Subhunter – The Final Listing

```
10 REM ****************************
30 REM ** 64 PROGRAMMING PROJECT **
70 REM ****************************
90 POKE55,0:POKE56,48:CLR:
REM LOWER MEMTOP
100 V=53248:FL=0:SC=0
110 GOSUB1000: REM SCREEN SETUP
120 GOSUB2000: REM SPRITE CREATION
130 GOSUB2500: REM SET SUB COORDS
140 TI$="000000"
200 REM **** MAIN LOOP ****
210 REM   ** TIMER **
220 PRINTCHR$(19);:PRINTTAB(14)CHR$(5);
"TIME "MID$(TI$,3,2)":"RIGHT$(TI$,2)
225 IFVAL(TI$)>259 THEN 400:REM END GAME
230 GET A$
240 IF A$="Z" THEN X0=X0-1.5:IF X0<24
THENX0=24
250 IF A$="X" THEN X0=X0+1.5:IF X0>245
THENX0=245
260 IF A$="M" AND FL=0 THEN GOSUB3000:
REM SET UP DEPTH CHARGES
270 REM  ** MOVE SHIP **
290 POKE V,X0
300 REM ** MOVE SUB **
310 X3=X3+DX
320 REM**IF SUB REACH EDGE OF SCREEN **
330 IF X3>360 THEN DS=-1:GOSUB5500:
GOSUB2500
340 H3=INT(X3/256):L3=X3-256*H3
350 POKE V+6,L3
360 IF H3=1 THEN POKE V+16,PEEK(V+16)OR8:
GOTO380
370 POKE V+16,PEEK(V+16)AND247
380 IF FL=1 THEN GOSUB4000:
REM MOVE DEPTH CHARGE
390 GOTO 200:REM RESTART MAIN LOOP
400 REM **** END OF GAME CONDITIONS ****
410 REM   ** TURN OFF SPRITES **
420 POKE V+21,0
430 REM   ** RESET SUB & SHIP COORDS **
440 X0=160:GOSUB 2500
450 INPUT"ANOTHER GAME (Y/N)";AN$
460 IF AN$<>"Y"THENEND
480 REM   ** RUBOUT MESSAGE **
490 PRINT CHR$(19):REM HOME CURSOR
500 FOR I=1 TO 120
510 PRINT" ";
520 NEXT I
540 REM   ** SET HI SCORE **
550 IF SC>HS THEN HS=SC
560 PRINT CHR$(19);CHR$(144);" SCORE 000":
SC=0
570 PRINT CHR$(19);
580 PRINT TAB(26);CHR$(144);"HI SCORE";HS
600 REM   ** RESET TIMER AND FLAG **
610 TI$="000000":FL=0
630 REM   ** TURN ON SUB & SHIP **
640 POKE V+21,9
660 GOTO200: REM RESTART LOOP
1000 REM **** SCREEN SETUP ****
1010 PRINT CHR$(147):REM CLEAR SCREEN
1030 REM   ** COLOUR SEA **
1040 POKE 53281,14:POKE 53280,6
1050 FOR I=1264 TO 1943
1060 POKE I,160:POKE I+54272,6
1070 NEXT
1090 REM   ** SEA BOTTOM **
1100 FORI=1944 TO 2023
1110 POKE I,102:POKE I+54272,9
1120 NEXT
1130 POKE 650,128:REM REPEAT KEYS
1150 REM   ** SCORE **
1160 PRINT CHR$(19);CHR$(144);" SCORE 000"
;SPC(16);"HI SCORE 000"
1170 RETURN
2000 REM **** SPRITE CREATION ****
2020 REM   ** READ SHIP DATA **
2030 FOR I= 12288 TO 12350
2040 READ A:POKE I,A:NEXT I
2060 REM   ** READ SUB DATA **
2070 FOR I=12352 TO 12414
2080 READ A:POKE I,A:NEXT
2100 REM   ** READ CHARGES DATA **
2110 FOR I = 12416 TO 12478
2120 READ A:POKE I,A:NEXT
2140 REM   ** READ EXPLOSION DATA **
2150 FOR I = 12480 TO 12542
2160 READ A:POKE I,A:NEXT
2180 REM   ** SET POINTERS **
2190 POKE 2040,192:POKE 2041,193:POKE 2042
,194
2200 POKE2043,195
2220 REM   ** SET COLOURS **
2230 POKE V+39,0:POKE V+40,1:POKE V+41,0
2240 POKE V+42,0
2260 REM   ** SET INITIAL COORDS **
2270 POKE V+1,80:X0=160: REM SHIP COORDS
2280 POKE V+29,15:POKE V+23,2
2300 REM   ** TURN ON SPRITES 0 & 3 **
2310 POKE V+21,9
2320 RETURN
2500 REM **** RESET SUB COORDS ****
2510 Y3=110+INT(RND(TI)*105)
2520 POKE V+7,Y3:POKE V+6,0
2530 X3=0:DX=RND(TI)*3+1
2540 POKE V+16,0
2550 RETURN
3000 REM **** SETUP DEPTH CHARGES ****
3020 REM   ** SET FLAG **
3030 FL=1
3050 REM   ** SET COORDS **
3060 Y2=95:X2=X0
3070 POKE V+4,X2:POKE V+5,Y2
3090 REM   ** TURN ON SPRITE 2 **
3100 POKE V+21,PEEK(V+21)OR4
3110 RETURN
4000 REM **** MOVE DEPTH CHARGE ****
4020 REM   ** DECREASE Y COORD **
4030 Y2=Y2+2
4050 REM   ** TEST SEA BTM & TURN OFF **
4060 IF Y2>Y3+25 OR Y2>216 THEN POKEV+21,
PEEK(V+21)AND251:FL=0
4070 POKE V+5,Y2
4090 REM   ** TEST FOR HIT ON SUB **
4100 IF PEEK(V+30)=12 THEN GOSUB 5000:
REM HIT ROUTINE
4110 RETURN
5000 REM **** HIT ROUTINE ****
5010 POKE V+30,0:REM CLR COLLISION REG.
5020 REM   ** TURN ON EXPLOSION SPRITE **
5030 POKE V+2,X2+10:POKE V+3,Y3
5040 POKE V+21,PEEK(V+21)OR2
5060 REM   ** FLASH COLOURS **
5070 FOR I=1 TO 20
5080 FOR J=1TO 15
5090 POKE V+40,J
5100 NEXT J:NEXT I
5120 REM   ** TURN OFF SPRITES 1,2 & 3**
5130 POKE V+21,PEEK(V+21)AND241
5150 REM   ** UPDATE SCORE **
5160 DS=1:GOSUB 5500
5180 REM   ** RESET SUB COORDS & FLAG **
5190 FL=0:GOSUB 2500
5210 REM   ** TURN SUB BACK ON **
5220 POKE V+21,PEEK(V+21)OR8
5230 RETURN
5500 REM **** UPDATE SCORE ****
5510 SC=SC+INT(Y3+DX*30)*DS
5520 IF SC<0 THEN SC=0
5530 PRINT CHR$(19);CHR$(144)" SCORE";SC;
CHR$(157);"    "
5540 RETURN
6000 REM **** SHIP DATA ****
6010 DATA0,0,0,0,0,0,0,0,0
6020 DATA0,128,0,0,192,0,0,192,0
6030 DATA0,192,0,1,224,0,1,224,0
6040 DATA13,224,0,3,248,128,3,253,8
6050 DATA15,254,16,31,255,48,255,255,255
6060 DATA127,255,254,63,255,254,31,255,252
6070 DATA0,0,0,0,0,0,0,0,0
6100 REM **** EXPLOSION DATA ****
6110 DATA0,0,0,0,0,0,0,16,0,0,8,0,4,16
6120 DATA0,3,2,64,1,56,128,12,255,144
6130 DATA1,238,40,5,151,0,11,121,0,1
6140 DATA183,0,25,214,96,0,236,48,6,24
6150 DATA152,3,98,0,8,51,0,0,96,128,0
6160 DATA64,0,0,0,0,0,0,0
6170 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
6200 REM **** DEPTH CHARGES DATA ****
6210 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
6220 DATA0,0,0,32,0,0,32,0,0,32,0,0,32,0
6230 DATA0,0,0,0,0,0,0
6240 DATA2,0,0,2,0,0,2,0,0,2,0,0
6250 DATA0,0,0,0,0,0,0,0
6260 DATA0,0,0,0,0,0,0,0
6300 REM **** SUBMARINE DATA ****
6310 DATA0,0,0,0,0,0,0,0,0,0,0,0
6320 DATA0,8,0,0,12,0,0,12,0
6330 DATA0,12,0,0,28,0,0,60,0
6340 DATA0,126,0,199,255,255
6350 DATA239,255,255,127,255,255
6360 DATA255,255,254,199,255,254
6370 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
```

Here then is the final listing for our Subhunter program together with a table of the key variables used in it. The listing contains many REM statements to aid understanding. These may be left out when typing the program into your own computer, but be careful that you do not delete a REM line that is required by another part of the program. For example, you may choose to delete the REM at line 400, but this line number is used as part of a GOTO statement in line 225. Deleting line 400 entirely will cause an 'UNDEF'D STATEMENT ERROR AT LINE 225' message to appear and the program will crash. The best way to avoid this is to leave out only those REMs that appear at the end of a line and those lines that use colons (:) to space out the code.