT : PRINT  INVERSE 1;"NOTE: ANY NUMB
ER RAISED TO THE  POWER OF 1  (eg 10A)   IS I
TSELF";CHR$ 8;CHR$ 8;CHR$ 8;CHR$ 8;CHR$ 8;CHR
$ 8; INVERSE 0; OVER 1;"_______";
1000 PRINT : PRINT  INVERSE 1;" AND ANY NUMBE
R RAISED TO POWER      0 (eg 10H) IS ALWAYS 1
.   "
1010 PRINT  INVERSE 1;"Using this convention,
 relating  ascending powers of the BASE   val
ue, you can create a countingsystem to any BA
SE you wish!    "
1020 INPUT  INK 2; PAPER 7;"PRESS <ENTER> ";X
$: LET B=10: GO TO 380
1030 GO TO 600
1099 REM *BINARY EXPLANATION
1100 CLS : PRINT  PAPER 2;"BINARY SYSTEM
     (Base 2)"
1110 PRINT : PRINT  INVERSE 1;"MECHANICAL AND
 ELECTRICAL       SWITCHES ARE SIMPLEST AND M
OST  RELIABLE WHEN THEY HAVE ONLY TWOPOSSIBLE
 STATES, 'ON' AND 'OFF'."
1120 PRINT  INVERSE 1;"FROM OUR NOTES ON THE
DECIMAL   SYSTEM WE CAN SEE THAT BINARY   NEE
DS ONLY TWO SYMBOLS '0' AND  '1'TO COUNT UP T
O ANY EQUIVALENT"
```

```
1130 PRINT  INVERSE 1;"DECIMAL VALUE.  USING
THE 'OFF' STATE OF A SWITCH OR CIRCUIT TO REP
RESENT '0' AND THE 'ON' STATETO REPRESENT '1'
, IT IS POSSIBLETO REPRESENT ANY DECIMAL NUMB
ER "
1140 PRINT  INVERSE 1;"USING A CHAIN OF VERY
SIMPLE          TWO-STATE DEVICES.        "
1145 INPUT  INVERSE 1;"PRESS <ENTER>  ";X$
1150 LET B=2: GO TO 380
1199 REM *HEXADECIMAL EXPLANATION
1200 CLS : PRINT  PAPER 2;"HEXADECIMAL
     (Base 16)"
1210 PRINT  INVERSE 1;AT 5,0;" COMPUTERS WORK
 BEST IN BINARY. "
1220 PRINT  INVERSE 1;"UNFORTUNATELY HUMANS D
O NOT! 187DECIMAL IS 10111010 IN BINARY!  "
1230 PRINT  INVERSE 1;"THIS COMPUTER USES 8 B
IT BYTES. EACH BYTE CAN HOLD NUMBERS FROM  0
TO 255 (ie 11111111 BINARY).        16(DECIMA
L) IS 2D        "
1240 PRINT  INVERSE 1;"SO HEXADECIMAL IS A GO
OD COMPROM-ISE BETWEEN COMPUTER AND HUMAN.AND
 NUMBERS FROM 0 TO 255 (DEC)   ARE ALL JUST T
WO HEX DIGITS.  "
1250 INPUT  FLASH 1;"PRESS<ENTER> ";X$: LET B
=16: GO TO 380
2000 DATA 240,16,32,64,240,0,0,0,240,16,112,1
6,240,0,0,0,128,128,160,240,32,0,0,0,240,128,
240,16,240,0,0,0,192,128,240,144,240,0,0,0,24
0,16,32,64,128,0,0,0
2010 DATA 96,144,144,144,96,0,0,0,240,144,96,
144,240,0,0,0,1,5,8,10,16,20,32,255
```


Toptrainer

(48K)

This is a horseracing game in two parts. In the first section players are presented with a board on which their counters are randomly moved by the computer. This offers players the opportunity to buy and sell horses, win or lose money, train their nags and prepare for stage two, the actual race. Prior to the race itself, each player has the chance to decide which of his horses he wants to enter and how he wants to place his bets. After players have issued 'race instructions' to their jockeys, the race is run and the winner collects both the prize money and any returns due from bets placed. At the start of the game each player has £10,000, and throughout the game balances are presented so that you can keep track of your fortunes. Play continues until someone reaches six figures, or until only one player is left in credit.

```
   1 REM toptrainer
   2 DATA "Ant ","Bee ","Cola","Dash","Emu ",
"Fox ","Gus ","Harp","Ibex","Jinn","Kay ","Li
na","Mack","Nixy","Olly","Pug "
   5 RANDOMIZE
  10 GO SUB 3000
  11  INK 0
  12 DIM h$(16,4): DIM h(16): DIM f(16): DIM
p(16)
  14 DIM a$(8,5): DIM a(8): DIM v(2,16): DIM
w(2,16)
  16 DIM t(16): DIM r(16): DIM s(16): DIM o(1
6): DIM q(4,16)
  18 DIM b(8): DIM d(8)
  20 FOR i=1 TO 16
  22 READ h$(i)
  25 LET h(i)=INT (RND*10+1)
  26 LET o(i)=-1
  28 LET f(i)=0
  29 NEXT i
  30 DATA 3,3,3,10,3,17,3,24
  31 DATA 8,24,13,24,18,24,18,17
  32 DATA 18,10,18,3,13,3,8,3
  35 FOR i=1 TO 12: READ w(1,i),w(2,i): NEXT
i
```

```
  40 FOR i=1 TO 12
  42 LET v(1,i)=6-(4*((i-1)/4-INT ((i-1)/4)))
  44 LET v(2,i)=12-INT ((i-1)/4)
  45 NEXT i
 100 PAPER 1: BORDER 1: CLS
 105 INPUT "How many players? (1-8) ";n
 107 IF n<1 OR n>8 THEN  GO TO 100
 110 FOR i=1 TO n
 120 PRINT AT 21,0;"Name of Player  ";i;
 125 INPUT ":-";e$
 126 IF LEN e$>5 THEN  PRINT AT 21,18;"Max 5
letters";: GO TO 125
 128 LET a$(i)=e$: LET a(i)=10000
 130 NEXT i
 135 BORDER 2
 140 INK 6: CLS : PRINT "         TOP TRAINER"
 141 INK 7: PRINT AT 2,4;"You start with £100
00 each."
 142 PRINT "Each of you is an owner/trainer"
 144 PRINT "of horses which you can buy,"
 146 PRINT "sell, train up, and enter for"
 148 PRINT "races."
 150 PRINT AT 8,4;"You make money from winnin
g"
 152 PRINT "races and also by betting on"
 154 PRINT "horses -yours or someone else's."
 156 PRINT AT 12,4;"Horses improve when they
run"
 158 PRINT "well but lose value when they"
 160 PRINT "don't. It costs £500 to enter a"
 162 PRINT "horse for the race."
 164 PRINT AT 17,4;"If you go bankrupt, you l
ose"
 166 PRINT "the chance to train, run or bet"
 168 PRINT "on horses."
 170 GO SUB 9920
 200 BORDER 4: PAPER 6: CLS : INK 2: LET m=1:
 LET w3=0
 201 FOR i=2 TO 30 STEP 7
 205 FOR j=1 TO 21
 210 PRINT AT j,i;" ";
 215 NEXT j: NEXT i
 220 FOR i=1 TO 21 STEP 5
 225 FOR j=2 TO 30
```



```
 230 PRINT AT i,j;" ";
 235 NEXT j: NEXT i
 240 PRINT AT 11,10;"              ";
 250 FOR j=7 TO 15
 255 PRINT AT j,16;" ";: NEXT j
 256 FOR i=1 TO n: LET p(i)=1
 257 LET line=0: LET col=0: IF i>4 THEN  LET
line=1: LET col=-4
 258 PRINT AT w(1,p(i))+line,w(2,p(i))+i+col;
CHR$ (48+i)
 259 NEXT i
 260 INK 2
 262 PRINT AT 2,3;"START> CHANCE ■SALE■ TRAIN
  "
 265 PRINT AT 7,3;"TRAIN  ";: INK 1: PRINT "B
ANK BALANCE£";: INK 2: PRINT " ■SALE■"
 270 PRINT AT 12,3;"CHANCE"
 272 PRINT AT 12,24;"CHANCE"
 275 PRINT AT 17,3;"■SALE■ TRAIN  CHANCE ■SAL
E■"
 280 FOR j=1 TO n
 285 PRINT AT 7+j,16;"       "
 290 PRINT AT 7+j,10;j;a$(j);
 291 IF a(j)<0 THEN  PRINT "";
 292 PRINT AT 7+j,16;a(j);"";
 295 NEXT j
 300 INK 0: PRINT AT 0,0;a$(m);"'s go..."
 310 LET thro=INT (RND*6+1)
 315 GO SUB 9500
 320 PRINT AT 0,15;thro
 330 GO SUB 9500
 335 LET line=0: LET col=0: IF m>4 THEN  LET
line=1: LET col=-4
 336 PRINT AT w(1,p(m))+line,w(2,p(m))+m+col;
" "
 337 LET x=p(m)+thro
 340 IF x>12  THEN  LET x=x-12
 345 LET p(m)=x
 350 LET line=0: LET col=0: IF m>4 THEN  LET
line=1: LET col=-4
 352 PRINT AT w(1,p(m))+line,w(2,p(m))+m+col;
CHR$ (48+m)
 355 GO SUB 9000
 358 IF x=1 THEN  GO TO 450
```

```
 360 IF x=2 OR x=6 OR x=8 OR x=11 THEN  GO TO
 6000
 362 IF x=3 OR x=5 OR x=7 OR x=10 THEN  GO TO
 7000
 365 IF x=4 OR x=9 OR x=12 THEN  GO TO 8000
 375 GO SUB 9900
 380 GO SUB 9000
 395 LET m=m+1
 397 IF m>n THEN  LET m=1
 400 GO TO 280
 450 PAPER 0: BORDER 3: CLS : INK 6
 452 PRINT "Someone landed on START, so it's"
 455 PRINT : PRINT "time for a race...."
 460 GO SUB 9500
 470 LET r=0
 550 FOR i=1 TO n
 557 FOR j=1 TO 16
 560 IF o(j)<>i THEN  GO TO 575
 562 CLS : PRINT AT 1,0;a$(i)
 563 PRINT AT 3,0;h$(j);" Cost £";h(j)*500: G
O SUB 5400
 564 PRINT AT 7,0;"Will ";h$(j);" race today?
"
 565 LET y$=INKEY$: IF y$="" THEN  GO TO 565
 570 IF y$="y" THEN  LET a(i)=a(i)-500: IF a(
i)<0 THEN  LET a(i)=a(i)+500: GO SUB 9600: GO
 TO 585
 572 IF y$="y" THEN  LET s(j)=1: LET r=r+1: L
ET x=INT (h(j)+f(j)/2): GO SUB 5000
 575 NEXT j
 585 NEXT i
 599 PAPER 4: BORDER 3: CLS : LET z=0: LET a=
0: LET rr=0
 600 GO SUB 4000
 605 LET rx=1
 610 LET m=INT (RND*16+1): IF w3>400 THEN  GO
 TO 885
 615 IF s(m)=0 OR s(m)=5 THEN  LET w3=w3+1: G
O TO 610
 630 LET rr=rr+1: LET s(m)=5
 635 PRINT AT v(1,rr),v(2,rr);CHR$ (64+m)
 636 LET z=z+h(m)+f(m)
 637 LET p(m)=rr
 640 IF r<>rr THEN  GO TO 610
```



```
 650 FOR j=1 TO 16
 655 IF s(j)<>5 THEN  GO TO 662
 658 LET h9=h(j)+f(j): IF h9<=1 THEN  LET h9=
1
 660 INK 6: PRINT AT 0,0;"ODDS": PRINT AT rx,
0;"";h$(j,1 TO 1);"=";INT (z/h9);""
 661 LET rx=rx+1
 662 NEXT j
 664 FOR i=1 TO n: INK 0
 665 IF a(i)<=0 THEN  PRINT AT 20,0;a$(i);" h
as no cash to bet!": GO SUB 9500: GO TO 680
 666 PRINT AT 13,0;a$(i);" Bet?(Y/N)"
 667 FOR k=1 TO 10: LET y$=INKEY$: NEXT k
 668 LET y$=INKEY$: IF y$="" THEN  GO TO 668
 670 IF y$="n" THEN  GO TO 690
 672 PRINT "Horse's letter? ";
 673 FOR k=1 TO 10: LET y$=INKEY$: NEXT k
 674 LET y$=INKEY$: IF y$="" THEN  GO TO 674
 675 PRINT y$
 676 FOR j=1 TO 16
 678 IF y$=h$(j,1 TO 1) THEN  LET b(h)=j
 679 NEXT j
 680 INPUT "How much money? ";y$: LET a=VAL y
$
 683 IF a(i)-a<0 THEN  PRINT "Not enough mone
y in the kitty!": GO SUB 9500: GO TO 697
 684 LET d(i)=a: LET a(i)=a(i)-a
 690 PRINT AT 13,0;"                    "
 692 PRINT AT 14,0;"                      "
 695 PRINT AT 20,0;"
    "
 696 PRINT AT 21,0;"
    "
 697 NEXT i
 698 GO SUB 9000
 699 GO SUB 4300
 700 FOR j=1 TO 16
 705 LET ja=p(j)
 710 IF s(j)<>5 THEN  GO TO 850
 720 LET r(ja)=1: IF v(2,ja)>24 THEN  LET r(j
a)=2
 730 IF v(1,ja)>16 THEN  LET r(ja)=3
 740 IF r(ja)=3 AND v(2,ja)<10 THEN  LET r(ja
)=4
```

```
 750 LET m=INT (RND*5)
 760 IF m>2 THEN  GO TO 780
 765 IF m=2 AND q(r(ja),ja)>0 THEN  LET q(r(j
a),ja)=q(r(ja),ja)-1: GO TO 780
 770 GO TO 850
 780 GO SUB 1000+100*r(ja)
 785 IF m=1 THEN  GO TO 850
 800 PRINT AT v(1,ja),v(2,ja);" "
 810 LET v(1,ja)=v(1,ja)+y
 815 LET v(2,ja)=v(2,ja)+x
 820 PRINT AT v(1,ja),v(2,ja);h$(j,1 TO 1)
 840 IF r(ja)=4 AND v(2,ja)<5 THEN  GO TO 860
 850 NEXT j
 855 GO TO 700
 860 GO SUB 9000
 861 PRINT AT 0,0;"The WINNER is ";h$(j): LET
 e$=h$(j)
 862 LET r=rr*1000
 863 PRINT AT 1,0;a$(o(j));" gets £";r;" priz
e": LET a(o(j))=a(o(j))+r
 865 GO SUB 9900
 867 GO SUB 9000
 868 LET z=INT (z/(h(j)+f(j))): IF z<1 THEN
LET z=1
 869 GO SUB 2000: PRINT AT 2,0;e$;" won at od
ds of ";z;" to 1"
 870 FOR k=1 TO n
 872 IF b(k)=j THEN  LET a(k)=a(k)+b(k)*z+b(k
): PRINT a$(k);"'s bet wins!"
 876 NEXT k
 879 GO SUB 9900
 880 LET r=1: LET rr=1
 881 FOR j=1 TO 16: LET r(j)=1: LET s(j)=0: L
ET p(j)=0
 884 NEXT j
 885 CLS
 886 GO TO 200
1100 LET x=1
1110 FOR y=1 TO -1 STEP -1: IF SCREEN$ (v(1,j
a)+y,v(2,ja)+x)=" " THEN  RETURN
1120 NEXT y
1130 LET m=1: RETURN
1200 LET y=1
1210 FOR x=-1 TO 1: IF SCREEN$ (v(1,ja)+y,v(2
```



```
,ja)+x)=" " THEN  RETURN
1220 NEXT x
1230 LET m=1: RETURN
1300 LET x=-1
1310 FOR y=1 TO -1 STEP -1: IF SCREEN$ (v(1,j
a)+y,v(2,ja)+x)=" " THEN  RETURN
1320 NEXT y
1330 LET m=1: RETURN
1400 GO TO 1300
2000 GO SUB 9000
2005 PRINT AT 0,0;"Form changes as a result o
f race"
2006 LET rx=0
2007 FOR j=1 TO 11
2010 FOR i=1 TO 3
2020 IF SCREEN$ (15+i,2+j)=" " THEN  GO TO 20
50
2025 LET x=CODE (SCREEN$ (15+i,2+j))-64
2027 LET rx=rx+1
2030 PRINT rx;" ";h$(x);
2032 IF j>=9 THEN  PRINT " Will lose points";
2033 PRINT
2034 LET f(x)=f(x)+INT ((13-j)*.75)
2050 NEXT i: NEXT j
2052 PRINT
2055 PRINT "If any horse hasn't been given a"
2060 PRINT "mention then it has lost 4 form"
2065 PRINT "points. It should have stayed at"
2070 PRINT "home!"
2075 GO SUB 9500: GO SUB 9900: CLS
2076 PRINT "Horse  Owner  £ before  £ now"
2080 FOR i=1 TO 16: IF s(i)<>5 THEN  GO TO 21
00
2085 LET f(i)=f(i)-4
2092 PRINT AT i,0;h$(i);TAB (7);a$(o(i))
2095 PRINT AT i,14;t(i): PRINT AT i,22;h(i)*5
00+f(i)*250
2100 NEXT i
2110 RETURN
3000 CLS : FOR j=1 TO 30
3010 INK (RND*8)
3015 PAPER (RND*8)
3020 PRINT AT RND*20,RND*21;"TOP TRAINER"
3030 NEXT j: RETURN
```

```
4000 PRINT AT 2,8;"TTTTTTTTTTTTTTTTTT"
4010 PRINT AT 7,8;"TTTTTTTTTTTTTT"
4020 PRINT AT 15,0;"TTTTTTTTTTTTTTTTTTTTTTTT"
4030 PRINT AT 19,0;"TTTTTTTTTTTTTTTTTTTTTTTTTTT
TTT"
4040 FOR i=2 TO 19: PRINT AT i,27;"T": NEXT i
4050 FOR i=7 TO 15: PRINT AT i,23;"T": NEXT i
4060 FOR i=3 TO 6: PRINT AT i,14;" ": NEXT i
4070 PRINT AT 15,4;"O": PRINT AT 15,13;" "
4090 RETURN
4300 FOR i=3 TO 6: PRINT AT i,14;" ": NEXT i
4340 FOR i=1 TO 16: LET t(i)=INT (h(i)*500+f(
i)*250): NEXT i
4350 RETURN
5000 IF x<=0 THEN  PRINT "This horse is badly
 off form": GO TO 5100
5005 PRINT "Points available for race...";x
5010 FOR m=1 TO 4
5020 IF m=4 THEN  PRINT "The 4th quarter must
 be ";x: LET q(m,j)=x: GO TO 5100
5025 PRINT "Orders for quarter no. ";m;"(0-9)
";
5027 FOR k=1 TO 10: LET y$=INKEY$: NEXT k
5030 LET y$=INKEY$: IF y$="" THEN  GO TO 5030
5032 IF CODE (y$)<48 OR CODE (y$)>57 THEN  GO
 TO 5030
5035 LET b=VAL y$
5040 LET x=x-b
5050 IF x<0 THEN  LET x=0: LET b=0
5055 PRINT b
5060 LET q(m,j)=b
5070 NEXT m
5100 GO SUB 9900
5105 FOR m=1 TO 4: LET q(m,j)=0: NEXT m: RETU
RN
5400 PRINT "Current value £";f(j)*250+h(j)*50
0
5405 IF (f(j)*250+h(j)*500)<=0 THEN  PRINT "W
hich is bad news!!"
5410 RETURN
6000 LET x=INT (RND*6+1)
6010 LET x=-250*x
6020 IF RND>.5 THEN  LET x=-x
6030 LET a(m)=a(m)+x
```



```
6040 GO TO 375
7000 PRINT AT 0,0;"Does ";a$(m);" wish to sel
l a horse?"
7010 GO SUB 9800
7020 IF y$="n" THEN  GO TO 7050
7025 GO SUB 9000
7026 FOR i=1 TO 16
7027 IF o(i)<>m THEN  GO TO 7045
7028 PRINT AT 0,0;"Do you wish to sell ";h$(i
): GO SUB 9800
7030 IF y$="n" THEN  GO TO 7040
7031 GO SUB 9000: LET bb=INT (h(i)*500+f(i)*2
50): IF bb<0 THEN  LET bb=0
7032 PRINT AT 0,0;h$(i);" cost £";h(i)*500;"
Now worth £";bb
7033 INPUT "Buyer No. (if none type 0)";b
7035 IF b=0 THEN  GO SUB 9000: PRINT AT 0,0;"
OK, I'll take it for £";bb: GO SUB 9500
7036 IF b=0 THEN  LET o(i)=-1: LET a(m)=a(m)+
bb: GO TO 7040
7037  IF b>n THEN  GO TO 7033
7038 INPUT "At what price £";a
7039 LET o(i)=b: LET a(m)=a(m)+a: LET a(b)=a(
b)-a
7040 GO SUB 9000
7045 NEXT i
7050 LET offer=INT (RND*15+1)
7060 IF o(offer)<>-1 THEN  GO TO 7050
7070 GO SUB 9000
7080 PRINT AT 0,0;"I'll sell you ";h$(offer);
" for £";h(offer)*500
7100 GO SUB 9800
7105 GO SUB 9000
7110 IF y$<>"y" THEN  GO TO 375
7120 PRINT AT 0,0;"OK - Done"
7125 LET o(offer)=m: LET a(m)=a(m)-h(offer)*5
00: GO TO 375
8000 FOR i=1 TO 16
8010 IF o(i)<>m THEN  GO TO 8100
8012 IF a(m)<0 THEN  PRINT AT 0,0;" You're BA
NKRUPT": GO SUB 9500: GO SUB 9000: GO TO 8100
8015 PRINT AT 0,0;"How much money to train ";
h$(i)
8020 INPUT "£ ";a
```

```
8030 IF a(m)-a<0 THEN  PRINT AT 0,0;"Not enou
gh cash in the kitty!": GO SUB 9500: GO TO 80
50
8034 LET x=INT (RND*5+2)
8036 LET b=INT (x*a/3000): IF b>5 THEN  LET b
=5
8040 LET f(i)=f(i)+b: LET a(m)=a(m)-a
8050 GO SUB 9000
8100 NEXT i
8200 GO TO 375
9000 PRINT AT 0,0;"
                    "
9010 RETURN
9500 PAUSE 55: RETURN
9800 LET y$=INKEY$
9805 IF y$="" THEN  GO TO 9800
9810 RETURN
9900 PRINT AT 0,0;"    Press any key to conti
nue    "
9910 GO TO 9800
9920 PRINT AT 21,0;"Press any key"
9925 GO TO 9800
9960 PRINT
9962 PRINT "cashless..............."
9966 RETURN
```


Biorhythms

The theory of biorhythms assumes that the physical, emotional and intellectual capacities of an individual are subject to regular cycles of 23, 28 and 33 days respectively. During each cycle the curve will increase to a high point, then sink below the median value, tracing out a sine wave. These cycles commence at birth, and progress at different rates, producing crossovers, considered to signify 'critical' periods (days when the individual is more prone to accident or error of judgment) when the crossover is one involving the low values of the curves. Especially crucial are those days when all three curves meet. Positive high values at crossovers have a good effect.

The program calculates the cycles from the day of birth, and displays a graph of the curves for a period of one month from the chosen date.

```
  10 BORDER 1: PAPER 1: CLS
  20 GO SUB 9000
 100 LET total=0: LET total2=0: PRINT  INK 5;
AT 0,10;"BIORHYTHMS": PRINT : PRINT : PRINT
 110 PAPER 0: INK 5: PRINT TAB (3);"BIRTH YEA
R:    ": PRINT : PRINT TAB (3);"BIRTH MONTH:
  ": PRINT : PRINT TAB (3);"BIRTH DAY:      "
 115 PRINT : PRINT
 120 PAPER 0: INK 5: PRINT TAB (3);"YEAR REQU
IRED: ": PRINT : PRINT TAB (3);"MONTH REQUIRE
D:": PRINT : PRINT TAB (3);"DAY REQUIRED    "
 130 PRINT  INK 5; FLASH 1;AT 21,3;"Enter det
ails now (numeric)"
 140 PRINT  PAPER 0; INK 7; FLASH 1;AT 4,3;"B
IRTH YEAR:": INPUT y: PRINT AT 4,20;y
 150 PRINT  PAPER 0; INK 7; FLASH 0;AT 4,3;"B
IRTH YEAR:"
 160 PRINT  PAPER 0; INK 7; FLASH 1;AT 6,3;"B
IRTH MONTH:": INPUT m: PRINT AT 6,20;m
 170 PRINT  PAPER 0; INK 7; FLASH 0;AT 6,3;"B
IRTH MONTH:"
 180 PRINT  PAPER 0; INK 7; FLASH 1;AT 8,3;"B
IRTH DAY:": INPUT d: PRINT AT 8,20;d
 190 PRINT  PAPER 0; INK 7; FLASH 0;AT 8,3;"B
IRTH DAY:"
```

```
 200 PRINT  PAPER 0; INK 7; FLASH 1;AT 11,3;"
YEAR REQUIRED:": INPUT y1: PRINT AT 11,20;y1
 210 PRINT  PAPER 0; INK 7; FLASH 0;AT 11,3;"
YEAR REQUIRED:"
 220 PRINT  PAPER 0; INK 7; FLASH 1;AT 13,3;"
MONTH REQUIRED:": INPUT m1: PRINT AT 13,20;m1
 230 PRINT  PAPER 0; INK 7; FLASH 0;AT 13,3;"
MONTH REQUIRED:"
 240 PRINT  PAPER 0; INK 7; FLASH 1;AT 15,3;"
DAY REQUIRED:": INPUT d1: PRINT AT 15,20;d1
 250 PRINT  PAPER 0; INK 7; FLASH 0;AT 15,3;"
DAY REQUIRED:"
 270 LET total=(y-1)*365.25
 280 LET total2=(y1-1)*365.25
 300 IF m>1 THEN  LET total=total+m(m-1)
 305 IF m1>1 THEN  LET total2=total2+m(m1-1)
 310 IF m-1>1 AND y/4=INT (y/4) THEN  LET tot
al=total+1
 315 IF m1-1>1 AND y1/4=INT (y1/4) THEN  LET
total2=total2+1
 320 LET total=total+d: LET total2=total2+d1
 330 LET day=total2-total
 335 IF m1=m AND d1=d THEN  GO SUB 5000
 350 PAPER 7: INK 2: CLS
 360 GO SUB 1000
 370 LET p=day-(INT (day/23)*23)
 380 LET e=day-(INT (day/28)*28)
 390 LET i=day-(INT (day/33)*33)
 490 PRINT  FLASH 1;AT 0,0;"Physical cycle"
 500 FOR n=p*c TO (p*c)+255
 510 PLOT n-(p*c),83.5+83.5*SIN (n/(11.5*PI))
 520 NEXT n
 525 PRINT  FLASH 1;AT 0,0;"Emotional cycle"
 530 FOR n=e*c TO (e*c)+255
 540 PLOT n-(e*c),83.5+83.5*SIN (n/(14*PI))
 550 NEXT n
 555 PRINT  FLASH 1;AT 0,0;"Intellectual cycl
e"
 560 FOR n=i*c TO (i*c)+255
 570 PLOT n-(i*c),83.5+83.5*SIN (n/(16.5*PI))
 580 NEXT n
 590 PRINT  PAPER 0; INK 5;AT 0,0;"Biorhythm
for      "
 595 PAUSE 100
```



```
 600 PRINT  PAPER 7; INK 2;AT 20,3;"Press a k
ey to restart"
 610 IF INKEY$="" THEN  GO TO 610
 620 GO TO 10
1000 PRINT  PAPER 0;"
      "
1010 LET c=9.869565217
1015 PRINT  PAPER 0; INK 5;AT 0,0;"DIVISIONS=
DAYS": PAUSE 100
1020 FOR x=1 TO 25
1040 PLOT c*x,0: DRAW 0,167
1060 NEXT x
1080 PRINT  PAPER 0; INK 5;AT 0,18;d1;"/";m1;
"/";y1;"+"
1100 RETURN
5000 LET a=.2: LET b=.4
5010 BEEP a,0: BEEP a,0: BEEP b,2: BEEP b,0:
BEEP b,5: BEEP b,4: PAUSE 10: BEEP a,0: BEEP
a,0: BEEP b,2: BEEP b,0: BEEP b,7: BEEP b,5:
PAUSE 10: BEEP a,0: BEEP a,0: BEEP b,12: BEEP
 b,9: BEEP b,5: BEEP b,4: BEEP b,2: PAUSE 10:
 BEEP a,10: BEEP a,10: BEEP b,9: BEEP b,5: BE
EP b,7: BEEP b,5
5020 RETURN
9000 RESTORE : DIM m(11)
9010 FOR x=1 TO 11
9020 READ n: LET m(x)=n
9030 NEXT x
9040 DATA 31,59,90,120,151,181,212,243,273,30
4,334
9999 RETURN
```

Alien

The alien ship passes overhead, razing the ground below with its power beam, and dropping swarms of deadly Veepods. Moving swiftly across your territory you fire your missiles as long as the power holds out. When a recharge is necessary, your base changes shape, and you must ride out the dangers undefended. As an added difficulty, you can choose to have an invisible alien, only identifiable when it fires, and providing minimal guidance for your missile positioning.

```
   1 REM @ P.STANLEY
   3 LET hs=0
  10 BORDER 0: PAPER 0: INK 6: CLS
  12 GO SUB 1000
  15 GO SUB 2000
  18 CLS
  19 PAUSE 50
  20 LET x=0: LET y=1: LET z=14: LET s=0: LET
 c=0
  25 PRINT AT 0,20;"HI-SCORE:";hs
  30 GO SUB 71
  35 IF RND>.97 THEN  GO SUB 200
  40 IF RND<.05 THEN  GO SUB 78
  60 IF c=3 THEN  GO TO 305
  61 LET z=z+(2 AND IN 65278=251 AND z<26)-(2
 AND IN 65278=253 AND z>0)
  62 PRINT AT 21,z; INK 3;"  C  "
  63 IF IN 32766=251 THEN  GO SUB 100
  68 PRINT AT 0,2;"SCORE:";s
  70 GO TO 30
  71 LET x=x+1: PRINT AT y,x;" ";g$
  72 IF x=29 THEN  PRINT AT y,x;"   ": LET x=
0: LET y=y+1
  73 IF y=21 THEN  LET y=1: LET c=c+1
  74 IF c=3 THEN  GO TO 305
  75 RETURN
  78 PLOT 8*x+12,(21-y)*8: DRAW 0,-((21-y)*8)
  79 BEEP .05,-20: BEEP .05,-15
  80 IF x=z+1 THEN  PLOT  OVER 1;8*x+12,(21-y
)*8: DRAW  OVER 1;0,-((21-y)*8): GO TO 300
```



```
  82 BEEP .05,-20: BEEP .05,-15
  83 OVER 1: PLOT 8*x+12,(21-y)*8: DRAW 0,-((
21-y)*8): OVER 0
  84 RETURN
 100 FOR a=20 TO 1 STEP -1
 110  PRINT AT a,z+2;"G"
 111 IF RND<.04 THEN  GO SUB 78
 112 LET z=z+(2 AND IN 65278=251 AND z<26)-(2
 AND IN 65278=253 AND z>0): PRINT AT 21,z; IN
K 3;"  C  "
 120 GO SUB 71
 150 BEEP .001,a+20
 160 IF a=y THEN  IF x=z+1 OR x=z THEN  LET s
=s+INT (100/y)+10: PRINT AT y,x;" DD": BEEP .
2,0: BEEP .2,12: RETURN
 168 PRINT AT a,z; INK 5;"      "
 170 NEXT a: RETURN
 200 LET f=x: FOR a=y TO 21
 210 PRINT AT a,f; INK 4;"FFFF"
 220 LET z=z+(2 AND IN 65278=251 AND z<26)-(2
 AND IN 65278=253 AND z>0): PRINT AT 21,z; IN
K 2;"  E  "
 230 IF a=21 THEN  IF f=z OR f=z-1 OR f=z+1 O
R f=z+2 THEN  GO TO 300
 240 GO SUB 71
 242 PRINT AT a,f;"    "
 245 NEXT a
 250 RETURN
 300 PRINT AT 21,z+2;" "
 301 FOR a=-15 TO 15 STEP 3
 302 PLOT z*8+20,2
 303 DRAW a,RND*16
 304 NEXT a
 305 FOR a=40 TO -40 STEP -2
 306 BEEP .005,a: NEXT a
 307 IF s>hs THEN  LET hs=s
 310 FOR a=-40 TO 40
 320 BEEP .005,a
 330 NEXT a
 332 INPUT AT 0,0;"Do you want to see the ali
en?",v$
 333 IF v$(1)="y" THEN  LET g$="AB": GO TO 33
6
 334 IF v$(1)="n" THEN  LET g$="  ": GO TO 33
```

```
6
 335 GO TO 332
 336 FOR f=1 TO 100: NEXT f
 340 PRINT AT 5,1;"Press any key to play agai
n:"
 350 IF INKEY$<>"" THEN  CLS : FOR x=0 TO 200
: NEXT x: GO TO 20
 360 GO TO 350
1000 FOR x=USR "a" TO (USR "g"+7): READ y: PO
KE x,y: NEXT x
1010 DATA 0,0,60,255,BIN 11101010,63,15,3,0,0
,60,255,BIN 01010111,252,BIN 11110000,192,8,8
,8,BIN 01011101,119,BIN 01100011,BIN 01011101
,0
1020 DATA 1,68,136,16,160,0,4,84
1025 DATA 129,255,BIN 10100101,36,60,60,126,2
55
1030 DATA 0,130,198,BIN 01101100,124,56,16,16
1035 DATA 8,8,8,8,8,28,0,0
1040 RETURN
2000 PLOT 0,95: DRAW 5,0: DRAW 8,28: DRAW 26,
0: DRAW 0,3: DRAW -25,0: DRAW 11,37: DRAW 27,
-67: DRAW 12,0: DRAW 0,67: DRAW 3,0: DRAW 0,-
64: DRAW 35,0: DRAW 0,-3: DRAW 25,0: DRAW 0,3
: DRAW 5,0: DRAW 0,61
2020 DRAW -5,0: DRAW 0,3: DRAW 15,0: DRAW 0,-
3: DRAW 0,-61: DRAW 5,0: DRAW 0,-3: DRAW 18,0
: DRAW 0,67: DRAW 30,0: DRAW 0,-3: DRAW -26,0
: DRAW 0,-25: DRAW 15,0: DRAW 0,-3: DRAW -15,
0: DRAW 0,-33: DRAW 30,0: DRAW 0,-3: DRAW 12,
0: DRAW 0,67: DRAW 37,-67: DRAW 0,67
2030 PRINT AT 12,0; INK 3;"  LEFT.....
.. Z            RIGHT..... X
   FIRE..... M
                    YOU CAN ONLY FIRE IF YO
UR BASE  IS ""C"" AND NOT ""£"""
2034 PRINT : PRINT "Press 'I' for an invisibl
e alienor 'V' for a visible one."
2036 IF INKEY$="i" THEN  LET g$="  ": GO TO 2
040
2037 IF INKEY$="v" THEN  LET g$="AB": GO TO 2
040
2038 GO TO 2036
2040 PAUSE 0
2050 RETURN
```


Galaxians

You are the commander of the sole surviving laser base on Earth. The fleets of Alien spacecraft are moving in for the final onslaught. Some swoop down, lasers blasting; others sit at the top of the screen launching unstoppable bombs which must be dodged. If you wipe out one fleet, another will appear in its place. In short, you haven't a chance. But make sure you take as many of the nasties with you as you can before you go.

```
  10 BORDER 0: PAPER 0: INK 7: CLS
  15 LET hs=0
  18 GO SUB 8000
  20 GO SUB 9000
  21 LET x=15: LET sc=0: LET l=3: LET m=RND*1
8: LET g=3: LET h=INT (RND*18)
  30 LET a$=" AB AB AB AB AB AB ": LET b$=" C
D CD CD CD CD CD ": LET c$="
  "
  35 LET d$=" EF EF "
  40 LET dir=1: LET y=0
  60 LET hit=0
  80 PRINT AT 0,17;"HIGH-SCORE:";hs
 100 PRINT AT 2,y; INK 5;a$
 110 BEEP .001,30: BEEP .001,30: BEEP .001,30
 115 BEEP .001,30: BEEP .001,30: BEEP .001,30
 120 PRINT AT 2,y; INK 5;b$
 130 BEEP .001,40: BEEP .001,40: BEEP .001,40
 140 LET x=x+2*(IN 65278=251 AND x<25)-2*(IN
65278=253 AND x>1)
 150 PRINT AT 21,x;"  NG  "
 155 IF IN 32766=251 THEN  GO SUB 1000: PRINT
 AT 0,0;"SCORE:";sc
 160 LET y=y+dir
 170 IF y=0 OR y=13 THEN  LET dir=-dir
 175 PRINT AT 1,m;"        "
 180 LET l=l+1: LET m=m+RND*4-RND*4
 185 IF l=21 THEN  LET l=3: LET d$=" EF EF "
 186 IF m>25 THEN  LET m=12
 187 IF m<0 THEN  LET m=12
 188 PRINT  INK 4;AT l,m;d$
 190 PRINT AT g,h;"  "
```

```
 200 LET g=g+3: PRINT AT g,h;"LM": IF g=21 TH
EN  LET g=3: PRINT AT 21,h;"  ": LET h1=h: LE
T h=INT (RND*17)+1: IF h1=x+3 OR h1=x+2 OR h1
=x+1 THEN  GO TO 4000
 210 IF RND>.8 THEN  IF d$<>"        " THEN  G
O SUB 3000
 300 GO TO 100
1000 IF POINT (x*8+23,(21-l)*8+4)=1 THEN  GO
TO 1080
1005 IF POINT (x*8+23,156)=1 THEN  LET hit=1
1010 PLOT x*8+23,8: DRAW 0,146
1020 BEEP .02,10
1030 PLOT  OVER 1;x*8+23,8: DRAW  OVER 1;0,14
6
1040 IF hit=1 THEN  LET a$(x+2-y TO x+4-y)="
  ": LET b$(x+2-y TO x+4-y)="    ": LET sc=sc+
10: PRINT AT 2,x+1;"HHH": FOR f=0 TO 15 STEP
5: BEEP .01,f: NEXT f: PRINT AT 2,x+1;"    "
1050 LET hit=0
1055 IF a$=c$ THEN  GO TO 2000
1060 RETURN
1080 IF g=1 THEN  IF h=x+1 OR h=x+2 THEN  RET
URN
1100 PLOT x*8+23,8: DRAW 0,(21-l)*8-8
1110 BEEP .02,10
1120 PLOT  OVER 1;x*8+23,8: DRAW  OVER 1;0,(2
1-l)*8-8
1130 LET d$(x+2-m TO x+4-m)="    ": LET sc=sc+
20: PRINT AT 1,x+1;"HHH": FOR f=0 TO 15 STEP
5: BEEP .01,f: NEXT f: PRINT AT 1,x+1;"    "
1140 RETURN
2000 FOR f=0 TO 15
2010 PRINT AT 7,f;" IJK"
2020 IF f=0 OR f=3 OR f=6 OR f=9 OR f=12 OR f
=15 THEN  FOR i=6 TO 2 STEP -2: PRINT  OVER 1
;AT i,f+1; INK 5;"AB": BEEP .01,i: PRINT  OVE
R 1;AT i,f+1; INK 5;"AB": NEXT i: PRINT  INK
5;AT 2,f+1;"AB"
2040 NEXT f
2042 FOR f=14 TO 26 STEP 2
2044 BEEP .01,-4
2046 PRINT AT 7,f;"  IJK"
2047 NEXT f
2050 PRINT AT 7,28;"     "
```



```
2060 GO TO 30
3000 IF d$(2)<>"£" THEN  GO TO 3080
3010 INK 3: PLOT m*8+16,(21-l)*8-1
3015 DRAW 0,9-(21-l)*8
3020 FOR f=38 TO 42: BEEP .001,f: NEXT f
3030 PLOT  OVER 1;m*8+16,(21-l)*8-1: DRAW  OV
ER 1;0,9-(21-l)*8
3040 IF POINT (m*8+16,4) THEN  GO TO 4000
3050 INK 7: RETURN
3080 IF g=1 AND h=x+2 OR h=x+1 THEN  RETURN
3100 INK 3: PLOT m*8+36,(21-l)*8-1: DRAW 0,9-
(21-l)*8
3120 FOR f=38 TO 42: BEEP .001,f: NEXT f
3130 PLOT  OVER 1;m*8+36,(21-l)*8-1: DRAW  OV
ER 1;0,9-(21-l)*8
3140 IF POINT (m*8+36,4) THEN  GO TO 4000
3160 INK 7: RETURN
4000 FOR f=1 TO 15
4009 PRINT AT 21,x+2; INK RND*6+1;"HH"
4020 BEEP .05,-RND*30
4030 NEXT f
4035 PRINT AT 21,x+2;"  "
4040 IF sc>hs THEN  LET hs=sc
4050 PRINT AT 10,8; FLASH 1;"G A M E  O V E R
";AT 18,2;"PRESS ANY KEY TO PLAY AGAIN"
4060 IF INKEY$<>"" THEN  CLS : INK 7: FOR f=1
 TO 100: NEXT f: GO TO 21
4070 GO TO 4060
8000 PRINT AT 0,6;"G A L A X I A N S"; OVER 1
;AT 0,6;"__________________"
8010 PRINT '"Fleet after fleet, the invaders
form and wait to attack. Some ofthem dive dow
n to Earth firing  lasers as they do."
8020 PRINT '"The invaders in the formation
drop dangerous bombs to try and destroy your
laser base. Diving invaders are worth more po
ints."
8030 PRINT '"As soon as 1 fleet of invaders
have been destroyed their mother-ship will ar
range a new battle-line."
8035 PRINT : PRINT "z = left  x = right  m =
fire"
8040 PRINT '' INVERSE 1;"PRESS ANY KEY TO STA
RT"
```

```
8050 PAUSE 0: CLS : RETURN
9000 FOR x=USR "a" TO USR "n"+7: READ y: POKE
 x,y: NEXT x
9010 DATA 34,35,36,62,15,7,2,14
9020 DATA 36,196,228,252,240,224,64,112
9030 DATA 2,3,7,63,39,39,34,3
9040 DATA 64,192,32,124,228,228,68,192
9050 DATA 128,BIN 10100110,242,123,61,47,39,3
9060 DATA 1,BIN 01100101,BIN 01001111,BIN 110
11110,BIN 10111100,244,196,192
9070 DATA 0,240,248,252,14,6,6,6
9073 DATA 145,82,0,3,192,0,74,145
9080 DATA 7,31,127,170,170,127,31,7
9090 DATA 255,255,255,170,170,255,255,255
9100 DATA 192,240,252,170,170,252,240,192
9110 DATA 18,19,18,28,4,2,1,1
9120 DATA 72,200,72,56,32,64,128,128
9300 DATA 1,31,63,127,225,193,192,192
9500 RETURN
```


Sheepdog Trials

There's no getting away from it, sheep are dumb. The pen in the middle of the screen is large enough for them all to be housed in comfort, but the wretched creatures are demonstrating an unpalatable degree of reticence. Your trusty collie, Jim, is doing the best he can, but he requires a firm handling from you and your cursor control keys. As in life, time is running out, and this unusually difficult game will defeat you unless you manage to get all the sheep into the pen before the last second ticks away. If your best efforts are to no avail never fear . . . there's always the slaughter house!

```
   1 REM by Robert Erskine from an original i
dea by Tom Hayward
  10 GO SUB 6000
  20 GO SUB 5000
  30 INPUT "How many players?";A
  40 DIM p(A): DIM S(4,2): LET DX=15: LET DY=
15: BORDER 4: PAPER 4: INK 4: CLS
  45 RANDOMIZE : LET DD=1: LET RR=1: DIM R(2)
: LET R(1)=-1: LET R(2)=1
  46 GO TO 65
  50 CLS : FOR x=0 TO 21: PRINT AT x,0; INK 0
;"F";AT x,31; INK 0;"£": NEXT x
  55 FOR x=6 TO 9: PRINT  INK 0;AT x,10;"F";A
T x,20;"£": NEXT x
  56 FOR x=11 TO 19: PRINT  INK 0;AT 5,x;"G";
AT 10,x;"_": NEXT x
  57 PRINT  PAPER 4; INK 4;AT 10,15;"  "
  58 PRINT  INK 0;AT 5,10;"H";AT 5,20;"I";AT
10,10;"J";AT 10,20;"K"
  60 FOR x=0 TO 31: PRINT AT 0,x; INK 0;"_";A
T 21,x; INK 0;"G": NEXT x
  61 RETURN
  80 FOR t=1 TO A: REM player loop
  81 GO SUB 50
  85 LET sc=0: LET S(1,1)=3: LET S(1,2)=15: L
ET S(2,1)=3: LET S(2,2)=16: LET S(3,1)=4: LET
 S(3,2)=15: LET S(4,1)=4: LET S(4,2)=16
  90 PRINT AT 0,0; INK 7;"PLAYER ";t
```

```
  95 GO TO 180
 100 REM dogmove
 105 IF INKEY$="0" THEN  GO TO 3000
 110 LET I=CODE (INKEY$)-52
 115 PRINT  INK 4; PAPER 4;AT DX,DY;" "
 120 IF I=1 AND ATTR (DX,DY-1)=36 THEN  LET D
Y=DY-1: LET DD=2
 130 IF I=2 AND ATTR (DX+1,DY)=36 THEN  LET D
X=DX+1
 140 IF I=3 AND ATTR (DX-1,DY)=36 THEN  LET D
X=DX-1
 150 IF I=4 AND ATTR (DX,DY+1)=36 THEN  LET D
Y=DY+1: LET DD=1
 160 IF DD=1 THEN  PRINT  PAPER 4; INK 0;AT D
X,DY;"A"
 170 IF DD=2 THEN  PRINT  PAPER 4; INK 0;AT D
X,DY;"B"
 175 RETURN
 180 FOR z=1 TO 4: REM sheeploop
 190 LET SX=S(z,1): LET SY=S(z,2): REM sheepm
ove
 195 GO SUB 100
 200 IF RND>.75 THEN  GO TO 230
 210 IF RND>.5 THEN  LET SX=S(z,1)+R(2): GO T
O 220
 215 LET SX=S(z,1)+R(1)
 220 IF RND>.5 THEN  LET SY=S(z,2)+R(2): GO T
O 230
 225 LET SY=S(z,2)+R(1)
 230 LET E=(ABS DX-S(z,1))/10: LET F=(ABS DY-
S(z,2))/10: LET G=S(z,1)-DX: LET H=S(z,2)-DY
 235 LET o=0: LET q=RND: IF q>E AND q>F THEN
 LET o=1
 240 IF G>0 AND o=1 THEN  LET SX=S(z,1)+1
 250 IF H>0 AND o=1 THEN  LET SY=S(z,2)+1: LE
T RR=1
 260 IF G<0 AND o=1 THEN  LET SX=S(z,1)-1
 270 IF H<0 AND o=1 THEN  LET SY=S(z,2)-1: LE
T RR=2
 280 PRINT AT S(z,1),S(z,2);" "
 290 IF ATTR (SX,SY)<>36 THEN  GO TO 310
 300 LET S(z,1)=SX: LET S(z,2)=SY
 310 IF RR=1 THEN  PRINT  PAPER 4; INK 7;AT S
(z,1),S(z,2);"C"
```



```
 320 IF RR=2 THEN  PRINT  PAPER 4; INK 7;AT S
(z,1),S(z,2);"D"
 330 LET RR=INT (RND*2)+1
 340 NEXT z
 350 LET sc=sc+1: PRINT  PAPER 4; INK 7;AT 0,
21;"Score ";150-sc;"   ": IF sc=150 THEN  GO
TO 3000
 360 GO TO 180
 370 NEXT t
2000 BORDER 1: PAPER 1: INK 1: CLS
2005 INK 7: PRINT AT 0,12;"RESULTS": PRINT :
PRINT
2010 FOR x=1 TO A
2020 PRINT TAB 9;"Player ";x;":      ";p(x)
2030 NEXT x
2040 PRINT : PRINT TAB 4;"PRESS ANY KEY TO RE
START"
2050 IF INKEY$="" THEN  GO TO 2050
2060 GO TO 10
3000 PRINT  INK 0;AT 10,15;"___"
3002 LET p(t)=150-sc
3005 LET check=0
3010 FOR x=1 TO 4
3020 IF S(x,1)>5 AND S(x,1)<10 AND S(x,2)>10
AND S(x,2)<20 THEN  LET check=check+1
3030 NEXT x
3040 IF check<4 THEN  PRINT  INK 7;AT 18,2;"Y
ou failed to pen the sheep";AT 19,2;"Your sco
re is zero": LET P(t)=0: LET check=0: GO SUB
4000
3050 IF check=4 THEN  PRINT  INK 7;AT 18,2;"Y
our score was ";P(t): LET check=0: GO SUB 400
0
3060 GO TO 370
4000 FOR q=1 TO 400: NEXT q: RETURN
5000 BORDER 1: PAPER 1: INK 7: CLS
5010 PRINT AT 1,8;"SHEEPDOG TRIALS";AT 3,5;"@
 Robert Erskine 1983"
5020 PRINT AT 5,0;"The object of the game is
to ","herd all four sheep into the penwithin
a fixed time limit by ","moving the dog using
 the arrow ","keys. When he sheep have been "
,"penned, close the gate with ","the 0 key an
d your score will ","be displayed. Less than
```

```
four ","sheep in the pen, or running","over t
ime, results in a zero ","score"
5030 PRINT
5050 PRINT
5060 PRINT "Any number of players can play ",
"in turn": PRINT
5070 PRINT "Press any key to start": PAUSE 0
5080 RETURN
6000 RESTORE : FOR x=USR "a" TO USR "a"+87
6010 READ n: POKE x,n
6020 NEXT x
6030 DATA 0,0,2,135,126,124,230,149,0,0,64,22
5,126,62,103,169,0,0,0,6,127,254,126,37,0,0,0
,96,254,127,126,164
6040 DATA 1,1,1,1,1,1,1,1,128,128,128,128,128
,128,128,128,255,0,0,0,0,0,0,0,0
6050 DATA 255,128,128,128,128,128,128,128,255
,1,1,1,1,1,1,1,128,128,128,128,128,128,128,25
5,1,1,1,1,1,1,1,255
6060 RETURN
```


Picture Pairs

This is one for the kids, testing their powers of observation and memory. There are ten pictures of various objects displayed on the screen for a few seconds. They are then hidden from view. When you choose one of the squares the picture is revealed and you must then identify the square behind which the corresponding image is hidden. If the two pictures chosen do not form a pair, they are once again hidden and no points are scored.

```
  10 REM ** HI-RES PICTURE PAIRS            @1
983 MICHAEL BEWS
  15 POKE 23609,110
  20 PAPER 5: INK 1
  25 LET LS=100: LET TT=0: LET TS=0
  30 DIM A(12,72): DIM Q(20): DIM R(20): DIM
T(20): DIM U(20)
  40 GO TO 600
  49 REM ** DISPLAY PICTURES **
  50 PAPER 6: INK 6: CLS : PRINT  PAPER 7; IN
K 1; INVERSE 1;"  P A I R S  @1983 MICHAEL BE
WS "
  60 FOR K=1 TO 10: PAPER K/2: INK K/2: FOR L
=0 TO 7: FOR M=1 TO 9
  70 POKE USR CHR$ (143+M)+L,A(CODE G$(K)-64,
L*9+M)
  80 NEXT M: NEXT L
  90 LET X=CODE D$(K*2-1)-64: LET Y=CODE D$(K
*2)-64
 100 PRINT AT Q(X),R(X);"ABC";AT Q(X)+1,R(X);
"DEF";AT Q(X)+2,R(X);"GHI";
 110 PRINT  PAPER 6; INK 6;AT Q(Y),R(Y);"ABC"
;AT Q(Y)+1,R(Y);"DEF";AT Q(Y)+2,R(Y);"GHI";
 120 NEXT K
 125 PAPER 7: INK 1
 130 LET A=-40: LET B=-A
 140 FOR Y=160 TO 40 STEP A
 150 FOR X=23 TO 200 STEP B
 160 PLOT X,Y: DRAW 27,0: DRAW 0,-27: DRAW -2
7,0: DRAW 0,27
```

```
 170 NEXT X: NEXT Y
 200 LET W=57+INT (RND*3): LET Z=22595
 210 FOR X=1 TO 9: FOR Y=1 TO 20: POKE Z+T(Y)
+U(X),W: NEXT Y: NEXT X
 220 PRINT  PAPER 6; INK 0;AT 1,4;"1";AT 1,9;
"2";AT 1,14;"3";AT 1,19;"4";AT 1,24;"5";AT 3,
0;"6";AT 8,0;"7";AT 13,0;"8";AT 18,0;"9"; PAP
ER 2; INK 7;AT 6,27;"TRIES"; PAPER 1;AT 9,27;
"SCORE";
 230 FOR X=5 TO 0 STEP -1: PRINT AT 18,30; IN
K 7; PAPER 2; FLASH 1;X;: FOR Y=1 TO 250: NEX
T Y: NEXT X: PRINT AT 18,30; PAPER 6;" "
 240 PRINT AT 20,0; INVERSE 1;"ENTER ROW/COLU
MN NUMBERS TO TRY FOR A MATCHING PAIR OF PICT
URES "
 250 LET W=18: LET Z=22595
 260 FOR X=1 TO 20: FOR Y=1 TO 9: POKE Z+T(X)
+U(Y),W: NEXT Y: NEXT X
 270 INPUT  INVERSE 1;"ENTER FIRST PICTURE(eg
 82)";X$: IF X$="" THEN  GO TO 270
 280 IF LEN X$<>2 OR X$(1)<"1" OR X$(1)>"9" O
R X$(2)<"1" OR X$(2)>"9" THEN  GO TO 270
 290 GO SUB 540
 300 IF P<1 OR P>20 THEN  GO TO 270
 302 IF S$(P)="1" THEN  GO TO 270
 305 LET Q=P: LET SA=P
 307 FOR X=1 TO 9: POKE Z+T(P)+U(X),40: NEXT
X
 310 INPUT  FLASH 1; INK 2;"ENTER NEXT PICTUR
E(eg 82)";X$: IF X$="" THEN  GO TO 310
 320 IF LEN X$<>2 OR X$(1)<"1" OR X$(1)>"9" O
R X$(2)<"1" OR X$(2)>"9" THEN  GO TO 310
 330 GO SUB 540: IF P<1 OR P>20 THEN  GO TO 3
10
 332 IF S$(P)="1" THEN  GO TO 310
 335 FOR X=1 TO 9: POKE Z+T(P)+U(X),40: NEXT
X
 340 LET SB=P: FOR X=1 TO 10: IF (D$(X*2-1)=C
HR$ (SA+64) AND D$(X*2)=CHR$ (SB+64))+(D$(X*2
-1)=CHR$ (SB+64) AND D$(X*2)=CHR$ (SA+64)) TH
EN  LET V=57: LET TT=TT+1: LET TS=TS+1: PRINT
 AT 7,29;TT;AT 10,29;TS;: LET S$(SA)="1": LET
 S$(SB)="1": GO TO 400
 350 NEXT X
```



```
 360 LET TT=TT+1: PRINT AT 7,29;TT;: LET V=W
 400 GO SUB 520
 405 FOR X=1 TO 20: IF S$(X)<>"1" THEN  GO TO
 270
 410 NEXT X
 420 REM ** END OF GAME ROUTINE
 430 IF LS>TT THEN  LET LS=TT
 440 PRINT AT 20,0;"
                                              ";AT 2
0,0; INVERSE 1;"YOU TOOK ";TT;" TRIES THIS TI
ME.       LOWEST SCORE THIS SESSION: ";LS;
 450 INPUT  FLASH 1;"PRESS <ENTER> FOR NEXT G
AME";X$
 460 LET TT=0: LET TS=0
 470 GO TO 640
 519 REM **WRONG GUESS ROUTINE
 520 FOR X=1 TO 9: POKE Z+T(Q)+U(X),V: NEXT X
: FOR X=1 TO 9: POKE Z+T(P)+U(X),V: NEXT X: R
ETURN
 529 STOP
 530 FOR X=1 TO 9: POKE Z+T(P)+U(X),57: NEXT
X: RETURN
 539 REM ** ROW/COLUMN INPUT
 540 LET A=0: LET B=0: LET A=(VAL X$(1) AND (
CODE X$(1)>53 AND CODE X$(1)<58))+(VAL X$(2)
AND (CODE X$(2)>53 AND CODE X$(2)<58))
 550 LET B=(VAL X$(1) AND (CODE X$(1)>48 AND
CODE X$(1)<54))+(VAL X$(2) AND (CODE X$(2)>48
 AND CODE X$(2)<54))
 560 LET P=5*(A-6)+B
 570 RETURN
 598 STOP
 599 REM ** INITIALISATION
 600 CLS : PRINT  PAPER 7; INK 1; INVERSE 1;"
  P A I R S  @1983 MICHAEL BEWS "
 605 PRINT AT 2,9; PAPER 7; INK 4; FLASH 1;"I
NITIALISING"; FLASH 0; INVERSE 1; INK 1;AT 4,
0;" THIS PROGRAM DISPLAYS TEN PAIRS OF HIGH R
ESOLUTION PICTURES AND THEN CONCEALS THEM FRO
M VIEW.  ";AT 9,0;" THE OBJECT OF THE GAME IS
 TO    MATCH ALL TEN PAIRS IN THE LOW- EST PO
SSIBLE NUMBER OF TRIES.  "
 610 FOR X=1 TO 11: FOR Y=1 TO 72: READ A(X,Y
): NEXT Y: NEXT X
```

```
 620 FOR X=1 TO 20: READ Q(X): NEXT X: FOR X=
1 TO 20: READ R(X): NEXT X
 630 FOR X=1 TO 20: READ T(X): NEXT X: FOR X=
1 TO 9: READ U(X): NEXT X
 640 LET D$="00000000000000000000": LET S$=D$
: LET E$=D$: LET F$="00000000000": LET G$=F$(
 TO 10)
 695 PRINT AT 15,4; PAPER 7; INK 2; FLASH 1;"
NEXT GAME IN 25 SECONDS "
 700 FOR X=1 TO 10
 710 LET N=1+INT (RND*11)
 720 IF F$(N)="1" THEN  GO TO 710
 730 LET F$(N)="1"
 740 LET NA=1+INT (RND*20)
 745 IF E$(NA)="1" THEN  GO TO 740
 750 LET E$(NA)="1": LET G$(X)=CHR$ (64+N)
 760 LET NB=1+INT (RND*20)
 770 IF E$(NB)="1" THEN  GO TO 760
 780 LET E$(NB)="1": LET D$(X*2-1)=CHR$ (64+N
A): LET D$(X*2)=CHR$ (64+NB)
 790 NEXT X
 800 GO TO 50
 998 STOP
 999 REM *** ship
1000 DATA 0,0,0,0,0,8,15,255,224,0,0,0,3,128,
8,0,0,0,0,0,0,0,3,128,8,0,0,0,0,0,0,15,255,8,0,
0,0,0,0,0,15,255,8,0,0,0,0,0,0,63,255,252,0,0
,0,0,0,8,63,255,248,0,0,0,0,0,8,31,255,240,0,
0,0
1009 REM ** helicopter
1010 DATA 0,0,0,0,7,128,0,255,252,0,0,0,0,12,
192,0,0,0,0,0,0,96,24,96,0,0,0,0,0,0,127,240,
112,0,0,0,0,0,0,111,255,224,0,0,0,0,127,240,3
,255,192,0,0,0,0,2,0,0,127,128,0,0,0,0,2,0,0,
6,4,0,0,0
1019 REM ** bus
1020 DATA 0,0,0,0,0,0,60,1,224,0,0,0,63,255,2
52,24,0,192,0,0,0,36,16,84,0,0,0,0,0,0,36,16,
84,0,0,0,0,0,0,0,36,16,84,0,0,0,0,0,0,63,255,21
4,0,0,0,0,0,0,0,63,255,214,0,0,0,0,0,0,127,255,
214,0,0,0
1029 REM **  railway engine
1030 DATA 0,0,0,12,3,128,7,131,192,0,0,0,12,1
95,128,3,1,128,0,0,0,31,255,128,0,0,0,0,0,0,3
```



```
1,255,240,0,0,0,0,0,0,31,255,240,0,0,0,0,3,24
0,31,255,240,0,0,0,0,0,2,128,15,255,240,0,0,0,1
2,2,128,31,255,240,0,0,0
1039 REM ** tree
1040 DATA 3,15,0,127,255,252,0,60,0,3,255,192
,63,255,188,0,60,0,15,255,240,55,247,248,0,60
,0,15,255,248,31,63,248,0,60,0,126,255,126,31
,60,240,0,60,0,127,255,254,24,60,48,0,60,0,25
5,255,252,0,60,0,0,60,0,127,223,252,0,60,0,0,
60,0
1049 REM ** car
1050 DATA 0,0,0,0,127,0,12,0,24,0,0,0,0,132,1
28,0,0,0,0,0,0,1,4,64,0,0,0,0,0,0,2,4,32,0,0,
0,0,0,0,127,255,255,0,0,0,0,0,0,63,255,255,0,
0,0,0,0,0,127,255,254,0,0,0,0,0,0,30,0,60,0,0
,0
1059 REM ** television set
1060 DATA 0,0,0,48,0,104,48,0,104,0,0,0,48,0,
120,63,255,248,0,0,0,48,0,104,63,255,248,0,0,
0,48,0,120,0,0,0,0,0,0,48,0,104,0,0,0,0,0,0,4
8,0,120,0,0,0,63,255,248,48,0,104,0,0,0,63,25
5,248,48,0,120,0,0,0
1079 REM ** flying goose
1080 DATA 0,0,0,0,120,0,1,0,0,0,0,0,0,124,0,3
,0,0,0,0,0,0,124,240,0,0,0,0,0,0,96,125,216,0
,0,0,1,224,0,127,255,252,0,0,0,0,248,0,127,25
5,255,0,0,0,0,248,0,15,255,128,0,0,0,0,248,0,
7,255,0,0,0,0
1089 REM ** tank
1090 DATA 0,0,0,64,3,0,51,51,48,0,0,0,64,255,
0,63,255,240,0,0,0,65,255,128,12,204,192,0,0,
0,67,0,255,0,0,0,64,0,0,79,255,192,0,0,0,64,0
,0,255,255,240,0,0,0,64,0,0,255,255,248,0,0,0
,64,0,0,127,255,252,0,0,0
1099 REM ** clock
2000 DATA 0,0,0,9,64,144,8,66,16,0,0,0,8,32,1
6,8,24,16,0,0,0,8,16,16,8,0,16,15,255,240,10,
15,80,15,255,240,8,0,16,8,0,16,0,0,0,8,24,16,
8,0,16,0,0,0,8,66,16,9,0,144,0,0,0,8,0,16,8,0
,16,0,0,0
2009 REM ** apple
2010 DATA 0,0,0,1,255,128,3,255,192,0,0,0,3,2
55,192,1,255,128,0,192,0,3,159,192,0,255,0,0,
32,0,7,255,224,0,60,0,0,16,0,7,255,224,0,0,0,
```

```
0,16,0,7,255,224,0,0,0,0,60,0,7,255,224,0,0,0
,0,255,0,3,255,192,0,0,0
2019 REM ** SCREEN PRINT AT X,Y
2020 DATA 2,2,2,2,2,7,7,7,7,7,12,12,12,12,12,
17,17,17,17,17
2030 DATA 3,8,13,18,23,3,8,13,18,23,3,8,13,18
,23,3,8,13,18,23
2039 REM ** ATTRIBUTE PRINT AT
2040 DATA 0,5,10,15,20,160,165,170,175,180,32
0,325,330,335,340,480,485,490,495,500
2050 DATA 0,1,2,32,33,34,64,65,66
```


Dambusters

Dambusters is a game in which you have to defend a dam which is under attack from enemy aircraft, armed with bouncing bombs. Each bomb which succeeds in hitting the dam will blow a section of it away until eventually the water pours through and the game is over.

Your defence consists of two beam guns which are mounted at each side of the dam and which fire converging ray beams at a target sight controlled by the player. Since the aircraft are out of range, you must aim the bouncing bombs themselves by moving your sight up, down, right or left and then use the zero key to fire. Unfortunately your beam weapons need to be recharged after every three firings and therefore accuracy is vital, especially as there is a strong wind which has a tendency to blow your sights off course!

```
  1 REM @ PAUL STANLEY
  2 LET hs=0
  5 BORDER 1: PAPER 1: INK 7: CLS
  8 GO SUB 8000
 10 GO SUB 1000
 15 PRINT AT 0,0; BRIGHT 1;"SCORE:0"
 17 PRINT AT 0,20; BRIGHT 1;"HI-SCORE:";hs
 20 PRINT AT 20,0; INK 3;":::::::::::::::::
::::::::::::::::::::::::::::::::::::::::::::
:"
 25 FOR f=1 TO 50: PLOT RND*255,175-RND*130:
NEXT f
 30 LET g=0: FOR f=1 TO 5: PLOT g,15+f: DRAW
255-2*g,0: LET g=g+2: NEXT f
 40: PLOT 0,16: DRAW 128,20: PLOT 255,16: DR
AW -128,20
 50 PLOT 0,16: DRAW 0,9: DRAW 2,0: DRAW 4,4:
DRAW 1,-1: DRAW -4,-4: DRAW 0,-8
 55 PLOT 255,16: DRAW 0,9: DRAW -2,0: DRAW -
4,4: DRAW -1,-1: DRAW 4,-4: DRAW 0,-8
 70 LET d=1
 72 LET s=0
 80 LET a=1
 85 LET p=16
```

```
  90 LET y=9
  95 LET x=INT (RND*20)+6
  97 FOR f=1 TO 5 STEP 2: PRINT  OVER 1;AT 5,
x; INK 6;b$(f);b$(f+1): BEEP .1,-20: PRINT  O
VER 1;AT 5,x;b$(f);b$(f+1): NEXT f: FOR f=1 T
O 4: PRINT  OVER 1;AT 5-f,x; INK 6;b$(5);b$(6
);AT 5+f,x;"B": BEEP .1,-20: PRINT  OVER 1;AT
 5-f,x;b$(5);b$(6);AT 5+f,x;"B": NEXT f
  98 LET f=INT (RND*25)+3: LET g=5+INT (RND*1
1)
 100 LET a$="ABCDEF": LET ht=10
 120 PRINT  OVER 1;AT y,x;a$(a)
 122 LET f=f+(INKEY$="8" AND f<29)-(INKEY$="5
" AND f>2): LET g=g+(INKEY$="6" AND g<17)-(IN
KEY$="7" AND g>3)
 125 PRINT  OVER 1;AT g,f; INK 5;"+"
 126 LET loss=loss+leek
 127 IF loss>1000 THEN  GO TO 400
 128 IF INKEY$="9" THEN  IF s<3 THEN  GO SUB
200
 130 BEEP .03,-y
 140 PRINT  OVER 1;AT y,x;a$(a)
 145 PRINT  OVER 1;AT g,f;"+"
 150 LET y=y+d
 155 IF RND>.6 THEN  LET f=f+INT (RND*1.5)-IN
T (RND*1.5)
 157 IF RND<.4 THEN  LET g=g+INT (RND*1.5 AND
 g<18)-INT (RND*1.5)
 160 IF y=ht THEN  LET p=p+1: LET d=1: LET a=
a+1
 170 IF y=p THEN  BEEP .15,-20: LET a=a+1: LE
T d=-1: LET ht=ht-3
 180 IF a=7 THEN  GO TO 350
 190 GO TO 120
 200 LET k=(21-g)*8-25: OVER 1: PLOT 6,29: DR
AW f*8-2,k: BEEP .03,30: BEEP .03,40: PLOT 6,
29: DRAW f*8-2,k
 205 LET s=s+1
 210 PLOT 249,29: DRAW f*8-245,k: BEEP .03,30
: BEEP .03,40: PLOT 249,29: DRAW f*8-245,k: O
VER 0
 215 IF g=y THEN  IF x=f THEN  GO TO 300
 220 RETURN
```



```
 300 LET sc=sc+10: PRINT AT 0,6; BRIGHT 1;sc:
 PRINT AT g,f; INK 6;"H": BEEP .08,-10: BEEP
.08,-12: BEEP .08,-8: BEEP .08,-12: PRINT AT
g,f;" ": GO TO 70
 350 FOR a=1 TO 5: BEEP .001,20: BEEP .001,40
: NEXT a: IF SCREEN$ (19,x)=" " THEN  GO TO 3
70
 360 PRINT AT 19,x;"  ": GO TO 70
 370 IF SCREEN$ (20,x)<>":" THEN  GO TO 390
 375 LET leek=leek+1
 380 PRINT AT 20,x;" ";AT 21,x; PAPER 5; FLAS
H 1;"G": GO TO 70
 390 LET leek=leek+2: PRINT AT 19,x-1;"   ";A
T 20,x-1;"   ";AT 21,x-1; PAPER 5; FLASH 1;"G
GG": GO TO 70
 400 PRINT AT 10,5;"- G A M E  O V E R -": PR
INT AT 13,2;"Press any key to play again.": F
OR f=1 TO 20: BEEP .03,f: NEXT f
 405 IF sc>hs THEN  LET hs=sc
 410 IF INKEY$<>"" THEN  CLS : RESTORE : GO T
O 10
 420 GO TO 410
1000 FOR f=USR "a" TO USR "l"+7: READ b: POKE
 f,b: NEXT f
1001 LET loss=0: LET sc=0: LET leek=0
1010 DATA 0,0,0,16,0,0,0,0,0,0,0,24,24,0,0,0
1011 DATA 0,0,0,56,56,0,0,0,0,0,0,60,60,60,0,
0
1012 DATA 0,0,126,126,126,126,0,0,0,0,254,254
,254,254,254,0
1013 DATA 73,BIN 10010010,73,37,BIN 01001010,
BIN 10010001,BIN 01001010,BIN 10010001
1014 DATA 153,58,36,219,219,36,58,153
1016 DATA 0,0,0,8,62,0,0,0,0,0,0,24,255,66,0,0,
0
1017 DATA 0,0,1,255,37,0,0,0,0,0,0,128,255,164,
0,0,0
1018 LET b$="I J KL"
1020 RETURN
8000 PRINT AT 0,5;"D A M B U S T E R S"; OVER
 1;AT 0,5;"_____"; INK 5;AT 2,7
;"@ Paul Stanley."
8010 PRINT '"THE YEAR IS 1943. YOU ARE IN
```

```
CHARGE OF A POWERFUL BEAM WEAPONWITH WHICH YO
U ARE TO PROTECT   A DAM FROM THE BOUNCING BO
MBS OFTHE BRITISH ATTACKERS. THEY HAVESEVERAL
 LANCASTER BOMBERS WHICH FLY TOWARDS YOU AND
RELEASE      THEIR DANGEROUS BOMBS."
8020 PRINT '"HOWEVER, YOUR TASK IS NOT ALL
THAT SIMPLE FOR YOUR WEAPON IS  UNABLE TO REA
CH THE LANCASTERS  SO YOU MUST JUST SHOOT AT
THE   BOMBS INSTEAD. YOU CAN MOVE      YOUR CR
OSS-HAIR SIGHTS WITH THE CURSOR KEYS."
8025 PRINT '"PRESS ANY KEY TO CONTINUE.": PAU
SE 0: CLS
8030 PRINT "EVEN ADJUSTING THE SIGHTS IS    D
IFFICULT BECAUSE THERE IS A    STRONG WIND WH
ICH CAUSES YOUR   SIGHTS TO MOVE ABOUT."
8045 PRINT '"FIRE YOR BEAM WITH ""9""": PRINT

8050 PRINT "BECAUSE OF THE POWER OF YOUR    W
EAPON AFTER 3 SHOTS IT IS      DRAINED OF POW
ER AND WILL ONLY  BE READY BY THE NEXT TIME A
N    AEROPLANE ATTACKS. YOUR BATTLE  IS OVER
WHEN TOO MUCH WATER HAS POURED THROUGH THE BR
OKEN DAM."''"PRESS ANY KEY TO START"
8060 PAUSE 0: CLS : RETURN
```


OXO

The classic game, played against the computer. But in our version the computer can be beaten!

```
   5 REM NOUGHTS+CROSSES                @ 1982 B
Y MICHAEL BEWS
  10 DIM a$(9): DIM a(9): LET d=0: LET h=0: L
ET m=0: LET n=0: LET t=0
  12 PAPER 1: BORDER 1: INK 7: CLS
  15 LET Y$=CHR$ 143+"      "+CHR$ 143+"      "
+CHR$ 143+"      "+CHR$ 143
  20 LET Z$="■■■■■■■■■■■■■■■■■■■■■": REM y$ AND
 z$ TO form grid
  25 FOR x=0 TO 7: READ a: POKE USR "c"+x,a:
NEXT x: FOR x=0 TO 7: READ a: POKE USR "a"+x,
a: NEXT x: REM USR defined x AND o
  30 GO TO 200
  34 REM ******** main routine ***
  35 BEEP .1,t*4: LET t=t+1: LET a$(n)=CHR$ (
a+145): LET a(n)=SGN a: LET a=-a: IF a<0 THEN
  PRINT AT 10,30;" ";
  40 FOR x=0 TO 2: FOR y=1 TO 3: LET z=x*3+y:
 FLASH 1 AND z=n: PRINT AT 5+5*x,3+6*y;a$(z):
 NEXT y: NEXT x: FLASH 0
  49 REM ****check for win****
  50 FOR x=0 TO 2: IF ABS (a(3*x+1)+a(3*x+2)+
a(3*x+3))=3 OR ABS (a(x+1)+a(x+4)+a(x+7))=3 T
HEN  GO TO 300
  60 IF x>1 THEN  GO TO 80
  70 IF ABS (a(5)+a(5+2*(x+1))+a(5-2*(x+1)))=
3 THEN  GO TO 300
  80 NEXT x: IF t=9 THEN  GO TO 118: REM ****
check for a draw****
  85 IF a<0 THEN  GO TO 150: REM ****players
turn****
  90 IF t>0 THEN  GO TO 96
  92 LET n=1+2*INT (RND*5): IF n=5 THEN  GO T
O 92: REM ***choose a corner square on first
move***
  94 GO TO 35
```

```
  95 REM ***check for possible win(k=2),then
check for possible opponent's win (k=-2)
  96 LET k=2: LET n=0
 100 FOR x=0 TO 2: IF a(3*x+1)+a(3*x+2)+a(3*x
+3)=k THEN  GO TO 120
 105 IF a(x+1)+a(x+4)+a(x+7)=k THEN  GO TO 13
0
 110 IF x=2 THEN  GO TO 112
 111 IF a(5)+a(5+2*(x+1))+a(5-2*(x+1))=k THEN
  GO TO 140
 112 NEXT x: LET k=-k: IF k<0 THEN  GO TO 100
 113 REM ***choose a corner square if possibl
e (40 attempts)***
 114: FOR x=1 TO 40: LET n=1+2*INT (RND*5): I
F n<>5 AND a(n)=0 THEN  GO TO 35
 115 NEXT x
 116 FOR x=1 TO 9: IF a(x)=0 THEN  LET n=x: G
O TO 35: REM ***choose any vacant square*****
 117 NEXT x
 118 PRINT AT 19,13; FLASH 1;"DRAW!"; FLASH 0
: LET d=d+1: FOR x=13 TO 1 STEP -1: BEEP .1,x
-8: NEXT x: GO TO 320
 119 REM ***select the vacant square in poten
tial win row****
 120 FOR y=3 TO 1 STEP -1: IF a(3*x+y)=0 THEN
  LET n=3*x+y: GO TO 35
 125 NEXT y
 130 FOR y=3 TO 1 STEP -1: IF a(x+y*3-2)=0 TH
EN  LET n=x+3*y-2: GO TO 35
 135 NEXT y
 140 IF a(5)=0 THEN  LET n=5: GO TO 35
 142 IF a(5+2*(x+1))=0 THEN  LET n=5+2*(x+1):
 GO TO 35
 144 IF a(5-2*(x+1))=0 THEN  LET n=5-2*(x+1):
 GO TO 35
 149 REM ***player's turn***
 150 LET x$=INKEY$: IF x$="" OR x$<"1" OR x$>
"9" THEN  GO TO 150
 160 LET n=VAL x$
 170 PRINT AT 11,26;"       ";AT 10,26;"You ";
n;: IF a$(n)>"9" THEN  PRINT AT 11,26;"AGAIN!
";: FOR x=1 TO 5: FOR y=1 TO 3: NEXT y: BEEP
.1,30: NEXT x: GO TO 150
 180 GO TO 35
```



```
 199 REM ****INITIALISATION*****
 200 PRINT TAB 7;"NOUGHTS & CROSSES";AT 0,7;
OVER 1;"__________________"; OVER 0
 210 FOR x=1 TO 9: LET a$(x)=STR$ x: NEXT x
 230 PRINT : PRINT : FOR X=1 TO 3: PRINT TAB
6; INK 6;Z$;TAB 6; INK 4;Y$;TAB 6; INK 2;Y$;T
AB 6; INK 5;Y$;TAB 6; INK 3;Y$: NEXT X: PRINT
 TAB 6; INK 6;Z$
 240 PRINT AT 1,1;"I am";TAB 25;"You are";AT
3,2;"C";AT 3,28;"A"; FLASH 0
 250 LET a=(2*INT (1+RND*2)-3)
 260 LET p$="Me": IF a<0 THEN  LET p$="You"
 270 PRINT AT 2,8;p$;" to go FIRST";: GO TO 4
0
 299 REM ****END OF GAME ROUTINE***
 300 LET p$="YOU WIN": IF a<0 THEN  LET p$="I
 WIN": LET m=m+1: GO TO 310
 305 LET h=h+1
 310 PRINT AT 19,13; FLASH 1;p$; FLASH 0: FOR
 x=1 TO 4: FOR y=1 TO 10: BEEP .04,y*2: NEXT
y: NEXT x
 320 PRINT AT 20,0;;"Score: You ";h;"   Me ";
m;"    Draw ";d;AT 21,3;"Press any key for ne
w game";
 330 LET x$=INKEY$: IF x$="" THEN  GO TO 330
 335 FOR x=1 TO 9: LET a(x)=0: NEXT x
 340 LET n=0: LET t=0: CLS : GO TO 200
 350 DATA 24,126,102,195,195,102,126,24,129,1
95,102,60,24,60,102,195
```

Space Traffic

As you travel about in the midst of an asteroid belt recovering lost satellites (well, someone has to do it), you are assailed by missiles and enemy spacecraft which you can either dodge or attack. Movement is either to left or right using the Z and X keys and your cannon can be fired with the M key, although this will lose you points.

The satellites are collected by manoeuvering your spaceship into them and points are gained for each one which you manage to recover. Collision with other objects results in destruction, although you are alloted five lives at the start of each game.

```
  1 BORDER 0: INK 6: BRIGHT 1: PAPER 0: CLS
 10 GO SUB 9000
 20 GO SUB 8000
 50 LET hs=0
 70 PRINT  FLASH 1;" ----- ASTEROIDS DETECTE
D ----- ": FOR F=1 TO 4: FOR d=-20 TO 0: BEEP
 .02,d: NEXT d: NEXT f
 90 LET x1=x
100 LET x=x+(INKEY$="x" AND x<26)-(INKEY$="z
" AND x>5)
105 IF (ATTR (7,x)=71 OR ATTR (7,x)=66) THEN
  IF SCREEN$ (7,x)="" THEN  LET hit=1
107 IF ATTR (7,x)=68 THEN  FOR d=0 TO 60 STE
P 20: BEEP .01,d: NEXT d: LET sc=sc+1
110 POKE 23692,255: PRINT AT 6,x1;" ";AT 21,
31;"  "; INK 4;AT 6,x;"A"
112 IF q=6 THEN  IF w=x THEN  BEEP .01,20: B
EEP .01,10: BEEP .01,20: GO SUB 4100
115 IF hit=1 THEN  LET hit=0: BEEP .1,-10: G
O SUB 4100
117 IF INKEY$="m" THEN  GO SUB 5000
120 LET l=INT (RND*30): LET g=(INT (RND*3)*2
)+1: PRINT  INK 7;AT 20,l;a$(g TO g+1);AT 21,
l;b$(g TO g+1)
125 IF c>400 THEN  LET l=INT (RND*30): LET g
=(INT (RND*3)*2)+1: PRINT  INK 7;AT 20,l;a$(g
 TO g+1);AT 21,l;b$(g TO g+1)
```



```
130 IF c=200 THEN  LET a$="CDB K ": LET b$="
EF    "
135 IF c=300 THEN  LET a$="CDCDCD": LET b$="
EFEFEF"
140 IF RND>.6 THEN  PRINT  INK 4;AT 21,RND*3
0;"G"
150 IF RND<.4 THEN  PRINT  INK 2;AT 21,RND*3
0;"H"
160 IF ATTR (8,x)=66 OR ATTR (9,x)=66 OR ATT
R (10,x)=66 OR ATTR (11,x)=66 THEN  GO SUB 40
00
185 LET c=c+1
187 IF c>400 THEN  GO TO 90
190 LET q=q-2: PRINT  INK 5;AT q,w;"I";AT q+
1,w;" ": IF q=0 THEN  LET q=20: LET w=x
200 GO TO 90
4000 LET d=88*(ATTR (11,x)=66)+96*(ATTR (10,x
)=66)+104*(ATTR (9,x)=66)+112*(ATTR (8,x)=66)
: IF d>112 THEN  LET d=112
4005 PLOT x*8+3,d: DRAW  INK 6;0,120-d: FOR f
=35 TO 40: BEEP .002,f: NEXT f: PLOT  OVER 1;
x*8+3,d: DRAW  OVER 1;0,120-d
4100 FOR g=1 TO 2: FOR f=5 TO 0 STEP -1: PRIN
T AT f,x-5+f;".";AT f,x+5-f;".";AT 10-f,x-5+f
;".";AT 10-f,x+5-f;".";AT f,x;".";AT 10-f,x;"
.";AT 5,x+5-f;".";AT 5,x-5+f;"."
4110 NEXT f: OVER 1: NEXT g: OVER 0: PRINT AT
 5,x;" "
4130 LET li=li-1: PRINT  FLASH 1;AT 0,0;"LIVE
S LEFT:";li;TAB 23;"SCORE:";sc: FOR f=-30 TO
0: BEEP .02,f: NEXT f
4135 IF li<>0 THEN  RETURN
4137 FOR f=1 TO 4: BEEP .3,0: BEEP .6,10: FOR
 g=1 TO 20: NEXT g: NEXT f
4140 CLS : PRINT AT 5,0;"You Scored ";sc;" po
ints."
4145 PRINT ''"The high-score is ";hs;"."
4150 IF sc>hs THEN  LET hs=sc: PRINT  INK 5''
"Congratulations!""That is a new  high score
."
4160 PRINT  INVERSE 1''"PRESS ANY KEY TO PLAY
 AGAIN."
4170 PAUSE 0: CLS : GO SUB 9500: GO TO 70
5000 LET sc=sc-1: FOR f=7 TO 17
```

```
5010 PRINT AT f,x;".": BEEP .001,30
5020 PRINT AT f,x;" ": IF SCREEN$ (f+1,x)=""
THEN  GO TO 5030
5025 NEXT f
5030 IF ATTR (f+1,x)<>71 THEN  RETURN
5040 PRINT AT f+1,x;" ": FOR d=1 TO 3: BEEP .
03,-20: NEXT d
5050 IF RND>.4 THEN  RETURN
5055 LET t=INT (RND*4)+1
5060 FOR d=0 TO t: PRINT AT f+1-d,x-d; INK 7;
"B";AT f+1-d,x+d;"B";AT f+1+d,x-d;"B";AT f+1+
d,x+d;"B"
5065 BEEP .03,-40
5070 IF d<t THEN  PRINT AT f+1-d,x-d;" ";AT f
+1-d,x+d;" ";AT f+1+d,x-d;" ";AT f+1+d,x+d;"
"
5080 NEXT d: RETURN
8000 PRINT  INVERSE 1;"    S P A C E  T R A F
 F I C    "''"         BY PAUL STANLEY
 "
8010 PRINT  INK 7'"You are flying through spa
ce    when suddenly you encounter an  asteroi
d belt."
8020 PRINT  INK 4'"Enemy craft will fire at y
ou    given the chance, and other     missile
s are aimed right at     you."
8030 PRINT '"To score you have to recover
lost satellites in your craft."
8040 PRINT  INK 5'"If you are desperate, you
can   fire at asteroids, but you lose a satel
lite in the process."
8050 PRINT '"Move left with Z, right with X,
and fire with M"
8060 INPUT  PAPER 6; INK 3;"      PRESS ENTER
 TO START     "; LINE q$
8070 CLS : RETURN
9000 FOR x=USR "a" TO USR "k"+7: READ y: POKE
 x,y: NEXT x
9010 DATA 254,124,40,124,40,56,16,16,0,48,72,
84,72,48,0,0,1,2,60,64,160,132,136,129
9020 DATA 224,152,8,136,70,9,17,145,130,144,1
21,5,4,5,6,3,133,3,20,72,16,32,32,192
9030 DATA 129,66,60,36,36,60,66,129,16,16,56,
```



```
84,84,56,16,124,0,16,8,16,32,16,16,56
9040 DATA 24,54,41,66,169,130,84,56,38,91,162
,152,130,106,60,4
9500 LET a$="B J K ": LET b$="       ": LET x=
15: LET c=0: LET hit=0: LET sc=0
9510 LET q=20: LET w=x: LET li=5
9700 RETURN
```

Dam Eaters

The object of this game is to prevent the dam-eating creatures from eating away the dam which is built up on the left-hand side of the screen by dropping shells on them from any of the three cannon at the top. The dam eaters enter randomly from the right of the screen and gradually chew away the bricks of the dam until finally they break through and you have lost the game. The game contains a number of other features which you will have to discover by experience.

```
  1 BORDER 0: PAPER 0: INK 7: CLS
  5 LET hs=0
 10 GO SUB 9000
 15 GO SUB 7000
 17 GO SUB 9800
 20 GO SUB 8000
 30 FOR i=1 TO n
 40 LET x(i)=x(i)-1: IF RND>.8 THEN  GO SUB
1000
 50 PRINT AT y(i),x(i); INK i+3;"DE "
 60 IF ATTR (y(i),x(i)-1)=22 THEN  GO SUB 20
00
 80 NEXT i
 90 LET q$=INKEY$
100 IF NOT b THEN  IF q$<>"" THEN  LET g=(VA
L q$)*6+2: LET s1=VAL q$: LET f=0: LET b=1: B
EEP .01,30: IF g<>8 AND g<>14 AND g<>20 THEN
 LET b=0
110 IF NOT b THEN  GO TO 30
115 FOR i=1 TO 2
140 PRINT AT f,g;" "
150 LET f=f+1: IF f=21 THEN  GO TO 5000
160 IF SCREEN$ (f,g)="" THEN  GO TO 3000
170 PRINT AT f,g;"|"
190 NEXT i
200 IF n<3 THEN  LET c=c+1: IF c=130 THEN  L
ET n=n+1: LET c=0: PRINT AT 17,8;"ENEMY REINF
ORCEMENT": FOR i=1 TO 30: BEEP .03,i: NEXT i:
 PRINT AT 17,8;"                    "
999 GO TO 30
```



```
1000 PRINT AT y(i),x(i);"   "
1005 LET y(i)=y(i)+1-(2 AND RND>.5)
1010 IF y(i)=0 THEN  LET y(i)=20
1020 IF y(i)=21 THEN  LET y(i)=1
1030 RETURN
2000 PRINT AT y(i),x(i)-1; BRIGHT 1;"FG": BEE
P .03,5: PRINT AT y(i),x(i)-1; BRIGHT 1;"GF":
 BEEP .03,0
2010 PRINT AT y(i),x(i)-1;"   "
2020 IF SCREEN$ (y(i),x(i)-2)=" " THEN  GO TO
 4000
2030 LET y(i)=INT (RND*20)+1: LET x(i)=29
2040 RETURN
3000 PRINT AT f,g-1; BRIGHT 1;"FGF": FOR o=3
TO 9 STEP 3: BEEP .01,o: NEXT o: PRINT AT f,g
-1; BRIGHT 1;"GFG": BEEP .05,25: PRINT AT f,g
-1;"   "
3005 LET sc=INT (sc+s1*2+f/3): PRINT AT 0,29;
sc
3010 LET b=0
3015 FOR i=1 TO n
3020 IF f=y(i) THEN  IF g=x(i) OR g=x(i)+1 TH
EN  GO TO 3500
3030 NEXT i
3500 LET y(i)=INT (RND*20)+1: LET x(i)=29
3510 GO TO 30
4000 FOR o=2 TO 5: PRINT AT y(i),o; INK 1;"■"
: BEEP .07,-20: NEXT o
4010 FOR o=y(i) TO 20: PRINT AT o,5; INK 1;"■
": BEEP .07,-20: NEXT o
4020 FOR o=20 TO 0 STEP -1: PRINT AT o,5; INK
 1;"■■■■■■■■■■■■■■■■■■■■■■■■■■"
4025 BEEP .07,-20
4030 IF SCREEN$ (o,4)=" " THEN  PRINT  INK 1;
AT o,4;"■"
4040 IF SCREEN$ (o,3)=" " THEN  PRINT  INK 1;
AT o,3;"■"
4050 NEXT o
4055 PRINT  PAPER 1; INK 6;AT 4,6;"You Scored
 ";sc;" Points."
4060 IF sc>hs THEN  PRINT AT 6,6; PAPER 1; IN
K 6;"Well Done! That's A New";AT 7,6;"High Sc
ore!!": LET hs=sc
```

```
4070 PRINT  PAPER 1; INK 6;AT 9,6;"The High-S
core Is ";hs
4080 PRINT  PAPER 1; INK 6;AT 11,6;"PRESS A K
EY TO PLAY AGAIN"
4090 IF INKEY$="" THEN  GO TO 4090
4100 CLS : GO TO 17
5000 PRINT AT 20,g; INK 5;"I": BEEP .1,-30: P
RINT AT 20,g;" "
5010 LET b=0: GO TO 30
7000 PRINT AT 0,6;"D A M  E A T E R S       "
7020 FOR f=29 TO 4 STEP -1: PRINT  INK 5;AT 2
,f;"DE ": BEEP .03,-20: NEXT f
7030 PRINT AT 2,3; BRIGHT 1;"FG": BEEP .03,5:
 PRINT AT 2,3; BRIGHT 1;"GF": BEEP .03,5: PAU
SE 25: PRINT AT 2,0;"    "
7035 CLS : PRINT AT 0,6;"D A M  E A T E R S
    "
7040 PRINT  INK 6;AT 2,0;"Can you prevent the
 dam from    being broken by the dam eaters?"
7050 PRINT  INK 5''"Release bombs from any of
 the   3 cannons above the dam with    the ke
ys 1-3."
7060 PRINT  INK 4''"There are several more fe
atures which you will have to wait to  find o
ut!"
7070 PRINT  INK 6''"Press any key to start":
PAUSE 0: CLS : RETURN
8000 DIM y(3): DIM x(3)
8010 LET sc=0: LET b=0
8020 LET n=1: LET c=0
8030 FOR i=1 TO 3: LET y(i)=INT (RND*20)+1: L
ET x(i)=29: NEXT i
8499 RETURN
9000 FOR f=USR "a" TO USR "i"+7: READ g: POKE
 f,g: NEXT f
9010 DATA 119,119,0,221,221,0,119,119,0,221,2
21,0,119,119,0,221,221,0,119,119,0,221,221,0
9020 DATA 0,255,171,0,0,171,255,0,28,39,255,2
55,255,255,0,0
9030 DATA 96,10,193,20,101,128,51,140,194,40,
67,24,130,40,67,16
9040 DATA 63,31,15,7,3,3,1,1
9060 DATA 2,196,40,23,232,16,231,24
```



```
9800 FOR f=0 TO 20 STEP 3: PRINT  INK 6; PAPE
R 2;AT f,2;"AAA";AT f+1,2;"BBB";AT f+2,2;"CCC
": NEXT f
9805 FOR f=0 TO 20: PRINT  INK 1;AT f,0;"■■":
 NEXT f
9810 FOR f=0 TO 31: PRINT AT 21,f; INK 1;"■":
 NEXT f
9820 PRINT  INK 3;AT 0,7;"H      H      H"
9830 PRINT AT 0,23;"Score:0"
9999 RETURN
```

Buzzy Bee

In Buzzy Bee you control a small bird which pecks away at the stems of a row of plants which are gradually growing towards the top of the screen. If any of the plants should reach the top a bee will drop down and take the nectar and you have lost the game.

The bird can be moved from left to right by using the Z and X keys and the M key will cause it to peck, although none of the stems can be pecked twice in succession.

```
   1 BORDER 0: PAPER 0: INK 7: CLS
   6 CLS
   7 GO SUB 9700
   8 GO SUB 9000
  10 LET hs=0
  20 GO SUB 8000
  50 POKE 23674,255: POKE 23673,255: POKE 236
72,255
 100 PRINT  PAPER 5;AT y1,x1;"   ";AT y1+1,x1
;"   "; INK 0;AT y,x;b$;AT y+1,x;c$: LET y1=y
: LET x1=x
 120 IF y(t)=4 THEN  GO SUB 1000
 480 LET g=g+(2 AND IN 65278=251 AND g<31)-(2
 AND IN 65278=253 AND g>0)
 500 PRINT AT f1,g1; INK 4; OVER 1;"P";AT f,g
;"P": LET f1=f: LET g1=g
 510 IF IN 32766=251 THEN  GO SUB 2000
 700 LET t=INT (RND*5)+1: LET y(t)=y(t)-1: IF
 y(t)<h2 AND y(t)>h1 THEN  LET h2=y(t): LET f
12=t
 710 IF y(t)<h1 THEN  LET h1=y(t): LET f11=t
 750 PRINT  INK t+2;AT y(t),t*6-5;"M   N";AT
y(t)+1,t*6-5;"      ";AT y(t)+2,t*6-5;"Q ■ R";
 INK 4;AT y(t)+3,t*6-5;" ■  ";AT y(t)+1,t*6-
3;"O"
 800 IF x<f11*6-4 THEN  LET b$=a$(3): LET c$=
a$(4): LET x=x+1
 820 IF x>f11*6-4 THEN  LET b$=a$(1): LET c$=
a$(2): LET x=x-1
 999 GO TO 100
```



```
1000 IF x=t*6-4 THEN  GO TO 1500
1002 IF g=t*6-3 THEN  PRINT  INK 4; OVER 1;AT
 f,g;"P"
1005 FOR f=4 TO 17
1010 PRINT  INK t+2;AT f,t*6-5;"      ";AT f+1
,t*6-5;"M   N";AT f+2,t*6-5;"      ";AT f+3,t*
6-5;"Q ■ R"; INK 4;AT f+4,t*6-4;" ■ ";AT f+2,
t*6-3;"O"
1020 BEEP .04,f
1030 NEXT f
1035 LET f=21
1040 LET y(t)=18
1050 IF t=f11 THEN  LET f11=f12: LET h1=h2
1100 IF g=t*6-3 THEN  PRINT  INK 4; OVER 1;AT
 f,g;"P"
1300 RETURN
1500 IF b$=a$(1) THEN  LET d=x+1
1502 IF b$=a$(3) THEN  LET d=x
1503 LET time=INT ((65536*PEEK 23674+256*PEEK
 23673+PEEK 23672)/49)
1505 FOR i=0 TO 3: FOR g=1 TO 10
1510 BEEP .005,2: BEEP .005,5: PRINT AT i,d;
PAPER 5; INK 0;a$(1,2 TO ): BEEP .005,7: PRIN
T AT i,d; PAPER 5; INK 0;a$(3, TO 2)
1520 NEXT g
1530 PRINT AT i,x; PAPER 5;"   ";AT i+1,x; IN
K 0;b$;AT i+2,x;c$
1540 NEXT i
1550 FOR f=1 TO 200: NEXT f
1560 CLS : PRINT AT 4,0; INK 6;"You survived
for ";time;" seconds."
1570 IF time>hs THEN  LET hs=time: PRINT  INK
 5''"Well done! That's the longest  recorded
 time!": GO TO 1600
1580 PRINT ' INK 5'"The longest recorded time
 standsat ";hs;" seconds."
1600 PRINT  INK 7''"Press any key to play aga
in."
1610 IF INKEY$="" THEN  GO TO 1610
1630 CLS : GO TO 20
2000 BEEP .01,20: IF g<>3 AND g<>9 AND g<>15
AND g<>21 AND g<>27 THEN  RETURN
2005 IF g=u*6-3 OR y((g+3)/6)>15 THEN  RETURN
```

```
2010 LET u=(g+3)/6
2020 LET y(u)=y(u)+2
2050 PRINT  INK u+2;AT y(u)-2,u*6-5;"      ";A
T y(u)-1,u*6-5;"      ";AT y(u),u*6-5;"M   N";
AT y(u)+1,u*6-5;"      ";AT y(u)+2,u*6-5;"Q ■
R"; INK 4;AT y(u)+3,u*6-4;" ■ ";AT y(u)+1,u*6
-3;"O"
2070 IF u=f11 THEN  IF y(u)>h2 THEN  LET h1=h
2: LET f11=f12: LET f12=u: LET h2=y(u)
2090 RETURN
8000 DIM y(5): FOR f=1 TO 5: LET y(f)=18
8010 PRINT  INK f+2;AT y(f),f*6-5;"M   N";AT
y(f)+1,f*6-5;"      ";AT y(f)+2,f*6-5;"Q ■ R";
 INK 4;AT y(f)+3,f*6-3;"■";AT y(f)+1,f*6-3;"O
"
8020 NEXT f
8100 FOR f=0 TO 3: PRINT AT f,0; PAPER 5;"
                                ": NEXT f
8500 LET y=0: LET x=15
8510 LET f=21: LET g=15
8520 DIM a$(4,3): LET a$(1)="ABC": LET a$(2)=
"DEF": LET a$(3)="GHI": LET a$(4)="JKL": LET
b$=a$(1): LET c$=a$(2)
8530 LET y1=y: LET x1=x: LET f1=f: LET g1=g
8540 PRINT AT f,g; OVER 1;"P"
8550 LET h1=20: LET h2=20: LET f11=2: LET f12
=4
8560 LET t=1
8570 LET u=10
8900 BEEP .5,0
8999 RETURN
9000 PRINT "■■■ ■ ■ ■■■ ■■■ ■ ■  ■■■ ■■■ ■■■■
 ■ ■ ■   ■   ■ ■ ■  ■ ■ ■   ■  ■■■ ■ ■  ■   ■
  ■■■  ■■■ ■■■ ■■■■ ■ ■ ■ ■   ■    ■   ■ ■ ■
  ■  ■■■ ■■■ ■■■ ■■■  ■   ■■■ ■■■ ■■■"
9010 RANDOMIZE 100
9020 LET y=8: LET y1=8: FOR f=1 TO 29
9025 BEEP .01,-10
9030 PRINT AT y1,f-1;"   ";AT y1+1,f-1;"   ";
AT y,f;"GHI";AT y+1,f;"J L"; INK 6;AT y+1,f+1
;"K"
9035 LET y1=y
9040 BEEP .01,-10
9050 IF RND>.5 THEN  LET y=y+1-(2 AND RND>.5)
```



```
9060 NEXT f
9070 PRINT AT y1,f-1;"   ";AT y1+1,f-1;"   "
9080 PRINT  INK 6;AT 6,6;"  @  PAUL STANLEY"
9100 PRINT AT 8,0; INK 5;"A giant bee likes n
ectar from   giant flowers, but you have to
stop it because you eat nectar  as well!!"
9200 PRINT  INK 6'"Chop chunks out of the sta
lks   with M (but note that once a    piece h
as been cut out of one   stalk you must cut t
he next    piece out of a different stalk)."
9300 PRINT '"Move left with Z & right with X.
"
9400 PRINT  INVERSE 1'"PRESS ANY KEY TO START
."
9500 IF INKEY$="" THEN  GO TO 9500
9600 CLS : RANDOMIZE : BORDER 5
9700 RESTORE : FOR x=USR "a" TO USR "r"+7
9710 READ n: POKE x,n
9720 NEXT x
9730 DATA 0,2,34,17,9,5,5,5,7,24,32,33,66,66,
68,69,128,124,226,34,34,66,130,12,7,13,25,63,
63,31,15,7,170,170,170,170
9740 DATA 170,170,170,170,240,248,252,254,252
,248,240,224,1,62,71,68,68,66,65,48,224,24,4,
132,66,66,34,162,0,64,68,136,144,160,160,160,
15,31,63,127
9750 DATA 63,31,15,7,85,85,85,85,85,85,85,85,
224,176,152,252,252,248,240,224,96,224,224,11
2,120,60,30,15,6,6,7,15,30
9760 DATA 60,120,240,108,104,75,139,145,73,81
,255,220,220,72,126,72,28,20,20,15,7,3,1,0,0,
0,0,240,224,192,128,0,0,0,0
9770 RETURN
```

```
2010 LET u=(g+3)/6
2020 LET y(u)=y(u)+2
2050 PRINT  INK u+2;AT y(u)-2,u*6-5;"      ";A
T y(u)-1,u*6-5;"      ";AT y(u),u*6-5;"M   N";
AT y(u)+1,u*6-5;"      ";AT y(u)+2,u*6-5;"Q ■
R"; INK 4;AT y(u)+3,u*6-4;" ■ ";AT y(u)+1,u*6
-3;"O"
2070 IF u=f11 THEN  IF y(u)>h2 THEN  LET h1=h
2: LET f11=f12: LET f12=u: LET h2=y(u)
2090 RETURN
8000 DIM y(5): FOR f=1 TO 5: LET y(f)=18
8010 PRINT  INK f+2;AT y(f),f*6-5;"M   N";AT
y(f)+1,f*6-5;"      ";AT y(f)+2,f*6-5;"Q ■ R";
 INK 4;AT y(f)+3,f*6-3;"■";AT y(f)+1,f*6-3;"O
"
8020 NEXT f
8100 FOR f=0 TO 3: PRINT AT f,0; PAPER 5;"
                                ": NEXT f
8500 LET y=0: LET x=15
8510 LET f=21: LET g=15
8520 DIM a$(4,3): LET a$(1)="ABC": LET a$(2)=
"DEF": LET a$(3)="GHI": LET a$(4)="JKL": LET
b$=a$(1): LET c$=a$(2)
8530 LET y1=y: LET x1=x: LET f1=f: LET g1=g
8540 PRINT AT f,g; OVER 1;"P"
8550 LET h1=20: LET h2=20: LET f11=2: LET f12
=4
8560 LET t=1
8570 LET u=10
8900 BEEP .5,0
8999 RETURN
9000 PRINT "■■■ ■ ■ ■■■ ■■■ ■ ■  ■■■ ■■■ ■■■■
 ■ ■ ■   ■   ■ ■ ■  ■ ■ ■   ■  ■■■ ■ ■  ■   ■
  ■■■  ■■■ ■■■ ■■■■ ■ ■ ■ ■   ■    ■   ■ ■ ■
  ■  ■■■ ■■■ ■■■ ■■■  ■   ■■■ ■■■ ■■■"
9010 RANDOMIZE 100
9020 LET y=8: LET y1=8: FOR f=1 TO 29
9025 BEEP .01,-10
9030 PRINT AT y1,f-1;"   ";AT y1+1,f-1;"   ";
AT y,f;"GHI";AT y+1,f;"J L"; INK 6;AT y+1,f+1
;"K"
9035 LET y1=y
9040 BEEP .01,-10
9050 IF RND>.5 THEN  LET y=y+1-(2 AND RND>.5)
```



```
9060 NEXT f
9070 PRINT AT y1,f-1;"   ";AT y1+1,f-1;"   "
9080 PRINT  INK 6;AT 6,6;"  @  PAUL STANLEY"
9100 PRINT AT 8,0; INK 5;"A giant bee likes n
ectar from   giant flowers, but you have to
stop it because you eat nectar  as well!!"
9200 PRINT  INK 6'"Chop chunks out of the sta
lks   with M (but note that once a    piece h
as been cut out of one   stalk you must cut t
he next     piece out of a different stalk)."
9300 PRINT '"Move left with Z & right with X.
"
9400 PRINT  INVERSE 1'"PRESS ANY KEY TO START
."
9500 IF INKEY$="" THEN  GO TO 9500
9600 CLS : RANDOMIZE : BORDER 5
9700 RESTORE : FOR x=USR "a" TO USR "r"+7
9710 READ n: POKE x,n
9720 NEXT x
9730 DATA 0,2,34,17,9,5,5,5,7,24,32,33,66,66,
68,69,128,124,226,34,34,66,130,12,7,13,25,63,
63,31,15,7,170,170,170,170
9740 DATA 170,170,170,170,240,248,252,254,252
,248,240,224,1,62,71,68,68,66,65,48,224,24,4,
132,66,66,34,162,0,64,68,136,144,160,160,160,
15,31,63,127
9750 DATA 63,31,15,7,85,85,85,85,85,85,85,85,
224,176,152,252,252,248,240,224,96,224,224,11
2,120,60,30,15,6,6,7,15,30
9760 DATA 60,120,240,108,104,75,139,145,73,81
,255,220,220,72,126,72,28,20,20,15,7,3,1,0,0,
0,0,240,224,192,128,0,0,0,0
9770 RETURN
```

Heli-Bomber

After all this intergalactic warfare, you'll find it refreshing to return to Earth and struggle to cope with a fleet of helicopters whose pilots are committed to wiping out your fair city. Thankfully you're in control of the metropolitan laser tower, and it's up to you to shoot down the bombs before they hit the city. You'll get points for every bomb you hit, and whilst you can wipe out a chopper if you feel so inclined, you will not add to your tally by so doing. You move your laser sight with the cursor keys, and the game is over once one of the bombs finds a clear path to the ground or the laser tower itself is destroyed.

```
  1 REM HELI-BOMBER @ R.Erskine 1983
 10 BORDER 0: PAPER 0: INK 7: CLS
 20 LET sc=0: LET hs=0
 30 PRINT AT 0,9;"HELI-BOMBER": PRINT
 40 PRINT : PRINT "Your city is under attack
 by ","helicopter bombers.  When a bombhas a
clear path through to the ground or when your
 laser tower is destroyed the game ends"
 50 PRINT : PRINT "Move your laser sight usi
ng the arrow keys and try to shoot downthe bo
mbs using the 0 key"
 60 PRINT : PRINT AT 20,0;"Press any key to
start"
 70 IF INKEY$="" THEN  GO TO 70
 80 GO SUB 2500
100 LET lin=lin+(2 AND INKEY$="6" AND lin<13
)
105 IF ATTR (21,15)=0 THEN  GO TO 3000
120 LET col=col-(2 AND INKEY$="5"): IF col<0
THEN  LET col=31
130 LET lin=lin-(2 AND INKEY$="7" AND lin>0)
140 LET col=col+(2 AND INKEY$="8"): IF col>3
1 THEN  LET col=0
150 PRINT  INK 4;AT ln,cl;" ";AT lin,col;"+"
: LET ln=lin: LET cl=col
160 IF col1=30 THEN  LET col1=0: LET lin1=IN
T (RND*10)+1
161 LET lin1=lin1+(1 AND RND>.7 AND lin1<13)
170 LET lin1=lin1+(1 AND RND>.7 AND lin1<13)
180 LET lin1=lin1-(1 AND RND>.7 AND lin1>0)
190 LET col1=col1+(1 AND col1<30)
200 PRINT  INK 0; PAPER 0;AT ln1,cl1;"  ";AT
 ln1+1,cl1;"  "; PAPER 0; INK 5;AT lin1,col1;
"__";AT lin1+1,col1;"DE": LET ln1=lin1: LET c
l1=col1
210 IF g=1 AND RND>.8 THEN  LET lin2=lin1+2:
 LET col2=col1: LET g=-g: LET ln2=lin1+2: LET
 cl2=col2
215 IF g=1 THEN  GO TO 270
220 LET lin2=lin2+1
250 PRINT  INK 0; PAPER 0;AT ln2,cl2;" "; IN
K 7;AT lin2,col2;"F": LET ln2=lin2: LET cl2=c
ol2: BEEP .01,-10: IF lin2=21 THEN  GO TO 300
0
260 IF ATTR (lin2+1,col2)=3 THEN  PRINT  PAP
ER 0; INK 0;AT lin2,col2;" "; PAPER 7;AT lin2
+1,col2;"F"; PAPER 0;AT lin2+1,col2;" ": LET
g=-g
270 IF INKEY$<>"0" THEN  GO TO 100
280 LET x=122: LET y=42: PLOT  INK 6;x,y
290 LET xx=col*8: LET yy=lin*8-172
300 LET yy=-yy
310 DRAW  OVER 1; INK 6;xx-x,yy-y
320 IF ATTR (lin1+1,col1)=6 OR ATTR (lin1+1,
col1+1)=6 THEN  LET h=-h
330 IF ATTR (lin2,col2)=6 THEN  LET b=-b
340 PLOT  OVER 1; INK 6;x,y: DRAW  OVER 1;xx
-x,yy-y
350 IF b=-1 THEN  GO SUB 380
360 IF h=-1 THEN  GO SUB 400
370 GO TO 100
380 FOR x=1 TO 10: BEEP .05,x+15: PRINT  FLA
SH 1; PAPER 2; INK 6;AT lin2,col2;"*": NEXT x
390 PRINT  INK 0; PAPER 0;AT lin2,col2;" ":
LET sc=sc+10: LET g=-g:: LET b=-b: RETURN
400 FOR x=lin1 TO 20
410 PRINT AT ln1,cl1;"  ";AT ln1+1,cl1;"  "
420 PRINT  FLASH 1; PAPER 2; INK 6;AT lin1,c
ol1;"  ";AT lin1+1,col1;"DE"
430 LET ln1=lin1: LET cl1=col1: LET lin1=lin
1+1
```

```
 440 BEEP .01,x
 450 NEXT x
 460 PRINT AT lin1,col1;"  ";AT lin+1,col1;"
 ": IF ATTR (21,15)=0 THEN  GO TO 3000
 470 LET lin1=0: LET col1=INT (RND*31)
 480 LET h=-h
 490 RETURN
2499 STOP
2500 RESTORE : FOR x=USR "a" TO USR "f"+7
2510 READ n: POKE x,n
2520 NEXT x
2530 DATA 255,165,165,255,165,165,165,255,24,
126,126,126,60,24,24,255,129,195,165,153,153,
165,195,129,0,0,195,255,15,7,0,0,128,128,224,
152,252,248,0,0,195,195,36,24,24,36,195,195
2540 PRINT AT 0,4;"HELI-BOMBER"
2600 GO TO 9000
3000 PRINT  INK 5;AT 10,10;"END OF GAME";AT 1
2,7;"Your score was ";sc: IF sc>hs THEN  LET
hs=sc
3001 PRINT  INK 5;AT 14,9;"High score ";hs
3005 FOR x=1 TO 300: NEXT x
3010 PRINT AT 16,4;"Press any key to restart"
3020 IF INKEY$="" THEN  GO TO 3020
3030 LET sc=0
3040 GO SUB 9000
3050 GO TO 100
9000 BORDER 0: PAPER 0: RANDOMIZE : INK 7: CL
S
9010 FOR x=0 TO 31
9020 LET r=INT (RND*5)+1+16
9030 FOR y=r TO 21
9040 PRINT  INK 3;AT y,x;"A"
9050 NEXT y
9060 NEXT x
9070 PRINT  INK 6;AT 16,15;"B"
9080 FOR x=17 TO 21
9090 PRINT  INK 6;AT x,15;"C"
9100 NEXT x
9200 LET lin=10: LET col=15: PRINT  INK 6;AT
lin,col;"+"
9210 LET lin1=0: LET col1=INT (RND*31): LET l
n=lin: LET cl=col
```



```
9220 PRINT  INK 0; PAPER 5;AT lin1,col1;"__";
 PAPER 0; INK 5;AT lin1+1,col1;"DE"
9225 LET ln1=lin1: LET cl1=col1
9230 LET g=1: LET h=1: LET b=1
9300 RETURN
```

Grand Prix

Grand Prix offers you a race-track, a worthy opponent (in the shape of your micro's car), and as much speed as you can handle. Unlike the computer, you have a choice of gears (first or second), and its up to you to select the type of course you want to compete on. If you crash you not only lose points, but you are replaced on the track in a random position, so you'll have to sort yourself out pretty snappily if you want to get back into the running.

```
    1 REM **GRANDPRIX**
   2 BORDER Ø: PAPER Ø: INK 7: CLS
   5 DIM b$(3,15): DIM i(3): FOR f=1 TO 3: LE
T b$(f)="": LET i(f)=Ø: NEXT f
   6 GO SUB 8ØØØ
   7 CLS
   8 INPUT "Enter skill (1-good to 4-bad) ";s
k: IF sk<1 OR sk>4 THEN  GO TO 8
   9 INPUT "How many laps? ";laps: IF laps<1
THEN  GO TO 9
  1Ø INPUT "1-Hard Or 2-Easy Circuit? ";ci: I
F ci<>1 AND ci<>2 THEN  GO TO 1Ø
  15 GO SUB 9ØØØ
  2Ø PRINT AT 2,17;"READY": BEEP .5,Ø: PRINT
AT 2,17;"STEADY": BEEP .5,5: PRINT AT 2,17;"
 GO  ": BEEP .2,1Ø: PRINT AT 2,19;"  "
  7Ø IF INKEY$="1" THEN  LET g=1: BEEP .Ø5,5Ø
  8Ø IF INKEY$="2" THEN  LET g=2: BEEP .Ø5,5Ø
 1ØØ LET po=po+(INKEY$="7" AND po<151)-(7 AND
 INKEY$="7" AND po=151)-(INKEY$="6" AND po>14
4)+(7 AND INKEY$="6" AND po=144): IF x<5 THEN
  LET c=1
 1Ø5 FOR f=1 TO g
 11Ø LET y=y-(po>144 AND po<148)+(po>148): LE
T x=x-(po<146 OR po=151)+(po>146 AND po<15Ø)
 115 IF SCREEN$ (y,x)="" THEN  LET y=y1: LET
x=x1: BEEP .Ø2,-1Ø: LET po=INT (RND*8)+144
 12Ø PRINT  OVER 1; INK Ø;AT y1,x1;CHR$ po1;
OVER 1; INK 7;AT y,x;CHR$ po
 125 LET y1=y: LET x1=x: LET po1=po
```



```
 13Ø IF y=11 THEN  IF x>27 THEN  IF c=1 THEN
 BEEP .1,1Ø: LET l1=l1+1: PRINT AT Ø,1Ø;l1: L
ET c=Ø: IF l1=laps+1 THEN  GO TO 5ØØØ
 14Ø NEXT f
 15Ø LET cy=cy-(cpo>144 AND cpo<148)+(cpo>148
): LET cx=cx-(cpo<146 OR cpo=151)+(cpo>146 AN
D cpo<15Ø)
 152 IF SCREEN$ (cy,cx)="" THEN  BEEP .Ø2,-2Ø
: LET cy=cy1: LET cx=cx1: LET cpo=cpo1
 16Ø IF SCREEN$ (cy,cx)="-" THEN  READ q: LET
 cpo=cpo+q
 165 IF cy=13 THEN  IF cx=3Ø THEN  RESTORE 94
ØØ
 17Ø PRINT  OVER 1; INK Ø;AT cy1,cx1;CHR$ cpo
1; INK 3; OVER 1;AT cy,cx;CHR$ cpo
 175 LET cy1=cy: LET cx1=cx: LET cpo1=cpo
 2ØØ IF cy=11 THEN  IF cx=3Ø THEN  LET l2=l2+
1: BEEP .1,15: PRINT AT Ø,3Ø;l2: IF l2=laps+1
 THEN  GO TO 5ØØØ
 5ØØ GO TO 7Ø
5ØØØ FOR f=1 TO 4Ø: BEEP .Ø1,f: NEXT f
5ØØ1 CLS
5ØØ2 LET sc=4Ø/ci+6Ø/sk
5ØØ5 IF cy=11 AND cx=3Ø THEN  LET sc=-sc
5ØØ7 LET sc=sc+(l1-12)*2
5Ø1Ø IF sc<Ø THEN  PRINT AT 2,Ø;"Bad Luck! Yo
u Were Beaten."
5Ø11 IF sc>Ø THEN  PRINT AT 2,Ø;"Well Done! Y
ou Were The Winner."
5Ø13 PRINT '"Your Score Is ";sc
5Ø14 IF sc<i(3) THEN  GO TO 5Ø5Ø
5Ø15 PRINT  INK 5;AT 6,Ø;"Your Score Is Good
Enough To Be Included In The Top Scores.
Please Enter Your Name.": INPUT n$: IF LEN n$
>15 THEN  GO TO 5Ø15
5Ø2Ø IF sc>i(1) THEN  LET i(3)=i(2): LET i(2)
=i(1): LET i(1)=sc: LET b$(3)=b$(2): LET b$(2
)=b$(1): LET b$(1)=n$: GO TO 5Ø5Ø
5Ø3Ø IF sc>i(2) THEN  LET i(3)=i(2): LET i(2)
=sc: LET b$(3)=b$(2): LET b$(2)=n$: GO TO 5Ø5
Ø
5Ø4Ø LET i(3)=sc: LET b$(3)=n$
5Ø5Ø PRINT '"These Are The Best Scores:": FOR
```

```
f=1 TO 3: PRINT 'f;"...";b$(f);TAB 23;i(f):
NEXT f
5060 PRINT ' INK 6'"Press Any Key To Play Aga
in.": PAUSE 0: GO TO 6
8000 LET a$="GRAND PRIX - BY PAUL STANLEY - "
8010 PRINT AT 2,0;"Steer Your Car Around The
Race- track And Try To Beat A Car      Driven
By The Computer."
8020 PRINT  INK 5'"Turn Left With ""6"" And R
ight    With ""7"". You Can Select Gears  Wit
h 1(Slow) And 2(Fast). The   Computer Will St
ay In First At  All Times."
8030 PRINT  INK 6'"If You Crash You Will Rest
art   In A Random Direction, So You   Must So
rt Yourself Out As Fast  As Possible."
8035 PRINT '"Your Car Is The White One."
8040 PRINT  INK 4'"PRESS ANY KEY TO CONTINUE.
"
8050 PRINT  PAPER 2; INK 6;AT 0,0;A$;AT 21,0;
a$: LET A$=a$(2 TO 31)+a$(1): PAUSE 3: IF INK
EY$="" THEN  GO TO 8050
8060 RETURN
9000 RESTORE 9005: FOR y=USR "a" TO USR "i"+7
: READ x: POKE y,x: NEXT y
9005 DATA 0,110,132,252,252,132,110,0,40,108,
240,58,223,76,24,8
9010 DATA 60,90,90,24,90,126,90,0,20,54,15,92
,251,50,24,16
9020 DATA 0,118,33,63,63,33,118,0,16,24,50,25
1,92,15,54,20
9030 DATA 0,90,126,90,24,90,90,60,8,24,76,223
,58,240,108,40
9040 DATA 60,66,189,165,165,189,66,60
9100 PRINT AT 1,0; INK 4;"  IIIIIIIIIIIIIIIII
IIIIIIIIIII   II                          II
II                                 III
   IIIIIIIII       II              II     I  II
     II              II    I   II    II     II
IIIIIIII       I    II   I"
9110 PRINT  INK 4;"I          I          I
 I   II          I          I     I   II
   I    I    I     I   III          I   III
 I     I   I IIIIIII    I   I I   I     I   I
```



```
    II   I   I I   I      I   I IIIIII    I
 I I   I     I   I"
9120 PRINT  INK 4;"II          I   I I   II
II   II          I   I I    IIIII    II     I
IIIII   I I             II               I I
          II              I I             II
I            II II           II IIIIIIIIIIIII
I   IIIIIIIIIIIII"
9130 PRINT AT 11,27;"      "
9150 IF ci=1 THEN  PRINT  INK 4;AT 3,6;"II";A
T 4,5;"II";AT 8,2;"I";AT 9,2;"II";AT 17,3;"I"
;AT 18,3;"I";AT 8,18;"I";AT 13,28;"I"
9190 DATA 3,9,3,24,6,5,6,6,7,4,8,4,9,5,9,6,9,
15,9,16,9,30,11,8,11,18,12,12,13,8,14,30,15,5
,15,6,15,18,16,4,17,4,17,12,17,20,17,27,18,5,
18,11
9200 DATA 3,8,3,25,6,4,6,5,7,3,8,3,8,30,9,4,9
,5,9,16,9,17,10,18,12,8,12,13,13,8,13,18,13,3
0,15,5,15,6,16,4,16,13,17,4,17,22,17,26,18,5,
18,11
9210 DATA 2,12,2,26,5,3,5,9,6,30,7,1,7,17,7,1
8,8,19,9,1,10,2,10,7,10,14,12,9,15,9,15,30,16
,3,16,8,16,14,16,19,17,2,18,2,19,3,19,11,20,2
3,20,25
9220 DATA 2,6,2,27,4,2,4,4,5,1,5,30,7,16,7,18
,9,20,9,1,9,14,10,2,10,7,13,10,14,10,16,30,16
,3,16,8,17,14,17,20,18,1,19,1,19,22,19,27,20,
2,20,11
9290 RESTORE 9180+sk*10
9300 FOR l=1 TO 26: READ y,x: PRINT  INK 0;AT
 y,x;"-": NEXT l
9350 RESTORE 9400
9370 LET l=-1
9400 DATA 1,1,7,-7,7,1,1,1,-1,-1,-1,-7,7,1,1,
1,1,1,-1,-1,-1,-1,1,1,1,1,1
9500 LET po=146: LET cpo=146
9510 LET y=10: LET x=28: LET cy=y: LET cx=30
9520 LET y1=y: LET x1=x: LET po1=po
9522 LET cy1=cy: LET cx1=cx: LET cpo1=cpo
9528 LET l1=1: LET l2=11
9529 LET g=1: LET c=0
9530 PRINT AT y,x; OVER 1;CHR$ po;" "; INK 3;
CHR$ cpo
```

```
9540 PRINT AT 0,0;"YOUR LAPS:";L1;"    COMPUTE
R'S LAPS:";L2
9600 RETURN
```


Giant Rats

The object of Giant Rats is to direct a man through a maze to reach the girl, whilst being pursued by a killer rat. You have a displayed time limit in which to move before the girl mutates - and if you are unlucky she will unpredictably change places with the rat! If the rat should reach the girl first, she will disappear altogether. At the beginning of the game you are shown the positions of up to four randomly placed mines which you must try to memorise since they will remain invisible for the remainder of the game.

```
   1 RANDOMIZE : BORDER 0: PAPER 0: INK 7: CL
S
   5 LET hs=0
  10 GO SUB 9000
  50 GO SUB 5000
  70 LET sc=0
  80 LET li=5
 100 FOR f=0 TO 30: PRINT  INK 4; PAPER 7;AT
0,f;"G";AT 20,f;"G": NEXT f: FOR f=1 TO 19: P
RINT  INK 4; PAPER 7;AT f,0;"G";AT f,30;"G":
NEXT f
 103 GO SUB 2000
 107 FOR i=1 TO 30: PRINT AT INT (RND*10)*2,I
NT (RND*15)*2; PAPER 7; INK 4;"G": NEXT i
 110 LET sc=sc-1: LET y=1: LET x=y: LET f=19:
 LET g=29: LET a$="C"
 115 PRINT AT 21,5;"HI-SC:";hs;AT 21,16;"LI:"
;li;AT 21,23;"SCORE:0"
 120 LET b$="AB": LET c=1
 130 GO SUB 1500
 200 FOR i=1 TO 2
 201 LET c=c-1: PRINT AT 21,0;c;" ": IF c=0 T
HEN  GO TO 3500
 205 IF RND>.97 THEN  GO SUB 1600
 210 PRINT AT y,x;" "
 220 IF INKEY$="8" THEN  IF ATTR (y,x+1)<>60
THEN  LET x=x+1
 230 IF INKEY$="5" THEN  IF ATTR (y,x-1)<>60
THEN  LET x=x-1
```

```
 240 IF INKEY$="7" THEN  IF ATTR (y-1,x)<>60
THEN  LET y=y-1
 250 IF INKEY$="6" THEN  IF ATTR (y+1,x)<>60
THEN  LET y=y+1
 255 IF ATTR (y,x)>128 THEN  GO SUB 1500
 257 IF (x=b(1) AND y=a(1)) OR (x=b(2) AND y=
a(2)) OR (x=b(3) AND y=a(3)) OR (x=b(4) AND y
=a(4)) THEN  GO TO 3000
 260 PRINT  INK 6;AT y,x;b$(i): GO SUB 1000
 270 NEXT i
 280 GO TO 200
1000 LET f1=f: LET g1=g
1010 IF f<y THEN  LET a$="F": LET f=f+.5
1020 IF f>y THEN  LET a$="E": LET f=f-.5
1030 IF g<x THEN  LET a$="D": LET g=g+.5
1040 IF g>x THEN  LET a$="C": LET g=g-.5
1050 PRINT  INK 3;AT f1,g1;" ";AT f,g;a$
1060 IF ATTR (y,x)=3 THEN  GO TO 3100
1070 PRINT AT INT (RND*10)*2,INT (RND*15)*2;
PAPER 7; INK 4;"G"
1100 RETURN
1500 LET sc=sc+1: PRINT AT 21,29;sc
1501 FOR l=1 TO 5: BEEP .01,l*5: NEXT l
1502 LET c=50
1505 LET q=INT (RND*10)*2+1: LET w=INT (RND*1
5)*2+1: PRINT  PAPER 6; FLASH 1; INK 2;AT q,w
;"H"
1510 RETURN
1600 PRINT AT q,w;" ": LET l=q: LET m=w: LET
l1=f: LET m1=g: LET f=l: LET g=m: LET q=l1: L
ET w=m1
1605 PRINT AT q,w; PAPER 6; INK 2; FLASH 1;"H
"
1606 LET t=1
1610 RETURN
2000 DIM a(4): DIM b(4)
2010 FOR i=1 TO 4: LET a(i)=INT (RND*10)*2+1:
 LET b(i)=INT (RND*15)*2+1: NEXT i
2020 FOR i=7 TO 0 STEP -1: FOR l=1 TO 4: PRIN
T  INK i;AT a(l),b(l);"■": BEEP .01,l*i: BEEP
 .01,-l*i: NEXT l: NEXT i
2030 RETURN
3000 FOR l=1 TO 3: FOR i=7 TO 0 STEP -1: PRIN
```



```
T AT y,x; INK i;"A": BEEP .05,i*8: NEXT i: NE
XT l
3010 GO TO 3600
3100 FOR l=1 TO 3: FOR i=7 TO 0 STEP -1: PRIN
T AT y,x; INK i;"F": BEEP .1,-i*4: NEXT i: NE
XT l
3120 GO TO 3600
3500 FOR l=1 TO 15: FOR i=1 TO 3: BEEP .02,l*
i: PRINT AT q,w; INK RND*7;"H": NEXT i: NEXT
l
3600 PRINT AT y,x;" ";AT f,g;" ";AT q,w;" "
4000 LET li=li-1: IF li>0 THEN  BEEP .3,0: GO
 TO 110
4002 CLS : FOR f=0 TO 20: BEEP .02,f: NEXT f:
 PRINT ''"You scored ";sc;" point";("s" AND s
c<>1);"."
4010 IF sc>hs THEN  LET hs=sc: PRINT  INK 4''
"WELL DONE!  A NEW HIGH-SCORE!": GO SUB 9100
4015 PRINT  INK 5''"The high-score is ";hs
4018 PRINT ' INK 6' FLASH 1;"PRESS ANY KEY TO
 PLAY AGAIN"
4019 IF INKEY$="" THEN  GO TO 4019
4020 CLS : GO TO 70
5000 PRINT  FLASH 1;"   C M D U E T F A C N D
 T E    "
5010 PRINT  FLASH 1'"        C R D A E T F S
C       "
5030 FOR y=0 TO 2 STEP 2: FOR i=0 TO 31
5035 BEEP .04,RND*40
5040 IF SCREEN$ (y,i)<>"■" AND SCREEN$ (y,i)<
>"" THEN  PRINT AT y,i; BRIGHT 1; INK 2; PAPE
R 7;SCREEN$ (y,i)
5050 NEXT i: NEXT y
5055 PRINT '"    @ P a u l  S t a n l e y"
5060 PRINT ''"The giant rat is out to get you
!You must try and reach the girl before she m
utates (a timer at  the bottom of the screen
counts this down)."
5070 PRINT  INK 5''"However she might be a mu
tant   herself and change places with  the ra
t unpredictably. Also she might disappear tot
ally (if she meets the rat, she will)."
5075 PRINT ''"Press any key...": PAUSE 0: CLS
```

```
5080 PRINT  INK 6;''"And that's not all! When
you     start, up to 4 mines will be     shown
in random positions.        These positions mus
t be noted,  for if you land on one, you
will be destroyed!"
5085 PRINT  INK 4;''"Move with 5-8"
5090 PRINT  INK 4; INVERSE 1;''"     PRESS ANY
KEY TO START.     ": PAUSE 0: CLS : RETURN
9000 RESTORE 9010: FOR y=USR "a" TO USR "h"+7
: READ x: POKE y,x: NEXT y
9010 DATA 28,93,73,62,8,28,34,65,28,28,8,127,
8,28,20,20
9020 DATA 7,1,33,57,93,255,36,108,240,128,132
,156,186,255,36,54
9030 DATA 8,28,62,28,28,63,61,7,15,57,255,124
,254,84,56,16
9040 DATA 255,129,189,165,165,189,129,255,28,
28,73,62,28,62,20,54
9050 RETURN
9100 LET g=.3: RESTORE 9200: FOR f=1 TO 23: R
EAD y,x: BEEP y,x: NEXT f: RETURN
9200 DATA 9,7,9,9,.6,7,9,7,9,9,.6,7,9,12,9,11
,9,9,9,7,1.2,9,9,11,9,9,9,7,9,5,9,4,9,5,.6,7,
9,2,9,5,9,4,9,2,1.2,0
```


Postman

In Postman you have a limited time in which to collect a letter from a post box and deliver it to the house without being caught by the dog. The number of post boxes can be varied for each game and letters must be collected from the one which is currently flashing.

```
  1 BORDER 7: PAPER 7: INK 0: CLS
  2 REM  @ Postman-Paul Stanley
  5 LET hs=0
  7 GO SUB 9000
 10 GO SUB 5500
 20 GO SUB 7000
 60 GO SUB 5000
 70 BEEP .1,0
 80 FOR i=1 TO 2
100 IF INKEY$="5" THEN  IF x>1 AND ATTR (y,x
-1)<>58 AND ATTR (y+1,x-1)<>58 THEN  LET a$="
EF": LET b$(1)=" G": LET b$(2)=" H": LET x=x-
1
110 IF INKEY$="8" THEN  IF x<29 AND ATTR (y,
x+2)<>58 AND ATTR (y+1,x+2)<>58 THEN  LET a$=
"AB": LET b$(1)="C": LET b$(2)="D": LET x=x+1
120 IF INKEY$="7" THEN  IF y>1 AND ATTR (y-1
,x)<>58 AND ATTR (y-1,x+1)<>58 THEN  LET a$="
I ": LET b$(1)="J": LET b$(2)="M": LET y=y-1
130 IF INKEY$="6" THEN  IF y<17 AND ATTR (y+
2,x)<>58 AND ATTR (y+2,x+1)<>58 THEN  LET a$=
"K ": LET b$(1)="L": LET b$(2)=b$(1): LET y=y
+1
140 PRINT AT y1,x1;"  ";AT y1+1,x1;"  "; INK
 1;AT y,x;a$;AT y+1,x;b$(i): LET y1=y: LET x1
=x
200 IF let THEN  IF x=hx OR x=hx-1 THEN  IF
y=hy THEN  FOR f=1 TO 10: BEEP .01,f: NEXT f:
 LET sc=sc+o: PRINT AT 21,7;sc: GO SUB 5000
250 IF NOT let THEN  IF x=px OR x+1=px THEN
 IF y=py THEN  LET let=1: BEEP .06,20: LET sc
=sc+10: PRINT AT 21,7;sc: LET o=FN a()
300 NEXT i
```

```
 500 LET dy=dy+(dy<y+1)-(dy>y+1)
 510 IF dx<x THEN  LET dx=dx+1: LET d$="N"
 530 IF dx>x THEN  LET dx=dx-1: LET d$="O"
 580 IF ATTR (dy,dx)=58 OR ATTR (dy,dx)=158 O
R ATTR (dy,dx)=59 THEN  LET u=dx: LET dx=dx+(
dx<x)-(dx>x): IF dx=u THEN  LET dx=dx+1
 800 PRINT  INK 3;AT hy,hx;"S"; INK 0;AT dy1,
dx1;" ";AT dy,dx;d$
 810 LET dy1=dy: LET dx1=dx: LET t=t-1: PRINT
 AT 21,27;t;" ": IF t=0 THEN  GO TO 8000
 850 IF dx=x OR dx=x+1 THEN  IF dy=y OR dy=y+
1 THEN  GO SUB 6000
 999 GO TO 80
5000 PRINT  INK 2;AT py,px;"P";AT py+1,px;"Q"
5003 LET f=INT (RND*1b)+1
5005 LET let=0
5010 PRINT  INK 6; PAPER 3; FLASH 1;AT y(f),x
(f);"P";AT y(f)+1,x(f);"Q"
5020 LET py=y(f): LET px=x(f)
5030 LET hx=INT (RND*14)*2+1: LET hy=INT (RND
*9)*2+1
5040 IF ATTR (hy,hx)=58 OR ATTR (hy,hx)=158 T
HEN  GO TO 5030
5050 PRINT  INK 3;AT hy,hx;"S"
5100 RETURN
5500 INPUT "How many post boxes would you  l
ike there to be? (Any number  between 1 and
36)  ";1b
5790 IF 1b<1 OR 1b>36 THEN  GO TO 5780
5800 RETURN
6000 FOR f=1 TO 12: BEEP .07,f: PRINT AT y,x;
 INK 1;"AB";AT y+1,x;"C"
6010 BEEP .05,f: PRINT  INK 1;AT y,x;"I ";AT
y+1,x;"J"
6020 BEEP .07,f: PRINT  INK 1;AT y,x;"EF";AT
y+1,x;" G"
6030 BEEP .05,f: PRINT  INK 1;AT y,x;"K ";AT
y+1,x;"L "
6040 NEXT f
6050 PRINT AT y,x;"  ";AT y+1,x;"  ";AT hy,hx
;" "
6060 LET t=t-50: IF t<=0 THEN  GO TO 8000
6070 PRINT AT 21,27;t;"  "
```



```
6080 LET y=17: LET x=28: LET y1=y: LET x1=x
6090 LET dy=1: LET dx=1: LET dy1=dy: LET dx1=
dx
6100 GO TO 60
7000 FOR f=0 TO 19: PRINT  INK 4;AT f,0;"R";A
T f,31;"R": NEXT f
7010 FOR f=1 TO 30: PRINT  INK 4;AT 0,f;"R";A
T 19,f;"R": NEXT f
7060 DIM y(1b): DIM x(1b)
7100 FOR f=1 TO 1b
7110 LET y=INT (RND*4)*4+3: LET x=INT (RND*9)
*3+3
7120 IF ATTR (y,x)=58 OR ATTR (y+1,x)=58 THEN
  GO TO 7110
7125 LET y(f)=y: LET x(f)=x
7130 PRINT  INK 2;AT y,x;"P";AT y+1,x;"Q": NE
XT f
7800 LET y=17: LET x=28: LET y1=y: LET x1=x
7810 DIM b$(2,2): LET a$="EF": LET b$(1)=" G"
: LET b$(2)=" H"
7840 LET sc=0: LET t=300: PRINT AT 21,1;"SCOR
E:";sc;AT 21,22;"TIME:";t
7850 LET let=0: LET py=y(1b): LET px=x(1b)
7900 LET dy=1: LET dx=1: LET d$="N"
7910 LET dy1=dy: LET dx1=dx
7950 DEF FN a()=INT (SQR (ABS (hy-py)^2+ABS (
hx-px)^2))
7999 RETURN
8000 FOR f=1 TO 40: BEEP .01,f: NEXT f
8005 CLS : PRINT  INK 4''"You have run out of
 time."
8010 PRINT  INK 3''"You scored ";sc;" points.
"
8020 IF sc>hs THEN  LET hs=sc: PRINT  INK 2''
"Well done that's a new high  score!!  Ple
ase ENTER your  name.": INPUT h$: GO TO 8
035
8030 PRINT  INK 2''"The high-score is ";hs;"
points"''"by Postman ";h$
8035 FOR f=1 TO 50: NEXT f
8040 PRINT  INK 5''"Press any key to play aga
in..."
8050 IF INKEY$="" THEN  GO TO 8050
```

```
8060 CLS : GO TO 10
9000 RESTORE 9010: FOR f=USR "a" TO USR "s"+7
: READ g: POKE f,g: NEXT f
9010 DATA 120,126,236,231,255,255,124,56,0,0,
0,254,255,254,0,0
9020 DATA 56,127,184,184,40,72,136,76,56,254,
185,56,40,37,34,48
9030 DATA 0,0,0,127,255,127,0,0,30,126,55,231
,255,255,62,28
9040 DATA 28,127,157,28,20,164,68,12,28,254,2
9,29,20,18,17,50
9050 DATA 16,56,56,56,56,56,56,56,124,254,124
,56,126,184,40,32
9060 DATA 28,62,91,73,62,62,93,157,28,28,28,2
8,8,0,0,0
9070 DATA 124,254,124,56,252,58,40,8,8,14,139
,142,252,124,68,68
9080 DATA 32,112,209,113,63,62,34,34,60,126,2
55,126,66,126,126,126,102,102,102,126,126,126
,126,255
9090 DATA 126,195,189,165,165,189,195,126,32,
126,255,126,86,86,126,126
9200 PRINT  INK 2;"   AB     P O S T M A N
EF"'"   C                          H"
9250 PRINT '"          @ Paul Stanley"
9300 PRINT  INK 1''"First collect a letter fr
om the flashing post-box. Then deliver it to
the little purple house."
9400 PRINT ''"You have limited time, and if
 you are attacked by the dog,     you will los
e time."
9500 PRINT  INK 3''"Move with 5-8."
9600 PRINT ''"Press any key to start....."
9700 IF INKEY$="" THEN  BEEP .01,20: PAUSE 10
: GO TO 9700
9999 CLS : RETURN
```


Xmas Eve

Xmas Eve is a race against time for Santa, who must rush to deliver presents before the inhabitants of the houses awake.

By manoeuvering Santa's sleigh left and right you can catch the presents as they are thrown down from above by the elves. Presents can then be dropped down the chimneys by pressing the M key. Each time a present is successfully delivered, the inhabitants of the house awake and switch on the lights, which causes the snow on the roof to melt at a rate proportional to the activity in the house. The more work Santa does the more he has to hurry, in order to complete his work without being seen.

```
  1 PAPER 1: INK 7: BORDER 1: CLS
  2 REM **********************
  3 REM ** @ PAUL STANLEY **
  4 REM **********************
  5 GO SUB 8000
  7 LET hs=0
 10 GO SUB 9000
 15 LET sk=.98: LET s=0
 20 LET a$="A": LET b$="B": LET c$="C": LET
x=27
 21 DIM d$(28)
 25 LET g=1: LET h=INT (RND*28)+2
 26 PRINT AT 0,18;"HIGH-SCORE:";hs
 27 LET p=0
 28 PRINT AT 0,0;"PRESENTS:";s
 30 IF INKEY$="x" THEN  LET x=x+(2 AND x<27)
: LET a$="D": LET b$="E": LET c$="F"
 35 IF INKEY$="z" THEN  LET x=x-(2 AND x>1):
 LET a$="A": LET b$="B": LET c$="C"
 40 PRINT AT 10,x-2;"       ";AT 10,x; INK 2
;a$; INK 0;b$; INK 2;c$;
 50 IF NOT p THEN  LET g=g+1: PRINT AT g-1,h
;" ";AT g,h; INK 6;"G": IF g=10 THEN  IF h=x+
2 OR h=x+1 OR h=x THEN  LET p=1
 60 IF g=12 THEN  IF SCREEN$ (g+1,h)=":" THE
N  GO TO 1000
 65 IF g=12 THEN  PRINT AT 12,h;" ": LET g=1
```

```
: LET h=INT (RND*28)+2
  70 IF p THEN  IF INKEY$="m" THEN  LET g=10:
 LET h=x-1+(a$="D")+(3 AND c$="C"): LET p=0
  80 IF RND>sk THEN  LET q=INT (RND*7)+1: LET
 e=INT (RND*4): PRINT  PAPER 3;AT 16,q*4-e+1;
" ": LET d$(q*4-e)="p": IF d$(q*4-3 TO q*4)="
pppp" THEN  GO TO 2000
  90 GO TO 30
1000 PRINT AT 12,h;" "
1010 IF SCREEN$ (18,h)="_" THEN  GO TO 25
1015 LET s=s+1: PRINT AT 0,0;"PRESENTS:";s
1020 PRINT AT 18,h; INK 0; PAPER 6;"__";AT 19
,h;"__"
1022 FOR f=1 TO 3: BEEP .001,30: NEXT f
1025 FOR f=4 TO 28 STEP 4: IF SCREEN$ (18,f)=
"_" THEN  NEXT f: LET sk=sk-.02: CLS : GO SUB
 9030: GO TO 20
1030 GO TO 25
2000 IF SCREEN$ (18,q*4)<>"_" THEN  GO TO 600
0
2010 GO TO 30
5000 RESTORE 5100: LET z=.3: LET c=.6: FOR f=
1 TO 26: READ a,b: BEEP a,b: NEXT f
5100 DATA z,6,z,6,c,6,z,6,z,6,c,6,z,6,z,9,z,2
,z,4,1,6,z,6,z,7,z,7,z,7,z,7,z,7,z,6,z,6,z,6,
z,9,z,9,z,7,z,4,c,2,c,2
5200 RETURN
6000 FOR f=10 TO 1 STEP -.5: PRINT AT f,x; IN
K 2;a$; INK 0;b$; INK 2;c$;AT f+1,x;"   ": BE
EP .005,2*f: NEXT f
6002 IF s>hs THEN  LET hs=s
6005 PRINT AT 1,x;"   "
6006 PRINT AT g,h;" "
6010 PRINT  FLASH 1;AT 18,q*4-1; INK 0; PAPER
 6;"__";AT 19,q*4-1;"K_"
6030 PRINT AT 8,8; FLASH 1;"G A M E  O V E R"
6045 GO SUB 5000
6050 PRINT AT 11,2; FLASH 1;"PRESS ANY KEY TO
 PLAY AGAIN"
6060 IF INKEY$<>"" THEN  CLS : GO TO 10
6070 GO TO 6060
8000 PRINT  INVERSE 1;AT 5,0;"  C H R I S T
M A S  E V E    "' INVERSE 0''"       @  PAU
```



```
L STANLEY": PAUSE 250: CLS
8010 PRINT '"It is approaching midnight on
Christmas eve and Santa is late.You play the
part of Santa and  you must deliver presents
which are thrown down to you by your  elves.
Having caught a present  (by flying directly
below it)  you must move over a chimney  a
nd drop a present down it."
8020 PRINT '"When a present has been dropped
down a chimney the family in  that house im
mediately start  work on opening up the pre
sent  and they will turn the light on.Droppin
g another present down  a chimney of a lit h
ouse will  not count."
8030 PRINT ' INVERSE 1;"PRESS ANY KEY TO SEE
MORE.": PAUSE 0
8040 CLS : PRINT "Beneath each roof you will
see  a patch of snow which melts as  time ela
pses. This melts at a  rate which is proport
ional to  the activity in the house."
8050 PRINT '"As the presents must be placed
down the chimneys before anyone sees you, if
all the snow has  melted under a particular
roof  without a present being dropped before
this occurs it will  indicate that the in
habitants  are awake and you will have to  r
eturn immediately."
8060 PRINT '"   Z------------------LEFT
   X-----------------RIGHT          M--------
--DROP PRESENT"
8070 PRINT ' INVERSE 1;"     PRESS ANY KEY TO
 START     ": PAUSE 0: CLS : RETURN
9000 RESTORE 9010: FOR y=USR "a" TO USR "k"+7
: READ x: POKE y,x: NEXT y
9010 DATA 0,0,1,0,0,0,0,0
9020 DATA 192,64,160,224,127,126,99,82
9030 DATA 8,28,8,124,156,72,63,128
9040 DATA 16,56,16,62,56,18,252,1
9050 DATA 3,2,5,7,254,126,198,74
9060 DATA 0,0,128,0,0,0,0,0
9070 DATA 0,0,0,54,54,0,54,54
9080 DATA 0,1,3,7,15,31,63,127
9090 DATA 0,128,192,224,240,248,252,254
```

```
9100 DATA 255,220,73,65,64,0,0,0
9110 DATA 24,60,BIN 01010110,60,24,126,255,25
5
9300 FOR x=2 TO 26 STEP 4
9310 PRINT  INK 3;AT 13,x+1;":"; PAPER 3; INK
 5;AT 14,x+1;"A"; PAPER 1;"I";AT 15,x;"A■■I";
 INK 7; PAPER 3;AT 16,x;"JJJJ";AT 17,x; PAPER
 1; INK 3;"■■■■";AT 18,x;"■  ■";AT 19,x;"■  ■
";AT 20,x;"■■■■";AT 21,x;"■■■■"
9320 NEXT x
9400 FOR x=48 TO 208 STEP 32: OVER 1: INK 3:
PLOT x,0: DRAW 0,39: NEXT x: INK 7: OVER 0
9450 FOR x=24 TO 216 STEP 32: PLOT x,23: DRAW
 15,0: NEXT x
9500 RETURN
```


Morse Tutor

This has to be the definitive Morse code tutor. It's got everything you could possible require to painlessly acquaint yourself with the code, and then to go on and practice until you reach professional speeds. The program offers you a comprehensive menu with a full listing of letters and numbers (in both text and Morse), a facility to convert your own messages into the code and a challenging tester section. You also have the opportunity to adjust the speed of the code to suit your own abilities. What more could you ask for?

```
  10 POKE 23658,255: REM force upper case inp
ut
  20 REM Morse Tutor @ Robert Erskine 1983
  40 GO SUB 8500
 100 PAPER 1: INK 5: BORDER 1: CLS
 110 PRINT AT 1,11;"OPTIONS"
 120 PRINT
 140 PRINT "1 Print a message": PRINT
 150 PRINT "2 Message with sound only": PRINT

 160 PRINT "3 Create your own message": PRINT

 170 PRINT "4 Test section": PRINT
 180 PRINT "5 Change speed": PRINT
 190 PRINT "6 The Morse Code": PRINT
 210 IF INKEY$="1" THEN  GO TO 2005
 220 IF INKEY$="2" THEN  GO TO 2000
 230 IF INKEY$="3" THEN  GO TO 2030
 240 IF INKEY$="4" THEN  GO TO 5000
 250 IF INKEY$="5" THEN  GO TO 6000
 260 IF INKEY$="6" THEN  GO TO 7000
 290 GO TO 210
1000 LET x$=v$: LET v$=q$+v$+h$
1010 FOR x=1 TO LEN v$-32
1020 IF 0=0 THEN  PRINT AT 21,0;v$(x TO x+31)
1025 LET T=CODE v$(x+31)
1030 FOR y=1 TO 5
1040 IF T>64 THEN  BEEP c(CODE (v$(x+31))-64,
y),25
```

```
1042 IF T<58 AND T>47 THEN  BEEP c(CODE (v$(x
+31))-21,y),25
1045 NEXT y
1046 PAUSE 3
1050 NEXT x
1999 GO TO 2110
2000 LET O=1
2005 LET v$=f$
2010 GO TO 1000
2020 GO TO 100
2030 CLS : PRINT AT 2,7;"CREATE A MESSAGE"
2040 PRINT "Enter your own message at the ","
bottom of the screen and then ","press the EN
TER key."
2050 INPUT v$
2060 CLS : PRINT "Do you want the message dis
played in both sound and vision? (Y or N)"
2065 PAUSE 100
2070 IF INKEY$="" THEN  GO TO 2070
2080 IF INKEY$="Y" THEN  GO TO 2100
2090 LET O=1
2100 GO TO 1000
2110 LET O=0
2140 LET f$=x$
2150 GO TO 100
5000 CLS : PRINT AT 1,10;"TEST SECTION"
5010 PRINT
5020 INPUT "Do you want to be tested on chara
cters (1) code (2) or sound (3)?";A$
5030 IF A$="1" THEN  LET W=1
5040 IF A$="2" THEN  LET W=2
5050 IF A$="3" THEN  LET W=3
5055 IF CODE A$<49 OR CODE A$>51 THEN  GO TO
5020
5060 INPUT "Do you want testing on letters (1
) or numbers (2)?";A$
5090 IF A$="1" THEN  LET B=1
5100 IF A$="2" THEN  LET B=2
5105 IF CODE A$<49 OR CODE A$>50 THEN  GO TO
5060
5110 IF W>1 THEN  GO TO 5250
5115 PAUSE 50
5120 PRINT "The character will appear first,
```



```
followed shortly by the code and sound": PAUS
E 100
5130 FOR x=1 TO 15
5140 IF B=1 THEN  LET v=INT (RND*26)+1
5150 IF B=2 THEN  LET v=(INT (RND*10)+1)+26
5160 IF B=1 THEN  PRINT CHR$ (v+64);
5170 IF B=2 THEN  PRINT CHR$ (v+21);
5180 PAUSE 50
5190 FOR y=1 TO 5
5200 BEEP c(v,y),25
5210 NEXT y
5220 PRINT " = ";c$(v)
5230 NEXT x
5240 PAUSE 50: GO TO 100
5250 IF W>2 THEN  GO TO 5390
5260 PRINT "The code will appear first, follo
wed shortly by the character and sound": PAUS
E 100
5270 FOR x=1 TO 15
5280 IF B=1 THEN  LET v=INT (RND*26)+1
5290 IF B=2 THEN  LET v=(INT (RND*10)+1)+26
5300 PRINT c$(v);: PAUSE 50
5310 FOR y=1 TO 5
5320 BEEP c(v,y),25
5330 NEXT y
5340 PRINT " = ";
5350 IF B=1 THEN  PRINT CHR$ (v+64)
5360 IF B=2 THEN  PRINT CHR$ (v+21)
5370 NEXT x
5380 PAUSE 50: GO TO 100
5390 PRINT "The sound will be heard first, fo
llowed shortly by the character and code": PA
USE 100
5400 FOR x=1 TO 15
5410 IF B=1 THEN  LET v=INT (RND*26)+1
5420 IF B=2 THEN  LET v=(INT (RND*10)+1)+26
5430 FOR y=1 TO 5
5440 BEEP c(v,y),25
5450 NEXT y
5460 PAUSE 50
5470 PRINT "That was ";
5480 IF B=1 THEN  PRINT CHR$ (v+64);" = ";c$(
v),
```

```
5490 IF B=2 THEN  PRINT CHR$ (v+21);" = ";c$(
v),
5500 PAUSE 50
5510 NEXT x
5520 PAUSE 50: GO TO 100
6000 CLS : PRINT AT 1,6;"ALTER SPEED OF CODE"
: PRINT
6010 PRINT "Enter a multiplication factor to
alter the speed of the morse.  Values less th
an 1 will increase the speed"
6020 INPUT A
6030 IF A>9 THEN  GO TO 6020
6040 PRINT "Please wait": LET s=s*A: LET l=l*
A: GO SUB 9000
6050 GO TO 100
7000 CLS : PRINT AT 0,7;"THE MORSE CODE": PRI
NT
7010 FOR X=1 TO 36
7020 IF X<27 THEN  PRINT CHR$ (X+64);" = ";C$
(X),
7030 IF X>26 THEN  PRINT CHR$ (X+21);" = ";C$
(X),
7040 NEXT X
7050 PRINT : PRINT AT 21,0;"PRESS ANY KEY TO
RETURN"
7060 PAUSE 0
7070 GO TO 100
8500 LET s=.1: LET l=.3: LET O=0: LET x$=""
8510 LET f$="THIS IS A MESSAGE TO DEMONSTRATE
 THE MORSE CODE TUTOR    THE COMPLETE ALPHABE
T IS AS FOLLOWS        ABCDEFGHIJKLMNOPQRSTUVW
XYZ       AND THE NUMBERS ARE        1234567890
"
8520 LET q$="                                  "
8530 LET h$=" "
9000 RESTORE : DIM c(36,5)
9010 FOR x=1 TO 36
9020 FOR y=1 TO 5
9030 READ c(x,y)
9040 NEXT y
9050 NEXT x
9060 DATA s,l,0,0,0,l,s,s,s,0,l,s,l,s,0,l,s,s
,0,0,s,0,0,0,0,s,s,l,s,0,l,l,s,0,0,s,s,s,s,0,
```



```
s,s,0,0,0,s,l,l,l,0,l,s,l,0,0,s,l,s,s,0,l,l,0
,0,0,l,s,0,0,0,l,l,l,0,0,s,l,l,s,0,l,l,s,l,0,
s,l,s,0,0,s,s,s,0,0,l,0,0,0,0,s,s,l,0,0,s,s,s
,l,0,s,l,l,0,0,l,s,s,l,0,l,s,l,l,0,l,l,s,s,0
9070 DATA l,l,l,l,l,s,l,l,l,l,s,s,l,l,l,s,s,s
,l,l,s,s,s,s,l,s,s,s,s,s,l,s,s,s,s,s,l,l,s,s,s,
l,l,l,s,s,l,l,l,l,s
9080 DIM c$(36,9)
9090 FOR x=1 TO 36
9100 READ c$(x)
9110 DATA "._","_...","_._.","_..","."
,".."
,"_ _."
,"...."
,".."
,"._ _ _"
,"_._"
,"._.."
,"_ _."
,"_ _ _"
,"._ _ ."
,"_ _._"
,"._."
,"..."
"_"
,".._"
,"..._"
,"._ _"
,"_.._"
,"_._ _"
,"_ _.."
,"_ _ _ _ _"
,"._ _ _ _ _"
,".._ _ _ _"
,"..._ _ _"
,"...._ _"
,"....."
,"_...."
,"_ _..."
,"_ _ _.."
,"_ _ _ _."
9120 NEXT x
9130 RETURN
```

Flying Geese

It's time to don your tweeds, grease up your shotgun and head for the marshes. The geese are back from the north and the freezer is empty. Don't worry about the corpses - your faithful hound will deal with those after the game is over. Just blast away with your shooter and notch up a handsome tally.

```
  10 REM ** FLYING GEESE                    @19
83 MICHAEL BEWS
  20 GO TO 580
  25 REM **FLYING/SHOOT ROUTINE
  30 FOR x=o TO fr: LET d(x)=ei-x+SGN (o-tw*I
NT (RND*tw)): PRINT AT h(x),g(x)-o;"  ";: FOR
 z=o TO fr: LET f=-f: PRINT AT d(x),g(x);" ";
a$(th-f);: NEXT z
  40 IF PEEK 23556=65 THEN  FOR y=o TO tw: PL
OT  OVER o;en,tf: DRAW  OVER o;fr,th: PRINT
OVER o;AT si,th;"£";: NEXT y: LET SH=SH+o: PR
INT  INVERSE o;AT 0,sx;SH;: IF g(x)=ev OR g(x
)=tv THEN  LET B=B+o: PRINT AT d(x),g(x);"
";  INVERSE o;AT 0,hy;B;: LET g(x)=o-tw: LET h
(x)=o: FOR y=d(x) TO ni STEP tw: PRINT AT y-t
w,fo;"  ";AT y-o,fo;"  ";AT y,fo;"F";AT y+o,fo;
"G";: NEXT y: PRINT AT ni-o,fo;"  ";AT ni,fo;"
 ";AT ni+o,fo;"  ";
  50 LET h(x)=d(x): LET g(x)=g(x)+tw: IF g(x)
>tn THEN  PRINT AT h(x),g(x)-o;"  ";: LET g(x
)=o
  60 NEXT X: IF SH>99 THEN  GO TO 300
  70 GO TO 30
 100 FOR x=1 TO 4: LET h(x)=1: LET g(x)=x*5-4
: NEXT x
 110 CLS : PRINT  INVERSE 0;AT 0,0;"SHOTS:  "
;AT 0,10; PAPER 7; INK 2;"<A> TO FIRE "; INK
7; PAPER 1;AT 0,24;"SCORE:  "; INK 4;AT 13,21
;"EEE";AT 14,20;"EEEEE";AT 15,19;"EEEEEEE";AT
 16,19;"EEEEEEE";AT 17,19;"EE■"; PAPER 2; INK
 0;"D"; PAPER 1; INK 4;"■EE"; PAPER 2; INK 0;
AT 18,22;"D";AT 19,22;"D";
 120 PRINT AT 20,0; PAPER 4;"                "; P
```



```
APER 1;"          "; PAPER 4;"
       "; INK 5; PAPER 1;"DDDDDDDD"; PAPER 4;
"           ";
 130 PRINT AT 18,1;"M";AT 19,1;"N";
 140 GO TO 30
 299 REM ***END OF GAME ROUTINE
 300 IF B>TOT THEN  LET TOT=B
 310 PRINT  FLASH 1;AT 9,10;" GAME OVER "; FL
ASH 0; INVERSE 1;AT 11,4;" SCORE:";B;" IN 100
 SHOTS ";
 320 PRINT AT 13,4; INVERSE 1;"HIGHEST SCORE:
 ";TOT;
 330 INPUT  FLASH 1;"PRESS <ENTER> FOR NEXT G
AME";X$: LET SH=0: LET B=0: GO TO 100
 570 REM **INITIALISATION***
 580 PAPER 1: INK 7: BORDER 6: CLS
 590 DIM a$(4,2): DIM d(4): DIM g(4): DIM h(4
)
 600 LET sx=6: LET hy=30: LET TOT=0: LET SH=0
: LET fi=15: LET tv=12: LET ev=11: LET ni=19:
 LET ty=20: LET en=18: LET tf=34: LET si=16:
LET fo=14: LET ei=8: LET f=-1: LET o=1: LET t
w=2: LET th=3: LET fr=4: LET tn=29
 610 FOR x=0 TO 7: READ a,b,c: POKE USR "A"+x
,a: POKE USR "B"+x,b: POKE USR "C"+x,c: NEXT
x
 620 LET a$(4)="AB": LET a$(2)="CB"
 630 FOR X=0 TO 7: READ a,b: POKE USR "M"+x,a
: POKE USR "N"+x,b: NEXT x
 640 FOR x=0 TO 7: READ a: POKE USR "D"+x,a:
NEXT x
 650 FOR x=0 TO 7: READ a: POKE USR "£"+x,a:
NEXT x
 660 FOR x=0 TO 7: READ a,b: POKE USR "F"+x,a
: POKE USR "G"+x,b: NEXT x
 690 GO TO 100
 999 REM **U.D. GRAPHICS DATA
1000 DATA 2,0,0,6,0,0,7,48,0,7,104,0,127,254,
127,31,192,31,8,0,15,0,0,3
1010 DATA 1,224,98,224,244,144,232,144,88,144
,232,144,248,144,224,216
1020 DATA 85,170,85,170,85,170,85,170
1030 DATA 66,16,132,33,4,81,4,160
1040 DATA 0,48,16,56,18,28,54,20,118,24,62,16
,60,16,60,0
```

Wordsum

A test of your logical thought processes, this program presents you with a sum to solve. Not so difficult you might think, but in this case some of the numbers have been replaced by letters, and the answer you want is not a number, but the word that the numbers spell! The program gives you a different set of number/letter substitutions for each problem, and the answer is always to be found if you follow the arithmetic through.

```
   5 BORDER 6: PAPER 5: INK 1
  10 REM **W O R D S U M**                    @19
83 BY MICHAEL BEWS
  20 CLS : PRINT  PAPER 7; INK 1;"W O R D S U
 M @1983 MICHAEL BEWS";AT 11,12;"STANDBY"
  35 REM ****READ WORD LIST***
  40 DIM A(10): DIM C(10): DIM A$(10): DIM W$
(60,6)
  45 LET B$="                "
  50 LET N=1
  60 READ W$(N): IF W$(N)(1)="!" THEN  LET N=
N-1: GO TO 80
  70 LET N=N+1: GO TO 60
  80 BORDER 6: PAPER 5: INK 1: LET T=0: LET N
N=1+INT (N*RND): LET X=6: IF W$(NN)(6)=" " TH
EN  LET X=5
  82 LET P$=W$(NN)( TO X)
  83 BEEP .1,10
  85 REM *****GET RANDON LETTER VALUES
  86 CLS : PRINT  INK 7; PAPER 1;"W O R D S U
 M @1983 MICHAEL BEWS";
  90 FOR X=1 TO LEN P$
100 LET A$(X)=P$(X)
110 IF X=1 THEN  GO TO 140
120 FOR Z=1 TO X-1: IF A$(X)=A$(Z) THEN  LET
A(X)=A(Z): GO TO 190
130 NEXT Z
140 LET A(X)=INT (RND*10)
150 IF A(1)=0 THEN  GO TO 140
160 IF X=1 THEN  GO TO 190
170 FOR Y=1 TO X-1: IF A(X)=A(Y) THEN  GO TO
140
```



```
180 NEXT Y
190 NEXT X
200 LET P=0
205 FOR X=6 TO 13: PRINT AT X,9; PAPER 6;B$;
: NEXT X
207 PAPER 6
210 FOR X=LEN P$ TO 1 STEP -1
220 LET T=T+A(X)*10^P
230 LET P=P+1
240 NEXT X
250 LET S=9*(1000+INT (RND*9000))
260 LET I=T-S
270 LET S$=STR$ S: LET T$=STR$ T: LET I$=STR
$ I
280 FOR X=1 TO LEN T$
300 FOR Y=1 TO LEN I$
320 IF I$(Y)=T$(X) THEN  LET C(X)=1: LET I$(
Y)=A$(X)
340 NEXT Y
350 NEXT X
360 FOR X=1 TO LEN (T$)
380 FOR Y=1 TO LEN (S$)
400 IF S$(Y)=T$(X) THEN  LET C(X)=1: LET S$(
Y)=A$(X)
420 NEXT Y
430 NEXT X
440 FOR X=1 TO LEN T$
450 IF C(X)=0 THEN  LET T$(X)=A$(X)
460 NEXT X
490 REM **PRINT SUM ON SCREEN**
495 INK 1
500 PRINT AT 7,22-2*LEN I$;: FOR X=1 TO LEN
I$: BEEP .1,X: PRINT I$(X);" ";: NEXT X
510 PRINT AT 9,22-2*LEN S$;: FOR X=1 TO LEN
S$: BEEP .1,X+6: PRINT S$(X);" ";: NEXT X
520 PRINT AT 10,9;"_____________"
530 PRINT AT 12,22-2*LEN T$;: FOR X=1 TO LEN
T$: BEEP .1,X+11: PRINT T$(X);" ";: NEXT X
540 PRINT AT 18,0; INVERSE 1;"PRESS <SPACE>
TO REVEAL THE WORD"; INVERSE 0
550 LET X$=INKEY$: IF X$="" THEN  GO TO 550
560 IF X$<>" " THEN  GO TO 550
565 BEEP .1,40: PRINT AT 7,6-LEN I$;STR$ I;A
T 9,6-LEN S$;STR$ S;AT 10,0;"________";AT 12,6
```

```
-LEN T$;STR$ T
 570 PRINT AT 12,22-2*LEN T$;: FOR X=1 TO LEN
 T$: BEEP .1,18+X: PRINT A$(X);" ";: NEXT X
 580 PRINT AT 18,0; FLASH 1;"  PRESS <1> FOR
ANOTHER WORDSUM "; FLASH 0
 585 LET B=PEEK 23556: IF B<>49 THEN  GO TO 5
85
 586 DIM C(6): GO TO 80
 590 DATA "HEARTH","YELLOW","ENGINE","RABBIT"
,"CARPET","CLEVER","FEASTS","SHADES","POTATO"
,"RADIOS","THAMES","CARROT","TOMATO","CHEESE"
,"BUTTER","RUDDER","HEATER","PLINTH","FARMER"
,"TROPHY"
 600 DATA "CHERRY","HAPPEN","COFFEE","TEAPOT"
,"MOTHER","SISTER","HOUSES","CABINS","ISLAND"
,"PIRATE","SILVER","JEWELS","BOUNTY","TOWELS"
,"PLANES","PLANTS","HOCKEY","TENNIS"
 610 DATA "COSTLY","LEMONS","APPLES","ORANGE"
,"VIOLET","ROBBER","RATHER","POINTS","PAINTS"
,"TANDEM","LETTER","LITTER","LATTER","FASTER"
,"MASTER","MISTER"
 620 DATA "!"
3000 LET A=INT (RND*10): PRINT A;" ";: GO TO
3000
```


Asset Stripper (48K)

This is an investment simulation in which you compete with the computer's company, Spectral Investments, to acquire £1 million. Starting with £100,000 you must study market intelligence reports and buy and sell shares on the stock market. If you find a company which is rich in capital assets but running at a loss, you can make a bid for the company with a mind to distributing its assets amongst the shareholders. To make a takeover bid you must attempt to buy 51 per cent of the shares, at which point the opposition will start bidding against you. Occasionally, Spectral will initiate its own takeover bids. The longer the bidding continues, the greater the possibility that a 'third party' will intervene.

Ordinary shares may be bought and sold in any quantity and a regular review of share prices is given, together with a market 'wire service'. If you want to look more closely at the performance of a particular company, you have the option of calling up a copy of its annual report which will give you information on assets, share prices, profits and other useful data. During each round, all the companies manufacture and trade their produce, and it is this activity which determines profitability. Frequently a company will invest in new capital equipment and this expenditure will cause a small drop in the share price. Don't be too hasty to sell your shares when a rise in productivity might just be around the corner.

```
  10 BORDER 1: PAPER 1: INK 7: CLS
  20 PRINT AT 0,9;"ASSET STRIPPER": PRINT AT
2,7;"@ R. Erskine 1982";AT 4,5;"What is your
surname?"
  30 INPUT n$
  50 PRINT AT 5,4;"Enter difficulty level ";A
T 6,11;"(1,2 or3)"
  60 INPUT lev
  70 PRINT AT 7,10;"Please wait"
  80 RANDOMIZE
  90 GO TO 3260
 100 PRINT TAB (11);"ACCOUNTS"
 140 PRINT
 150 PRINT n$;e$
```

```
 160 PRINT
 170 PRINT "Liquid assets ","£";INT ((ch+.005
)*100)/100
 180 PRINT
 190 LET q=0: LET q1=q
 200 FOR x=1 TO 10
 210 LET q=q+e(x)
 220 IF f$(x)="c" THEN  GO TO 240
 230 LET q1=q1+(e(x)*d(x))
 240 NEXT x
 250 PRINT "Shares held ",INT q
 260 PRINT
 270 PRINT "Total share value £";INT ((q1++.0
05)*100)/100
 280 PRINT
 290 PRINT "Total assets","£";INT ((q1+ch+.00
5)*100)/100
 300 PRINT
 310 IF q1+ch>s THEN  GO TO 2720
 320 IF q1+ch<0 THEN  GO TO 2760
 330 LET q3=0
 340 FOR x=1 TO 10
 345 IF f$(x)="c" THEN  GO TO 355
 350 LET q3=q3+(f(x)*d(x))
 355 NEXT x
 360 IF q3+zxch>s THEN  GO TO 2760
 370 IF q3+zxch<0 THEN  GO TO 2720
 380 IF t$="x" AND ch+q1>zxch+q3 THEN  GO TO
2720
 390 IF t$="x" AND ch+q1<zxch+q3 THEN  GO TO
2760
 410 PRINT m$;" Claims assets of £";q3+zxch
 420 PRINT
 450 RETURN
 480 PRINT TAB (10);"WIRE SERVICE"
 490 LET q=0: LET q1=0
 510 LET m(1)=asa
 520 FOR x=1 TO 10
 530 IF f$(x)="c" THEN  PRINT c$(x),"Ceased t
rading"
 540 IF f$(x)="c" THEN  GO TO 680
 550 PRINT
 560 LET q=q+1
 570 IF b(x)>a(x) AND e(x)<510000 AND f(x)<51
```



```
0000 THEN  PRINT c$(x),"May be ripe for takeo
ver"
 580 PRINT
 590 IF g(x)<1 AND w(x)>59 THEN  PRINT c$(x),
"Profits low"
 600 PRINT
 610 IF w(x)<60 THEN  PRINT c$(x),"Heads for
trouble"
 620 PRINT
 630 IF g(x)>5 THEN  PRINT c$(x),"Set for goo
d profits"
 640 PRINT
 650 IF v(x)>0 AND v(x)>=1 THEN  PRINT c$(x),
"Announces ";INT v(x);" Redundancies"
 660 PRINT
 670 LET q1=q1+d(x)
 675 PAUSE 100
 680 NEXT x
 690 IF q=0 THEN  LET t$="x"
 700 IF q=0 THEN  GO TO 110
 710 LET asa=q1/q
 720 PRINT "All share average ";INT ((asa+.00
5)*100)/100
 730 IF asa>m(1) THEN  PRINT "up ";INT (((asa
-m(1))+.005)*100)/100
 740 IF asa<m(1) THEN  PRINT "down ";INT (((m
(1)-asa)+.005)*100)/100
 750 IF asa>i(2) THEN  PRINT "All time high"
 760 IF asa>i(2) THEN  LET i(2)=asa
 770 IF asa<i(3) THEN  PRINT "All time low"
 780 IF asa<i(3) THEN  LET i(3)=asa
 810 RETURN
 840 FOR x=1 TO 10
 850 IF f$(x)="c" THEN  GO TO 1010
 860 IF lev=1 OR lev=2 THEN  GO TO 880
 870 IF f$(x)="x" AND f(x)>0 AND f(x)<510000
THEN  GO SUB 1110
 880 IF w(x)<61 AND f(x)<510000 THEN  GO SUB
1105
 900 IF f$(x)="c" THEN  GO TO 1010
 910 IF zxch<100 THEN  GO TO 1010
 915 IF lev=1 AND RND> .5 THEN  GO TO 950
 920 LET f=((((s/100)*51)-f(x))*d(x))
 930 IF (b(x)/100)*51>f AND f<zxch AND f(x)<5
```

```
10000 AND e(x)<510000 AND g(x)<1 THEN  GO TO
2620
 940 IF f$(x)="c" THEN  GO TO 1010
 950 IF zxch<100 THEN  GO TO 1010
 955 LET tenth=zxch/10
 960 IF w(x)>60 AND g(x)>0 THEN  GO SUB 1040
 970 IF lev=1 THEN  GO TO 1010
 980 IF w(x)>60 AND g(x)>1 THEN  GO SUB 1040
 990 IF w(x)>60 AND g(x)>5 THEN  GO SUB 1040
1000 IF w(x)>60 AND g(x)>10 THEN  GO SUB 1040
1010 NEXT x
1020 RETURN
1040 IF (tenth/d(x))+e(x)+f(x)>l(x) THEN  RET
URN
1050 IF f(x)<510000 AND (f(x)+(tenth/d(x)))>s
/2 THEN  RETURN
1060 LET a(x)=a(x)+tenth*1.05
1070 LET zxch=zxch-tenth
1080 LET f(x)=f(x)+INT (tenth/d(x))
1090 LET l(x)=l(x)-INT (tenth/d(x))
1100 RETURN
1110 LET a(x)=a(x)-((f(x)*d(x))*1.05)
1120 LET zxch=zxch+f(x)*d(x)
1130 LET l(x)=l(x)+f(x)
1140 LET f(x)=0
1150 RETURN
1180 PRINT
1190 PRINT TAB (9);"SHARE PRICES"
1200 PRINT
1210 PRINT "COMPANY";TAB (11);"SHARE PRICE";T
AB (24);"UP/DOWN"
1220 PRINT
1230 FOR x=1 TO 10
1240 IF f$(x)="c" THEN  PRINT c$(x);"CLOSED D
OWN"
1250 IF f$(x)="c" THEN  GO TO 1310
1260 IF INT d(x)=d(x) THEN  LET p$=STR$ d(x)+
".00"
1270 IF INT n(x)=n(x) THEN  LET r$=STR$ n(x)+
".00"
1280 IF INT d(x)<d(x) THEN  LET p$=STR$ (INT
((d(x)+.005)*100)/100)
1290 IF INT n(x)<n(x) THEN  LET r$=STR$ (INT
((n(x)+.005)*100)/100)
```



```
1300 PRINT  c$(x);TAB (21-LEN p$+1);p$;TAB (3
0-LEN r$+1);r$
1310 NEXT x
1320 PRINT
1380 PRINT "ALL SHARE AVERAGE ";INT ((asa+.00
5)*100)/100
1390 PRINT "You have £";INT ((ch+.005)*100)/1
00
1410 RETURN
1430 PRINT "BUY HOW MANY?"
1440 INPUT y
1450 IF y*d(x)>ch THEN  PRINT "You have insuf
ficient cash"
1460 IF y*d(x)>ch THEN  GO TO 1430
1470 IF y>l(x) THEN  PRINT "Not enough shares
 available"
1480 IF y>l(x) THEN  GO TO 1430
1490 IF y+e(x)>500000 AND e(x)<510000 THEN  G
O TO 1660
1500 LET ch=ch-(y*d(x))
1510 LET l(x)=l(x)-y
1520 LET a(x)=(a(x)+(y*d(x)))*1.05
1530 LET e(x)=e(x)+y
1540 LET x$="p"
1550 RETURN
1570 PRINT "How many do you wish to sell?"
1580 INPUT y
1590 IF y>e(x) THEN  PRINT "You do not hold t
hat many"
1600 IF y>e(x) THEN  GO TO 1570
1610 LET ch=ch+(y*d(x))
1620 LET l(x)=l(x)+y
1630 LET a(x)=a(x)-((y*d(x))*1.05)
1640 LET e(x)=e(x)-y
1645 LET x$="p"
1650 RETURN
1680 LET t$="phaseh"
1690 LET z1=.01
1700 PRINT TAB (7);"TAKEOVER BID"
1705 PRINT
1710 PRINT "Your shareholding is ";INT (e(x)*
100)/s;" percent"
1720 PRINT "Current share price is £";INT ((d
(x)+.005)*100)/100
```

```
1730 PRINT "There are ";INT l(x);" available"
1740 PRINT "You need ";INT (510000-e(x));" fo
r a majority"
1750 PRINT "These cost £";INT (((510000-e(x))
*d(x)+.005)*100)/100,"at market price"
1755 PRINT "You have £";INT ((ch+.005)*100)/1
00
1756 LET eg=0
1757 FOR v=1 TO 10
1758 IF f$(v)<>"c" THEN  LET eg=eg+(f(v)*d(v)
)
1759 NEXT v
1760 IF RND>.10 THEN  GO TO 1769
1762 PRINT "Third party wins bid"
1763 GO SUB 2040
1764 GO TO 1890
1769 PRINT "How much do you bid per share?"
1770 INPUT z
1810 IF z1>z THEN  GO TO 1880
1820 LET k1=a(x)+(510000*(z+.01))
1822 LET k2=(510000-f(x))*(z+.01)
1830 IF k1>k2 AND (zxch+eg)>=k2 THEN  LET z1=
z1+.01
1840 IF z1>z THEN  PRINT m$;" bids ";INT ((z1
+.005)*100)/100
1860 IF z1>z THEN  GO TO 1760
1870 IF z1<z THEN  GO SUB 1920
1880 IF z1>z THEN  GO SUB 2170
1890 LET z1=0
1895 LET z=0
1900 IF t$="phaseh" THEN  GO TO 1540
1910 IF t$="phasem" THEN  GO TO 1010
1920 REM disposal
1930 PRINT
1940 LET Z1=0
1950 LET F=0
1960 PRINT "YOU HAVE WON THE BID"
1970 LET CH=CH-(Z*(510000-E(X)))
1980 LET A(X)=A(X)+(Z*(510000-E(X)))
1990 LET E(X)=E(X)+(510000-E(X))
2000 LET L(X)=S-(E(X)+F(X))
2010 PRINT "Do yo want to strip the assets of
 this company?"
2020 INPUT y$
```



```
2030 IF y$="n" THEN  RETURN
2040 PRINT "Assets are being distributed","am
ongst shareholders"
2050 LET psh=(e(x)*100)/s
2060 LET zxpsh=(f(x)*100)/s
2070 LET oo=b(x)/100
2080 LET ch=ch+(psh*oo)
2090 LET zxch=zxch+(zxpsh*oo)
2100 IF a(x)<=0 THEN  GO TO 2140
2110 LET d(x)=a(x)/s
2120 LET ch=ch+(e(x)*d(x))
2130 LET zxch=zxch+(f(x)*d(x))
2140 LET f$(x)="c"
2150 LET l(x)=0
2160 RETURN
2190 IF z1*(510000-f(x))>zxch THEN  PRINT "Sp
ectral withdraws": RETURN
2200 PRINT m$;" has won bid"
2220 LET zxch=zxch-((510000-f(x))*z1)
2230 LET a(x)=a(x)+((510000-f(x))*z1)
2240 LET f(x)=f(x)+(510000-f(x))
2250 LET z1=0
2260 IF g(x)<1 THEN  GO SUB 2040
2270 RETURN
2290 FOR x=1 TO 10
2300 IF f$(x)="c" THEN  GO TO 2590
2310 LET v(x)=0
2320 LET c(x)=0
2330 IF a(x)<10000 THEN  LET a(x)=10000
2340 LET j(x)=a(x)/10
2350 LET c(x)=c(x)+j(x)
2360 IF h(x)<j(x)/1000 THEN  LET h(x)=j(x)/10
00
2370 IF b(x)>=a(x)/20 THEN  GO TO 2400
2380 LET c(x)=c(x)+((a(x)/10)-b(x))
2390 LET b(x)=INT (a(x)/10)
2400 LET prod=j(x)/10
2410 LET rnd=INT (RND*3555)+1
2420 IF rnd=1 THEN  LET w(x)=w(x)-1
2430 IF rnd=3 THEN  LET w(x)=w(x)+1
2440 LET t(x)=prod*w(x)
2450 LET c(x)=c(x)+(h(x)*5000)
2460 LET prof=t(x)-c(x)
2470 LET a(x)=a(x)+t(x)
```

```
2480 LET a(x)=a(x)-c(x)
2490 IF a(x)<=10000 THEN  LET v(x)=h(x)
2500 IF a(x)<=10000 THEN  LET h(x)=j(x)/1000
2510 LET v(x)=v(x)-h(x)
2520 LET g(x)=(prof*100)/t(x)
2530 LET sp1=d(x)
2540 IF a(x)<10000 THEN  LET a(x)=10000
2550 LET d(x)=a(x)/s
2560 LET n(x)=d(x)-sp1
2570 IF a(x)<10000 THEN  LET a(x)=10000
2580 IF RND>.9 THEN  LET w(x)=w(x)+10
2585 IF RND>.9 THEN  LET w(x)=w(x)-10
2590 NEXT x
2610 RETURN
2620 PRINT : PRINT
2640 LET t$="phasem"
2660 PRINT m$;" bid for"
2670 PRINT c$(x);"takeover"
2680 LET z1=d(x)
2690 PRINT "at ";INT ((d(x)+.005)*100)/100;"
per share"
2700 GO TO 1710
2740 PRINT "You have won"
2750 GO TO 2780
2770 PRINT m$;" has won","with £";zxch+q3
2780 PRINT "Do you want another game?"
2790 INPUT v$
2800 IF v$="y" THEN  GO TO 10
2810 STOP
2820 REM loop
2830 GO SUB 2280
2850 GO SUB 2280
2860 GO SUB 100
2870 GO SUB 460
2890 GO SUB 1180
2900 PRINT "ENTER INITIAL OF CHOSEN COMPANY"
2910 PRINT "OR P(PASS)";w$
2920 INPUT x$
2930 IF x$="p" THEN  GO TO 3240
2940 FOR x=1 TO 10
2950 IF CODE c$(x)(1)=CODE x$-32 THEN  GO TO
2970
2960 NEXT x
2965 GO TO 2900
```



```
2970 IF f$(x)="c" THEN  GO TO 2900
2980 PRINT
2990 PRINT c$(x)
3000 PRINT "Liquid capital £";INT ((a(x)+.005
)*100)/100
3010 PRINT "Capital equipment £";INT ((b(x)+.
005)*100)/100
3020 PRINT "Employees ";INT h(x)
3030 PRINT "Overheads £";INT ((c(x)+.005)*100
)/100
3040 PRINT "Profit £";INT ((t(x)-c(x)+.005)*1
00)/100
3050 PRINT "Profit percent of turnover £";INT
 g(x)
3060 PRINT "Share price £";INT ((d(x)+.005)*1
00)/100
3070 PRINT "Shares available ";INT l(x)
3080 PRINT "Shares held by you ";INT e(x)
3090 PRINT "Percentage shares held by you ";I
NT ((e(x)*100)/s)
3100 PRINT "You have £";INT ((ch+.005)*100)/1
00
3110 PRINT "_____"
3120 IF e(x)>=510000 THEN  PRINT "Dispose of
assets?"
3130 IF e(x)>=510000 THEN  INPUT a$
3140 IF e(x)<510000 THEN  LET a$="n"
3150 IF e(x)>=510000 AND a$="y" THEN  GO SUB
2040
3160 IF f$(x)="x" THEN  PRINT "Buy (b),Sell (
s),or Pass (p)"
3170 IF f$(x)="x" THEN  INPUT x$
3175 IF f$(x)="c" THEN  LET x$="p"
3180 IF x$<>"p" AND x$<>"s" AND x$<>"b" THEN
 GO TO 2900
3190 IF x$="b" THEN  GO SUB 1420
3200 IF x$="s" THEN  GO SUB 1560
3210 IF x$="p" THEN  PRINT "Look at another c
ompany?(y or n)"
3220 IF x$="p" THEN  INPUT a$
3230 IF x$="p" AND a$="y" THEN  GO TO 2890
3240 GO SUB 820
3250 GO TO 2850
```

```
3270 LET m$="Spectral Investments Ltd"
3280 DIM c$(10,18)
3290 LET c$(1)="ACME CORP"
3300 LET c$(2)="BRN IND."
3310 LET c$(3)="CAPRA STEEL"
3320 LET c$(4)="DELTA GROUP"
3330 LET c$(5)="ELLIOT CORP"
3340 LET c$(6)="FORAX CHEMICALS"
3350 LET c$(7)="GNS INT."
3360 LET c$(8)="HOPE HOLDINGS"
3370 LET c$(9)="INCE AND CO."
3380 LET c$(10)="JONES AND PEEKE"
3390 LET x=10
3400 DIM a(x): DIM b(x): DIM c(x): DIM t(x):
DIM d(x): DIM p(x): DIM e(x): DIM f(x): DIM g
(x): DIM h(x)
3500 DIM i(3)
3510 LET w$="                "
3520 DIM j(x): DIM l(x)
3540 LET e$=" Investments Ltd"
3550 LET s=1000000
3560 LET ch=100000
3570 LET zxch=ch
3580 LET aw=5000
3590 LET asa=0
3600 LET t$="o"
3620 DIM m(3)
3630 LET pt=0
3640 DIM n(x): DIM w(x): DIM v(x)
3680 DIM f$(x)
3690 FOR x=1 TO 10
3699 FOR x=1 TO 10
3700 LET a(x)=INT (RND*s/2)+1
3710 LET d(x)=s/a(x)
3720 LET b(x)=INT (RND*s/10)+1
3730 LET h(x)=b(x)/10/1000
3740 LET w(x)=60
3750 LET f$(x)="x"
3760 LET l(x)=s
3770 NEXT x
3780 GO TO 2820
```


Bricklayer

You are in control of a small aircraft which flies across the top of the screen. From the bottom of the screen, a large wall is being built up which will eventually fill the whole of the playing area. The object of the game is to drop men out of the aircraft, aiming to plummet them through gaps in the wall to the bottom of the screen. If a man should hit any part of the wall then a life will be lost. In order to create gaps for the men to drop through and to prevent the wall advancing too far up the screen, you also have the option of dropping bombs which blow sections of the wall away.

```
  1 PAPER 5: BORDER 5: CLS
  2 GO SUB 4000
  3 PAUSE 100
  5 LET hs=0
 10 GO SUB 180
 15 PRINT AT 0,13;"HI:";hs
 20 LET x=x+f
 30 IF x=0 OR x=29 THEN  BEEP .04,10: LET f=
-f
 32 PRINT AT 0,0;"SCORE:";s;AT 0,24;"LIVES:"
;lives;" "
 40 PRINT AT 1,x;" B "
 50 IF INKEY$="z" THEN  IF t<>1 THEN  LET t=
1: LET k=x+1: LET l=2
 55 IF INKEY$="m" AND x>3 AND x<27 THEN  IF
z<>1 THEN  LET z=1: LET q=x+1: LET i=2
 60 IF t=1 THEN  PRINT AT l,k;" ": LET l=l+1
: PRINT AT l,k;"C": BEEP .002,0: IF SCREEN$ (
l+1,k)<>" " THEN  GO SUB 140
 65 IF z=1 THEN  PRINT AT i,q;" ": LET i=i+1
: PRINT AT i,q;"D": BEEP .002,-5: IF SCREEN$
(i+1,q)<>" " THEN  GO SUB 160
 70 IF l=21 THEN  PRINT AT l,k;" ": LET t=0
 75 IF i=21 THEN  LET s=s+b*2: BEEP .1,20: P
RINT AT i,q;" ": LET i=0: LET z=0
110 LET a=a+c
115 PRINT AT b,a; INK RND*3; PAPER 7;"A"
120 IF a<3 OR a>27 THEN  LET c=-c: LET b=b-1
```

```
 125 IF b=3 THEN  GO TO 1000
 130 GO TO 20
 140 PRINT AT l,k;" ": PRINT AT l+1,k-2;"
 ": LET t=0: IF l<20 THEN  PRINT AT l+2,k-1;"
   "
 150 RETURN
 160 PRINT AT i,q; FLASH 1;"*": LET lives=liv
es-1: BEEP .1,-30: BEEP .1,-25: LET z=0: PRIN
T AT i,q;" ";AT i+1,q-1;"    ": IF lives=0 THE
N  GO TO 1000
 166 RETURN
 180 DATA 0,126,126,126,126,126,126,126
 181 DATA 0,24,118,219,255,110,24,0
 182 DATA 231,126,60,60,60,60,60,24
 183 DATA 28,28,8,62,8,8,20,34
 190 FOR a=USR "a" TO USR "d"+7: READ b: POKE
 a,b: NEXT a
 191 LET a=27: LET b=20
 192 LET c=-.6: LET t=0: LET l=1: LET z=0: LE
T i=1
 193 LET x=0: LET f=1
 194 LET s=0
 197 LET lives=10
 200 RETURN
1000 IF lives=0 THEN  PRINT AT 0,30;"0"
1010 FOR o=-30 TO 30 STEP 2
1020 BEEP .01,o
1025 NEXT o
1030 PRINT  FLASH 1;AT 15,7;"ANOTHER GAME?"
1035 IF s>hs THEN  LET hs=s
1040 INPUT a$
1050 IF a$(1)="y" THEN  GO SUB 191: CLS : PAU
SE 100: GO TO 15
1060 STOP
4000 PRINT AT 1,10;"BRICK LAYER"
4010 PRINT AT 1,10; OVER 1;"__________"
4013 PRINT '"The object is to drop humanoids
from the spacecraft at the top  of the screen
                    As the game progresses a
 wall will be built up, starting from the bot
tom.Holes can be made in this by releasing a
bomb.          You have 10 lives and each    t
ime a humanoid hits the wall a life will be l
ost."
```



```
4015 PRINT '''   Z..........DROPS BOMBS
    M....RELEASES HUMANOIDS"
4017 PRINT  INVERSE 1;'"Press any key to star
t."
4020 PAUSE 0
4025 CLS
4030 RETURN
```

Dogfight

Up in the wild blue yonder, you and the enemy ace are duelling above the trenches. Swoop down on the foe, hang on his tail, catch him unawares from below, with your trusty Brownings spitting leaden death. All good clean fun, but watch for the wraparound!

```
   1  REM Solo Dogfight @ R. Erskine 1983
   5 GO SUB 8000
  10 GO SUB 9000
  20 BORDER 1: PAPER 5: CLS
  90 GO SUB 7100
1000 REM mainloop
1005 IF p(3)=q(3) AND p(4)=q(4) THEN  GO SUB
4000
1010 PRINT AT p(3),p(4);" "
1020 IF p(1)<21 THEN  PRINT  INK 1;AT p(1),p(
2);CHR$ (a+143): LET p(3)=p(1): LET p(4)=p(2)
1025 IF p(1)=q(3) AND p(2)=q(4) THEN  GO TO 4
000
1030 PRINT AT q(3),q(4);" "
1040 IF q(1)<21 THEN  PRINT  INK 0;AT q(1),q(
2);CHR$ (aa+151): LET q(3)=q(1): LET q(4)=q(2
)
1050 IF INKEY$="x" AND g=1 THEN  LET f=1
1060 IF RND>.5 AND g=-1 AND ABS (p(1)-q(1))<7
 AND ABS (p(2)-q(2))<7 THEN  LET f=2
1070 IF INKEY$="a" AND g=1 THEN  LET a=a+1: I
F a=9 THEN  LET a=1
1080 IF RND>.9 THEN  LET aa=aa+1: IF aa=9 THE
N  LET aa=1
1090 IF INKEY$="z" AND g=1 THEN  LET a=a-1: I
F a=0 THEN  LET a=8
1100 IF RND>.9 THEN  LET aa=aa-1: IF aa=0 THE
N  LET aa=8
1110 IF f>0 THEN  GO SUB 2000
1115 IF p(1)>20 THEN  LET p(1)=0
1116 IF q(1)>20 THEN  LET q(1)=0
1117 IF p(1)<0 THEN  LET p(1)=20
1118 IF q(1)<0 THEN  LET q(1)=20
1130 LET p(1)=p(1)+d(a): LET p(2)=p(2)+d(a+8)
```



```
1160 IF p(2)>31 THEN  LET p(2)=0
1170 IF p(2)<0 THEN  LET p(2)=31
1180 LET q(1)=q(1)+e(aa): LET q(2)=q(2)+e(aa+
8)
1210 IF q(2)>31 THEN  LET q(2)=0
1220 IF q(2)<0 THEN  LET q(2)=31
1230 LET g=-g
1250 GO TO 1000
2000 REM fire
2010 IF f=1 THEN  LET x=FN a(p(2)): LET y=FN
b(p(1)): LET y=-y
2020 IF f=2 THEN  LET x=FN a(q(2)): LET y=FN
b(q(1)): LET y=-y
2030 IF f=1 THEN  LET xx=f(a): LET yy=f(a+8)
2040 IF f=2 THEN  LET xx=g(aa): LET yy=g(aa+8
)
2045 LET cnt=0
2050 IF x>247 OR x<8 OR y<8 OR y>175 THEN  GO
 TO 2200
2055 IF cnt>0 THEN  PLOT  INK f; OVER 1;x,y
2070 IF f=1 AND ATTR (q(1),q(2))=41 OR f=2 AN
D ATTR (p(1),p(2))=42 THEN  GO TO 5000
2085 LET cnt=cnt+1
2090 PLOT  INK f; OVER 1;x,y: LET x=x+xx: LET
 y=y+yy
2095 IF cnt<6 THEN  GO TO 2050
2200 LET f=0: RETURN
3080 PRINT  PAPER 2; INK 6; FLASH 1;AT 20,q(2
);" "
3090 FOR x=1 TO 10: BEEP .1,-20: NEXT x: PRIN
T  PAPER 5;AT 20,q(2);" "
3100 LET lives2=lives2-1: IF lives2=0 THEN  G
O TO 6000
3110 LET aa=1: LET q(1)=20: LET q(2)=31
3120 GO SUB 7100
3130 RETURN
4000 REM collision
4010 PRINT  INK 2; PAPER 6; FLASH 1;AT p(3),p
(4);"*"
4020 LET lives=lives-1: LET lives2=lives2-1
4030 FOR l=1 TO 10: BEEP .1,-20: NEXT l
4040 IF lives=0 OR lives2=0 THEN  GO TO 6000
4045 PRINT AT p(3),p(4);" "
4050 LET a=1: LET aa=1: LET p(1)=20: LET p(2)
```

```
=0: LET q(1)=20: LET q(2)=31: LET p(3)=p(1):
LET p(4)=p(2): LET q(3)=q(1): LET q(4)=q(2)
4060 GO SUB 7100
4070 GO TO 1000
5000 IF f=1 THEN  PRINT  PAPER 2;AT q(1),q(2)
;"*"
5010 IF f=2 THEN  PRINT  PAPER 2;AT p(1),p(2)
;"*"
5030 FOR l=1 TO 10: BEEP .1,-20: NEXT l
5040 IF f=1 THEN  LET lives2=lives2-1: IF liv
es2=0 THEN  GO TO 6000
5050 IF f=2 THEN  LET lives=lives-1: IF lives
=0 THEN  GO TO 6000
5060 IF f=1 THEN  LET q(1)=20: LET q(2)=31: L
ET aa=1
5070 IF f=2 THEN  LET p(1)=20: LET p(2)=31: L
ET a=1
5080 GO SUB 7100
5090 GO TO 2100
6000 REM end: IF lives=0 AND lives2=0 THEN  P
RINT AT 18,4;"The result is a draw"
6010 IF lives=0 AND lives2>0 THEN  PRINT AT 1
8,3;"The computer is the winner"
6020 IF lives>0 AND lives2=0 THEN  PRINT AT 1
8,4;"   You are the winner"
6030 PRINT AT 20,4;"Press any key to restart"
6040 IF INKEY$="" THEN  GO TO 6040
6050 RUN
7100 PRINT  PAPER 1; INK 7;AT 21,0;"PLYR LIVE
S: ";lives;"      COMP. lives: ";lives2
7110 RETURN
8000 PAPER 1: INK 7: BORDER 1: CLS
8010 PRINT AT 0,9;"SOLO-DOGFIGHT": PRINT : PR
INT
8020 PRINT : PRINT "         Player controls:"
: PRINT : PRINT "  a = up  z = down  x = fire
": PRINT : PRINT : PRINT : PRINT "The player
controls the blue ","aircraft and the compute
r ","controls the black."
8050 PRINT AT 21,4;"Press any key to start"
8060 IF INKEY$="" THEN  GO TO 8060
8070 RETURN
9000 DIM p(4)
9010 DIM q(4)
```



```
9020 DIM g$(2,1)
9030 DIM d(16): DIM e(16)
9040 LET g=1
9050 LET p(1)=20: LET p(2)=0: LET q(1)=20: LE
T q(2)=31: LET p(3)=p(1): LET p(4)=p(2): LET
q(3)=q(1): LET q(4)=q(3)
9060 LET a=1: LET aa=a
9070 RESTORE : FOR x=1 TO 16
9080 READ n: LET d(x)=n
9090 READ n: LET e(x)=n
9100 NEXT x
9110 DATA 0,0,-1,-1,-1,-1,-1,-1,0,0,1,1,1,1,1
,1
9120 DATA 1,-1,1,-1,0,0,-1,1,-1,1,-1,1,0,0,1,
-1
9130 LET f=0
9140 LET g$(1)=CHR$ (a+143): LET g$(2)=CHR$ (
aa+151)
9150 FOR x=USR "a" TO USR "p"+7
9160 READ n
9170 POKE x,n
9180 NEXT x
9190 DATA 0,15,132,255,0,15,0,0
9200 DATA 8,26,52,9,18,164,64,0
9210 DATA 84,84,116,84,16,16,16,48
9220 DATA 16,72,36,208,72,36,2,4
9230 DATA 0,240,0,255,33,240,0,0
9240 DATA 0,2,37,72,144,36,88,16
9250 DATA 12,8,8,8,42,46,42,42
9260 DATA 32,64,36,18,11,36,18,8
9265 DATA 0,240,33,255,0,240,0,0
9270 DATA 16,88,164,144,72,37,2,0
9275 DATA 42,42,46,42,8,8,8,8
9280 DATA 8,18,36,11,18,36,64,32
9285 DATA 0,0,15,0,255,132,15,0
9286 DATA 0,64,164,18,5,36,26,4
9287 DATA 48,16,16,16,84,116,84,84
9288 DATA 4,2,36,72,208,36,72,16
9290 LET lives=3: LET lives2=3
9300 DEF FN a(x)=x*8+4
9310 DEF FN b(x)=x*8-172
9320 DIM f(16): DIM g(16)
9330 FOR x=1 TO 16: READ n: LET f(x)=n: NEXT
x
```

```
9350 DATA 8,8,0,-8,-8,-8,0,8,0,8,8,8,0,-8,-8,
-8
9360 FOR x=1 TO 16: READ n: LET g(x)=n: NEXT
x
9370 DATA -8,-8,0,8,8,8,0,-8,0,8,8,8,0,-8,-8,
-8
9999 RETURN
```


This is series of six programs which have been divided into three self contained groups. It represents the evolution of life from the single celled amoeba to modern man, linked by a single theme — survival!

Evolution 1

Evolution 1 begins with the amoeba stage, in which the player controls the movement of a tiny amoeba which must wander round the screen eating spores whilst avoiding attack from other single celled creatures.

In the second program in this suite the player is transformed into a frog which has to dodge from side to side avoiding capture by birds whilst zapping the required number of airborne flies with its tongue. There is no fairy princess as a reward for this one but instant promotion into the form of a beaver in the third program, in which you must swim around and capture ten fish whilst avoiding contact with a vicious crab.

```
   1 BORDER 0: PAPER 0: INK 7: CLS
 100 PRINT AT 0,6;"E V O L U T I O N"
 110 PRINT ' INK 6'"This semi-scientific seri
es of"' INK 5'"routines gives you the chance
to"' INK 4'"evolve from an amoeba to a human"
' INK 7'"based on the theory that only"' INK
6'"the strong survive."'' INK 5'"Press ENTER
to continue."
 120 PAUSE 0: CLS
 122 PRINT "This program goes from amoeba   t
o frog to beaver."' INK 5'"The next program g
oes from      gorilla to caveman."' INK 4'"Th
e final program of this trio  involves the pr
esent stage of   evolution - MAN and his tech
-   nology."
 123 PRINT '"The intention is that you should
try the stages in the correct   order but aft
er each stage you  are given a menu of option
s."
 124 PRINT '"Press ENTER to continue.": PAUSE
 0: CLS
 130 GO TO 1000
 140 PRINT "The first stage is as an amoeba (
 A ). You have to eat 5 spores ( D ) while av
```

```
oiding B and C."
 150 PRINT  INK 6'"This is also a battle agai
nst   time, for when the clock at the top of
the screen says 0, it     means that you have
starved      because you did not eat the      s
pores in time."
 155 PRINT '"Move about in the water with the
cursor keys 5-8."
 160 PRINT  INK 5'"Press ENTER to start stage
 1.": PAUSE 0: CLS : GO TO 1050
1000 LET a=0: RESTORE 1010: FOR f=USR "a" TO
USR "d"+7: READ g: POKE f,g: NEXT f
1010 DATA 120,132,180,178,129,153,85,51
1020 DATA a,24,36,90,90,36,24,a
1030 DATA a,73,42,28,127,28,42,73
1040 DATA a,60,66,145,133,145,66,60
1045 GO TO 140
1050 LET ay=15: LET ax=14: DIM y(6): DIM x(6)
: LET a$="BBCCDD"
1055 LET t=100: LET sc=0
1060 FOR f=1 TO 6: LET y(f)=INT (RND*22): LET
 x(f)=INT (RND*32): PRINT  BRIGHT 1;AT y(f),x
(f); INK f;a$(f): NEXT f
1100 PRINT AT ay,ax;"A"
1110 FOR f=1 TO 5 STEP 2: FOR i=f TO f+1
1120 PRINT AT y(i),x(i);" ": LET y(i)=INT (y(
i)+RND*2-RND*2): LET x(i)=INT (x(i)+RND*3-RND
*3)
1125 IF f<5 THEN  LET y(i)=y(i)+(y(i)<ay)-(y(
i)>ay): LET x(i)=x(i)+(x(i)<ax)-(x(i)>ax)
1130 IF y(i)<a OR y(i)>21 THEN  LET y(i)=11
1140 IF x(i)<a OR x(i)>31 THEN  LET x(i)=15
1150 PRINT  BRIGHT 1; INK f;AT y(i),x(i);a$(i
)
1155 IF ATTR (ay,ax)<>6 THEN  GO TO 1200
1157 PRINT AT ay,ax;" "
1160 LET ay=ay+(INKEY$="6" AND ay<21)-(INKEY$
="7" AND ay>a)
1170 LET ax=ax+(INKEY$="8" AND ax<31)-(INKEY$
="5" AND ax>a)
1175 LET t=t-1: PRINT AT a,15;t;" ": IF t=a T
HEN  GO TO 1200
1176 IF ATTR (ay,ax)<>7 AND ATTR (ay,ax)<>6 T
```



```
HEN  GO TO 1200
1177 PRINT AT ay,ax;"A"
1180 NEXT i: NEXT f: GO TO 1100
1200 IF ATTR (ay,ax)<69 THEN  GO TO 1210
1201 PRINT  FLASH 1;AT ay,ax;"A": FOR j=1 TO
15: BEEP .01,RND*20: NEXT j: FOR j=5 TO 6
1202 IF ay=y(j) AND ax=x(j) THEN  LET wh=j
1203 NEXT j: LET y(wh)=INT (RND*22): LET x(wh
)=INT (RND*32): PRINT  INK wh;AT y(wh),x(wh);
a$(wh)
1205 LET sc=sc+1: IF sc<5 THEN  GO TO 1177
1208 CLS : PRINT "Well done you survived the
first"' INK 6'"stage of evolution as an amoeb
a.": GO TO 8000
1210 FOR f=5 TO 30 STEP 5: BEEP .01,f: NEXT f
: CLS : PRINT '"Bad luck! You failed in the 1
st stage of evolution.": GO TO 8000
2000 PRINT "In this stage you have to catch f
lies on your tongue, while     avoiding the b
irds which swoop  down to try and capture the
ir   prey- YOU !"
2010 PRINT  INK 6'"Press 0 to stick your tong
ue out6 to move left, and 7 to move   right."
' INK 5'"You have survived this stage    when
 you have consumed 10 flies without falling p
rey to the     birds."' INK 4'"Press ENTER to
 start."
2020 PAUSE 0: CLS
2030 RESTORE 2040: FOR f=USR "a" TO USR "g"+7
: READ g: POKE f,g: NEXT f
2040 DATA 28,34,78,79,56,32,64,48,56,68,114,2
42,28,4,2,12
2050 DATA 15,48,64,92,88,84,82,249,240,12,2,5
8,26,42,74,159
2060 DATA 0,0,0,34,85,63,24,0
2070 DATA 0,0,0,63,127,143,1,15,31,124,240,19
2,224,255,0,0
2100 LET x=15: LET y(1)=RND*6+13: LET x(1)=0:
 LET y(2)=0: LET x(2)=30: LET y(3)=y(2): LET
x(3)=x(2): LET f=0
2110 INK 5: PLOT 0,7: DRAW 255,0: INK 4
2120 PRINT AT 0,15;f;AT 19,x;" AB ";AT 20,x;"
 CD "; INK 6;AT y(1),x(1);"E";AT y(3),x(3);"
```

```
 "; INK 5;AT y(2),x(2);"FG"
2122 LET y(3)=y(2): LET x(3)=x(2)
2125 IF INKEY$="Ø" THEN  GO SUB 2200
2130 IF INKEY$<>"" THEN  BEEP .003,1: BEEP .0
03,2: BEEP .003,3: BEEP .003,4
2140 IF ATTR (18,x+2)=5 THEN  GO TO 2250
2150 IF y(2)=18 THEN  PRINT AT y(2),x(2);"  "
: LET y(2)=Ø: LET x(2)=x+9: IF x(2)>30 THEN
LET x(2)=30
2155 IF x(1)>29 THEN  PRINT AT y(1),x(1);" ":
 LET x(1)=Ø: LET y(1)=RND*6+13
2160 PRINT AT y(1),x(1);" ";AT y(2),x(2);"  "
2180 LET y(2)=y(2)+2: LET x(2)=x(2)+(x(2)<x+1
)-(x(2)>x+1): LET y(1)=y(1)+RND*1.5-RND*1.5:
LET x(1)=x(1)+RND*1.5: IF y(1)>20 THEN  LET y
(1)=14
2190 LET x=x-(INKEY$="6" AND x>Ø)+(INKEY$="7"
 AND x<28)
2195 GO TO 2120
2200 PLOT x*8+12,17: DRAW Ø,57
2202 BEEP .05,-10: BEEP .05,-6
2204 PLOT  OVER 1;x*8+12,17: DRAW  OVER 1;Ø,5
7
2210 IF ATTR (y(1),x(1))=4 THEN  LET f=f+1: B
EEP .1,-30: PRINT AT y(1),x(1);" ": LET x(1)=
Ø: LET y(1)=RND*6+13
2220 IF f=10 THEN  CLS : FOR f=10 TO Ø STEP -
1: BEEP .05,f: NEXT f: PRINT '"Well done! You
 consumed 10 fliesand can therefore evolve to
 the next stage.": GO TO 8000
2230 RETURN
2250 FOR f=1 TO 20: BEEP .01,f: NEXT f: CLS :
 PRINT '"You have been consumed and can  evol
ve no further.": GO TO 8000
3000 INK 7: PRINT "You have now evolved to a
beaver"' INK 6'"In this stage you have to eat
"' INK 5'"10 fish before you are eaten by"' I
NK 4'"the patrolling crab."
3010 PRINT '"Move using 5-8 and try to eat
the fish before the fresh-water crab does. Ma
ke sure that you   avoid the crab because if
it    comes into contact with you it  will ea
t you and you will evolveno further."
```



```
3020 PRINT  INK 5'"Press ENTER to start.": PA
USE Ø: CLS
3030 RESTORE 3040: FOR f=USR "a" TO USR "g"+7
: READ g: POKE f,g: NEXT f
3040 DATA Ø,Ø,15,16,224,159,8,12,Ø,32,220,10,
1,254,16,24
3050 DATA Ø,4,59,80,128,127,8,24,Ø,Ø,240,8,7,
249,16,48
3060 DATA Ø,Ø,8,61,191,255,255,255,12,30,BIN
10111010,255,255,BIN 10111110,30,12
3065 DATA 195,60,255,126,235,66,165,165
3070 PRINT AT 21,Ø; PAPER 1;"EEEEEEEEEEEEEEEE
EEEEEEEEEEEEEEEE"
3080 FOR f=5 TO 20: PRINT  INK 1; PAPER 1;AT
f,Ø;"■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■": NEXT
f
3085 LET y=20: LET x=15: LET y1=y: LET x1=x:
LET f=5: LET g=Ø: LET f1=f: LET g1=g
3087 LET a$="AB": LET fi=Ø: PRINT AT Ø,15;fi
3090 IF RND>.95 THEN  PRINT  BRIGHT 1; INK RN
D*4+3; PAPER 1;AT RND*15+5,RND*29+1;"F"
3095 IF ATTR (y,x)>64 OR ATTR (y,x+1)>64 THEN
  BEEP .1,Ø: LET fi=fi+1: PRINT AT Ø,15;fi: I
F fi=10 THEN  PRINT AT y1,x1; INK 1; PAPER 1;
"■■"; INK 4; FLASH 1;AT y,x;a$: FOR f=1 TO 30
: BEEP .07,RND*20: NEXT f: GO TO 3250
3098 PRINT AT y1,x1; INK 1; PAPER 1;"  ";AT f
1,g1;" "; INK 4;AT y,x;a$; INK 6;AT f,g;"G"
3115 LET y1=y: LET x1=x: LET f1=f: LET g1=g
3117 IF f=y THEN  IF g=x OR g=x+1 THEN  FOR f
=1 TO 20: BEEP .01,f: NEXT f: GO TO 3300
3120 IF INKEY$="8" THEN  LET a$="AB": LET x=x
+(2 AND x<29)
3130 IF INKEY$="5" THEN  LET a$="CD": LET x=x
-(2 AND x>1)
3140 IF INKEY$="7" THEN  IF y>5 THEN  LET y=y
-1
3150 IF INKEY$="6" THEN  LET y=y+(y<20)
3160 LET f=INT (f+RND*1.5-RND*1.5+(f<y)-(f>y)
): LET g=g+1
3170 IF f<5 OR f>20 THEN  LET f=(20 AND f>20)
+(5 AND f<5)
3180 IF g=31 THEN  LET g=Ø
```

```
3190 GO TO 3090
3250 CLS : PRINT '"Well done! You survived as
 a    beaver and you can continue to  the nex
t stage if you wish."
3260 GO TO 8000
3300 CLS : PRINT '"Bad luck! You can evolve n
o"' INK 6'"further because you have been"' IN
K 5'"destroyed by the crab.": GO TO 8000
8000 PRINT '"Press the key which corresponds
to what you want to do next."
8010 PRINT  INK 6'"1....Amoeba stage."'"2...
.Frog stage."'"3....Beaver stage."'"4....Lo
ad stages 4&5."'"5....Exit from the program.
"
8020 IF INKEY$="" THEN  GO TO 8020
8030 IF INKEY$="1" THEN  CLS : RUN 130
8040 IF INKEY$="2" THEN  CLS : GO TO 2000
8050 IF INKEY$="3" THEN  CLS : GO TO 3000
8060 IF INKEY$="4" THEN  LOAD ""
8070 IF INKEY$="5" THEN  STOP
8080 GO TO 8020
```


Evolution 2

In the second program in this suite the player is transformed into a frog which has to dodge from side to side avoiding capture by birds whilst zapping the required number of airborne flies with its tongue. There is no fairy princess as a reward for this one but instant promotion into the form of a beaver in the third program, in which you must swim around and capture ten fish whilst avoiding contact with a vicious crab.

Evolution 2 contains two programs. In the first, the player controls a large gorilla which lumbers round a forest collecting bananas which drop randomly to the ground. The computer controls a small and extremely agile monkey which makes for very tough competition.

The second program in this section puts you in control of a caveman who tries to kill raiders attacking his territory from surrounding caves by firing arrows.

```
   1 REM *EVOLUTION 2*
   5 BORDER 0: INK 7: PAPER 0: CLS
  10 PRINT '"If you have tried the previous
program this will be the 4th    stage in the
evolution sequence."
  20 PRINT  INK 6'"If you haven't then the ob
ject  is to evolve as far as possible in a ro
le-playing series of     different programs."
  30 PRINT  INK 5'"In this stage you play the
 part of a gorilla who competes       against
 a smaller monkey who is faster than you."
  40 PRINT  INK 4'"You have to eat only 10 ou
t of  40 bananas which are placed in  the for
est in random positions, but the monkey likes
 bananas as well!"
  50 PRINT '"Press ENTER to continue.": PAUSE
 0: CLS
  60 PRINT '"Move with 5-8, but note that you
cannot go through the trees."
  70 PRINT  INK 6'"You pick up a banana by al
igningthe top half of your body with  the ban
ana."
```

```
  80 PRINT ' INK 5'"Press ENTER to start.": P
AUSE 0: BORDER 4: PAPER 4: INK 0: CLS
  90 RESTORE 110
 100 FOR f=USR "a" TO USR "h"+7: READ g: POKE
 f,g: NEXT f
 110 DATA 64,99,101,51,63,31,13,7,0,192,160,1
92,248,252,190,231
 120 DATA 7,7,7,14,12,12,12,28,227,225,224,11
2,48,48,48,56
 130 DATA 2,2,6,14,28,56,240,0,25,25,255,188,
152,60,36,102
 140 DATA 247,195,129,1,0,128,129,195,231,231
,231,231,231,231,231,231
 200 FOR f=0 TO 31: PRINT AT 0,f; INK 4; PAPE
R 2;"G";AT 20,f;"G"; PAPER 1;AT 1,f;"H";AT 21
,f;"H": NEXT f
 210 FOR f=2 TO 18 STEP 2: PRINT  INK 4; PAPE
R 2;AT f,0;"GG";AT f,30;"GG";AT f+1,0; PAPER
1;"HH";AT f+1,30;"HH": NEXT f
 220 RANDOMIZE
 230 FOR f=1 TO 12: LET x=RND*27+2: LET y=RND
*16+2: PRINT  PAPER 2; INK 4;AT y,x;"G";AT y+
1,x; PAPER 1;"H": NEXT f
 240 LET g=2: LET f=2: LET g1=g: LET f1=f: LE
T y=18: LET x=28: LET y1=y: LET x1=x
 250 LET b=40: LET s=0
 260 LET by=INT (RND*15+2): LET bx=INT (RND*2
6+2)
 265 IF SCREEN$ (by,bx)<>" " THEN  GO TO 260
 270 PRINT  INK 6;AT by,bx;"£"
 280 PRINT  INK 7;AT 0,3;b;AT 0,28;s
 300 PRINT AT y1,x1;"  ";AT y1+1,x1;"  ";AT y
,x;"AB";AT y+1,x;"CD";AT f1,g1;" ";AT f,g;"F"
; INK 6;AT by,bx;"£"
 320 IF y=by THEN  IF x=bx OR x+1=bx THEN  GO
 SUB 650
 330 IF f=by THEN  IF g=bx THEN  LET b=b-1: P
RINT AT 0,3; INK 7;b;" ": BEEP .1,-10: GO SUB
 655
 335 LET y1=y: LET x1=x
 340 LET f1=f: LET g1=g
 350 LET y=y+(INKEY$="6" AND y<18)-(INKEY$="7
" AND y>2): LET x=x+(INKEY$="8" AND x<28)-(IN
```



```
KEY$="5" AND x>2)
 360 IF ATTR (y,x)<23 OR ATTR (y+1,x)<23 OR A
TTR (y,x+1)<23 OR ATTR (y+1,x+1)<23 THEN  LET
 y=y1: LET x=x1
 380 LET f=f+(f<by)-(f>by): LET g=g+(g<bx)-(g
>bx)
 390 IF ATTR (f,g)<23 THEN  LET f=INT (f1+RND
*1.5-RND*1.5): LET g=INT (g1+RND*1.5-RND*1.5)
: GO TO 390
 500 GO TO 300
 650 LET s=s+1: LET b=b-1: PRINT  INK 7;AT 0,
3;b;" ";AT 0,28;s
 652 BEEP .1,10
 655 IF s=10 THEN  GO TO 800
 657 IF b=0 THEN  GO TO 700
 660 LET by=INT (RND*15+2): LET bx=INT (RND*2
6+2)
 665 IF SCREEN$ (by,bx)<>" " THEN  GO TO 660
 670 PRINT  INK 6;AT by,bx;"£"
 680 RETURN
 700 BORDER 0: PAPER 0: INK 7: CLS
 710 PRINT '"Bad luck! You are not fast
enough to progress any further  in evolution.
"
 760 GO TO 1810
 800 BORDER 0: INK 7: PAPER 0: CLS : PRINT '"
Well done! You managed to eat  the bananas b
efore you starved  and therefore you can proc
eed  to the next stage."
 900 GO TO 1810
1000 PRINT '"The object here is to stop other
cavemen from attacking your cave"' INK 5'"You
r cave is in the middle of 8 others, and from
 any of these  can come rivals who are prepa
redto kill you in order to steal  your prope
rty."
1010 PRINT  INK 5'"You can spin round with 6
and 7 and throw a spear with 0. You  have su
ccessfully defended your cave when 30 attacks
 have been  made. However, you are given 3  l
ives to make your task easier."
1020 PRINT  INK 4'"Press ENTER to start."
```

```
1030 PAUSE 0: CLS
1040 RESTORE 1050: FOR f=USR "a" TO USR "i"+7
: READ g: POKE f,g: NEXT f
1050 DATA 8,28,8,8,8,8,8,8,0,6,6,8,16,32,64,0
,0,0,2,255,2,0,0,0,0,64,32,16,8,6,6,0
1060 DATA 8,8,8,8,8,8,28,8,0,2,4,8,16,96,96,0
,0,0,64,255,64,0,0,0,0,96,96,16,8,4,2,0
1070 DATA 28,28,8,62,8,28,20,20
1075 FOR f=1 TO 6: READ s,c: PRINT AT s,c; IN
K RND*5+2;"    ";AT s+1,c;"    ": NEXT f: PRINT
  INK RND*5+2;AT 9,0;"  ";TAB 30;"  ";AT 11,0
;"  ";TAB 30;"  "
1077 DATA 1,5,1,14,1,23,20,3,20,25,20,14
1079 PRINT  INK 4;AT 8,14;"    ";AT 9,13;"
 ";AT 11,13;"      ";AT 12,14;"    "
1080 LET q=1
1085 PRINT AT 0,0;"LIVES: II"
1090 LET a$="ABCDEFGH": LET a=1: LET s=0: LET
 c=0
1091 LET k=0
1092 PRINT AT 0,21;"ATTEMPTS:";c: IF c=30 THE
N  GO TO 1700
1095 GO SUB (INT (RND*8)*10)+1400
1100 PRINT AT 10,15; INK 4;a$(a)
1110 PRINT AT y,x;" ": LET y=y+dy: LET x=x+dx
: PRINT AT y,x; INK 5;"I"
1115 IF y=10 THEN  IF x=15 THEN  GO TO 1600
1120 IF s THEN  PRINT AT f,g;" ": LET f=f+dy2
: LET g=g+dx2: PRINT AT f,g; INK 3;b$
1130 IF s THEN  IF (f=y AND x=g) OR (f+dy2=y
AND g+dx2=x) THEN  PRINT AT f,g;" ": FOR w=7
TO 0 STEP -1: PRINT  INK w;AT y,x;"I": BEEP
.02,f: NEXT w: LET s=0: LET c=c+1: GO TO 1092
1140 BEEP 1/(c+20),(y+x)/2
1200 LET a=a+(INKEY$="7" AND a<8)-(7 AND INKE
Y$="7" AND a=8)-(INKEY$="6" AND a>1)+(7 AND I
NKEY$="6" AND a=1)
1210 IF INKEY$="0" THEN  IF s=0 THEN  LET b$=
a$(a): LET f=10: LET g=15: LET s=1: GO SUB 15
10+a*10
1300 GO TO 1100
1400 LET y=q: LET x=6: LET dy=q: LET dx=q: RE
TURN
```



```
1410 LET y=q: LET x=15: LET dy=q: LET dx=0: R
ETURN
1420 LET y=q: LET x=24: LET dy=q: LET dx=-q:
RETURN
1430 LET y=10: LET x=31: LET dy=0: LET dx=-q:
 RETURN
1440 LET y=21: LET x=26: LET dy=-q: LET dx=-q
: RETURN
1450 LET y=21: LET x=15: LET dy=-q: LET dx=0:
 RETURN
1460 LET y=21: LET x=4: LET dy=-q: LET dx=q:
RETURN
1470 LET y=10: LET x=0: LET dy=0: LET dx=q: R
ETURN
1520 LET dy2=-1: LET dx2=0: RETURN
1530 LET dy2=-1: LET dx2=1: RETURN
1540 LET dy2=0: LET dx2=1: RETURN
1550 LET dy2=1: LET dx2=1: RETURN
1560 LET dy2=1: LET dx2=0: RETURN
1570 LET dy2=1: LET dx2=-1: RETURN
1580 LET dy2=0: LET dx2=-1: RETURN
1590 LET dy2=-1: LET dx2=-1: RETURN
1600 PRINT AT f,g;" "; FLASH 1;AT y,x;"I": FO
R f=1 TO 20: BEEP .01,f: BEEP .01,10-f: NEXT
f: PRINT AT y,x;a$(a): LET k=k+1: PRINT AT 0,
k+6;" "
1605 IF k=3 THEN  GO TO 1800
1607 LET s=0
1610 GO TO 1092
1700 CLS : PRINT "Well done! Defending your c
ave  was not easy, but you did very  well and
 you can evolve further if you wish to."
1710 GO TO 1810
1800 CLS : PRINT "Bad luck! You failed in you
r     attempt to defend your cave."
1810 PRINT  INK 4'"Press the key which corres
ponds to what you want to do next."
1820 PRINT  INK 5'"1...Start the gorilla stag
e."'"2...Start the caveman stage."'"3...Loa
d the 6th stage."'"4...Exit from the program
."
1830 IF INKEY$="" THEN  GO TO 1830
1840 IF INKEY$="1" THEN  CLS : GO TO 30
```

```
1850 IF INKEY$="2" THEN  CLS : GO TO 1000
1860 IF INKEY$="3" THEN  LOAD ""
1870 IF INKEY$="4" THEN  STOP
1880 GO TO 1830
```


Evolution 3

Evolution 3 is the logical culmination of survival conditioning. As the leader of the superpower of your choice you must destroy your enemy's capitals with cruise missiles before you are destroyed by one of their ICBM's. To do this you have a very short time to pre-program the flight of your missile with a series of direction codes as the enemy's missile moves towards your capital. The screen features a map of the world on which the missile courses are plotted.

```
   1 BORDER 0: PAPER 0: INK 7: CLS
   3 POKE 23658,10
   5 REM @ P.Stanley
  10 DATA 0,8,28,8,8,62,0,0,0,32,36,62,36,32,
0,0,0,62,8,8,28,8,0,0,0,2,18,62,18,2,0,0
  15 DATA 128,128,128,128,128,128,128,255,128
,128,128,156,156,128,128,255
  17 DATA 127,127,127,127,127,127,127,0
  20 FOR y=USR "a" TO USR "g"+7: READ x: POKE
 y,x: NEXT y
  30 DATA "LONDON",8,13,"MOSCOW",5,24,"BONN",
7,17,"WASHINGTON",8,3,"BRASILIA",17,4,"TOKYO"
,9,28,"RIYADH",12,17,"CANBERRA",18,29,"PEKING
",9,25,"PRETORIA",17,14
  60 PRINT "This is the 3rd and final       s
ection in the series of         evolution prog
rams."' INK 5'"This one involves a nuclear wa
r,where you can play the part of  P.M. of any
 of 10 superpowers   which may exist in 2002
(the    year in which this war takes    place
)."
  70 PRINT  INK 6'"The object is to program c
ruise missiles to home in on the       enemies
' capitals."
  80 PRINT  INVERSE 1'"Press any key to read
more.": PAUSE 0: CLS
  90 PRINT "In 2002 the World is not very   d
ifferent from the previous 20  years, apart f
rom new superpowerforces exist. South America
 has been over-run by Brazil and its capital
```

```
is Brasilia."' INK 5'"Japan has become a powe
rful      nation, and the Arabs have a     figh
ting nation based around     Riyadh. Also Aust
ralia & South  Africa are superpowers."
  95 INPUT "Enter a skill level (30-100).   3
0 is the hardest: ";sk
  97 IF sk<30 OR sk>100 THEN  GO TO 95
 100 PRINT '"In which capital do you want to
be P.M. ? (You only need to typethe first 2 c
haracters.)"
 101 RANDOMIZE
 105 LET f$="          "
 110 PRINT : FOR f=1 TO 10: READ a$,y,x: PRIN
T a$,: NEXT f
 120 INPUT a$: IF LEN a$<2 THEN  GO TO 120
 130 RESTORE 30: FOR f=1 TO 10: READ b$,y,x:
IF b$(1 TO 2)<>a$(1 TO 2) THEN  NEXT f
 135 IF b$(1 TO 2)<>a$(1 TO 2) THEN  GO TO 12
0
 136 LET v=y: LET u=x: LET e$="A": LET f$(f)=
"X"
 137 RESTORE 30
 138 LET i=INT (RND*10)+1: IF f$(i)<>"X" THEN
  FOR f=1 TO i: READ b$,y2,x2: NEXT f: GO TO
140
 139 GO TO 138
 140 LET sc=1: CLS : PRINT "The way you progr
am your missileis by compass directions (ie n
,s,w and e). The world map is     divided int
o squares, and each  step of the program move
s the   missile 1 square."
 145 LET f$(i)="X"
 150 PRINT  INK 5'"For example ""nnees"" move
s the   missile 2 squares up, 2 right   and 1
 down."' INK 6'"If the missile goes off the
   screen at any side it will      appear on
the opposite side."
 151 PRINT  INK 4'"The red square is your tar
get"
 155 PRINT '"You must enter your program as
quickly as possible . When it isready press F
 to launch a nuke."
 160 PAPER 0: INK 5: PRINT AT 21,0;"Press a k
```



```
ey to begin": PAUSE 0: CLS : GO SUB 9000
 170 PRINT AT y2,x2; INK 2; FLASH 1;"■"; INK
6; INK 0; PAPER 3;AT y,x;"F": LET y1=y2: LET
x1=x2: LET d$="A"
 175 DIM c$(50): LET c=1
 180 LET c$="": PRINT  INK 7;AT 21,0;"Enter p
rogram after the tone."
 185 FOR f=1 TO 150: NEXT f: PRINT AT 21,0;"
                              ": BEEP .1,10
 190 LET C1=C
 195 FOR f=1 TO sk: IF INKEY$="" THEN  NEXT f
 200 IF INKEY$="N" THEN  LET c$(c)="N": LET c
=c+1
 210 IF INKEY$="S" THEN  LET c$(c)="S": LET c
=c+1
 220 IF INKEY$="W" THEN  LET c$(c)="W": LET c
=c+1
 230 IF INKEY$="E" THEN  LET c$(c)="E": LET c
=c+1
 235 IF INKEY$="F" OR c=51 THEN  PRINT AT 21,
0;"                                ": BEEP .1
,20: GO TO 600
 240 IF c1=c THEN  GO SUB 500: GO TO 190
 250 PRINT  INK RND*4+3;AT 21,(c-1 AND c<33)+
(c-33 AND c>=33);c$(c-1)
 255 IF c=32 THEN  PRINT AT 21,0;"
                    "
 260 BEEP .1,0
 270 GO TO 190
 500 PRINT AT y1,x1; OVER 1;d$; OVER 0;AT y2,
x2; INK 2;"■"
 510 IF y1<y THEN  LET y1=y1+1: LET d$="C"
 520 IF y1>y THEN  LET y1=y1-1: LET d$="A"
 530 IF x1<x THEN  LET x1=x1+1: LET d$="B"
 540 IF x1>x THEN  LET x1=x1-1: LET d$="D"
 550 PRINT  INK 3; FLASH 1; BRIGHT 1;AT y1,x1
; OVER 1;d$
 555 IF y1=y THEN  IF x1=x THEN  GO TO 900
 557 BEEP .06,25: BEEP .06,27
 560 RETURN
 600 LET c=1
 602 PRINT AT v,u; OVER 1;e$
 605 FOR f=1 TO 3: PRINT AT y,x; INK 6; FLASH
```

```
 1; PAPER 0;"A"; FLASH 0;AT v,u; INK 5; OVER
1;e$
 610 LET v=v+(c$(c)="S")-(c$(c)="N"): LET u=u
+(c$(c)="E")-(c$(c)="W")
 615 LET e$="": LET e$=e$+("C" AND c$(c)="S")
+("A" AND c$(c)="N")+("B" AND c$(c)="E")+("D"
 AND c$(c)="W")
 620 IF v=-1 THEN  LET v=20
 630 IF v=21 THEN  LET v=0
 640 IF u=-1 THEN  LET u=31
 650 IF u=32 THEN  LET u=0
 660 IF v=y2 THEN  IF u=x2 THEN  GO TO 2000
 670 PRINT  OVER 1; INK 7; BRIGHT 1;AT v,u;e$
 671 LET c=c+1: IF c<51 THEN  IF c$(c)<>"N" A
ND c$(c)<>"W" AND c$(c)<>"E" AND c$(c)<>"S" T
HEN  LET c=1: GO TO 800
 672 IF c=51 THEN  GO TO 800
 675 FOR i=20 TO 30: BEEP .001,i: NEXT i
 680 NEXT f
 690 GO SUB 500
 700 GO TO 605
 800 PRINT  OVER 1;AT v,u;e$
 810 LET c=1: LET v=y: LET u=x
 830 GO TO 180
 900 PRINT  INK 7;AT 21,0;"You have been dest
royed": FOR f=1 TO 20: PRINT AT y,x; INK RND*
6+1;"■": BEEP .05,f*3: NEXT f: INPUT "Want an
other go? (Y/N)";f$
 905 PRINT AT 21,0;"
     "
 906 GO SUB 9000
 907 LET sc=1
 910 IF f$(1)="N" THEN  STOP
 915 INPUT AT 0,0;"Enter a skill level (30-10
0).   30 is the hardest: ";sk
 917 IF sk<30 OR sk>100 THEN  GO TO 915
 920 INPUT AT 0,0;"Want to see the names?";f$
: IF f$(1)="N" THEN  GO TO 950
 930 RESTORE 30: FOR f=1 TO 10: BEEP .05,-20:
 READ f$,y,x: PRINT  INK RND*3+4;AT 21,0;f$;"
         ": FOR y=1 TO 70: NEXT y: NEXT f
 950 LET f$="          "
 960 INPUT AT 0,0;"Which capital?";a$: IF LEN
```



```
 a$<2 THEN  GO TO 960
 970 RESTORE 30: FOR f=1 TO 10: READ b$,y,x:
IF b$(1 TO 2)<>a$(1 TO 2) THEN  NEXT f: GO TO
 960
 975 LET f$(f)="X"
 980 LET c=1: LET c$="": LET v=y: LET u=x
 990 LET i=INT (RND*10)+1: IF f$(i)<>"X" THEN
  RESTORE 30: FOR f=1 TO i: READ b$,y2,x2: NE
XT f: LET f$(i)="X": GO TO 170
1000 GO TO 990
2000 IF sc=9 THEN  LET i=5: GO TO 2015
2010 LET i=INT (RND*10)+1: IF f$(i)="X" THEN
 GO TO 2010
2015 LET sc=sc+1: LET f$(i)="X": PRINT  INK 7
;AT 21,0;b$;" has been destroyed": FOR f=1 TO
 4: FOR s=7 TO 0 STEP -1: PRINT AT y2,x2; INK
 s;"■": BEEP .03,s*7: NEXT s: NEXT f
2016 IF sc=10 THEN  GO TO 4000
2017 PRINT AT y1,x1; OVER 1;d$
2020 PRINT  INVERSE 1;AT y2,x2;"£": LET c=1:
LET c$="": LET v=y: LET u=x: RESTORE 30: FOR
f=1 TO i: READ b$,y2,x2: NEXT f: PRINT  FLASH
 1;AT y2,x2; INK 2;"■": LET y1=y2: LET x1=x2
2025 PRINT AT 21,31;" "
2030 GO TO 180
4000 PRINT  INVERSE 1;AT y2,x2;"£": PRINT AT
21,0;"                                "
4005 INK 2: FLASH 1: BRIGHT 1: GO SUB 9000: I
NK 5: FLASH 0: BRIGHT 0: PRINT AT 9,0;"CONGRA
TULATIONS - YOU NOW RULE  THE WHOLE WORLD (WE
LL WHAT'S    LEFT AFTER YOUR NUKES' WORK!)
"
4010 FOR f=1 TO 3: FOR g=12 TO 20 STEP 2: BEE
P .07,g: NEXT g: FOR g=18 TO 10 STEP -2: BEEP
 .07,g: NEXT g: NEXT f
4020 PRINT "                                  P
RESS Y TO TRY AGAIN, ELSE N...."
4025 IF INKEY$="" THEN  GO TO 4025
4030 IF INKEY$="Y" THEN  GO SUB 9000: PRINT A
T 21,0;"                                    ": GO
 TO 915
4040 STOP
9000 PRINT AT 0,0;"EEEEEEGGGGGEEEEEEEEEGGGEGE
```

```
EEEEEEEEEEEEGGGGGEEEEEEEGGGGGGGGGGEEEEEEEEEEE
GGGEEEEEGGGGGGGGGGGGGGGGGEGGEEEEGEEEEEGGGGGG
GGGGGGGGGGGGGEGGEEEEEEEGEEEEGGGGGGGGGGGGEEEG
GGGGEEEEEEEEEEEGGGGGGGGGGGGEEE"
9010 PRINT "GGGGGGEEEEEEEEEGGGGGGGGGGGGGEEEG
GGGGGEEEEEE ■EGGGGGGGGGGGGGGGEEGGGGEEEEEEEEG
EGGGGGGGGGGGGEEEEEGGGEEEEEEEEEEEGGGGGGGGGGGG
EGEEEGGGEEEEEEEEEGGGGGGGGGGGGGGGEGEEEGEGEEEE
EEEEGGEGGGGGGGGEEEEEEEEEEGEEEEEEEEEE   EGGEEG
GEEGEEEGEEEGGEEEEEEEEEGGGGGEGEEEGEEEEGEEGEE"
9020 PRINT "EGGGGEEEEEGGGGGGGEEEEEEEEEEEEEEE
EGGGGEEEEEGGGGGGEEEEEEEEEEGEGEEEEGGGGGEEEEEEG
GGGEEEEEEEGGGGGGEEEEGGGGEEEEEEEGGGEGEEEEGGGG
GGGGEEEEGGEEEEEEEEGGGEEEEEEEEGGGGGGEEEEEGGEEE
EEEEEGEEEEEEEEEGEEEGGEEEEEGEEEEEEEEEEEEEEEE
EEEEEEEEEEE"
9030 PLOT 255,8: DRAW 0,167: DRAW -255,0
9040 RESTORE 30: FOR f=1 TO 10: READ a$,b,a:
PRINT AT b,a;"f": NEXT f: RETURN
```


Exocet

It's time to play the Falklands all over again. A group of enemy ships randomly make their way across the horizon, and it's up to you to sink as many of them as possible by firing missiles using the zero key. A mobile sight is printed slightly below the line of the horizon. There are three sizes of enemy ships, and the smaller the target the more points you score for a hit. Occasionally the enemy's electronic defence system will succeed in confusing your missile and deflecting it from its course.

```
  1 REM Exocet @ Robert Erskine 1983
  5 GO SUB 9000
 10 GO SUB 4000
 15 GO SUB 1000
 20 GO SUB 1170
 30 LET hs=0
 40 RANDOMIZE
 50 INK 0
100 FOR x=1 TO (LEN S$-32)
110 IF LEN S$(x TO LEN S$)>31 THEN  PRINT  I
NK 0; PAPER 5;AT 10,0;S$(x TO x+31)
115 PRINT  PAPER 1; INK 7;AT LIN,COL;" "
120 IF INKEY$="z" AND FLAG=0 AND COL>0 THEN
LET COL=COL-1: LET T=T-8
130 IF INKEY$="x" AND FLAG=0 AND COL<26 THEN
 LET COL=COL+1: LET T=T+8
134 PRINT  PAPER 1; INK 7;AT LIN,COL;"+"
135 IF FLAG=1 THEN  GO TO 170
140 IF INKEY$<>"0" THEN  GO TO 200
150 LET L=0: LET D=1: LET FLAG=1: LET Y=127
160 LET EX=EX-1
170 PLOT  INK 1; OVER 1;Y,L
172 LET LL=L: LET YY=Y
175 BEEP .03,0
176 IF L>=112 THEN  LET D=0
177 IF RND>.8 THEN  GO TO 190
180 LET L=L+(8 AND D=1)-(8 AND D=0)
182 LET Y=Y+(ABS (Y-T)/2 AND T>Y)-(ABS (Y-T)
/2 AND T<Y)
190 PLOT  OVER 1;YY,LL
```

```
 195 IF L<=95 AND D=Ø THEN  GO SUB 6ØØØ
 2ØØ IF FLAG=Ø THEN  PAUSE 5
 2Ø2 IF EX<Ø THEN  GO TO 3ØØØ
 2Ø5 NEXT x
 21Ø GO TO 3ØØØ
1ØØØ PAPER 1: CLS : LET LIN=11: LET COL=15: L
ET T=123: LET FLAG=Ø: LET EX=1Ø
11ØØ FOR X=Ø TO 1Ø
112Ø FOR y=Ø TO 31
113Ø PRINT  PAPER 5; INK 1;AT x,y;" "
114Ø NEXT y
115Ø NEXT x
116Ø RETURN
117Ø DIM G$(1Ø,6)
118Ø LET G$(1)="A      "
119Ø LET G$(2)="BC     "
12ØØ LET G$(3)="DEF    "
121Ø FOR x=4 TO 1Ø
122Ø LET G$(x)="       "
123Ø NEXT x
1235 LET Q$="
": LET S$=Q$
124Ø FOR x=1 TO 1ØØ
125Ø LET S$=S$+G$(INT (RND*1Ø)+1)
126Ø NEXT x
127Ø LET sc=Ø: LET S$=S$+Q$
128Ø RETURN
3ØØØ PAPER Ø: INK 5: CLS : PRINT AT 1Ø,6;"You
r score was ";sc
3Ø1Ø LET sc=Ø: LET EX=1Ø
3Ø2Ø PRINT AT 2Ø,3;"Press any key to restart"
3Ø25 INK Ø
3Ø3Ø IF INKEY$="" THEN  GO TO 3Ø3Ø
3Ø4Ø GO SUB 1ØØØ
3Ø45 GO SUB 117Ø
3Ø5Ø GO TO 1ØØ
4ØØØ BORDER Ø: INK 5: PAPER Ø: CLS : PRINT AT
 1,12;"EXOCET"
4Ø1Ø PRINT
4Ø2Ø PRINT "The object of this game is to ","
sink the enemy ships with Exocetmissiles as t
hey cross the ","horizon"
4Ø3Ø PRINT
4Ø4Ø PRINT "      z = move sight left": PRINT
```



```
4Ø5Ø PRINT "      x = move sight right": PRINT

4Ø6Ø PRINT "      Ø = fire missile": PRINT
4Ø7Ø PRINT "      hit on DEF scores 1Ø": PRINT

4Ø8Ø PRINT "      hit on BC scores 2Ø": PRINT
4Ø85 PRINT "      hit on A scores 3Ø"
4Ø9Ø PRINT AT 21,4;"Press any key to start"
42ØØ IF INKEY$="" THEN  GO TO 42ØØ
421Ø RETURN
6ØØØ IF POINT (Y,88)=Ø THEN  GO TO 6Ø6Ø
6Ø1Ø IF S$(x+COL)="A" THEN  LET sc=sc+3Ø
6Ø2Ø IF S$(x+COL TO x+(COL+1))="BC" OR S$(x+(
COL-1) TO x+COL)="BC" THEN  LET sc=sc+2Ø
6Ø25 IF S$(x+COL TO x+(COL+2))="DEF" OR S$(x+
(COL-1) TO x+(COL+1))="DEF" OR S$(x+(COL-2) T
O x+COL)="DEF" THEN  LET sc=sc+1Ø
6Ø3Ø RESTORE 6Ø39
6Ø31 FOR z=1 TO 15: BEEP .Ø3,-2Ø
6Ø32 PLOT Y,L: READ YY: READ LL: DRAW  INK 2;
YY,LL
6Ø33 NEXT z
6Ø39 DATA -4,4,-4,5,-3,6,-3,7,-2,8,-2,9,-1,1Ø
,Ø,11,1,1Ø,2,9,2,8,3,7,3,6,4,5,4,4
6Ø5Ø LET S$=S$(1 TO x-1)+S$(x TO (x+(COL-3)))
+"       "+S$((x+(COL+3)) TO LEN S$)
6Ø6Ø LET FLAG=Ø
6Ø85 PRINT  PAPER 5;AT LIN-2,COL;" ";AT LIN-1
,COL;" "
611Ø IF sc>hs THEN  LET hs=sc
612Ø PRINT  PAPER 5; INK Ø;AT Ø,Ø;"SCORE:";sc
;" EXOS:";EX;" HIGH SCORE:";hs
613Ø RETURN
9ØØØ RESTORE 9ØØØ: FOR u=USR "a" TO USR "a"+4
7
9Ø1Ø READ g
9Ø2Ø POKE u,g
9Ø3Ø NEXT u
9Ø4Ø DATA Ø,Ø,Ø,Ø,Ø,Ø,Ø,16,255
9Ø5Ø DATA Ø,Ø,Ø,Ø,1,39,255,127,Ø,Ø,Ø,Ø,128,23
Ø,255,254
9Ø6Ø DATA Ø,Ø,Ø,Ø,1,255,127,63,Ø,24,6Ø,63,255
,255,255,255,Ø,Ø,Ø,Ø,192,255,254,252
9Ø7Ø RETURN
```

Energy Field

You are at the edge of Time, closely pursued by a fleet of alien craft who are out to steal your ship's power. However you have a trick or two up your sleeve. You have the capacity to guard the ends of the time tunnel by setting up energy fields at each of the four open ends of the system. If you attempt to set up a force field anywhere other than at the ends of the time tunnel, the force will feedback and destroy you. Likewise, if you set up a field at the end of an unoccupied tunnel you are finished. Passive cruiser commanders who allow too many aliens through will find their power drained and the game over.

```
  1 BORDER 0: PAPER 0: INK 7: CLS
  2 REM  @ PAUL STANLEY
  5 GO SUB 9800
  7 GO SUB 9840
  8 LET h=0
 10 GO SUB 8000
 20 GO SUB 9000
 25 PRINT AT 0,28;h
 30 OVER 1
 35 PRINT  INK 3;AT y,x;"HI"
 39 IF li<=1 THEN  GO TO 7000
 40 LET p=p-.05: PRINT  OVER 0;AT 0,0;s: LET
g=1: GO TO (INT (RND*4)+1)*100
 60 FOR d=1 TO p: PRINT  INK 7;AT y,x;"HI"
 65 IF INKEY$="1" THEN  LET x=x+1: LET y=y-1
 70 IF INKEY$="2" THEN  LET x=x+1: LET y=y+1
 75 IF y=-1 THEN  LET y=21
 80 IF y=22 THEN  LET y=1
 83 IF x=-1 THEN  LET x=31
 87 IF x=31 THEN  LET x=0
 90 PRINT  INK 3;AT y,x;"HI"
 92 IF INKEY$="0" THEN  IF g THEN  GO SUB 10
00
 93 NEXT d
 95 RETURN
100 LET o=s: FOR f=1 TO 4
105 LET a=1
110 PRINT AT 10+2*f,15; INK 5;a$(f)
```



```
115 GO SUB 60
120 BEEP .04,f
130 PRINT AT 10+2*f,15;a$(f);AT 11+2*f,15; I
NK 5;a$(f)
135 GO SUB 60
140 BEEP .04,f
150 PRINT AT 11+2*f,15;a$(f)
160 NEXT f
165 IF s<>o THEN  PRINT  FLASH 1;AT 11+2*f,1
5; INK 6;"J": BEEP .1,-30: BEEP .1,-28: BEEP
.1,-26: BEEP .1,-28: BEEP .1,-30: PRINT AT 11
+2*f,15; INK 7;"J"
167 IF s=o THEN  LET li=li-.2: PRINT AT 21,2
7; OVER 0;INT li;"  "
170 GO TO 39
200 LET o=s: FOR f=1 TO 4
205 LET a=2
210 PRINT AT 11-2*f,16; INK 3;a$(f)
215 GO SUB 60
220 BEEP .04,f
230 PRINT AT 11-2*f,16;a$(f);AT 10-2*f,16; I
NK 3;a$(f)
235 GO SUB 60
240 BEEP .04,f
250 PRINT AT 10-2*f,16;a$(f)
260 NEXT f
265 IF s<>o THEN  PRINT  FLASH 1;AT 10-2*f,1
6; INK 6;"J": BEEP .1,-30: BEEP .1,-28: BEEP
.1,-26: BEEP .1,-28: BEEP .1,-30: PRINT AT 10
-2*f,16; INK 7;"J"
267 IF s=o THEN  LET li=li-.2: PRINT AT 21,2
7; OVER 0;INT li;"  "
270 GO TO 39
300 LET o=s: FOR f=1 TO 5
305 LET a=3
310 PRINT AT 10,15-2*f; INK 4;b$(f)
315 GO SUB 60
320 BEEP .04,f*6
330 PRINT AT 10,15-2*f;b$(f);AT 10,14-2*f; I
NK 4;b$(f)
335 GO SUB 60
340 BEEP .04,f*6
350 PRINT AT 10,14-2*f;b$(f)
360 NEXT f
```

```
 365 IF s<>o THEN  PRINT  FLASH 1;AT 10,14-2*
f; INK 6;"J": BEEP .1,-30: BEEP .1,-28: BEEP
.1,-26: BEEP .1,-28: BEEP .1,-30: PRINT AT 10
,14-2*f; INK 7;"J"
 367 IF s=o THEN  LET li=li-.2: PRINT AT 21,2
7; OVER 0;INT li;"  "
 370 GO TO 39
 400 LET o=s: FOR f=1 TO 5
 405 LET a=4
 410 PRINT AT 11,16+2*f; INK 6;b$(f)
 415 GO SUB 60
 420 BEEP .04,f*6
 430 PRINT AT 11,16+2*f;b$(f);AT 11,17+2*f; I
NK 6;b$(f)
 435 GO SUB 60
 440 BEEP .04,f*6
 450 PRINT AT 11,17+2*f;b$(f)
 460 NEXT f
 465 IF s<>o THEN  PRINT  FLASH 1;AT 11,17+2*
f; INK 6;"J": BEEP .1,-30: BEEP .1,-28: BEEP
.1,-26: BEEP .1,-28: BEEP .1,-30: PRINT AT 11
,17+2*f; INK 7;"J"
 467 IF s=o THEN  LET li=li-.2: PRINT AT 21,2
7; OVER 0;INT li;"  "
 470 GO TO 39
1000 IF x<6 THEN  GO TO 1100
1010 IF x>9 AND x<22 THEN  GO TO 1200
1020 IF NOT x>24 THEN  GO TO 2000
1030 IF x>29 OR y<2 OR y>19 THEN  GO TO 2000
1040 FOR q=2 TO 19: PRINT  PAPER 3;AT q,27;"
  ": NEXT q
1050 BEEP .03,-10: BEEP .03,-13: BEEP .03,-15
: BEEP .03,-10
1060 FOR q=2 TO 19: PRINT  PAPER 0;AT q,27;"
  ": NEXT q
1065 IF a<>4 THEN  GO TO 2000
1070 LET s=s+20
1080 LET g=0
1090 RETURN
1100 IF x<1 OR y<2 OR y>19 THEN  GO TO 2000
1110 FOR q=2 TO 19: PRINT  PAPER 3;AT q,2;"
 ": NEXT q
1120 BEEP .03,-10: BEEP .03,-13: BEEP .03,-15
: BEEP .03,-10
```



```
1130 FOR q=2 TO 19: PRINT  PAPER 0;AT q,2;"
 ": NEXT q
1135 IF a<>3 THEN  GO TO 2000
1140 LET s=s+20
1150 LET g=0
1160 RETURN
1200 IF y>10 THEN  GO TO 1300
1210 IF y<1 OR y>3 THEN  GO TO 2000
1220 FOR q=11 TO 20: PRINT  PAPER 3;AT 1,q;"
";AT 2,q;" ";AT 3,q;" ": NEXT q
1230 BEEP .03,-10: BEEP .03,-13: BEEP .03,-15
: BEEP .03,-10
1240 FOR q=11 TO 20: PRINT  PAPER 0;AT 1,q;"
";AT 2,q;" ";AT 3,q;" ": NEXT q
1245 IF a<>2 THEN  GO TO 2000
1250 LET s=s+20
1260 LET g=0
1270 RETURN
1300 IF y>20 OR y<18 THEN  GO TO 2000
1310 FOR q=11 TO 20: PRINT  PAPER 3;AT 18,q;"
 ";AT 19,q;" ";AT 20,q;" ": NEXT q
1320 BEEP .03,-10: BEEP .03,-13: BEEP .03,-15
: BEEP .03,-10
1330 FOR q=11 TO 20: PRINT  PAPER 0;AT 18,q;"
 ";AT 19,q;" ";AT 20,q;" ": NEXT q
1335 IF a<>1 THEN  GO TO 2000
1340 LET s=s+20
1350 LET g=0
1360 RETURN
2000 PRINT AT y,x;"HI"
2010 FOR r=y TO 21
2020 PRINT AT r,x-1; INK 5;"JJJ"
2030 BEEP .0001,r
2040 PRINT AT r,x-1;"JJJ"
2050 NEXT r
2060 LET li=li-1: PRINT  OVER 0;AT 21,27;INT
li;"  ": IF li<=1 THEN  GO TO 7000
2065 PRINT AT y,x;"HI"
2070 RETURN
7000 FOR f=1 TO 60: PRINT  OVER 0;AT 10,8; IN
K f/9; INVERSE 1;"G A M E  O V E R": BEEP .00
1,f: NEXT f
7005 IF s>h THEN  LET h=s
7100 PRINT  OVER 0;AT 21,2; INVERSE 1;"PRESS
```

```
ANY KEY TO PLAY AGAIN"
7200 IF INKEY$<>"" THEN  RESTORE : CLS : OVER
 1: GO TO 10
7300 GO TO 7200
8000 FOR f=USR "a" TO USR "j"+7
8010 READ x: POKE f,x: NEXT f
8020 DATA 40,BIN 01010100,BIN 10111010,124,BI
N 10111010,BIN 01010100,40,0
8030 DATA 0,16,40,BIN 01010100,40,16,0,0
8040 DATA 0,0,0,24,24,0,0,0
8050 DATA 0,0,0,16,0,0,0,0
8060 DATA 255,195,189,189,189,189,195,255
8070 DATA 0,62,54,42,54,62,0,0
8080 DATA 0,0,28,28,28,0,0,0
8090 DATA 96,240,249,239,249,240,96,0
8100 DATA 6,15,159,247,159,15,6,0
8110 DATA BIN 11011010,33,76,195,24,BIN 01100
101,BIN 10010011,BIN 01100100
8250 LET x=1: LET y=1
8300 LET a$="DCBA"
8350 LET b$="DCGFE"
8400 LET s=0
8410 LET li=8: LET p=5
8500 RETURN
9000 OVER 0: PLOT 126,93: DRAW 4,0: DRAW 0,-4
: DRAW 4,0: DRAW 0,-4: DRAW -4,0: DRAW 0,-4:
DRAW -4,0: DRAW 0,4: DRAW -4,0: DRAW 0,4: DRA
W 4,0: DRAW 0,4
9010 DRAW -40,77: DRAW 84,0: DRAW 0,-25: DRAW
 -84,0: DRAW 0,25: PLOT 86,145: DRAW 40,-52:
DRAW 4,0
9020 DRAW 40,52: DRAW 0,25: DRAW -40,-77
9030 PLOT 126,81: DRAW -40,-77: DRAW 84,0: DR
AW 0,25: DRAW -84,0: DRAW 0,-25: DRAW 0,25: D
RAW 40,52: DRAW 4,0: DRAW 40,-52: DRAW 0,-25:
 DRAW -40,77
9040 PLOT 122,89: DRAW -107,71: DRAW 30,0: DR
AW 0,-146: DRAW -30,0: DRAW 0,146: DRAW 30,0:
 DRAW 77,-71: DRAW 0,-4: DRAW -107,-71: DRAW
30,0: DRAW 77,71
9050 PLOT 134,89: DRAW 107,71: DRAW -30,0: DR
AW 0,-146: DRAW 30,0: DRAW 0,146: DRAW -30,0:
 DRAW -77,-71: DRAW 0,-4: DRAW 107,-71: DRAW
-30,0: DRAW -77,71
```



```
9500 RETURN
9800 FOR f=1 TO 7: FOR G=0 TO F: PRINT  INK G
;AT f,f*2;"ENERGY FIELDS": BEEP .03,G: NEXT G
: NEXT F
9835 RETURN
9840 PRINT AT 10,0;"Guard the tube with your
craft  by setting up energy shields at the 4
open ends of the system.  Attempting to place
 a field at  any place other than the end
will result in your destruction."
9850 PRINT "Setting one up at a tube not    c
ontaining an enemy will result in destruction
 also."
9855 PAUSE 0: CLS : GO SUB 9800
9860 PRINT AT 9,0;"Move with 1(up) & 2(down)
but   remember that you move right at the sam
e time and going off the screen will place yo
u on the    opposite side."
9870 PRINT "Place an energy field at a tube m
outh with 0."'"Letting an enemy past or self-
  destruction results in power    loss and if
 this is too great   then the game is over."'
' INVERSE 1; OVER 1;"Press a key to start": P
AUSE 0: CLS
9880 RETURN
```

Drag Racer

This is a simulation of a drag race. The object of the game is to complete the quarter mile course in the shortest possible time. You have four gears and must determine the optimum moment for changing up. If you change too early, your revs will fall too low and you will lose valuable time; if you spend too much time in high revs you'll probably blow your engine. The rear end ratio of the car is progressively increased with each succeeding game, and the right moment to change gear becomes increasingly hard to judge.

```
  1 REM Drag Racer @ R.Erskine 1983
  5 GO SUB 4000
 10 GO SUB 9000
 15 GO SUB 9150
 20 LET g=1
 100 LET I=CODE INKEY$
 110 IF I=109 THEN  LET a=a+1
 120 IF I>48 AND I<53 THEN  LET g=I-48
 125 IF t<3 THEN  LET rpm=FN a(x): GO TO 140
 130 LET rpm=FN b(x)
 140 IF RND>(rpm-6000)/1000 THEN  GO TO 160
 150 GO TO 3000
 160 LET os=ns
 170 LET op=np
 180 LET tq=FN c(x)
 190 LET tq1=17
 200 LET ns=FN d(x)
 210 LET np=FN e(x)
 240 LET t=t+1
 260 LET a=FN f(x)
 270 LET x=48*SIN a
 280 LET y=48*COS a
 285 IF t>1 THEN  PLOT 152,56: DRAW  OVER 1;x
x,yy
 290 PLOT 152,56: DRAW  OVER 1;x,y
 300 LET xx=x: LET yy=y
 310 LET a=FN g(x)
 320 LET n=48*SIN a
 330 LET o=48*COS a
 340 IF t>1 THEN  PLOT 49,56: DRAW  OVER 1;nn
,oo
 350 PLOT 49,56: DRAW  OVER 1;n,o
 360 LET nn=n: LET oo=o
 365 PRINT  PAPER 5; INK 0;AT lin1,col1;"_"
 400 LET col1=col1+INT ((np-op)/c1)
 410 IF col1>31 AND lin1<8 THEN  LET col1=0+(
col1-31): LET lin1=lin1+1
 460 IF lin1<8 THEN  PRINT  PAPER 5; INK 0;AT
 lin1,col1;"A"
 500 IF np<1320 THEN  GO TO 100
2000 LET t=FN h(x)
2005 IF bt=0 THEN  LET bt=t
2010 IF t<bt THEN  LET bt=t
2030 PRINT AT 0,0;"Time ";t;" seconds"
2040 PRINT "Best time: ";bt;" seconds"
2050 PRINT "Maximum speed: ";ns;" mph"
2055 FOR x=1 TO 1000: NEXT x
2060 PRINT "Press any key to restart"
2070 IF INKEY$="" THEN  GO TO 2070
2090 LET gr=gr+.1: IF gr>4.1 THEN  LET gr=4.1
1
2095 GO SUB 9000
2096 GO SUB 9310
2100 GO TO 20
3000 PRINT  FLASH 1; PAPER 2; INK 6;AT lin1,c
ol1;"A";AT 0,3;"Engine blown": GO TO 2055
4000 PAPER 0: INK 5: BORDER 0: CLS
4010 PRINT AT 0,10;"Drag Racer"
4020 PRINT
4030 PRINT "In this drag racing simulation ",
"you must try to cover the ","quarter mile in
 the shortest ","possible time. The only cont
rolsyou need are the gears which ","must be c
hanged at the optimum ","moment.": PRINT
4040 PRINT "At the start you are in first ","
gear and you must watch the rpm counter and d
ecide when to ","change into second.  At over
 ","6000 rpm there is a high ","probability o
f the engine ","blowing.": PRINT
4050 PRINT "With each succeeding attempt ","t
he rear end ratio is increased slightly which
 makes the game ","progressively more difficu
lt.": PRINT
4060 PRINT "Try not to change gear too late o
```

```
r too early.  The gear keys are1,2,3 and 4.
Good Luck."
4070 PRINT : FOR x=1 TO 1000: NEXT x
4080 PRINT "Press any key to start"
4085 IF INKEY$="" THEN  GO TO 4085
4090 RETURN
8000 FOR x=0 TO 7
8010 PRINT  PAPER 5;AT x,0;"
                "
8020 NEXT x
8030 FOR x=112 TO 168 STEP 8
8040 PLOT 0,x: DRAW  INK 0;255,0
8050 NEXT x
8060 RETURN
9000 DIM g(4)
9005 BORDER 5: PAPER 0: INK 7: CLS
9010 LET g(1)=4
9020 LET g(2)=2.5
9030 LET g(3)=1.5
9040 LET g(4)=1
9050 LET t=0: LET np=0: LET ns=np
9070 LET mph=0
9080 LET rpm=0
9090 CIRCLE 152,56,48
9100 CIRCLE 49,56,48
9110 PRINT AT 14,5;"RPM";AT 14,17;"MPH";AT 10
,26;"Drag";AT 19,26;"Racer"
9120 PRINT AT 14,13;"135";AT 14,23;"45";AT 9,
19;"0";AT 20,18;"90"
9130 PRINT AT 9,6;"0";AT 14,10;"17";AT 14,0;"
52";AT 20,5;"35"
9140 GO SUB 8000
9145 RETURN
9150 DEF FN a(x)=4200*(g(g)/g(1))
9160 DEF FN b(x)=ns*gr*g(g)*con/circ
9170 DEF FN c(x)=(c1*rpm^3)+(c2*rpm^2)+(c3*rp
m)
9180 DEF FN d(x)=os+(tq/tq1)
9190 DEF FN e(x)=op+ns*(5280/60^2)
9200 DEF FN f(x)=(ns*2)/180*PI
9210 DEF FN g(x)=(rpm/19.5)/180*PI
9220 DEF FN h(x)=t+(1320-op)/(np-op)-1
9250 LET con=63360
```



```
9260 LET circ=4523.893421
9270 LET c1=-1.8953E-9
9280 LET c2=1.02157E-5
9290 LET c3=.015752
9300 LET bt=0: LET gr=3: LET c1=5.176
9310 LET lin1=0: LET col1=0
9320 RESTORE : FOR x=USR "a" TO USR "a"+7
9330 READ n: POKE x,n
9340 NEXT x
9350 DATA 0,0,0,0,224,255,227,255
9999 RETURN
```

Moonlander

This is an up-market real-time lander program which gives you an opportunity to grapple with the problems which face a space-lagged cruiser commander returning home after a long haul. The object of the exercise is to land your craft on the chillingly small landing-pad at the bottom of the screen. Precision is the name of the game, because if your rate of descent is greater than -5 you and your crew are gonners. A word of warning: if you over-fire your rockets you'll disappear into hyperspace until returning back on screen, plummeting to your doom unless you've been doing some nifty blind flying to slow your descent.

```
  10 REM Moon Lander @ Robert Erskine 1983
  20 GO SUB 8000
  80 GO SUB 9000
  90 IF E=0 THEN  GO TO 150
 100 LET m=m1: LET m1=m-F1
 110 LET H1=H: LET H=(H+V)-.81
 120 LET V=V+((T/F1)*(LN (m/m1)))-1.62
 130 LET F=F-F1
 140 GO TO 175
 150 LET m1=m:
 160 LET H1=H: LET H=(H+V)-.81
 170 LET V=V-1.62
 175 LET col1=col
 180 IF col>0 AND RND>.5 THEN  LET col=col-1
 185 IF col<31 AND RND>.5 THEN  LET col=col+1
 190 PRINT AT 0,0;"Height ";INT H;"
"
 200 PRINT "Velocity ";INT V;"          "
 210 PRINT "Fuel ";F;"     "
 220 IF INKEY$="o" THEN  LET E=0
 230 IF INKEY$="i" THEN  LET E=1
 232 IF INKEY$="z" AND col>0 THEN  LET col=co
l-1
 234 IF INKEY$="x" AND col<31 THEN  LET col=c
ol+1
 240 IF H>2000 OR H<1 THEN  GO TO 270
 250 PRINT ;AT 20-(H1/100),col1;" "; INK 5;AT
 20-(H/100),col;"A"
 260 IF E=1 THEN  PRINT AT 21-(H1/100),col1;"
```



```
 "; INK 2;AT 21-(H/100),col;"B";AT 21-(H/100)
,col;" "
 270 PRINT  INK 7;AT 20,0;"__________________
_____________"; INK 3;AT 20,15;"_"
 300 IF F=0 OR H<=0 THEN  GO TO 2000
 310 GO TO 90
2000 IF F=0 THEN  PRINT  FLASH 1;AT 10,10;"OU
T OF FUEL"
2010 IF H<=0 AND V<-5 THEN  PRINT  FLASH 1;AT
 11,8;"YOU HAVE CRASHED": GO TO 3000
2020 IF H<=0 AND V>-6 THEN  PRINT  FLASH 1;AT
 11,8;"YOU HAVE LANDED": PRINT AT 20-(H1/100)
,col1;" ": PRINT  INK 5;AT 20,col;"A": INK 0
2025 IF H<=0 AND V>-6 AND col=15 THEN  PRINT
 PAPER 6; FLASH 1;AT 12,5;"IN THE CORRECT PLA
CE"
2026 IF H<=0 AND V>-6 AND col<>15 THEN  PRINT
  PAPER 6; FLASH 1;AT 12,6;"IN THE WRONG PLAC
E"
2030 INK 7: PRINT AT 15,4;"PRESS ANY KEY TO R
ESTART"
2040 IF INKEY$="" THEN  GO TO 2040
2050 GO TO 80
3000 PRINT AT 20-(H1/100),col1;" "; INK 5;AT
20,col1;"C"
3010 FOR x=1 TO 5
3020 BEEP .03,x-20
3030 NEXT x
3040 GO TO 2030
8000 BORDER 0: PAPER 0: INK 6: CLS : PRINT AT
 2,4;"MOON LANDER"
8020 PRINT
8030 PRINT "This is a real-time moon lander g
ame in which you must land the lunar module o
n the small purplelanding pad.  You must land
 in ","the correct place at a rate of ","desc
ent not faster than -5."
8040 PRINT
8050 PRINT "Use the folowing command keys:"
8060 PRINT
8070 PRINT "z = move left": PRINT
8080 PRINT "x = move right": PRINT
8090 PRINT "i = motor on": PRINT
8100 PRINT "o = motor off": PRINT
```

```
8110 PRINT "Press any key to start"
8120 IF INKEY$="" THEN  GO TO 8120
8130 RETURN
9000 LET H=2000
9010 LET V=-20
9020 LET m=1378: LET m1=m
9030 LET T=4800
9040 LET F1=2
9050 LET F=378
9060 LET E=1
9080 LET col=15
9090 LET y=8
9200 PAPER 0: BORDER 0: CLS
9210 FOR x=1 TO 30
9220 PLOT  INK 7;INT (RND*255),INT (RND*165)+
10
9230 NEXT x
9290 RESTORE : FOR x=USR "a" TO USR "c"+7
9300 READ n: POKE x,n
9310 NEXT x
9320 DATA 60,126,219,255,255,126,189,129,24,6
0,60,60,24,24,0,0,0,0,0,0,24,60,126,255
9330 PRINT  INK 3;AT 20,15;"_"
9340 RETURN
```


Anagrammatic

This is a simple anagram jumbler. There are few things more infuriating than staring blankly at crossword clues, unable to de-jumble the letters. This little program will hopefully get the old brain ticking again with some fresh ideas on how to unscramble the problem.

```
  10 REM **ANAGRAMATIC**              A SIMPLE
 ANAGRAM SOLVER          by H.NYWALW
  20 POKE 23658,255: REM forces caps shift
  30 BORDER 5: PAPER 5: INK 0: CLS
  40 PRINT TAB 10; BRIGHT 1; INVERSE 1;"ANAGR
AMATIC"
  50 PRINT : PRINT " IF YOU ARE A CROSSWORD A
DDICT, THEN YOU WILL KNOW THE PROBLEMS"
  60 PRINT "OF TRYING TO REARRANGE LETTERS."
  70 PRINT : PRINT " FOLLOW THE INSTRUCTIONS
AND    THEN SIT BACK AND WATCH THE "
  75 PRINT "SCREEN AS EVERY POSSIBLE "
  80 PRINT "COMBINATION RUNS UP BEFORE YOUR V
ERY EYES.THE AIM IS NOT TO LOOKAT EVERY WORD
GROUP,BUT SIMPLY "
  85 PRINT "TO GLANCE AT THE SCREEN OCCASIO-N
ALLY AND YOU MAY WELL GET SOME"
  90 PRINT "INSPIRATION."
  95 PRINT : PRINT "ALTERNATIVELY,PUT IN A PR
INTER  SUBROUTINE FOR HARD COPY."
 100 PRINT "PRESS ANY KEY TO START."
 104 IF INKEY$="" THEN  GO TO 104
 110 BORDER 4: PAPER 4: INK 0: CLS
 120 PRINT TAB 4;"      ANAGRAMATIC      "
 130 PRINT '''"TYPE "; INVERSE 1;"ONLY"; INVER
SE 0;" THOSE LETTERS WHICH","ARE TO BE REARRA
NGED.DO NOT","INPUT ANY LETTERS WHOSE POSITIO
NIS KNOWN."
 140 INPUT A$: IF A$="" THEN  GO TO 140
 150 PRINT
 160 LET L=LEN A$
 170 PRINT "ARE ANY LETTERS/SPACES KNOWN?","P
RESS Y(YES) OR N(NO)"
 175 LET Z$=INKEY$: IF Z$="" THEN  GO TO 175
```

```
 180 IF Z$="N" THEN  GO TO 240
 181 IF Z$<>"Y" THEN  GO TO 175
 190 PRINT "TYPE IN THE KNOWN ORDER AS PER  E
XAMPLE.": PRINT "E.G.  '---D-F- -EE'"
 200 INPUT K$: LET W=L
 210 LET T=0: FOR J=1 TO LEN K$: IF K$(J)="-"
 THEN  LET T=T+1
 220 NEXT J: IF T<>L THEN  GO SUB 1000: GO TO
 200
 230 GO TO 270
 240 LET K$="": FOR J=1 TO L: LET K$=K$+"-":
NEXT J
 250 INPUT "NUMBER OF LETTERS TO BEGIN",W
 260 IF W<1 OR W>L OR W<>INT W THEN  GO SUB 1
000: GO TO 250
 270 DIM B$(L): DIM C$(L): DIM Q(L)
 280 PRINT "------------------------------"
 290 GO SUB 500
 300 FOR J=W TO L
 305 PRINT AT 21,0;" ": POKE 23692,-1
 310 LET K=1
 320 LET Q(K)=1
 330 IF B$(Q(K))=" " THEN  GO TO 440
 340 LET C$(K)=B$(Q(K)): LET B$(Q(K))=""
 350 LET K=K+1
 360 IF K<=J THEN  GO TO 320
 370 LET A=1
 380 FOR S=1 TO LEN K$
 390 IF K$(S)="-" THEN  PRINT C$(A);: LET A=A
+1: GO TO 410
 400 PRINT K$(S);
 410 NEXT S: PRINT
 420 LET K=J
 430 LET B$(Q(K))=A$(Q(K))
 440 LET Q(K)=Q(K)+1
 450 IF Q(K)<=L THEN  GO TO 330
 460 LET K=K-1
 470 IF K>=1 THEN  GO TO 430
 480 NEXT J
 490 PRINT : PRINT "THAT'S ALL THE POSSIBLE A
NAGRAMSWRITTEN.TYPE RUN FOR ANOTHER GO.": STO
P
 500 FOR N=1 TO L
```



```
 510 LET B$(N)=A$(N): NEXT N: RETURN
1000 PRINT  BRIGHT 1; FLASH 1;"E R R O R!    P
LEASE REDO.......": RETURN
9999 PAUSE 0: BORDER 0: PAPER 0: INK 6: CLS
```

Stellar Run

On a routine run into hyperspace, you suddenly come upon a new universe. Instantly your cruiser is confronted with a series of mazes, obstacles and tunnels as you struggle to chart new horizons. As an experienced commander, you are well aware that any contact with the numerous meteors, rock walls or barriers will lead to your instant destruction. You will need to think fast and use your missiles to blast a hole through obstacles. So stand by, finger on the keyboard . . . Good luck!

```
   1 REM STELLAR RUN                    ORIGINAL
 VERSION @ H WALWYN      SPECTRUM VERSION @ D
PARKER
   2 RANDOMIZE : CLS : PRINT AT 10,10; FLASH
1;"STELLAR  RUN": GO SUB 8000: BORDER black:
GO SUB 7000: GO TO 6000
 100 REM SCREEN$ FOR UDG
 110 LET i=CODE SCREEN$ (y+1,x): IF i THEN  R
ETURN
 120 POKE 23606,PEEK 23675: POKE 23607,PEEK 2
3676-1
 130 LET i=CODE SCREEN$ (y+1,x)+112
 140 POKE 23606,0: POKE 23607,60
 150 RETURN
1000 REM MAIN LOOP
1010 POKE 23692,255
1020 LET e=e+ee*RND: GO TO 1000+d*100
1100 REM D=1
1110 LET d$=a$( TO SIN (e)*11+13)+CHR$ 20+CHR
$ 0+b$( TO 20)+a$: IF e>15 THEN  BEEP .1,e/3:
 LET d=2
1120 GO TO 2000
1200 REM D=2
1210 LET d$=a$( TO SIN (e)*11+13)+CHR$ 20+CHR
$ 0+b$( TO 16)+a$: IF e>30 THEN  BEEP .1,e/3:
 LET d=3
1220 GO TO 2000
1300 REM D=3
1310 LET d$=a$( TO SIN (e)+COS (e*.9)*4.5+12)
```



```
+CHR$ 20+CHR$ 0+b$( TO 16)+a$: IF RND<.08 THE
N  LET d$=a$
1320 IF e>45 THEN  BEEP .1,e/3: LET d=4
1330 GO TO 2000
1400 REM D=4
1410 LET n$=CHR$ 20+CHR$ 0+b$: IF RND<.08 THE
N  LET n$=CHR$ 20+CHR$ 0+i$
1420 LET d$=a$( TO (SIN (e)+COS (e*1.1))*4.5+
12)+n$( TO 16)+a$
1430 IF e>60 THEN  BEEP .1,e/3: LET d=5
1440 GO TO 2000
1500 REM D=5
1510 IF RND>.6 THEN  LET d$=CHR$ 20+CHR$ 0+b$
: GO TO 1530
1520 LET d$=CHR$ 20+CHR$ 0+c$(INT (RND*40+1)
TO 40)
1530 IF e>75 THEN  BEEP .1,e/3: LET d=6
1540 GO TO 2000
1600 REM D=6
1610 LET d$=a$( TO SIN (e)*12+14)+CHR$ 20+CHR
$ 0+b$( TO 14)+a$: IF e>90 THEN  BEEP .1,e/3:
 LET d=7
1620 GO TO 2000
1700 REM D=7
1710 LET d$=a$( TO (SIN (e)+COS (e*5.1))*4.5+
12)+CHR$ 20+CHR$ 0+b$( TO 16)+a$: IF e>105 TH
EN  BEEP .1,e/3: LET d=8
1720 GO TO 2000
1800 REM D=8
1810 IF RND>.25 THEN  LET d$=CHR$ 20+CHR$ 0+b
$: GO TO 1830
1820 LET d$=i$(INT (RND*2+1) TO 30)
1830 IF e>120 THEN  BEEP .1,e/3: LET d=9
1840 GO TO 2000
1900 REM D=9
1910 IF RND>.5 THEN  LET d$=CHR$ 20+CHR$ 1+b$
: GO TO 1930
1920 LET d$=a$
1930 IF e>=135 THEN  GO TO 3000
2000 REM PRINT
2010 IF LEN d$<32 THEN  LET d$=d$+a$
2030 PRINT AT 21,31; INK d; PAPER 9;"BB";d$(
TO 32);AT 0,0; INK 9;"MISSILES=";fg;AT 0,13;"
```

```
LEVEL=";d;AT Ø,22;"LYEARS=";INT e
2100 REM CHECK IF KEY PRESSED
2110 LET k=CODE INKEY$: IF m<Ø THEN  LET m=Ø
2120 BEEP .Ø2,m*10: LET fg=fg+1
2130 IF NOT k THEN  LET m=m-2: GO TO 2300
2140 IF k<>48 THEN  GO TO 2200
2150 IF fg<2 THEN  GO TO 2300
2160 LET f=1: LET fg=fg-2
2170 IF fg<Ø THEN  LET fg=Ø
2180 GO TO 2300
2200 REM KEY PRESSED
2210 LET m=m+1: IF m>3 THEN  LET m=3
2220 IF k=53 THEN  LET x=x-m: IF x<1 THEN  LE
T x=1
2230 IF k=56 THEN  LET x=x+m: IF x>30 THEN  L
ET x=30
2240 IF k=54 THEN  LET y=y+m: IF y>14 THEN  L
ET y=14
2250 IF k=55 THEN  LET y=y-m: IF y<1 THEN  LE
T y=1
2300 REM DISPLAY AND CHECK HIT
2310 IF fg>9 THEN  LET fg=9
2315 GO SUB 100: IF i>144 THEN  GO TO 4000
2320 PRINT AT fy-1,fx; PAPER 8; INK 9;" ";AT
fy-2,fx; PAPER 8; INK 9;" ";AT y,x; PAPER 8;
INK 9;s$: LET fx=x: LET fy=y
2330 IF f<1 THEN  GO TO 1000
2340 IF f=2 THEN  GO TO 2355
2350 LET f=2
2355 BEEP .Ø1,d
2360 LET r=x*8+3: LET s=(21-y)*8: PLOT  BRIGH
T 1; INK red;r,s: DRAW  BRIGHT 1; INK red; OV
ER 1;Ø,-50: PAUSE 5: PLOT  BRIGHT Ø; INK red;
r,s: DRAW  BRIGHT Ø; INK red; OVER 1;Ø,-50
2370 LET t=(r-4)/8: FOR v=y+1 TO y+7: IF SCRE
EN$ (v,t)<>" " THEN  PRINT AT v,t; PAPER 8;"
": BEEP .25,-10
2380 NEXT v: LET f=Ø: GO TO 1000
3000 REM YOU'VE MADE IT
3010 INK red: PAPER yellow: BORDER blue: CLS
3020 FOR k=Ø TO 48: BEEP .Ø1,k: BEEP .Ø1,48-k
: NEXT k
3030 FOR k=Ø TO 7: BEEP .Ø1,k: PRINT AT k+5,3
; INK 8-k; PAPER k+1;"WELL DONE! YOU'VE MADE
```



```
IT!": BEEP .Ø1,20-k: NEXT k
3040 GO TO 4070
4000 REM SHIP HIT
4005 PRINT AT fy-1,fx;" "
4010 FOR k=Ø TO 7: BEEP .Ø2,-1: PRINT AT y,x;
x$(k+1): BEEP .Ø2,1: NEXT k
4020 INK black: PAPER yellow: CLS : BORDER bl
ack
4030 PRINT AT 6,11; FLASH 1;"DESTROYED!"
4040 PRINT AT 8,7;"You got as far as"
4050 PRINT AT 10,14;INT (e*10)/10
4060 PRINT AT 12,10;"light years"
4070 PRINT AT 14,6;"ANOTHER GAME? (y/n)"
4080 LET k$=INKEY$: IF k$="y" THEN  GO TO 600
Ø
4090 IF k$<>"n" THEN  GO TO 4080
4100 GO TO 9999
6000 REM INITIALISE
6010 PAPER 7: CLS : FOR a=Ø TO 21: PRINT : NE
XT a
6020 REM X AND Y POSITION OF SHIP
6025 LET x=16: LET fx=x: LET y=10: LET fy=y
6030 REM MISSILE BANK
6040 LET fg=9
6050 REM DISPLAY SHIP
6054 FOR k=Ø TO 48: BEEP .Ø1,k: BEEP .Ø1,48-k
: NEXT k
6055 LET s$=CHR$ 144
6060 PRINT AT y,x;s$
6070 REM VARIABLES
6080 LET f=Ø: LET m=Ø: LET d=1: LET e=Ø: LET
a=Ø: LET b=Ø: LET c=Ø: LET ee=.2
6090 LET x$=CHR$ 148+CHR$ 32+CHR$ 149+CHR$ 32
+CHR$ 150+CHR$ 151+CHR$ 152+CHR$ 32
6100 LET o$=CHR$ 145: LET p$=CHR$ 146: LET q$
=CHR$ 147
6110 LET a$="": FOR k=1 TO 45: LET a$=a$+CHR$
 145: NEXT k
6120 LET i$="": FOR k=1 TO 45: LET i$=i$+CHR$
 147+CHR$ 32: NEXT k
6130 LET b$="
     "
6140 LET c$="      "+p$+"      "+p$+"
   "+p$+"              "+p$+"
```

```
                    "+p$+"          "
6999 GO TO 1000
7000 REM INSTRUCTIONS
7010 PAPER yellow: CLS : PRINT AT 0,10; INK r
ed; INVERSE 1;"STELLAR  RUN"
7020 INK black: PRINT AT 1,0;"You   are   in
 control  of  theSTELLAR    TRIPPER    and
havediscovered a new galaxy."
7030 PRINT '"The galaxy is  135  light  years
wide   and   you  will  have  tonavigate your
  way  through  theWARP MAZE."
7040 PRINT '"Each time you play you  will  be
given a slightly different  maze....so watch
out!!!"
7050 PRINT '"See how far you can get!"
7060 PRINT '"No-one  has  reached  the  other
side!"
7070 PRINT '"The further you go,  the  harder
it is!"
7080 PAUSE 1000: CLS
7090 PRINT AT 8,2;"Press 5 to move left";TAB
8;"8 to move right";TAB 8;"6 to move forward"
;TAB 8;"7 to move back";TAB 4;"SPACE to fire
laser"
7100 PRINT AT 21,5;"Press any key to start"
7110 IF INKEY$="" THEN  GO TO 7110
7999 RETURN
8000 REM GRAPHICS
8010 DATA "a",66,102,126,126,60,60,24,24
8020 DATA "b",255,170,251,170,255,170,255,170
8030 DATA "c",24,36,102,153,153,102,36,24
8040 DATA "d",129,66,36,24,24,36,66,129
8050 DATA "e",66,102,126,126,60,60,90,0
8060 DATA "f",66,102,126,126,60,188,0,73
8070 DATA "g",66,102,126,126,60,0,0,129
8080 DATA "h",66,102,126,0,161,0,8,0
8090 DATA "i",128,16,0,4,64,0,4,0
8100 FOR a=1 TO 9: READ a$: FOR b=0 TO 7: REA
D c: POKE USR a$+b,c: NEXT b: NEXT a
8200 LET blue=1: LET red=2: LET magenta=3: LE
T green=4: LET cyan=5: LET yellow=6: LET whit
e=7: LET black=0
8999 RETURN
9999 BORDER 7: INK 0: PAPER 7: CLS
```


Russian Roulette

The six-shooter points straight at you. There is only one bullet somewhere in the cylinder. Spin the cylinder as much as you wish and then press the trigger — if you dare!

```
  10 REM *RUSSIAN ROULETTE                  @19
83 MICHAEL BEWS
  20 BORDER 0: INK 7: PAPER 0
  30 LET F=1: LET SC=0: LET HS=0
 100 CLS : PRINT  INK 7; PAPER 2;"RUSSIAN ROU
LETTE";TAB 0;
 110 CIRCLE 126,119,32
 120 CIRCLE 146,131,6
 130 CIRCLE 146,107,6
 140 CIRCLE 126,95,6
 150 CIRCLE 106,107,6
 160 CIRCLE 106,131,6
 170 CIRCLE 126,143,6
 180 CIRCLE 126,119,14
 185 CIRCLE 126,119,13
 187 CIRCLE 126,119,12
 200 PRINT AT 11,15;"■■";AT 12,15;"■■";AT 13,
15;"■■";AT 14,15;"■■";AT 15,15;"■■"
 210 PRINT AT 2,15;" "
 220 PRINT  PAPER 1; INK 7;AT 16,0;"THIS IS A
 REVOLVER, POINTING AT YOU. IT HAS ONE BULLET
. PRESS   'A' TO SPIN THE CYLINDER FOR AS LON
G AS YOU WISH AND FIRE WITH  'B'. SCORE 100 E
ACH TIME THE GUNFAILS TO KILL YOU,THEN TRY AG
AIN"
 230 PRINT AT 0,18; INVERSE 1;"THIS SCORE:
";AT 1,15;"HIGHEST SCORE:    "
 250 LET A=PEEK 23556: IF A=255 THEN  GO TO 2
50
 252 BEEP .002,30
 255 PRINT AT 6,15;"  ";AT 7,15;"  ";AT 12,20
;"            ";AT 14,20;"            "
 260 IF A<>65 THEN  GO TO 400
 300 PLOT  OVER 1;146,131: LET F=1: PLOT  OVE
R 1;146,131
```

```
 305 LET A=PEEK 23556: IF A<>65 THEN  GO TO 2
50
 310 PLOT  OVER 1;146,107: LET F=2: PLOT  OVE
R 1;146,107
 315 LET A=PEEK 23556: IF A<>65 THEN  GO TO 2
50
 320 PLOT  OVER 1;126,95: LET F=3: PLOT  OVER
 1;126,95
 325 LET A=PEEK 23556: IF A<>65 THEN  GO TO 2
50
 330 PLOT  OVER 1;106,107: LET F=4: PLOT  OVE
R 1;106,107
 335 LET A=PEEK 23556: IF A<>65 THEN  GO TO 2
50
 340 PLOT  OVER 1;106,131: LET F=5: PLOT  OVE
R 1;106,131
 345 LET A=PEEK 23556: IF A<>65 THEN  GO TO 2
50
 350 PLOT  OVER 1;126,143: LET F=6: PLOT  OVE
R 1;126,143
 360 GO TO 250
 400 IF A<>66 THEN  GO TO 250
 410 IF F=1 THEN  PRINT  INK 2; PAPER 7; FLAS
H 1;AT 6,15;"■■";AT 7,15;"■■";: PRINT AT 12,2
0;"YOU'RE DEAD!";AT 14,20;"BULLET IN ";F: GO
TO 500
 420 PRINT AT 12,20;"YOU SURVIVED";AT 14,20;"
BULLET IN ";F
 430 LET SC=SC+100: PRINT  INVERSE 1;AT 0,29;
"  ";AT 0,29;SC
 440 IF PEEK 23556<>255 THEN  GO TO 440
 445 BEEP .1,8: BEEP .1,5: BEEP .1,1
 450 GO TO 250
 500 IF HS<SC THEN  LET HS=SC
 505 LET SC=0
 510 PRINT  INVERSE 1;AT 1,29;"   ";AT 1,29;H
S
 515 PRINT  INVERSE 1;AT 0,29;"   ";AT 0,29;S
C
 520 IF PEEK 23556<>255 THEN  GO TO 520
 522 BEEP .1,1: BEEP .1,1: BEEP .1,0: BEEP .1
,1
 530 LET F=1: GO TO 250
```


Swordsman

Choose your moment, then swiftly thrust your sturdy blade into the gaping jaws of some hideous monster. Beastmaster you'll never be, these nasties are definitively untameable, but swordsman you might just about manage. It's all quite simple. You just have to survive and get as many points as possible before some hideous creature does for you. Maybe the Vampire Cat will get to chew on your jugular. Who can tell? Quick. Lunge and thrust, missed . . . back to the left quickly . . . missed again . . Aaargh . . . !

```
  1 BORDER 4: INK 1: PAPER 4
  2 POKE 23685,255
 10 REM     SWORDSMAN                        B
Y H. WALWYN                    FOR THE CBM 64
                                             C
ONVERTED FOR THE 16/48K                SPECTRU
M                         BY ANDY GREEN
 25 LET MZ=0
 30 DIM E$(4,64): LET E$(1)="YOU ARE UNHARME
D AND RARING TO  GO
   "
 31 LET E$(2)="YOU ARE SLIGHTLY WOUNDED NOW.
  BE BRAVE                                  "
 32 LET E$(3)="YOU HAVE RECEIVED MULTIPLE
  LACERATIONS.                              "
 33 LET E$(4)="IT'S YOUR LAST CHANCE NOW. GO
OD LUCK...                                  "
100 DIM V(9)
110 FOR J=1 TO 9: READ V(J): NEXT J
120 DATA 3,4,3,4,2,5,2,2,4
150 REM ** VK=NUMBER OF DEAD       MONSTERS
160 REM ** WK=WOUNDED LEVEL
170 REM ** PK=POINTS SCORED
180 LET VK=0: LET PK=1: LET WK=1
200 DIM V$(9,17)
210 FOR K=1 TO 9: READ V$(K): NEXT K
220 DATA "GANGRENE GOAT","NORTH-SEA BOIL","V
AMPIRE CAT"
230 DATA "POLITICAL WORM","MAD METER-MAID","
```

```
SCHOOL SPINACH"
 240 DATA "DANDRUFFFED BEAR","RAMPANT BANKER"
,"PICKLED ALBATROSS"
 500 DIM D$(4,3,4): DIM M$(9,4,3,5)
 510 FOR I=1 TO 4: FOR J=1 TO 3: READ D$(I,J)
 530 NEXT J: NEXT I
 550 REM ** THESE DATA LINES     (600-620) CON
TAIN THE VARIOUS   STANCES OF THE SWORDSMAN
 600 DATA " O|"," O "," ))"
 602 DATA " O|"," O ","(("
 604 DATA " O /"," O-"," X"
 606 DATA " O","O--","/ )"
 650 FOR K=1 TO 9: FOR J=1 TO 4: FOR I=1 TO 3
 660 READ M$(K,J,I)
 680 NEXT I: NEXT J: NEXT K
 699 REM ** THESE DATA LINES     (700-876) CON
TAIN THE VARIOUS   STANCES OF THE MONSTERS WH
O      OPPPOSE THE SWORDSMAN
 700 DATA " O ","■■-","))"
 702 DATA "  O ","  ■ _","'\\"
 704 DATA " O ","■■-","'\"
 706 DATA "O  /","  \","("
 720 DATA "***","*O:O*","* ■ *"
 722 DATA "***","*O:O*","* ■ *"
 724 DATA "***","*O:O*",""
 726 DATA "***","*O:O*","* ■ *"
 740 DATA "","O- "," X"
 742 DATA "","O- "," |"
 744 DATA "","O--","\\"
 746 DATA "","O- ","//"
 760 DATA "","■OO  O"," OO O"
 762 DATA "","■O  OO"," OO  O"
 764 DATA "","OO O","■OO  O"
 766 DATA "","O O  ","■OO OO"
 780 DATA "$$$$$","$O.O$","<< >>"
 782 DATA "$$$$$","$O.O$"," X X"
 784 DATA "$$$$$","$O.O$","<< >>"
 786 DATA "$$$$$","$O.O$"," X X"
 800 DATA "■■ ■","■O■■"," ■■"
 802 DATA "■■■","■■■■","O■■"
 804 DATA " ■■","■■■","■ ■"
 806 DATA "■ ■","■■ ■","■O■"
 820 DATA "*OO*."," ","  B  "
```



```
 822 DATA "*OO*","   .","  E  "
 824 DATA "*OO*","  ","  A  ."
 826 DATA "*OO*","  ","  R  "
 840 DATA " O","-:-","X"
 842 DATA " O","  :  ","( )"
 844 DATA " O","|:|","< >"
 846 DATA " O","■■■","/ \"
 860 DATA "  ■ ","O -<","'' "
 862 DATA "O--<","'' ",""
 864 DATA "O\\<","  ■ ",""
 866 DATA "","O--<","''"
 999 REM ** START OF GAME
1000 CLS
1100 GO SUB 4000
1900 GO TO 1000
2750 FOR L=1 TO 100: NEXT L: RETURN
2760 PRINT AT 10,0; INVERSE 1;"THE ";V$(MZ);"
 CUT YOU UP"
2765 FOR I=1 TO 100: NEXT I: RETURN
2799 REM ** CLEAR TOP OF SCREEN
2800 FOR X=0 TO 10: PRINT AT X,0;"
                                "
2815 NEXT X
2817 PRINT AT 0,0;
2820 RETURN
2950 LET MR=MZ
2960 LET MZ=INT (RND*9)+1: IF MZ=MR THEN  GO
TO 2960
2970 RETURN
4000 GO SUB 2950: REM ** MONSTER BATLE
4002 INVERSE 1: PRINT AT 9,0;"
                              "
4003 PRINT "                                  "
4004 PRINT "                                  "
4005 PRINT "  IT'S THE ";V$(MZ);"  !   "
4006 PRINT " (DEGREE OF DIFFICULTY TO KILL
                                    ";AT 14,0;"= "
;V(MZ);")"
4007 PRINT ;E$(WK)
4008 INVERSE 0
4010 LET M7=4: LET D7=2: LET M8=INT (RND*6+20
): LET D8=15: LET M6=4: LET D6=2: LET M9=M8:
LET D9=D8
```

```
4015 PRINT AT 0,0;"TOTAL POINTS=";PK
4020 LET A$=INKEY$
4025 IF A$="5" THEN  LET D8=D8-1: LET D7=1: I
F D8<4 THEN  LET D8=4
4030 IF A$="8" THEN  LET D8=D8+1: LET D7=2: I
F D8>27 THEN  LET D8=27
4035 IF A$="6" THEN  LET D7=D7+1: IF D7>3 THE
N  LET D7=4: LET D8=D8+1: IF D8>27 THEN  LET
D8=27
4036 IF A$="6" AND D7=2 THEN  LET D7=3
4037 PRINT AT 6,D9-1;"      ";AT 7,D9-1;"
";AT 8,D9-1;"      "
4038 FOR X=0 TO 2: PRINT AT 6+X,D9;D$(D7,X+1)
: NEXT X
4039 LET D9=D8: LET D6=D7
4040 IF D7=4 THEN  GO TO 4060
4050 GO TO 4085
4060 FOR X=0 TO 2: PRINT AT 6+X,M9;M$(MZ,M6,X
+1): NEXT X
4065 FOR Z=0 TO 1
4068 LET Z1=CODE (SCREEN$ (7,1+D8+Z)): IF Z1<
>32 AND Z1<>43 AND Z1<>45 THEN  GO TO 4090
4070 PRINT AT 7,2+D8;"+"
4072 NEXT Z
4062 LET D7=2
4085 LET M7=M7+1: IF M7=5 THEN  LET M7=1
4086 IF RND>.35 THEN  LET M8=M8-1
4087 PRINT AT 6,M9-1;"       ";AT 7,M9-1;"
  ";AT 8,M9-1;"       "
4088 FOR X=0 TO 2: PRINT AT 6+X,M8;M$(MZ,M6,X
+1): NEXT X: IF M8<D8+2 THEN  GO TO 4100
4089 LET M9=M8: LET M6=M7: GO TO 4020
4090 PRINT  INVERSE 1;AT 10,0;"WELL DONE! YOU
 GOT THE           ";V$(MZ);"
"
4091 LET P5=INT (V(MZ)*D8): LET VK=VK+1: LET
WK=WK-1: IF WK<1 THEN  LET WK=1
4092 PRINT AT 0,0;"POINTS FOR KILL = ";P5: LE
T PK=PK+P5: GO SUB 2750
4093 GO SUB 2800
4095 RETURN
4100 LET WK=WK+1
4102 IF WK<5 THEN  PRINT AT 0,0;"TRY AGAIN...
```



```
": GO SUB 2760: GO SUB 2800: GO TO 4001
4103 CLS
4105 PRINT '''': FOR I=1 TO 3: PRINT "OH DEAR
...";
4106 POKE 23692,255
4107 BORDER I: FOR J=1 TO 50: NEXT J: NEXT I
4110 PRINT '"AAAAAAAAARGH!!!!"
4120 PRINT '"ANOTHER HERO BITES THE DUST."
4125 PRINT '"YOU KILLED ";VK;" MONSTERS"'"SCO
RING ";PK;" POINTS."
4130 PRINT '"PRESS 'Y' TO PLAY AGAIN, 'N'
TO FINISH."
4132 IF INKEY$<>"" THEN  GO TO 4132
4133 IF INKEY$<>"Y" AND INKEY$<>"N" THEN  GO
TO 4133
4134 IF INKEY$="Y" THEN  RUN
4135 STOP
```

Hangman

In this rather sophisticated game of Hangman the computer invites you to guess words from a range of topics, including animals, countries of the world, composers and artists, chemical elements, christian names and general verbs.

The strings from which the words are chosen by the computer are stored in A$ and you may wish to modify the program to include your own words and topics or to combine all the existing topics so that the selected word can be taken randomly from any one of them. Note that some of the topics are divided up into two distinct groups of words of different lengths and random number routines are used in the program to determine which group the word is to be chosen from.

```
   1 RANDOMIZE : BORDER 7: PAPER 7: INK 0: CL
S
   2 REM @ PAUL STANLEY
   4 GO SUB 7000
   5 POKE 23658,10
  10 GO TO 1000
 100 IF RND>.5 THEN  GO TO 125
 110 LET A$="PIGEONDONKEYBUDGIEMAGGOTJAGUARSP
IDERBEETLEWEEVILEARWIGSHRIMPSALMONPLAICEMINNO
WBADGERCATTLEKITTENLOCUSTMAGPIERABBITTURKEYTU
RTLECANARYGERBILMONKEYCURLEW"
 120 LET I=(INT (RND*25)+1)*6-5: LET B$=A$(I
TO I+5): RETURN
 125 LET A$="SNAILROACHHIPPOLLAMACHIMPCAMELHO
RSETIGERHOUNDSNAKEROBINHERONRAVENSTORKTROUTWH
ALEHYENAPANDASKUNKTAPIRZEBRAMOUSESHREWEAGLESW
IFTPERCHPRAWNOTTERGOOSEKOALASHEEP"
 130 LET I=(INT (RND*31)+1)*5-4: LET B$=A$(I
TO I+4): RETURN
 150 IF RND>.5 THEN  GO TO 175
 160 LET A$="ALBANIAAUSTRIABELGIUMDENMARKFINL
ANDGERMANYHUNGARYICELANDIRELANDRUMANIABAHRAIN
LEBANONALGERIALIBERIANIGERIASENEGALTUNISIABER
MUDAJAMAICABOLIVIAURUGUAY"
 170 LET I=(INT (RND*21)+1)*7-6: LET B$=A$(I
TO I+6): RETURN
```



```
 175 LET A$="TURKEYUGANDASWEDENPOLANDNORWAYME
XICOKUWAITISRAELGREECEZAMBIAFRANCECYPRUSCANAD
ABRAZILTAIWANPANAMAMALAWIJORDANAZORESANGOLA"
 185 LET I=(INT (RND*20)+1)*6-5: LET B$=A$(I
TO I+5): RETURN
 200 LET A$="PURCELLROSSINIBELLINIBERLIOZBORO
DINPUCCINIDEBUSSYSTRAUSSBRITTENHOLBEINMILLAIS
DAUMIERCEZANNEGAUGUINMATISSEPICASSO"
 210 LET I=(INT (RND*16)+1)*7-6: LET B$=A$(I
TO I+6): RETURN
 250 IF RND>.5 THEN  GO TO 275
 260 LET A$="BARIUMCARBONCERIUMCOBALTCOPPERCU
RIUMERBIUMHELIUMINDIUMIODINENICKELOSMIUMOXYGE
NRADIUMSILVERSODIUM"
 265 LET I=(INT (RND*16)+1)*6-5: LET B$=A$(I
TO I+5): RETURN
 275 LET A$="ARSENICBISMUTHBROMINECADMIUMCAES
IUMCALCIUMFERMIUMGALLIUMHAFNIUMHOLMIUMIRIDIUM
KRYPTONLITHIUMMERCURYRHENIUMRHODIUMSILICONSUL
PHURTERBIUMTHORIUMTHULIUMYTTRIUM"
 280 LET I=(INT (RND*22)+1)*7-6: LET B$=A$(I
TO I+6): RETURN
 300 LET A$="JAMESDAVIDEDGARHENRYCAROLHELENBR
IANSALLYSARAHSUSANPETERSIMONMANDYKEVINSCOTTNI
GELMILESROBINVENUSROMEOCECILDYLANPERCYLEIGHEM
ILYPABLOFRANKCLIVEDIANANICKYTRACYBARRYGEOFFTE
RRY"
 320 LET I=(INT (RND*34)+1)*5-4: LET B$=A$(I
TO I+4): RETURN
 350 IF RND>.5 THEN  GO TO 375
 360 LET A$="CARRYCATCHMARRYLAUGHTWISTBRINGFE
TCHWRITECLIMBWORRYGLIDEAWASHSHOOTDODGEPUNCHSM
ACKSCALETHROWLOATHDRIVEPRESSTASTESPEAKHURRYSC
ORETRAILFORCEPROVETRACEPAINT"
 370 LET I=(INT (RND*30)+1)*5-4: LET B$=A$(I
TO I+4): RETURN
 375 LET A$="COLOURTHRILLUNLOCKAFFECTABDUCTFO
LLOWATTACKDEFENDDIFFERSELECTOUTPUTDEFINECHANC
EMODIFYREMAINACCEPTSPRINGASSUREVANISHFINISHTR
AVEL"
 390 LET I=(INT (RND*21)+1)*6-5: LET B$=A$(I
TO I+5): RETURN
1000 PRINT AT 0,9; PAPER 3; INK 7;"H A N G M
A N"
```

```
1005 PRINT  INK 1''"Which subject do you want
?"
1010 PRINT  INK 4''"1.....ANIMALS"' INK 3'"2.
....COUNTRIES OF THE WORLD"' INK 4'"3.....COM
POSERS & ARTISTS"
1020 PRINT  INK 3'"4.....CHEMICAL ELEMENTS"'
INK 4'"5.....CHRISTIAN NAMES"' INK 3'"6.....G
ENERAL VERBS"
1050 PRINT ' INK 2'"Press the appropriate key
."
1060 LET i$=INKEY$: IF CODE I$<49 OR CODE I$>
54 THEN  GO TO 1060
1070 GO SUB 50+50*VAL i$
1080 LET C$=B$: CLS
1090 PRINT  PAPER 3; INK 7;AT 0,15;"H A N G M
 A N"
1100 LET S=0: LET C=0: LET l=LEN b$: LET Y=13
: LET X=15
1105 PRINT AT 11,15; INK 2;"Your guesses:"
1110 FOR f=1 TO l: PRINT AT 3,13+f*2; INK 4;"
_": NEXT f
1120 PRINT AT 7,15;"Guess a letter"
1130 LET I$=INKEY$: IF I$="" THEN  GO TO 1130
1140 IF CODE I$<65 OR CODE I$>90 THEN  GO TO
1130
2000 LET S1=S: FOR F=1 TO L
2010 IF I$=B$(F) THEN  LET B$(F)="*": GO TO 2
100
2020 NEXT F: IF S=S1 THEN  BEEP .4,-15: BEEP
.4,-25: GO SUB 5000+10*C: LET C=C+1
2030 IF S=S1 THEN  PRINT  INK 4;AT Y,X;I$: LE
T X=X+2: IF X=33 THEN  LET X=15: LET Y=Y+2
2040 GO TO 1120
2100 PRINT  INK 2;AT 3,13+F*2;I$
2110 BEEP .3,30: LET S=S+1: IF S=L THEN  GO T
O 3000
2115 NEXT F
2130 GO TO 1120
3000 PRINT AT 20,0;"WELL DONE! YOU CORRECTLY
GOT     ";C$;" IN ";C+S;" GUESSES"
3010 FOR F=1 TO 400: NEXT F: CLS : GO TO 1000
5000 PRINT AT 17,1; INK 5;"■■■■■■■■■■■■■■■■": R
ETURN
```



```
5010 FOR F=5 TO 16: PRINT  INK 3;AT F,2;"■":
NEXT F: RETURN
5020 PRINT AT 4,2; INK 4;"          ": RETURN
5030 FOR F=0 TO 5: INK 2: PLOT 24,112+F: DRAW
 23-F,23-F: NEXT F: INK 0: RETURN
5040 PRINT  INK 1;AT 5,9;" ": RETURN
5050 INK 2: CIRCLE 73,118,9: PLOT 70,120: DRA
W 1,0: DRAW 0,1: DRAW -1,0: PLOT 76,120: DRAW
 1,0: DRAW 0,1: DRAW -1,0
5052 PLOT 73,118: DRAW 3,-3: DRAW -2,0: DRAW
-1,1
5056 PLOT 69,115: DRAW 10,0,2: INK 0: RETURN
5060 FOR F=72 TO 75: PLOT F,104: DRAW 0,4: NE
XT F
5062 PRINT  INK 3;AT 9,8;"■■ "; INK 5;AT 10,7
;" ■■■"; INK 3;AT 11,8;"■■ "; INK 5;AT 12,8;"
  ": RETURN
5070 PLOT 83,104: DRAW 10,10: DRAW 1,0: DRAW
-10,-10: FOR F=1 TO 3: CIRCLE 97,116,F: NEXT
F: RETURN
5080 PLOT 64,104: DRAW -10,10: DRAW -1,0: DRA
W 10,-10: FOR F=1 TO 3: CIRCLE 51,116,F: NEXT
 F: RETURN
5090 INK 5: FOR F=1 TO 4: PLOT 67+F,79: DRAW
-20,-30: NEXT F
5092 INK 0: PRINT AT 16,5;"  ": RETURN
5100 INK 5: FOR F=1 TO 4: PLOT 79+F,79: DRAW
20,-30: NEXT F
5102 INK 0: PRINT AT 16,12;"  "
5110 PRINT AT 20,0;"BAD LUCK! YOU'VE BEEN HAN
GED.   THE ANSWER WAS ";B$
5120 GO TO 3010
7000 FOR L=5000 TO 5090 STEP 10: GO SUB L: NE
XT L
7050 INK 5: FOR F=1 TO 4: PLOT 79+F,79: DRAW
20,-30: NEXT F
7060 INK 0: PRINT AT 16,12;"  "
7080 FOR F=1 TO 3: FOR I=1 TO 11: BEEP .02,I:
 NEXT I: LET I=USR 3280: NEXT F
8000 PRINT  INK 7;"■ ■  ■  ■  ■ ■■■ ■   ■  ■
 ■  ■ ■ ■ ■ ■ ■  ■ ■   ■   ■ ■ ■ ■  ■ ■■■ ■■■
 ■  ■ ■   ■ ■ ■ ■■■ ■  ■ ■ ■ ■ ■ ■  ■ ■ ■ ■
 ■ ■ ■ ■  ■ ■ ■ ■ ■ ■  ■ ■■■ ■   ■ ■ ■ ■  ■"
```

```
8010 FOR F=7 TO 0 STEP -1: FOR I=17 TO 21: PR
INT AT I,0; OVER 1; INK F;"
                ": BEEP .01,5: BEEP .01,10: NEX
T I: NEXT F
9000 PRINT AT 5,16; INK 3;"@ Paul Stanley"
9500 PAUSE 250: CLS : RETURN
```


Roots

You are about to see your infallible micro make an unbelievably simple mistake — that even a four year old child would spot!

In the section of the program where you are asked to enter numbers yourself, we have actually included an ABS function in LINE 670 to help your computer out of its predicament! Computers are happiest in Binary arithmetic but would probably settle for Hexadecimal as a compromise — but if we humans insist that micros communicate with us in the Decimal system then we have only ourselves to blame if the computer seems to get it wrong occasionally.

```
  10 REM ** **   R O O T S
@1983 MICHAEL BEWS
  15 BORDER 3: INK 7: PAPER 1
  20 POKE 23609,111
  50 FOR X=1 TO 3: FOR Y=0 TO 7: READ a: POKE
 USR CHR$ (143+X)+Y,a: NEXT y: NEXT X
  60 FOR X=1 TO 4: FOR Y=0 TO 7: READ a: POKE
 USR CHR$ (146+X)+Y,a: NEXT y: NEXT X
 100 CLS : PRINT " R O O T S   @1983 MICHAEL
BEWS "
 110 PRINT  INVERSE 1;"THIS PROGRAM CALCULATE
S ROOTS   USING BOTH THE INTERNAL ' ^ '   FUN
CTION IN THE COMPUTER ROM ANDNEWTON/RAPHSON R
EITERATIVE      APPROXIMATION.
   "
 115 PRINT  INK 7; PAPER 2; FLASH 1;"   WHEN
IS A '5' NOT A '5' ??   "
 120 PRINT  INVERSE 1;"    THE PROGRAM WILL D
EMONSTRATEONE OF THE PROBLEMS FACED BY    YOU
R COMPUTER WHEN IT TRIES TO  "
 130 PRINT  INVERSE 1;"CONVERT THE RESULT OF
ITS BINARYSYSTEM CALCULATIONS INTO DECIMAL
FOR DISPLAY ON THE SCREEN.   "
 140 PRINT  INVERSE 1;"ALTHOUGH WE WOULD NEED
 TO EMPLOYMACHINE CODE METHODS TO ACTUALLYSEE
 THE 'BIT' DIFFERENCE BETWEENTWO SEEMINGLY ID
ENTICAL NUMBERS,WE CAN"; OVER 1;CHR$ 8;CHR$ 8
;CHR$ 8; INK 1; PAPER 7;"___"; OVER 0;
```

```
 150 PRINT  INVERSE 1;" SHOW YOU THE 'IMPOSSI
BLE'  AS YOUR COMPUTER 'FAILS' TO  RECOGNISE
 THE NUMBER FOR WHICH  IT IS SEARCHING!
          "
 160 INPUT  INK 7; PAPER 2;"PRESS <ENTER>  ";
X$
 170 CLS : PRINT " R O O T S   @1983 MICHAEL
BEWS "
 175 PRINT  INVERSE 1;" ";TAB 0;"ANY ROOT MAY
 BE CALCULATED BY  REITERATIVE APPROXIMATION
 USING "
 180 PRINT  INVERSE 1;" ";TAB 0;"    A =1/2
N    + G*(R-1)/F            R£G^(R-1)
 G";TAB 0;
 185 PLOT 56,128: DRAW  INVERSE 1;6,0: PLOT 7
2,128: DRAW  INVERSE 1;52,0
 187 PRINT  INVERSE 1;" ";TAB 0;"WHERE N=ORIG
INAL NUMBER               R=ROOT NUMBER REQUI
RED          G=ANY NUMBER
A=APPROXIMATION TO AN              PRODUCED B
Y THE FORMULA"
 188 PRINT  INVERSE 1;" ";TAB 0;"IF A<>G THEN
 WE LET G=A AND     REPEATEDLY APPLY THE FORM
ULA,   MAKING G EQUAL TO THE PRECEDING VALUE
OF 'A' UNTIL A=G. AT THIS POINT";TAB 0;"
       A = AN";TAB 0;
 190 INPUT  INVERSE 1;"PRESS<ENTER> ";X$
 192 CLS : PRINT " R O O T S   @1983 MICHAEL
BEWS "
 195 PRINT  INVERSE 1;" ";TAB 0;"    A =1/2
N    + G*(R-1)/F            R£G^(R-1)
 G";TAB 0;
 196 PLOT 56,152: DRAW  INVERSE 1;6,0: PLOT 7
2,152: DRAW  INVERSE 1;52,0
 200 PRINT  INK 7; PAPER 2;"       EXAMPLE TO
 FIND BA16     "
 210 PRINT  INVERSE 1;" ";TAB 0;"LET G=3 (A R
EASONABLE GUESS AS      BA16=■ AS YOU KNOW!)"
;TAB 0;
 220 LET G=3: LET N=16
 225 GO SUB 230
 227 GO TO 235
 230 LET A=(N/G+G)/2: RETURN
```



```
 235 PRINT  PAPER 5; INK 0;"G=";G;" GIVES A="
;A;TAB 0;
 240 PRINT  INVERSE 1;"WE NOW LET G=";A;TAB 0
;"    AND TRY THE FORMULA AGAIN    "
 245 LET G=A: GO SUB 230
 250 PRINT  INK 0; PAPER 5;"G=";G;" GIVES A="
;A;TAB 0;
 260 IF A=G THEN  GO TO 280
 270 GO TO 245
 280 PRINT  INVERSE 1;"       THEREFORE A16 =
 ";A;TAB 0;" ";TAB 0;
 285 PRINT  INK 7; PAPER 2;" YOUR COMPUTER SA
YS THAT BA16=";A;" "
 290 PRINT  FLASH 1;AT 21,0;" LOOK AT THIS EX
AMPLE CAREFULLY "
 300 INPUT  PAPER 6; INK 1;"AND THEN PRESS <E
NTER> ";X$
 310 PRINT  INVERSE 1;AT 5,0;: FOR X=1 TO 16:
 PRINT  INVERSE 1;" ";TAB 0;: NEXT X: PRINT T
AB 31;" "
 320 PRINT  INK 7; PAPER 2;AT 4,0;"       EXA
MPLE TO FIND BA25     "
 330 PRINT  INVERSE 1;" ";TAB 0;"LET G=3 AGAI
N(BA25=5 AS WE KNOW)"
 340 LET G=3: LET N=25: GO SUB 230
 350 PRINT  PAPER 5; INK 0;"G=";G;" GIVES A="
;A;TAB 0;
 360 PRINT  INVERSE 1;"WE NOW LET G=";A;TAB 0
;"    AND TRY THE FORMULA AGAIN    "
 370 LET G=A: GO SUB 230
 380 PRINT  INK 0; PAPER 5;"G=";G;" GIVES A="
;A;TAB 0;
 390 IF A=G THEN  GO TO 400
 395 GO TO 370
 400 PRINT  INVERSE 1;"       THEREFORE A25 =
 ";A;TAB 0;
 402 PRINT  INVERSE 1;TAB 14; FLASH 1;"BUT";
FLASH 0;TAB 0; ●
 405 PRINT  INK 7; PAPER 2;"YOUR COMPUTER ";
FLASH 1;"FAILED"; FLASH 0;" TO STOP ON THE FI
RST "; INK 0; PAPER 5;"G=5 GIVES A=5"; INK 7;
 PAPER 2;"  BECAUSE  G DOES NOT EQUAL PRECISE
LY 5!!"
```

```
 410 PRINT AT 21,0; FLASH 1;"ENTER"; FLASH 0;
" 'R' TO REPEAT THE EXAMPLES"
 420 INPUT  INK 7; PAPER 1;"OR <ENTER> TO TRY
 YOUR OWN";X$
 430 IF X$="R" OR X$="r" THEN  GO TO 192
 440 CLS : PRINT " R O O T S   @1983 MICHAEL
BEWS "
 500 PRINT AT 1,0;"ENTER NUMBER (N): "
 505 INPUT  INVERSE 1;">0 AND <1000000  ";N$
 510 IF N$="" THEN  GO TO 505
 515 FOR X=1 TO LEN N$: IF N$(X)<"0" OR N$(X)
>"9" THEN  GO TO 505
 520 NEXT X
 530 LET N=VAL N$: IF N<.01 OR N>1000000 THEN
  GO TO 505
 540 PRINT  INVERSE 1;AT 1,18;N
 550 PRINT AT 2,0;"ENTER NUMBER OF THE DESIRE
D ROOT"
 560 INPUT  INVERSE 1;"ROOT (>1 AND <100) ";R
$
 570 IF R$="" THEN  GO TO 560
 580 FOR X=1 TO LEN R$: IF R$(X)<"0" OR R$(X)
>"9" THEN  GO TO 560
 590 NEXT X
 600 LET R=VAL R$: IF R<2 OR R>99 THEN  GO TO
 560
 605 PRINT AT 3,5;": ROOT NUMBER = "; INVERSE
 1;R
 610 LET G=2*(N^(1/R)): LET X=1
 650 LET A=(N/G^(R-1)+G*(R-1))/R
 660 PRINT AT 6,0;X;">  A=";A
 670 IF ABS (A-G)<.0001 THEN  GO TO 700
 680 LET X=X+1: LET G=A: GO TO 650
 700 PRINT  INVERSE 1;AT 8,0;"THE ";R;" ROOT
OF ";N;" IS     ";TAB 19;A;TAB 0;
 710 PRINT AT 13,0;"CHECK,USING COMPUTER '^'F
UNCTION";" ";TAB 0;A;" ^ ";R;" = ";A^R
 720 PRINT  INVERSE 1;AT 21,0;"         ENTER
'Q' TO QUIT         "
 730 INPUT  INVERSE 1;"OR <ENTER> TO TRY AGAI
N ";X$
 740 IF X$="Q" OR X$="q" THEN  STOP
 750 GO TO 440
```



```
 999 STOP
1000 DATA 31,16,16,16,144,80,32,0
1010 DATA 112,144,32,64,240,0,0,0,240,16,112,
16,240,0,0,0
1030 DATA 2,4,8,8,16,16,32,32,32,16,16,8,8,4,
2,0,64,32,16,16,8,8,4,4,4,8,8,16,16,32,64,0
```

Bulls and Cows

Choosing a four digit number, the computer will respond to your guesses (or deductions, we hope) by displaying a bull when you get a correct digit in the the right place, and a cow when a number you input also occurs in the computers' number, but not in the same place. You should note that the computers number can have the same digit repeated.

You can choose the number of guesses you're allowed, making it more difficult for yourself as you get more practiced.

```
   1 REM Bulls and Cows @ Robert Erskine
  10 GO SUB 9000
  20 GO SUB 8000
  26 FOR x=1 TO 4
 100 RANDOMIZE : LET R=RND: INPUT "How many g
uesses do you want?";t
 110 GO SUB 1000
 120 CLS : PRINT "I have chosen a number": PA
USE 100
 130 GO SUB 2000
 135 FOR q=1 TO t
 140 INPUT "ENTER YOUR GUESS NOW (4 digits) "
; LINE g$: IF LEN g$<>4 THEN  PRINT #1; FLASH
 1;"reinput correctly!!": PAUSE 60: GO TO 140
 145 FOR f=1 TO 4: IF CODE g$(f)<48 OR CODE g
$(f)>57 THEN  PRINT #1; FLASH 1;"Numbers only
!!": PAUSE 60: GO TO 140: NEXT f
 150 GO SUB 200
 160 GO SUB 3000
 170 IF black<4 THEN  NEXT q
 180 PAUSE 100: GO SUB 4000
 190 PRINT AT 21,4;"PRESS ANY KEY TO RESTART"
: PAUSE 0: GO TO 100
 200 LET black=0: LET white=0
 205 DIM a(4): DIM h(4)
 210 FOR x=1 TO 4
 215 LET a(x)=VAL (g$(x))
 217 NEXT x
 220 FOR x=1 TO 4
 230 IF a(x)=n(x) THEN  LET black=black+1
```



```
 240 IF a(x)=n(x) THEN  LET h(x)=1
 250 NEXT x
 260 FOR x=1 TO 4
 270 FOR y=1 TO 4
 280 IF a(x)=n(y) AND h(y)=0 THEN  LET white=
white+1: LET h(y)=1: GO TO 310
 290 NEXT y
 310 NEXT x
 320 PRINT g$;
 330 RETURN
1000 DIM n(4): REM choose
1010 FOR x=1 TO 4
1020 LET n(x)=INT (RND*9)+1
1030 NEXT x
1040 RETURN
2000 BORDER 0: PAPER 1: INK 7: CLS
2010 PRINT "GUESSES     BULLS     COWS"
2020 PRINT
2030 RETURN
3000 IF black=0 THEN  GO TO 3070
3010 LET f=13
3020 FOR x=1 TO black
3030 PRINT TAB (f); INK 0;"A";
3040 BEEP .1,25
3050 LET f=f+1
3060 NEXT x
3070 IF white=0 THEN  GO TO 3130
3080 LET f=22
3085 FOR x=1 TO white
3090 PRINT  INK 7;TAB (f);"B";
3100 BEEP .1,25
3110 LET f=f+1
3120 NEXT x
3130 PRINT
3160 RETURN
4000 IF black<4 THEN  GO TO 4030
4010 CLS : PRINT AT 4,0;"You are correct. the
 number ",,,"I chose was ";
4020 GO TO 4040
4030 CLS : PRINT "That was not very good. The
 ",,,"number I chose was ";
4040 FOR x=1 TO 4
4050 PRINT n(x);
```

```
4060 NEXT x
4070 PRINT : PRINT : PRINT ;"and you guessed
";
4080 FOR x=1 TO 4
4090 PRINT a(x);
4100 NEXT x
4110 PRINT
4120 RETURN
8000 PRINT AT 1,8;"Bulls and Cows": PRINT
8010 PRINT "The object of Bulls and cows is",
"to guess a four digit number ","chosen by th
e computer. After ","each guess the computer
will ","give you clues; each bull ","indicate
s a correct digit in thecorrect position and
each cow ","indicates a correct digit in ","t
he wrong position."
8020 PRINT AT 21,4;"Press any key to start"
8030 IF INKEY$="" THEN  GO TO 8030
8040 RETURN
9000 RESTORE : FOR x=USR "a" TO USR "b"+7
9010 READ n
9020 POKE x,n
9030 NEXT x
9040 DATA 0,2,3,255,126,126,66,66,0,0,3,255,1
26,126,66,66
9050 RETURN
```


Invaders

How could we write a Bumper Book of programs without including the classic Invaders games? Well, here it is complete with shields and Mothership and a screen full of the dreaded Aliens.

```
  10 REM *** INVADERS - @1983
  MICHAEL BEWS
  20 DIM I(50)
  30 GO TO 460
  49 REM ******MAIN PROGRAM LOOP
  50 GO SUB 70: GO SUB 220: GO TO 50
  69 REM INVADER SHUFFLE ROUTINE
 100 FOR X=U TO P: IF I(X+L*P)=U THEN  NEXT X
: LET FX=U: FOR X=U TO 49: IF I(X)=U THEN  NE
XT X: GO TO 900
 120 IF FX=U THEN  LET FX=0: GO TO 180
 125 IF L+A>21 THEN  GO TO 800
 130 PRINT AT L+A,0;: IF Z=-U THEN  PRINT "
";
 140 FOR X=U TO P: LET B$=I$: IF I(P*L+X)=U T
HEN  LET B$="     "
 150 PRINT B$;
 160 NEXT X
 180 LET L=L+U: IF L>Q THEN  LET L=0: LET Z=-
Z: LET C=C+U: IF C=V THEN  LET C=0: PRINT AT
A,0;"                                    ";: LET
A=A+U.
 190 IF (L=0 AND A>0) THEN  PRINT AT 0,0;"
                                  ";AT 0,INT (27*R
ND); INK 2;G$
 200 RETURN
 210 REM **KEYBOARD INPUT****
 220 LET X$=INKEY$
 230 IF X$="" THEN  RETURN
 240 IF (CODE X$=11 OR X$="7") THEN  GO SUB 3
30: RETURN
 245 BEEP .08,-40
 250 IF X$<>"5" THEN  GO TO 265
 255 IF XP<U THEN  RETURN
 260 LET XP=XP-U: PRINT AT 20,XP;T$;: RETURN
```

```
 265 IF X$<>"8" THEN  GO TO 280
 270 IF XP>27 THEN  RETURN
 275 LET XP=XP+U: PRINT AT 20,XP;T$;: RETURN
 280 IF CODE X$<>8 THEN  GO TO 290
 285 PRINT AT 20,XP;"    ";: LET XP=XP-V: IF
XP<0 THEN  LET XP=0
 286 PRINT AT 20,XP;T$;: RETURN
 290 IF CODE X$<>9 THEN  RETURN
 292 PRINT AT 20,XP;"    ";: LET XP=XP+V: IF
XP>27 THEN  LET XP=27
 295 PRINT AT 20,XP;T$;: RETURN
 320 REM **ROCKET FIRE******
 330 LET XN=(XP-U+W)*T: LET XS=XN-W*INT (XN/W
): IF (XS<>T AND XS<>T+T) THEN  RETURN
 332 IF RR<1 THEN  PRINT AT 21,15; FLASH 1;"
 TAKE COVER!! 0 "; FLASH 0: RETURN
 334 BEEP .12,35
 335 LET RR=RR-1: PRINT AT 21,30;"  ";AT 21,3
0;RR;
 340 PRINT AT 19,XP+U;"A";
 350 FOR R=18 TO 0 STEP -U: IF SCREEN$ (R,XP+
U)=" " THEN  NEXT R: PRINT AT 19,XP+U;" ";AT
0,XP+U;"A";AT 21,W; FLASH 1;"MISS!"; FLASH 0:
 BEEP .2,-15: FOR X=U TO 80: NEXT X: LET SC=S
C-W: PRINT AT 21,6;"    ";AT 21,6;SC;TAB W;"
    ";AT 0,XP+U;" ": RETURN
 360 FOR X=1 TO 3: PRINT AT R,XP+U;M$;: BEEP
.02,30-(3*X): FOR Y=1 TO 8: NEXT Y: PRINT AT
R,XP+U;" ";: FOR Y=U TO V: NEXT Y: NEXT X: PR
INT AT R,XP;"   ";AT 19,XP+U;" ";: LET SC=SC+
200-(180*SGN R): PRINT AT 21,6;SC;
 370 IF R>=A THEN  LET I(P*(R-A)+U+INT ((XP+1
)/4))=1
 380 RETURN
 459 STOP
 460 CLS : BORDER 1: PRINT  PAPER 1; INK 7;"
I N V A D E R S  @1982 M.BEWS": PRINT AT 0,1;
 OVER 1;"■_____";  OVER
 0
 462 PRINT AT 11,5;"I N I T I A L I S I N G"
 465 FOR X=0 TO 7: READ A,B: POKE USR "S"+X,A
: POKE USR "I"+X,B: NEXT X: LET I$="SI"+"  "
 470 FOR X=0 TO 7: READ A,B: POKE USR "A"+X,A
```



```
: POKE USR "B"+X,B: NEXT X: LET T$=" "+"AB"+"
 "
 480 FOR X=0 TO 7: READ A,B: POKE USR "C"+X,A
: POKE USR "G"+X,B: NEXT X: FOR X=0 TO 7: REA
D A,B: POKE USR "D"+X,A: POKE USR "F"+X,B: NE
XT X: FOR X=0 TO 7: READ A: POKE USR "E"+X,A:
 NEXT X: LET G$="CDEFG"
 490 FOR X=0 TO 7: READ A,B,C: POKE USR "J"+X
,A: POKE USR "K"+X,B: POKE USR "L"+X,C: NEXT
X: LET D$="JKL"+"  "
 495 FOR X=0 TO 6: POKE USR "H"+X,24: NEXT X:
 POKE USR "H"+7,0: LET R$="H"
 497 FOR X=0 TO 7: READ A: POKE USR "M"+X,A:
NEXT X: LET M$="M"
 500 LET RR=60
 510 LET HS=0: LET TS=0
 550 PRINT AT 1,0;"USE YOUR ROCKET LAUNCHER "
;T$;" TO WIPE OUT THE INVADERS  ";I$;
 560 PRINT " ANDTO DAMAGE THE COMMAND SHIP WH
ICH ARRIVES LATER  ";G$;
 570 PRINT : PRINT "YOU CAN NOT FIRE WHILE YO
U ARE  BEHIND A LASER SHIELD  ";D$
 590 PRINT : PRINT "USE LEFT AND RIGHT CURSOR
 ARROWSTO MOVE YOUR LAUNCHER (with CAPS SHIFT
 to move faster).  USE THE  'UP' ARROW TO FI
RE ROCKETS."
 600 PRINT TAB 3;"YOU HAVE ONLY ";RR+1;" ROCK
ETS."
 610 PRINT "* * * * * * * * * * * * * * * * *"
 620 PRINT "SCORE  20  FOR EACH KNOCKED OUT I
NVADER AND  200  FOR EACH      DIRECT HIT ON
THE COMMAND SHIP."
 700 PRINT "LOSE  10  POINTS FOR EACH MISS!!"
 710 PRINT : PRINT " IF INVADERS GET CLOSE TO
 YOU   THEY WILL BECOME INDESTRUCTABLE!"
 720 PRINT TAB 2; FLASH 1;"<PRESS ANY KEY TO
START GAME>"; FLASH 0
 722 IF INKEY$="" THEN  GO TO 722 ■
 725 LET A=0: LET C=0: LET FX=0: LET L=0: LET
 P=7: LET Q=6: LET T=2: LET U=1: LET V=5: LET
 W=10: LET SC=0: LET XP=0: LET Z=1
 730 BORDER 5: PAPER 5: CLS : FOR X=0 TO 6: P
RINT AT X,2;: FOR Y=1 TO 7: PRINT  INK 1;I$;:
```

```
 NEXT Y: NEXT X
 750 PRINT AT 19,0;: FOR X=1 TO 6: PRINT  INK
 3;D$;: NEXT X: PRINT  INK 3;"ZK";
 760 PRINT AT 20,0;T$;
 770 PRINT AT 21,0;"SCORE:";SC;AT 21,15;"ROCK
ET RESERVE:";RR;
 790 GO TO 50
 799 REM ***END OF LOST GAME
 800 PRINT AT 5,0; PAPER 2; INK 7;"YOUR PLANE
T HAS BEEN TAKEN OVER.
         YOU SCORED ";SC;" USING ";60-RR;" RO
CKETS";: GO TO 910
 900 PRINT AT 5,0; PAPER 1; INK 7;"YOU HAVE W
IPED OUT THE INVADERS,";AT 7,0;"SCORED ";SC;"
 AND USED ";60-RR;" ROCKETS";AT 9,1; FLASH 1;
"C O N G R A T U L A T I O N S"; FLASH 0
 910 IF SC>HS THEN  LET HS=SC
 915 LET TS=TS+SC
 920 PRINT AT 11,12; PAPER 6; INK 2;"LAST SCO
RE     ";SC;AT 12,12;"HIGHEST SCORE ";HS;AT 13
,12;"TOTAL SCORE    ";TS;AT 15,2; FLASH 1;"PRE
SS ANY KEY FOR NEXT GAME"
 930 LET X$=INKEY$: IF X$="" THEN  GO TO 930
 940 CLS : PRINT AT 11,12; INK 2; PAPER 6; FL
ASH 1;"STANDBY"; FLASH 0: FOR X=5 TO 1 STEP -
1: PRINT AT 17,15;X;: FOR Y=1 TO 80: NEXT Y:
NEXT X: FOR X=1 TO 49: LET I(X)=0: NEXT X: LE
T SC=0: LET RR=60: LET XP=0: GO TO 725
1000 REM ****USR DEF GRAPHICS
1030 DATA 60,60,140,49,115,206,51,204,63,252,
111,246,193,131,192,3
1040 DATA 27,224,31,240,26,88,62,124,255,255,
255,255,85,170,42,84
1050 DATA 0,0,0,0,0,7,224,31,248,248,31,127,254
,0,0,0,0
1060 DATA 0,0,63,252,240,15,191,253,0,0,255,2
55,127,254,0,0
1070 DATA 126,255,0,195,255,129,255,60
1080 DATA 255,255,255,126,0,126,255,255,255,1
26,0,126,255,255,255,126,0,126,255,255,255,0,
0,0
1090 DATA 0,82,24,124,62,24,74,0
2000 LET X$=INKEY$: IF X$="" THEN  GO TO 2000
```



```
2010 PRINT CODE X$;" ";: GO TO 2000
3000 INPUT A,B,C$: PRINT AT 18,30;" ";AT A,B;
C$;: IF SCREEN$ (4,4)="0" THEN  PRINT AT 18,3
0;"*";
3010 GO TO 3000
```

Mushroom Invasion

All right. So you've dealt with the worst that the galaxies can throw up. The Space Invaders, the asteroid belts, the nightmare timewarp tunnels, the vampire cats — you've seen it all haven't you? Don't you believe it! Things can only get worse. This time around you are faced with a mindless, soulless, heartless fungus . . . the invasion of the mushrooms. It's all over for Earth. The mushrooms already cover half the globe and they're moving in for the final kill. You are the commander of the only surviving security cruiser, and your laser cannons are running low. Wait until you see the whites of their undersides and make every shot count. If they hit your ship you're finished.

```
  1 CLS
  5 PAPER 0: BORDER 0
  8
 10 GO SUB 750
 20 GO SUB 2060
 30 GO SUB 2100
 40 PRINT  BRIGHT 1; INK 1;AT x,y;"MUR"
 45 IF y>27 THEN  LET y=27
 50 IF INKEY$="1" THEN  GO SUB 4000
 60 IF INKEY$="5" THEN  LET y=y-1
 70 IF INKEY$="5" THEN  PRINT AT x,y+3;"   "
 80 IF INKEY$="8" THEN  LET y=y+1
 90 IF INKEY$="8" THEN  PRINT AT x,y-3;"   "
100 IF INKEY$="1" THEN  GO SUB 4000
105 IF y<1 THEN  LET y=1
110 PRINT  BRIGHT 1; INK 1;AT x,y;"MUR"
120 IF ATTR (x-1,y)=2 OR ATTR (x-1,y+1)=2 OR
ATTR (x-1,y+2)=2 THEN  GO SUB 5000
130 GO SUB 3000
140 PRINT AT x,y; BRIGHT 1; INK 1;"MUR"
150 GO TO 40
750 FOR m=0 TO 7: READ x: POKE USR "M"+m,x:
NEXT m
760 FOR m=0 TO 7: READ x: POKE USR "U"+m,x:
NEXT m
770 FOR m=0 TO 7: READ x: POKE USR "R"+m,x:
NEXT m
```



```
780 FOR m=0 TO 7: READ x: POKE USR "S"+m,x:
NEXT m
995 FOR n=0 TO 7: READ x: POKE USR "F"+n,x:
NEXT n
996 FOR n=0 TO 7: READ x: POKE USR "C"+n,x:
NEXT n
1000 RETURN
1020 DATA BIN 00000011,BIN 00000111,BIN 0000
111,BIN 10101010,BIN 10101010,BIN 00001111,BI
N 00000111,BIN 00000011
1030 DATA BIN 11111111,BIN 11111111,BIN 1111
111,BIN 10101010,BIN 10101010,BIN 11111111,BI
N 11111111,BIN 11111111
1040 DATA BIN 11000000,BIN 11100000,BIN 11110
000,BIN 01010101,BIN 01010101,BIN 11110000,BI
N 11100000,BIN 11000000
1045 DATA BIN 00011000,BIN 01111110,BIN 11111
111, BIN 11111111,BIN 00111100,BIN 00011000,B
IN 00011000,BIN 00011000
2030 DATA 24,24,24,24,24,24,24,24
2040 DATA BIN 10011001,BIN 01011010,BIN 01111
110,BIN 00111100,BIN 00111100,BIN 01111110,BI
N 01011010,BIN 10011001
2050 RETURN
2060 LET x=0: LET y=1: LET W=0: LET C=0
2070 RETURN
2100 PRINT  INK 6;" THE EARTH IS BEING ATTACK
ED BY A FLEET OF MINDLESS BUT DEADLY  MUSHROO
MS.AS ALWAYS, YOU ARE ITSSOLE DEFENDER.THE LE
FT AND RIGHTCURSOR KEYS WILL SHIFT YOU ABOUT&
 THE 1 KEY FIRES YOUR LASER.THE END IS INEVIT
ABLE:IF YOU'RE HIT YOU'RE DEAD. BUT TRY AND N
OTCH UP A MEAN SCORE BEFORE YOU GO."
2102 PRINT TAB 9; INVERSE 1; INK 5;"ANY KEY T
O PLAY"
2105 FOR k=1 TO 128: BEEP .05,.5: PRINT  INK
2;"S  ";: NEXT k
2110 PAUSE 0: CLS
2120 RETURN
3000 LET W=INT (RND*29)
3001 LET M=20
3005 LET V=RND*3
3010 PRINT AT M,W;  INK 2;"S": PRINT AT M,W+V
```

```
; INK 2;"S"
3012 BEEP .05,RND*30
3013 INK 2: INK 1
3015 POKE 23692,-1: PRINT AT 21,0''
3018 PRINT AT x,y; INK 1;"MUR"
3020 RETURN
4000 PRINT  BRIGHT 1; INK 6;AT x+1,y+1;"F": R
EM "F" is graphics F
4010 IF ATTR (x+2,y+1)=2 THEN  GO SUB 6000
4020 BEEP .1,RND*12
4060 RETURN
5010 PRINT AT x,y; BRIGHT 1; INK 6;"CCC"
5013 BEEP .5,-40: BEEP .5,6: BEEP .2,10: BEEP
 .05,-35
5020 CLS
5030 FOR v=1 TO 7: BEEP .05,10-v: PRINT  BRIG
HT 1; INK 6;TAB 4;"YOU HAVE BEEN DESTROYED.
   YOUR SCORE IS ";C;" . ANOTHER GAME?
 ANY KEY TO START": NEXT V
5070 PAUSE 0: CLS
5080 RETURN
6000 PRINT AT x+2,y+1; INK 6;"C"
6001 LET C=C+1
6010 RETURN
```


Countabout

Kids and computers just don't mix. Not if it's your computer that is. They take up far too much valuable hacking time. However it has to be conceded that micros do have a role in the pedagogic process, and so it is not without some reluctance that we have included a selection of educational programs, of which this is one. This is for the very small, and has been designed to keep them quiet while you have an algorithm to work on, whilst at the same time teaching them the basics of counting.

The program sets a series of counting problems from the numbers one to nine. You know, count the ships, flowers, cats, houses or whatever and — if the answer is correct — reward the little angels with ships moving, cats smiling, telephones ringing or the like.

```
  10 REM COUNTABOUT.....H.WALWYN
  15 LET X=0: GO SUB 9000
  17 LET Z$="                                "
  20 PAPER 5: BORDER 5: INK 0: CLS : PRINT "C
OUNTABOUT"
  30 PRINT : PRINT "A counting game for child
ren    aged 2-5"
  40 GO SUB 1000
  50 PRINT : PRINT "PRESS ANY KEY TO START PR
OGRAM"
  60 LET K=RND: IF INKEY$="" THEN  GO TO 60
  70 CLS
  80 PRINT AT 0,0; FLASH 1;"PLEASE PRESS ANY
KEY"
  90 LET K=RND: IF INKEY$="" THEN  GO TO 90
 100 CLS
 110 LET Q=INT ((RND*9)+1)
 120 LET K=INT ((RND*5)+1)
 130 LET J=4: FOR I=1 TO Q
 140 IF I=4 OR I=7 THEN  LET J=4:
 150 GO SUB L(I)
 160 PRINT  OVER 1;TAB J;
 170 IF X=1 THEN  GO TO 200
 180 GO SUB L(K+9)
 190 GO TO 210
 200 GO SUB L(K+14)
```

```
 210 LET J=J+10: NEXT I
 220 IF X=1 THEN  LET X=0: GO TO 360
 240 PRINT AT 0,0; INK 1;"H O W  M A N Y  ";N
$;" ?"
 250 LET A$=INKEY$: IF A$="" THEN  GO TO 250
 260 IF CODE A$<49 OR CODE A$>57 THEN  GO TO
250
 270 PRINT  INK 1;TAB 18;A$: FOR L=1 TO 100:
NEXT L
 280 IF VAL A$=Q THEN  CLS : GO TO 320
 290 IF VAL A$=(Q+1) OR VAL A$=(Q-1) THEN  GO
 TO 330
 300 BEEP .6,.5: BEEP .6,-2: PRINT TAB 2; FLA
SH 1; BRIGHT 1; PAPER 4; INK 7;"N O,W R O N G
  A N S W E R!"
 310 GO SUB 5500: GO TO 230
 320 LET X=1: GO TO 130
 330 IF VAL A$=0 THEN  GO TO 300
 340 BEEP .2,.5: PRINT  INK 2;"V E R Y  N E A
 R L Y  !"
 350 GO SUB 5500: GO TO 230
 360 GO SUB 5600: PRINT AT 2,9; BRIGHT 1; FLA
SH 1; PAPER 0; INK 7;"C O R R E C T"
 370 IF Q=1 THEN  PRINT Q;"   ";N$(1 TO (LEN
N$-2)): GO TO 390
 380 PRINT Q;"   ";N$
 390 FOR F=1 TO 300: NEXT F: GO SUB 2000: GO
TO 80
1000 REM INSTRUCTIONS
1010 PRINT : PRINT "There is no need to use t
he"
1020 PRINT "'ENTER KEY' in this program."
1030 PRINT : PRINT "Once the child knows wher
e the  numbers from 1 to 9 are on the  keyboa
rd,";
1050 PRINT "you can sit back and   let the ";
1060 PRINT "computer do a bit of    teaching!
"
1100 RETURN
2000 PRINT AT 0,0; INK 2;TAB 20
2010 GO TO D(Q)
2100 PRINT "AB",," B",," B": RETURN
2200 PRINT "CED": PRINT "CEF": PRINT "GEE": R
ETURN
```



```
2300 PRINT "CED",," EJ",,"GEF": RETURN
2400 PRINT " _ ",,"A B",,"HHI": RETURN
2500 PRINT "KEE",,"GED",,"GEF": RETURN
2600 PRINT "CED",,"LED",,"GEF": RETURN
2700 PRINT " __",,"  A",," A ": RETURN
2800 PRINT "CED",,"LEJ",,"GEF": RETURN
2900 PRINT "CED",,"GEJ",,"GEF": RETURN
5000 PRINT AT 4,0;: RETURN
5010 PRINT AT 10,0;: RETURN
5020 PRINT AT 16,0;: RETURN
5500 FOR L=1 TO 500: NEXT L
5600 PRINT AT 0,0;"
     "
5610 FOR L=1 TO 3
5615 PRINT "                                "
5620 NEXT L
5625 RETURN
6000 INK 0: LET N$="H O U S E S": REM HOUSE D
RAWING
6001 PRINT  OVER 1; INK 0;"     ";Z$( TO 28);"
 Q■■■■P";Z$( TO 26);"Q■■■■■■P";Z$( TO 25);"B
   B";Z$( TO 24);"B  S   B";
6002 RETURN
6100 REM CATS
6101 INK 2: LET N$="C A T S"
6110 PRINT  OVER 1; INK 2;" Q  P";Z$( TO 27);
" ■■■■■";Z$( TO 27);"=N■■O=";Z$( TO 26);
6120 PRINT  OVER 1; INK 2;" Q■■■P";Z$( TO 27);
" ■■■■■";Z$( TO 27);"      ";
6130 RETURN
6200 REM TELEPHONE
6210 INK 3: LET N$="T E L E P H O N E S"
6220 PRINT  OVER 1;"Q■■■■P";Z$( TO 27);" ■■■ "
;Z$( TO 27);" (o)";Z$( TO 28);"    ";
6230 RETURN
6300 REM BOATS
6310 INK 1: LET N$="S H I P S"
6320 PRINT  OVER 1;"  ";" ";Z$( TO 29); INK 1
;"_R RR";Z$( TO 27);"N:::::O";: RETURN
6400 REM  LOWER
6410 INK 4: LET N$="F L O W E R S"
6420 PRINT  OVER 1;"N■■O";Z$( TO 28); INK 4;"
 7 ";Z$( TO 29);" 7 ";Z$( TO 29);" U ";: RETU
RN
```

```
7000 REM HOUSE CORRECT
7005 BEEP .5,10-I
7010 PRINT  OVER 1;"     ";Z$( TO 28);" Q■■■P"
;Z$( TO 26);"Q■U■U■P";Z$( TO 25);"■■■U■■■";Z$
( TO 25);"■■GEF■■";: RETURN
7100 BEEP .5,10-1: PRINT  OVER 1;" P  Q";Z$(
TO 28);" ■■ ";Z$( TO 27);"=NGFO=";Z$( TO 27);
"Q■■P";Z$( TO 28);"■■■■";Z$( TO 28);"     ";:
RETURN
7200 REM TELEPHONE CORRECT
7210 PRINT  OVER 1;"   RING";Z$( TO 28);"Q■■■
P";Z$( TO 27);" I■M ";Z$( TO 28);"(O)";Z$( TO
 29);"    ";
7220 BEEP .5,1.9: PAUSE 5: BEEP .5,1.9: PAUSE
 30: RETURN
7300 REM BOATS
7305 BEEP .5,10-I
7310 PRINT  OVER 1;"  ";" ";Z$( TO 29); INK 1
;"_R RR";Z$( TO 27);"N:::::O";: RETURN
7320 PRINT "        ";Z$( TO 27);Z$( TO 27);Z$
( TO 27);: RETURN
7400 REM FLOWER
7405 BEEP .5,10-I
7410 PRINT  OVER 1;"N■O";Z$( TO 29);" 7 ";Z$(
 TO 29);" F ";Z$( TO 29);"    ";: RETURN
8999 RETURN
9000 REM INITIALISE ARRAYS,GRAPHICS
9010 RESTORE : DIM L(19): FOR F=1 TO 19: READ
 L(F): NEXT F: DATA 5000,5000,5000,5010,5010,
5010,5020,5020,5020
9020 DATA 6000,6100,6200,6300,6400,7000,7100,
7200,7300,7400
9030 DIM D(9): FOR F=1 TO 9: READ D(F): NEXT
F: DATA 2100,2200,2300,2400,2500,2600,2700,28
00,2900
9040 RESTORE 9900: FOR F=0 TO 7: READ A,B
9050 POKE USR ("A")+F,A
9060 POKE USR ("B")+F,128
9070 POKE USR ("C")+F,B
9080 NEXT F
9090 FOR F=0 TO 7: READ A: POKE USR ("D")+F,A
9100 POKE USR ("E")+F,0: IF F=3 THEN  POKE US
R ("E")+F,255
9110 READ A: POKE USR ("F")+F,A
```



```
9120 READ A: POKE USR ("G")+F,A
9130 NEXT F
9140 FOR F=0 TO 7
9150 POKE USR ("I")+F,128
9160 POKE USR ("H")+F,0
9170 POKE USR ("J")+F,16
9180 READ A: POKE USR ("K")+F,A
9190 POKE USR ("L")+F,8
9200 POKE USR ("M")+F,1
9210 POKE USR ("N")+F,(2^(7-F))-1
9220 POKE USR ("O")+F,255-((2^(F))-1)
9230 POKE USR ("P")+F,255-((2^(7-F))-1)
9240 POKE USR ("Q")+F,((2^(F))-1)
9250 POKE USR ("R")+F,0
9260 READ A: POKE USR ("S")+F,A
9270 POKE USR ("T")+F,16
9280 NEXT F
9290 FOR F=0 TO 7: READ A: POKE USR ("U")+F,A
9400 NEXT F
9490 POKE USR ("H"),255
9500 POKE USR ("I"),255
9510 POKE USR ("J")+3,240
9520 POKE USR ("L")+3,15
9530 POKE USR ("M"),255
9540 POKE USR ("M"),255
9550 POKE USR ("R"),255: POKE USR ("R")+1,255
9900 DATA 1,0,2,0,4,0,8,3,16,4,32,8,64,8,128,
8
9910 DATA 0,16,8,0,16,8,0,32,4,192,192,3,32,0
,0,16,0,0,16,0,0,16,0,0
9920 DATA 0,213,0,171,0,213,15,171,8,213,8,17
1,8,213,8,171
9930 DATA 0,60,126,126,126,126,60,0
9999 RETURN
```

S-M's Book

Robert Erskine & Humphrey Walwyn with Paul Stanley and Michael Bews
Bumper Book of Programs for the Sinclair ZX Spectrum £4.95

Robert Erskine & Humphrey Walwyn with Paul Stanley and Michael Bews
Bumper Book of Programs for the BBC Micro £4.95

Robert Erskine & Humphrey Walwyn with Paul Stanley and Michael Bews
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