

# SAFE PASSAGE

The Lighthouse Keepers (PD-1)



## Contents

Concept .....	3
Concept summary .....	3
Mechanics .....	4
Player 1 Mechanics .....	4
Player 2 Mechanics .....	4
MOSCOW Model .....	5
Input & Controls .....	6
Player 1 – Lighthouse keeper .....	6
Player 2 – Ship coordinator .....	7
Game Flow & Loop .....	8
Tutorial .....	8
UI & UX .....	12
<b>Player 1</b> .....	12
<b>Player 2</b> .....	12
UI MOSCOW Player 2 .....	13
Level & Map Design .....	14
Obstacles .....	14
Level .....	15
Boat Manual .....	16
Objectives & Goals .....	18
Main Objective .....	19
Achievements & Rewards .....	19
Story/Narrative .....	20
Art Direction .....	20
Audio .....	22

# Concept

## Concept summary

**A two-player co-op mobile game** where 2 players need to communicate and work together to make sure ships pass safely through dangerous waters and safely reach their designated docks.

**Player 1** acts as the lighthouse keeper, who needs to look around with their phone and who can see everything that's going on the waters around them, including the ships and possible obstacles.

**Player 2** is a ship coordinator; they control how the ships are moving through a map located in front of them. Player 1 needs to relay information to player 2 about obstacles and navigate them to safety.

### Player 1

#### Controls

Using **gyroscope**, player 1 can look in a 360 rotation around them. They also have limited vertical rotation where they can look up and down to a certain degree. The camera location doesn't change, so moving the phone up and down doesn't move the position of the camera in-game. *Optionally*, they can swipe two fingers inwards or outwards or move a vertical slider on the side of the screen to zoom in and out, in order to get a broader or more specific view of the environment.

#### Screen

Player 1 is located in a 3D environment where they are located on the top of a lighthouse overlooking the sea around it. --

### **Player 2**

#### Controls

Using **touch screen**, player 1 can tap on the map to move ships. Tapping a ship once selects it, at which point they can move the direction in which the ship is moving. The direction is changed by holding down a button that either turns the ship to its right or left in a continuous manner.

#### Screen

Player 1's screen is in 2D. In the middle you have a paper map showing the current locations of the ships. On the left, the player has a guide that can be opened (it slides to the right in view of the screen) to allow the player to identify the boats.



## Mechanics

### Player 1 Mechanics

Player 1 plays the character at the top of the lighthouse who observes the 3D environment and communicates with the other player. Player 1's main goal is to **observe and communicate** properly with the other player based on these observations.

#### Binoculars mechanic

1. The player can move their phone around to look at the environment around them, mimicking binoculars.
2. The player can zoom in and zoom out by pinching two fingers on the screen and bringing them close or away from each other.

### Player 2 Mechanics

Player 2 plays the character who controls the ships based on the information that they are given by player 1. Player 2's main goal is to **interpret information correctly and lead the ships to safety in their respective harbor** based on that information.

## Boat Guiding Mechanic

1. The player can click on a boat on the 2D map to select the boat and “activate it”.
2. Once a boat is “activated”, the player can choose to move the boat to its left or right by holding down the turn right or turn left button. It also shows with an arrow in front of the ship (on the map) in what direction the boat is currently moving.
3. Choosing a direction has the boat slowly rotate in that direction.

## Boat Identification Manual

The player can open a boat identification manual that slides from the side of the screen, where they may obtain information about which boats on the map are which in the 3D world.

*The manual consists of a listing of the three ports, and 2d illustrations of what the types of ships look like that go to that port.*

## Sticker/Notes (future mechanic)

The player can place stickers that represent different obstacles on the map, based on information they have gathered from the other player, so that they may remember where certain obstacles are.

## MOSCOW Model

Here is a model we used to determine which mechanics we needed or should have in the game, and which mechanics we could add in the future, or we would never add in this iteration but still were considered.

### Must have:

- ~~Two player co-op~~
- ~~Gyroscope looking around.~~
- ~~Map with ships and a way to move them.~~
- 1 level
- Tutorial

### Should have:

- ~~Local networking (sending data from phone to phone in unity)~~
- Start menu.
- Feedback on success rate (star system / score)
- 3 levels
- ~~Zoom in and zoom out.~~
- Stickers/notes on map

### Could have:

- Mic input tasks
- Accelerometer input tasks
- A way to identify ships.
- Horn when ship enters screen.
- Ships have different qualities/parameters.
- Collectibles around the map that can be gathered for higher score.
- Crashed ships turn into obstacles
- When tourist ships move past landmarks, they get a note talking about the location with a bit of lore about the world
- Players can leave 'zoomed out' to get more general view with actions to do.
  - Player on screen sees a problem with the power and tells the other player, the player at the top can see that a wind turbine generating power is broken and needs to fix it by communicating the problem to the screen player. The screen player identifies the problem and communicates the specific solution to the player at the top of the lighthouse.

### Won't have:

- Procedurally generated levels
- VR version
- More than 3 levels

## Input & Controls

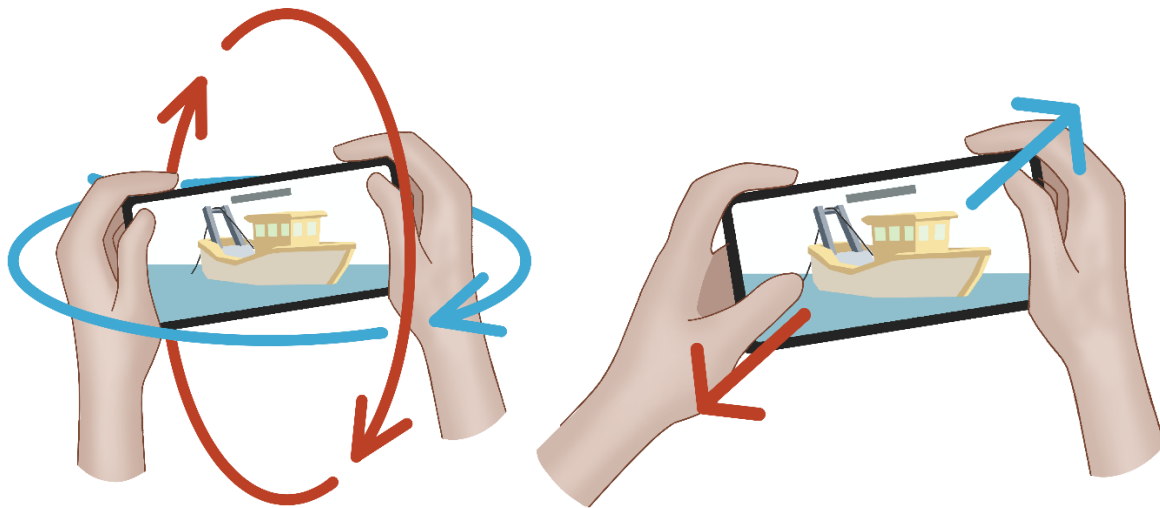
### Player 1 – Lighthouse keeper

### Looking around

Player 1 has the responsibility of looking around the area and relaying information to player 2. Using gyroscope, they can look around the area surrounding the lighthouse in a 360° view. Their camera also has limited vertical movement, being able to look up and down to a degree. The player cannot move around, so although the camera can rotate, it does not ever change locations.

### Zooming in and out

By pinching two fingers on the inner parts of the screen and sliding outwards, Player 1 can zoom in with their camera to get a closer view of things, and they can zoom out by pinching and moving their fingers inwards from the outer parts of the screen.



*Figures: Illustrations used in the tutorial to teach Player 1 how to use the mechanics*

### Player 2 – Ship coordinator

Input from Player 2 only consists of touchscreen tapping and dragging.

### Boat Moving

Player 2 can click with their fingers on the different boats moving on the map. Clicking opens a UI overlay which enables the player to click on two options of movement (right or left of the boat).

### Manual

Player 2 can also click on the manual that is bordering the left side of the screen, which will open the manual and show descriptions/information about which boats (1 to 4) correspond to specific features that may be seen by Player 1.

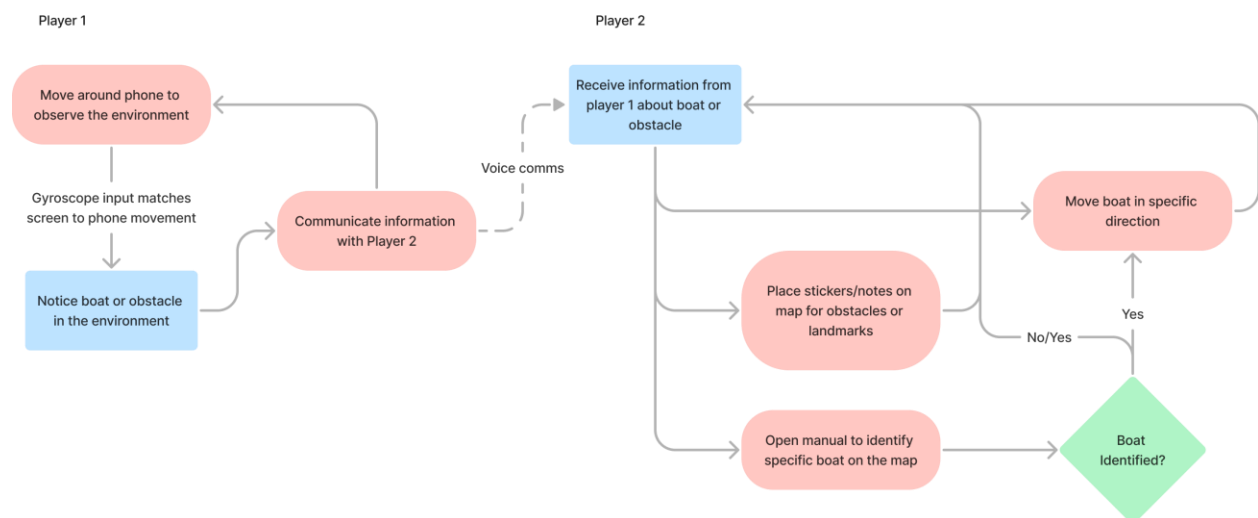
### Stickers (Future implementation)

Player 2 can also drag stickers from the right side of the screen onto the map to mark certain obstacles or landmarks.

## Game Flow & Loop

The game flow is quite simple for both players, as they do not have many actions to perform. In our eyes, this is a good thing as it allows for a strong base that we can build upon by adding diversity and variety to the gameplay through development.

### Game Loop Chart



## Tutorial

The tutorial is told by the old lighthouse keeper who is handing over the reins to the two players and is showing them the ropes. His speech is very direct and uses a lot of traditional speech:

- The sea be a fickle mistress – the sea is unpredictable.
- Keep a weather eye on the horizon – stay vigilant and prepared.



- In the blink of a lighthouse lamp – a short period of time
- Fair winds and following seas – good luck.

### Introduction for both players:

*“So ye be the new hires are ye? This job ain’t for whippersnappers with cold feet, so make sure yer ready for this task, aight?”*

### Player 1 steps:

#### 1. In menu where you choose which player you want to be, explain what each player’s role is

- *“As the ship spotter, it is your task to keep track of the different ships and inform your partner on anything that’s happening around the area.”*  
*“Ye serve as the ship spotter now, tasked with keepin’ a watchful eye on the vessels traversing these waters.*  
*Keep a keen lookout and relay any tidings to yer comrade about the happenings on the high seas around us!”*

#### 2. Moving the camera

- *“Move your phone to look around the area!”* (Player can click to proceed)
- A ship spawns but it doesn’t move yet.  
*“A ship has appeared, let’s check it out!”* (completed when ship is on screen)  
*“Me ship senses be tingling! Let’s investigate our newfound vessel!”*
- *“Press your fingers against the screen and drag outward to zoom in, and vice versa to zoom out!”* (completed when player zooms in)  
*“You young bucks have the luck of using one of them brand new touch-screen binoculars. Back in my day you had nothing but the own peepers in ye skull to scan the ocean waters!”*

#### 3. Relaying information about characteristics of the ships

- *“But where does it need to go? Communicate its characteristics to your partner who can identify where it needs to go with the boat guide!”* (Player can click to proceed)  
*“But what port does this old trawler call home?*  
*Your comrade has the ol’ shipguide to tell them exactly that, and it’s up to you to give them the ship’s characteristics so they can figure it out.”*
- On the top right a button will appear, when both players have pressed it, the ship will start moving.  
*“When yer sure of where the ship needs to go, press the button on top right. When ye and ye pall are both sure we can tell the ship to start moving.*  
*Be warned though, others ships won’t wait for you to identify them, so keep a weather eye on the horizon!”*

**4. Tell player 1 some obstacles can only be seen by them and they need to tell the other player**

- (Only starts when player 2 has finished boat guide tutorial)

Ships starts moving, in the direction of an obstacle.

*"Some obstacles don't appear on your partner's map! It's up to you to tell them how to maneuver around these. (Player can click to proceed)*

*"Now, the ol' map your mate has before them is what you might call a bit... behind the times, so they don't know about the many hazards you can find in these waters.*

*You're their only lifeline against these perils. So keep a good eye on the vessels, or in a blink of the lighthouse lamp they're going to be greeting Davy Jones at the bottom of the sea."*

**5. End of tutorial**

*"And that's all words can help you with, so time to get your sea legs! Keep a weather eye on the horizon and may you have fair winds and following seas, ye whippersnapper!"*

**Player 2 steps**

**1. In menu where you choose which player you want to be, explain what each player's role is**

- *"As coordinator your task is to listen to the info the lighthouse keeper gives you and identify and coordinate ships using this info, in order to bring the ships back the safety of the port."*

*"Yer the new coordinator are ye? Then, in case ye didn't read the job description, let me give you reminder of your responsibilities.*

*As coordinator, it's yer task to identify and navigate the ships to the safety of the bay, using the information and guidance yer spotter is giving ye."*

**2. Explanation of map**

- *"This is the map, here you have an overview of the entire map and the locations of the ships."*

*"On yer map ye can see the seas and land around the lighthouse. Any incoming vessels also appear on this map. Now, our map is... behind the times, so not all dangers of the sea are visible to you. Rely on your spotter for proper navigation of ships!"*

**3. Opening and traversing the manual**

- A ship spawns but it doesn't move yet.

*"A ship has appeared! But where does it need to go? Look at the guide and with the info from your partner you can figure out to what bay it needs to go." (Completed when player opens guide/manual)*

*"A new ship has appeared on our map! But we don't yet know the bay port that this vessel calls home. Consult yer trusty guide as well as your ship spotter on the appearance of the ship to figure out where it's from."*

*"When yer sure of our vessel's destination, continue by pressing the button in the top right corner."*

- On the top right a button will appear, when both players have pressed it, the ship will start moving.

*“When yer sure of where the ship needs to go, press the button on top right. When ye and ye pall are both sure we can tell the ship to start moving.*

*Be warned though, others ships won’t wait for you to identify them, so keep a weather eye on the horizon!”*

#### **4. Selecting ships and controlling them**

- Arrow appears above the ship

*“Now that you know where it needs to go, let’s bring it home!*

*Select a ship and press the arrows to move it port or starboard. Not all obstacles on the map are visible to you, so make sure to listen to your partner on how to move!”*

*(Completed when player turns the ship)*

*“We know the ship’s destination, so let’s get it there! Select a vessel and press the arrows to steer it port or starboard.”*

#### **6. End of tutorial**

*“And that’s all words can help you with, so time to get your sea legs! Fair winds and following seas to you, ye whippersnapper!”*

## Waves

Wave	Ship amount
0. Tutorial	1
1.	1
2.	2
3.	3
4.	4

## UI & UX

### Player 1

When the screen is tapped. A small menu icon appears on the top left of the screen. This opens a menu with the options to restart or go back to main menu.

*(sketches will be added)*

### Tutorial UI

At the beginning of the game, a bit of UI is used in order to explain the controls to the player. These happen in order:

- A small illustration of a phone being held by hands with arrows to the right and left of it. It disappears when the player moves the phone left and right.
- An illustration of two fingers touching the inner parts of the screen, with arrows pointing outwards. It disappears when the player zooms in.

### Input UI

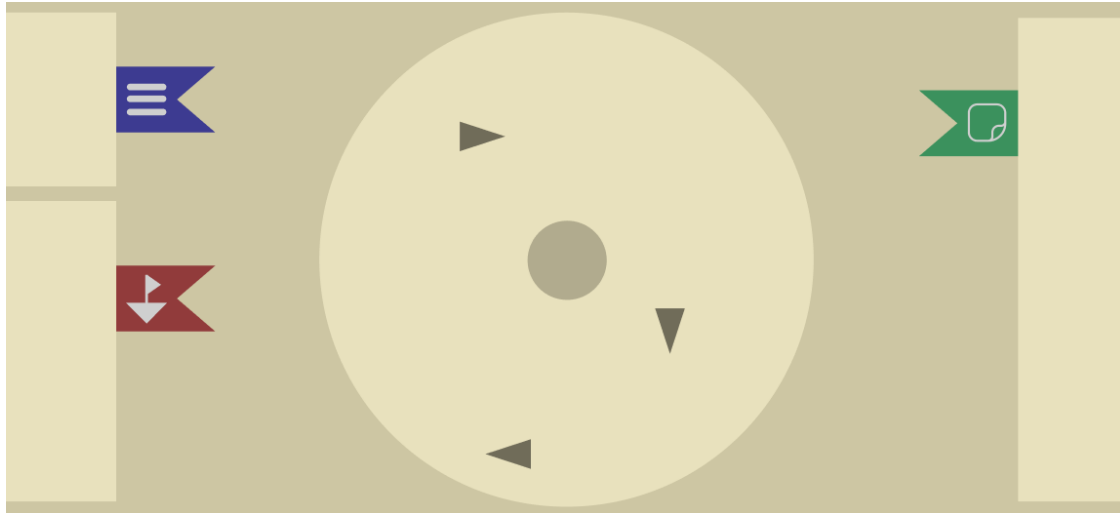
On the top right, player 1 has 3 small lights in blue, green and red.

- Whenever a ship comes in, the blue light turns on for ~3 seconds while a horn plays.
- Whenever a ship reaches the correct port, the green light turns on.
- The red light turns on when a ship crashes and sinks along with sounds of creaking and snapping wood.

### Player 2

On the top left you have a small menu icon that, when tapped on, brings up a menu with the options to restart or go back to main menu. It's possible to have the guide and stickers menu as pop-up menus as well.

Quick Layout sketch:



## UI MOSCOW Player 2

### Must have's

- Ship buttons that can be clicked to activate them.
- Buttons to move the ships in different directions.
- Buttons to open the ship manual.

### Should have's

- Visual feedback on buttons pressed.
- Visual indication when boat spawns
- Audio feedback (moving the paper pages, clicking on the buttons)

### Could have's

- Ability to label the boats on the map from 1 to 4.
- Zoom in on the map.
- Button to open a stickers placing tool.
- Ability to put stickers down for obstacles.

### Won't have's

- Drawing a path for the boats instead of moving them in the moment
- Note taking tool.

## Concept/Sketch 1



## Level & Map Design

### Obstacles

Obstacles could come in 3 different forms:

- Static obstacles: Obstacles that are preset in level design which do not move.
- Dynamic obstacles: Obstacles which move either back and forth in an area, or randomly across the water.
- Event obstacles: Obstacles that only appear every once in a while, appearing after a warning.

#### Static Obstacles

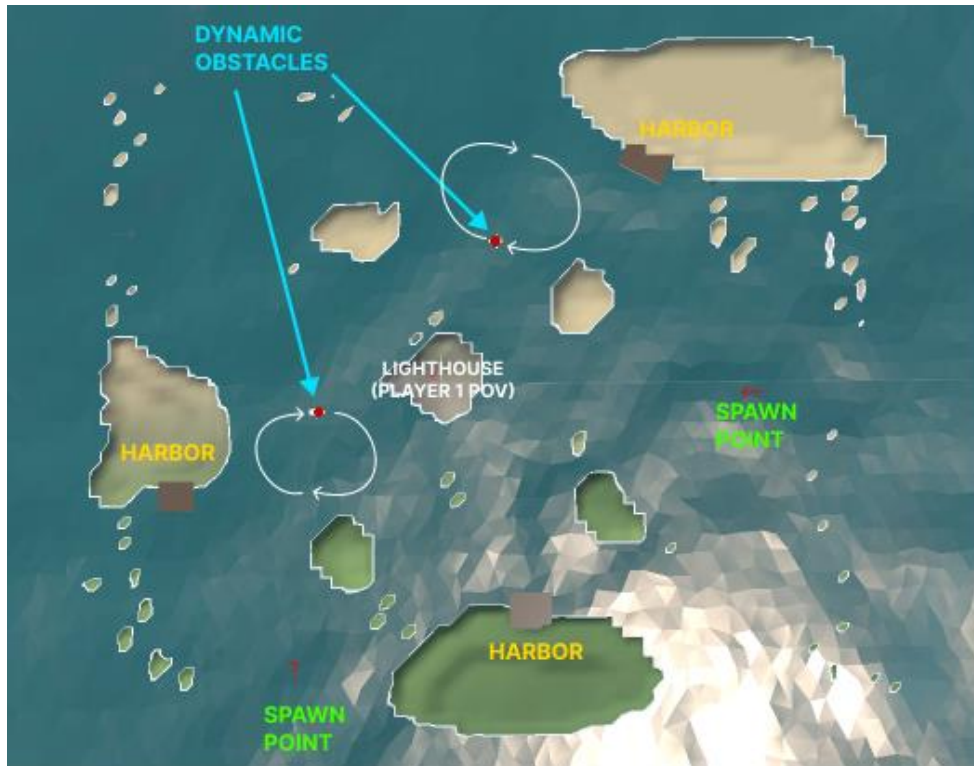
- Rocks
- Shipwreck (from a ship being destroyed).
- Iceberg
- Buoy

#### Dynamic Obstacles

- Rowboat (maybe)
- Tree logs
- The boats themselves
- Monsters

## Event Obstacles

- Kraken attack
- Whirlpool



Level design is not very complex for this game in terms of designing the map, as we only have one map where ships spawn in waves. In the picture above, it can be seen how we have laid out the map for prototype 2.

The map has 2 **Spawn Points**, where all ships that must be controlled spawn from. **The arrows** on the spawn points show the direction the ships will go after spawning.

There are 2 dynamic obstacles (rowboats which move in circles). Static obstacles are shown by all land/terrain, such as islands and rock formations.

**Harbours** are the endpoints of boats' journeys, as the boats must be guided there to earn points.

## Level

### WAVE 1

1 ship

Spawn 1 to port 1 / richtown – Tourboat Jip

## WAVE 2

2 ships

Spawn 3 to port 3 / folktown – Fishing boat Robert

Spawn 2 to port 1 / richtown – Sailboat Hester

## WAVE 3

3 ships

Spawn 1 to port 2 / navytown – Tourboat Alex

Spawn 3 to port 1 / richtown – Fishingboat Yvens

Spawn 3 port 3 / folktown – Sailboat Stan

## WAVE 4

4 ships

Spawn 2 to port 2 / navytown – Fishingboat Oceania

Spawn 3 to port / Folktown - Imme

Spawn 2 to port 3 / navytown – Sailboat Luna

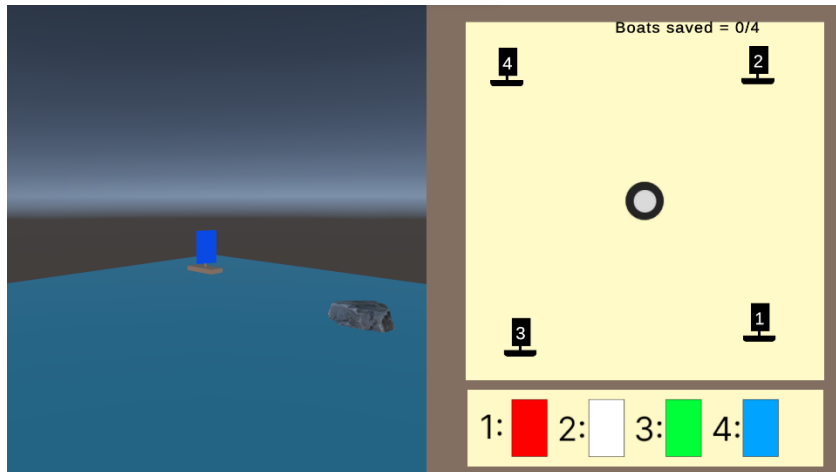
Spawn 1 to port 1 / Richtown - Hester

## Boat Manual

The boat manual is the tool which Player 2 must use while playing the game. The manual helps to identify which boat is which, allowing for the player to complete their task in the game.

In the first prototype, we had the manual be just a small identification tool from observing the ships' different colors.





Expanding upon this, the idea is to have more detail on different types of boats to identify them. The 3 different boat types would be fishing boats, sailboats, and tourist boats. In the example below, I've used 3 traits which help to identify fishing boats: Flag color(s), number of lifebuoys and name of the boat.

The table below shows the different rules for each type of boat. There are 3 types of boats that can all go to 3 different harbors. For example, FishBoats going to NavyTown must have less than 2 lifebuoys, their flag must have the color blue, and their name must start with a vowel.

FishBoat IDing				SailBoat IDing				TourBoat IDing			
Harbour	Buoy #	Flag Colors	Name	Harbour	Buoy #	Flag Colors	Name	Harbour	Buoy #	Flag Colors	Name
A: Navy Town	<2	Has blue	Starts with a vowel	A: Navy Town	>2	Has blue	Ends with vowel	A: Navy Town	is 4	Has blue	Has an X
B: FolkTown	<2	Always has 2 colors	No name	B: FolkTown	<2	Any color	Starts with consonant	B: FolkTown	<2	No orange	Starts with a vowel
C: RichTown	>3	No white	>4 letters	C: RichTown	has 4	Always one color	>4 letters	C: RichTown	has 0	Two colors	>4 letters

With the rules defined above, we could create a list of various boats (18 boats, 6 for each type of boat):

Fishboat variants	Buoy #	Flag Colors	Name	Sailboat variants	Buoy #	Flag Colors	Name	Tourboat variants	Buoy #	Flag Colors	Name
NT 1	3	Blue and White	Oceania	NT 1	4	Blue and white	Luna	NT 1	4	Blue and white	Alex
NT 2	4	White	Omen	NT 2	3	Blue orange &	Brittania	NT 2	4	Blue and orange	Phoenix
FT 1	1	Blue and White	Robert	FT 1	1	white		FT 1	1	White	Imme
FT 1	0	Orange and Blue		FT 2	0	Blue & Red	Stan	FT 2	0	Blue	Express
RT 1	4	Orange and Blue	Yvens	RT 1	4	Blue	Hester	RT 1	0	White and orange	Jip
RT 2	4	Orange	Serendipity	RT 2	4	orange	Saxion	RT 2	0	Blue and orange	Celerity

To make it simple for the player, we then defined a set of checks in a list the player can go through to find where the boat they are identifying is going:

#### Rules for FishBoat

If the boat's flag has 2 colors and the boat has no name, it is going to FolkTown.

Else, if the boat's flag does not contain white, it is going to RichTown.

Else, the boat is going to Navy Town.

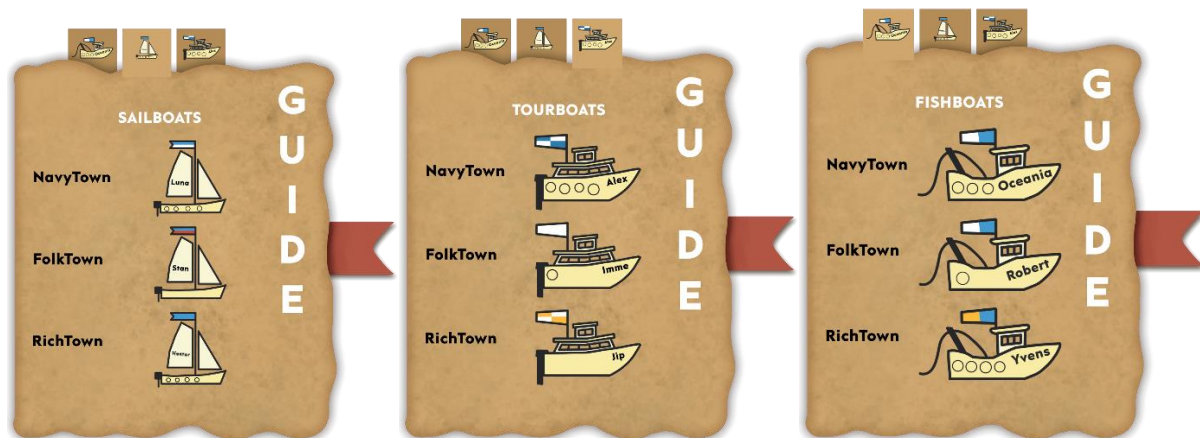
#### Rules for SailBoat

If the boat has more than 2 buoys and its name ends with a vowel, it is going to Navy Town.

Else, if it has less than two buoys, it is going to FolkTown.

Else, the boat is going to RichTown.

After testing, we found that players did not like reading all this information and did not end up using the manual at all, so we decided to go for a simpler approach, where we would show pictures of the boats in the manual, stating exactly where they are going. This way, players can know based on the description they are given and what they see in the manual.



## Objectives & Goals

## Main Objective

The goal of the game is to guide boats to different harbors, by moving them away from static, moving and event obstacles that stand in the way of the ships.

Identifying ships based on their appearance tells the player where they must take the ships in terms of the harbors.

## Achievements & Rewards

Rewards for getting ships to safety in the right harbors.

Coins are rewarded for getting ships to safety.

You can also get more coins from performing actions based on the different types of ships:

- Fishing boats taken through schools of fish gives extra coins.
- Sail boats taking the least turns possible to get to their harbor will give extra coins.
- Tour boats bypassing landmarks before arriving at their harbor will give extra coins.

### Score formula

1000 gold coins = 100% completion / perfect score

For every ship that reaches a port you get 50 gold coins

If the ship reaches the correct port, this is increased to 100 gold coins

For every ship that crashes, 100 points are deducted of the points, this can go into the minus.

Total score =

100%

Your pay came in!

1000 gold coins

## Story/Narrative

### Synopsis

Players 1 and 2 play as the new lighthouse keeper and coordinator who are taking over an old man retiring from the job. The lighthouse is located in the middle of an archipelago where 3 coastal towns are located. Many ships travel through the waters, where many obstacles such as rocks, other boats and sea creatures stand in the way. The lighthouse's light broke down recently, and so boats must be guided through the waters without light at night, which is done through telecommunication from the lighthouse.

The new lighthouse workers are taught by the previous keeper on how to do this job, and warns them that if they let multiple boats crash, they might lose their new jobs.

### Theme

Isolation

## Art Direction

### Color Palette



### 3D

Low-poly, simple color textures.



2D





## Audio

Audio is minimal in our game, but still present. Most sounds are realistic and organic, mostly for ambience, to convey the feeling of being in the middle of the sea.

Music was also made for the menu screen, which attempts to convey feelings of loneliness and mystery, as is the theme of our game.