Dead Run

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1. Backstory

Captain Jonah Livingston (known as "The Dreaded Jook" to his rivals) recently returned home from his most successful quest yet: the acquisition of the map to the legendary lost treasure of Gurnet's Head.

Eager to celebrate their discovery, Jonah and his crew congregated at their favorite pub, The Hallowed Lady. After hours and hours of emptied pints and bawdy stories, the Captain (perhaps with somewhat impaired judgment) stood on his table and bellowed, "We sail at dawn! The treasure of Gurnet's Head will be ours!" His men sprung to their feet, raised their tankards, and roared with excitement.

It was then that he captain realized his mistake. The Hallowed Lady was also a haunt for every pirate, scoundrel, and buccaneer on the high seas. The captain's glazed eyes scanned the room and spotted many men from other ships make their way towards the door. Paranoia kicked in. They now must be hasty. They would undoubtedly have company along the way. It was no longer just a treasure hunt; it was now a race against time and his bitter enemies for the lost treasure of Gurnet's Head.

2. Objective

Guide Captain Jonah Livingston through each level to locate the landmark on the treasure map leading to the lost treasure.

3. Core Mechanic

The player must steer Captain Jonah Livingston's Ship, The Treacher, through the high seas by following the wind patterns in order to gain speed. When battling enemies, the player must position their ship broadside because the cannons fire from the sides of the ship.

4. View

Top-down (bird's eye view) 2D game with a rich color palette.

A wind/weather vane will show the direction of the wind. The wind's current speed will be displayed underneath the wind vane. A bar meter will show the amount of damage remaining of the ship's hull (structural integrity).

Ship Screen
The ship screen will display the current stats of the player's ship and upgrades purchased and not purchased.

Map Screen
The map screen will be displayer at the beginning of each level and will have the look of an old treasure map. The map will show the Caribbean Sea and have multiple landmarks representing each of the levels. The current position of The Treacher (the current level) will also be displayed.

5. Controls

Control	Result
W	Increase sail
S	Decrease sail
A	Turn left
D	Turn right
E	Fire Right Cannon
Q	Fire Left Cannon
Mouse Click	Interface selection (intro screen, ship screen, etc.)

6. Gameplay

Like a real sailing ship, The Treacher does not move on its own; it requires wind to gain speed. Utilizing the wind is critical for controlling the ship. The player must use the wind vane to determine the direction of the wind and line up their ship to catch the wind.

The physics system will model the wind's speed and direction in order to capture the feel of maneuvering a large vessel but keeping the focus on fast-paced gameplay.

Ship Speed
A ship's current speed is based on the wind's speed, the direction of the ship relative to the wind direction, the ship's sails, and the ship's wind multiplier.

Ship speed = (wind speed) * (direction difference) * (sail level) * (wind multiplier)

Wind Speed and Direction
The wind can blow in one of 360 directions (which simulates the 360 degrees around a circle or compass). The wind speed and direction will be randomly determined at regular time intervals and will be based on the wind's previous direction and speed.

In a normal level, the wind speed will be set to a specific range and the wind direction will change a certain amount based on the wind's current direction in order to avoid drastic changes in speed and direction. Each level will also have its own wind speed range and maximum wind speed values. Wind speed and direction will be recalculated at regular time intervals, which may vary depending on the level.

Property	Value
Wind timer	5 seconds
Wind speed range	4 – 8 knots
Wind change	0 - 50 degrees

Level 1 Wind Properties

Wind Timer: The time (in seconds) the wind's speed and direction will change.
Wind Speed Range: The range (minimum and maximum) of the wind speed.
Wind Change: The maximum amount (in either direction) the direction of the wind will change from its previous direction.

The relationship between the ship's current direction and the direction of the wind will affect the ship's speed. The ship's speed will be reduced by a certain percentage based on the directional difference. This range is 20% to 100%.

For example, pointing the ship in the same direction as the wind will result in 100% of the ship's maximum speed (a dead run), whereas going completely into the wind will result in an 80% reduction in speed (wind speed will be multiplied by .2). Enemy ships will follow the same mechanics.

Sail Level
The player can use the W and S keys to control the level of sail on their ship. There are five levels of sail: fully open (5) to fully closed (1). The level of sail will determine the percentage of speed gained from the wind the player's ship is currently catching.

Number of Sails	Speed %
1	20
2	40
3	60
4	80
5	100

Wind Multiplier
A ship's wind multiplier is the primary representation of how fast the ship is. After the wind speed, direction difference, and sail level are calculated, the values get multiplied by the wind multiplier to determine the ship's current speed.

Combat
When a player fires the ship's cannons, all cannons of the ship fire and travel in a straight line. The cannons are "dumb" weapons, meaning that the only thing determining whether they hit an enemy is the player's positioning and timing.

Ship Statistics
All ships (enemy and player) have a variety of statistics that determines their behavior and effectiveness during play.

Type	Size	Max Speed	Wind Multiplier	Turing Speed	Hull Damage	Weapons	Firing Rate	Projectile Speed	Range	Damage
Clipper	Medium	fast	x2	medium	10	2	2	medium	3	2
Dinghy	Tiny	medium	x1.5	fast	1	1	1	slow	1	1
Frigate	Medium	medium	x1.5	medium	20	3	2	fast	5	3
Galleon	Huge	slow	x.8	very slow	50	4	4	fast	6	5
Sloop	Small	fast	x2	fast	5	1	1.5	medium	2	2
The Treacher	Large	medium	x1	slow	30	1	3	medium	4	4

Ship Statistics

Size: the size of the ship
Max Speed: the maximum speed the ship can move regardless of the ship speed calculation
Wind Multiplier: the number the wind speed is multiplied by to determine the ship's current speed
Turning Speed: how quickly the ship can turn (currently relative value only)
Hull Damage: amount of damage the can take before it is destroyed
Weapons: number of attacks on each side of the ship
Firing Rate: how often the ship can fire its weapons
Projectile Speed: how fast the projectiles travel
Range: how far the projectiles travel before they
Damage: the amount of damage the weapon does on a hit

Enemies & Obstacles
There are many dangers in the Caribbean Sea. Obstacles such as jagged rocks, reefs, and sandbars can damage your ship and must be avoided. Whirlpools and typhoons will twist and turn the direction of the ship creating a loss of control. The ancient seas can summon monsters of the deep upon ships such as giant squids, sharks, and other deadly creatures. Cannons are the best defense against these beasts but sharp maneuvering can provide escape.

All enemies and obstacles use the ship statistic system but may not have all of these statistics depending on the nature of the enemy or obstacle.

Type	Size	Max Speed	Wind Multiplier	Turing Speed	Hull Damage	Weapons	Firing Rate	Projectile Speed	Range	Damage
Reef	any	NA	NA	NA	NA	1	0	0	0	4
Jagged Rock	any	NA	NA	NA	NA	1	0	0	0	3
Sandbar	any	NA	NA	NA	NA	1	0	0	0	1
Giant Squid	varies	fast	0	fast	10	1	1	2	1	2
Giant Shark	varies	fast	0	fast	20	1	*	NA	0	5

*The giant shark will attempt to ram the player's ship.

Sample Enemies

A range of zero means the enemy or obstacle must touch the player's ship in order to do damage. The player will only take damage from enemies and obstacles with a range of zero once, even if they remain in contact with that obstacle. If the player moves so the ship is no longer in contact with the obstacle and then comes into contact with the enemy or obstacle again, the player's ship will take damage again.

Whirlpools
A whirlpool will pull both the player and enemies towards it. Although a whirlpool is a water-based phenomenon, for the game's purposes, it will change the wind's speed (drastically). The size (range) of a whirlpool will vary.

Enemy Frequency
The appearance and frequency of enemies will vary based on the properties of each level. Each level will have a specific set of enemies that may appear in that level along with an associated frequency rating. At specific time intervals, the game will select enemies based on that value and place the enemy at a random position on one of the edges of the screen.

Enemy Behavior
Playtest note: Given the nature of the game (enemy pirates hunting the player), the AI system will be based on the player's location opposed to a set movement pattern.

Checkpoints
Before each level, the treasure map screen will appear and show the player's current position in the Caribbean. This map has no direct relation to the game itself; it merely sets the stage to show how many levels the player must complete before reaching the end.

The treasure map is comprised of multiple sections, each representing a level. Each level is essentially an enclosed area of the ocean. Within each level is a landmark that the player must find. Each area on the map will display the name and a drawing of the landmark in that area. Finding this landmark essentially means the player is "on the right track" towards finding the treasure.

While in a level, the player will not have a map that leads to the landmark. The idea is that Jonah does not know the exact location of each landmark, only the relative position of the next landmark to the previous. This is the reason he must find each landmark in order in order to find the treasure of Gurnet's Head.

A landmark is found when the player sails near it and it appears on screen.

At each landmark, a boss enemy (rival pirate, sea monster, etc) will be waiting for battle. When the landmark is found, the boss will revealed by moving onto the screen. No other enemies will spawn when the boss battle begins. Defeating the boss will allow the player to proceed to the next level (the next area of the treasure map).

Scoring
The player's progress is primarily tracked by advancing to the next successive level.

The player also gains booty by defeating pirates. Booty allows the player to upgrade The Treacher. When the player destroys an enemy ship, his booty total is instantly increased.

Each level will contain a port which the player must find that will allow them to upgrade their ship or the player will only be able to upgrade their at the end of each level (TBD).

Ship Upgrades
Each ship statistic will be able to be upgraded: max speed, wind multiplier, turning speed, hull damage, number of weapons, reduced firing rate, projectile speed, range, and damage.

Losing
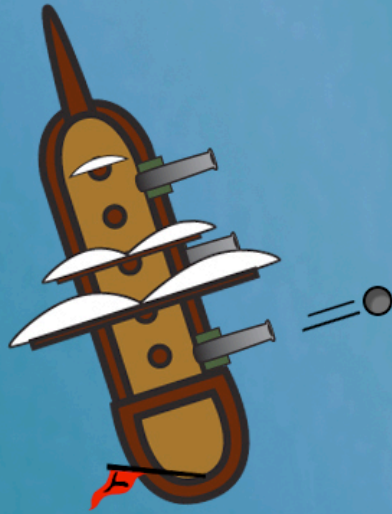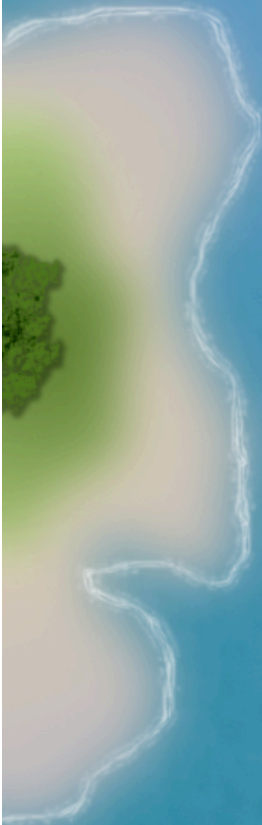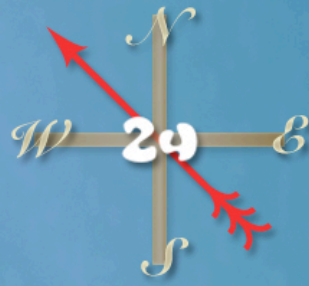When the ship's hull meter is depleted, The Treacher is destroyed.

Winning
Reach the southeast corner of St. Georges Island to find the ancient treasure of Gurnet's Head!

7. Singular Piece of Joy

Maneuvering the ship to bring your cannons to bear against enemies.
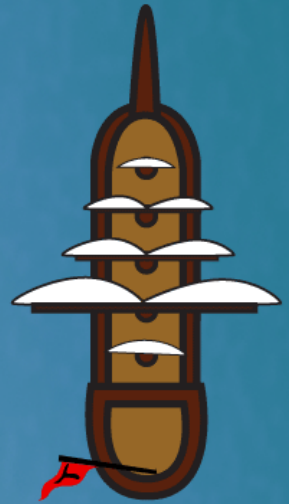
8. Screenshots

Sail Levels

Level 1   2   3   4   5