UBOOT

THE BOARD GAME

Rulebook

Herzlich Wilkommen, herr Kaleun!

Thank you very much for expressing your interest in UBOOT The Board Game! We sincerely hope that the game will prove to be worthy of your time and that it will let you dive straight into the fray of World War II submarine conflict.
Please bear in mind, however, that the game is still in development, and many of its components have not reached their full potential yet. UBOOT The Board Game is a unique and demanding project, and as such still requires months of development before it is completed. Please keep that in mind while playing, yet regardless of the above, we wish you a good time with the preview!

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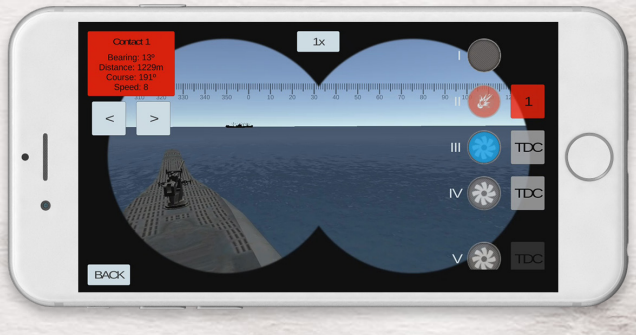
1. Introduction

1.1 Player Roles and the Goal of the Game

UBOOT The Board Game is a cooperative game for 1-4 players that lets you take on the role of a German submarine crew during the Second World War.
Players assume the roles of Captain, First Officer, Navigator and the Chief Engineer on board of a type VII C U-boat. They coordinate their actions to fulfill mission objectives issued to them by the German U-boat HQ. They are a crew, and they always win or lose as a crew.

1.2 The Companion App

The game requires a free companion app that you can download here: XXXXXXXXXX. **The app is an integral**



part of UBOOT The Board Game and you cannot play the game without it. The app provides real-time gameplay featuring dynamic enemy A.I., as well as music and sound effects. All of these constitute a significant part of the experience and are meant to immerse you even further in the role of a U-boat crew. Make sure you download and install the app on your Android device before you continue. To find out more on how the app functions, see the First Officer's player-specific rules in section 8.1.

1.3 Learning How to Play

Before reading the rules, you can watch our rules overview videoson our Youtube channel **https://goo.gl/jfP27i**. They are intended to help you understand the core concepts of the game before moving on to details. Once you feel comfortable with the rules, it is worth taking a look at the tactical guide included with the game, as it outlines the basics of World War II submarine tactics.

2. Components

The following list will let you familiarize yourself with the box contents of the game.

Hull Section Cards

These cards constitute the Technical View of the U-boat. They are placed on both sides of the model to show section names and specialization icons indicating where particular orders are carried out. Consult the setup diagram to confirm their appropriate arrangement.

The 3D Model

This is where most of the action takes place. The model is a representation of the Type VII C U-boat and features all of its most important sections for the sailors to move about and carry out their duties.

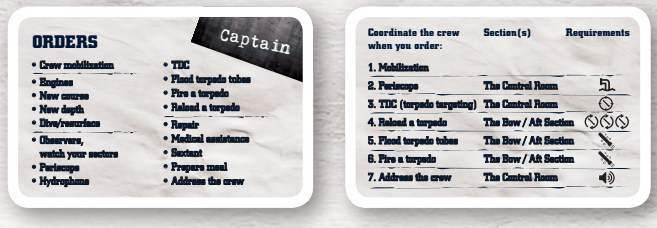
Player Panels

These panels should be arranged around the board in a way that is comfortable to all the players. Please refer to setup diagram in section 5.2. on how to arrange the panels around the board.

Crew tiles

These tiles are placed on the player panels and help players track their crew status. They contain geometrical symbols for each sailor, as well as their specialization icons.

Player Aids



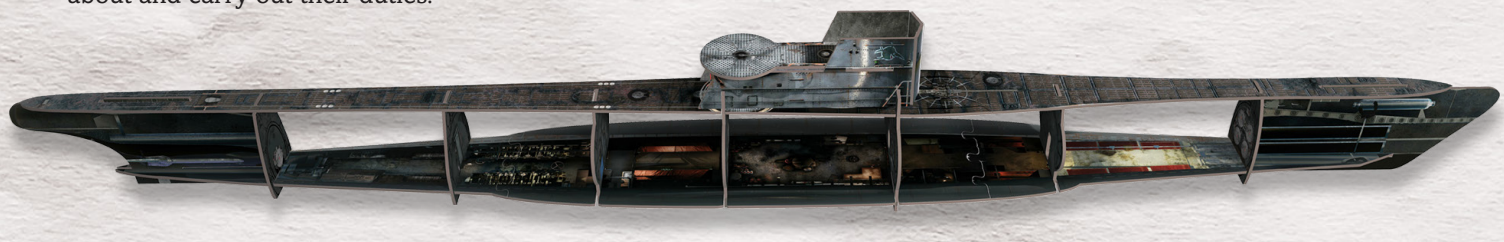
Four small sheets summarizing the orders each player is responsible for, as well as the most important information for each role.

Rulebook

The rules booklet that you are reading right now.

Tactical Guide

A separate booklet containing gameplay advice.



The Captain

The First Officer

The Navigator

The Chief Engineer

Sailor Figures

These figures represent the sailors serving on the U-boat. Each role controls a group of 4 figures of the same color, each of which has a different base from the others in that group.

Event Cards

Cards that contain text and/or icons which affect your sailors' performance during a mission.

Morale Cards

Cards that contain events brought about by the deteriorating morale of the crew.

Wound Cards

Cards that depict health conditions that might occur when sailors are exposed to dangerous situations.

The Captain's Cards

Cards that are played by the Captain to influence the morale of the crew.

Crew Tokens

16 tokens, each corresponding to one of the sailors' base shapes and colors. The Captain blind-draws from among these tokens whenever sailors are to be affected by game effects.

Order Tokens

The Captain uses two of these tokens on his panel to order the crew and pay for morale cards. The third token is used to mark the chosen difficulty level on the Captain's panel.

Technical Condition Tokens

These tokens mark a wide variety of technical issues to be dealt with. They are placed on the Technical View by the Chief Engineer. The front of the token denotes varying degrees of technical issues, and the back is referred to as an activation side.

Environmental Condition Tokens

These tokens mark environmental effects that may occur (fires, flooding, electrical hazards, etc.) They are placed on the 3D model by the Chief Engineer and directly affect the crew's health and performance.

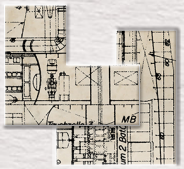
Supply Tokens

These tokens mark a variety of supplies and equipment that the Chief Engineer uses to deal with environmental conditions.

Toolbox Markers

These two markers show the locations of the Chief Engineer's toolboxes.

The Technical Puzzle



A puzzle that must be solved collectively by all the players whenever the submarine sustains critical structural damage.

Flooded Section Token
This token is used whenever a hull breach occurs. If the breach is not sealed in time, then the token is used to mark a flooded section.

Activation Tokens
These tokens are used to track how many actions a particular crew member has taken. Observation tokens, Technical Conditions tokens and Environmental Condition tokens also have 'activation' on their back.

Observation Tokens
These tokens are used by The Navigator to mark who is performing observer duty.

Provision Tokens

These tokens represent the food supply that the crew has at their disposal.

Wounded / Fatigue Tokens
These tokens are used for sailors that get sick or wounded in the line of duty.

Medical Supply Tokens

These tokens are various supplies used by the First Officer to treat sick or wounded sailors.

KIA Tokens
These tokens are used when a sailor has been killed in action.

U-boat Marker
This marker is placed on the tactical map to depict where the U-boat is located in relation to enemy vessels.

Enemy Marker
This marker is placed on the tactical map to depict a contact's position before it has been identified.

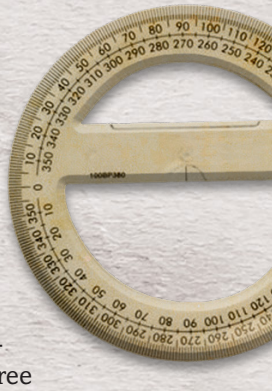
Trophy Tokens
These tokens are placed on the tactical map to denote identified enemy vessels. Each token has a GRT (gross register tonnage) value which is scored by the players after they sink it.

Attack Disk
This component is used by the Navigator to determine the position of enemy vessels on the tactical map, as well as intercept vectors to attack them.

Distance Ruler

The Navigator uses this ruler to plot the course on the map. It can also be used to calculate distance covered in transit.

360 Degree Protractor
Used when plotting the submarine's course on the strategic map.



3. GLOSSARY OF U-BOAT TERMS

Attack disk
The Navigator's tool used to determine target intercept vectors. It is composed of three concentric disks and provides quick answers regarding enemy position and optimal torpedo attack solutions. The Attack disk very closely resembles authentic tools used by U-boat sailors to calculate targeting data, and mastering its use is absolutely essential for the Navigator to be able to perform his tasks.

ASDIC (active sonar)
ASDIC was a device used for locating and tracking submerged U-boats. It emitted a highly concentrated sound wave that traveled through water, and, upon hitting an object, bounced back to the transceiver, giving the operator a rough location and depth of the target. Initially, ASDIC lacked precision, but later models could give a very precise reading of a submerged contact. The downside of ASDIC was that it could not detect surfaced U-boats.

Bridge
When speaking of submarines of the WWII era, the term 'bridge' means the open platform at the top of the conning tower. This is where observers perform their duties.

Hydrophone (passive sonar)
A device that served as the U-boat's ears. Whenever the submarine was submerged, it could use the hydrophone to hear sound waves traveling through the water, enabling the operator to calculate the bearing and distance of enemy vessels by listening to their propeller sounds. An experienced operator could even determine the course and speed of the vessel. The hydrophone was a primary target acquisition system for the Type VII C U-Boat. In poor weather conditions it could provide a faster attack solution than attempting a visual solution.

GRT (gross register tonnage)
During WWII, The United Kingdom was heavily reliant on its sea trade routes. German submarine strategy focused on cutting these supply lines, depriving

the UK of vital cargo in an attempt to starve the country into submission. GRT refers to the amount of cargo (fuel, munitions etc.) a merchant vessel could carry. Merchant vessels were the primary target of U-Boat operations.

Contact
A detected surface, subsurface or airborne unit.

Enigma
A cipher machine used extensively by German forces during WWII. It encrypted messages according to a 'daily key'. The daily key contained rotor settings that changed clear text into cipher text. The three rotor Enigma code was broken by Polish cryptanalysts before the second world war. Using their method, the Allied cryptanalysts at Bletchley Park were able to break the German four and five rotor enigma code and even the encoded and encrypted German Naval Enigma code. Early war cryptanalysis was a time-consuming affair.

TDC (Torpedo Data Computer)
This device, known as the 'Torpedovorhaltrechtner', served as the torpedo targeting system of the U-boat. The optimal firing solution was calculated based on enemy contact's bearing, distance, course, and speed.

4. GAMEPLAY OVERVIEW

4.1 Missions
UBOOT The Board Game is a mission-based game. Players must fulfill objectives to achieve victory. Those objectives will be highlighted in the pre-mission briefing. There will be a primary objective, and possibly one or more secondary objectives. To win, players must complete the primary objective. Additional points can be scored by completing secondary objectives.

4.2 Game end: Winning and Losing
The game ends when one of the following conditions occurs:
- primary mission objectives have been completed or failed
- mission time has run out
- the crew has gone rogue
- the submarine has been sunk

Once mandatory objectives have been fulfilled, or mission time has run out, it is the end of the game and the app will then debrief you, instructing you how to calculate your score.

If, on the other hand, the submarine has been sunk for any reason, or its crew has turned against the commanding officers, then the mission is failed! **The crew will defect and surrender the submarine to the Allies if the order token drops off the Morale track.** In other words, if you must advance the morale track, and you are already on the last space, then the game is over and all players lose the game.

You can replay the mission if you fail or wish to improve your result. You can also consult the tactical guide if you find any part of the game too difficult.

The mission included in the preview is a 'hunt' type mission. You have 4 days to sink as much allied GRT as possible. Once the time passes, the U-boat will automatically return to base.

4.3 Real-time Gameplay Experience
There are no defined player turns in UBOOT The Board Game. Instead, the pace of the game is dictated by the companion app and the Captain's orders. The app alerts players to new threats and opportunities. The players then coordinate their response. It is important not to lose sight of the primary objective nor neglect urgent threats.

The app will also request specific players to update the situation on the technical view, the 3D model, or their panels. Such updates should be performed without delay, as they allow all players to have a live view of the U-Boat's condition. This game element, if neglected, could easily put mission success at risk.

5. SETTING UP THE GAME

Follow the steps below to set up the game:

1. Choose roles
2. Prepare game components
3. Choose difficulty levels
4. Mission briefing

5.1. Choose roles
When choosing roles, you should consider the following recommendations:

The Captain – for natural-born leaders and quick decision-makers.
The First Officer – for players with good communication and some digital skills.
The Navigator – for players with good spatial awareness (or sailing experience).
The Chief Engineer – for players that excel at resource management and prioritizing.

When playing with fewer than four players, it is recommended to:
- set game speed to 'Real-Time' in the app
- set all difficulty levels to easy or medium, especially when learning the game
- distribute the roles as follows:

3 Players
One of the players controls both the First Officer and the Navigator.

2 Players
One player controls the Captain and the Chief Engineer. The other player controls the First Officer and the Navigator.

1 Player
One player takes on all four roles. Easy difficulty for all roles, as well as 'Real-Time' mode are strongly recommended for learning the game in this configuration.

5.2. Prepare game components

1. Place the 3D model in the middle of the table and arrange the Hull Section Cards on both sides, lining up with the sections as shown in the setup diagram.
2. Arrange the player panels as shown in the Setup diagram (p. 8-9).
3. Hand out each player's components:

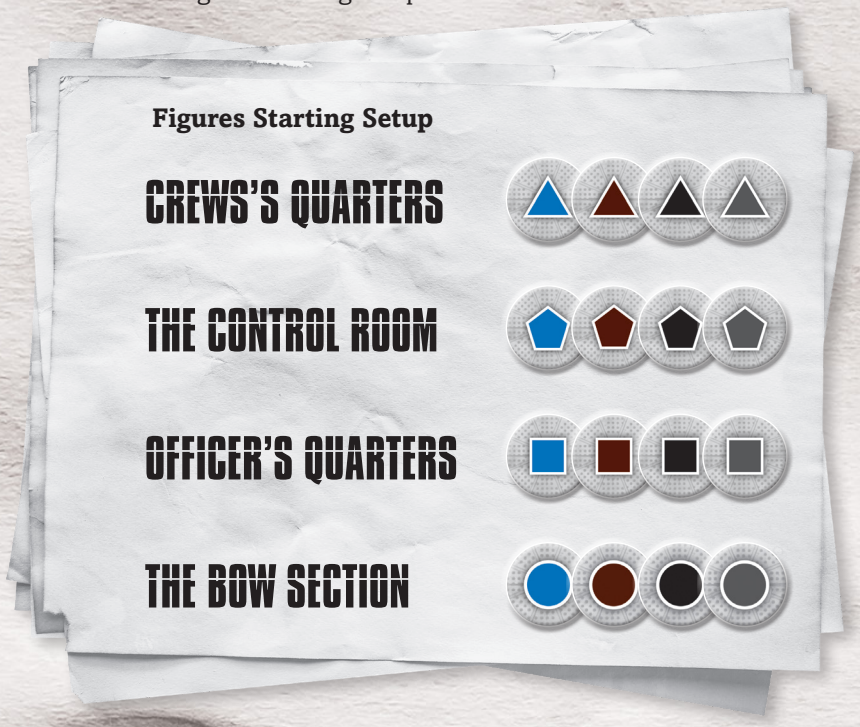
The Captain
- 4 sailor figures
- The Captain's panel
- The Captain's crew tile
- The Captain's player aid
- 3 Order tokens
- Morale cards
- 16 crew tokens
- Captain's cards
- 12 Activation tokens

The First Officer
- 4 sailor figures
- The First Officer's panel
- The First Officer's crew tile
- The First Officer's player aid
- Device running the companion app
- Event cards
- Wound cards
- Medical supply tokens
- Wounded/Fatigue tokens
- KIA tokens
- 12 Activation tokens

The Navigator
- 4 sailor figures
- The Navigator's panel
- The Attack disk
- The Navigator's crew tile
- The Navigator's player aid
- The strategic map
- 360 protractor and distance ruler
- Provision tokens
- 9 Observation tokens
- Pencil and eraser (not included with the game)
- U-boat marker, Enemy marker, and Trophy tokens

The Chief Engineer
- 4 sailor figures
- The Chief Engineer's panel
- The Chief Engineer's crew tile
- The Chief Engineer's player aid
- Technical condition tokens
- Environmental condition tokens
- Flooded section token
- Supplies and toolboxes
- Technical puzzle pieces

4. Shuffle and place all card decks as shown on the Setup diagram.
5. Place tokens as shown on the Setup diagram. Specifically:
   - Place the crew tokens in an opaque container next to the Captain's player panel.
   - Shuffle all the Provision tokens and place them face down on the Navigator's panel in the Food Supply box.
   - Place all the Medical Supply tokens on the 'Verbandkasten' space on the First Officer's panel.
   - Place the Supply tokens on the toolbox spaces (Werkzeugkasten) on the Chief Engineer's panel (at least two Supply tokens per space). Then place the grey toolbox marker in Officer's Quarters and the green toolbox marker in the Bow Section on the Technical View of the U-boat on the board.
6. Place the figures on the 3D model as shown on the Figures starting setup.



5.3. Choose Difficulty Levels

Each player may select the difficulty for their role(s) as they see fit.

The Captain
- **Easy:** place one of the Order tokens on the 'Easy' space of the Order Track.
- **Medium:** place one of the Order tokens on the 'Medium' space of the Order Track.
- **Hard:** place one of the Order tokens on the 'Hard' space of the Order Track.

The Order token placed on the Easy/Medium/Hard space marks the end of the Order Track (blocking off its own space and all spaces to its right).

The First Officer

Choose a difficulty level below by removing a certain number of Health Condition cards from the Event deck (the cards with the top and bottom information bar):
- **Easy:** separate the 8 Health Condition cards from the Event deck. Pick 2 cards randomly and shuffle them back into the Event deck, discarding the rest (they will not be used this mission).

Setup diagram

1. **3D model and Hull Section cards**
2. **Device running the app**
3. **Event cards**
4. **KIA and Wounded/Fatigue tokens**
5. **Activation tokens**
6. **The First Officer's crew tile**
7. **Wound cards**
8. **Medical supply tokens**
9. **The First Officer's panel**
10. **Trophy tokens**
11. **Observation tokens**
12. **Provision tokens**
13. **The Navigator's crew tile**
14. **The Navigator's panel**
15. **Pencil and eraser**
16. **Strategic map**
17. **360 protractor and ruler**
18. **Attack Disk**

19. **Crew tokens**
20. **The Captain's cards**
21. **The Captain's panel**
22. **Order tokens**
23. **The Captain's crew tile**
24. **Morale cards**
25. **The Chief Engineer's panel**
26. **The Chief Engineer's crew tile**
27. **Technical condition tokens**
28. **Environmental condition tokens**
29. **Flooded section token**
30. **Supplies**
31. **A Toolbox (grey)**
32. **B Toolbox (green)**
33. **Technical puzzle pieces**
34. **Sailor figures**
35. **Player Aids**

- **Medium:** separate the 8 Health Condition cards from the Event deck. Pick 4 cards randomly and shuffle them back into the Event deck, discarding the rest (they will not be used this mission).
- **Hard:** do not remove any cards from the Event deck.

The Navigator
- **Easy:** if the 'Today's Meal' space is empty when the app asks about consumed food, advance the Morale Track by **one** space instead of **two** spaces.
- **Medium:** prepare food, replace and rearrange tokens as written in the rules.
- **Hard:** discarding and substituting tokens in the 'Available Products' pyramid is not possible, but they may still be rearranged as written in the rules.

The Chief Engineer
- **Easy:** you may relocate both toolboxes to **any** section whenever The Captain announces mobilization.
- **Medium:** use the toolboxes as written in the rules.
- **Hard:** Remove the toolbox markers from the game. Place the Supply tokens on the Technical View, **one** per section. Use the same rules for relocating them as you would for toolboxes. **A sailor can carry a maximum of one token at a time.**

5.4. Mission briefing
Read the mission briefing in the app. It contains everything you need to know about the mission objectives. Once everyone is ready, press the 'Start Mission' button.

6. CORE RULES

1. Player responsibilities
2. Sailors
3. Basic Gameplay Elements
4. Mobilization
5. Carrying Out Orders
6. Activation
7. Busy Sailors
8. The Watch System
9. Health
10. Repairs
11. Crew Damage
12. Timing Conflicts

6.1. Player Responsibilities
Regardless of the role, each player:
- controls four sailor figures of his color and may move only his own figures
- is responsible for carrying out orders printed on their Player aid
- may use their figures to help another player carry out their order

6.2. Sailors
- Players move their sailors around the submarine to carry out orders.
- Each player controls two watches of 4 sailors each. Only one watch of figures is available to a player at a time.
- The sailors are represented by plastic figures. The figures' bases and colors correspond with those on the players' crew tiles.
- The crew tiles are double-sided, and each side represents either the first or the second watch. For the first watch (beginning of the game), the crew tiles are placed on the player panels as shown below.

- Each sailor has two specialization icons printed in his sailor space on the crew tile, and three activation spaces on the player panel. Please note that the sailor spaces on the crew tile align with the activation spaces on the player panel.
- Specializations allow sailors to carry out orders more efficiently. All the specialization icons are listed below:

6.3. Basic Gameplay Elements: Mobilization and Order
During the game, the Captain either announces Mobilization or issues Orders. Although Mobilization is one of the Orders, a distinction is made as it is governed by a different ruleset. That is the reason why the rules always differentiate between the terms 'Order' and 'Mobilization', because many game effects (e.g. activation) apply to all Orders except Mobilization.

In simple terms, Mobilization is used for moving the sailors around, while Orders are used for making them do things.

6.4. Mobilization

- The Captain mobilizes the crew to enable players to move their sailors around the U-Boat.
- The Captain must advance the order track by one space for each mobilization.
- The cost must be paid before players can move their sailors.
- Do not activate the sailors who are mobilizing.
- Any number of sailors can be moved during a single mobilization.
- Sailors can move from any number of starting sections to any number of destination sections which are connected by an unbroken chain of adjacent sections. Sailors cannot enter or move through flooded sections. See section 10.3.6 'Hull Breach' for details.
- The Bridge and the Control Room are considered adjacent, unless the submarine is submerged. In that case, sailors cannot move between the Bridge and the Control Room.
- Orders can never be issued or carried out during Mobilization. Only after Mobilization is finished can orders be issued and carried out again. See 'Ending Mobilization' for details.
- Mobilization also allows the Chief Engineer to reposition his toolboxes. Any sailor moving from or through a section containing a toolbox may take it with him and place it in the section where he finishes his movement. See section 10.3.4. 'Supplies and Toolboxes' for details.

Hazardous Sections

A section becomes hazardous when there is a fire, toxic gas, or electrical failure token placed in it.

- Sailors may move into and through Hazardous Sections.
- After finishing movement, resolve crew damage for each sailor who has moved into or through a Hazardous Section. See section 6.11. 'Resolving Crew Damage' for details.
- Resolve crew damage only once for each Environmental Condition token: all sailors who have moved into or through a Hazardous Section during the mobilization are affected simultaneously.

Ending Mobilization

- Once all the sailors have finished moving and resolved Crew Damage (if necessary), the Captain must receive a verbal confirmation from each player.
- Once all the players involved have confirmed their readiness, the Captain must announce the end of the current Mobilization. Once that happens, no sailors can move until the Captain announces the next Mobilization.

The overall mobilization scheme is as follows:

1. Announce Mobilization
2. Move sailors
3. Resolve crew damage (if necessary)
4. End Mobilization

1.

The sailors are in their starting positions and The Captain announces mobilization to maneuvering stations: 'Crew mobilize! Engines, ballasts, helm, observers, man your stations!'

2.

The mobilization is now complete: the sailors have repositioned in accordance with the Captain's orders. The observers are all on the bridge, the engine and ballast crew, as well as helmsmen are all in position. The crew is now ready to carry out orders.

6.5. Carrying Out Orders

- The Captain issues orders to the other players.
- The Captain must pay the order cost by advancing the Order Track by one space for each issued Order.
- Each order has requirements that must be fulfilled before the order can be followed. To fulfill the specific order requirements, the sailor(s) carrying out the order must:
  - be present in the specified section(s).
  - collectively match or exceed the required number of specialization icons required by the order.
- All sailors carrying out an order must be activated (see section 6.6. 'Activation' for details).
- **Sailors without the required specialization icon may carry out the given order, yet they activate at a penalty of placing one additional Activation token in their activation spaces (one additional activation token per such sailor). Such sailors count as each having one icon required by the order.**
- Players should collectively confirm their sailors are ready to complete the order.
- The First Officer records the order in the app by pressing OK.
- The available orders are listed below:

Maneuvering

- Engines
- New course
- New depth
- Dive/resurface

Navigation and Target Acquisition

- Observers, watch your sectors
- Periscope
- Hydrophone
- Sextant

Armament
- TDC
- Flood tubes
- Fire torpedoes
- Reload tubes

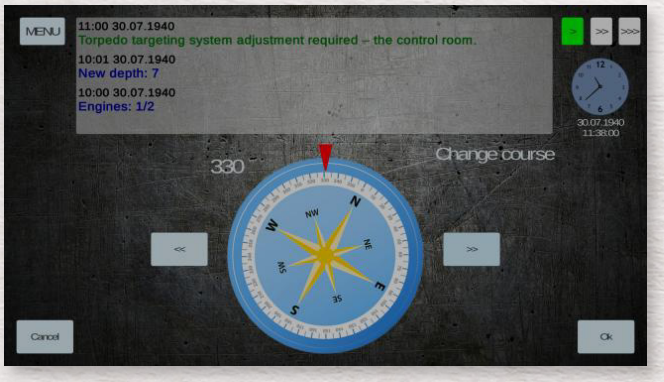
Safety and Crew Management
- Repairs
- First aid
- Address the crew
- Prepare meal
- Mobilize

Carrying out orders must follow the sequence below:

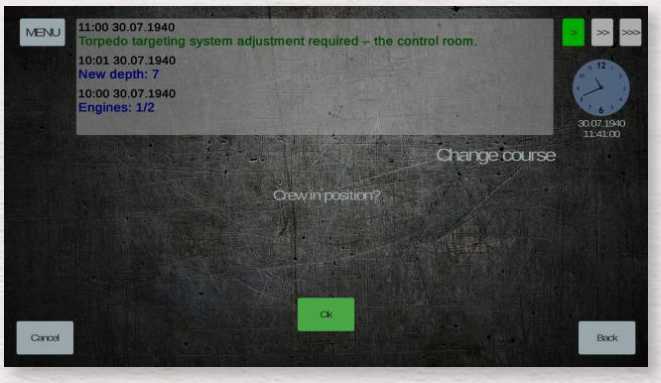
1. Advance the Order Track and issue the order.
2. Select the order in the app.
3. Confirm whether the sailors are in position.
4. Activate the sailor(s) carrying out the order.

Two helmsman are already in position when the Captain decides to change course.

He advances the Order Track by one and issues the order: 'New course: 330 degrees'.



The First Officer quickly selects the order in the app and sets the given course.



The app always asks whether the crew is in position. In this case, these are the First Officer's sailors, so there is no need to confirm with the other players.

The First Officer activates the sailors carrying out the order.

6.6. Activation

- Each time a sailor carries out an order, they are activated.
- Place an Activation token (or any other token with an activation side up) in that sailor's empty activation space.
- If they do not have the required specialization icon for an order they must be able to take **two** Activation tokens.
- A sailor with not enough empty activation spaces cannot be activated until enough activation spaces are freed.
- A sailor can never have more than three Activation tokens.
- When placing a token in a sailor's activation space, make sure you place it on the respective side of the panel (top or bottom, whichever the active watch is) and in an empty activation space from among the three activation spaces aligned with the particular sailor space on the crew tile.
- If you ever run out of activation tokens, use suitable substitutes instead. A pool of surplus activation tokens has been provided to reduce the chances of this ever happening.

The First Officer has not yet carried out an order this watch, so all his activation spaces are empty. The Radio Officer has already carried out three orders and cannot carry out any more as all his activation spaces are taken. The two sailors on the right have performed one course change, so each of them has a single Order token.

- Players remove Activation tokens when their sailors rest.
- Sailors rest when the watch changes. Watch change is at 0600, 1200 1800 and 00:00.
- Watch change is indicated by the app with a bell sound. See section 6.8. 'The Watch System' for details.

6.7 Busy Sailors

- Observation and repairs differ from other orders in that they take place over a longer time period, and sailors carrying out such orders are activated using the corresponding observation or Technical Condition tokens instead of regular Activation tokens.
- Observation and Technical Condition tokens are double-sided and have an activation icon on their back side, so make sure to flip such tokens to their activation side once the order in progress has been carried out or finished.
- To activate a sailor for an observation or repair order, take the token corresponding with the order being carried out, placing it in an activation space the same way you would normally place an Activation token, but with the order side up (e.g. if the sailor is repairing a Technical Condition, then place a Technical Condition token of the matching color with the wrench side up in an empty activation space on his player panel). This is to show that a given sailor is busy.
- **If a busy sailor is mobilized, he immediately stops carrying out his order. Update the repairs or observation in the app and flip his 'busy' token to its activation side.**
- A busy sailor may carry out orders in his current section without flipping his 'busy' order token to its activation side.
- When activating sailors for observation or repairs, remember to place one additional Activation token in an activation space of a sailor who doesn't have the required specialization icon in his sailor space.
- If a busy sailor dies or can no longer participate in carrying out the order, update the order information in the app as soon as possible.

The three sailors with repair tokens are busy having been ordered to repair a Technical Condition. They have been activated using the appropriately colored Technical Condition tokens.

When the sailors finish repairs or are mobilized, the Chief Engineer flips the Technical Condition tokens to their activation side.

6.8. The Watch System

The watch changes over at 0600, 1200, 1800 and 0000. The app announces the change with a bell. When players hear the watch change bell:

- If any sailors are located in Hazardous Sections, those sailors may get hurt. Resolve crew damage from those environmental effects. See section 6.11. 'Resolving Crew Damage' for details.
- Each player then discards a single Activation token from each sailor space on their player panel (no more than one token is ever discarded per sailor).
- Place any transferred busy tokens in an empty activation space of their next-watch counterpart. (the sailor's colleague is taking over his duties). If there are not enough empty activation spaces or the next-watch counterpart is KIA, then the sailor cannot take over and the observation or repair value in the app must be updated as soon as possible.
- **Do not** discard any additional Activation tokens from a busy sailor after transferring a token.
- Incoming watch sailors that have received a transferred token who don't have the required specialization icon take an additional Activation token.

The sailors on the left are carrying out repairs, and the sailors on the right have one Activation token each. It is now time for the other watch to take over.

The Technical Condition tokens are transferred to the new watch, while regular Activation tokens are discarded.

- If a sailor has a Health Condition **AND** the required medical supplies have been placed on the Health Condition card, then discard one of the Wound/Fatigue tokens instead of an Activation token.

The sailors on the right each have a Health Condition, but only one of them has received the required treatment.

When the other watch takes over, only sailor(s) who received the required medications can get rid of tokens resulting from cards (one per sailor).

- The First Officer updates the observation and repair values in the app if they have changed for any reason (e.g. when a sailor from the incoming watch cannot continue the order due to Health Conditions or death). See section 6.7. 'busy sailors' for details.
- Flip the crew tile over once you are done with updating the tokens.

Changing the watch summary:

1. Resolve crew damage.
2. Discard and/or transfer Activation tokens
3. Flip crew tiles

6.9. Health

- Whenever a sailor becomes sick or is wounded, he is assigned a card. Cards causing these conditions are collectively referred to as Health Condition cards.
- A sailor may get a Health Condition from an Event card, a Morale card, or due to resolving crew damage. See section 6.11. 'Resolving Crew Damage' for details.
- Health Condition cards have an information bar at the top and bottom and are assigned to sailors to help players remember their effects. To assign a card, tuck it under the affected sailor's activation space, leaving an information bar visible.
- The information bars list the effects that the card has on a sailor, as well as the medical supplies required to treat it. When counting the number of icons, use either the top or the bottom bar of the card, never both.

The bottom bar of a Health Condition card.

- The information bar may contain Activation icons, Fatigue icons, or Wound icons.
- When a sailor is assigned a Health Condition card, place a token for each of the icons visible on the card (Activation, Fatigue, or Wound) in the affected sailor's activation spaces. If there are not enough spaces, then discard enough Activation tokens to place all tokens listed on the card. Activation Tokens in excess are ignored and do not affect the sailor in any way.

One of the sailors has been fully activated when he is wounded and must receive the appropriate Health Condition card.

Two of his Activation tokens must be removed to make enough space for the tokens resulting from the effect of the Health Condition card.

- If a sailor receives a second Wound token, then he is dead and eliminated from the game. Place a KIA token in any of his activation spaces and lay this figure on its side. This sailor is no longer part of the game. Stand the figure up whenever the watch changes (unless the counterpart from the other watch has also died).
- When sailors receive KIA tokens, the Captain must advance the Morale track by two for each KIA sailor.
- *If any sailors are left on the Bridge after the U-boat dives, they are all considered KIA.*
- Some Health Condition cards prevent a sailor from carrying out a particular order. Such cards contain that particular order icon with a prohibitive traffic sign over it.
- Wound and Fatigue tokens remain in effect until they are treated. See section 8.9. 'First Aid' for details.

6.10. Repairs

The submarine may suffer a variety of malfunctions and damage. It is the Chief Engineer's responsibility to manage repairs. There are three categories of problems that can be resolved using the 'Repair' order:

Technical Conditions

Technical Conditions represent various components of the U-boat

breaking down or requiring attention. They will increase in severity with time if left unattended. See section 10.3.1. 'Technical Conditions' for details.

Environmental Conditions

Environmental Conditions directly influence the crew's health, morale, and performance. They are placed on the 3D model of the submarine and must be dealt with using appropriate supplies. Three of them (fire, electrical hazard, and toxic gas) cause sections to become hazardous and may require players to resolve crew damage. See section 6.11. 'Resolving Crew Damage', and section 10.3.3. 'Environmental Conditions' for details.

Hull Breaches

A breached hull is the most severe type of failure on a submarine. The integrity of the pressure hull has been compromised and the U-boat is taking on water. Each time a hull breach occurs, a countdown starts in the app; this is how much time the players have to seal the breach. See section 10.3.6.'Hull Breaches' for details.

6.11. Resolving Crew Damage

Crew damage must be resolved when sailors become exposed to Environmental Conditions or enemy attacks.
Crew damage is resolved when:

- A fire, electrical hazard, or toxic gas Environmental Condition token is placed in a section where one or more sailors are located. Such sections are referred to as Hazardous Sections.
- One or more sailors move into or through a Hazardous Section.
- One or more sailors are located in a Hazardous Section when a watch changeover begins.
- The app instructs the players to resolve crew damage as a result of enemy attack.

Crew damage is resolved as follows:

- The Captain draws as many Crew tokens as there are sailors in the affected section.
- If any of the tokens drawn match any of the sailors in that section, the First Officer assigns a Wound card of the indicated type to each of those sailors. Fire causes burns, electrical hazard causes electric shock, and toxic gas causes poisoning.
- Assign Wound cards to sailors one by one, in the order of your choice. Do not look at a Wound card before choosing which sailor to assign it to.
- When resolving crew damage in a section with more than one Environmental Condition token, resolve crew damage separately for each token in the order of your choice.

A Fire token has just been placed in the Engine Room. As there are four sailors in that section...

...The Captain draws four crew tokens. Unfortunately, one of the sailors from the engine room is among them!

The brown square sailor gets burnt and receives a Wound card from the 'Burns' deck. A Wound Token and an Activation Token will need to be placed in his activation spaces.

6.12. Timing Conflicts

There might be situations where several things happen within a very close timeframe. Whenever that is the case, then:

- The First Officer should remind players of any pending issues, e.g. game effects to be resolved, cards to be drawn, etc.
- Card effects (i.e. drawing and resolving event or Morale cards) must be postponed until you finish the current order or Mobilization, but after that they have to be resolved as quickly as possible.
- The order of dealing with pending issues is decided by the Captain.

Most importantly, do not forget about the golden rule as regards the real-time aspect of the game:

- Always finish carrying out one order / resolving one game effect before moving on to the next.

If, for example, you get caught off guard by an air patrol while changing the watch, then you must continue with changing the watch and only then should you resolve the effects of the air patrol (applying them to the new watch). The Captain should work closely with the First Officer and always be aware of how long it is until the next change of the watch.

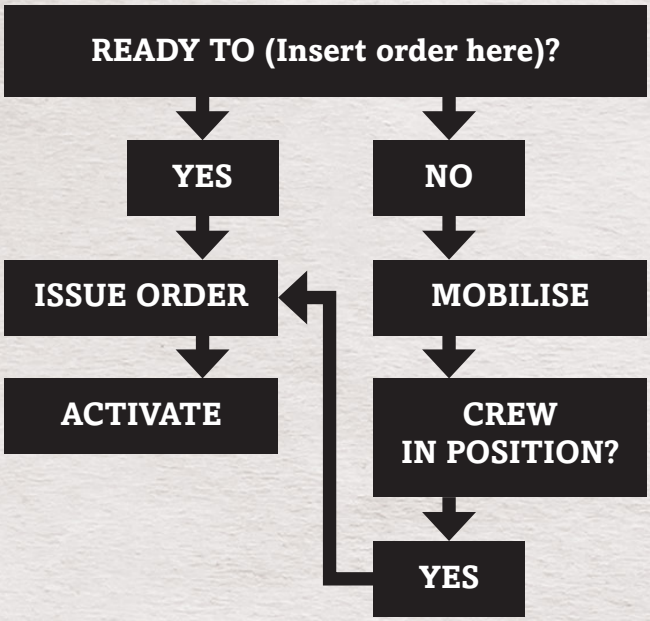
7. THE CAPTAIN

Playing as the Captain is one of the most demanding tasks in the game. It requires strategic planning, leadership skills, and a rudimentary knowledge of WWII submarine tactics. To get started, read the section below on how to issue orders to fellow players. For a better explanation on how to carry out WWII submarine operations, please consult the Tactical Guide included with the game.

7.1. Commanding the Crew

The Captain either mobilizes the crew or issues orders. Mobilization enables the crew to move and complete subsequent orders. Each captain will have their own style and can issue orders however they like. The flowchart be-

low should help a new Captain determine when to order or mobilize their crew.



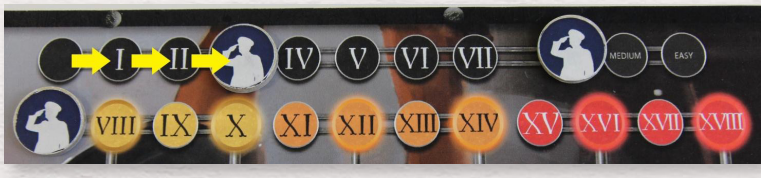
Let's assume that the Captain wishes to dive the U-Boat. They begin by making sure the crew is ready:

CAPTAIN: Ready to dive?
CHIEF ENGINEER: Ballast not ready.
CAPTAIN: Alright, everybody mobilize. Diving stations!
(the Chief Engineer repositions his ballast crew to assume positions in the Control Room)
CAPTAIN: Everybody in position?
CHIEF ENGINEER: Yes sir!
CAPTAIN: Alright, dive to periscope depth!

A more efficient Captain might check himself whether everybody is in position and issue an order or announce Mobilization straight away. That will speed up the process, but also require more attention from the Captain. Sticking to the above diagram is not mandatory, but it's a good idea to keep it in mind if the Captain does not have a clear idea of how to command the crew.

7.2. The Order Track

- The Order Track has 8 black spaces starting with a blank space and ending with VII.
- Additional spaces may be available depending on the chosen difficulty level.
- The Captain must pay the cost of mobilization and orders by advancing the Order token on the Order Track:
  - Each Mobilization advances the Order token one space on the Order Track.
  - Each order advances the Order token one space on the Order Track.



So far, the Captain has announced Mobilization once, and then issued two orders.

- At the beginning of the game, the Order token is on the blank space of the Order Track. When the Order token reaches the end of the Order Track, further orders will be paid for on the Morale Track. (See 'Morale Track' below for details).

As the Captain had reached the end of the order track, he began paying order cost on the Morale Track.

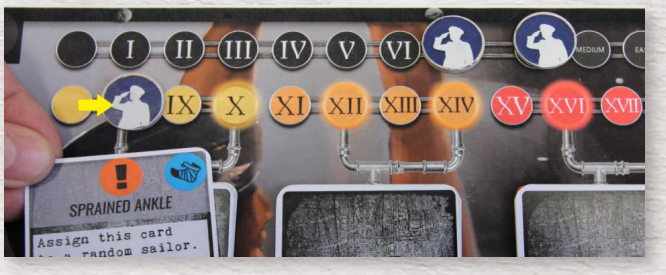
- The First Officer should inform the Captain to reset the Order Track to its starting space at 0600 and 1800 (or whenever the app sounds a triple bell).
- The Captain can then use the Order Track to pay for orders as normal.
- The Order Track ends where the Order token showing the difficulty level is located. This Order token blocks off the space where it is located and all spaces to its right, making the Order Track shorter on Medium and Hard difficulty levels.

It is 0600 and the Captain has heard the triple bell. They quickly reset the Order Track, leaving the Morale Track as it is.

7.3. The Morale Track

The Morale Track functions much the same way as the Order Track and is also marked with an Order token.

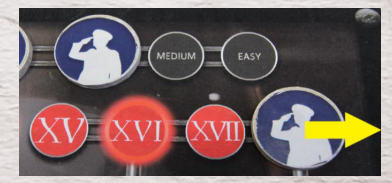
- The Captain pays the same cost to Mobilize and order his crew as if using the Order Track.
- However whenever the token is advanced to space VIII, X, XII, XIV, XVI or XVIII on the Morale Track, the Captain must draw and resolve a Morale card from the connected card deck space.



The Order token is already in its last available space, but the Captain still needs to issue an order. They advance the Morale

Track by one and draw a card because the token has landed on a Morale card space (highlighted and connected to the particular deck).

- After being resolved, Morale cards are discarded to the bottom of their respective decks.
- At the beginning of the game, the Order token is put on the starting (empty) space of the Morale Track.
- The Morale Track never resets, but morale can be improved by certain actions. Retract the Morale Track when instructed by cards or the app.
- Do not draw Morale cards when retracting the token on the Morale Track.
- **Advance the Morale Track by two for each sailor who is KIA.**
- When the Order token on the Morale Track has reached space XVIII and The Captain is required to advance it further, then the crew mutinies and surrenders the U-Boat to the Allies. All players have lost the game.



The Order token is already on the last space of the Morale Track. If the Captain is forced to advance the Order token any further, then it is GAME OVER.

7.4. Order List

All available orders are detailed below. They have been organized into categories to help you learn more quickly. The list is also abbreviated on The Captain's player aid for quick reference.

- Each order is the responsibility of one or more players. Their sailors may need to be mobilized before the order to be in position.
- The assigned Officers ensure that the order is entirely completed before any other activity starts.
- **The Captain must advance the Order token on the Order Track by one each time the crew is mobilized or an order is issued.** This applies to **each time** you extend the periscope, use the hydrophone, etc.

7.4.1. Maneuvering

Engines - assigned Officer: The Chief Engineer
This order allows you to change the speed of the submarine. The possible throttle settings are: Full Astern, Stop, Slow Ahead, Half Ahead, Full Ahead. The Chief Engineer's sailors have to be in the Engine Room or the Aft Section for this order.

New course - assigned Officer: The First Officer
The First Officer's helmsmen have to be in position so that the course can be set in the app in accordance with the Navigator's plot.

Dive/Surface - assigned Officers: The First Officer and The Chief Engineer
This is the most labor-intensive maneuver of all. It must be performed each time the U-Boat submerges or surfaces. It involves switching propulsion from diesel to the electric motors (or the other way round), operating the ballast tanks, and setting depth on the helm. Make sure both the First Officer and The Chief Engineer are ready before ordering this. **Be ready to dive at all times when traveling on the surface.**

New depth - assigned Officers: The First Officer and The Chief Engineer
This is less complex than a Dive/Surface order, since it does not involve switching between the two different means of propulsion (the U-Boat remains submerged throughout the order). It requires both The First Officer and the Chief Engineer to have their crew members in position.

7.4.2. Navigation and Target Acquisition

Observers, watch your sectors - assigned Officer: The Navigator
When on the surface, having observers on the bridge is crucial. The Navigator should provide an appropriately skilled crew for the order. Once the sailors are in position, issue this order to start observation. **Note, this will cause activated sailors to be activated with an Observation token and become 'busy'.**

Periscope - assigned Officer: The Captain
While at periscope depth (within 10 meters under the surface) it is used to acquire and attack surface targets.

Hydrophone - assigned Officer: The First Officer
This detects contacts when the submarine is submerged. It is recommended to perform a full sweep before surfacing; unless you are willing to take the risk of being surprised on the surface.

Sextant - assigned Officer: The Navigator
To plot the position on the map, the U-boat must be surfaced and there must be a sailor on the bridge.

7.4.3. Armament

TDC - assigned Officer: The Captain
The Torpedo Data Computer must be programmed before torpedoes are launched. Carrying out this order opens the torpedo attack menu in the app.

Flood Tubes - assigned Officer: The Captain
Tubes must be flooded before torpedoes can be launched. **You can flood as many tubes as you like with a single order.**

Fire a torpedo - assigned Officer: The Captain
'Torpedo... Los!' **Launching each torpedo is a separate order.** The torpedoes are now in the water, and rapidly closing in on the target. All that is left to do is to wait for the explosion...

Reload a torpedo - assigned Officer: The Captain
Once torpedoes have been fired, new ones must be loaded into the tubes. Y**ou can reload only one torpedo per order.** It requires considerable manpower, but is necessary if you wish to press on with the attack.

7.4.4. Safety and Crew Management

Repairs – assigned Officer: The Chief Engineer
When anything requires maintenance or repairs, the Chief Engineer will see to it. This includes Technical and Environmental Conditions, as well as Hull Breaches.

First aid – assigned Officer: The First Officer
The crew is exposed to various illnesses and wounds, collectively referred to as Health Conditions. These lower the crew's combat efficiency, and may even result in death. Therefore, it is a good idea to monitor the health of the crew.

Address the crew – assigned Officer: The Captain
This order allows play of The Captain's cards to improve crew morale. The Captain starts with a hand of cards which can be added to. The cards are one-time use only and they are removed from the game after being played.

Prepare Meal - assigned Officer: The Navigator
This order allows the Navigator to prepare meals for the crew. It should be done once daily, or morale will suffer.

Mobilize - assigned Officer: all officers
Mobilization enables players to move their sailors around the U-Boat and be in the right positions to complete subsequent orders. A good Captain will use a single Mobilization to get the sailors ready for multiple orders. The Captain should announce all the orders that they are planning to issue when mobilizing the crew.

7.5. Crew Tokens

- These tokens are used whenever a sailor is to be selected for any game effect. These include Event and Morale card effects, as well as crew damage resulting from Environmental Conditions and enemy attacks.
- When a card instructs you to 'assign this card to a random sailor', draw a Crew token and assign the card to the sailor whose symbol you have drawn from among the Crew tokens.

7.6. Scoring Trophy Tokens

After a successful attack, the Navigator will pass the Trophy token(s) of sunken vessels to the Captain. These are used to determine the game-end score. **Each time an enemy vessel is sunk, retract the Morale Track by 3 spaces.**

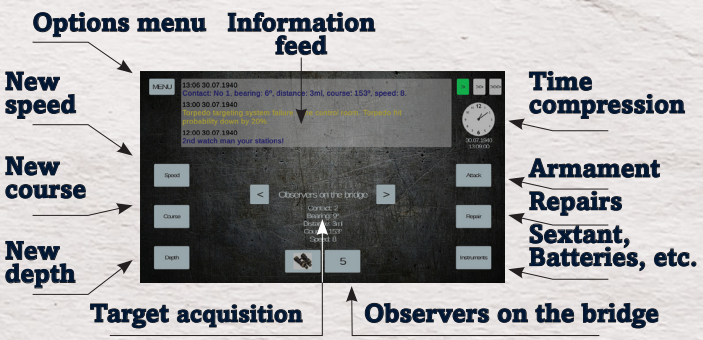
For more information and advice on how to launch successful torpedo attacks, refer to the Tactical Guide included with the game.

8. THE FIRST OFFICER

The First Officer is the Captain's second in command. They interact with the app to enter orders and report events. They are also responsible for the helm and keeping the crew in good shape by providing first aid.

8.1. Companion App Basics

Main Screen
This is where the Information Feed, the maneuver buttons (left), Target Acquisition (center), and other options (right) are located. From here you will learn about all the threats and opportunities facing the U-boat.



To be a good First Officer, make sure to:

- Pay close attention to the Information Feed, it is the primary source of information that the crew must react to.
- Report **EVERYTHING** you learn from the app to the other players; they may also request access to the app, but they can do so only when sailors under their control are carrying out the order in question. Don't forget to take control of the app after they are finished. For example, the Navigator might want to see the view from the bridge to get better situational awareness.

Maneuvering:

The three buttons on the left are your maneuvering options: Speed, Course or Depth. Each option brings up the necessary controls to input new orders. Rotate the compass, drag the depth gauge arm, or choose the desired speed option. Once a new order is entered correctly, confirm by pressing the 'OK' button.

8.2. The First Person View

The app provides a first-person view (FPV) in three distinct situations: observer view, periscope view, and targeting (TDC) view. Each view features a zoom functionality which is toggled with the zoom button (located at the top of the screen). Please remember that you can switch gyroscope functionality on or off in the in-game menu.

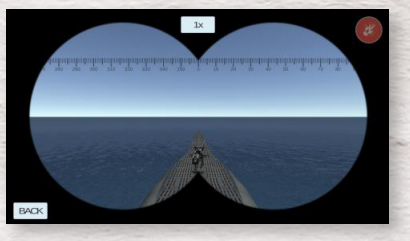
8.2.1. Observers on the Bridge

Whenever the U-boat is surfaced, it is crucial to have observers on the Bridge. Once they have been mobilized to the bridge, they must be Ordered to Observe.

- The Captain must order the observers to watch their sectors.
- Each of the participating sailors must be activated with an Observation token.
- The Navigator reports the number of observers currently on duty to the First Officer. The higher the number, the more frequent and precise the reports will be.
- When there is at least one observer on the bridge, The First Officer can click on the binoculars button to enter the Observer FPV and get a better picture of the tactical situation.
- Entering the Observers FPV does not cost anything.

Once observers are on the bridge, they are ready for duty. Press the button indicated in the example above to open the keypad menu.

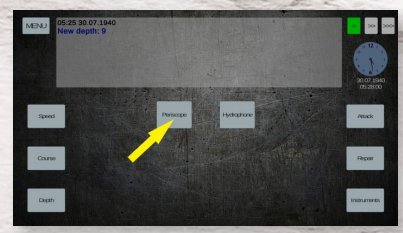
After the Captain orders sailors to watch their sectors, confirm how many observers are on duty. Remember to activate them all with Observation tokens.



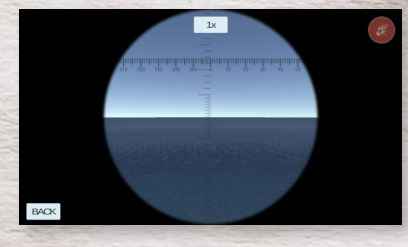
Use your device as binoculars, or or swipe across the screen to look around for contacts.

8.2.2. The Periscope

At Periscope Depth (i.e. with the U-boat submerged up to 10 meters), the periscope view can be entered to observe the surface. The U-Boat's periscope can be spotted by enemy contacts. Raising the Periscope is an order and must be paid for. The sailor operating the Periscope must be activated.



When submerged, two options appear in the target acquisition space: 'Periscope' and 'Hydrophone'.

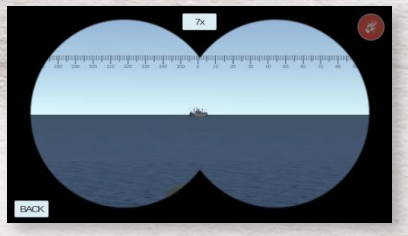


Select Periscope to raise it and enter the Periscope's FPV.

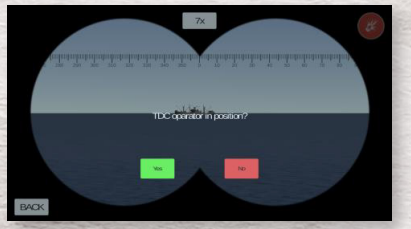
The periscope and the binoculars FPV have a 360° view. This view is aligned with the hull of the U-Boat. 0° is straight over the bow of the U-Boat, 180° is the stern, etc. A contact at 90° has a bearing of 90° from the U-Boat which is very useful information to the Navigator. Note, these values have nothing to do with direction of travel.

8.2.3. Engaging the Torpedo Data Computer (TDC):

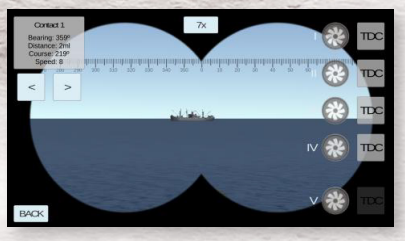
The TDC FPV can be engaged by pressing the Attack button in both the Periscope FPV and the Observer's FPV. Engaging the TDC is an order and must be paid for. The sailor operating the TDC must be activated.



When you are in position for a torpedo attack, press the red attack button in the top-right corner of the screen to launch the TDC.



The app will ask to confirm if there is an operator in position. Press 'Yes' if that is the case.

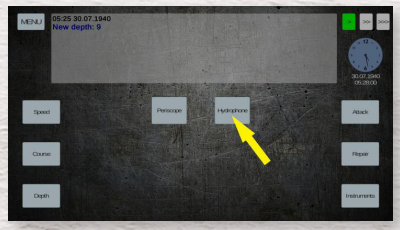


You are now ready to target contacts, flood tubes, and fire torpedoes.

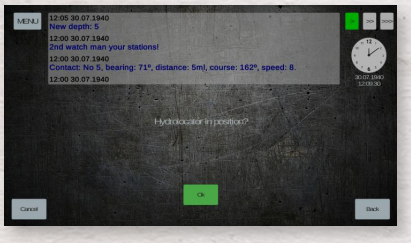
8.3. The Hydrophone

When submerged, the Hydrophone can be used to detect and track enemy vessels. It is always advised to perform a hydrophone sweep before resurfacing. Using the Hydrophone is an order and must be paid for. The sailor operating the Hydrophone must be activated.

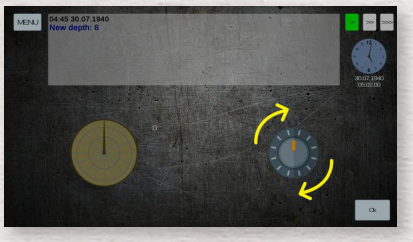
- Select 'Hydrophone' from the app menu (active only when submerged).
- Use the knob on the right to turn the microphone to the direction of your choice.
- The display on the left indicates where the microphone is currently pointed.
- The Hydrophone will display contact data and update the information feed when it detects a contact.



The Hydrophone becomes active when the U-Boat is submerged.



The app will ask if the operator is in position.



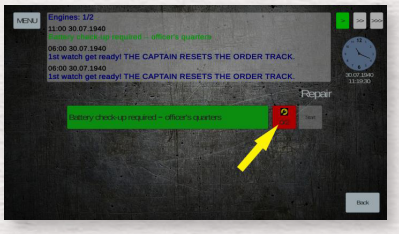
The arm on the left shows where the Hydrophone is pointed. 0 degrees means 'straight ahead'. Use the knob on the right to turn it in the direction of your choice.

As soon as one or more contacts are detected, the information feed will update, and contact data will appear in the middle of the screen.

8.4. Repairing Technical Conditions

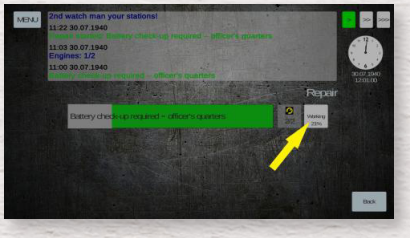
- Technical Condition's status are shown by pressing the 'Repair' button. Each Technical Condition has a difficulty level (next to the Wrench icon). This is the number of sailors required to fix the Technical Condition.
- Keep the Chief Engineer informed of all Technical Condition details when they change.
- Confirm the number of sailors participating in the repair order to start the repairs. The sailors performing repairs must be in the section where the Technical Condition has occurred to carry out the repairs.
- If the number of sailors repairing a Technical Condition changes, pause the repair as soon as possible to update the number of sailors on the job.
- Remember to activate the participating sailors with a Technical Condition token instead of the regular Activation token.

Once there is a Technical Condition, the First Officer will be notified of it in the information feed. All the details concerning current technical conditions can be found in the repair menu.

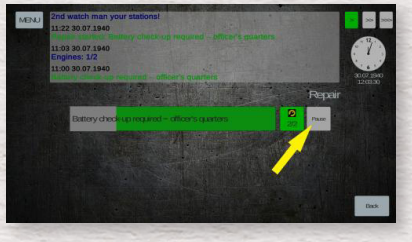


Upon selecting repairs, the difficulty levels will be displayed in the red boxes. Press the red box next to the Technical Condition you wish to repair.

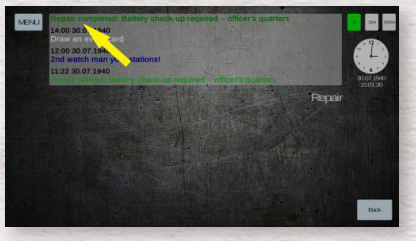
Confirm how many sailors are in the repair crew.



Repairs will start immediately. There is a progress bar advancing from left to right.



Repairs can be paused and resumed to update the number of sailors in the repair crew.



Once the repairs are complete, the app will display a message in the Information Feed.

8.5. Repairing Environmental Conditions and Hull Breaches

Environmental Conditions are not tracked by the app, and Hull Breaches are only tracked by a timer. Make sure to help the other players with sealing the breach and press the 'Yes' button **only after the breach has been sealed** (i.e. once the Technical Puzzle has been solved).

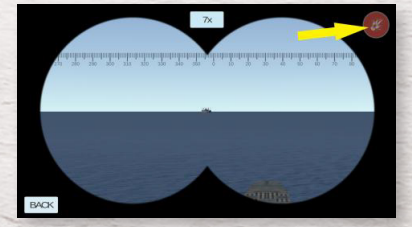
8.6. Launching Torpedo Attacks

Launching a torpedo is comprised of the following steps:

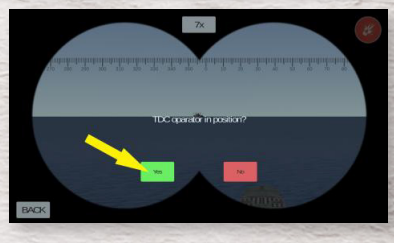
1. The target must be within 3 miles and inside a 60° arc ahead (30 degrees to either side of the bow of the U-Boat), or behind its stern (there is a single torpedo tube at the stern).
2. The TDC (Torpedo Data Computer) must be engaged.
3. Once the TDC is launched, it will display all detected contacts in the top-left corner of the screen. Dark grey contacts are outside range and firing arc, whereas light grey contacts can be targeted.
4. To target a contact, cycle through the available targets and press the TDC button to the right of a torpedo tube

when you have selected a contact within range and firing arc (light grey). The contact is now targeted with the torpedo in that tube.

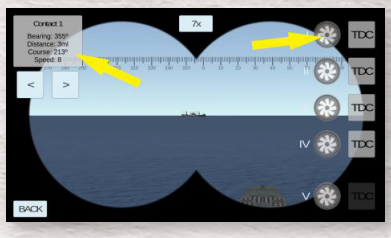
5. Press the tube icon to flood it. Flooding the tubes must be paid for as an order. The sailor carrying out the order is activated once, regardless of how many tubes you are flooding.
6. Press the 'Fire' button next to the ready tube. Every fired torpedo is a separate order. For example, if you wish to fire three torpedoes then the Captain advances the order (or morale) track by three. The sailor(s) operating the tubes must also be activated a total of three times.



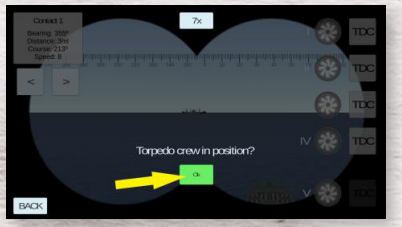
The enemy is within range and firing arc, so it's time to engage the TDC.



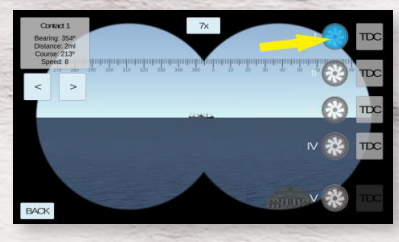
Make sure the operator is in position and press 'Yes' to confirm.



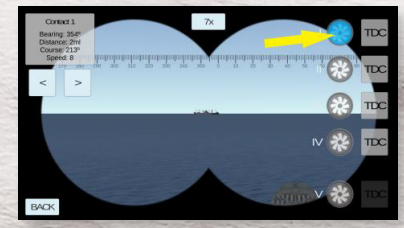
The window in the top-left corner lets you cycle through targets. You can also flood the torpedo tubes (on the right).



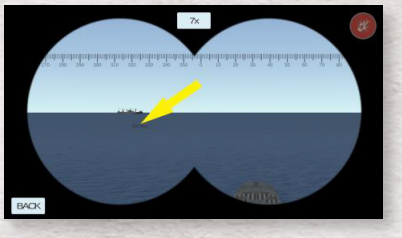
When you begin flooding, the app will ask about the torpedo crew. If they are in position, you can hit 'Yes'.



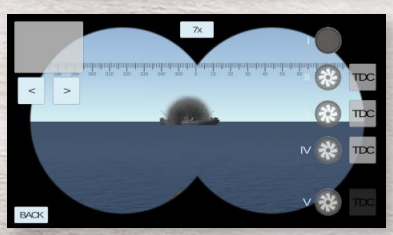
You can now see that tube 1 has been flooded. Pressing the 'TDC' button to its right will assign the selected target to that tube.



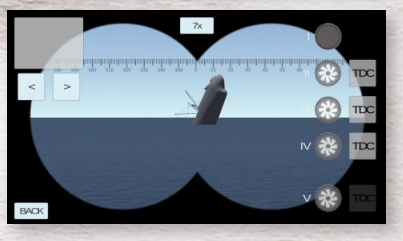
Once a target is assigned, the tube will highlight in red with the number of the target contact. A 'Fire' button will also appear.



After pressing the 'Fire' button, you can watch the torpedo go towards the target.



The enemy has been hit...



...and they are going down! It is now time to score the corresponding Trophy Token.

8.7. Reloading Torpedoes

Select 'Armament' in the app and then click on each empty tube that you wish to reload. Reloading each torpedo is a separate order.

8.8. Time Compression

If not for the time compression, the game would take much longer to complete. The First Officer is responsible for keeping track of time, and it is his duty to select the appropriate compression level in a given situation. Make sure to adjust the pace of the game to the abilities of the crew and notify the Captain whenever you feel that speeding up time is necessary.

The three buttons in the top-right corner are used to change the level of time compression. Depending on the selected game speed, the app will either reset the compression to 'Real-time', or to 'Action' whenever anything happens. You can find the time compression buttons in the top-right corner of the screen, and the preferred time settings can be changed from the in-game menu.

There are three possible time compression options:
Real time: good for combat situations, or when players need time to talk things over.
Action: suitable for approaching targets, or when players wish to speed things up a little.
Fast forward: recommended mostly for transit situations.

Depending on the chosen time settings in the menu, the app will reset to either 'Real time' or 'Action' whenever anything occurs.
In short, it is the First Officer's responsibility to manage time compression in cooperation with the Captain and to select the most suitable option for the given moment and gameplay situation.

8.9. First Aid

- The First Aid order is not managed by the app. Standard Order rules and their cost still apply to the Medical Assistance order.
- The sailor Activated on a Medical Assistance Order has to be in the same section as the sailor receiving treatment.
- Only one sailor can be treated for each Medical Assistance Order. However, it is possible to treat multiple Health Condition cards assigned to that sailor.
- Each Health Condition card lists the Medical Supply tokens required to treat the condition. There are five kinds of medical supplies: pills, ointments, bandages, shots, and surgical instruments.
- After the First Aid order has been given, treat the sailor by placing the required Medical Supply tokens on a sailor's assigned Health Condition card(s).
- When a sailor's Health Condition has been treated they can discard Fatigue and Wound tokens the same way as Activation tokens (i.e. one token per watch change).
- Once there are no more detrimental effects (i.e. tokens resulting from the card) present in the sailor's activation spaces, discard the Health Condition card and the Medical Supply tokens used to treat it. They are removed from the game.
- If a Health Condition card contains no Activation, Fatigue, or Wound icons, then after it has been treated it can be discarded during a subsequent watch changeover.

8.10. Event Cards

The app will notify when Event cards are to be drawn. Always take the top card from the Event deck and resolve its effects. Some cards have an immediate effect, while others are added to The Captain's hand of cards and played at their discretion. Once an Event card has been resolved, return it to the bottom of the Event deck. The Captain's cards, including Event cards played by the Captain, are removed from the game after being played.

8.11. Wound Cards

These cards comprise four decks and are assigned to sailors affected by crew damage. When resolving crew damage, wait for the Captain to draw Crew tokens. If any sailors are wounded, then shuffle the appropriate Wound card deck, draw a card, and assign the card that you have drawn to the affected sailor. Continue drawing and assigning Wound cards to sailors (one at a time) until all sailors who have suffered damage have each received a Wound card. When discarding Wound cards (thanks to first aid), discard them to the bottom of the appropriate Wound card deck.

9. THE NAVIGATOR

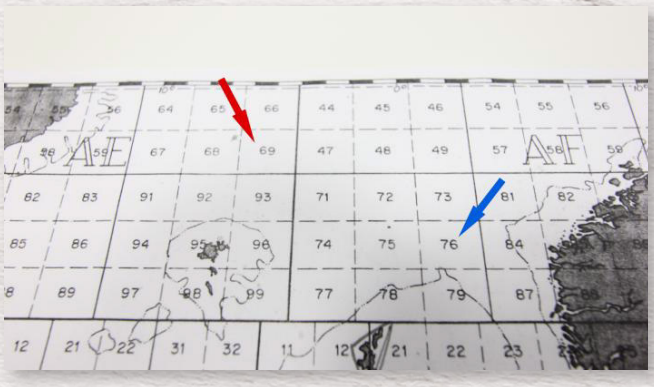
The Navigator advises The Captain on how to steer the U-boat. This includes strategic plotting of transit routes to reach patrol areas and tactical maneuvering to acquire firing solutions on a contact. The Navigator is also responsible for observers on the bridge and the crew's food consumption.

9.1. Strategic Navigation

When the mission begins, the Navigator calculates the optimum route towards mission objectives. The Mission briefing always indicates the submarine's starting square.

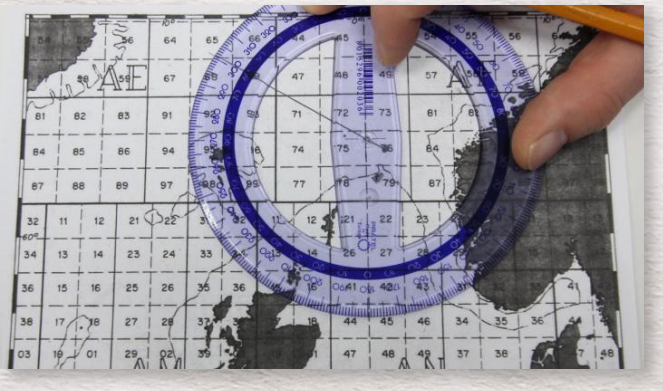
- In order to set the course:

1. Find the square where the submarine is located.
2. Confirm the current destination with the Captain.
3. Find the destination square and draw a line between the two squares.
4. Measure the angle of the line you have drawn using the protractor. This is the course that you want to follow.
5. Report the course to the Captain and the First Officer.

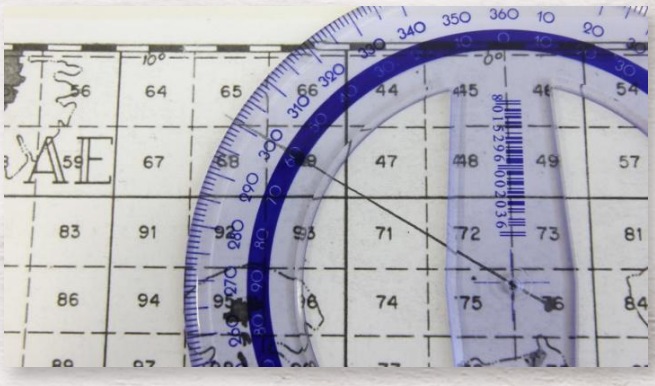


The U-boat is located in AF76 (blue arrow) and the Navigator wishes to plot a course towards AE69 (red arrow).

The Navigator draws a line connecting the squares...



...and aligns the 360° protractor so that '360' is aligned with the North, and make sure the drawn line goes through the center of the protractor.



Read the result: the optimal course from AF76 to AE69 is 301 degrees.

9.1.2. The Range Ruler

The ruler's scale on the strategic map equates to the U-Boat's 'Ahead-Full' speed (surfaced on one side, and submerged on the other). This permits a dead-reckoning of the U-Boat's position if the sextant is not an option.

When held against the map, the ruler can be used as a time-to-distance converter. The above example shows that when starting from AE67 and traveling at full speed on the surface, it will take the U-boat roughly 9 hours to reach AE69, but 24 hours to reach AF 49).

9.1.2. The Sextant

The Sextant can be used to plot the U-Boat's accurate position. This order must be carried out on the Bridge. Activate the sailor carrying out the order as normal and ask the First Officer to check the sextant in the 'Instruments' menu.

9.2. Observers on the Bridge

Observer duty on the Bridge is the most important responsibility of the Navigator's crew. Whenever sailing on the surface, it is crucial that there are eyes on the Bridge scouring the horizon. Once sailors are mobilized to the Bridge, the Captain must issue the 'Observers, watch your sectors!' order. The number of observers is then passed to the First Officer who updates it in the app. The more observers are on duty, the more up-to-date their reports will be.

- All observers on duty are considered 'busy'. Remember that carrying out the 'Sextant' order is possible without stopping observation.
- **Observers must get inside before the 'Dive' order is carried out. All sailors on the Bridge are KIA once the U-boat has dived.**

9.3. Tactical Navigation

The moment contacts are detected, tactical navigation becomes The Navigator's top priority. The Navigator must use the Attack Disk and translate the information received from the First Officer onto the tactical map (located on his player panel). The information is comprised of the following three components:

- Bearing (the direction where the contact has been detected)
- Distance (the distance between the submarine and the contact)
- Course (the heading of the contact)

9.3.1. Using the Attack Disk and the Tactical Map

1. Rotate the green disc so that its yellow arrow (U-boot course) is aligned with the submarine's current course on the white disk.
2. Turn the black arrow in the center towards the bearing value on the green disc.
3. Rotate the black disc to align its yellow arrow with the contact's course.
4. Place the U-boat marker and the enemy marker on the tactical map so that the relation between the U-boat marker and enemy marker reflects their relation as shown on the attack disk. Then update the facing of the enemy marker in accordance with it.
5. It is now possible to see clearly:
   - the relation between the submarine and the contact on the tactical map
   - the course for perfect broadside approach on the attack disk

The U-boat is following course 290 when The First Officer reports a contact: Bearing 40 degrees, distance four miles, course 70 degrees.

*The Navigator starts with the green disk, making sure that its yellow arrow is pointing at the current U-boat course (290 degrees **on the white disk**). He then turns the black arrow in the center to point towards the bearing value **on the green disk**. Lastly, The Navigator turns the black disk so that its yellow arrow (enemy course) is pointing at 70 degrees **on the white disk**.*

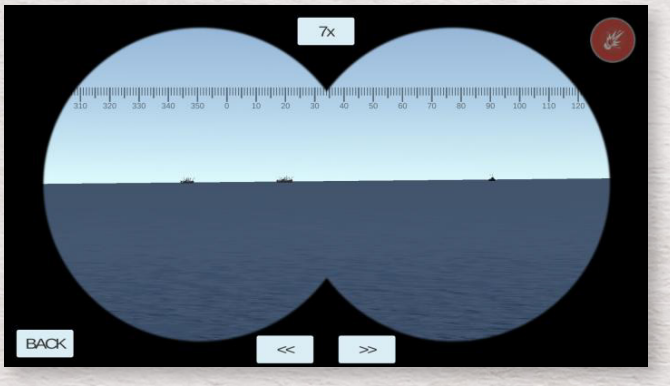
The Navigator is now ready to update the tactical map. He aligns the course of the U-boat with the front (although not mandatory, it certainly makes life easier). The Navigator can now see where the enemy is located (which is the direction where the black arrow is pointing, four miles away). After placing the enemy marker, the last thing to do is to rotate it so that it's attitude reflects the 'contact course' (the yellow arrow on the black disk).

The tactical map is now updated!

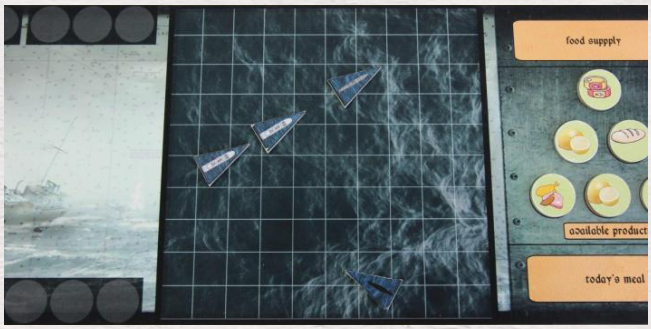
9.3.2. Visual Identification

Visual identification must be performed before an attack can take place. It consists of updating the tactical map to reflect the composition of the enemy force in detail. It can be done by observers on the Bridge, or through the Periscope. Either the First Officer or the Navigator must look through the observer's binoculars or through the periscope to determine the number and type of enemy vessels encountered. The Navigator then replaces enemy markers that have been visually sighted with Trophy tokens. Trophy tokens are drawn blindly and placed facedown on the tactical map. Once the tactical map has been updated, flip the Trophy tokens to reveal how much GRT each target is worth. It is the Navigator's duty to update the tactical map to reflect the changing positions of surface contacts.

In order to make sure which contact is which (and choose the biggest fish to catch) cycle through the available targets in the target acquisition space (either reported by observers or detected with the Hydrophone). Comparing their bearing values will let you make sure which contact number(s) to focus on during attack.



The First Officer looks through the binoculars and reports two merchant vessels (visible left and center in the example above) as well as one escort (on the right).



The Navigator replaces the enemy marker with the appropriate Trophy tokens (two merchants and one escort). The Navigator draws them blindly, and flips them to the GRT side only after placing them on the tactical map.

9.3.3. Tactical Navigation Notes

- Course values (both of the U-boat and other vessels) are read using the degree values on the white (outermost) disk.
- The bearing values are printed on the green (innermost) disc and MUST NOT be confused with the course values.
- The tactical map does not need to be overly precise, as its role is to give players general situational awareness in combat. As the situation is constantly changing, it is better to provide approximate positions in time, than to offer exact positions too late.

9.3.4. Collecting Trophy Tokens

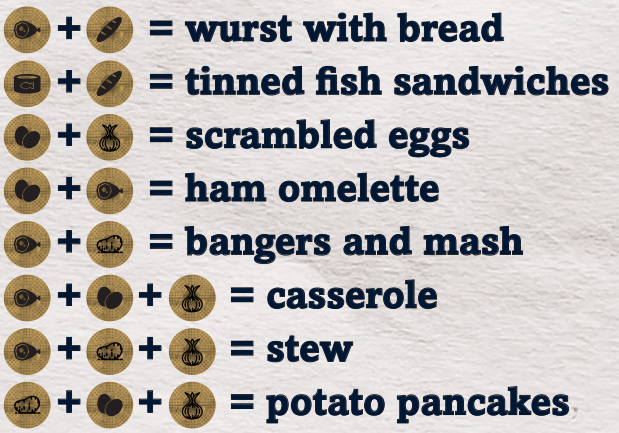
When a vessel has been sunk, The Navigator takes the corresponding Trophy token and passes it to the Captain. The Captain will keep these and add them up at the end of the game.

9.4. Food

Other than navigation itself, The Navigator also manages the crew's food consumption. Good food fosters good morale. Neglect this aspect and morale will quickly suffer. A good meal will consist of 3 different ingredients which are represented by the following Provision tokens:

Above from left to right: onions, bread, lemons, eggs, tinned fish, meat, potatoes.

The possible token combinations are:



A meal has the following effects on the crew's morale:

Meal Size	Effect
no mealadvance	the morale track by 2
1 ingredient	advance the morale track by 1
2 ingredients	no effect
3 ingredients	retract the morale track by 1

- Lemons are not used in combination with any other products, but it is important to include them in the diet (please see below for details).

9.4.1. Meal Preparation

- To prepare a meal, the sailor with the meal preparation icon must be present in the Crew's Quarters and ordered to 'Prepare Meal'.
- Draw tokens one by one from the Food Supply and fill the Available Products pyramid from top to bottom and from left to right.
- Before selecting tokens, The Navigator may switch the positions of any two tokens or discard any one token and draw one token from the Food Supply to replace it. Taking either option will activate the sailor one additional time.
- The 'meal' consists of one, two, or three tokens from the Available Products pyramid. If The Navigator selects more than one token, they must be adjacent to one another (adjacency can be tracked in all directions). If there is a lemon token within the pyramid, then The Navigator must collect it together with the rest of the selected tokens (even if not adjacent to the rest of the combo).
- Collect all the selected tokens and put them on the 'Today's Meal' space of The Navigator's panel.
- Inform the First Officer and Captain that the crew has been fed. Replenish the 'Available Products' pyramid with new Provision Tokens drawn from the Food Supply.

A very good draw, giving the Navigator three different options.

He opts for the omelette and adds the obligatory lemon when preparing the meal.

This example shows a less fortunate draw, as there is no combo.

The Navigator decides to swap the positions of two tokens at the cost of one additional activation.

9.4.2. Food Getting Stale

Each time The Navigator goes through the entire food supply, discard all tokens of one type from the pool permanently – they are removed from the game. The rest of the tokens are then returned to the food supply. This reflects food going bad and will make it increasingly difficult to put together good combinations. Food Provisions Tokens should be discarded in the following order:

meat - onions - eggs - bread - lemons - potatoes - tins.

10. THE CHIEF ENGINEER

The Chief Engineer's responsibility is operating and maintaining the U-Boat's propulsion and ballast systems. They also play a key role in repairing all Technical and Environmental Conditions, as well as Hull Breaches.

10.1. Engines

There are two means of propulsion on board of the Type VIIC: Diesel engines and electric motors. The Diesels are located in the engine room, while the electric motors are located in the aft section.

Generally:

- When the U-Boat is surfaced, it runs on Diesel engines and charges the electric motors' batteries.
- When the U-Boat is submerged, it runs on electric motors and draws from the batteries.

Each time the submarine Dives or Surfaces, The Chief Engineer is to switch propulsion. It requires 1 sailor in the Engine Room and one in the Aft Section (see Chief Engineer's player aid). There is no need to switch propulsion when changing depth, as the U-Boat is already running on electric motors.

To change speed, the engines need two sailors in either the Aft Section or the Engine Room. If The Captain has ordered a submerged speed change, the sailors must be operating the electric motors in the Aft Section. A surfaced speed change requires sailors operating the Diesels in the Engine Room.

Make sure to update the engine room telegraph on the Chief Engineer's player panel after changing speed.

10.2. Ballast Tanks

The Submarine can Dive only when the ballast tanks are flooded. This is done by two sailors in the control room whenever the depth changes (this applies to both changing depth and diving/resurfacing). Remember to activate the ballast operators whenever they carry out their orders.

Make sure to update the depth gauge on the Chief Engineer's player panel after changing depth.

10.3. Repairs

The repair order has very broad applications. These fall into three general categories:

- Technical Conditions
- Environmental Conditions
- Hull Breaches

10.3.1. Technical Conditions

Technical Conditions, if ignored, will pose an increasing risk to the sailors and the U-Boat. Technical Conditions have three levels of severity:

Maintenance: Routine tasks that need to be performed to keep the submarine in working order. If neglected, it will likely result in a failure.

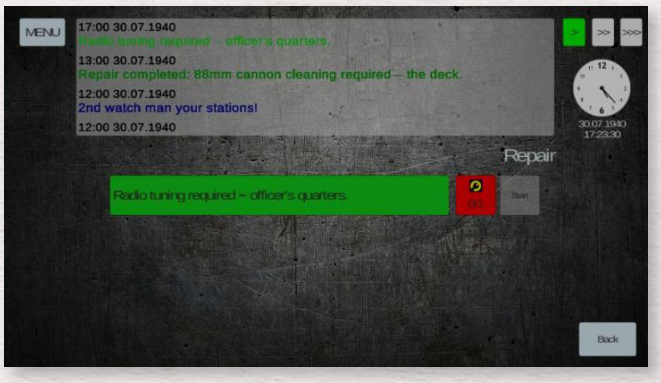
Failure: This is a more serious condition – if it is left unrepaired, a major failure is imminent!

Major failure: The situation has gone from bad to worse. The component in question is completely out of order and will not work until it is repaired!

10.3.2. Repairing Technical Conditions

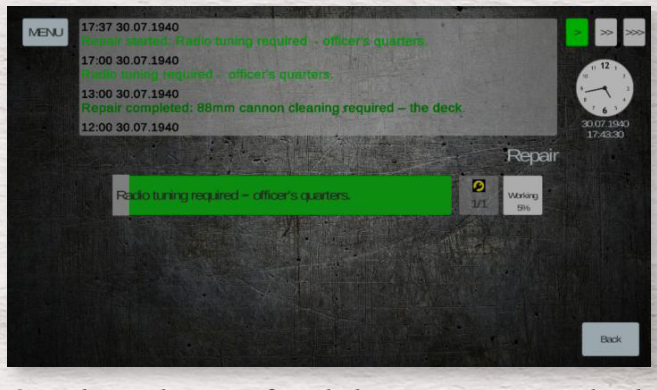
- As soon as the First Officer reports a Technical Condition, The Chief Engineer must immediately mark it with the appropriate token.
- Each Technical Condition has a difficulty level shown by the color of the token. Green is minor, red is severe.
- The severity of the Technical Condition affects the number of sailors required to repair it. The number is given in the app Repair Menu.
- When repairing a Technical Condition, place a Technical Condition token of the corresponding severity color in each sailor's activation space if they are part of the repair crew. Note that one Technical Condition token and one Activation token is required if the particular sailor doesn't have the 'repair' specialization icon.
- When sailors are ordered to repair a Technical Condition, they are considered busy. See 'Busy Sailors' in Section 6 for details.
- The app will indicate when repairs are finished. Flip Technical Condition tokens to their activation side once the repairs have been finished.
- If the number of sailors on the repair crew changes, pause the repair in the app as soon as possible and update the number of sailors.

When the First Officer reports a Technical Condition, place the required token in the specified section on the Technical View.



The First officer can check the difficulty level in the repair menu (red square with the wrench icon).

The First Officer inputs the number of sailors in the repair crew.



Once the number is confirmed, the repairs start immediately and their progress can be tracked in the Repair menu.

10.3.3. Environmental Conditions

These conditions directly influence the crew's health, morale, and overall performance. They are marked on the 3D model and must be dealt with using the appropriate supplies.

- When instructed by the app, place the appropriate Environmental Condition token in the specified section, resolving crew damage if necessary.
- Multiple Environmental Condition tokens can exist together in a single section.

10.3.4. Supplies and Toolboxes

The Chief Engineer starts the game with two toolboxes and five supply tokens:

At the beginning of the game, The Chief Engineer allocates the supply tokens to each toolbox (green or grey). Each toolbox must contain at least two supply tokens.

Above from left to right: wire, absorbers, water pump, light bulbs, fire extinguisher.

10.3.5. Dealing with Environmental Conditions

- In order to get rid of an Environmental Condition, a toolbox containing the required supplies must be present in the section where the Environmental Condition token is.
- Any sailor moving from or through a section containing a toolbox may pick it up and place it in the section where they finished their movement.
- The repair difficulty of all Environmental Conditions is 1 .
- Activate the sailor carrying out the order with a regular Activation token.
- Dealing with Environmental Conditions does not require the app. The Captain pays the order cost as normal and the sailor carrying out repairs is activated with a regular Activation token.
- The officer controlling that sailor removes the Environmental Condition token.
- Fire, electrical hazard, and toxic gas cause a section to become hazardous.
- Having the right supplies **does not** protect a sailor against the effects of fire or electrical failure (toxic gas is an exception).

Following is the list of possible Environmental Conditions, their effects, and the supplies that are used to eliminate them:

HAZARDOUS

Electrical Failure

Effect: resolve crew damage in this section (electric shock).
Eliminated by: wire

Fire

Effect: resolve crew damage in this section (burns), then all sailors in that section must move to one or more adjacent section(s). If they must move to a Hazardous Section, then resolve crew damage as normal.
Eliminated by: fire extinguisher*

Toxic Gas

Effect: resolve crew damage in this section (poisoning)
Neutralized by: absorbers
Eliminated by: Surfacing**

NON-HAZARDOUS

Lighting Failure

Effect: one additional sailor is required to carry out each order in this section (this also applies to dealing with this particular Environmental Condition).
Eliminated by: light bulbs

Leak

Effect: advance the Morale Track by one space, and retract it by one when the leak is eliminated.
Eliminated by: water pump

*Fire extinguisher may be used to put out fire in an adjacent section.

**Toxic gas cannot be removed other than being vented outside from the submarine after Surfacing. Therefore, while the absorbers allow the crew in that section to avoid resolving crew damage, this Environmental Condition will linger until the crew can open the hatch and let in fresh air. If toxic gas ever occurs while the submarine is sailing on the surface, resolve crew damage once, and then discard the Toxic Gas token.

10.3.6. Hull Breach

A Hull Breach is the most severe type of failure that can occur on a submarine. It means the pressure hull has been compromised, and the U-boat is taking on water. This is far more serious than a leak and must be sealed immediately. If it is ignored for too long, the affected section will need to be flooded and isolated with a watertight bulkhead. **When a second section is flooded, the U-Boat will sink!**

10.3.7. Sealing a Hull Breach

A Hull Breach starts a countdown in the app. The countdown shows the remaining time players have to seal the breach. This is done by solving the Technical Puzzle. The Technical Puzzle consists of 16 puzzle pieces that show the U-Boat schematic in sections.

Players have to assemble three adjacent sections of the puzzle. These sections are where the Hull Breach occurred and the sections forward and aft. Note, that the bow and aft sections have adjacent 'sections' at either end of the U-Boat for the purposes of the Technical Puzzle.

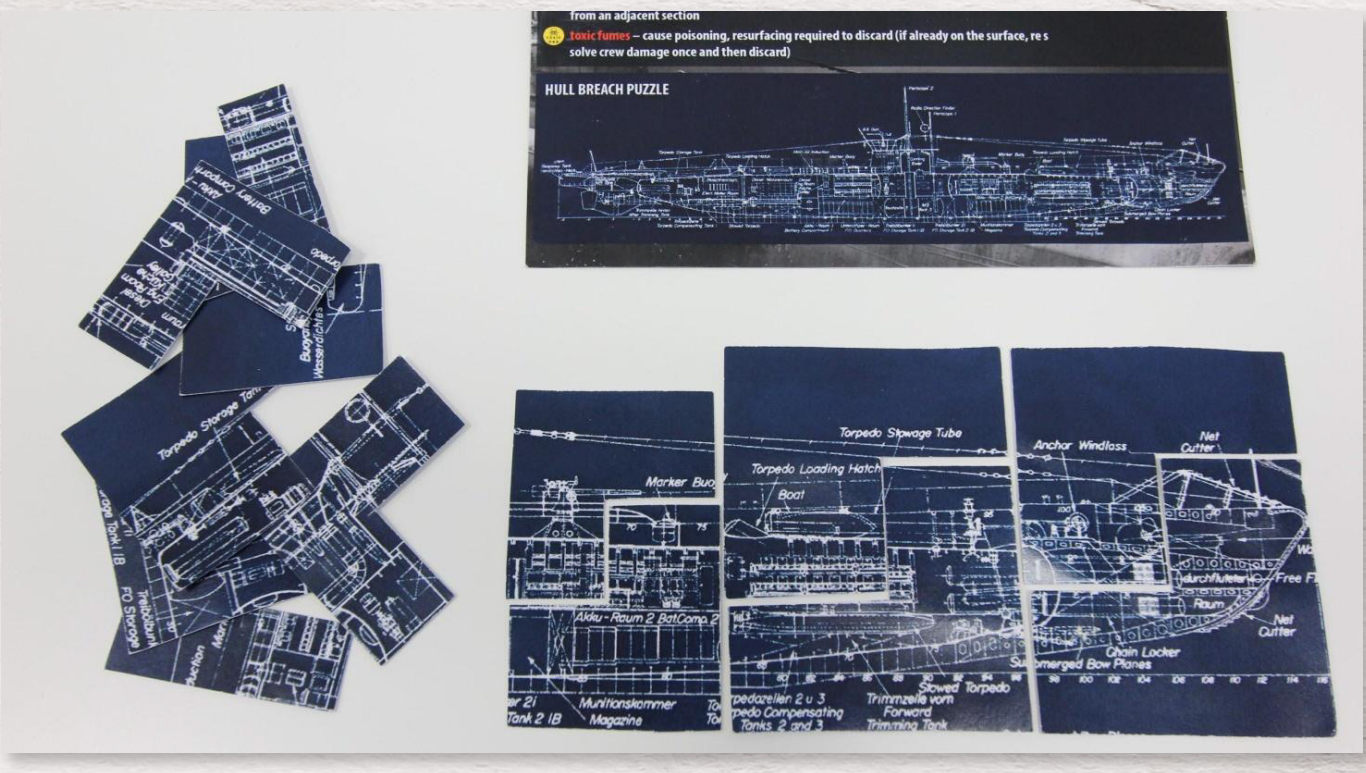
If players do not complete the Technical Puzzle before the countdown ends, they must isolate and flood the section where the Hull Breach occurred. This action is a last ditch effort to save the U-Boat from sinking. Below is a description of how the whole process is handled:

- The difficulty of a repair order to seal a Hull Breach is always 5 (i.e. 5 sailors are required to carry out the repair order for a Hull Breach).
- The sailors must be in the section where the Hull Breach occurred. They are activated using regular Activation tokens.
- The Chief Engineer takes the pile of Technical Puzzle pieces and puts it in front of himself.
- All players may look through the pile and help the Chief Engineer.
- Put the appropriate pieces over the Technical View of the U-boat to solve the puzzle.
- Three sections must be put together before the timer runs out. For example, if there is a Hull Breach in Officer's Quarters, then the Control Room, Officer's Quar-

ters, and the Bow Section need to be assembled to seal the breach.

- Once the puzzle is solved, press the 'YES' button in the app and the timer will stop.
- If players fail to complete the puzzle in time, then all sailors who remained in the section where the hull breach occurred are considered KIA. Put a flooded section token into the section where the Hull Breach occurred.
- Sailors can never move into or through a flooded section. No game effects can target it and it is unaccessible for sailors until the end of the mission.
- Sections that have been cut off, but are NOT flooded, may be used as normal.
- The app retains all its functionalities for the duration of a Hull Breach.
- After resolving a Hull Breach, collect the Technical Puzzle pieces, flip them face down and shuffle thoroughly before putting them away until the next Hull Breach.

The below example shows how to complete the Technical Puzzle if the bow section was breached.



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