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PC DVD-ROM

SILENT HUNTER 4

★ WOLVES OF THE PACIFIC ★



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GETTING STARTED

This section will help you get started playing Silent Hunter®: Wolves of the Pacific. Users familiar with the previous versions of Silent Hunter should still scan this section for up-to-date information.

INSTALLATION

INSTALLING SILENT HUNTER®: WOLVES OF THE PACIFIC

Silent Hunter: Wolves of the Pacific must be installed before you can run the game. To install, insert the first Silent Hunter: Wolves of the Pacific CD and wait for the launch screen to appear.

Click Install and follow the instructions as they appear.

If you have auto-run disabled, you may launch the installer manually. Choose Windows Explorer from the Programs submenu on your Windows Start menu. Choose the Silent Hunter: Wolves of the Pacific CD icon to display the files located on the CD. Look for Setup.exe among those files and double-click it to run the installer.

INSTALLING SILENT HUNTER®: WOLVES OF THE PACIFIC

To uninstall the game, select Uninstall from the Silent Hunter Start menu item. You can also choose Settings from the Windows Start menu and select Control Panel, select Add/Remove Programs, left-click on Silent Hunter: Wolves of the Pacific, and click on the Add/Remove button. The game and all its components are then removed from your system, except for your saved games.

GAME SETUP

LAUNCHING THE GAME

When the game is installed, you are offered a shortcut on the desktop. If you decide to use it, you can start the game by clicking the SH4.exe icon displayed on your desktop. Otherwise, click on your computer's Start button and select Programs/Ubisoft/Silent Hunter 4/"Play Silent Hunter 4."

When you start the game, the Ubisoft logo and Silent Hunter 4 intro movie will be played and the Main Menu will then appear on your screen. From the Main Menu you can access all of the game's features. See specific sections in the manual for details.



USING THE MENUS

KEYBOARD

The Esc key takes you back to the previous screen.

MOUSE

To display information, simply point at the desired icon or text with the mouse pointer. To select or confirm a choice, click on the desired icon or text with the left mouse button. To return to the previous screen, use the on-screen Back button.

OPTIONS

The Options page has three types of settings:

- Sound
- Graphics
- Gameplay

SOUND SETTINGS

- **Master Volume** lets you change the overall volume of the game. Check the Master Volume box to set the volume to zero (mute).
- **Sound Volume** lets you change the volume of the sound effects within the game. Check the Sound Volume box to set the volume to zero (mute).
- **Music Volume** lets you change the volume of the music within the game. Check the Music Volume box to set the volume to zero (mute).
- **Voice Volume** lets you change the volume of the characters' voices within the game. Check the Voice Volume box to set the volume to zero (mute).
- In order for the changes to take effect you must press the Apply Changes button.



GRAPHICS SETTINGS

Graphics settings can be changed in two ways. You can choose one of the three pre-defined settings (Low, Medium, High), which will check/uncheck the graphics options as necessary, or you can change the graphics settings manually by checking/unchecking the option boxes. In this case, the graphics settings will be set to Custom.

- **Game Resolution:** You can switch between several resolutions via the drop-down list. Depending on your graphics card, higher resolutions may cause lower performance.
- **Ship 3D Damage:** The visual damage on a ship has three levels of detail. When set to maximum, you will have the best visual experience but may encounter lower performance.
- **Character Detail:** Enable or disable the usage of the normal maps on the characters.
- **Particle Density:** Choose the density of particles used within the game. Higher densities may cause lower performance.
- **Window Mode:** Choose whether to play in window mode or full-screen mode.
- **Post-Process Filters:** Check this button if you want to enable all photographic filters.
- **Full Scene Glare:** Check this button if you want to enable sun glares in the game.
- **Light Shafts:** This option enables the effect of scattering sunrays under water.

- **Environmental Effects:** This option enables clouds, shadows, and volumetric fog.
- **3D Ship Wakes:** This option enables the usage of 3D ship wakes.
- **Detailed Wave Ripples:** This option enables more realistic wave effects.
- **Normal Ship Maps:** This option enables the usage of normal maps on the ships.
- **Ship Caustic Effects:** This option enables the reflections of the sun from the water on the ship.
- **Texture Quality:** Choose low- or high-quality textures.



GAMEPLAY SETTINGS

Gameplay settings affect the realism of the game. Please note that when playing at 100% realism, you will need to reserve enough fuel to get back to within 25km of your home port, in order to return to base. Once you are within 25km, press the Esc key and select the Dock at Port option.

- **Limited Batteries:** When selected, the batteries that power your sub's electric engines are limited. This, in turn, limits the amount of time you can stay submerged before the batteries must be recharged. (adds 5% to realism)
- **Limited Compressed Air:** When selected, your sub uses an amount of compressed air to surface, blowing air into the ballast tanks. If you exhaust your supply, you will have trouble bringing the submarine to the surface. Compressed air is regenerated by your compressor when the submarine is running on the surface, so that piece of equipment is vital. (adds 1%)
- **Limited Oxygen:** When the submarine is submerged, the crew uses oxygen and generates CO2. Over time, the air will become unbreathable, affecting the performance of the crew and possibly even leading to their deaths. When this option is selected, you must surface your sub periodically to resupply with fresh air. (6%)
- **Limited Fuel:** When selected, your sub has limited fuel and, therefore, limited range. You must return to base before your fuel supply is exhausted. There are no refuelling subs in the game. You will receive a warning during a patrol when you have used 50% of your fuel. (6%)
- **Realistic vulnerability:** When selected, your sub is more easily damaged. (5%)

- **Realistic Repair Time:** When selected, damage repairs will take longer. (8%)
- **Realistic ship sinking time:** When selected, ships that you attack will take longer to sink. (2%)
- **Manual Targeting System:** When selected, you must enter the appropriate information into the Torpedo Data Computer (TDC) when firing torpedoes. You cannot simply point the Torpedo Bearing Transmitter (TBT) or periscope at a target and fire. You can still request a solution from your officers, unless the No Weapons Officer Assistance option below is also disabled. (15%)
- **No Map Contact Update:** When selected, hydrophone and visual contacts will not appear on the navigation map. Radio contacts, however, will still appear periodically. (12%)
- **Realistic Sensors:** When selected, the effectiveness of your hydrophones and radar is reduced. (6%)
- **Dud Torpedoes:** When selected, your torpedoes will periodically malfunction. Malfunctioning torpedoes may detonate too early or not at all. (4%)
- **Realistic Reload:** When selected, it will take a considerable amount of time to reload your torpedo tubes. (6%)
- **No Event Camera:** When selected, the event camera is disabled. (3%)
- **No External View:** When selected, the external camera (hotkey F11) is disabled. (8%)
- **No Stabilised View:** When selected, your targeting optics (i.e. the TBT or the attack periscope) will be realistically affected by the submarine's movement on the waves. This will make targeting in rough seas much more difficult. (5%)
- **No Noise Meter:** When selected, the noise meter - which gives an indication of how detectable your submarine is at the moment - will be disabled. (2%)
- **No Weapons Officer Assistance:** When selected, the Weapons Officer will not identify targets or calculate firing solutions for you. You must determine range, speed, and Angle On Bow (AOB) by yourself. (6%)



GAME MODES

From the Main Menu page, choose to play either a single-player or multiplayer game.

OFFLINE MODES

Silent Hunter: Wolves of the Pacific has the following single-player modes available.

SUBMARINE SCHOOL

GAME MODE DESCRIPTION

The Submarine School is the game's tutorial, a collection of missions which teach you the essentials of submarine navigation and warfare. Four "courses" (objectives) are offered: Navigation, Artillery (how to use guns), Torpedoes, and Convoy Attack.

Completing Submarine School missions is not mandatory, but it gives you a boost when starting a new campaign. Exams can be taken an unlimited number of times, so don't despair if you get a poor grade your first time out. To complete a mission, finish your objectives and then press the Esc key.

GAME MODE DESCRIPTION

NAVIGATION TRAINING

Objective: Reach a designated zone.

To control the speed of the submarine you may use the speed telegraph dial (the left-most dial on the interface). You can left-click anywhere on the dial. The dive officer will automatically set the engine speed according to your selection.

On the right side of the speed telegraph dial are the speed steps for moving ahead. On the left side of the speed telegraph dial are the speed steps for moving backwards. In the middle lower part of the speed telegraph is the All Stop command.

To control the direction of the submarine use the compass dial (the middle dial on the HUD). You can left-click on the outer disc of the compass dial to set a new direction for your submarine. The compass allows you to turn the boat and continue in the selected direction.

To control the depth of the submarine use the depth dial (the right-most dial on the HUD). You can left-click anywhere on the marked area. The dive officer will automatically set the depth according to your selection. Using the depth dial, you can dive up to 165 ft. Each marking represents 5 ft of depth.

You can use the following shortcuts to set various depths: S key to surface the submarine and P key for dive to periscope depth.

ARTILLERY TRAINING

Objective 1: Destroy the airplane.

The anti-air (AA) and deck guns can be manned and used only when surfaced and in good weather.

To use the AA guns manually, select the AA station from the Station panel. Alternatively, you can use the shortcut F7 key.

Aim the guns by moving the mouse in the desired direction, after clicking first in the 3D space to capture the movement of the cursor. To zoom the view of a target through the targeting device use the mouse wheel or the Tab key.

Press the Space Bar to fire.

Objective 2: Destroy the merchant ship.

Unarmoured ships of small size can be tackled with the deck gun or the heavier AA guns on your submarine. It isn't wise to engage in an artillery duel with any large ships, but occasionally you may find targets that are not worth a torpedo.

To use the deck gun manually, select the Deck Gun Station from the Station panel. Alternatively, you can use the shortcut F6 key.

To get a better view of a target, use the optical aiming device of the gun by using the mouse wheel or pressing the Tab key. On the top of the optical aiming device, you will see the current elevation of the gun in yards.

Move the crosshair left or right by using the left and right cursor keys or the mouse to point the gun in the desired direction.

Press the Space Bar to fire.

TORPEDO TRAINING

Objective: Sink the cruiser.

The periscope is the submarine's main torpedo-aiming device while the submarine is submerged.

You can access the periscope by selecting the Periscope icon from the station panel. Alternatively, you can use the shortcut F4 key.

To raise or lower your periscope, left-click on the Raise Periscope or Lower Periscope order from the order bar, or use the Page Up/Page Down keys.

Look round with the periscope to locate your target. Use the left and right cursor keys or left-click in the circular periscope view. In this way you link the periscope to your mouse. To revert to the mouse cursor left-click again.

You can zoom your view using the mouse wheel or Tab key.

Aim the centre of the crosshair over the target. In Assisted mode, the AI will perform all the necessary computing for a valid torpedo solution.

Once you have a solution you are satisfied with, you must select a loaded tube to be able to fire.

Bring out the Torpedo Tubes panel from the right edge of the screen, then left click on a loaded tube to select it. Left-click on the Fire button to launch a torpedo.

SONAR AND RADAR TRAINING

Objective: Detect the enemy convoy.

In this mission you will learn to use the radar and sonar to intercept an enemy convoy.

CONVOY ATTACK TRAINING

Objective: Sink 10,000 tons of merchant ships.

This is a training exercise in which you have to engage a convoy in combat conditions. The enemy will attack you. Use the submarine's capabilities to the maximum.

The convoy will move on an NNE course. You start in a good attack position, SE of the convoy's current position. The sun is setting.

Remain submerged and head NW, perpendicular to the convoy's estimated course. Approach the convoy at Ahead Slow to remain undetected by the escorts.

The escorts' hydrophones have a limited range. Avoid getting too close to them and you will remain undetected. An escort's weak spot when searching a submerged submarine is behind it.

The escorts' hydrophones cannot detect a submarine behind them because of their own propeller noise. If you find yourself in such a position, you can move fast without being discovered. If an escort has detected your submarine, dive to a safe depth of at least 164ft.

When an escort launches depth charges, you should move your submarine with Ahead Flank speed and turn hard to one side or the other. After evading an attack, return to Ahead Slow to remain undetected.

Once you pass the escort screen, the best chance of successfully attacking a merchant ship with torpedoes is by remaining undetected, within 1,000 yards, and positioned abeam of the target.

CAREER

GAME MODE DESCRIPTION

The Career mode is also known as the "dynamic campaign." In this mode, you perform a series of patrols throughout the course of the war. The length of your career will depend on your performance. A poor player may be relieved of command early, while an excellent captain will be offered the command of a new and better submarine, and later retire to a desk job.

CAREER MENU

In the Career menu you can choose a name, the starting date of the campaign, the starting unit that you'll be part of, the type of submarine, the difficulty of the campaign, and the starting renown. Several of the starting options will default to random, allowing you to receive a surprise assignment every time you start a career.



OBJECTIVES

Before every patrol, you will be presented with a number of objectives that your commander wants accomplished. As the campaign and the objectives are dynamically generated, there is no telling what each of the patrols may consist of. Your orders may, however, include the following objectives:

- Patrol area and sink enemy ships.
- Photo recon of enemy installations.
- Lifeguard duty in support of air operations.
- Supply drop to friendly forces.
- Transport and insert Allied agents or troops on an enemy-held island.
- Stop at a friendly base.

Accomplishing the objectives is not mandatory, in that you are not required to complete them in order to advance in the game. As in real life, sometimes it's just not possible to complete a certain action without losing your vessel. Remember, though, that an unproductive commander will not be appreciated, so try to accomplish objectives whilst also keeping your vessel safe.

You are free to engage any enemy targets you encounter before, during, or after completion of your objectives. To terminate the patrol you will need to sail back to port.

CAREER PROGRESSION

As you complete each patrol in your career, you will receive several rewards for your actions.

Renown: This is a measure of your fame as a submarine captain and the influence you have with the commanders of the submarine fleet. The more successful you are, the more renown you gain. You can use your renown to get access to certain improvements for your submarine sooner than they become available to the rest of the fleet. You may also be able to recruit better-trained crewmembers for your submarine.

A few actions that get you renown are:

- Destroying enemy ships.
- Destroying enemy planes.

- Completing objectives.
- Saving downed Allied pilots.

Loss of Renown: It is perfectly possible to lose your renown and thus the influence you have with the commanders. Possible reasons include:

- Sinking neutral ships.
- Sinking Allied ships.
- Shooting down friendly airplanes.
- Causing your men to be wounded or killed.
- Receiving damage to your submarine.

Promotions: If you are particularly successful, you may be allowed to award promotions to members of your crew. If you have sufficient renown, you may even get promoted yourself.

Medals: If you are particularly successful, you may be allowed to allocate medals to members of your crew. It is also possible for you to receive such decorations.

Qualifications: Whenever you promote a crewmember up to Petty Officer status, you will be required to assign him a qualification. This will improve his skills and thus his efficiency in the submarine. For best results you should qualify men based on their natural skills.

SAVING, LOADING, AND DELETING CAREERS

To save your career during a mission, hit the Esc key. You will then see a menu option to save your career. To load career saves, you must select a previously created career profile. When selecting a save, a panel will display relevant career details. Because saves are stored in chronological order, loading an early save will delete all the following saves of that career.

ENDING A PATROL

To end a patrol, you will have to reach your home base. When you're close enough to the base, a pop-up screen will appear asking if you wish to dock. You do not have to travel the last nautical mile and dock in the submarine pen, though you are welcome to try.

RENOWN AND REALISM

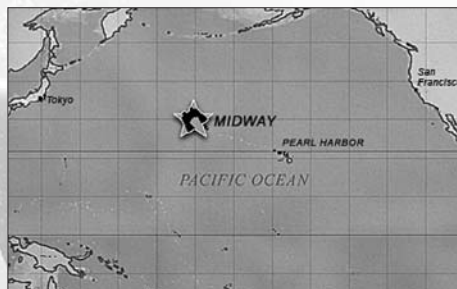
The renown you receive for sinking enemy ships is also affected by your realism settings. For example, at 100% realism, you will receive full renown credit for every ship that you sink and at 0% realism, you will receive 25% of the renown credit for every ship. However, the higher the realism setting, the harder the game.

QUICK MISSION

GAME MODE DESCRIPTION

Quick mission allows you to take part in a quick one- or two-hour action against the enemy. While the mission cannot be modified, you may choose to play it with any type of submarine historically available at the time that the mission takes place, in a sort of "what if" approach.

The missions have specifically set objectives that you must complete in order to be successful.

MISSION 1 – BATTLE OF MIDWAY, 1942

Briefing: This is our chance to turn the tide of the war in the Pacific. Using decoded Japanese transmissions, we have turned a trap intended for our carriers into one for the Japanese. This morning, our scout planes finally located the enemy flattops. At this very moment, aircraft based on Midway Island and our carriers are approaching the Japanese task force. Your submarine, part of the force deployed in support of this operation, is the only vessel to have actually made contact with the enemy. You have a unique chance to sink a major Japanese unit and help the war effort.

Primary objective: Sink major Japanese warships.

MISSION 2 – AMBUSH IN PALAWAN PASSAGE, 1944

Briefing: Your submarine has been deployed to intercept Japanese forces responding to the U.S. landings on Leyte, in the Philippines. At 4.51am this morning, your SJ radar operator detected an large number of contacts on bearing 230. It seems the Japanese are indeed coming this way. It's time to go take a look at them.

Primary objective: Attack the Japanese force.

MISSION 3 – BATTLE OF CORAL SEA, 1942

Briefing: We have credible intelligence that the Japanese are pushing South again towards Australia, this time looking to land at Port Arthur and conquer New Guinea from the South. The two available U.S. fleet carriers will deploy to counter the Japanese movements, but with limited time available for preparation, only four of our submarines have made it to the area. This battle would prove to be the first carriers-only fight in the war, foreshadowing the decline of battleships and the rise of airpower.

Primary objective: Sink the Japanese flattops.

MISSION 4 – BATTLE OF PHILIPPINE SEA, 1944

Briefing: Reacting to the U.S. invasion of the Marian Islands, the Japanese fleet is coming out in force. They are looking for a decisive battle, but this time the U.S. fleet is more than a match for them. The problem is finding the Japanese fleet in time, and your sub has just done it.

Primary objective: Sink Japanese aircraft carriers and battleships.

MISSION 5 – BATTLE OFF SAMAR, 1944

Briefing: The decisive moments of the battles around the Leyte gulf are here. With the 3rd U.S. fleet steaming north to attack Ozawa's carrier group, the way is left open for Kurita's mighty battleship force to reach the American landing beaches. Only two feeble obstacles stand in their way: the escort carrier groups supporting the landings and your submarine. Having reported to this station to deliver injured Ens. G.W. Rudolph to a more adequate medic station, you are now in a good position to return the favour and attack the Japanese fleet. If the Japanese forces meet enough opposition, perhaps they will turn back!

Primary objective: Protect the carrier fleet.

MISSION 6 – PHOTO RECON, 1943

Briefing: As part of the war effort against the empire of Japan, you are assigned to patrol the Mindoro Strait area. Engage enemy shipping with priority on tankers. Intelligence points out that the enemy may be using Batangas Bay as a staging area for their fleet operations. If the opportunity arrives, conduct photographic reconnaissance of the anchorage and report enemy fleet disposition.

Primary objective: Take photos of the enemy fleet.

MISSION 7 – TOKYO-SAIPAN CONVOY, 1944

Briefing: On 12th March, a large convoy carrying elements of the 43rd Division left Tokyo Bay heading for Saipan, Mariana Islands. Shortly after the convoy left the Tokyo harbour a strong escort group, under the flagship of an unidentified light cruiser, joined the convoy. Three days later on the west coast of Aogashima, the convoy was intercepted by USS Sandlance.

Primary objective: Engage Japanese convoy heading for Saipan.

MISSION 8 – BATTLE OF BALIKPAPAN, 1945

Briefing: On 2nd January, aerial reconnaissance spotted a convoy of fifteen transports carrying the landing force bound for Balikpapan, an important oil field in south-eastern Dutch Borneo.

Primary objective: Engage Japanese invasion force of Balikpapan.

MISSION 9 – AGAINST ALL ODDS, 1942



Briefing: On 22nd August, while returning to Brisbane, the USS Skipjack was trapped by Japanese escorts in the shallow waters off the Camotes Islands. Surrounded and heavily outnumbered, it tried to reach the deep waters of the Bohol Sea.

Primary objective: Reach the deep waters of Bohol Sea.

MISSION 10 – LAST TARGET, 1945



Briefing: Two days ago our reconnaissance aircraft spotted a large unidentified battleship entering Hiroshima Bay. Further information confirmed that the super battleship Yamato is anchored for repair in the harbour of Kure. Try to infiltrate the naval base of Kure and sink the Yamato. It will be a great blow to Japanese morale to have their flagship sunk, showing them that there is no place to hide.

Primary objective: Sink Yamato battleship.

SINGLE PATROLS

GAME MODE DESCRIPTION

This game mode provides a bridge between the quick missions and the time-consuming dynamic campaign. In each patrol the player starts off from the base and must complete a specially designed patrol full of interesting encounters and events. As with the quick missions, you have specifically-defined objectives that should be completed. Accomplishing them will be time-consuming and generally mean you have to travel the ocean to hunt for ships and reach specific areas. Due to the nature of the game, it is perfectly possible to encounter events on-route that are unforeseen – even to the mission designers – so each patrol will be an unique experience.

MISSION 1 – HUNT FOR WOUNDED BEAR, 1942

Briefing: After the Battle of the Coral Sea, which took place in May, one of the most important Japanese carriers – Shokaku – was sent home for repair. Our ULTRA code-breaking service intercepted a message about fleet carrier Shokaku leaving the port of Rabaul and heading for the Celebes Sea. Intercepting the ship before it reaches its home waters would be a great blow to the Japanese Navy.

Primary objective: Intercept and sink the fleet carrier Shokaku at all costs.

MISSION 2 – PHILIPPINES ATTACK, 1941

Briefing: The Philippines is under siege and the Japanese Navy is invading the island from all directions. We must delay the invading forces in order to establish defensive positions. Our submarines will form a patrol line, report enemy fleet movements and engage any landing force.

Primary objective: Engage Japanese landing force.

MISSION 3 – LIFEGUARD, 1944

Briefing: With the U.S. invasion of Saipan, a Japanese counter-attack is imminent. We expect heavy air-to-air fights and a possible encounter between the U.S. 5th Fleet and the Japanese Navy. Our submarine force will perform reconnaissance and lifeguard duty in the Philippines Sea.

Primary objective: Perform reconnaissance and lifeguard duty mission around Saipan.

MISSION 4 – CLOAK AND DAGGER, 1943

Briefing: Singapore is one of the major ports in Southeast Asia. Our intelligence service wants to deploy an agent there to spy on the enemy harbour traffic.

Primary objective: Deploy the agent near the port of Singapore.

MISSION 5 – HELLCAT, 1944

Briefing: With our advance in the Marianas and the expansion of our air cover, the only safe Japanese waters remain the Sea of Japan. Equipped with the latest sonar model, the submarines will try to pass the heavily-mined straits around the home waters and infiltrate the Sea of Japan.

Primary objective: Infiltrate the Sea of Japan and sink merchant ships.

MUSEUM

The museum option in the Main Menu allows you to view ships, submarines, and aircraft from all the nations portrayed in the game. You should visit the museum from time to time to keep yourself educated, and to train in the art of ship recognition.



If you move the mouse over the upper part of the screen, a small menu will drop down allowing you to browse through the ships available in the game. There are three combo boxes from which you can choose the country, the unit type, or a specific ship. In the bottom right corner you will find the button that opens the Recognition Manual.



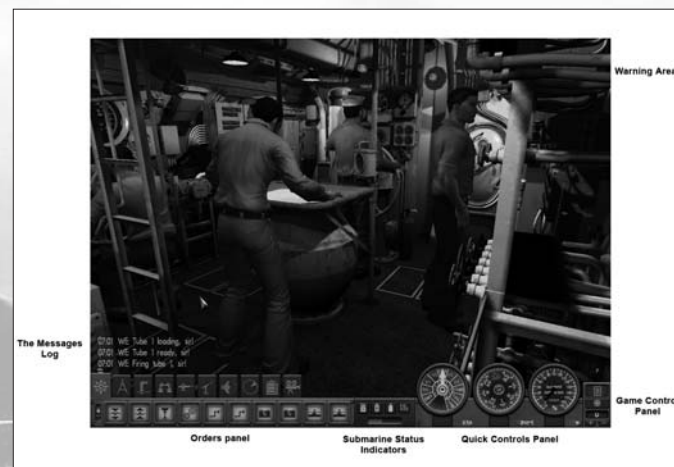
In the upper right corner you will find the Close button, which will take you to the Main Menu page.

ONLINE MODES

Silent Hunter: Wolves of the Pacific can also be played in multiplayer using a LAN connection or over the Internet using Ubisoft Matchmaking dedicated servers (more details in the Multiplayer section).

PLAYING THE GAME

IN-GAME INTERFACE



The player interface is designed to keep all vital functions of the submarine within your reach. For this reason, almost every menu of the game can be found on-screen. The main elements of the interface are:

- Quick Controls Panel
- Game Control Panel
- Submarine Status Indicators
- Orders Panel
- The Messages Log
- Warning Area

Each element is explained below.

QUICK CONTROLS PANEL

Here you will find the most common commands and instruments required to manoeuvre your submarine: speed, direction and depth. In each section, you can switch between displaying two instruments used for the same purpose by clicking the button in the lower left corner of the section in question.

SPEED

The controls that set your submarine's speed are the engine's telegraph, which requests a certain regime from the Engine Room, and the knotmeter, which allows you to set a particular speed to be met by the engines. Keep in mind though that circumstances – such as running on electric engines, sustaining damage, or having insufficient crew – may prevent the Engine Room team from meeting your request.

DIRECTION

You can turn your submarine in two ways: click on the rudder indicator to set the rudders to the desired position, or request a new direction relative to your current position by clicking on the compass, and let the Chief Engineer do the rest.

The first method is useful when you want to start a turn of a certain rate – dependent on the position of the rudders – for an indefinite time. The latter method, on the other hand, should be used when a turn of precise magnitude and fixed turning rate – maximum for the current conditions – is desired.

In the same section you will see the magnetic compass on the top of the panel, indicating the current direction.

Hint: Turning your submarine demands a minimum speed; otherwise the rudders are not effective. The faster the submarine is going, the faster it turns.

DEPTH CONTROL

Depth changes are requested by clicking on the depth meter. Two versions of this instrument are available. The fine version, marked up to 165 ft, is useful when requesting depth changes near the surface in order to run at periscope or snorkel depth, or to surface the boat. All these important depth settings are clearly marked on the instrument.

Should you need to go deeper than 165 ft, use the gross scale version of the depth meter.

Both versions show the depth of the submarine's keel; for this reason, the minimum depth indicated will be about 82 ft.

Hint: Whilst changing depth works even at zero speed by using the ballast tanks and compressed air, it is best done when some speed is available to make use of the dive planes.

When ordering depth changes, keep in mind that each submarine has a maximum operational depth, marked in green on the depth meters. Diving beyond that depth is a risky enterprise, but sometimes useful to avoid detection or depth charge attacks. When the red section of the meter is reached however, you are inviting disaster and risk pressure hull failure.

GAME CONTROL PANEL

TIME COMPRESSION AND CLOCK

You can set the time compression level from 1x to 1024x. Time compression is an absolute necessity when travelling long distances, as it makes time pass faster. Note however that:

- You will not be able to set time compression higher than 32x except in the Navigation Map station.
- Time acceleration will automatically drop down to lower levels in various situations, such as when you are in close proximity to other ships or land.

CAPTAIN'S PANEL BUTTON

Press this button to open a window with three tabs: Objectives, Radio Messages, and Captain's Log. Each tab is self-explanatory. When a new objective is added or a new radio message is received, the button will blink.

GAME MENU BUTTON

When pressed, the game menu window will pop up.

SUBMARINE STATUS INDICATORS

There are four indicators of vital importance: fuel indicator, power indicator, compressed air indicator, and CO2 indicator.

ORDERS PANEL

The Orders panel contains the following buttons:

Command Room (F2)

1. Go to Command Room

3. Emergency Surface

5. Evasive Manoeuvre

7. Recharge Batteries

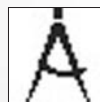
2. Crash Dive

4. Depth Under Keel

6. Deploy Decoys

8. Silent Running



Navigation Map (F3)

1. Go to Navigation Map



2. Go to Attack Map



3. Set Course



4. Return to Course



5. Patrol Course

**Periscope (F4)**

1. Go to Attack Periscope



2. Go to Observation Periscope



3. Raise Periscope



4. Lower Periscope



5. Target Information



6. Recognition Manual



7. Chronometer

**Bridge (F5)**

1. Go to Bridge



2. Go to TBT



3. Crew on Bridge



4. Target Information



5. Recognition Manual



6. Chronometer

**Deck Gun (F6)**

1. Go to Deck Gun



2. Man Deck Gun



3. Hold Fire



4. Short Range



5. Long Range



6. Aim for Command Deck



7. Aim for Weapons



8. Aim for Waterline



AA Guns (F7)

1. Go to Heavy AA

2. Go to Light AA (1st)3. Go to Light AA (2nd)

4. Man AA Guns



5. Hold Fire



6. Short Range



7. Long Range



8. Engage Closing Targets



9. Engage Any Target

**Sonar (F8)**

1. Go to Sonar



2. Follow Target



3. Range to Target



4. Report Contacts



5. Send Data to TBT

**Radar (F9)**

1. Go to Radar



2. Search Mode



3. One Sweep



4. Report Contacts

**Sub Management (F10)**

1. Go to Crew Management



2. Go to Damage Control



3. Go to Torpedo Control



4. All Crew to Battle Stations

**Camera (F11)**

1. External Camera



2. Free Camera



3. Event Camera



4. Previous Unit



5. Next Unit



MESSAGES LOG

Reports received from your officers or crewmen are added to the message log. Each entry contains the following:

- The time of the report.
- The function of the person responsible for it.
- The actual report text.

Whenever an officer is selected in the Officers Panel, any reports received from him will be highlighted in the log.

WARNING AREA

The warning area will display all the important messages that require your attention and intervention in order to correct the problem. For example, such messages can appear when there is a fire or flooding aboard the submarine.

SUBMARINE STATIONS

COMMAND ROOM

ORDERS

- Standard Propulsion
- Recharge Mode
- Rig for Silent Running
- Secure from Silent Running
- Crash Dive
- Blow Ballast
- Deploy Decoys

NAVIGATION MAP STATION

This map is used for navigation, convoy interception, etc.



MAP INFORMATION

The following elements are displayed on the navigation map:

Ports

- Submarine bases
 - Harbours where you can resupply with torpedoes and fuel, recruit new crewmembers and repair your submarine.
- Allied ports
 - Harbours where you can resupply with fuel and repair your submarine.
- Neutral ports
 - Harbours where you can resupply with fuel.
- Enemy ports

Contacts of groups of aircraft, ships, or convoys. The following information is available for each:

- Type
 - Warship – represented by a diamond.
 - Submarine – represented by a circle.
 - Merchant – represented by a square.
 - Aircraft – represented by a triangle.
 - Size
 - Single – represented by a small icon.
 - Convoy – represented by a large icon.
 - Allegiance
 - Enemy – shown in red.
 - Allied – shown in blue.
 - Neutral – shown in green.
 - Unknown – shown in grey.
 - Player – shown in black.
 - Course, displayed with a small line whose direction is contrary to the actual direction of movement.
- Attached to the contact is a **contact tag** that contains:
- Moment of last contact: HH:MM (this is shown only when you lose contact with a target).
 - Estimated speed.
 - Estimated heading.

Geographical landmarks

- Sea
- Islands
- Gulfs
- Straits
- Canals
- Physical features (capes)

Navigation landmarks

- Lighthouses
- Maximum depths
- Depth lines

MAP TOOLS/ORDERS

MAP NOTES

- With this tool you can place marks on the map. Each mark will have a generic name when placed (Mark 1, Mark 2, etc).
- You can modify this name (18 characters max.) and attach a note (54 characters, centred, max. 18 characters wide).
- You can delete marks.

RULER

- With this tool you can measure distances and draw lines on the map.
- The end of the line will display the total distance. All the distances will be represented in kilometres with one decimal representing hundreds of metres. All measurements will be rounded up to hundreds of metres.
- The error margin serves to avoid letting you precisely measure distances on the map and then use these measurements for firing solutions. Also it has an immersive value, which gives a more convincing feeling of possible human error in estimations done on the map.

COMPASSES

- With this tool you can draw ranges represented as circles around a selected unit or location. Two types of ranges can be drawn.
 - Linked ranges – ranges that are linked to a unit (the unit is in the centre of the circle). These ranges follow the unit they are linked to.
 - Free ranges – ranges that are drawn on the map at any location.
- Both ranges have the radius length displayed.

WAYPOINTS

- This tool allows you to set a course for your submarine using a waypoint system.

- This system contains:

- New course – with this, new waypoints are placed on the map. After you activate the tool, left-click on the map to place the first point, then left-click somewhere else to place the next waypoint, and so on. Right-click to confirm the entire waypoint course.
- Add new waypoints – when the waypoint tool is selected and a course is already plotted, any new waypoint will continue from where you left off.
- Insert new waypoints – when the waypoint tool is selected, left-click on an existing waypoint to continue the course from this point. The existing waypoints after the one you have clicked on are deleted.
- Modify current course – you can move a selected waypoint by dragging it to a new position.
- Delete waypoints – you can delete a selected waypoint. The new course will be plotted between the remaining waypoints.
- A tag attached to each waypoint will show:
 - The distance from it to the submarine (in kilometres).
 - ETA – The time needed to reach it (using the course set with the waypoints and current submarine speed).

ERASER

- With this tool you can delete marks, lines, range circles and waypoints on the map.
- After selecting the eraser, any object you touch with it will be deleted. Any map marking, line, range or waypoint you add can be deleted by left-clicking on it.

ZOOM IN

ZOOM OUT

PERISCOPE STATION

ATTACK PERISCOPE



PERISCOPE ELEMENTS

- Periscope view
- Periscope vertical position
- Periscope horizontal position
- Recognition manual
- Chronometer
 - Torpedo timer
- Target information
 - Ship type
 - Ship class
 - Range
 - Angle on bow
 - Speed
- Torpedo fire control
 - Tubes status
 - Fire button

TARGET INFORMATION SELECTION

When the centre of the periscope passes over a target the following information is automatically displayed on the Information Panel.

	CASUAL	EXPERT
Ship type	YES	YES
Range to target	YES	NO
Angle on bow	YES	NO
Target speed	YES	NO
Send data to TDC	YES	NO

SHIP TYPE

- Expert mode: Once a ship type is identified, the type will be replaced with the ship class.
- Casual mode: The ship is automatically identified and the ship class displayed.

SEND DATA TO TDC

- Expert mode: Left-clicking on the Send Data to TDC icon will:
 - Display the current Range, Angle on Bow, and Speed to TDC.
 - Switch the TDC to Track mode ON.
- Casual mode: Whenever the cursor passes over a target, the information will automatically be sent to TDC.

RESET DATA

- Expert mode: Left-clicking will:
 - Reset the information from the Information Panel and TDC to zero.
 - Switch the TDC to Track mode ON.
- Casual mode: Whenever the cursor is not over a target, you will launch the torpedo on the current bearing.

LOCK TARGET

Left-click on the Lock button in Periscope view to follow the selected target. You will have the freedom to move the periscope to the left or right in order to centre the periscope over any ship compartment.

SOLUTION (ONLY FOR CASUAL MODE)

Whenever the centre of the periscope passes over a ship, a small triangle will appear under the ship. The triangle's colour will reflect the effectiveness of the solution.

- Green: Excellent
- Yellow: Good
- Red: Bad

BRIDGE STATION

BINOCULARS

While using the binoculars, you have two orders available:

- Lock target
- Engage target

ENGAGE TARGET ORDER

When you give the Engage Target order the AI will choose to engage, depending on the target type, using:

- **Deck gun:** Surface targets.
- **AA guns:** Air targets.

TBT STATION

The Torpedo Bearing Transmitter (TBT) is a similar to a large pair of binoculars affixed to a special post on the deck of U.S. submarines. Historically it was used from 1943 onwards to help obtain the bearing of and range to a target during surface torpedo attacks. In our game, the TBT will be available from the start of the war, simulating the ability of the crew to transmit orders verbally rather than automatically through the rotating post of the TBT.

The TBT can be accessed in two ways. In 3D mode, go to the bridge (shortcut: F5 Bridge) and left-click on the large binoculars that you see mounted in the centre. Or, you can press the U key on the keyboard to be transported directly to the TBT.

NOTE: This station, like the bridge, is only accessible while surfaced. Function-wise, this station is almost identical to the two periscopes, except that the range-finding mechanics are missing the split image function. Refer to the Periscope descriptions and the chapter on conducting torpedo attacks for further information.



TDC STATION



CONDUCTING TORPEDO ATTACKS

One cannot overestimate the importance of torpedo attack in the training of the submarine officer. To quote the official submarine doctrine of the U.S. Navy, as formalised by ComSubPac in February, 1944:

The primary objectives of submarines are enemy ships. The primary weapon of the submarine is the torpedo; the secondary weapons are the mines and guns.

A successful torpedo attack requires several steps. It is your duty as captain to ensure that each step is completed.

The steps are:

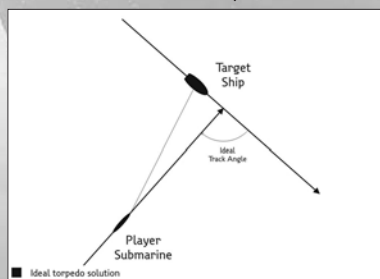
1. Approach and positioning
2. Data collection
3. Sending data to the TDC
4. Tubes selection
5. Attack

1. APPROACH AND POSITIONING

Your torpedoes are not extremely reliable or easy to use. Before attacking, bring your submarine as close to the target as possible – within 1,000 yards for best results.

At short range, even if you or the torpedoes are suddenly spotted and the target starts evasive manoeuvres, it will be too late for the enemy.

Distance is not the only point of interest, however: the submarine's position relative to the target is equally important. Generally speaking, the best position from which to begin your attack is "ahead of the beam," meaning 45° to either side of the target's course. From this point, you will have plenty of time to gather the data required for the attack and still be well placed for a bow or beam shot.



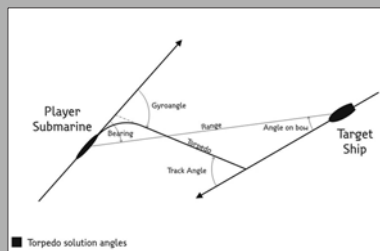
2. DATA COLLECTION

To have your torpedoes meet with the target is not a simple feat. Every attack is a complex trigonometric problem that needs to be solved.

Fortunately, most submarines of the World War II era were equipped with a Torpedo Data Computer – an electro-mechanical device that solves movement equations and provides you with the data needed for the actual attack.

Unlike the TDC onboard other nations' submarines, the U.S. TDC does a lot more, but we'll talk about that later.

THE TORPEDO FIRE CONTROL PROBLEM



Given an initial situation - a target ship moving on a constant, straight course C , at a constant speed S - we need to obtain the course CT on which a torpedo of speed ST must travel in order to reach point (X) at the same time as the target.

The mechanics of torpedoes are such that after leaving the tube, they run a standard straight distance – the so-called "torpedo reach" – before making one turn according to the set "Gyro Angle" to reach the desired course CT .

The Gyro Angle is calculated by the Angle Solver part of the Torpedo Data Computer, but requires the following information to be collected on the target:

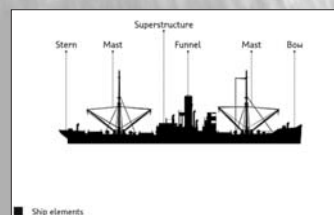
- Bearing to target
- Range to target
- Angle on bow
- Target speed

To acquire this data, you will have to use one of the two main stations of attack: the Periscope (optic used for underwater attacks) or the Target Bearing Transmitter (binoculars used for surface attacks). Both are equipped with all the tools needed for this task. You can also obtain range and bearing information from the Sonar stack and Surface Search Radar.

On lower difficulty settings, all data will be acquired automatically by the game whenever your crosshair passes over a viable target. On Historical settings, however, each step will need to be completed by you.

Measuring Range

Determining range to a target of a known height is a simple problem, so the first step to be undertaken in any attack is identifying the target. Bring up the recognition manual (shortcut: N key) and flip through it until you find a match with what you have seen through the optics. This is not an easy task, but focusing on the defining elements of the ship (bow and stern shape, number and disposition of masts, number of turrets) should enable you to get a close match.



Once satisfied, check the empty box present on the manual's page. This will identify the ship in question and automatically enter its mast height – the tallest object on the ship – into the stadimeter.

Hint: It's easier to identify a ship when looking at it from abeam (90° to its side) as it presents the full profile, much like in the manual.



Click the icon on the attack data tool, which will switch it to the correct mode.

As you now have the target's real height from the ID book, all you need to do is read its apparent height (as angle α) from the periscope or TBT. Both optics are fitted with marked reticules for this task. The periscope comes equipped with a split-image stadimeter to automatically measure it, while the TBT only simulates the measuring process with the aid of a moving line index.

The meaning of the reticule marks is outlined in the table below:

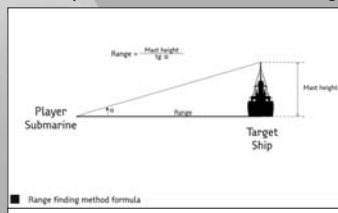
Optic Used (Zoom Level)	Small Marks	Large Marks
Periscope (Low Magnification)	1°	4°
Periscope (High Magnification)	0.25° (0°15')	1°
TBT (7x)	0.2° (0°12')	1°



To use the stadimeter, first lock the target. Next, click the icon on the upper left part of the Attack Data tool. Your mouse cursor will be captured, and vertical mouse movement will be used to displace a second image of the target instead. Raise it so that it touches the top of the original image. In other words, you need to have the waterline of the target, as viewed in the second picture, touch the masthead of the first one.

Throughout this process the stadimeter will automatically calculate the range to the target, based on the angle displacement between the two images. When you are satisfied with the results, left-click and the range will be saved. You can then use the Send to TDC button to correct or set the target data.

Should you desire to calculate the range yourself, the formula you should be using is:



When intelligence on a target is unavailable or accurate identification is impossible to obtain, you should estimate the height of the masthead or another significant feature on the superstructure:

- Count the number of decks that are seen above the main deck.
- Add the number of decks that would cover the visible freeboard.
- Multiply the number obtained by 8, which is the average height of a deck in feet.

The result gives you the height of the tallest point on the bridge structure. You can use this as a yardstick to approximate the height of the masthead – on average 2.1 times the figure obtained. If the masthead appears shorter, use 1.7 or 1.8 as a ratio instead.

By practising on targets of known height you should be able to obtain a good enough approximation for a firing solution.

ANGLE ON BOW

The Angle on Bow (AOB) is simply the bearing on which the target ship would observe your submarine. It is easier to approximate relative to your boat and is used to define the ship's course relative to your own.



To enter the AOB for your target, first switch the attack data tool to the appropriate section by clicking the icon. Entering the desired value is as simple as dragging the external ring of the dial (representing the target ship) to put it in the correct position relative to your submarine, represented by the fixed index in the 6 o'clock position. The question is, what should the desired value be?



There are multiple methods to judge the AOB of a target. The quickest method is through visual observation. This is obviously quite inaccurate, but using the recognition manual AOB page you may come up with a reasonable value quite fast.

A more accurate but time-consuming and difficult method is to adjust your heading until the lateral separation between your ships is constant and you are both heading the same way. At this point, you have "matched course to target." In other words you are travelling along parallel courses. It's easy to determine AOB at this point, using the following formula.

$$\text{AOB} = 180^\circ - \text{bearing}$$

SPEED

One of the most critical parts of the firing solution is to determine the target speed. In the game, there are two methods for doing this.

The quickest method is to simply guesstimate the value by checking the target, the bow wake, and the intelligence info that you have from the recognition manual. Estimates from the sonar officer also come in handy here.

A more precise but also more time-consuming method is to take multiple sightings (range + bearing) of a target over a period of time. Using this data and your own speed and course, you can determine the target's speed. An automated method is implemented in the game.



To begin the process, left-click on the clock icon on the data tool. This will take the first sighting and begin counting the time. It is best to have the target locked at this moment. When satisfied with the expended time – longer is better – left-click again. This will conclude the measurement and display the results. As always, check whether you are satisfied with your approximation.

Hint: This method of finding target speed is heavily dependent on the accuracy of your range estimation. If you are getting speed results that are “off the scale,” recheck the range.



A final method of acquiring the speed of the target would be to “match speed and course” with it. This is somewhat similar to the technique explained in the AOB section above; adjust your own course and speed until the bearing and distance to target remain constant. At this point you should be travelling along parallel courses and at the same speed. You can enter this speed directly into the TDC.

3. SENDING DATA TO THE TDC

Once you have a complete set of data for the target, it needs to be inserted in the TDC. On lower levels of difficulty, this is done automatically after data collection – when the crosshair passes over a target.

On Historical difficulty however you will be required to send the data yourself by “checking” it on the attack data tool.

Note: You may reset the TDC and data by pressing the X icon on the notepad. This will, amongst other things, set the “target speed” dial on the TDC to 0, basically transforming your optics into a point-and-shoot device. Until new data is entered, the torpedoes will shoot on the bearing that the currently used optic is pointing towards.

In most situations data collected for a target degrades rapidly, as AOB and range change over time, even for a non-maneuvring target. Fear not, as this is just what the Position Keeper function of the TDC has been built for.

USING THE POSITION KEEPER



The great advantage that U.S. torpedo data computers have over those of other nations is the Position Keeper (PK). This unique device estimates the target data based on the initial values entered by the user. It computes the target movement in relation to your submarine, taking into account your own ship movements.

The output from the Position Keeper is good for evaluating the tactical situation, but is also automatically entered into the Angle Solver. In theory, for a non-maneuvring target, once you have looked at the target you can lower the periscope and just watch the PK output to decide when to attack.

The catch is, the output of the PK is only as good as the input, so verifying the data from time to time is a good idea. Retake range and bearing measurements and compare them to the output of the Position Keeper. If they don't match, insert the new data in the TDC and try again later.

Once your measurements and the PK match to a reasonable degree, you can be pretty sure your approximation of the target data was good. You are now ready to attack. At this point, advanced players should also begin worrying about some other settings:

TORPEDO RUNNING DEPTH

This should be set in close relation to the desired detonation method (see below). For magnetic detonations, the torpedo should ideally pass directly under the target's keel. In this case, take the Draft entry in the Recognition Manual and add three to five feet. Keep in mind that large waves may cause a ship's draft to vary quite a bit, and too great a distance may lead to the detonator not sensing the ship's magnetic field.

When using an impact detonator, the torpedo should be set to hit the target under the protective armoured belt. In the absence of specific information about your target's protection, the following settings should be used:

Target Type	Depth
Battleships	20 feet
Heavy Cruisers, Carriers, Large Merchants	12 feet
Light Cruisers, Small Merchants, Submarines	10 feet
Destroyers	6 feet



TORPEDO DETONATION METHOD

Torpedoes fielded by the U.S. submarine force at the start of its involvement in World War II used combined detonators that could be triggered by either frontal impact with a solid object or sensing the magnetic field of a ship above it.



As in real life, your torpedo detonators will have two possible settings: Contact Only and Magnetic Influence + Contact. When detonation is achieved under the ship's keel, the entire force of the explosion is vented inside the target, literally crippling it. Even a battleship may be sunk with a single such hit. But magnetic detonations also have disadvantages, the main one being their poor reliability, manifested in premature detonations. Read the "Torpedo Armament" section for further information.

TORPEDO RUNNING SPEED

The Mark 14 steam-powered torpedoes can be set to different speeds, which also affects their range. See the "Torpedo Armament" section for further information.

Setting	Speed (kts)	Range (yds)
Slow	31	9000
Fast	46	4500

The U.S. submarine doctrine calls for the use of the highest torpedo speed that will still allow it to reach the target.



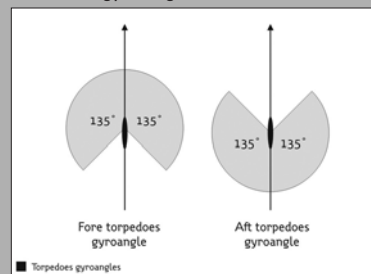
High speed is essential for a torpedo, in order to reduce the time required to cover the distance from submarine to target; the higher the speed, the less time elapses, and consequently the target has less time to manoeuvre to avoid.

Slow speed should be used when conditions preclude approaching the target to the range required by the fast setting. To keep the probability of a hit high, such long-range shots should be attempted only against stationary targets (from outside an anchorage) or against masses of enemy ships.

4. TUBE SELECTION

This step can actually be taken at any point in the attack, as it simply means selecting the torpedo tube to be used. You should ask yourself the following questions:

- **Should this be a bow or stern shot?** All factors being equal, it is best for the gyro angle turns made by the torpedoes to be as small as possible. There are also limits to what gyro angle can be set: 135° to either Port or Starboard.



- **What torpedo should I use?** It is impractical to reload a torpedo before the actual attack, as it is a time-consuming process. Therefore, the current loadout should govern your choices of tube(s). Check the Weapons Status panel for information on the loaded torpedoes.
- **Do I need more than one torpedo for this target?** U.S. submarine service doctrine calls for multiple torpedo salvos depending on the target size. The following historical table should be used as a guide:

Target	Life in Torpedo Hits	Required Number of Torpedoes To Ensure Sinking Target. 50% Hits with Spread	Recommended Volume of Fire With Spread
Battleship	7	14	10
Large Carrier	5	10	10
Escort Carrier	3	6	6
Heavy Cruiser	3	6	6
Light Cruiser, Merchant, Seaplane Tenders	2	4	3 or 4
Destroyer	1	2	3
Submarine	1	2	3

With U.S. submarines, a salvo is organised as a succession of individually fired shots. It is good practice to aim each torpedo at a different point on the same target – under the mast, at the funnels, or whatever you consider a weak spot.

This can be done by placing the optic's crosshair over the desired impact point on the target and correcting the target bearing before launching each torpedo. The Torpedo Data Computer is a simple tool that will take the current bearing input as the target; this allows for very precise shots.

Another method is to keep the target bearing set for "Middle of Target" and set the appropriate spread – which in fact adds or subtracts from the resulting gyro angle – for each torpedo to be fired.



A salvo can also be a good solution when you want to make sure you score a hit on a target, regardless of its manoeuvring prior to the hit. The angle covered by the spread of torpedoes should be set in order to cover all the possible routes the target may take. Take into consideration the forward motion of the target as a factor in its ability to manoeuvre.

5. ATTACK

At this point, you are ready to launch your torpedo. To speed up the process and avoid any sudden changes in target data from ruining the shot, begin opening the torpedo tube before acquiring the data.

A final assessment of the situation should be done before firing the shot. Keep in mind the following:

- All factors being equal, shorter range is better (provided that arming distances are met).
- The higher the torpedo speed, the lesser the chances that the target will be able to avoid it.
- The closer to 0° the target's bearing is (or 180° for stern tubes shots), the less important range estimation errors become.
- It's best to attack from abeam (AOB ~ 90°).

DECK GUN STATION

- Normal (3D station).
- Zoom (2D station).

INTERFACE

Moving the cursor to the left/right and top/bottom edges of the screen will move the camera view in that direction.

ROTATE THE DECK GUN VIEW:

- **With mouse:** Left-click and hold moves the deck gun view camera left/right/up/down. The gun will follow the camera view with a reduced rotation speed.
- **With keyboard:**
 - **Left cursor:** Rotate deck gun and camera view to the left.
 - **Right cursor:** Rotate deck gun and camera view to the right.
 - **Up cursor:** Raise the deck gun and camera view.
 - **Down cursor:** Lower the deck gun and camera view.

FIRE THE GUN:

- **With keyboard:** Space Bar

CHANGE AMMO:

- **With mouse:** Left-click on the Ammo icon.

ACTIVATE TARGETING SYSTEM:

- **With mouse:** Right-click to enter targeting system

TARGETING MODE (ZOOM)

ROTATE THE GUN:

- **With mouse:** Left-click and hold to move the gun left/right/up/down. The camera view will move in time with the gun.

- **With keyboard:**

- **Left cursor:** Rotate deck gun and camera view to the left.
- **Right cursor:** Rotate deck gun and camera view to the right.
- **Up cursor:** Raise the deck gun and camera view.
- **Down cursor:** Lower the deck gun and camera view.

FIRE THE GUN:

- **With keyboard:** Space Bar for normal fire.

CHANGE AMMO:

- **With mouse:** Left-click on the Ammo icon.

ZOOM:

- **With mouse wheel:** Cycle through the zoom levels.
- **With mouse:** Right-click to exit targeting system (return to Deck Gun mode).
- **With keyboard:** Press the Tab key to cycle through the zoom levels.

Design Note: The rotation speed of the view will be slower at higher zoom levels.

AA GUN STATION

LIGHT AA GUN INTERFACE

ROTATE THE GUN:

- **With mouse:** Moving the mouse moves the AA gun view left/right/up/down. The AA gun will follow the camera view with a reduced rotation speed.
- **With keyboard:**
 - **Left cursor:** Rotate AA gun and camera view to the left.
 - **Right cursor:** Rotate AA gun and camera view to the right.
 - **Up cursor:** Raise the AA gun and camera view.
 - **Down cursor:** Lower the AA gun and camera view.

FIRE THE GUN:

- **With keyboard:**
 - **Space Bar:** Normal fire.
 - **Hold Space Bar:** Continuous fire.

ACTIVATE TARGETING SYSTEM:

- **With mouse:** Right-click to cycle through the zoom levels.

Design Note: The rotation speed of the view will be slower at higher zoom levels.

HEAVY AA GUN

ROTATE THE GUN:

- **With mouse:** Moving the mouse moves the AA gun view left/right/up/down. The AA gun will follow the camera view with a reduced rotation speed.
- **With keyboard:**
 - **Left cursor:** Rotate AA gun and camera view to the left.
 - **Right cursor:** Rotate AA gun and camera view to the right.
 - **Up cursor:** Raise the AA gun and camera view.
 - **Down cursor:** Lower the AA gun and camera view.

FIRE THE GUN:

- **With keyboard:**
 - **Space Bar:** Normal fire.
 - **Hold Space Bar:** Continuous fire.

ACTIVATE TARGETING SYSTEM:

- **With mouse:** Right-click to enter targeting system.

TARGETING MODE (ZOOM)

ROTATE THE GUN:

- **With mouse:** Moving the mouse moves the AA gun view left/right/up/down. The AA gun will follow the camera view with a reduced rotation speed.
- **With keyboard:**
 - **Left cursor:** Rotate AA gun and camera view to the left.
 - **Right cursor:** Rotate AA gun and camera view to the right.
 - **Up cursor:** Raise the AA gun and camera view.
 - **Down cursor:** Lower the AA gun and camera view.

FIRE THE GUN:

- **With keyboard:**
 - **Space Bar:** Normal fire.
 - **Hold Space Bar:** Continuous fire.

CHANGE FIRING MODE:

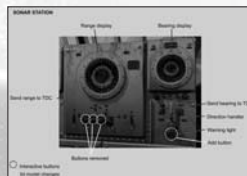
- **With mouse:** Left-click to cycle through the firing modes.

ZOOM:

- **With mouse wheel:** Cycle through the zoom levels.
- **With mouse:** Right-click to exit targeting system (to AA gun mode).
- **With keyboard:** Tab key to cycle through the zoom levels.

Design Note: The rotation speed of the view will be slower at higher zoom levels.

SONAR STATION



HYDROPHONE/SONAR ELEMENTS

- **Direction handler:** Left-click on the handler to change the listening direction.
- **Bearing:** Automatically entered; corresponds with the direction in which the hydrophone is pointing.
- **Range (Sonar):** Display range to target.
- **Send information to TDC/map.**
- **Hydrophone volume.**
- **Warning light.**

The sound heard by the hydrophone needs to be easily distinguished to determine:

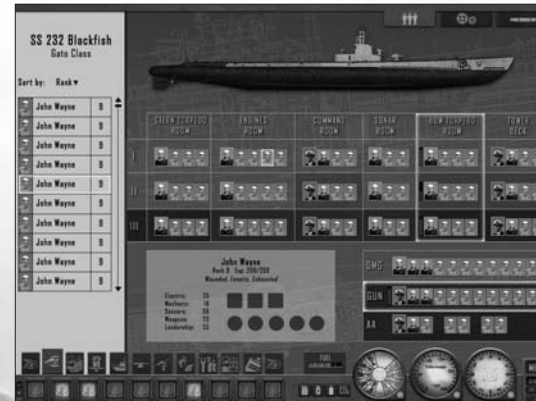
- **Contact type:** Single ship or convoy.
- **Ship type:** Merchant or warship.
- **Range to ship:** Short (under 1,100 yards), medium (between 1,100 and 5,500 yards), or long (over 5,500 yards).
- **Position relative to submarine:** Closing or moving away.

RADAR STATION



- **There are two operating modes for radar:**
 - Oscilloscope mode.
 - PPI (Plan Position Indicator) mode.
- **Left-clicking switches the radar on/off.**
- **Sweep/focus:**
 - Left-clicking switches Radar mode between continuous sweep and focus.
 - In Focus mode, the radar is controlled using the radar wheel.
- **Range scale:** Left-clicking switches the radar scale between long and short range.
- **Radar display:** The green spike/dot displays signal strength.

SUBMARINE MANAGEMENT STATION



Without its crew, a submarine is only a tube of metal. Together, they are a lethal fighting machine. It is your job as captain to manage the crew.

The Crew Management screen serves to watch the current state of each crewmember and the crew as a whole. By default, the crew is a functional entity that has been chosen for you by the officers and chief of the boat. Your attention is required only to optimise the workings of the crew or to respond to a crisis such as casualties being suffered onboard the submarine.

The way the crew functions in Silent Hunter: Wolves of the Pacific is inspired by reality. During normal patrol routine, the crew stands watch to keep the vital stations of the submarine manned. Each man stands a four-hour watch, after which he is allowed eight hours of off-duty time dedicated to minor repairs, studying submarine theory and - finally - rest and sleep.

Watches succeed each other automatically during the day, without any input from the player. However, you may choose each crewmember's role in the submarine and the watch that he takes part in.

When starting combat action, the player should command the crew to Battle Stations, which ensures that enough efficiency is generated for combat action. Don't overuse this feature though, as the crew will become exhausted and this will prevent you from undertaking combat operations in the following days.

Each crewmember is a unique individual with a set of skills that are both innate and acquired through education. Once a crewmember is manning a station, his efficiency is determined by his skills and the specifics of the station. (By "station" we mean the compartment where he is located, as a crewmember will perform differently in each part of the submarine.)

A crewmember doesn't act on his own; he is part of a team in each compartment. First, he will get a bonus in efficiency from the leader of the compartment. Second, everyone onboard the submarine may get a bonus of efficiency from the leader present in the command room – the Officer on Deck.

DAMAGE MANAGEMENT

Sooner or later your submarine will suffer a malfunction due to damage being taken or insufficient care by the crew. As with any properly trained submarine crew, your men will start repairing damage located in their area of responsibility as soon as possible.

In addition, you can order a special damage control team to take care of particularly difficult repairs. To prioritise their tasks, simply drag the malfunctioning items into their queue.



TORPEDO MANAGEMENT

The chief weapon of your submarine is the torpedo, and the captain must make sure the submarine's torpedo tubes are loaded and ready for battle. By default, the crew will start reloading the tubes once they are emptied (after firing). You can order your crew to wait for your command before starting loading operations, which may be useful to conserve the crew's energy for other operations or to allow you to start the loading of the torpedoes when desired.

To order the loading of a torpedo, drag it to the tube that you wish to be loaded. The only restriction is that bow tubes may only be loaded from the bow torpedo room, while stern tubes are loaded only from their room.

Reloading torpedoes is a tiring and noisy operation, and therefore all reloading operations are stopped when the submarine is rigged for silent running.



MULTIPLAYER

SETTING UP FOR ONLINE PLAY

The game uses MatchMaking+, Copyright © 2006, by DemonWare Ltd.



The DemonWare name and logo are copyright of DemonWare Ltd. 2006

The Multiplayer mode of Silent Hunter: Wolves of the Pacific allows you to play privately hosted online games through the Ubisoft Matchmaking servers or local LAN games.

The following TCP and UDP ports should be opened to allow for Silent Hunter: Wolves of the Pacific's multiplayer gaming:

Direction	Protocol	Remote Port	Remote Hosts	Local Port	Comment
Outbound	TCP	3074	test.lsg.agora.mmp. demonware.net	Any	Lobby Server
Outbound	TCP	3074	gsdev##.gsdev.mdc. ubisoft.com	Any	Development Authentication Server
Outbound	TCP	3074	agora-as##.gs.mdc. ubisoft.com	Any	Production Authentication Server
Outbound	UDP	Any	Any	3074-3174	Peer to Peer
Inbound	UDP	Any	Any	3074-3174	Peer to Peer
Outbound	TCP	80	gconnect.ubi.com	Any	Service Discovery

Besides the Matchmaking ports these other ports need to be open:

TCP port 19.000

UDP port 19.001

UDP port 19.002

MULTIPLAYER INTERFACE

MULTIPLAYER MENU

From the Multiplayer menu, you can choose between a LAN game and an online game. After choosing, you will be taken to the Profiles screen. Press Back to return to the previous screen.



PROFILES PAGE

LAN GAME

On the Profile screen, fill in the Username field and press Next, which will take you to the Sessions screen.

Press Back to return to the previous screen.

ONLINE GAME

On the Profile screen, fill in the Username field, the Password field and the CD-KEY field, then press Next, which will take you to the Sessions screen. You can also create a new profile. Just press the Create Profile button, which will open a browser window and take you to ubi.com. Follow the instructions there to create a valid account. You can then use the newly created username and password to authenticate yourself in the game.

Press Back to return to the previous screen.



SESSION PAGE

Here you can create a new game by pressing the Create Game button or join an existing session by pressing the Join Game button. Press the Leave button to go to the Main Menu.

The Session page will have the following fields:

- **Session:** The name of each session will be displayed here.
- **Map:** The name of the maps will be displayed here.
- **Mode:** The type of game – Co-op or Adversarial – will be displayed here.
- **Players/Max:** This field indicates the number of players in a session and the maximum number of players allowed.
- **Latency.**

The session list can be sorted by:

- **Session.**
- **Map.**
- **Mode.**
- **Players.**
- **Maximum number of players.**
- **Latency.**



CREATING A NEW GAME

When creating a new game, you must enter a session name in the Session field. Setting a password for your session is optional. You must also set the maximum number of players. This can be as low as two players or as high as eight players. You can set the game mode to Co-op or Adversarial.

There are two check boxes: Submarine Selection and Crew Selection. Checking them will allow joining players to select the submarine type and the crew's skill. Leaving them unchecked means that only the server will be able to select the submarine type and the crew's skill.

Pressing the Create button will take you to the Lobby page. Pressing the Back button will take you to the previous screen.



LOBBY PAGE

The Lobby page contains a list of the available slots and the connected players, the type of submarine for each player, the crew's skill and its latency. Next to each player there is a check mark showing the status of each player. The host of the game will also have an X mark next to the check mark, which makes it possible to kick players out of the game.

To the right of the screen is a window where you can choose the mission from a drop-down list. Once a mission is selected, a description of the mission will appear below the drop-down list.



LIST OF PLAYERS (MAXIMUM 8)

- Player's name
- Player's submarine type
 - Allows players to select their submarine type
- Players crew experience level
 - Allows players to select their crew experience level
- Latency
- Ready icon
- Kick icon (only for server)

CHAT OPTION

- To all
- To allies

REALISM

- Easy
- Normal
- Hard
- Very hard

IN-GAME CHAT

- Radio
- Normal



MAP SELECTION

- Single-player mission
- Random mission
 - Mission period
 - Mission time
 - Convoy type
 - Convoy size
 - Escort size
 - Escort experience
 - Air cover
 - Distance to convoy

LEAVE

READY (FOR CLIENT) / START (FOR SERVER)

MULTIPLAYER RESULTS SCREEN

Pearl Harbor Attack - Dec. 7, 1942							
Name	Sub	Merchants	Warships	Tonnage	Renown	Status	
Player1	Sub	20	22	10000	10000	Killed	
Player2	Sub	2	2	2000	2000		
Player3	Sub	10	0	10000	10000	Killed	
Player4	Sub	2	2	2000	2000		
Player5	Sub	20	0	10000	10000		
Player6	Sub	8	0	1000	1000		
Player7	Sub	2	0	2000	2000		
Player8	Sub	10	0	10000	10000		
OBJECTIVES							
Objective 1					Completed		
Objective 2					Failed		
Objective 3					Completed		
					001		

PLAYERS SCORE LIST

- Player name
- Sub type
- Number of Merchants sunk
- Number of Warships sunk
- Total tonnage sunk
- Renown won
- Status
 - Killed

OBJECTIVES STATUS

- Objective name
- Objective status

MULTIPLAYER GAME MODES

CO-OPERATIVE MODE

In co-operative multiplayer a maximum of four players (over the Internet) or eight players (on a LAN), each commanding a submarine, must work together toward the completion of a common set of objectives. Enemy ships are controlled by the computer.

The main objective for the players is to sink a specific amount of tonnage in enemy shipping, but there may be specific objectives depending on the mission.

ADVERSARIAL MODE

Adversarial mode is similar to Co-operative mode except for the fact that one player – the server operator – controls the escort ships present in the scenario. Your objective during the game is to stop the submarine players from achieving their goals in the set time of the mission.

To accomplish this, the player uses the sensors and weapons onboard the escorts to locate, attack, repel and hopefully sink the submarines.

TABS AND ORDERS

ESCORT CONTROL TAB

- Centre **camera** view (on selected escort).
- **Defensive/aggressive** mode.
 - **Defensive (default mode):** Escort engages submarines only in the assigned patrol zone.
 - **Aggressive:** Escort engages any submarine contact.
- **Search** on/off mode (default: off).
 - When Escort Search mode is on, escort makes search patterns in the assigned patrol zone.
- **Attack with side ASW (Anti Submarine Warfare):**
 - Escort will immediately use the side (left and right) ASW weapons.
- **Attack with aft ASW:**
 - Escort will immediately use the aft (back) ASW weapons.



QUICK SELECTION PANEL (ONLY ON THE ESCORT TAB PANEL)

This panel allows the player to select any escort using the combo box. This combo box appears only on the Escort Tab panel.

ESCORT CONTROL DIALS

These dials appear only when an escort is selected.

- Engine telegraph
 - This panel allows the player to set the speed for the selected escort.



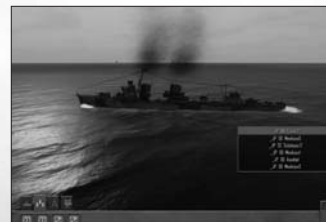
- Escort course
 - This panel allows the player to set the course for the selected escort.
- Escort position



- **Fore**
 - Inner circle (1-4 km around the convoy)
 - Outer circle (5-9 km around the convoy)
- **Aft**
 - Inner circle (1-4 km around the convoy)
 - Outer circle (5-9 km around the convoy)
- **Left**
 - Inner circle (1-4 km around the convoy)
 - Outer circle (5-9 km around the convoy)
- **Right**
 - Inner circle (1-4 km around the convoy)
 - Outer circle (5-9 km around the convoy)

Escort patrol zones (inner and outer circles) change accordingly with the new convoy shape, but their position is constant:

- 3-5 km for inner defensive screen
- 5-9 km for outer defensive screen



CONVOY

This panel allows you to control the convoy (not the escorts).

- **Zigzagging:** Convoy will start to zigzag.
- **Slow/Fast:** Toggle between two-thirds speed and full speed.

MAP

This panel allows you to access the navigation map.

- **Go to Map Station.**
- **Set Course:** On the navigation map, the Convoy Commander can select escorts (not merchants) and set their course.

Any actions you take – set new course, attack with depth charges, etc. – override current AI actions.

UNIT SELECTION

You can select escorts on the navigation map. You can set a course or give orders to selected escort units by using the Escort Panel or dials.



CAMERA CONTROL

This panel allows the player to control the camera.

- **Free camera.**
- **View next escort.**
- **View previous escort.**
- **View next convoy ship.**
- **View previous convoy ship.**

Free camera for the Convoy Commander does not work underwater and it will only move up to a certain distance from friendly units.

UNIT SELECTION

You can select escorts while in the Free Camera mode. Left-click to select and right-click to deselect.



APPENDIX

BASIC CONTROLS

- F1 Help
Esc Options

NAVIGATION CONTROLS

SPEED CONTROLS

- ` All Stop
- 1 Ahead 1/3
- 2 Ahead 2/3
- 3 Ahead Standard
- 4 Ahead Full
- 5 Ahead Flank
- 6 Back 1/3
- 7 Back 2/3
- 8 Back Full
- 9 Back Emergency

DIRECTION CONTROLS

- [Hard to Port (left)
-] Hard to Starboard (right)
- ` Rudder Amidships

DEPTH CONTROLS

- E Emergency Surface
- P Periscope Depth
- A Maintain Depth
- S Surface
- D Dive
- C Crash Dive

STATION CONTROLS

- F2 Command Room
- F3 Navigation Map
- F4 Attack Periscope
- F5 Bridge
- F6 Deck Gun
- F7 AA Gun
- F8 Sonar
- F9 Radar
- F10 Sub Management
- F11 External Camera
- F12 Captain's Panel
- T Torpedo Management
- Y Damage Management
- U TBT (Torpedo Bearing Transmitter)
- O Observation Periscope
- K Captain's Log
- M Radio Messages

ATTACK CONTROLS

Return	Fire
Space Bar	Fire
Tab	Zoom
Q	Open/Close Selected Tube Door
W	Cycle Tubes
L	Lock View to Target
J	Deploy Decoys
Z	Toggle Silent Running Mode

OTHER CONTROLS

N	Recognition Manual
X	Chronometer

TIME COMPRESSION

Numpad -	Decrease Time Compression
Numpad +	Increase Time Compression
Back Space	Pause

EVENT CAMERA

V	Maximise/Minimise Event Camera Viewer
/	Turn off Event Camera
,	Previous Unit
.	Next Unit

PERISCOPE CONTROL

Ins	Up Observation Periscope
Del	Down Observation Periscope
Page Up	Raise Attack Periscope
Page Down	Lower Attack Periscope

FREE CAMERA CONTROLS

Cursor Up	Move Camera Ahead
Cursor Down	Move Camera Back
Cursor Left	Turn Camera Left
Cursor Right	Turn Camera Right
Shift + Cursor	Fast Camera Movement
Ctrl + Cursor	Slow Camera Movement
Left Mouse Button	Select
Right Mouse Button	Return to Previous View