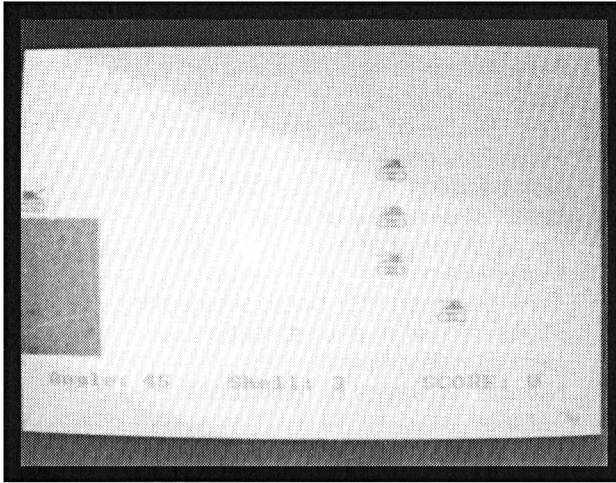# TANK AMBUSH

CLASSIFICATION: Simulation Game

An ambush has been planned for a squadron of enemy tanks. Your tank is positioned on a cliff and you fire at the enemy on the right using keys '∅' to '9' give angle of projection of your bomb and shell (muzzle velocity ∅-9). Then press the space bar to fire, or fire without keying in any numbers to send up a flare.

The game ends when an enmy tank reaches the bottom of the cliff and you score 5∅ points for each hit.

Use the keys '∅' to '9' to make an angle between ∅∅ and 89 degrees, and a 'shell' (muzzle velocity) between ∅ and 9. Fire by pressing the space bar.

PROGRAMMING SUGGESTIONS

Some more tanks could be added to make the game harder and more exciting or the tank speed could be altered using the TSPEED variable.

PROGRAM
Variables

EXPL$(6,3)	Strings for six explosion phases, each with 3 lines
LT $	Last tank moved
TSPEED(4)	Tank speeds
TANK$	String for printing tank
TCOL	Tank colour
TK	Tank number
TANKX(4), TANKY(4)	Coordinates of each tank
SCORE	Player's score
HIT	Number of tanks hit by bomb
FIRE	Is this shot a flare or a bomb?
ANGLE	Angle of projection
SHELL	Muzzle velocity
T	Time parameter for bomb's trajectory
XIV, YIV	Initial velocity in each direction
BOMBX, BOMBY	Bomb's coordinates
NROUNDS	Number of waves of tanks destroyed
I, J	Temps
CU	Character under Bomb
MSG$(9)	Array of message strings
MN	Message number
EXIST(4)	Does each tank exist?

Program Structure

Lines	Function/Activity
10 — 179	Initialise game
190 — 300	New Round
320 — 480	Editor
500 — 520	Main loop
1000 — 1130	Move bomb
2000 — 2060	Explosion
3000 — 3530	Move/print tanks
4000 — 4040	Hit tank
5000 — 5020	Print message
9000 — 9040	Game over

```
┌──────────────────────────────────────┐
│  Initialise game                      │
└──────────────────────────────────────┘
```

```
10    DEG : MODE 1 : INK 0, 0 : INK 1, 15 : INK 2, 18 : INK 3
      , 24
20    SYMBOL AFTER 232 : SYMBOL 232, 0, 0, 255, 1, 7, 31, 127
      , 0 : SYMBOL 233, 127, 199, 146, 199, 127, 0, 0, 0
30    SYMBOL 234, 0, 64, 248, 248, 248, 252, 254, 0 : SYMBOL
      235, 254, 227, 73, 227, 254, 0, 0, 0
40    SYMBOL 240, 18, 129, 36, 26, 76, 16, 129, 8 : SYMBOL 24
      1, 128, 0, 69, 32, 2, 0, 68, 32 : SYMBOL 242, 64, 0, 16,
      128, 9, 0, 18, 64
50    SYMBOL 243, 0, 0, 64, 8, 2, 32, 4, 33 : SYMBOL 244, 0,
      128, 4, 0, 32, 2, 64, 9 : SYMBOL 245, 144, 2, 16, 0, 66,
      0, 0, 17
60    SYMBOL 246, 64, 4, 0, 144, 1, 16, 4, 64 : SYMBOL 247, 2
      , 33, 0, 18, 8, 128, 0, 16 : SYMBOL 248, 4, 0, 144, 2, 6
      4, 0, 8, 1
70    SYMBOL 249, 0, 0, 63, 63, 63, 63, 127, 0 : SYMBOL 250,
      127, 200, 135, 200, 127, 0, 0, 0 : SYMBOL 251, 1, 7, 156
      , 240, 192, 248, 254, 0 : SYMBOL 252, 254, 19, 225, 19,
      254, 0, 0, 0
80    SYMBOL 253, 0, 0, 24, 60, 60, 24, 0, 0
90    EXPL$(1,1) = "" : EXPL$(1,2) = "." + CHR$(240) + "." :
      EXPL$(1,3) = ""
100   EXPL$(2,1) = "." + CHR$(241) + "." : EXPL$(2,2) = CHR$(
      242) + CHR$(9) + CHR$(244) : EXPL$(2,3) = "." + CHR$(243
      )+"."
110   EXPL$(3,1) = CHR$(245)+CHR$(9)+CHR$(247) : EXPL$(3,2) =
      "" : EXPL$(3,3) = CHR$(246)+CHR$(9)+CHR$(248)
120   EXPL$(4,1) = "" : EXPL$(4,2) = CHR$(9) + "." : EXPL$(4,
      3) = ""
130   EXPL$(5,1) = CHR$(9) + "." : EXPL$(5,2) = "." + CHR$(9)
      + "." : EXPL$(5,3) = CHR$(9) + "."
140   EXPL$(6,1) = "." + CHR$(9) + "." : EXPL$(6,2) = "" : EX
      PL$(6,3) = EXPL$(6,1)
150   TANK$ = CHR$(232)+CHR$(234)+CHR$(10)+STRING$(2,8)+CHR$(
      233)+CHR$(235)
170   MSG$(1) = "Ready.to.fire" : MSG$(2) = "Press.a.key.with
      .a.number.on.it"
175   MSG$(3) = "Waiting.for.second.digit" : MSG$(4) = "Name.
      your.shell.(0.-.9)" : MSG$(5) = "Prepare.to.FIRE.!"
177   MSG$(6) = "PRESS.THE.SPACE.BAR,.SILLY.!" : MSG$(7) = ".
      ..F...I...R...E...!!!"
179   MSG$(8) = "...F...L...A...R...E" : MSG$(9) = "ENEMY.HAS
      .OVERRUN.YOUR.POSITION.!!"
```

```
┌──────────────────────────────────────┐
│  New round of game                    │
└──────────────────────────────────────┘
```

```
180   :
190   FOR I=1 TO 4 : TSPEED(I) = -INT(RND(1)*2) - 1 : TANKX(I
      ) = 34 : EXIST(I) = 1 : NEXT
200   TANKY(1) = INT(RND(1)*5) + 6 : TANKY(2) = TANKY(1) + 3
210   TANKY(3) = TANKY(2) + 3 : TANKY(4) = TANKY(3) + 3
220   NROUNDS = NROUNDS + 1
230   PAPER 0 : BORDER 0 : CLS
240   PEN 1 : LOCATE 1, 10 : PRINT CHR$(249)+CHR$(251)+CHR$(1
```

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```
            0)+STRING$(2,8)+CHR$(250)+CHR$(252)
250    FOR I=1 TO 6 : FOR J=12 TO 20 : LOCATE I, J : PRINT CHR
       $(143) : NEXT : NEXT
260    MOVE 0, 78 : DRAWR 640, 0
270    MOVE 0, 226 : DRAWR 30, 0 : DRAWR 10, -3
280    PEN 2 : LOCATE 3, 22 : PRINT "Angle : " : LOCATE 16, 22
       : PRINT "Shell : "
290    LOCATE 29, 22 : PRINT "SCORE : "
300    LOCATE 35, 22 : PEN 2 : PRINT SCORE
```

┌───┐
│ Editor   │
└───┘

```
310    :
320    MN = 1 : GOSUB 5000
330    D1$ = INKEY$ : IF D1$ = "" THEN GOSUB 3000 : GOTO 330
340    IF D1$ = "▲" THEN FIRE = 0 : MN = 8 : GOSUB 5000 : GOT
       O 500
350    IF D1$ < "0" OR D1$ > "8" THEN MN = 2 : GOSUB 5000 : GO
       TO 330
360    MN = 3 : GOSUB 5000
365    PEN 2 : LOCATE 9, 22 : PRINT VAL(D1$)
370    D2$ = INKEY$ : IF D2$ = "" THEN GOSUB 3000 : GOTO 370
380    IF D2$ < "0" OR D2$ > "9" THEN MN = 2 : GOSUB 5000 : GO
       TO 370
390    ANGLE = 10 * VAL(D1$) + VAL(D2$)
400    PEN 2 : LOCATE 11, 22 : PRINT USING "#"; VAL(D2$)
410    MN = 4 : GOSUB 5000
420    D1$ = INKEY$ : IF D1$ = "" THEN GOSUB 3000 : GOTO 420
430    IF D1$ < "0" OR D1$ > "9" THEN MN = 2 : GOSUB 5000 : GO
       TO 420
440    PEN 2 : LOCATE 22, 22 : PRINT VAL(D1$);
450    SHELL = VAL(D1$) : MN = 5 : GOSUB 5000
460    D1$ = INKEY$ : IF D1$ = "" THEN GOSUB 3000 : GOTO 460
470    IF D1$ <> "▲" THEN MN = 6 : GOSUB 5000 : GOTO 460
480    MN = 7 : GOSUB 5000 : FIRE = 1
```

┌───┐
│ Main program loop   │
└───┘

```
490    :
500    SOUND 1, 0, 10, 11, 1, 1, 15
505    GOSUB 1000
510    GOSUB 3000
520    IF BOMBX = 0 THEN 320 ELSE 505
```

┌───┐
│ Move bomb   │
└───┘

```
990    :
1000   IF (BOMBX <> 0) THEN 1010 ELSE BOMBX = 3 : BOMBY = 8 :
       T = 0 : LOCATE 3, 8 : PEN 3 : PRINT CHR$(253) : CU = 32
1005   IF FIRE = 0 THEN ANGLE = 45 : SHELL = 4
1007   XIV = SHELL * COS(ANGLE) / 3 : YIV = SHELL * SIN(ANGLE)
       / 5
1010   PEN 1 : IF (BOMBX < 39) AND (BOMBY > 0 AND BOMBY < 23)
       THEN LOCATE BOMBX, BOMBY : PRINT CHR$(CU)
1020   T = T + 2
1030   IF (T = 20) AND (FIRE = 0) THEN 2000
1040   BOMBX = INT(3 + T * XIV)
```

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```
1050    BOMBY = INT(8 - T * YIV + 0.049 * T * T)
1060    IF BOMBY < 1 THEN RETURN
1065    IF BOMBY > 19 THEN BOMBY = 19 : IF BOMBX > 34 THEN BOMB
        X = 34 : GOTO 2000 ELSE GOTO 2000
1070    IF BOMBX > 34 THEN BOMBX = 34 : IF BOMBY < 2 OR BOMBY >
        22 THEN BOMBX = 0 : RETURN ELSE GOSUB 2000 : RETURN
1080    IF TEST(BOMBX * 16 - 8, 400 - BOMBY * 16) = 1 THEN CU =
        143 ELSE CU = 32
1090    HIT = 0 : FOR TK=1 TO 4 : IF EXIST(TK) = 0 THEN 1110 EL
        SE T1 = BOMBX - TANKX(TK) : T2 = BOMBY - TANKY(TK)
1100    IF (T1 = 0 OR T1 = 1) AND (T2 = 0 OR T2 = 1) THEN HIT =
         TK
1110    NEXT
1120    IF HIT = 0 THEN LOCATE BOMBX, BOMBY : PEN 3 : PRINT CHR
        $(253) : RETURN
1130    GOTO 4000
```

┌───┐
│   │
│   Explosion   │
│   │
└───┘

```
1140    :
2000    PEN 3 : FOR I=1 TO 6
2010    LOCATE BOMBX-1, BOMBY-1
2020    PRINT EXPL$(I,1)
2022    LOCATE BOMBX-1, BOMBY
2024    PRINT EXPL$(I,2)
2026    LOCATE BOMBX-1, BOMBY+1
2028    PRINT EXPL$(I,3)
2030    SOUND 1, 0, 15, 15, 1, 1, 31
2035    IF HIT <> 0 THEN 2050
2040    IF INT(I/2) <> I/2 THEN INK 0, 24 : TCOL = 1 : GOSUB 35
        00 ELSE INK 0, 0 : TCOL = 0 : GOSUB 3500
2050    NEXT
2055    IF BOMBX < 8 THEN FOR I=1 TO 6 : FOR J=12 TO 20 : PEN 1
         : LOCATE I, J : PRINT CHR$(143) : NEXT : NEXT
2060    BOMBX = 0 : LOCATE 9, 22 : PRINT " ▲▲ " : LOCATE 22, 22
        : PRINT " ▲▲ " : RETURN
```

┌───┐
│   │
│   Move and display tanks   │
│   │
└───┘

```
2990    :
3000    IF RND(1) > NROUNDS/100 THEN RETURN
3010    LT = LT + 1 : IF LT = 5 THEN LT = 1
3020    IF EXIST(LT) = 0 THEN 3010
3030    TANKX(LT) = TANKX(LT) + TSPEED(LT)
3040    IF TANKX(LT) <= 6 THEN TCOL = 3 : GOSUB 3500 : GOTO 900
        0
3050    RETURN
3500    FOR TK=1 TO 4
3510    IF EXIST(TK) = 0 THEN 3530 ELSE LOCATE TANKX(TK), TANKY
        (TK) : PEN TCOL
3520    PRINT TANK$
3530    NEXT : RETURN
```

┌───┐
│   │
│   Hit tanks   │
│   │
└───┘

```
3990    :
4000    EXIST(HIT) = 0 : SCORE = SCORE + 50 : LOCATE 35, 22 : P
        EN 2 : PRINT SCORE
```

```
4010   K = BOMBX : GOSUB 2000 : BOMBX = K : GOSUB 2000 : BOMBX
       = K : GOSUB 2000
4020   HIT = 0 : BOMBX = K : GOSUB 2000
4030   IF EXIST(1) = 0 THEN IF EXIST(2) = 0 THEN IF EXIST(3) =
       0 THEN IF EXIST(4) = 0 THEN 190
4040   RETURN
```

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│    Display message                                    │
│                                                       │
└─────────────────────────────────────────────────────┘
```

```
4990   :
5000   LOCATE 4, 24 : PEN 3 : PRINT SPACE$(34)
5010   LOCATE 4, 24 : PRINT MSG$(MN)
5020   RETURN
```

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│    Game over                                          │
│                                                       │
└─────────────────────────────────────────────────────┘
```

```
8990   :
9000   MN = 9 : GOSUB 5000 : FOR I=1 TO 1000 STEP 10 : SOUND 1
       , I, 8, 15 : NEXT
9010   FOR I=1 TO 22 : PRINT : NEXT
9020   PRINT "▴▴▴▴▴PRESS▴A▴KEY▴FOR▴ANOTHER▴TRY"
9030   IF INKEY$<>"" THEN 9030
9040   IF INKEY$="" THEN 9040 ELSE RUN
```

ChexSum Tables

10	=	1530	370	=	2613	2022	=	1540
20	=	3886	380	=	3292	2024	=	1022
30	=	4396	390	=	2491	2026	=	1799
40	=	4164	400	=	1865	2028	=	1023
50	=	3655	410	=	930	2030	=	695
60	=	3762	420	=	2661	2035	=	1158
70	=	7174	430	=	3340	2040	=	5004
80	=	1193	440	=	1503	2050	=	208
90	=	3947	450	=	2301	2055	=	5272
100	=	7174	460	=	2701	2060	=	2372
110	=	6735	470	=	2442	2990	=	0
120	=	3370	480	=	1623	3000	=	2417
130	=	4993	490	=	0	3010	=	2707
140	=	4256	500	=	670	3020	=	1900
150	=	5197	505	=	456	3030	=	3285
170	=	5553	510	=	416	3040	=	3076
175	=	7761	520	=	1821	3050	=	201
177	=	4248	990	=	0	3500	=	1062
179	=	4741	1000	=	5790	3510	=	4830
180	=	0	1005	=	2764	3520	=	656
190	=	6190	1007	=	5008	3530	=	378
200	=	3922	1010	=	6052	3990	=	0
210	=	3521	1020	=	949	4000	=	4177
220	=	1886	1030	=	2410	4010	=	4229
230	=	548	1040	=	2224	4020	=	2033
240	=	5347	1050	=	3970	4030	=	5742
250	=	3765	1060	=	1467	4040	=	201
260	=	763	1065	=	5338	4990	=	0
270	=	1333	1070	=	6398	5000	=	1190
280	=	2570	1080	=	5015	5010	=	1275
290	=	1076	1090	=	8033	5020	=	201
300	=	1333	1100	=	4621	8990	=	0
310	=	0	1110	=	176	9000	=	3321
320	=	927	1120	=	3675	9010	=	1374
330	=	2571	1130	=	397	9020	=	2353
340	=	3170	1140	=	0	9030	=	1259
350	=	3249	2000	=	1215	9040	=	1652
360	=	929	2010	=	1800			
365	=	1388	2020	=	1021	TOTAL	=	301283

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