Protek
HUNTER KILLER

Instruction Manual

Solo Game

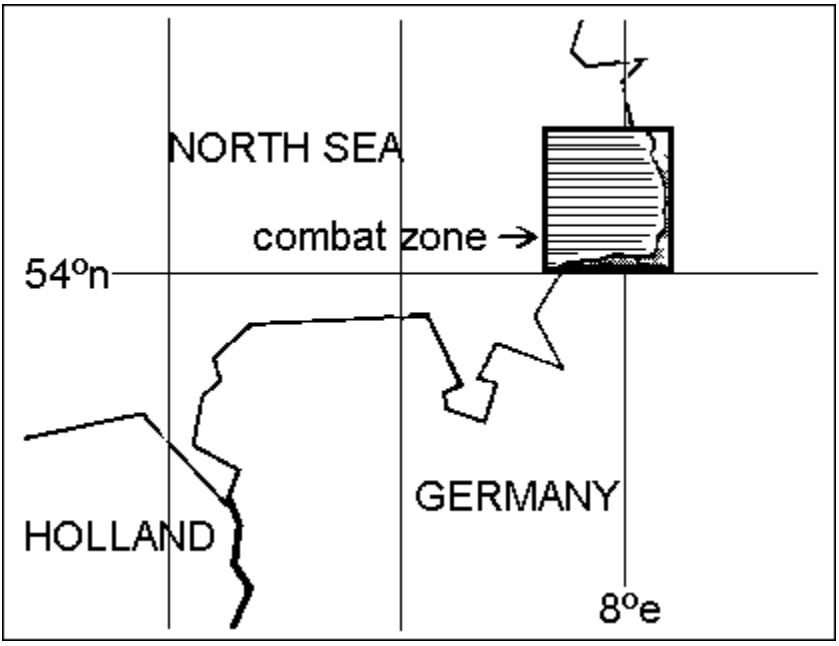

Fig.1 Combat Zone

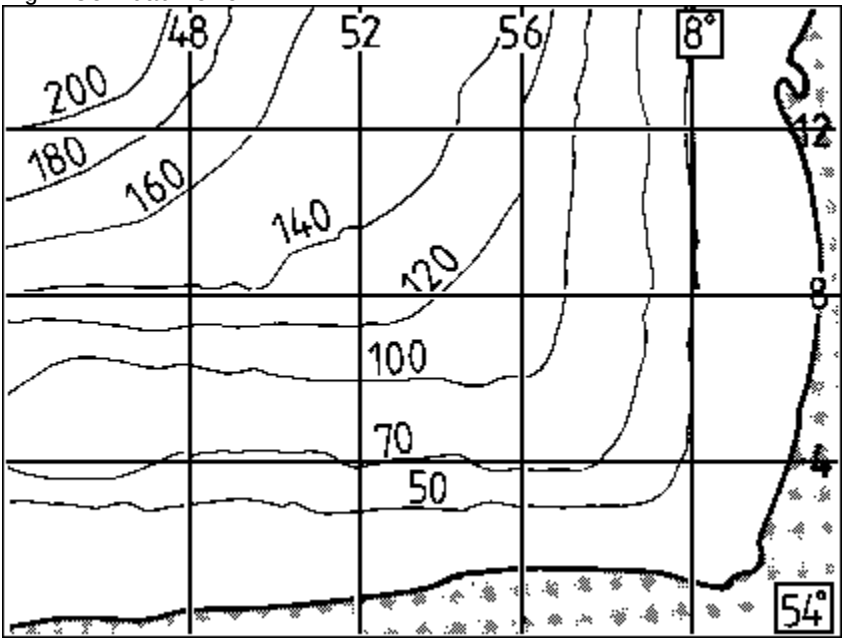

Fig.2 Seabed Contour Chart

HUNTER KILLER

by R. Hopkins

Loading the Game

The solo program is loaded by typing LOAD "" or LOAD "HUNTER". If you have any problems with tape loading, consult pages 141-148 of the Sinclair ZX Spectrum handbook. The program loads in four sections; only stop your recorder when the display showing the stars and your position comes up.

The dual version loading is covered in the "Dual Game" section.

The Game

You are the Commander of an "S" type submarine on an important mission off the coast of Heligoland (Germany) and Denmark during the Second World War. The area is shown in Fig.1. Inside this area is an enemy submarine that you must hunt and sink to complete your mission successfully. You must not stray outside your area or you will be sunk by destroyers which are hunting you. The coast is heavily mined and if you sail too close to it you will probably hit a mine; if not you will run aground. The seabed contours are shown in Fig.2.

"S" Type Submarine

The "S" type submarine was one of the most successful classes of British submarine, being the largest single group of submarines ever built for the Royal Navy. The class remained in service and production throughout the Second World War. They had an overall length of 217 ft. and displaced up to 1000 tons, and a crew complement of 44. The diesel engines developed 1900 SHP giving a maximum speed of 16 knots; the electric motors developed 1300 SHP and gave a speed underwater of 9 knots. The maximum diving depth was 300 ft.

Sailing a Submarine

A submarine sails like a normal ship, left rudder (←) will turn you to port and right rudder (→) will turn you to starboard (remember that left and port both have four letters). You can also turn using left and right movements of the joystick. The maximum rudder angle is 70 degrees. The rudder sensitivity depends on your speed, and the faster you are sailing, the faster you will turn.

A submarine has two engines; one diesel, one electric. On the surface you should use the diesel engine but, because diesel engines need air to run, they cannot be used under water. In this situation you must use your electric motors; diving underwater with diesel engines will cause a

warning light to flash and, if this warning is disregarded, you will irreparably damage your diesel engines. The electric motors run off batteries that are charged up by the diesel engines when on the surface and if you allow the batteries to run down by spending long periods of time underwater, you can leave yourself with too little power to surface and re-charge, so watch the battery charge indicator.

Diesel engines are more powerful than the electric motors; they will give you a top speed of 16 knots compared with only 9 knots under electric power. Pressing the E key will change your engines from diesel to electric or vice-versa, and an indicator in the main control room will show you which motors you are using.

To dive the submarine two actions must be taken. You must first fill your ballast tanks by using the N - Neutral buoyancy - key. As the tanks fill up the indicator at the top left hand side of the control room will show the water level in the tanks. This will cause the submarine to sink slowly. To assist in diving, there are miniature wings on submarines called hydro-planes. If these are turned clockwise, pushing the tips downwards, then this will push the submarine underwater. This is done by pushing the (↓) key (on the 6) or pulling the joystick back. Remember you will not dive quickly if you don't take both of these actions.

To stop diving you must level the hydro-planes by pushing the (↑) key (on the 7) or pushing the joystick forward. You must also empty your ballast tanks until the ballast indicator is at the half-way mark. You will now level out at this depth.

To surface, you must do the reverse of diving, blowing your tanks using the B - Blow - key and angle the hydro-planes upwards by turning them anti-clockwise. This is done by pushing the (↑) key (on the 7) or pushing the joystick forwards. Fig.3 shows the positions of the instruments and indicators in the control room.

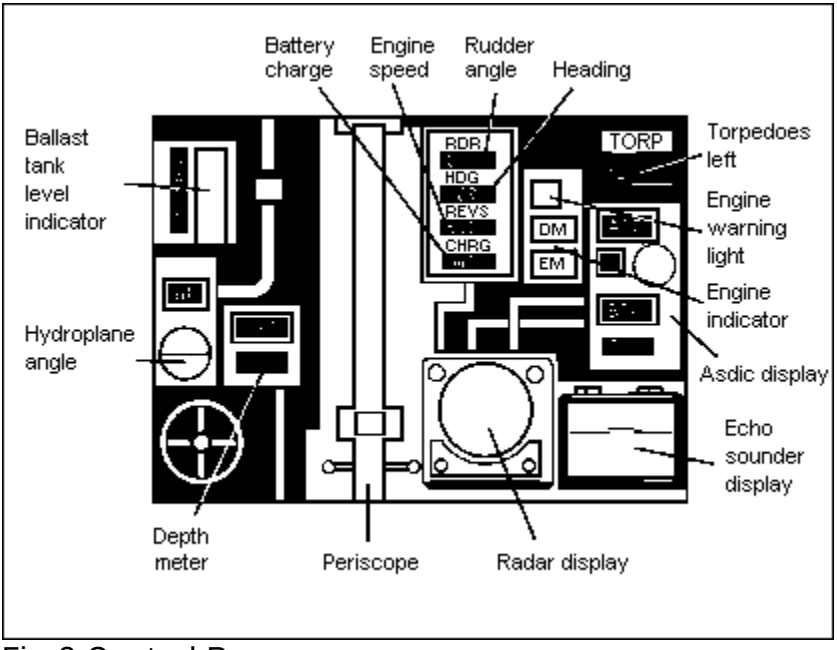

Fig.3 Control Room

Using the Periscope

The periscope is in the centre of the control room; press the P key will raise or lower it, and pressing V will let you see through it. When you look through the periscope you will see the surface of the sea and the target, if it is within visual range. The sea surface will be higher up the viewing window the deeper the submarine is sailing; below about 38 ft. you will be too deep for a periscope view. The optimum periscope depth is around 34 ft.

To turn the periscope, press O and it will rotate clockwise in 36 degree increments. Pressing I will rotate it anticlockwise in 6 degree increments.

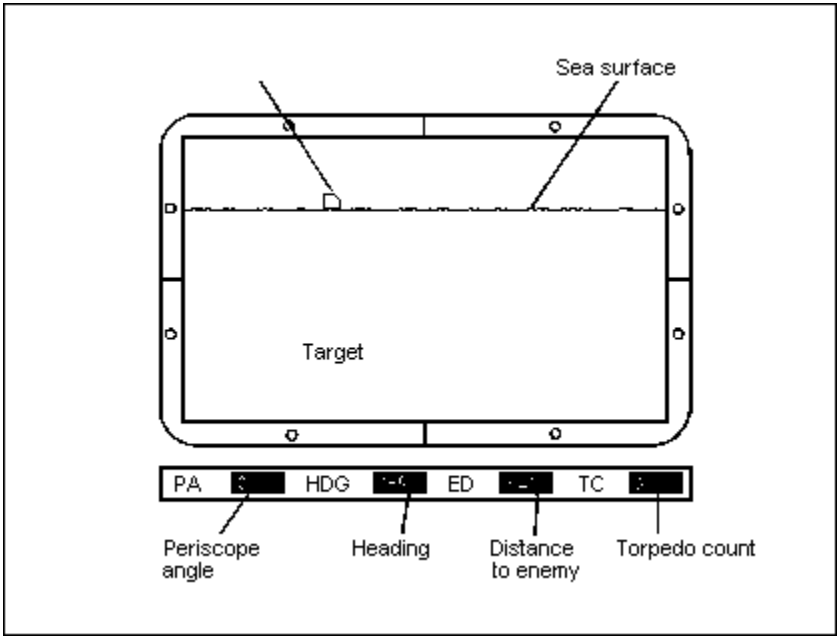

Fig.4 Periscope View

Below the periscope lens are four digital readouts. These are shown in Fig.4. The first shows the periscope angle, 0 degrees is dead ahead, the second is heading - the way the ship is pointing, which is not necessarily the way it is moving. The third gives the distance to the enemy, updated only if the enemy is within range of the instruments, and the fourth shows the number of torpedoes running.

Press V to return to the control room.

Radar, Asdic and Depth Recorder

The Asdic set displays a north up true bearing for targets within a four mile range. It comes on automatically at depths greater than 10 ft. and you will hear its characteristic "ping". On the surface, the radar is switched on instead. It has a greater range - 22 miles - and again is a north up, PPI display, on which each sweep of the antenna is seen. Finally, the echo sounder indicates the depth of water below the keel. Thus, if the boat is rising, the trace falls, as it does when the submarine remains level while the sea-bottom shelves off. Fig.2 shows the seabed contour charts and the echo sounder range is from 200 ft. up to 0 ft.

The Chart Room

The chart room is on the starboard of the control room and is accessed by pressing the C key. It is shown in Fig.5. The control room proper slides across, making room for the chart display as it goes. Sounder and Asdic sets both remain in view, now on the left, and both continue to work. On the chart itself, apart from the local coastline, there is a large compass rose, the boundaries of a continuous coastal minefield - m - and a longitude/latitude grid calibrated at the bottom and right. Inverse figures give degrees, the others, minutes.

At the top left of the chart a small line radiating from a small circle points in the direction of the tide

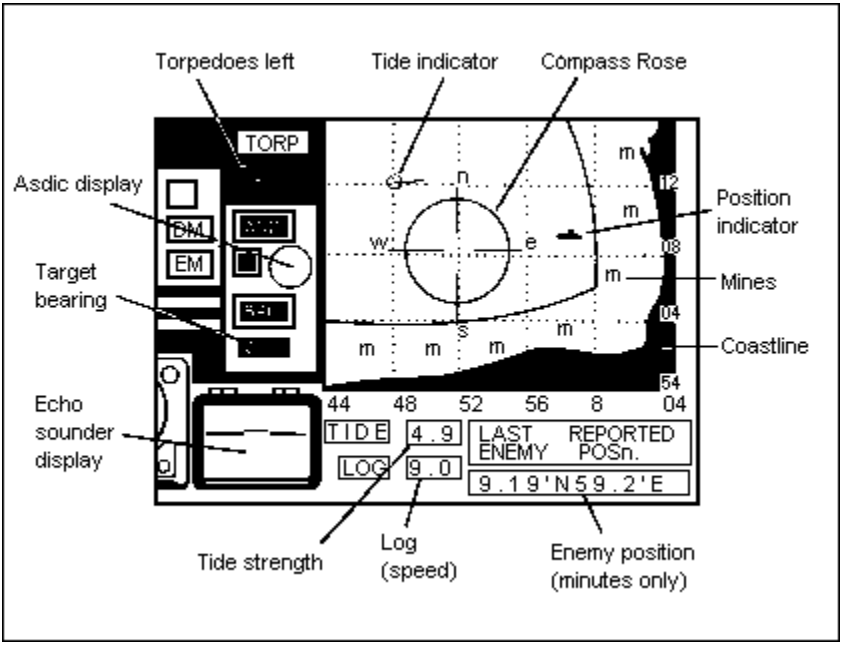

Fig.5 Chart Room

stream. Your own position is indicated by a miniature submarine - at the left-hand end. Below the chart can be found tide strength; the log, i.e. your speed through the water; and the enemy's last reported position. The position indicator only gives the minutes part of the position, the degree part is obvious. For example if the position indicator says 30.2' N, 7.4' E then the full position is 58° 30.2' N, 8° 7.4' E. This position is only updated if the target is within range of the sensor that is functioning at this time. The enemy is always surfaced for the solo game, and always starts off from some point on the eastern side of the chart, steering a course with a lot of west in it, at a random speed up to about four knots. Your position is not updated while the chart room is accessed. Pressing the X key will allow you to exit from the chart room and return to the control room.

Firing Torpedoes

Torpedoes can be fired dead ahead at a target; there are only bow torpedo tubes. Pressing T will prime the torpedoes and fire the first one. Second and subsequent torpedoes in this salvo are fired using F. The torpedo count meter will keep track of the number of torpedoes in this salvo. Salvoes must be spread in time, not angle.

Torpedoes run at 45 knots and have a range of three miles. A bubble track gives some indication of the progress of the torpedoes, though not an accurate position of the torpedo, of course. If the salvo has clearly missed, the salvo can be aborted by pressing A.

Torpedoes cannot be fired unless the rudder is straight and the boat is maintaining a steady depth less than or equal to the maximum periscope depth. If the periscope angle is other than zero on firing, it will automatically swing to, and lock on zero. The rest of the display also locks until a torpedo strikes home, or until all have run themselves out.

Additional Dangers

There are aircraft hunting for you. If one is spotted, you will hear it approach and your klaxon will sound. You have about two minutes to dive below 30 ft.; if you fail you will be sunk.

If you spend some time dead ahead of the target submarine it will torpedo you.

When the game is first loaded you will be offered a quick practice shot at a sitting target. Follow the prompts on the screen exactly to make use of this option.

Summary of Controls

Key	Function
5 (←) or Joystick left	Rudder left
6 (↓) or Joystick back	Hydro-planes down: dive
7 (↑) or Joystick forwards	Hydro-planes up : surface
8 (→) or Joystick right	Rudder right
A	Abort salvo
B	Blow ballast
C	Go to Chartroom
E	Change engines
F	Fire second and subsequent torpedoes
I	Turn periscope anti-clockwise by 6°
J	Decrease engine revs
K	Increase engine revs
N	Flood tanks (negative buoyancy)
O	Turn periscope clockwise by 36°
P	Raise/lower periscope
T	Prime torpedoes and fire first torpedo
V	View through or exit from periscope
X	Exit from Chartroom

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Instruction Manual

Dual Game

HUNTER KILLER

DUAL GAME

Loading the Game

To play the dual game you need two ZX Spectrums, both fitted with Interface 1 and their own TV sets. They should be linked using the networking lead supplied with Interface 1 as shown in Chapter 7 of the Interface 1 and Microdrive Manual. Connect the tape recorder to one ZX Spectrum and type in LOAD "" or LOAD "HUNTER2" and load the program in the conventional manner. The program will autorun.

Type LOAD*"N";1;"HUNTER2" followed by ENTER into the other ZX Spectrum; when the program in the first computer runs it will transfer the program to the second computer.

Playing the Game

The area of combat and the destroyer, mine and seabed hazards are the same as the solo version. All the submarine controls and instruments and the hazards of running underwater are unchanged.

Apart from the fact that the target is now controlled by the operator of the other computer, there are two differences between the solo and dual games. Firstly, the dual game has no air attacks, the duel is between the two submarines only. Secondly, the initial battery charge given to each submarine is much less than in the solo game. This is to ensure that each captain must conserve battery charge, not just dive underwater and stay there indefinitely.

A summary of the submarine controls are given on the back of this leaflet to let each captain have his own copy.

If any error codes are generated, type CONTINUE followed by ENTER. If all else fails, BREAK both games and type in RUN2 to both computers. Press enter together and the game will restart.

Summary of Controls

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5 (←) or Joystick left	Rudder left
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7 (↑) or Joystick forwards	Hydro-planes up : surface
8 (→) or Joystick right	Rudder right
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