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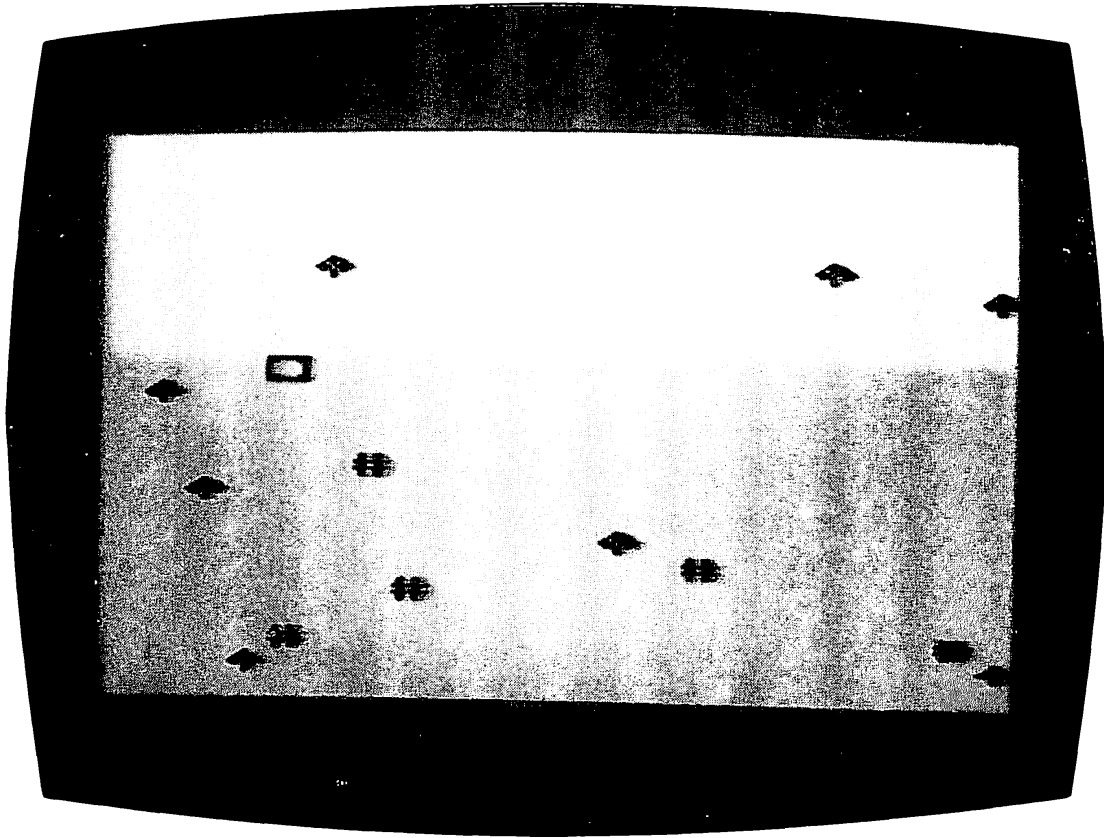# Minefield

You are an escaped prisoner-of-war trying to make your way back to join your own troops. Between you and safety lies an enemy minefield, which you have to cross on foot. It is a barren area, with only a few trees and bushes for cover. The enemy are aware of your escape, and since you are a high-ranking officer, they are out in force to prevent you from getting back alive.

The enemy has sent armoured vehicles to patrol the minefield, with orders to shoot on sight. Although they are a danger to you, they can also be a help. If you can keep out of sight and watch where the vehicles go, you will be able to discover the unmined paths across the minefield and so reach safety. But put only one foot wrong and you will be blown sky-high by a mine. When you are in sight, the gunners will shoot you, but they cannot see you when you are hiding in a bush. On the other hand, armoured vehicles do not bother to avoid bushes; they simply drive over them. This could be unfortunate for you, if you happen to be hiding in the flattened bush at the time!

Apart from that risk, the bushes are a safe place to seek, for there are no mines in, or under, a bush.

How to play

The game is played at 10 levels, of which the easiest is level 1. The higher the level, the more thickly scattered are the mines. Above level 5 the guns fire further. At the highest levels (8 and over) the vehicles destroy the bushes as they pass over them. If you take too long to cross the minefield, you may find that few places remain in which to hide.

As soon as you have keyed in your chosen level and pressed 'RETURN' the screen clears, the mines are laid (though you cannot see them) and the bushes are displayed in unmined locations. Then the black vehicles of the enemy appear at the top of the screen. You are the red character which is at the top left corner. Your destination is the bottom right corner. The whole of the top row and bottom row are clear of mines so, once you reach the bottom of the screen, it is safe to move along it (though you may still get shot by a passing vehicle).

The vehicles move off into the minefield, travelling down the screen at first. When a vehicle finds a mine ahead, it turns right and then proceeds in a new direction. Vehicles also turn right when one is blocked by another. All the time you will hear the sounds of gunfire, and shells bursting beside you. You move by using these keys:

U   move up (toward top of screen)
H   move left
J   move right
N   move down

If you press no key, you stay in the same place. You cannot move off the edge of the screen, but the vehicles can. When you are near one edge of the screen, it is essential to watch the opposite edge, for a vehicle may suddenly appear close to you and shoot you before you have had time to get clear. In levels 4 and lower, the range of the guns is 1 row or column. In other words, the vehicle has to be on the next screen location, vertically or horizontally. At levels 5 and over the range is extended to two rows or columns. When you are hiding in a bush, you cannot be shot but, if a vehicle runs over the bush you are hiding in, you are run over.

The game ends with suitable sound effects, and you are told how

long you took to get to safety. If you failed to reach your goal, you are told how long you managed to survive the hazards of the minefield.

Press the space-bar to play again.

Winning tactics

Give the vehicles a few moments to head through the minefield and watch where they go. At the lower levels there is a chance that there is a clear path straight across. Even then, watch out for deflected vehicles cutting across your path and shooting you as they pass. If there is a bush close by, it is worth deviating from your path to hide until the vehicle has passed. Watch out for pairs of vehicles travelling on parallel paths, two or three rows or columns apart. Between them, their guns cover a wide area of the minefield and it is difficult to move out of their way quickly. One of the worst dangers is the vehicle which goes off the screen on one side and instantly reappears on the opposite side. If it goes off the left edge, it reappears one row further up the screen on the right. If it leaves the right edge it reappears one row down on the left. If you are on the extreme edge, it is possible to be shot by a vehicle which approaches the opposite edge. In effect, it catches you unawares by suddenly appearing over the horizon. It is this factor which makes it essential to take care when you have got to the bottom of the screen and are making your final dash for safety.

Keying in

There are no special problems.
   Control characters are:

      CLEAR: lines 50, 80, 700, 800, 900, 1000
      CTRL/2: lines 700, 870
      CRSR DOWN: lines 710(3,2), 870(3,2), 970(3,2), 1040(3,2)
      CTRL/1: lines 970, 1040
      CTRL/7: line 1510

Program design

10-50	Initializing variables and sound of vehicles.
60-70	Asking for required level.
80-180	Setting up minefield, with bushes.
190-220	Resetting variables.
230-390	Processing player's move.
400-600	Processing moves of vehicles, in turn.
610-630	Effect of falling shells.
700-780	'Winning' routine.
800-880	'Mined' routine.
900-980	'Shot' routine.
1000-1050	'Run over' routine.
1500-1520	Making ready for next game.
2000-2010	Subroutine giving duration of notes in victory tune.

Points of interest

The mines are displayed on the screen as asterisks (character code
42) but since they are displayed in white (colour code 1, line 90) they
are invisible to the player. They are not invisible to the computer,
which PEEKs the character code RAM at lines 310 and 460 to find
out if the player or a vehicle is about to move onto a mine.

The program

```
10   REM ** MINEFIELD **
20   G=7680:H=38400
30   S1=36874:S3=36876:N=36877:V=36878:C=3
6879
40   DIM M%(30)
50   PRINT"[]":POKE C,29:POKE V,1:POKE N,12
8:POKE S1,128:POKE649,1
60   INPUT"LEVEL (1-10)";A$
70   L=VAL(A$):IF L<1 OR L>10 THEN 50
80   PRINT"[]":FOR J=1 TO 20+L
90   M%(J)=RND(1)*462+22:POKE H+M%(J),1:PO
KE G+M%(J),42
100  NEXT
110  FOR J=1 TO 10
120  S%(J)=RND(1)*462+22
130  FS=0:FOR K=1 TO 20+L
140  IF S%(J)=M%(K) THEN FS=1
150  NEXT
160  IF FS=1 THEN 120
170  POKE S%(J)+H,5:POKE S%(J)+G,88
180  NEXT
```

```
190 FG=0:P=0:PN=0:PD=1:FS=1:POKE G,209:P
OKE H,2:TI$="000000"
200 FOR J=1 TO 5
210 C%(J)=4*J:CN%(J)=C%(J):CD%(J)=2:POKE
 G+C%(J),35:POKE H+C%(J),0
220 NEXT
230 GET A$
240 IF A$="U" THEN PN=P-22
250 IF A$="J" THEN PN=P+1
260 IF A$="H" THEN PN=P-1
270 IF A$="N" THEN PN=P+22
280 IF PN<0 OR PN>505 THEN PN=P
290 IF A$="H"ANDINT(P/22)=P/22 OR A$="J"
AND INT((P+1)/22)=(P+1)/22 THEN PN=P
300 IF PN=505 THEN 700
310 PG=PEEK(G+PN)
320 IF PG=42 THEN 800
330 IF PG=35 THEN PN=P
340 IF PN=P THEN 400
350 POKE G+P,32+FS*56
360 IF FS=1 THEN POKE H+P,5:FS=0
370 SS=PEEK(H+PN)AND7:IF SS=5 THEN FS=1
380 P=PN:POKE G+P,209
390 POKE H+P,2+FS*3
400 J=1
410 IF CD%(J)=0 THEN CN%(J)=C%(J)-22
420 IF CD%(J)=1 THEN CN%(J)=C%(J)+1
430 IF CD%(J)=2 THEN CN%(J)=C%(J)+22
440 IF CD%(J)=3 THEN CN%(J)=C%(J)-1
450 IF CN%(J)<0 OR CN%(J)>505 THEN CN%(J
)=CN%(J)-506*SGN(CN%(J))
460 PG=PEEK(G+CN%(J))
470 IF PG=42 OR PG=35 OR PG=209 THEN CD%
(J)=CD%(J)+1:CN%(J)=C%(J)
480 IF CD%(J)=4 THEN CD%(J)=0
490 D=ABS(P-CN%(J)):IF FS=1 THEN 530
500 FG=0:IF D=1 OR D=22 THEN FG=1
510 IF L>5 AND D=2 OR L>5 AND D=44 THEN
FG=1
520 IF FG=1 THEN 900
530 IF PG=209 THEN 1000
540 IF CN%(J)=C%(J) THEN 600
550 IF L>9 THEN CC%(J)=0
560 POKE G+C%(J),32+56*CC%(J)
570 IF CC%(J)=1 THEN POKE H+C%(J),5:CC%(
J)=0
580 PS=PEEK(H+CN%(J))AND7:IF PS=5 THEN C
C%(J)=1
590 C%(J)=CN%(J):POKE G+C%(J),35:POKE H+
C%(J),0
600 J=J+1:IF J<6 THEN 410
610 R =INT(RND(1)*6):IF R<3 THEN 230
620 POKE V,15:FOR J=1 TO 80:POKE S3,254-
J-10*R:NEXT:POKE V,1:POKE S3,0
630 GOTO 230
700 PRINT"⬛▨":POKE C,106:POKE N,0
710 PRINT"▨▨▨YOU HAVE ESCAPED!":PRINT"▨▨▨
IN";INT(TI/60);"SECONDS"
720 POKE V,15:POKE S1,195:D=4:GOSUB 2000
730 POKE V,0:D=1:GOSUB 2000
740 POKE V,15:POKE S1,195:D=4:GOSUB 2000
750 POKE S1,191:D=2:GOSUB 2000:POKE S1,1
95:D=2:GOSUB 2000
760 POKE S1,201:D=4:GOSUB 2000:POKE S1,1
83:D=6:GOSUB 2000
770 POKE S1,175:D=8:GOSUB 2000:POKE V,0:
POKE S1,0
780 GOTO 1500
```

```
800 PRINT"[]":POKE V,15:POKE N,180
810 POKE C,25
820 D=2:GOSUB 2000
830 POKE C,8
840 FOR J=1 TO 150
850 POKE V,15-J/10
860 NEXT
870 PRINT"[]YOU WERE MINED!":PRINT"[]A
FTER";INT(TI/60);"SECONDS"
880 GOTO 1500
900 PRINT"[]":POKE C,42
910 FOR J=1 TO 20
920 POKE V,15:POKE N,200
930 FOR K=1 TO 20:NEXT
940 POKE V,0:POKE N,0
950 FOR K=1 TO 20:NEXT
960 NEXT
970 PRINT"[]YOU WERE SHOT":PRINT"[]AFT
ER";INT(TI/60);"SECONDS"
980 GOTO 1500
1000 PRINT"[]":POKE C,24
1010 POKE V,15
1020 D=20:GOSUB 2000
1030 POKE V,0
1040 PRINT"[]YOU WERE RUN OVER":PRINT"
[]AFTER ";INT(TI/60);" SECONDS"
1050 GOTO 1500
1500 GET A$:IF A$<>" " THEN 1500
1510 PRINT"[]"
1520 GOTO 50
2000 FOR K=1 TO D*100:NEXT
2010 RETURN
```

Variations

The number of mines planted is 20 plus 10 times the level of play (line 80). To make the game even more difficult, increase the number of mines. In this case line 130 also needs amending to the new value. You can add more vehicles by altering the value of J in line 200. Reduce the initial spacing between them by changing the '4' in line 210 to '3' or '2'. The value in line 600 also needs changing to allow for a greater value of J.

Having more vehicles makes the game slower, although the added time is necessary to give the player time to assess the movements of all the vehicles. As it stands, the game is certainly fast enough but, to increase speed still further, cut out the sound effect routine by deleting lines 610–620.