

“The only thing that ever really frightened me during the war was the U-boat peril.”

– W.S.Churchill, The Second World War

SILENT HUNTER

III

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INTRODUCTION

August 1939. The Second World War is about to begin. The grey wolves, the U-boats of the German Kriegsmarine, take to the sea. There will be war in the Atlantic. The goal – to cut England's lifelines.

Six years later, the war ends, and Germany lays in ruins. The U-boat fleet is all but wiped out, 30,000 of its 40,000 men having died at sea. Still, fighting hard but fair, they have accomplished success beyond all expectations and out of proportion to their strength. At some points during the war, they had come close to bringing the British Empire to its knees.

On the Allied side, the cost of victory has been even higher. More than 30,000 merchant seamen have been lost in this struggle, along with many thousands of servicemen from all branches of the military. About 20 million tons of merchant tonnage lies under the sea.

And the emotional cost of the war has been even greater.

Yet, this is also a time of explosive technological development. Allied anti-submarine defenses have discovered how to defend against the U-boat and submarine warfare in general.

But the real breakthrough is taking place in Germany. Having just entered operational service, yet never used in actual combat, the revolutionary Type XXI U-boat is a prototype for post-war submarine development in the world's major naval fleets. This, alone, is testimony to the high level of professionalism and experience of the U-boat force and the engineers behind them.

This game pays homage everyone – Allied or Axis – who served at sea during the crucial years of World War II.

GETTING STARTED

SYSTEM REQUIREMENTS

Supported OS: Windows® XP/2000 (only)

Processor: Pentium® III 1.4 GHz or AMD Athlon™ 1.4 GHz or faster (Pentium IV 2.0 GHz or AMD Athlon 2.0GHz or faster recommended)

RAM: 512 MB (1 GB recommended)

Video Card: 64 MB DirectX® 9-compliant graphics card (128 MB DirectX 9-compliant card recommended) (see supported list*)

Sound Card: DirectX 9-compliant PCI card

DirectX Version: DirectX 9 or later (included on disc)

DVD-ROM: 4x DVD-ROM drive or faster (DVD-ROM only)

Hard Drive Space: 2 GB

*Supported Cards at Time of Release

NVIDIA® GeForce™ 3/4/FX series (except MX series cards)

ATI® RADEON™ 8500/9000 family cards or newer

Laptop models of these cards not supported. These chipsets are the only ones that will run this game. Additional chipsets may be supported after release. For an up-to-date list of supported chipsets, please visit the FAQ for this game on our support website at: <http://support.ubi.com>.

NOTICE: This game contains technology intended to prevent copying that may conflict with some disc and virtual drives.

INSTALLING SILENT HUNTER III

INSTALLATION KEY CODE: In order to prevent unauthorized copies, your DVD may contain an unlocking installer key code. You will be prompted to enter this number at the first launch of the game. The code is located inside the game box.

Silent Hunter III must be installed before you can run the game. To install, insert the Silent Hunter III DVD 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 III DVD icon to display the files located on the DVD. Look for Setup.exe among those files and double-click it to run the installer.

UNINSTALLING SILENT HUNTER III

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 III, and click on the Add/Remove button. The game and all its components are then removed from your system, except for your saved games.

RUNNING THE GAME

From the Start menu, select: Programs: Silent Hunter III: Silent Hunter III.

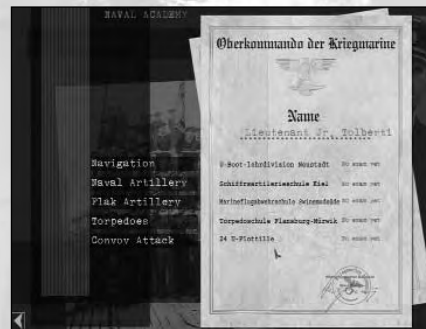
The intro video will play, after which the Main Menu will appear. From the Main Menu you can access all of the game's features. See the sections further into the manual for details.

GAME MODES

NAVAL ACADEMY

The Naval Academy menu gives you access to a set of five tutorials. Each tutorial focuses on a set of aspects of the game:

- **Navigation Course:**
 - U-boat direction control.
 - U-boat speed control.
 - U-boat dive controls.
- **Naval Artillery Course:**
 - Deck gun aiming.
 - Deck gun ammo management.
- **Flak Artillery Course:**
 - Flak gun aiming.
- **Torpedoes Course:**
 - Periscope use.
 - Torpedo tubes management.
 - Torpedo attacks.
- **Convoy Attack Course:**
 - Positioning in submersion.
 - Target priority.
 - Detection avoidance.

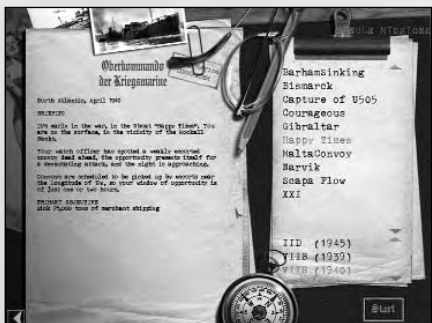


Note that each tutorial is playable as a training or exam session. Each tutorial played as an exam session will grant you a result of pass or fail, with a quality evaluation. You can retry a tutorial even after failing it. Only the best results per tutorial are recorded.

NOTE: *Graduating all the tutorials will give you bonus renown when you start the Career mode!*

SINGLE MISSIONS

The Single Missions menu gives you access to individual missions and historical scenarios. From this screen, you will also launch new missions created with the game's Mission Editor or downloaded from the Internet.



The menu consists of two main parts:

- The list in the upper right corner shows the available missions.
- The left side of the screen displays a short description of the currently selected mission.

If you want to play the mission with a different U-boat model than the one selected by the mission maker, use the scrolling list provided on the lower portion of the screen.

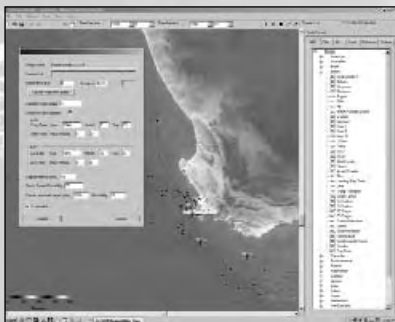
THE MISSION EDITOR

Should you want more than the single missions included with the game, the first solution is to use the mission generator. If something more complex is what you're looking for, try the Mission Editor – included as a separate executable within the game.

You can use the Mission Editor either to create a new mission from scratch, or to edit the campaign data for the dynamic campaign. Make sure you back up anything you edit, though, or you may end up with an unusable install of the game.

Single missions also use the dynamic campaign engine; you therefore do not need to worry about filling the ocean with ships. The game engine will do that, and do it with historical accuracy.

Full documentation for the Mission Editor is available on the game DVD.



CAREER MODE

The core of Silent Hunter III is the Career mode. The game uses a dynamic, random campaign engine based on historical reality. Every time you play, you can have a unique career.

Career Renown

As a measure of your performance, after each patrol you will earn “renown” for achieving objectives and destroying enemy units. Your renown will accumulate as you play through Career mode. You can use your renown to gain access to better U-boat types, improved equipment, or new crew members.

NOTE: *If your renown reaches negative values, your career may suddenly end!*

Career Timeline

The career timeline will evolve from the moment you start your career. The time spent on patrol will add to the time you spend on base.

Between patrols, you will spend time performing a number of actions: repairing a damaged U-boat after a patrol, changing the type of U-boat, or upgrading a system. You will spend a minimum of two weeks (of game time) on base between patrols.

NOTE: *No matter when you start your career, the war will always end in May of 1945!*

Career Options

Starting a New Career

While the campaign has random elements, you can customize some things to your liking. By selecting a start year and initial flotilla assignment, you will change what type of U-boat you will start the campaign on, the theater of operation, and even the nature of the warfare you will conduct.



Starting Year

You can start the campaign at any time between 1939 and 1943. The later you start your campaign, the more challenging the enemy will be.

Starting Flotilla

This choice will determine the operational base and the type of U-boat you will be assigned.

• 1st Flotilla

- 1939: U-boat Type IIA.
- 1940: U-boat Type IID.
- 1941: U-boat Type VIIB.
- 1942: U-boat Type VIIC.

• 2nd Flotilla

- 1940: U-boat Type VIIB.
- 1941: U-boat Type IXB.
- 1942: U-boat Type IXC.

• 7th Flotilla

- 1939: U-boat Type IIA.
- 1940: U-boat Type IID.
- 1941: U-boat Type VIIB.
- 1942: U-boat Type VIIC.
- 1943: U-boat Type IXC.

• 10th Flotilla

- 1942: U-boat Type IXB.
- 1943: U-boat Type IXC.

• 11th Flotilla

- 1942: U-boat Type VIIC.
- 1943: U-boat Type VIIC/41.

• 29th Flotilla

- 1941: U-boat Type VIIB.
- 1942: U-boat Type VIIB.
- 1943: U-boat Type VIIC.

Career On-Base Options

When you start your career, and every time you return from patrols, you will access the main Career menu.

In this menu, you will have access to a number of options specific to Career mode.



U-Boat Options

This menu will allow you access to:

- Newer types of U-boats.
- Upgraded versions of conning towers.
- Newer versions of flak guns.
- The torpedo armament of the U-boat before leaving in mission.
- Access to new or upgraded versions of U-boat systems:
 - Engine upgrades.
 - Snorkel.
 - Batteries.
 - Hydrophones.
 - Sonar.
 - Radar.
 - Radar warning.
 - Sonar decoys.
- Personalized U-boat emblems.



Switching to a new U-boat or upgrading the conning tower will cost you renown. To have access to newer types of U-boats early on, you will need high amounts of renown.

Although basic torpedo load will cost you nothing, adding advance torpedo types to your loadout will require renown.

Improving the systems or adding new ones to your U-boat will also tax your renown.

Gaining the right to wear an emblem and to personalize it depends entirely on your performance during the patrols.

Barracks Options

This menu will allow you to:

- Replace crew losses.
- Add extra crew to your starting crew.
- Pre-arrange the crew in any desired configuration.
- Recruit experienced crew.



Player Options

This menu will allow you to:

- Review your evolution for the current career.
- Review your evolution patrol by patrol.
- View your awards.
- Apply for transfer to a new flotilla.
- Promote your crew.
- Specialize your crew.
- Award your crew decorations after each patrol.

You will be awarded medals and ranks as you progress in your campaign, depending on specific conditions related to your combat service.

You can apply for transfer to a new flotilla at any time, but your request will be approved only if you have proved yourself a valuable U-boat commander.

Between patrols, as your crew gains combat experience, you will be allowed to promote or qualify some crew members. This will make your crew both more resilient and more efficient.

At the end of a good patrol you may be rewarded with decorations for your crew. They are a welcome upgrade for your crew members and have various beneficial effects. You may end up with an elite crew that drastically improves your performance in patrols.

Career Options

This menu will allow you to:

- Set the game difficulty.
- Adjust the video settings.
- Adjust the audio settings.

Career Saving

For each career patrol, there will be two auto-saves, one before leaving in patrol and one after returning from patrol.

You can also save during patrols. All these saves will be available for a specific career profile.

Starting a new career with the same profile will cause you to lose any previous saves under that profile.

Career Loading

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.

MULTIPLAYER

Silent Hunter III supports LAN multiplayer games for up to eight players and online games for up to four players, on ubi.com™. Two modes are available: scripted missions and generated missions.

The scripted mission included in the game covers a series of famous convoy battles. You can add more scripted missions by using the Mission Editor.

Generated missions are based on the campaign data. Using the mission generator, the host will select specific options like mission starting date, type and experience of enemies, U-boat starting positions, and more.

MUSEUM

Using the Museum interface you can familiarize yourself with the planes, ships, and submarines included in the game. It is important to know your enemy before encountering him on the field of battle, and this is the place to do it.

Units are sorted by nationality and type. For a given class or model, you can also check which armament versions are used throughout the war.



COMMANDING THE U-BOAT

As captain, you will be required to manage your U-boat in an efficient manner. You will need to move from station to station, keeping your boat's running parameters, the tactical situation, and the crew's state under observation.

THE MAIN PLAYER INTERFACE



The player interface is designed to keep all vital functions of the U-boat within your reach. For this reason, it is on-screen in almost every menu of the game. The main elements of the interface are:

- The Quick Controls Panel.
- The Messages Log.
- The Stations Panel.
- The Officers Panel.
- The Stealth Meter.

Each of these elements is explained below.

Quick Controls Panel

Here you will find the most common commands and instruments required to maneuver your U-boat: 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 U-boat's speed are the Engines 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 an insufficient crew – may prevent the Engine Room team from meeting your request.

Direction

You can turn your U-boat in two ways: by clicking on the rudders indicator to set the rudders to the desired position, or by requesting a new direction relative to your current position – click 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 second 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, indicating the current direction, on the top of the panel.

HINT: *Turning your boat demands a minimum speed; otherwise the rudders are not effective. The faster the boat goes, 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 25 m, is useful when requesting depth changes near the surface in order to run at periscope depth or snorkel depth or surface the boat. All these important depth settings are clearly marked on the instrument.

Should you need to go deeper than 25 m, use the gross scale version of the depth meter.

Both versions show the depth of the U-boat's keel; for this reason, the minimum depth indicated will be about 4 m.

HINT: *While 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 U-boat has a maximum operational depth, marked with green on the depth meters. Diving beyond that depth is a risky enterprise, but is sometimes useful to avoid detection or depth charge attacks. When the red section of the meter is reached, however, you are inviting disaster and pressure hull failure.

Time Compression and Clock

You can set the time compression level from 1x to 1024x. Time compression is an absolute necessity when traveling 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.

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.

Stations Panel

This panel provides a quick, mouse-driven way to travel directly to certain sections of the U-boat or game interfaces. Simply click on the desired icon to be transported to that station. From top to bottom, the shortcuts are:

- Command Room (shortcut: F2).
- Attack Periscope (shortcut: F3).
- Bridge (shortcut: F4).
- Navigation Map (shortcut: F5).
- Torpedo Data Computer (shortcut: F6).
- Crew and Damage Management (shortcut: F7).
- Mission Orders (shortcut: F8).
- Radio Room (shortcut: F9).
- Deck Gun (shortcut: F10).
- Flak Gun (shortcut: F11).
- Free Camera (shortcut: F12).

Officers Panel

The most important members of your crew can be contacted through the Officers Panel. From left to right, they are:

- Chief Engineer.
- Navigator.
- Weapon Officer.
- Sonarman.
- Radioman.
- Watch Officer.

NOTE: *The officers and crewmen present on the panel are those assigned to the stations at the moment, through the Crew Management Interface. They are not necessarily those with the greatest expertise for that particular job.*

The Officers Panel has twofold functionality. Left-clicking on an officer selects him, which in turn opens up his primary orders level and highlights messages received from that station in the messages log.

Right-clicking on the officer will instantly transport you to his station, allowing you to better supervise him and even manually take over some of the tasks.

Stealth Meter

This icon represents the overall stealth factor of your U-boat. It depends on the following factors:

- **Speed:** The faster you turn the propellers, the more noise you make. This means you will be detected more easily by hydrophone.
- **Height:** The higher the silhouette of your U-boat above water, the easier it will be to detect you by visual observation or radar.
- **Weather:** High waves will make your U-boat's silhouette harder to notice.
- **Light Level:** When it's dark and you can't see a thing, neither can the enemy. Until someone lights a flare, that is.

The representation is color-coded. Green means you should be pretty safe, while Red is not good at all.

NOTE: *The stealth meter only shows how detectable your submarine is at the moment. It will not tell you whether you have been actually detected by anyone.*

MOVING AROUND THE U-BOAT

Silent Hunter III was designed to immerse the player in the experience of a U-boat commander, while allowing rapid access to the submarine stations vital to your job. Generally speaking, in every U-boat type you will be able to visit the following stations:

- **Command Room**
 - Chief Engineer's Station.
 - Attack Officer Station.
 - Navigator Station.
 - Observation Periscope.
 - Damage and Crew Management Interface.
 - Conning Tower.
 - Attack Periscope.
 - Radio Room.
 - Radio Station.
 - Sound Station.
 - Captain's Log.
 - Bridge.
 - UZO.
 - Deck Gun.
 - Flak Cannons.

There are several ways to move between these stations, and our preferred method is through the 3D medium. For this, the mouse is the primary controller:

- Click the left mouse button (LMB) on a door to enter it.
- Click the right mouse button (RMB) on an officer to move to his station.
- Click the LMB on an officer or instrument to interact with him or it.
- Click and hold down LMB to capture the mouse and rotate the view.

Should you find this method too slow, use either the interface buttons in the upper right corner or keyboard shortcuts to speed up your movements. We recommend a combination of all three methods for maximum effect.

STATIONS

Periscope Station (Shortcut: F3)

The primary tool for submerged observation and attack is the periscope. Most U-boats carry two of them:

- **Attack periscope:**
 - Smaller head, harder for the enemy to spot.
 - Larger magnification, allowing a better observation of the targets.
- **Observation periscope:**
 - Larger head, allowing better light transmission.
 - Larger field of view for quicker spotting of targets.
 - Able to tilt to a higher degree upwards; more useful to scan for aircraft.



Both periscope stations have identical functionality and share controls. In the interface, you will interact with the following areas:

Periscope View

Dominating the screen, the periscope gives you a view of the outside world. Clicking on it will capture the mouse and allow you to rotate the periscope.

Shortcuts:

- **Arrows:** Rotate the view.
- **Shift + Arrows:** Rotate the view fast.
- **Ctrl + Arrows:** Rotate the view slowly.

Periscope Up/Down Lever

When submerged, you need to raise the periscope above the surface to check your surroundings. This is done by clicking on the respective part of the control lever.

Shortcuts:

- **PgUp:** Raise periscope incrementally.
- **PgDn:** Lower periscope incrementally.

- **Ctrl PgUp/PgDn:** Completely raise/lower periscope.

Papenberg Depth Meter

The higher the periscope stands above water, the easier it is to spot. You should keep it as low as possible, and the Papenberg – named after its inventor – is just the right tool to aid you.

In the middle of the meter, a moving liquid column shows the depth at which the submarine's keel is located. The current level can be read on the scale to the right. On the left of the instrument, an index moving over a submarine silhouette shows the current height reached by the periscope head. When the index is level with the liquid column top, you are breaking the surface.

Tubes Status Panel

The panel displays the torpedo tubes of your submarine and their status. The color of the tube's indicator lamp shows its status:

- **Green:** Tube is loaded and ready to fire.
- **Red:** Tube is loading.
- **White:** Tube is empty and no torpedoes are available for loading at this moment. To select a different tube than the current one, simply click on its indicator.

Shortcuts:

- **Y:** Cycle torpedo tubes selection.
- **O:** Open selected tubes.
- **W:** Close selected tubes.
- **I:** Open Weapons Management screen to check torpedo loadout.

Target Notepad

The Target Notepad displays acquired data for the currently selected target. More information is available in the “Conducting Torpedo Attacks” section of this manual.

Recognition Manuals

When encountering ships, make sure you correctly identify the target before firing. Attacking friendly or neutral ships is not appreciated in the Kriegsmarine. The Recognition Manuals are organized by nationality, so make sure to check all of them before committing to an identification.

To bring up a manual, click on its spine. Click on the brackets in the lower right corner of the cover to cycle to another manual, or on the cover to open it.

Shortcuts:

- **N:** Bring up/close the Recognition Manuals.

Lock Button

To efficiently gather target information for an attack, it is best to lock the target. Place the crosshairs over the ship, and click the Lock button.

Shortcuts:

- **L:** Lock/unlock target.

Gyro Angle Indicator

The firing solution received from the Torpedo Data Computer is displayed here and will be used for subsequent attacks.

Fire Button

Press this button to launch torpedoes from the selected tubes on the current firing solution.

Shortcuts:

- **Enter:** Launch selected tubes.

Launched Torpedoes Status Panel

Once a torpedo has been launched, it appears in the Torpedoes panel and stays there until it hits something or runs out of fuel. Clicking on a torpedo icon selects it and displays its timing information on the Chronometer.

Chronometer

The Chronometer comprises two displays. The main one, with the needle, shows the seconds elapsed since the last minute has been completed. The smaller display, inserted in the main one, shows the total time and is marked in minutes, up to 12 of them.

You can use the Chronometer to time events taking place in the game, such as submerging operations or depth charge attacks. To start the timer, click on it. A second click will stop the timer, allowing you to view the end time. A third click will reset it to 0, ready for another use.

Additionally, the Chronometer will automatically time torpedo attacks. When a torpedo is selected in the Launched Torpedoes Status panel (see above section), a red needle on the timer will show the time remaining to impact.

HINT: The torpedo's time of impact is based on the range obtained from the periscope at the moment of firing. If the range is erroneous or the target starts maneuvering, the timer will be off.

UZO Station (Shortcut: U)

Contrary to popular belief, the most common type of U-boat attack took place on the surface, during the night. The choice aiming device was the UZO (short for Uboot Zieloptik), which was placed on a rotating post on the bridge.



You can access the UZO in two modes: In 3D mode, go to the bridge (shortcut: F4) and left-click on the large, white binoculars that you see mounted in the center. Or, you can press the U key on the keyboard to be transported directly to it.

NOTE: The UZO station, like the bridge, is only accessible while surfaced.

Function-wise, this station is almost identical to the two periscopes, except that the Papenberg Depth Meter and Periscope Up/Down Lever are missing. Refer to the previous section for information on how to use the UZO.

Torpedo Data Computer (Shortcut: F6)

The Vorhaltrechner, or Torpedo Data Computer (TDC), is the brain of the U-boat's attack system. Using data provided by the player and the currently used optic (periscope or UZO), it computes the gyro-angle – the angle at which the torpedo will need to turn in order to enter a collision course with the target.



Attack Map

This is the main element of this station. You can see on the map your submarine and any surrounding ships detected by your sensors. Clicking and dragging the map will make it display a different area. The map will also show, with a red line, the current shooting solution for your torpedoes.

Shortcuts:

- **Tab or mouse wheel:** Map zoom level.

Map Tools

Sliding in from the upper part of the screen are the map tools. Click on them to zoom in or out on the map, or to display a map helper.

Target Data Section:

- **Input switch:** Normally the TDC receives data from one of the attack stations. However, you can choose to adjust the data from here by clicking on the Input On/Off switch.
- **Bearing:** Shows and sets the bearing received from the target.
- **Range:** Shows and sets the range to target in hectometers (1 hm = 100 m).
- **Angle on bow:** Shows and sets the target's angle on bow.
- **Speed:** Shows and sets the target's speed, and also shows in the inset dial the selected torpedo speed.

Gyro Angle

This is purely a feedback dial, showing the resulting firing solution.

Salvo Switch

Switches between single shots (one tube only) and salvo shots (multiple tubes), depending on submarine.

Tubes Selection

In addition to the tubes indicator lamp board at the top of the screen, which is basically the same as in the Periscope and UZO stations, you can also select tube(s) using the historically accurate rotating knobs. Only the knob used for the current shooting mode – salvo or single shot – is displayed. The use of the knob is mandatory for salvo shots.

Spread Angle

When a salvo shot is prepared, this dial shows and sets the opening of the fan angle covered by the torpedoes.

Pistol

Switches the torpedo detonation mode between I (impact only) and M (magnetic plus impact detonation).

Depth

Sets the torpedo running depth from 0 to 25 m. Use it in relation to the pistol selection and the ship's draft value read in the Recognition Manual. Actual minimum running depth is 3 m.

Torpedo Speed

Sets the torpedo running speed on steam-running torpedoes to slow (30 kts), medium (40 kts), or fast (45 kts).

FAT/LUT Settings

To get maximum effectiveness from FAT or LUT pattern-running torpedoes you will need to set several parameters for their trajectory. When one of these torpedoes is loaded into a tube, a green button will appear on top of its status indicator lamp. Press the button to access the dials for Straight Run, Second Gyro Angle, Pattern Leg, and Pattern Angle, and press it again to return to the normal dials.

Fire Button

If you are happy with the data set and need to launch the torpedo(s), click on this button.

Shortcuts:

- **Enter:** Launch selected tubes.

NOTE: For more information on torpedo attacks, refer to the section "Conducting Torpedo Attacks."

Navigation Map (Shortcut: F5)



The navigation map is where you can plot course for the U-boat. By changing your realism settings, you can change how information on the map is displayed.

The tools available on the navigation map can be selected from the upper right corner, and are from left to right:

- **Zoom in:** Allows you to zoom in.
- **Zoom out:** Allows you to zoom out.
- **Marks:** Allows you to place markers on the map to help you remember possible contact positions, important places, etc.
- **Liner:** Allows you to draw lines and measure the distance between two points.
- **Compass:** Allows you to draw circles and measure ranges.
- **Plot course:** Allows you to plot your course using a waypoint navigation system.
- **Delete:** Delete any marks, lines, circles, or waypoints on the map.

HINT: Left-click and hold you can pan the map to easily reach adjacent zones.

Crew and Damage Management (Shortcut: F7)

At this station, you can assign crew to specific locations and repair damaged systems on the U-boat.

Crew Structure

In Silent Hunter III, the crew is composed of the following:

- **Sailors:**
 - Seaman.
 - Able Seaman.
 - Leading Seaman.
- **Warrant Officers:**
 - Warrant Officer.
 - Senior Warrant Officer.
 - Chief Warrant Officer.

- **Officers:**
 - Senior Midshipman.
 - Lieutenant Jr.
 - Lieutenant Sr.

The basic stats of each crew member are:

- Morale (blue bar).
- Fatigue (yellow/red bar).
- Health (visible only when crewmember is wounded).

Warrant Officers and Officers can be qualified in the following areas:

- Torpedoes.
- Gunner.
- Flak.
- Watch.
- Command.
- Communication and Sensors.
- Engines.
- Damage Control.
- Medic.

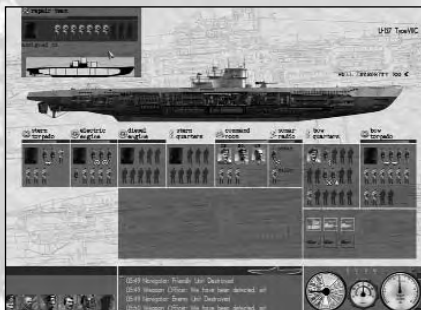
Using specialized crew in specific compartments will increase crew efficiency in those compartments.

While Warrant Officers are allowed only one qualification, Officers are allowed up to three qualifications depending on their rank.

U-Boat Structure

The U-boat is structured in compartments. A typical U-boat has the following compartments:

- Bow/Stern Torpedo Room.
- Bow/Stern Crew Quarters.
- Radio and Sonar Room.
- Command Room.
- Diesel/Electric Engine Room.
- Tower Deck.
- Deck Gun.
- Flak Gun.



Each compartment is associated with one or more specific systems on board the U-boat. In addition, each compartment has a predetermined number of crew slots. For example, on a Type VII U-boat, the bow torpedo room has 15 crew slots and a specific torpedo tubes loading time.

Crew Roles on U-Boat

The crew is assigned to compartments to play specific roles. For example, to move the U-boat, the player will need crew in the engine room (diesel on surface, electric underwater).

The crew's influence on systems performance in any compartment is represented by an Efficiency meter (green bar under each compartment).

Efficiency has four different states:

- **None:** No crew or not enough crew assigned to man the compartment.
- **Minimal:** Barely enough crew assigned to man the compartment.
- **Normal:** Usual-size crew assigned to man the compartment.
- **High:** Supplemental or very qualified crew assigned to man the compartment.

According to its size and systems, each compartment requires a certain number of crew members to function. Thus, the player will need to assign crew to specific compartments for specific tasks to be performed. For example, if the player wants to fire the flak guns, he should assign crew to the flak guns.

Remember, the efficiency of the crew a compartment influences the performance of the systems in the compartment.

Crew Assignment Methods

At the start of a mission, U-boat crew assignment is preset (during the career this structure is decided by the player before leaving on a mission).

Method 1: From Crew Quarters

Double left-click on any compartment name to automatically assign enough crew from quarters to that compartment to make it work. If there is no crew in the quarters, the operation will not take place.

Right-click on a compartment name to send the crew to quarters (for rest and recovery from wounds).

Method 2: Between Two Compartments

To easily move the entire crew (or as many as needed) from one compartment to another, select the destination compartment (left-click on compartment name) then right-click on another compartment name.

Note that right-clicking on individual crew members will send them to a selected compartment.

Method 3: Moving Individuals

Left-click and drag any individual crew member to place him in any compartment with free crew slots.

Note that during a mission, certain automated assignments are active.

1. Whenever the U-boat navigates at surface, a watch crew has to be maintained in the tower deck location (they are lookouts).
2. If the boat is surfacing, a watch crew is automatically assigned to this position, if there are crew members in the crew quarters.

3. If the player is using the guns, the watch crew automatically goes to the quarters to avoid unwanted casualties.
4. If the gun crew is sent below deck, the watch crew automatically returns to tower deck location.
5. If the U-boat dives, the crew in the engines room will automatically switch from diesel to electric compartment.

U-Boat Damage

Non-Repairable Damage

The first type of damage affects the general integrity of the submarine hull. This type of damage is not repairable while in patrol. Beware – as your hull integrity is affected, your U-boat safe depth will decrease. Diving too deep will no longer be an option if your boat integrity is seriously affected.

Repairable Damage

The second type of damage is specific to compartments, locations, and systems aboard the U-boat. Your crew can repair these items if they are not destroyed. Any destroyed system is lost until you return to base, where the system will automatically be replaced. Any dead crew member must be replaced when you return to base.

The repair system works as follows:

If any crew members are on location, they will repair any minor damage to the compartment/location and any system.

For more serious damage you should assemble a repair team. To assign this team to a specific location, left-click on the damaged location on the small submarine silhouette below it.

Moderate damage to a compartment or location can result in some damage to systems and crew. Usually, the crew on location will fix this kind of damage without any other measures.

Serious damage to a compartment or location can result in major damage to or destruction of a system or even crew casualties. To recover from this kind of damage it is best to assign a damage control team to that compartment.

Critical damage to a compartment or location can result in destruction of systems, crew casualties, and very often flooding. In these situations you must act quickly or the U-boat may be doomed.

If any compartment within the pressure hull is destroyed, your boat will be lost.

Deck Gun Station (Shortcut: F10)

From this location you can control the deck gun of the U-boat. The deck gun can be used only when at surface, and only in good weather. In order to control your deck gun, you will need to assign crew to operate the gun.

There are two ways to assign crew to deck gun. You can select the Watch Officer (lower left side of the game screen, right-most officer). First, select the Crew on Deck option. Next, select the Man the Deck Gun order.

Alternatively, you can go to the Crew Management screen (shortcut: F7 key). Double-click on the Deck Casing location. This will assign enough crew to operate the deck gun.

To use the deck gun manually, select the Deck Gun icon from the upper-left side of the game screen (shortcut: F10 key).

To get a better view of a target, use the optical aiming device of the gun by pressing the Tab key. On the vertical left side of the optical aiming device, you will see the current elevation of the gun in meters.



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.

Use the up and down cursor keys or the mouse to aim at long range or at close range. Press the Space bar to fire.

Flak Gun Stations (Shortcut: F11)

There can be up to three different flak gun locations, depending on the type and version of the U-boat. The flak guns can be used only when at surface, and only in good weather. In order to control your flak guns, you will need to assign crew to operate the guns.

There are two ways to assign crew to flak guns. One way is to select the Watch Officer (lower left side of the game screen, right-most officer). First, select the Crew on Deck option. Next, select Man the Flak Guns order.

Alternatively, you can go to the Crew Management screen (shortcut: F7 key). Double-click on the Flak Guns location. This will assign enough crew to operate the flak guns.

To use the flak gun manually, select the Flak Guns icon from the upper-left side of the game screen (shortcut: F11 key). If more than one flak gun is available, you can use the F, T, and G keys to get directly to a specific flak gun.

To zoom in on the view of a target through the targeting device, press the Tab key.



Move the aiming device left or right by using the mouse to point the flak gun in the desired direction. Use the mouse to adjust range and follow your target. Press the left mouse button to fire.

Radar Station (Shortcut: R)



The radar station will allow the player to manually handle the radar.

- **Radar on/off:** Turn the radar on/off.
- **Direction handler:** Left-click on the handler to change the listening direction.
- **Radar range scale:** Choose between range scales of 4,500 m and 15,000 m.
- **Radar mode:** The player can select between Continuous and Focus modes.
- **Range:** Read the range to the contact in the lower left part of the radar.

HINT: While the radar is a very powerful tool for detecting enemy contacts (ships and airplanes), don't forget that using it will give away your presence.

Hydrophone (Shortcut: H)



The hydrophone station will allow the player to manually handle the hydrophone.

- **Direction handler:** Left-click on the handler to change the listening direction.
- **Hydrophone volume:** Set the volume of sound received with the hydrophone.
- **Send ping (only available for sonar):** Left-click to send a ping in the current sonar direction. If you hit a target, it will return the range between the U-boat and the object. Each additional ping will provide a more accurate range.
- **Information displayed:** In this notepad you add new contacts to the map.

Radio Messages Station (Shortcut: M)

From this location the player can read, send, and receive messages.

- **Send contact report:** Sending contact reports will give precise enemy locations to the commander of the U-boats (referred to as the BdU, for Befehlshaber der Unterseebootsabwehr). This can result in Luftwaffe or Kriegsmarine attacks!
- **Send patrol report:** If you send a patrol report with the available number of torpedoes, fuel level, and U-boat and crew status, BdU may relocate to a new patrol grid according to the new conditions or ask you to return to base.

Captain's Log (Shortcut: K)



This screen will note all the ships sunk, aircraft destroyed, and other useful information. Each entry will have an entry date, class type, and tonnage description.

The External View

This view allows you total freedom of movement in the scene. The camera will go as high as 50 m above sea level and as deep as 300 m below sea level.

Camera controls:

- **Rotate left:** Left cursor key.
- **Rotate right:** Right cursor key.
- **Move forward:** Up cursor key.
- **Move back:** Down cursor key.

Alternative control (left-click in view):

- **Pan left:** Left cursor key.
- **Pan right:** Right cursor key.
- **Move forward:** Up cursor key.
- **Move back:** Down cursor key.
- **View control:** Use mouse.

In both modes, you can also use the following controls:

- **Raise camera:** Home key.
- **Lower camera:** End key.
- **Cycle camera through units visible in scene:**
 - Cycle up: Shift + “,” key.
 - Cycle down: Shift + “.” key.

Note, however, that you will not be able to move freely away from the viewed unit, when using the Cycle Units mode.

OFFICER ORDERS

Officer Interaction

In order to access the more complex functions of the U-boat, you will need to talk to your officers. They are on the U-boat to assist you, so use them.

To talk to an officer or give him orders, left-click either on his icon in the Officers panel, or on his body in the 3D view. To take his post and do his job yourself, right-click on the same spots.

Chief Engineer

The Chief Engineer oversees all the U-boat governing systems and their use. Although the basic controls of speed, direction, and diving are accessible through this interface, assigning an officer to this post will offer a number of vital extra options.



Propulsion



Standard Mode

In this mode the U-boat uses both port and starboard engines for propulsion. At surface or when using the snorkel, the diesel engines provide the propulsion. When the U-boat submerges, the crew will automatically switch to electric engines.



Recharge Mode

This mode is available only when at surface or when using the snorkel. It allows the U-boat to use one engine for propulsion, while the other engine is used for recharging batteries.



Snorkel Up

Raise the snorkel. The operational depth for the snorkel is 10 m or above.



Snorkel Down

Lower the snorkel.



Rig for Silent Running

This order changes the U-boat speed to Ahead Slow. While the U-boat is set in this mode, the maximum speed available is Ahead Slow. All noisy activities, such as loading torpedoes or repairing, stop.



Secure from Silent Running

Cancel the Rig for Silent Running mode and all the above restrictions.

HINT: *The snorkel is a device that enables U-boats to run their diesel engines for propulsion when submerged. It also allows the U-boat to recharge its batteries while running underwater. The operating depth was usually 10 m. It was available for U-boats starting in summer 1943.*



Maneuvers



Knuckle Left

This evasive maneuver allows the U-boat to make a sharp 90° turn to port. The U-boat accelerates to Ahead Flank and goes to 25 m depth if at surface; otherwise, it maintains the current depth.



Double Knuckle Left

This evasive maneuver allows the U-boat to make two sharp 90° turns to port in quick succession. The U-boat accelerates to Ahead Flank and goes to 25 m depth if at surface; otherwise it maintains the current depth.



Knuckle Right

This evasive maneuver allows the U-boat to make a sharp 90° turn to starboard. The U-boat accelerates to Ahead Flank and goes to 25 m depth if at surface; otherwise it maintains the current depth.



Double Knuckle Right

This evasive maneuver allows the U-boat to make two sharp 90° turns to starboard in quick succession. The U-boat accelerates to Ahead Flank and goes to 25 m depth if at surface; otherwise, it maintains the current depth.



Deploy Decoys

This order launches a decoy astern of the U-boat.

HINT: *This was a chemical device intended to confuse hunters equipped with sonar. It consisted of a metal can, released from a special launcher. It presented a false target to the attacker's sonar for a period of approximately 5–25 min, enabling the U-boat to sneak away.*



Emergency Orders



Crash Dive

This emergency order submerges the U-boat at 70 m depth in the fastest way possible, with Ahead Flank speed.



Blow Ballast

This emergency order brings the U-boat to surface in the fastest way possible, using the compressed air to empty the ballast tanks.

HINT: While the Blow Ballast order brings the U-boat quickly to surface, it uses large quantities of compressed air. It is recommended that you use this order only in extreme situations.



Reports



Fuel Level

Display the current fuel level on the U-boat.

HINT: Don't forget that the faster you run, the faster the fuel runs out.



Battery Level

Display the current battery level. When the U-boat is at surface and in Recharge mode, the battery is recharged.



Compressed Air Level

Display the current compressed air level. When the U-boat is at surface, the compressed air is automatically replenished.



CO2 Level

Display the current CO2 level in the U-boat. When the U-boat is at surface, the oxygen is automatically replenished.

Navigator

The Navigator assists you on long-range navigation. Although you can manually plot your course, the navigator will provide extra information useful in making long-term decisions.



Plot Course

This order allows course plotting using the navigation map.



Search Pattern



Pattern 1

Plot a spiral search pattern.



Pattern 2

Plot a zigzag search pattern.



Pattern 3

Plot an X search pattern.

HINT: Search patterns are recommended when you have to patrol an area or you need to find a target in a specific zone.



Reports



Maximum Range at Current Speed

The Navigator will calculate the maximum range the U-boat can reach with the available fuel using the current speed.



Time to Course End

The Navigator will calculate the time needed to reach the end of the plotted course.



Range to Course End

The Navigator will calculate the distance to the end of the plotted course.



Depth Under Keel

Using the Atlas Echolot, the Navigator will report the depth under keel.

HINT: To find the depth from the U-boat keel to the sea bottom, the Navigator uses an active device that sends pings. Do not forget that these pings can disclose your location.



Weather

The Navigator makes a brief weather report.



Return to Course

This order returns the U-boat to the previously plotted course (if there is one).

Weapon Officer

The role of the Weapon Officer is to assist you with torpedo attacks. Although you can manually perform all the required torpedo attack procedures, the Weapon Officer will make a beginning U-boat commander's life easier.



Torpedo Attack



Ship Identification

Asks the Weapon Officer to identify a selected target.



Solution

Asks the Weapon Officer to calculate a torpedo solution for a selected target.



Fire Torpedo

Asks the Weapon Officer to launch a torpedo using the current available solution.



Choose Torpedo Target



Nearest Ship

Asks the Weapon Officer to select the nearest ship in range for a torpedo attack.



Nearest Merchant

Asks the Weapon Officer to select the nearest merchant in range for a torpedo attack.



Nearest Warship

Asks the Weapon Officer to select the nearest warship in range for a torpedo attack.



Recommended Target

Asks the Weapon Officer to recommend the best target in range for a torpedo attack.



Solution on Map

The Weapon Officer will display the current torpedo solution on the attack map.



Weapons Management

The Weapon Officer will display the torpedo, deck, and flak ammo management screen.

Sound Operator

The Sound Operator informs you of any contacts revealed by sound detection. You are strongly advised to have the Sound Operator at his station at all times.



Report



Repeat Last Report

Repeat the last report the Sound Operator made.



Report on Nearest Contact

The Sound Operator will make a report on the nearest hydrophone or sonar contact.



Hydrophone



Normal Sweep

The Sound Operator will use normal sweep procedure.



Follow Nearest Sound Contact

The Sound Operator will follow only the nearest sound contact.



Sonar



Estimate Range to Contact

The Sound Operator will estimate range to a selected sonar contact.



Precise Range to Contact

The Sound Operator will give the precise range to a selected sonar contact.

Radio Operator

The Radio Operator allows you to send and receive radio communications. Although you can perform radio and radar procedures manually, it is advisable to maintain a Radio Operator at station at all times.



Report



Report Nearest Radio Contact

The Radio Operator repeats the last radio contact received.



Send Contact Report

The Radio Operator sends a contact report to the base.



Send Patrol Report

The Radio Operator sends a patrol report to the base.



Radar



One Sweep

The Radio Operator will make a 360° radar sweep.



Continuous Sweep

The Radio Operator will use the radar continuously.



Turn Off

The Radio Operator turns the radar off.



Gramophone



Play

Start the music on the gramophone.



Previous

Go to previous melody.



Stop

Stop the gramophone.



Next

Skip the current melody.

Watch Officer

The Watch Officer controls the crew on deck when the U-boat is at surface. Although you can manually perform all the operations on the deck, having the Watch Officer at station will give you remote control on the gun crews and will dramatically improve their performance when engaging surface and air targets.



Deck Gun Target



Nearest Ship

The Watch Officer will select the nearest ship available for a deck gun attack.



Nearest Merchant

The Watch Officer will select the nearest merchant available for a deck gun attack.



Nearest Warship

The Watch Officer will select the nearest warship available for a deck gun attack.



Recommended Target

The Watch Officer will recommend the best target available for deck gun attack.



Crew on Deck



Man the Deck Gun

The Watch Officer will order the crew to operate the deck gun.



Man the Flak Gun

The Watch Officer will order the crew to operate the flak guns.



Man the Deck and Flak Gun

The Watch Officer will order the crew to operate the deck and flak guns.



Watch Crew

The Watch Officer will order the watch crew on the bridge.



Weapons Management

The Watch Officer will display the torpedo, deck, and flak ammo management screen.



Deck Gun



Fire at Will

This orders the deck gun crew to engage any target.



Hold Fire

This order restricts the deck gun crew from engaging targets.



Short Range

This order restricts the deck gun crew to engaging targets only at short range (up to 1,000 m).



Medium Range

This order restricts the deck gun crew to engaging targets only at medium range (up to 3,000 m).



Long Range

This order restricts the deck gun crew to engage targets at long range (up to maximum range of 8,000 m).



Aim for Hull

The deck gun crew will aim at the target's hull.



Aim for Command Deck

The deck gun crew will aim at the target's command deck.



Aim for Weapons

The deck gun crew will aim at the target's weapon platforms.



Aim for Waterline

The deck gun crew will aim for the target's waterline.



Flak Gun



Fire at Will

This order allows the flak guns crew to engage any target.



Hold Fire

This order restricts the flak guns crew from engaging targets.



Short Range

This order restricts the flak guns crew to engaging targets only at short range (up to 500 m).



Medium Range

This order restricts the flak guns crew to engaging targets only at medium range (up to 1,000 m).



Long Range

This order allows the flak guns crew to engage targets at maximum range (up to 2,000 m).



Targeting Fighters

The flak guns crew will engage enemy fighters with priority.



Targeting Bombers

The flak guns crew will engage enemy bombers with priority.



Targeting at Will

The flak guns crew will engage any enemy aircraft.



Targeting Closing Targets

The flak guns crew will engage closing enemy aircraft with priority.



Engage Any Targets

The flak guns crew will engage all enemy aircraft.



Visual Contacts

The Watch Officer will report the closest visual contact.

CONDUCTING TORPEDO ATTACKS

The German U-boat force was meant for one purpose: to wage war at sea. War demands weapons, and the U-boat's main weapon is the torpedo.

A successful torpedo attack requires several steps. As captain, it is your job to perform each one of them. However, you may require assistance from your Weapons Officer in completing some of them.

The steps are:

1. Approach.
2. Data Collection.
3. Sending Data to the TDC.
4. Tubes Selection.
5. Attack.

Approach

Your torpedoes, especially early war models, are not extremely reliable or easy-to-use weapons. Before attacking, bring your submarine as close to the target as possible, within 1000 m for best results. At short range, even if you or the torpedoes are suddenly detected and the target starts evasive maneuvers, it will be too late for him.

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

Data Collection

It is no simple task to make your torpedoes collide with the target and not the empty space of the open sea. Every attack is a complex trigonometric problem that requires a solution. In the Great War, the First Watch Officer would employ tables and disc calculators for this purpose. Fortunately, this is no longer needed. Each U-boat comes equipped with an electro-mechanical computer for this task. All you are required to do is gather the following data on the target:

- Range.
- Angle on bow.
- 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 UZO (binoculars used for surface attacks). Both of them are equipped with all the necessary tools. Later in the war, when commanding a Type XXI U-boat, you will be able to use the advanced Nibelung sonar to acquire sufficient data for underwater attacks without even raising the periscope.

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

Range

Determining range to a target of known height is a simple problem, so the first step in any attack is the identification of the target. Bring up the Recognition Manual (shortcut: M key) and flip through it until you find a match with the target you are looking at through the optics. Check the empty box on the manual's page. This will identify the ship in question and automatically enter the mast height – the tallest object on the ship – on your notepad.

HINT: *It's easier to identify a ship when looking at it from abeam (90° to its side).*

Click the Range section on the notepad, which will open it to the correct section. Once you have the target's correct height from the ID book, all you need to do is read its apparent height (as angle α) from the periscope or UZO. Both optics are fitted with marked reticles for this task and a Stadimeter-like tool to automatically measure the target. The meaning of the reticle marks can be read in the table below:

OPTIC USED	SMALL MARKS	LARGE MARKS
Periscope (1x or 1.5x)	1°	5°
Periscope (4x or 6x)	0.25° (0°15')	1.25° (1°15')
UZO (7x)	0.2° (0°12')	1° (0°15')

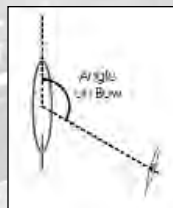
To use the Stadimeter, first place the crosshair on the waterline of the target. Next, click the icon in the lower left corner of the notepad. Your mouse cursor will be captured and will be used to move a horizontal line in the periscope view. Place it on the target's highest point – the masthead. When satisfied with the approximation, left-click and the range will automatically be calculated in the notepad. If you agree with the results, check them to return to the main page of the notepad.

Should you desire to calculate the range yourself, use the following formula:

$$\text{range} = \frac{\text{Mast}}{\sin \alpha}$$

Angle on Bow

The Angle on Bow (AOB) is, in brief, the bearing on which the target ship would observe your U-boat. It is used to define the ship's course relative to your own.



To enter AOB for your target, click on the relevant notepad section. A new page will open, showing the AOB tool. Entering the desired value is as simple as

dragging the outer ring icon (representing your submarine) to the correct position and then checking the lower right corner box. The question is, what should the desired value be?

There are multiple methods for judging AOB on a target. The quickest method is through visual observation. This is obviously quite inaccurate, but the Recognition Manual AOB page may help you come up with a reasonable value quite fast.

A more time-consuming and difficult – but also more accurate – method is to adjust your heading until the lateral separation between your ships remains constant and you are both heading the same way. At this point, you have “matched course to target”; in other words, you are traveling along parallel courses. It’s easy to determine AOB at this point, using the following formula.

AOB = 180° – bearing

Speed

The Speed section of the notepad is simple to use and understand. You are basically taking 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.

To begin the process, left-click on the Clock icon on the notepad. 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 them if 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.*

Another method of acquiring the speed of the target would be to match speed and course with target. This is somewhat similar to the technique explained in the AOB section above – you adjust your own course and speed until the bearing and distance to the target remains constant. At this point you should be traveling along parallel courses and at the same speed. You can enter this speed directly into the TDC.

Finally, you can estimate the target’s speed using the data from the recognition manual, visual observation, and plain experience.

Sending Data to the TDC

Once you have a complete set of data for the target, they need to be inserted in the TDC. On lower levels of difficulty, this is automatically done with the data collection, when the crosshairs pass over a target.

On Historical difficulty, however, you will be required to send the data yourself by checking it on the notepad.

NOTE: *You may reset the TDC and data by pressing the X icon on the notepad. This will, among other things, set the Target Speed dial on the TDC to 0, which basically transforms your optics to a point-and-shoot device. Until new data is entered, the torpedoes will shoot on the bearing towards which the currently used optic is pointing.*

In most situations, data collected for a target degrades rapidly, as AOB and range change over time for even non-maneuvering targets. Once entered in the TDC, however, the AOB will be automatically corrected for any changes in target bearing. 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 MZ detonations, it is best if the torpedo passes directly under the target’s keel. In this case, take the Draft entry in the Recognition Manual and add 1–2 m. Keep in mind that large waves may change a ship’s draft quite a bit, and too great a distance may lead to the detonator not sensing the ship’s magnetic field.

Torpedo Detonation Method

German torpedoes of 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 torpedoes’ detonators will have two possible settings: Impact Only and Magnetic + Impact. When a detonation is achieved under the ship’s keel, the entire force of the explosion is vented inside the ship, crippling it. Even a battleship may be sunk with a single such hit. The only way to achieve such an effect is by using the magnetic detonation part of the torpedo pistol. But magnetic detonations also have disadvantages, the main one being their poor reliability, manifested in premature detonations. Overly sensitive and insufficiently tested mechanisms lead to premature detonations, especially in bad weather and specific zones of the globe. Read the “Torpedo Armament” section for further information.

Torpedo Running Speed

Steam-powered torpedoes (T1 and relatives) can be set to different speeds, which also affect their range. See the “Torpedo Armament” section for further information.

SETTING	SPEED (KTS)	RANGE (HM)
Slow	30	125
Medium	40	75
Fast	45	50

Pattern-Running and Guided Torpedoes

As war progressed and the Allies strengthened their anti-submarine measures, U-boat captains found it difficult to approach their targets in order to deliver an accurate torpedo attack. One solution was the introduction of pattern-running torpedoes.

In case of a miss during the initial attack – which was more likely due to increased distance – the torpedo would begin to execute a trajectory that, with the proper shot setup, would ensure that the target or another ship in the convoy eventually got hit.

Another solution was adding acoustical guidance to the torpedoes. Evidently, such a torpedo would be able to track the target itself, thus negating minor aiming errors from the crew’s part.

For a complete overview on the settings that you can make for the pattern-running torpedoes, see the “Torpedo Armaments” section of this manual.

Tubes Selection

This step can actually be taken at any point in the attack, as it simply means selecting the torpedo tube(s) to be used for the attack. 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: +/- 90° at the start of the war; +/- 135° later.

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 in tube(s). Check the Weapons Status panel for information on the loaded torpedoes.

Do I need more than one torpedo for this target?

Large targets may require multiple shots, either organized as a salvo (fan-shot) or as succession of shots. It is a 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. For a succession of shots launched individually, aim each torpedo by placing the optic's crosshair over the desired impact point. The Torpedo Data Computer is a simple tool that will take the current bearing input as the target; this allows for very precise shots.

If a salvo is your approach, a quick way to set the correct spread angle is to point the optic at the extremities of the desired impact zone on the target. Make note of the bearing interval covered in the process, and enter it as the spread in the TDC.

A salvo can also be a good solution when you want to make sure you score a hit on the target, regardless of its maneuvering 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 maneuver.

Attack

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

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

- All factors being equal, shorter range is better (provided that arming distance is met).
- The higher the torpedo speed, the lesser the chances that the target will 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°).

Multiple Target Attacks

The primary method of warfare for the German U-boat, as predicted by Admiral Doenitz in the years before World War II, was the nighttime surface attack on convoys. The U-boat was adequate for this purpose, and with some practice, you can excel at it too.

The key element to remember when attacking a convoy is that all ships share course and speed. Once you determine those factors for one merchant, you can quickly, to the limit of your torpedo loadout, attack a multitude of targets.

For a non-maneuvering target, the TDC will automatically correct the angle on bow in relation to the bearing transmitted by the optics. As the ship's course will not change, this is simply a matter of mathematical calculation. You can use this to your advantage, because the calculator will also automatically correct the AOB when you point the optic at another ship traveling on the same course – as in, you guessed it, a convoy.

U-BOAT, VEHICLES, AND WEAPON DATA

THE SILENT HUNTER III U-BOATS

Silent Hunter III includes a good cross-section of the U-boats available throughout World War II. The following sections discuss the different U-boat types and the weapons they used.

THE TYPE II U-BOATS

Nicknamed the “einbaum” (dugout canoe) by their crews, the Type II U-boats were the first production submarines constructed for the Kriegsmarine after World War I. While the earlier Type I prototype (which would eventually evolve into the Type IX long-range U-boat) was designed as a fleet submarine, the Type II was designed as a short-range coastal boat primarily for defensive use.

Because of their short range and relatively weak armament (three torpedo tubes and a machine gun) the Type II U-boats were mostly relegated to training duties after 1940.

However, six Type II-B's were dismantled and shipped by barge, road, and rail to the Black Sea port of Constanta, from which they operated against Soviet shipping.

Type II-A

The original variant. First launched in 1935.

- **Displacement:** 254 tons (surfaced), 303 tons (submerged)
- **Length:** 40.9 m
- **Beam:** 4.1 m
- **Draft:** 3.8 m
- **Max. speed:** 13.0 kt (surfaced), 6.9 kt (submerged)
- **Endurance:** 1,050 nm (at 12 kt surfaced), 35 nm (4 kt submerged)
- **Depth:** 100 m (operational), 150 m (maximum)
- **Dive time:** 35 sec
- **Torpedo tubes:** 3 bow, 0 stern
- **Reloads:** 3
- **Guns:** 1 20mm machine gun

Type II-D

This final variant of the Type II had extra saddle-tanks similar to those used on Type VII U-boats, giving it sufficient range to operate around the British Isles. First launched in 1940, the II-D saw active service only briefly, as the need for training boats was so great. By 1941, they all had been relegated to training duties.

- **Displacement:** 314 tons (surfaced), 364 tons (submerged)
- **Length:** 44.0 m

- **Beam:** 5.0 m
- **Draft:** 3.9 m
- **Max. speed:** 13 kt (surfaced), 7.9 kt (submerged)
- **Endurance:** 3,450 nm (at 12 kt surfaced), 56 nm (at 4 kt submerged)
- **Depth:** 125 m (operational), 175 m (maximum)
- **Dive time:** 25 sec
- **Torpedo tubes:** 3 bow, 0 stern
- **Reloads:** 2
- **Guns:** 1 20mm machine gun

THE TYPE VII U-BOATS

The Type VII design was selected over the earlier Type I-A design partly because of its smaller size, which allowed more U-boats to be constructed within the tonnage limitations established by treaty. However, the design was very sound and it would form the backbone of the U-boat fleet, with over 700 of all subtypes completed.

Type VII-B

The original Type VII variant had a single rear-firing torpedo tube that was mounted externally. This awkward arrangement was corrected in the Type VII-B, which had a real aft torpedo room and room for one reload for the single aft tube.

The VII-B was also equipped with four watertight compartments on the upper deck, which were used to store additional torpedo reloads, bringing the total torpedo load to 14.

The Type VII-B was also gifted with more range and speed than the original, allowing it to go farther out into the Atlantic. First launched in 1938, the Type VII-B would pave the way for the most common U-boat variant of them all, the Type VII-C.

- **Displacement:** 753 tons (surfaced), 857 tons (submerged)
- **Length:** 66.5 m
- **Beam:** 6.2 m
- **Draft:** 4.7 m
- **Max. speed:** 17.2 kt (surfaced), 8.0 kt (submerged)
- **Endurance:** 6,500 nm (at 12 kt surfaced), 90 nm (at 4 kt submerged)
- **Depth:** 150 m (operational), 225 m (maximum)
- **Dive time:** 30 sec
- **Torpedo tubes:** 4 bow, 1 stern
- **Reloads:** 7 internal, 2 external
- **Guns:**
 - 1 88mm naval gun
 - 1 20mm machine gun

Type VII-C

The Type VII C was by far the most common variant of any U-boat built, with 577 units completed by the end of the war. Length was increased over the VII-B, but engine power was not, leading to a slight reduction in submerged performance. First launched in 1940, these units formed the backbone of the U-boat forces employed in the Battle of the Atlantic.

- **Displacement:** 761 tons (surfaced), 865 tons (submerged)
- **Length:** 67.1 m
- **Beam:** 6.2 m
- **Draft:** 4.8 m
- **Max. speed:** 17.2 kt (surfaced), 7.6 kt (submerged)
- **Endurance:** 6,500 nm (at 12 kt surfaced), 80 nm (at 4 kt submerged)
- **Depth:** 150 m (operational), 225 m (maximum)
- **Dive time:** 27 sec
- **Torpedo tubes:** 4 bow, 1 stern
- **Reloads:** 7 internal, 2 external
- **Guns:**
 - 1 88mm naval gun
 - 1 20mm AA

Type VII-C/41

In the face of increased Allied ASW (Anti-Submarine Warfare) efforts, it was decided that there was room for improvement in the Type VII-C design. Increases in pressure hull thickness allowed this variant to dive deeper, and a new bow design improved seakeeping.

- **Displacement:** 759 tons (surfaced), 860 tons (submerged)
- **Length:** 67.2 m
- **Beam:** 6.2 m
- **Draft:** 4.8 m
- **Max Speed:** 17.0 kt (surfaced), 7.6 kt (submerged)
- **Endurance:** 6,500 nm (12 kt surfaced), 80 nm (4 kt submerged)
- **Depth:** 150 m (operational), 225 m (maximum)
- **Dive time:** 25 sec
- **Torpedo tubes:** 4 bow, 1 stern
- **Reloads:** 7 internal, 2 external
- **Guns:**
 - 1 88mm naval gun
 - 1 20mm AA

Type VII-C/42

Another improved variant – the Type VII-C/42 – was planned but constructed in small numbers, as priority was shifted to the newer Type XXI U-boats. First launched in 1943, this was the last Type VII variant produced.

- **Displacement:** 999 tons (surfaced), 1,099 tons (submerged)
- **Length:** 68.7 m
- **Beam:** 6.7 m
- **Draft:** 5.1 m
- **Max. speed:** 18.6 kt (surfaced), 8.2 kt (submerged)
- **Endurance:** 10,000 nm (at 12 kt surfaced), 80 nm (at 4 kt submerged)
- **Depth:** 250 m (operational), 350 m (maximum)
- **Dive time:** 27 sec
- **Torpedo tubes:** 4 bow, 1 stern
- **Reloads:** 7 internal, 4 external
- **Guns:** 1 20mm AA

THE TYPE IX U-BOATS

Derived from the earlier Type I-A U-boat prototype, the Type IX was envisioned as a long-range U-boat, with much greater endurance than could be managed by the Type VII. The Type IX U-boats operated as far away as the Caribbean, the South Atlantic, and even the Indian Ocean.

The Type IX U-boats were larger than the Type VII variants in order to carry sufficient fuel and supplies to operate at long ranges. This made them unsuitable for some theaters, particularly the Mediterranean, where large size was a disadvantage in light of the Allied air presence.

Type IX-B

This first improvement to the Type IX illustrates the design history of this class – mainly the search for extended range. This variant mainly incorporates greater fuel capacity for a slight range improvement at the expense of performance. Otherwise, this variant, first launched in 1938, is similar to the Type IX-A.

- **Displacement:** 1051 tons (surfaced), 1,178 tons (submerged)
- **Length:** 76.5 m
- **Beam:** 6.8 m
- **Draft:** 4.7 m
- **Max. speed:** 18.2 kt (surfaced), 7.3 kt (submerged)
- **Endurance:** 8,700 nm (12 kt surfaced), 64 nm (4 kt submerged)
- **Depth:** 150 m (operational), 225 m (maximum)
- **Dive time:** 35 sec
- **Torpedo tubes:** 4 bow, 2 stern
- **Reloads:** 8 internal, 7 external
- **Guns:**
 - 1 105mm naval gun
 - 3 20mm AA
 - 1 37mm AA

Type IX-C

This second Type IX variant extended the range of this series to 11,000 nautical miles, a significant improvement over its predecessors. Power plant improvements helped maintain performance parity with earlier Type IX's. First launched in 1939, the Type IX-C's design remained relatively stable, with 54 units produced in total.

- **Displacement:** 1,120 tons (surfaced), 1,232 tons (submerged)
- **Length:** 76.8 m
- **Beam:** 6.8 m
- **Draft:** 4.7 m
- **Max. speed:** 18.3 kt (surfaced), 7.3 kt (submerged)
- **Endurance:** 11,000 nm (at 12 kt surfaced), 63 nm (4 kt submerged)
- **Depth:** 150 m (operational), 225 m (maximum)
- **Dive time:** 37 sec
- **Torpedo tubes:** 4 bow, 2 stern
- **Reloads:** 8 internal, 8 external
- **Guns:**
 - 1 105mm naval gun
 - 3 20mm AA
 - 1 37mm AA

Type IX-C/40

This was the most common variant of the Type IX series, with 87 units completed through 1944. Though more were ordered initially, many were cancelled to accommodate Type XXI production. First launched in 1941, this variant included even greater range than its predecessors, although it was similar in most other respects.

- **Displacement:** 1,144 tons (surfaced), 1,257 tons (submerged)
- **Length:** 76.8 m
- **Beam:** 6.9 m
- **Draft:** 4.7 m
- **Max. speed:** 18.0 kt (surfaced), 7.0 kt (submerged)
- **Endurance:** 11,400 nm (12 kt surfaced), 63 nm (4 kt submerged)
- **Depth:** 110 m (operational), 230 m (maximum)
- **Dive time:** 37 sec
- **Torpedo tubes:** 4 bow, 2 stern
- **Reloads:** 8 internal, 8 external
- **Guns:**
 - 1 105mm naval gun
 - 2 20mm AA
 - 1 37mm AA

Type IX-D2

In the quest for greater operational range, the Germans attempted to stretch the Type IX series to its ultimate limit with the Type IX-D. Physically larger than their predecessors, the D variants included two sets of diesel engines instead of the usual single pair. One set was smaller and designed for low-speed cruising, while the other set was larger and could propel the boat at its maximum speed. This arrangement allowed for a phenomenal doubling of the boat's endurance.

Unfortunately, the original Type IX-D1 engines were very troublesome and only a few were built. All were converted to transports.

First launched in 1942 with a revised power plant, the Type IX-D2 successfully extended the Ubootwaffe's range as far as the Indian Ocean and beyond, giving the Germans the ability to assist their Japanese allies in the Far East.

- **Displacement:** 1,616 tons (surfaced), 1,804 tons (submerged)
- **Length:** 87.6 m
- **Beam:** 7.5 m
- **Draft:** 5.4 m
- **Max. speed:** 19.2 kt (surfaced), 6.9 kt (submerged)
- **Endurance:** 23,700 nm (12 kt surfaced), 57 nm (4 kt submerged)
- **Depth:** 150 m (operational), 225 m (maximum)
- **Dive time:** 42 sec
- **Torpedo tubes:** 4 bow, 2 stern
- **Reloads:** 8 internal, 12 external
- **Guns:**
 - 1 105mm naval gun
 - 2 20mm AA
 - 1 37mm AA

THE TYPE XXI U-BOAT

Derived from the Walter-designed Type XVIII, the Type XXI represented the state of the art in submarine design in World War II and was the basis for most post-war submarine development among the major powers. The Type XXI was designed first and foremost for excellent submerged performance. The deck gun, always considered an auxiliary weapon anyway, was removed, and numerous streamlining measures were incorporated.

The result was a phenomenal submerged speed of 17 kts – faster even than the boat could travel while surfaced – and unparalleled submerged range. In addition, large internal storage for torpedoes and a new fast-reload mechanism made this model a formidable opponent.

Unfortunately for the Germans, the revolutionary technology and complex production process meant that few of the 120 units built would ever become operational.

- **Displacement:** 1,621 tons (surfaced), 1,819 tons (submerged)
- **Length:** 76.7 m
- **Beam:** 6.6 m
- **Draft:** 6.3 m
- **Max. speed:** 15.6 kt (surfaced), 17.5 kt (submerged)
- **Endurance:** 11,150 nm (at 12 kt surfaced), 285 nm (at 6 kt submerged)
- **Depth:** 175 m (operational), 275 m (maximum)
- **Dive time:** 25 sec
- **Torpedo tubes:** 6 bow, 0 stern
- **Reloads:** 17 internal
- **Guns:** 2 20mm AA

TORPEDO ARMAMENTS

Initially, German torpedoes resembled those of most of the other major powers in World War II. However, the desperate attempts to interdict Allied convoys in the face of increasingly effective antisubmarine efforts and the customary German ingenuity would combine to produce some of the more exotic weapons of the war.

Early War Torpedoes

When the war began the Germans had two basic torpedo types in service.

The T-1 (model G7a) was a steam-powered torpedo 533 mm in diameter with a maximum range of 12,500 m at its slowest speed, which was 30 kts. A medium speed yielded 7,500 m at 40 kts and a fast speed yielded a range of 5,000 m at 44 kts. Because of the highly visible wake left by steam torpedoes, German doctrine dictated that these be used only at night, if possible.

The T-III (model G7e) was an electric torpedo with a range of 5,000 m at 30 kts. The electric power plant made these essentially wakeless, but the batteries required preheating if these torpedoes were to achieve their maximum range. In 1942 the improved T-IIIa was developed, which increased electric torpedo range to 7,500 m at 30 kts.

In both cases, a mechanical depth-keeping device and a gyroscope comprised the guidance system, allowing the torpedoes to, in theory, run a straight course at a fixed depth until intersecting a target or running out of power.

The Germans also had both impact and magnetic influence detonators. The magnetic detonators were designed to allow a torpedo to run under the keel of the target before detonating, causing catastrophic structural damage.

Problems

German submariners experienced a number of torpedo failures that were remarkably similar to those their American counterparts would face a few years later in the war against Japan. The problems were traced to a whole series of technical difficulties with the German torpedo designs.

A faulty depth-keeping mechanism caused torpedoes to run deeper than they were programmed to. When this was discovered, the U-boat crews were ordered to set their torpedo depths to zero until a revised mechanism could be designed.

In addition, the magnetic detonators tended to be oversensitive, resulting in premature detonation once the torpedo had armed itself. U-boat crews were forced to disable the magnetic detonators and rely on their impact detonators until a new magnetic influence pistol could be devised. Even then, many commanders would continue to disable the magnetic detonator, preferring to trust their lives to the more reliable contact detonators.

Unfortunately, there were problems with impact detonators as well. A series of “whiskers” on the front of the torpedo were designed to trigger a detonation. However, a fault in this mechanism resulted in an increasing likelihood of failure at angles of impact other than 90°.

Over the early months of the war these problems were gradually discovered, and redesigned torpedoes were issued to the U-boat crews, improving the effectiveness of U-boat operations immensely. But this was just the beginning.

Improved Guidance Systems

As the Battle of the Atlantic raged on, it became more and more difficult for U-boat commanders to approach a convoy closely enough to attack effectively with the basic straight-running torpedoes. Allied ASW had become more effective at keeping the U-boats at arm's length.

The Kriegsmarine sought ways to improve the odds of hitting a target at long range in order to give their U-boats a fighting chance. This resulted in a series of guidance-system improvements that allowed torpedoes to behave more intelligently.

The effort proceeded down two separate paths:

- Torpedoes, which could run pre-programmed patterns, would be able to increase the odds of a hit by searching along the convoy's path of motion.
- Acoustically guided torpedoes could home in on the sound of a ship's engines, overcoming the target's ability to evade incoming torpedoes.

Pattern-Running Torpedoes

The idea behind these designs was to produce a torpedo that would perform normally over an initial run distance but would, if no target was hit, go into a search mode that allowed it to proceed along the convoy's track and, hopefully, find something to hit along the way.

One of the most successful of these designs was the Federapparat Torpedo, or FaT, which was fitted to both the T-I and T-III torpedoes. The FaT-I guidance system was programmable to a limited degree. A gyroscope guided the torpedo along its initial run, a distance that was computed to carry the torpedo into the midst of a convoy. The torpedo officer could set this distance.

If no target was hit over the initial run, the torpedo would perform a 180° turn to port or starboard, which could also be set by the torpedo officer, and backtrack in search of a target.

The torpedo would then, if no target was hit, proceed a distance of 800 or 1,600 m, again selectable by the torpedo officer, and perform another 180° turn in the opposite direction. This would repeat until the torpedo hit a target or ran out of steam.

The result was a search pattern that resembled the rungs of a ladder and was designed to advance at a fixed speed along the convoy's path of motion. To achieve this ideal search pattern, the U-boat commander would have to maneuver so that his U-boat was close to a position directly abeam the convoy and fire across the convoy's path.

Other pattern-running variants were designed and deployed. The LuT torpedo was designed to overcome some of the limitations of the FaT-I, including the use of electric propulsion for wakeless performance. The LuT guidance system was more difficult to program, including a second gyroscope for more flexible targeting options. In any case, only about 70 of these were made.

The FaT-II was also electrically powered. Designed to run a circular pattern after their initial run length, these torpedoes were meant to be fired defensively at escort ships.

Acoustically Guided Torpedoes

German U-boats increasingly fell prey to escort ships as the Allies improved their ASW techniques and equipment. Some means of safely keeping the escorts occupied would help improve the odds for U-boats in the Atlantic.

The T-V acoustically guided torpedo was designed to provide the edge needed. Based on the T-III electric torpedo, the maximum speed of the T-V was reduced to 24.5 kts in order to reduce self-noise, a constant problem with the acoustic guidance systems. This had the side benefit of increasing range to 5,750 m.

There were additional limitations to the acoustic seeker technology. A fairly loud engine sound was required to attract the seeker, limiting its use to targets that were moving at 12 to 15 kts or faster. This also made it possible for the Allies to easily devise decoys to draw off acoustic torpedoes. Also, the seeker was as likely to acquire the U-boat as any target, so standard practice was to dive after firing a T-V in order to avoid this eventuality. This had the effect of reducing the U-boat commander's knowledge about the effectiveness of his fire control, leading to unfortunate exaggerated claims about the T-V's effectiveness.

In any case, the actual effectiveness of the T-V was probably only around 30%, making it an interesting, if not very successful, exercise in weapon design.

DECK GUNS

8.8cm and 10.5cm naval guns were fitted to Type VII and Type IX U-boats as auxiliary weapons. In the most optimistic view, these weapons could be used to finish off targets that had already been torpedoed or otherwise rendered helpless.

As a practical matter, U-boats were fragile craft designed for stealth and not for gun fighting. Against any target that could shoot back, a U-boat was much better off diving deep and running away.

In addition, U-boats were poor gun platforms due to their low position in the water and their tendency to roll and pitch in heavy seas. However, the practice of fitting naval guns to submarines continued through much of the war, only giving way when it was clear that they were mainly adding weight and drag to the submarine without contributing much to its capabilities. In fact, the advanced Type XXI U-boats were designed without deck guns to improve underwater performance.

A few U-boat commanders garnered some success with their deck guns. Captain-Lieutenant Reinhard Hardegen, for instance, sunk several merchant ships using the 10.5cm deck gun on his Type IX-B U-boat during Operation Drumbeat. However, given situations where escorts were present in force, attacking with gunfire would have been a near-suicidal act.

8.8cm Deck Guns

These were fitted to Type VII U-boats for much of the war. In spite of having the same caliber, these were unrelated to the famous 8.8cm flak guns used so successfully by the Wehrmacht.

10.5cm Deck Guns

These larger weapons were fitted to Type IX U-boats.

MACHINE GUNS

Allied aircraft were the greatest enemies of the U-boat in World War II. Equipped with centimetric radar and a brace of depth charges, the patrolling Catalinas, Sunderlands, and Liberators made the Bay of Biscay a nearly impassable area for U-boats during the latter half of the war.

Until the development of the snorkel, U-boats were forced to travel on the surface for much of the long, dangerous voyage to the convoy lanes, diving only when attacked. Most U-boat types were designed from the beginning to carry machine guns to fend off attacking aircraft. Usually these were single 20mm machine guns. The Type IX U-boats, which were considered more vulnerable to aircraft due to their larger size, were normally equipped with a single 37mm gun in addition to the 20mm. The 37 was a heavy, slow-firing weapon, but packed considerably more punch when it hit. These were occasionally used against shipping, with some success.

In general, the number of machine gun mounts increased throughout the war. Often, twin 20mm machine guns replaced the singles. A series of Type VII submarines were specially equipped with quad 20mm machine guns and were designed to escort groups of U-boats across the Bay of Biscay. Known as the "U-Flak," these boats were less than successful in their assigned roles.

As a practical matter, a U-boat was much better off diving deep and avoiding aircraft. In hindsight, the development of radar detectors, radar, and snorkels were of more practical use to U-boat crews, though the machine guns at least gave them a way to fight back.

2cm Machine Guns

The German 2cm/65 C/30 and C/38 AA MG were manufactured by Rheinmetall and were developed from an earlier Solothurn design, the ST-5. Both models were fully automatic. The C/30 model was prone to jamming and used a small magazine (20 rounds), which meant frequent pauses for reloading. The later C/38 was a much-improved gun and used a 40-round magazine.

A very successful variation of this weapon was the Flak 35 Vierling, which combined four C/38 guns in a single quad mounting. A three-dimensional stabilized navy-mount was introduced in 1944.

The C/38 was also produced in very sophisticated twin mounts for U-boats. These were able to withstand a 550-foot (200 m) diving depth.

3.7cm Anti-Aircraft Guns

The 3.7cm/L83 was used on every major combatant ship in the German navy. A unique feature of this weapon was a third axis of movement that stabilized the gun carriage when the ship rolled or pitched. This allowed the gun to track an airplane without interference from the motion of the ship. However, problems with this mounting led to its abandonment in subsequent designs of 3.7cm guns.

These guns were in use until the last years of the war. However, this weapon was only capable of semi-automatic firing, with each shell being individually loaded. This made it a rather slow-firing weapon for anti-aircraft defense, approximately 30 rounds per minute.

U-BOAT THREATS

The German U-boat force's primary target in World War II was merchant ships, particularly those ships supplying the British Isles and the Allied war machine. Britain recognized the threat to its own survival, however, and organized defenses against the U-boats.

Here are the obstacles you will meet in accomplishing your missions:

ESCORTS

If merchants are the primary target of your missions, escorts are your primary enemy. Their objective is, put simply, to stop you from achieving yours. They have the sensors, the performance, and the weapons needed for this purpose.

As war started, few escorts were available to Britain. They were mainly assigned to convoy or task force escort duties, or to patrol the home waters and ports.

Later, however, the appearance of dedicated Hunter Killer groups changed considerably the way the war was fought. These escorts would prosecute a U-boat contact for as long as needed to destroy it, and were good at the job.

AIRCRAFT

The most effective means of fighting the U-boat was with aircraft, especially because of the way U-boat warfare worked. Virtually immobile underwater before the introduction of the snorkel, U-boats scouted the ocean for convoys on surface. Even after initial contact, U-boats would need their surface speed to overtake the target for the attack.

Capable of covering large distances quickly, airplanes would detect any U-boats approaching or trailing a convoy and, at minimum, force them underwater. Additional forces could be vectored to the location, and sometimes an attack could be made even before the sub would get to submerge.

Early in the war, patrolling aircraft would duel with a U-boat's bridge watch in visual detection. The sub was easier to spot, but more often than not the plane would be detected quickly enough to allow an escape. At night, however, the subs were safe.

With the introduction of centimetric radar, however, night could be turned into day and aircraft would appear directly over the surprised watch without warning.

Even later in the war, the strengthening of air patrols and introduction of escort carriers closed the air gap that U-boats had enjoyed in the mid-Atlantic.

WARSHIPS

Encountered by U-boats as convoy escorts or as part of a task force, warships are generally not armed with any antisubmarine armament due to their inadequate maneuverability for such tasks. On the surface, however, their direct-fire armament is devastating, and even auxiliary cruisers will deal with U-boats without much ado.

MERCHANTS

Although primarily just a target for any warship, merchant ships are not always defenseless. As the war progressed, more and more merchants bore cannons and machine guns, which, even with poorly trained crews, could easily pierce the pressure hull of a U-boat.

Additionally, even a small merchant may ram a U-boat if given the opportunity. The difference in mass between the two objects leaves little doubt about who the loser would be.

ENEMY SENSORS

The biggest ships and the largest cannons in the world are useless if there is no way to detect their targets. Here are the sensors that you will be facing in Silent Hunter III.

Eyeball

Up to this day, the human eye has not been completely replaced as a detection tool, and its importance is never diminished at close range. Periscopes, torpedo wakes, and partially submerged conning towers can be spotted easily by an alert watch.

Keeping completely submerged will obviously help you avoid being seen, but there are times when you need to take a peek outside or run the boat on diesels. For those instances, try to keep your profile (be it conning tower or periscope) as low above the surface as possible. Use darkness to your advantage, and never keep the scope up more than it is needed.

ASDIC

The primary ASW sensor used throughout the war by Allied escorts, ASDIC (named for the Anti-Submarine Detection Investigation Committee) relies on sending sound impulses through water and listening for echoes from submerged objects. Early models projected an almost horizontal beam in the forward hemisphere of the escort, and were unable to tilt it in the vertical plane. The consequences were twofold: the depth of the target could only be guessed, and contact was lost when the escort approached the target.

To defeat ASDIC, try to present the minimum possible silhouette to the escorts. This may create a weak echo that will be ignored or lost on the way back to the sensor. Another way to avoid detection would be to “use the vertical.” Move on the surface – the waves create distortions that prohibit the proper travel of ASDIC waves.

Hydrophone

A primary detection tool on submarines, the hydrophone was only of secondary importance for escorts. Still, even if not providing input sufficient for an attack, it could detect a U-boat and prompt a search by ASDIC.

Detection by hydrophone is best avoided by keeping noisy activity at minimum in the U-boat by giving the Rig for Silent Running order and running your engines on Slow Speed – the setting that creates the least cavitation and noise.

Radar

Used by both aircraft and escorts, radar can detect a target miles away, much beyond your visual range. It relies on the same principle as ASDIC, but uses radio waves instead of sound. Advances in technology led to even the snorkel head being detectable towards the end of the war.

Avoiding radar is difficult. As with ASDIC, the strength of the echo depends on the profile presented to the sensor. Unless you're skimming the outer limits of its range, however, it won't make that much difference. A much better defense would be submerging and not presenting any profile at all.

ASW WEAPONS

Once you have been detected, expect prosecution to occur quickly. If you are visible, you may be subjected to gunfire or ramming. If you are submerged, however, the weapons used against you change dramatically.

Depth Charges

Deployed from either the racks on the sterns of the ships or projectors on their sides, the depth charge is essentially the same weapon it was in World War I: a barrel filled with explosives that slowly sinks towards a set depth, which triggers its explosion. It needs to explode within close proximity of the submarine's hull in order to do any significant damage, and this, coupled with the lack of target depth information during early war, led to it being a very ineffective weapon. There are known instances of submarines surviving attacks of a few hundred depth charges.



While virtually blind in his steel hull during depth charge attacks, an experienced U-boat commander can lessen the chances of receiving damage. Waiting for the moment when the approaching escort increases speed to enter the attack run, he can order full speed in confidence that he has entered the ASDIC blind spot and the escort cannot hear much due to its own increased speed. Gaining as much distance and depth as possible is always a good thing to do just before the depth charges start exploding.

Once this happens, acoustic conditions will be ruined in that particular area for a period of time, which leads to both the ASDIC and hydrophone becoming ineffective.

Hedgehogs

A bigger threat to the U-boat was forward-throwing weapons such as the Hedgehog, a salvo of 24 projectiles landing simultaneously in an elliptical pattern over the U-boat's suspected position. The attack is delivered while still maintaining ASDIC contact with the target, making it a much more accurate weapon. In addition, the projectiles would only explode on contact with the U-boat, which meant no ASDIC blind zones would be created unless a hit was scored.



There's little to be done to escape a Hedgehog's attack except increase speed and depth and change course. Without the aid of the external camera, the only hint of the attack you may get is the noise of the 24 projectiles entering water – which may be too late.

Fortunately, a single Hedgehog is not a very powerful weapon. It carries a very small explosive quantity, and thus it lacks the potential for a catastrophic kill.

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