

# SILENT SERVICE™

## LOADING INSTRUCTIONS

### CBM 64/128

Press SHIFT & RUN/STOP the press play on recorder.

### SPECTRUM 48/128K, +2

Type LOAD then press RETURN.

### AMSTRAD CPC

PRESS the CTRL & ENTER key together then press any key when prompted to load your software.

## QUICKSTART

- Review the SUBMARINE CONTROLS and COMBAT CONTROLS sections to give you an idea of how to handle your submarine.
- Look over the CONNING TOWER MENU and BATTLE STATION SCREENS sections to understand the options available to you on each screen.
- Locate your loading instructions and load the program into your computer.
- Choose Torpedo/Gun Practice or a Convoy Action scenario. (Stick to scenario 1 or 2 until you learn to manoeuvre and attack with your submarine.)
- Choose difficulty level 1 (trainee).
- Turn off all reality level factors.
- Good luck!

## TARGET IDENTIFICATION PRACTICE

A vital skill which each sub captain must possess is the ability to recognise and identify enemy targets. If you select one of the dangerous Patrol Mission scenarios you will be given a chance to refresh your target identification skills. Look up the ship requested (example: Japanese "Type 1" Destroyer). Determine which of the four ship silhouettes displayed on the screen matches the silhouette at the end of the instructions. Type the number of the matching silhouette (1, 2, 3, 4). If you correctly identify the ship you may proceed on your patrol. If you are incorrect, you will be re-assigned for further training and will proceed to Torpedo/Gun Practice at Midway Island.

## OPTIONS

Upon loading, you will be allowed to select the scenario, options, and skill factors you wish to use.

## SCENARIOS

There are three types of scenarios. "Torpedo/Gun Practice" places you outside the American base at Midway Island. Four old cargo ships are anchored there as torpedo and gunnery practice targets. The second set of scenarios: "Convoy Actions", recreate various actual submarine attacks on a convoy. "War Patrols", allow you to command an entire patrol, beginning at the submarine bases at Midway, Brisbane, or Fremantle; continuing through a number of convoy actions; and concluding with a return to base.

## SKILL LEVELS

You may select from one of four skill levels: "MIDSHIPMAN", "LIEUTENANT", "COMMANDER" or "CAPTAIN". The skill level affects the accuracy of torpedo runs, damage sustained from depth charge attacks, the skills of enemy lookouts and sonar operators, as well as other factors. The "MIDSHIPMAN" level is designed to provide a challenge for beginning players. The "COMMANDER" level is designed to be historically accurate. The "CAPTAIN" level is intended for the expert submarine driver. Press 1, 2, 3, 4 to change the skill level.

## REALITY LEVELS

In addition, you may customise the simulation with various "reality levels". Each level introduces an element which makes the simulation both more realistic and more difficult. To select the reality levels, use the joystick to move the flashing asterisk and press the trigger to toggle the YES/NO indicator.

### • LIMITED VISIBILITY

If this level is selected enemy ships which are beyond radar/sonar range will not appear on the map displays. Enemy ships which were detected but have moved out of range will blink slowly at their last known position. If this level is not selected all enemy ships will appear on the map displays regardless of their range or location.

### • CONVOY ZIG-ZAGS

If this level is selected enemy convoys will "zig-zag" (change course) at regular intervals. If this level is not selected, cargo ships will steam straight ahead unless they are attacked by torpedoes or encounter land masses.

### • DUD TORPEDOES

If this level is selected some of your torpedoes may be duds, especially during the years 1942-1943. Dud torpedoes may hit the enemy but will not explode, only the splash will be seen.

### • PORT REPAIRS ONLY

If this level is selected repairs will no longer be accomplished automatically while in battle or on patrol. Once an item of major equipment is damaged, it may not be repaired.

### • EXPERT DESTROYERS

If this level is selected certain enemy convoys will be escorted by "expert" destroyers. These escorts are more persistent and have better trained sonar operators.

### • CONVOY SEARCH

If this level is selected convoys will not always appear within radar range. You will need to search them out. Far off convoys are best sighted by performing a 360 degree periscope/binocular sweep of the horizon.

### • ANGLE-ON-BOW INPUT

If this level is selected the computer will no longer calculate the "Angle on the Bow" for torpedo shots. You must enter the angle yourself based on periscope observations. Be sure you understand the workings of the Torpedo Data Computer before attempting this level. Recommended for experienced players only.

## DIFFICULTY LEVELS

The skill level and reality levels you select combine to produce an overall difficulty factor from 1 to 9. This difficulty factor and the tonnage which you sink will determine your ranking in the "Submariner's Hall of Fame" at the conclusion of your mission.

Once you are satisfied with the skill and reality levels, press "F7" to load the remainder of the game and begin play.

Additional data may be loaded at this time. When loading is completed you will appear in the conning tower (or the Patrol Navigation Map if you selected a War Patrol scenario) and the action will begin!

## TERMINOLOGY

- Port: The left side of the ship.
- Starboard: The right side of the ship.
- Bearing: The direction you are looking.
- Heading: The direction your ship is going.

## KEYBOARD COMMANDS

COMMAND	C64	SPEC	AMS	DESCRIPTION
<b>LOCATIONS</b>				
CONNING TOWER	SP. BAR	SP. BAR	SP. BAR	Return to the conning tower menu screen.
MAP	F1	SHIFT 1	F1	Select the Maps and Charts battle station. If you are already at Maps and Charts, this will re-centre the map on your sub.
BRIDGE	F3	SHIFT 2	F2	Select the Bridge battle station (only possible when the sub is on the surface).
SCOPE	F5	SHIFT 3	F3	Select the Periscope/Binoculars battle station screen (only possible if sub is at periscope depth or on the surface).
GAUGES	F7	SHIFT 4	F4	Select the Gauges and Instruments battle station screen.
DAMAGE	F2	SHIFT 5	F5	Select the Damage Reports battle station screen.
LOG	F4	SHIFT 6	F6	Display the Quartermaster's Log for the current patrol.
PATROL/END	F8	SHIFT 8	F8	Return to the War Patrol Navigation screen to search for another convoy. This ends the game if playing a Convoy Action or Training scenario.

## SUBMARINE CONTROLS

PERISCOPE	P	P	P	Raise/Lower periscope. This commands also sets the visual bearing to be the same as your sub's heading - you will be looking straight ahead (see above).
THROTTLE	0-4	1-5	1-5	Throttle settings: all stop, 1/3, 2/3, full, and flank speeds.
REVERSE	R	R	R	Reverse the engines. Note that the turning effect of the rudders is reversed if the sub is proceeding in reverse.
DIVE	D	D	D	Causes sub to dive. Cancel this command by pressing RETURN.
SURFACE	S	S	S	Causes sub to rise toward surface. Cancel this command by pressing RETURN.
LEFT	←	C	Shift	Left rudder. Press again for Full Left Rudder. To cancel press RETURN.
RIGHT	→	V	Shift	Right rudder. Press again for Full Right Rudder. To cancel press RETURN.
CANCEL EMERGENCY	RETURN CTRL.E	ENTER CTRL.E	ENTER CTRL.E	Cancel all turn and dive commands. Blow emergency tanks to half uncontrolled dive. (Can only be used once per engagement).

## COMBAT CONTROLS

IDENTIFY	I	I	I	Identify target in crosshairs on scope.
TORPEDO	T	T	T	Fire torpedo. Bow or aft tubes will be selected automatically depending on which faces the target more directly.
GUN	G	G	G	Fire the 4-inch deck gun.
UP 25	+	+	>	Add 25 yards to the deck gun range deflection.
DOWN 25	-	-	<	Subtract 25 yards to the deck gun range deflection.
ROTATE SCOPE LEFT	JOYSTICK CMND.	NA	NA	Rotate periscope/binoculars or bridge view to the left.
ROTATE SCOPE RIGHT	NO KEY CMND.	NA	NA	Rotate periscope/binoculars or bridge view to the right.
AOB	A	A	A	Enter Angle-on-Bow estimate. AOB is entered in degrees by holding the joystick left or right. Press the fire button to enter the estimate. Use positive numbers Starboard, negative numbers for Port, e.g. 45 degrees Port is -045.
RELEASE DEBRIS	?	?	Ctrl?	Release debris and oil which may convince the enemy your sub has sunk.

## TIME AND SCALE CONTROLS

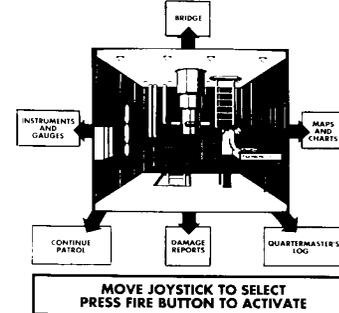
WAIT	W	W	W	Pause the simulation - press any key to continue. You may also pause by selecting the Conning Tower screen.
FASTER	F	F	F	Increase the time scale to cause the simulation to proceed more rapidly. Return to normal time scale.
NORMAL	N	N	N	Expand the simulation map to take a closer look at nearby ships and terrain.
ZOOM	Z	Z	Z	Expand the simulation map to take a closer look at nearby ships and terrain.
UN-ZOOM	X	X	X	Compress the simulation map display to get a wider view of ship locations and land areas.



Keys SPECTRUM 0-9 simulate LEFT, RIGHT Y-H - UP, DOWN M - FIRE AMSTRAD Joystick works as per instruction keys and copy to fire simulate joystick.

## CONNING TOWER MENU SCREEN

The conning tower screen acts as a menu screen - from this screen, you may select any of the five detailed battle station screens: the attack periscope, the bridge, the map plot, critical gauges and instruments, and damage reports (all of these are described in the "Battle Stations"). Use the joystick to position the captain at the desired battle station, then press the trigger. Centre - Periscope; Up - Bridge; Left - Instruments and Gauges; Right - Maps and Charts; Down - Damage Reports. To access the binoculars battle station you must first go to the Bridge, then press the fire button again. You may return to the conning tower from any screen but the Bridge. When you are at the conning tower screen, the simulation is paused. Note that some selections are unavailable under certain conditions, e.g. the bridge is unavailable if you are under water, etc. You may also select two special functions from this screen. If you are playing a Training or Convoy Action scenario, the "End of the Game" function (joystick down and left) will end your mission. If you are playing a War Patrol scenario, the "Continue Patrol" function (joystick down and left) ends the current convoy battle and returns you to the patrolling screen. You cannot end the battle if you are being tracked by enemy escorts, have torpedoes active, or if an enemy ship is still sinking. The "Quartermaster's Log" option (joystick down and right) is used to review your accomplishments so far in this patrol.



## BATTLE STATION SCREENS

SILENT SERVICE contains multiple Battle Station screens. On each screen different information is available and different commands can be entered. The battle stations represent the main locations from which the captain manages the battle and takes action. Not all controls are operable from all screens; be sure to note what controls are available on each screen.

## WAR PATROL NAVIGATION MAP BATTLE STATION (War Patrol scenarios only)

When you select a War Patrol scenario you start out on this screen, which displays a map of the western Pacific Ocean. You are free to explore any area of the map. Your ship is a tiny black dot near your starting port of Fremantle on Exmouth Gulf, Brisbane, or Midway. The Patrol screen simulates the time required to proceed from your base to enemy-controlled waters as well as the patrolling activity between engagements. (A typical patrol lasted up to two months.) Moving on the War Patrol map: if using a joystick, push the stick in the direction you wish to move. Time moves quickly while patrolling. The ocean or screen border changes from light to dark blue to represent day and night. Finding the Enemy: When the ocean or screen border turns red, you've spotted a convoy. Press the fire button to exit from patrol if you want to engage in battle. Note that enemy ships are generally found along the heavily travelled convoy routes and close to land. Valuable tanker and troop ships convoys are more likely to be found near Japan.

If you get the urge to explore a particular area of the map, you may do so, even if no convoys have been sighted and you are not at your base. Simply press the fire button to exit war patrol.

Getting Home: The submarine bases at Midway Island, Fremantle and Brisbane are indicated by flashing dots. When you have reached your base and the ocean or screen border turns green, you can return to port. Press the fire button to end the patrol and record your score in the Submariner's Hall of Fame.

Important Note: NO OTHER CONTROLS function on the patrol navigation screen. To make other controls work you must exit the war patrol.

## MAPS AND CHARTS BATTLE STATION

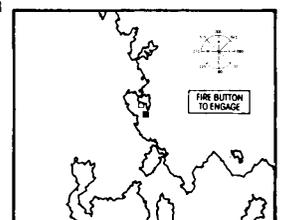
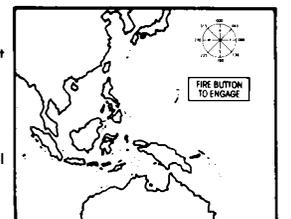
The maps and charts screen display information available from the navigator and the tracking party. Map information, visual sightings, radar and sonar are combined on this screen to show the location of your submarine, torpedoes, and all known enemy ships. Your submarine is represented by a black dot, torpedoes and enemy ships are white dots, green areas represent land masses and islands. NOTE: Sometimes there are enemy ships out there that you have not yet detected. These undetected ships do NOT appear on the map. Your lookouts aren't always reliable - it's wise to leave the maps battle station and look around the horizon with the periscopes and binoculars yourself. If an enemy ship is no longer within sighting range, a dot will flash slowly at its last known position. If more ships and torpedoes are active than the tracking party can handle, the most distant objects may be dropped from the map.

Zoom: You may enlarge or shrink the scale of the map to any of four levels of detail by using the Z and X keys. The initial map shows the entire Western Pacific. The Patrol Area map shows a 300 by 300 mile area. Zoom again and you will see the Navigation Map, which shows 60 by 60 miles. The most detailed map is the Attack Plot map, which shows an area of 8 miles by 5 miles. On the Attack Plot, ships are displayed with small "tails" which indicate the direction each ship is moving.

Controls Available: All Submarine and Time and Scale controls, plus "Release Debris."

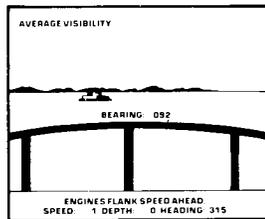
## BRIDGE BATTLE STATION

You may select this screen only if your sub is on the surface. The bridge screen provides a wide-angle view of nearby ships, islands and coastline. This screen also displays the current visibility conditions (good, average or poor).



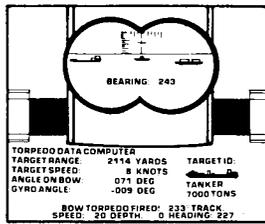
Controls Available: Rotate View left and right, Fire Deck Gun and Increase and Decrease Deck Gun and Increase and Decrease Deck Gun Deflection.

(NOTE: Firing the deck gun from the bridge is not recommended - use the Periscope/Binoculars battle station. Bearing: Notice that the "Bearing" changes as you rotate your view. Bearing is the direction in which you are looking expressed in compass degrees. Bearing 000 indicates you are looking North, 090 is East, 180 is South and 270 is West.



**PERISCOPE/BINOCULARS BATTLE STATION**  
This screen displays the view through the attack periscope during daylight/dusk/dawn and the view from the bridge Target Bearing Transmitter binoculars at night. The viewing area shows an enlarged image of visible ships and land. This screen may be selected when the sub is in the surface, or at periscope depth (44 feet or less) in daylight. (The attack periscope did not transmit enough light to be used at night.)

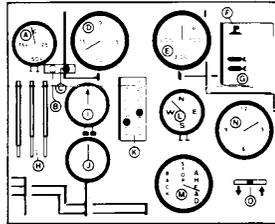
Controls Available: All Combat controls, plus Wait, Faster Time and Normal Time.  
Torpedo Data Computer: When the crosshairs turn white the Torpedo Data Computer is activated and target tracking is displayed. The TDC displays the range to the target, the target's speed, "angle on the bow," the computed gyro lead angle necessary to hit the ship, and the target's course. (Course is not available if you have selected the "Enter Angle-On-Bow" reality level.) You may fire a torpedo by pressing the "T" key, fire the deck gun by pressing the "G" key, or request target information from the identification party by pressing the "I" key.



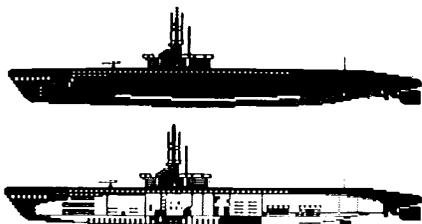
**INSTRUMENTS AND GAUGES**

This screen displays vital status information. The straight up position for all gauges represents a zero value, with increasing values in the clockwise direction. The primary instruments and gauges are:

- (A) **BATTERY LEVEL** - a gauge indicating the amount of electricity remaining in the battery. The battery is used for submerged cruising and is gradually recharged when on the surface. If your battery is exhausted you will be unable to move while underwater. A fully charged battery will allow one hour of high speed manoeuvring underwater...five or six hours at slow speeds.
- (B) **BATTERY CHARGE LIGHT** - indicates the battery is being charged.
- (C) **BATTERY IN USE LIGHT** - indicates the battery is being drained.
- (D) **SPEED** - a gauge indicating the sub's speed through the water. Maximum surface speed is 20 knots, maximum submerged speed is 10 knots.
- (E) **DEPTH** - a gauge showing the current depth below the surface. Periscope depth is 44 feet or less. Note that depth measured in feet below the surface; zero depth means the sub is on the surface.
- (F) **PERISCOPE INDICATOR** - this indicator in the upper left of the torpedo status box is white if the periscope is raised, black if down.
- (G) **TORPEDO READY INDICATOR** - a series of lights indicating which forward and aft torpedo tubes are ready for firing. Green indicates ready, black indicates empty. Torpedo reloading is performed automatically and requires about 10 game minutes per tube. The green number under each column of torpedoes how many bow/aft remain in addition to those already in the tubes. The red number above the indicator indicates how many deck gun shells remain.
- (H) **FUEL LEVELS** - three vertical tubes showing the diesel fuel levels in the three main tanks. The diesel fuel floats on top of the water. The tubes show the amount of fuel (black) and water (white) in each tank. Full tanks allowed for 50 to 60 days cruising.
- (I) **DEPTH UNDER THE KEEL** - a gauge showing the depth from the sub to the ocean bottom. When this gauge reads zero you will run aground. Maximum reading on this gauge is 500 feet.
- (J) **WATER TEMPERATURE** - a gauge showing the temperature of the water outside the submarine. A blue dial hand indicates that the submarine is below a thermal gradient layer.
- (K) **"CHRISTMAS TREE"** - light indicating the status of all hull openings. Green light indicates closed, red light indicates open. Hull openings are closed automatically when you give the order to dive.
- (L) **COMPASS** - indicates the direction the submarine is heading.
- (M) **THROTTLE** - 0-4 throttle settings. All stop, 1/2, 2/3, full and flank speeds.
- (N) **CLOCK** - shows the time of day. The sweep hand shows MINUTES and the number printed below is the HOUR (0-23) in 24 hour time. Dusk in the Pacific is from 7:00PM (Hour 19) to 8:00PM (Hour 20), dawn is from 5:00AM to 6:00AM.
- (O) **DIVE BUBBLE** - a horizontal tube showing whether the submarine is diving or surfacing.



**DAMAGE REPORTS BATTLE STATION**



This screen indicates the nature of any damage to the submarine. Damage may be caused by depth charge attacks or enemy gunfire. Types of damage include:  
Bow/Aft torpedo damage: These torpedo tube doors have been damaged. The torpedoes will not fire.  
Periscope damage: The periscope housing has been damaged. The periscope cannot be lowered or raised.  
Dive plane damage: The bow and stern dive planes have been damaged. The submarine will only dive or surface at half its normal rate.  
Fuel Leaking: The external fuel tanks are leaking. Fuel will be consumed at twice the normal rate. In addition, fuel rising to the surface will make the submarine easier to detect by enemy destroyers.  
Engine Damage: the main diesel engines are damaged. Surface speeds are reduced by half.  
Machinery Damage: internal pumps and engines are damaged. The extra noise make the enemy's sonar tracking easier.  
Battery Damage: batteries are used up at twice the normal rate when submerged. If the "Port Repairs Only" reality level is not selected, repairs are attempted by the crew automatically. If your sub is taking on water, the leakage rate is indicated in gallons per second (GPS). Leakage will often cause your sub to descend, although the dive planes may be able to counter-act the dive. This information is provided in the top right hand side of the Damage Reports Screen.

**SUB CONTROL DIAGRAM and STATUS AREA**

The bottom few lines of most battle station screens contain the sub control diagram and the status area. The sub control diagram on the left is a rear view of your sub with the current rudder, dive plane and throttle settings displayed. Left and right arrows indicate left/right rudder, up and down arrows indicate up/down dive planes, and a number 0-4 shows the throttle setting. The bottom line displays your current speed (in knots), depth (in feet) and heading (in degrees). The top line is used to keep you informed of status messages from the crew.

**MESSAGES and SOUNDS**

You may receive at any time from various members of the crew. Rudder, throttle, and periscope commands will be acknowledged. You will also hear the sound of your own engines, nearby ships, and torpedoes. In addition there are messages and sounds with special meanings:

- SONAR REPORTS DESTROYERS CLOSING.** ("ping" sound)  
The sonarman is reporting that the submarine has been located by the enemy's sonar.
- SONAR REPORTS DEPTH CHARGES DROPPED.** ("splash" sound)  
The soundman is reporting that a destroyer overhead has dropped depth charges into the water.
- DEPTH CHARGES EXPLODING!** (explosion sound)  
LOOKOUT REPORT DESTROYERS FIRING. (gun sound)  
Lookouts on the bridge are reporting that enemy destroyers are in range and are firing at the sub.
- SHELL HIT! SUB DAMAGED.** (whistling explosion sound)  
Your submarine has been hit by a destroyer's shell. Damage has been sustained.
- BOW (AFT) TORPEDO FIRED!** 135 TRACK. (torpedo launch, torpedo motor sounds)  
One of your torpedoes has been launched in the direction indicated.
- DECK GUN FIRED** (gun fire sound)  
You have fired your deck gun in the direction indicated.
- SONAR REPORTS DISTANT EXPLOSIONS.** (distant explosion sound)  
The sonarman is reporting a torpedo or gun hit.
- WARNING: TEST DEPTH EXCEEDED.** (hull creaking sound)

You have exceeded the sub's rated test depth, small leaks are starting. (Check the Damage Reports screen.)  
**WE HAVE RUN AGROUND!** (grinding sound)  
Your sub is scraping the bottom. You will be stopped until you rise off the bottom.  
**REPAIRS COMPLETED.**  
Work parties report that they have repaired a damaged component; check the Damage Reports screen.  
**BLOW EMERGENCY TANK!** (alarm sound)  
The emergency buoyancy tank has been emptied.  
**RAMMED BY ENEMY SHIP!** (grinding sound)  
You have been rammed by an enemy ship and will start to sink. This is usually fatal.

**TIME SCALING**

In order to ensure accuracy, all ship movement, sightings, torpedo runs, and dive rates are recalculated every two seconds of simulated game time. However, under most conditions it is desirable to speed up the action somewhat. Normally the simulation proceeds at four time real time: one minute of game time takes 15 seconds. If the "F" key is pressed, the time scale is doubled. Repeated pressing will continue to increase the time scale up to a maximum of 32 times real-time (i.e. one hour of game time will take two minutes of time scale 4). When the "N" command is entered you are detected by the enemy or torpedoes are fired, the time scaling returns to normal.

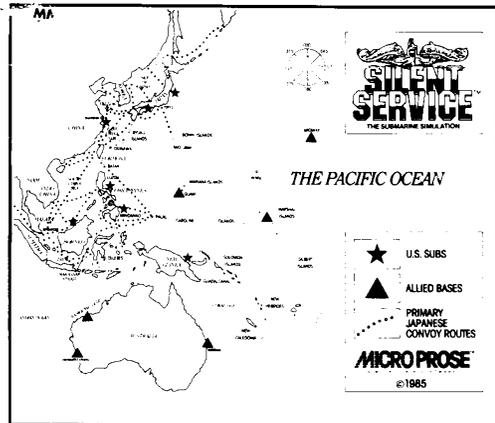


**END OF MISSION, SCORING and RANKS**

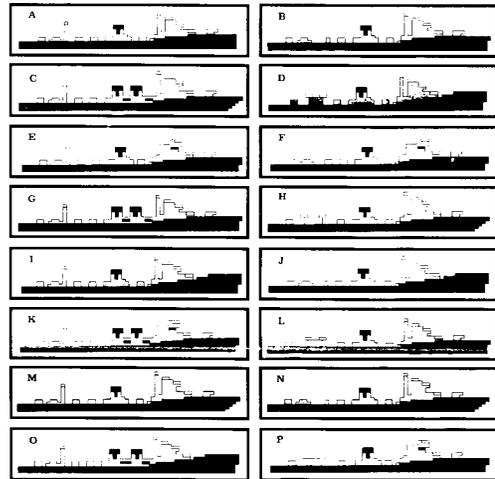
Convoy Action missions end when you select the "End of Game" option. War Patrol missions end when you return to one of your bases. Either mission type ends if you are sunk or beached. In all cases you will see a screen displaying all ships which you have sunk and your final rank. Many patrols failed to sink any enemy ships, while successful captains often sank over 15,000 tons. Your mission is to sink the highest tonnage of shipping without losing your sub. The simulation records your sinkings automatically. Your ranking will be based on tonnage sunk, difficulty level, and reality levels chosen. The higher the levels, the more value your tonnage is given. All players will rank at least Ensign. Higher levels are Lieutenant JG, Lieutenant, Lieutenant Commander, Commander, Captain, Vice-Admiral, Admiral, Fleet Admiral, and ultimately WGSC (World's Greatest Submarine Captain)! Press "F7" from this screen to embark on a new mission.

**SUBMARINERS' HALL OF FAME**

If you have a successful cruise, you will be prompted to enter your name. Type your name on the keyboard, then press RETURN. The Hall of Fame records the best rankings achieved and also includes real-life tonnages sunk by five submarines in actual war patrols. Remember that your rank is computed from both tonnage sunk and the difficulty factors used.



**TARGET IDENTIFICATION PRACTICE**



**PLAYING TIPS**

This simulation has been designed to present you with the same types of situations and to let you use the same tactics you will read about. Make sure you understand the role of the Torpedo Data Computer - most torpedo shots should be made with the periscope crosshairs directly on your target. If you really want TO LEAD the target, select the "Enter Angle-on-Bow" reality level and leave the gyro angle at zero. Now your torpedoes will always track in the direction your scope is pointing. You must now point and shoot the torpedoes like a gun, i.e. you must estimate the amount of distance the target will travel from the time you fire the torpedo until it arrives in the proximity of the ship. You then lead the target by that estimated amount. (Under normal modes the TDC will do this automatically.)  
During WWII the Captain had not only to call off the range and bearing but also estimate the Angle-on-Bow. Although in this simulation the TDC calculates the angle, you are welcome to enter it using the "A" key and the joystick or mouse. You should study the accompanying diagrams for an exact explanation. However, a good way to estimate this angle is to use the "enemy captain" method. Imagine yourself on the bridge of the enemy ship looking forward. The angle left or right from the bow of the enemy ship where the enemy captain would see the submarine is the Angle-on-Bow. For example, if the enemy captain would see your submarine 45 degrees off the left side of his ship, as the submarine captain you would (assuming you chose the Angle-on-Bow Reality Level) press "A" and move your control until the angle reads -045 degrees. As you can see, this is an estimate procedure. By using this procedure, you are trying to solve the equation  $GYRO\ LEAD\ ANGLE = \text{ArcSine}(\text{Target Speed} \times \text{Sine}(\text{Angle-on-Bow}) / \text{Torpedo Speed})$  in your head. Tricky, eh?  
Make sure you understand the distinction between BEARING and HEADING. BEARING is the direction in which your scope/binoculars are looking. HEADING is the direction your sub is facing. Note that it is generally much faster and easier to aim your torpedoes and gun by rotating the scope (changing your BEARING) rather than by steering the sub (changing your HEADING). In general, you should plan on making a submerged attack in daylight, and a surface attack at night. During dawn and dusk you can try both.  
Submarines were not designed for extended gun duels and did not incorporate sophisticated range finding devices for their deck gun. Your best bet is to try to achieve a position directly to the side of your target which allows you to use no range deflection (the target is neither approaching nor receding). If this is not possible, try a number of ranging shots at different range deflections. Once you hit the target with a ranging shot, commence rapid firing. Most importantly, try to anticipate your opponent's manoeuvres and reactions. In general, you will know more about his location, course, speed, etc. than he knows about you. Use this advantage to plan and execute the most destructive and least dangerous attack you can devise.  
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