SOFTWARE FILE

Bomb disposal

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203-30

THE ARTICLE on games applications for the ZX-80/81 in the August/September issue by Tim Hartnell prompted me to write this program which only just fits into 1K. The program maps the top left-hand corner of the screen with a 10-by-10 matrix. In it lies a point which corresponds to the location of a bomb. By entering various points in the normal coordinate fashion, values are printed which give an indication to where it is.

Obviously, a large number of values will lead to easy location and so the score is weighted accordingly and printed after the bomb has been diffused.

Those with 16K RAM packs can modify this program to include more elaborate Print statements and a combination problem to be solved before the bomb is diffused.

One tip I find useful when programming is the use of keywords in print statements. They save the valuable memory space in the ZX-81.

The words above the keys can be entered by the K cursor mode then editing, placing words if necessary in front. Those words in red can be entered by simply pressing shift, and it is this which must be used in line 19 - the word stop. In the list inverse characters are underlined.

Screen artist

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233-31

READY

PAGE 121 of the ZX-81 manual lists a program which draws a line from pixel (A,B) to pixel (C,D) but its 25 lines take nearly 1K of memory so it is little use as a subroutine for unexpanded machines.

My eight-line program does not only the same job, but leaves the initial values A, B, C and D unaltered and uses only four new variables. As this listing is intended as a subroutine you will first need to Input (A,B) and (C,D).

The program works on the principle that the distance between the "x" co-ordinates, X, and the "y' co-ordinates, Y, can be covered in M steps where M is the greater of the absolute

```
FOR X=0 TO 9
 2
    PRINT AT 11,X;X
 3
    PRINT AT X,11;X
    FOR Y=0 TO 9
 5
    PRINT AT X,Y;"..."
 6
    NEXT Y
 7
 8
    LET A=INT(RND*9)
 9
    LET B=INT(RND*9)
10
    LET G=40
    PRINT AT 13,0;"DETONATION IN ";G;" CYCLES"
11
12
    LET G=G-1
13
    IF G=0 THEN GOTO 22
14
    INPUT C
15
    INPUT D
16
    IF C=A AND D=B THEN GOTO 19
17
    PRINT AT D.C;(INT((ABS(D-B)+RBS(C-A))/2)
18
    GOTO 11
19
    PRINT AT 17,0; "STOP DETONATION-PRESS D"
20
    IF INKEY$="D" THEN GOTO 25
21
    GOTO 20
22
    CLS
23
    PRINT "BOOM"
24
    STOP
    PRINT "BOMB SAFE - SCORE=";G**2
25
```

```
1000 LET X = C - A
1010 LET Y = D - B
1020 LET M = ABS X
1030 IF ABS Y > M THEN LET M = ABS Y
1040 FOR N = 0 TO M - 1
1050 PLOT A + N * X / M, B + N * Y / M
1060 NEXT N
1070 RETURN
```

values of X and Y. The distance to be travelled in each step is, therefore, X/M and Y/M respectively.

The appearance of very steep or very shallow lines can be improved by adding Step 2 to line 1040 and plotting every other point.

Ark Royal

D Ewan. Haddington, East Lothian.

333-37

YOU ARE CHALLENGED to land an aeroplane on the aircraft carrier, Ark Royal. There is an obstruction at the start of the flight deck which you must not hit with the wheel of your aircraft - landing too hard on the flight deck also spells disaster.

Once mastered, the game can be made much harder by changing line 300. You now have to judge your height above the flight deck. If it is not correct, you will require to increase altitude to correct your descent rate. The program runs in 1K.

```
10 LET S = 0
                                                                210 IF PY = 18 AND A = S THEN GOTO 400
                                                                     IF PY > = 19 THEN GOTO 420
   LET PY = INT (RND * 15) + 1
20
                                                                     IF INKEYS - "6" THEN LET PY - PY + 1
                                                                300
30 FOR Q = 1 TO 20
                                                                     IF INKEYS = "7" THEN LET PY = PY - 1
                                                                310
40 FOR A = 0 TO 28 STEP 2
                                                                      NEXT A
100 CLS
                                                                330
                                                                      NEXT Q
     PRINT AT 18, S + 4; "1"; AT 19, S; " [ ]
110
                                                                340
                                                                      STOP
                                                                400
                                                                      PRINT AT Ø, 1; "LANDED", Q: " ATTEMPTS"
120
    PRINT AT 20, S; " - -
                                                                 410
                                                                      STOP
130
    LET S = S + 1
                                                                     PRINT AT 8, 1; "CRASHED"
                                                                420
     IF S = 27 THEN LET S = Ø
148
    FOR A MORE ADVANCED GAME CHANGE LINE 300 AS FOLLOWS:-
150
    IF PY + 1 = 19 AND A + 3 - S THEN GOTO 420
                                                                 300 IF INKEYS - "6" THEN LET PY - PY + 2
200
```