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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 sandy 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 un-mined 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 RET the screen clears, the mines are laid (though you cannot see them) and the green bushes are displayed in unmined locations. Then the

black vehicles of the enemy appear at the top of the screen. The circular red character at the top left corner is your red beret. Your destination is the bottom right corner. The whole of the top row and bottom row of the screen 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).

With a roar as they accelerate, 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 the direction keys on the keypad to the right of the main keyboard. To move in any given direction, hold down the appropriate key until your move has been effected. 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.

When the game ends 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. Remember that even though the display shows the guns pointing ahead, you will be shot whether you are ahead, to the side of the vehicle or behind it. 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 re-appears on the opposite side. If it goes off the left edge, it re-appears on the same row on the right of the screen. If it leaves the right edge it re-appears on the left. It is 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.

Program design

20–30	initialising arrays
40–90	defining characters for soldier, bushes and tanks
100–110	asking for required level
120–250	setting up minefield, with bushes and soldier
260–270	initialising variables and time
280–310	displaying tanks
320	start of main loop; reading key-press
330–500	processing player's move
510–750	processing moves of vehicles, in turn
760–790	sound effects of gunfire and falling shells
800–820	'escaped' display
830–850	'shot' display
860–880	'run over' display
890–900	'mined' display
910–930	displaying time
940–960	making ready for next game

Points of interest

The mines are displayed on the screen as asterisks (character code 42) but since they are displayed in light yellow (colour code 11, line 120) they are invisible to the player. They are not invisible to the computer, which uses SPK$ to read the video RAM at lines 420 and 600 to find out what lies ahead of the player or a tank. It is useful to have 'visible' mines when checking to see that the program is running

properly. To do this, change the COLOUR 1,11 statement of line 120 to COLOUR 1,4. This makes the mines appear in blue.

The program

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10 REM ** MINEFIELD **
20 DIM C(2,5),CN(2,5),CC(5),CD(5)
30 DIM M(2,55),S(2,20)
40 GENPAT 1,129,32,118,255,63,254,127,23
8,38
50 GENPAT 1,130,0,60,126,126,126,126,60,
0
60 GENPAT 1,131,40,40,56,124,124,124,124
,56
70 GENPAT 1,132,0,124,255,252,255,124,0,
0
80 GENPAT 1,133,56,124,124,124,124,40,40
,0
90 GENPAT 1,134,0,0,30,255,63,255,30,0
100 VS 5: CLS : CSR 3,3: INPUT "LEVEL? (
1-10) ";A$
110 LET L=VAL(A$): IF L<1 OR L>10 THEN
GOTO 100
120 VS 4: COLOUR 0,11: COLOUR 1,11: COLO
UR 2,11: COLOUR 4,11: CLS
130 FOR J=1 TO 25+3*L
140 LET M(1,J)=INT(RND*31)+1: LET M(2,J)
=INT(RND*21)+1: CSR M(1,J),M(2,J): PRINT
 "*";
150 NEXT
160 COLOUR 1,12: FOR J=1 TO 20
170 LET S(1,J)=INT(RND*31)+1: LET S(2,J)
=INT(RND*21)+1
180 LET FS=0: FOR K=1 TO 25+3*L
190 IF M(1,K)=S(1,J) AND M(2,K)=S(2,J) T
HEN  LET FS=1
200 NEXT
210 IF FS=1 THEN  GOTO 170
220 CSR S(1,J),S(2,J): PRINT CHR$(129)
230 NEXT
240 SOUND 2,1,0,10,0,750,1: SOUND 3,7,15
250 CSR 1,0: COLOUR 1,8: PRINT CHR$(130)
260 LET X=1: LET Y=0: LET NX=1: LET NY=0
: LET FS=1: LET FG=0
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270 CLOCK "000000"
280 FOR J=1 TO 5
290 LET C(1,J)=6*J: LET C(2,J)=0: LET CN
(1,J)=C(1,J): LET CN(2,J)=CN(2,J): LET C
D(J)=3: LET FG=0
300 COLOUR 1,1: CSR C(1,J),C(2,J): PRINT
 CHR$(130+CD(J))
310 NEXT
320 LET A=ASC(INKEY$)
330 IF A=11 THEN  LET NX=X: LET NY=Y-1
340 IF A=25 THEN  LET NX=X+1: LET NY=Y
350 IF A=10 THEN  LET NX=X: LET NY=NY+1
360 IF A=8 THEN  LET NX=X-1: LET NY=Y
370 IF NX<1 THEN  LET NX=1
380 IF NX>31 THEN  LET NX=31
390 IF NY<0 THEN  LET NY=0
400 IF NY>22 THEN  LET NY=22
410 IF NX=31 AND NY=22 THEN  GOTO 800
420 CSR NX,NY: LET PG=ASC(SPK$)
430 IF PG=42 THEN  GOTO 890
440 IF PG>130 AND PG<135 THEN  LET X=NX:
 LET Y=NY
450 IF X=NX AND Y=NY THEN  GOTO 510
460 CSR X,Y: PRINT " "
470 IF FS=0 THEN  CSR X,Y: COLOUR 1,12:
PRINT CHR$(129): CSR NX,NY: COLOUR 1,8:
PRINT CHR$(130): LET FS=1
480 IF FS=1 AND PG=129 THEN  CSR NX,NY:
COLOUR 1,12: PRINT CHR$(130): LET FS=0
490 IF FS=1 AND PG=32 THEN  CSR NX,NY: C
OLOUR 1,8: PRINT CHR$(130)
500 LET X=NX: LET Y=NY
510 LET J=1
520 IF CD(J)=1 THEN  LET CN(1,J)=C(1,J):
 LET CN(2,J)=C(2,J)-1
530 IF CD(J)=2 THEN  LET CN(1,J)=C(1,J)+
1: LET CN(2,J)=C(2,J)
540 IF CD(J)=3 THEN  LET CN(1,J)=C(1,J):
 LET CN(2,J)=C(2,J)+1
550 IF CD(J)=4 THEN  LET CN(1,J)=C(1,J)-
1: LET CN(2,J)=C(2,J)
560 IF CN(1,J)<1 THEN  LET CN(1,J)=31
570 IF CN(1,J)>31 THEN  LET CN(1,J)=1
580 IF CN(2,J)<0 THEN  LET CN(2,J)=21
590 IF CN(2,J)>21 THEN  LET CN(2,J)=0
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600 CSR CN(1,J),CN(2,J): LET PG=ASC(SPK$
)
610 IF PG=42 OR PG>129 AND PG<135 THEN
LET CD(J)=CD(J)+1: LET CN(1,J)=C(1,J): L
ET CN(2,J)=C(2,J)
620 IF CD(J)=5 THEN  LET CD(J)=1
630 IF FS=0 THEN  GOTO 680
640 LET DX=ABS(X-CN(1,J)): LET DY=ABS(Y-
CN(2,J))
650 IF DX<2 AND DY<2 THEN  LET FG=1
660 IF L>5 THEN  IF DX<3 AND DY<3 THEN
LET FG=1
670 IF FG=1 THEN  GOTO 830
680 IF PG=130 THEN  GOTO 860
690 IF CN(1,J)=C(1,J) AND CN(2,J)=C(2,J)
 THEN  GOTO 750
700 CSR C(1,J),C(2,J): PRINT " "
710 IF CC(J)=1 THEN  LET CC(J)=0: IF L<8
 THEN  CSR C(1,J),C(2,J): COLOUR 1,12: P
RINT CHR$(129)
720 IF PG=129 THEN  LET CC(J)=1
730 LET C(1,J)=CN(1,J): LET C(2,J)=CN(2,
J)
740 CSR C(1,J),C(2,J): COLOUR 1,1: PRINT
 CHR$(130+CD(J))
750 LET J=J+1: IF J<6 THEN  GOTO 520
760 SBUF 1: SBUF 10
770 IF RND<.3 THEN  GOTO 320
780 SOUND 3,4,15: PAUSE 100: SOUND 3,4,1
0: PAUSE 100: SOUND 3,7,10
790 SOUND 0,150+RND*100,240,RND*5,0,500,
1: GOTO 320
800 CLS : VS 5: INK 15: PAPER 3: CSR 3,3
810 PRINT "You have escaped!"
820 GOTO 910
830 CLS : VS 5: INK 1: PAPER 8: CSR 3,3
840 PRINT "You were shot by a tank"
850 GOTO 910
860 CLS : VS 5: INK 1: PAPER 11: CSR 3,3
870 PRINT "You were run over by a tank"
880 GOTO 910
890 CLS : VS 5: INK 15: PAPER 1: CSR 3,3
900 PRINT "You were blown up by a mine"
910 CSR 3,7: PRINT "Your time was:"
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920 CSR 15,9: PRINT MID$(TIME$,3,2);" mi
n"
930 CSR 15,11: PRINT RIGHT$(TIME$,2);" s
ec"
940 SBUF 1: SOUND 0,0,0: SOUND 1,0,0: SO
UND 2,0,0: SOUND 3,0,0: SBUF 2
950 IF INKEY$<>" " THEN  GOTO 940
960 GOTO 100
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Variations

The number of mines planted is 25 plus 3 times the level of play (line 130). To make the game even more difficult, increase the number of mines. In this case line 180 also needs amending to the new value. You can add more vehicles by altering the upper value of J in line 280. Increase the second dimension of all arrays in line 20 to the new upper value of J. Reduce the initial spacing between them by changing the '6' in line 290 to '5' or '4'. The value in line 750 also needs changing to allow for a greater value of J.

Having more vehicles makes the game slower, but more difficult to play. The extra time helps to give the player time to assess the movements of all the vehicles.