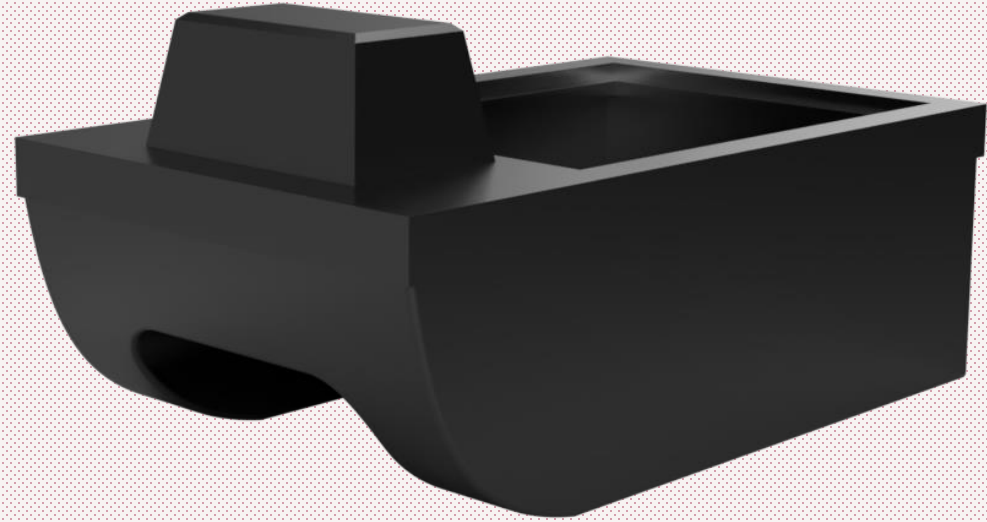


# Test Readiness Review Pt. 1



By: Tamara McCaskill, Joseph Earnest, Manning Owens, Steven Harrington, Bryson Potts





Bryson Potts



Joseph Earnest



Manning Owens



Tamara McCaskill



Steven Harrington

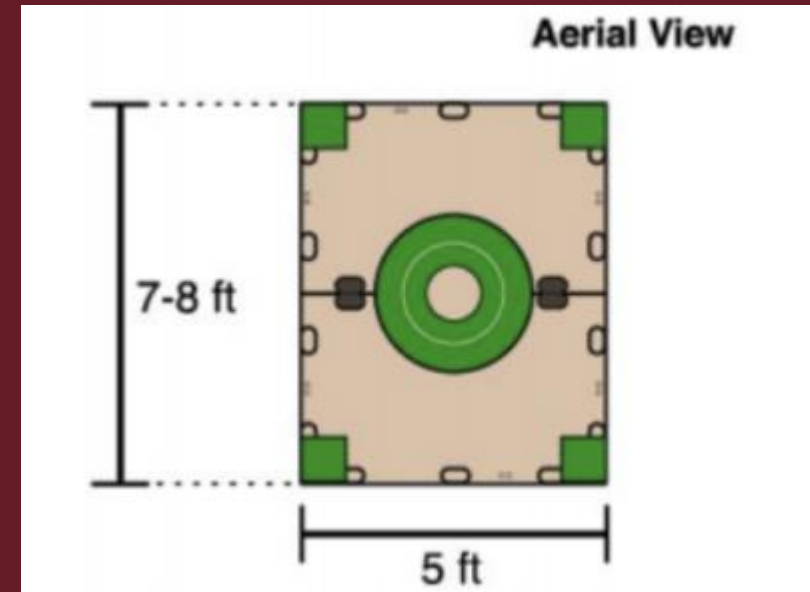
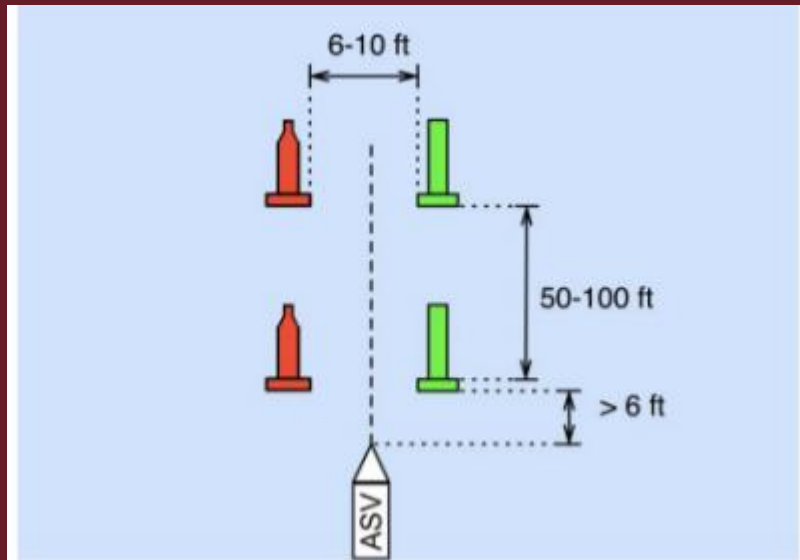
# Our Team

# Project Overview

- The goal of our project is to design and build a boat with autonomous function capable of completing the course objectives for the 2021 RoboBoat Competition.

# Project Background

- RoboBoat is an international competition hosted by RoboNation in Daytona, Florida.
- Competitors create autonomous surface vehicles (ASV) to complete simplified tasks.
- The tasks simulate real world challenges found in the maritime industry such as surveillance, object delivery, and navigation.



# Previous Winners



VANTEK 2020



Institut Teknologi Sepuluh  
Nopember 2019



Embry Riddle 2014

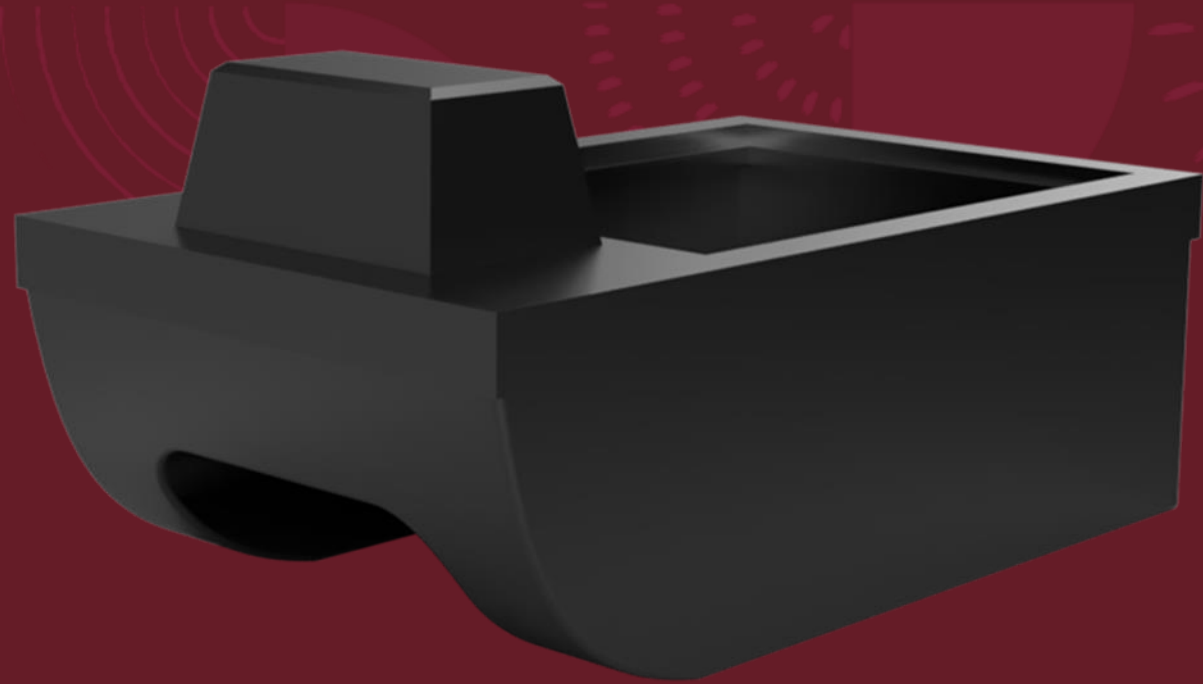
# As a Result of Covid...

The RoboBoat 2021 competition was held online

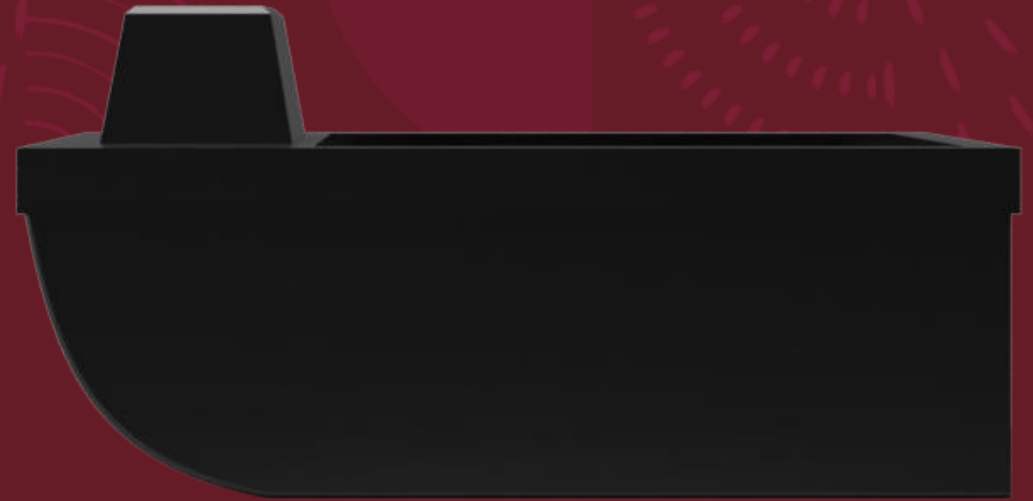
Deliverables for the competition included:

- Short Skills video
- Detailed Technical Report
- Team Website (<https://pcspear.org/the-2020-2021-team/>)





H



L

## B.O.A.T

- Length is 1.2 meters
- Height is 0.7 meters
- Material of construction is E6 Fiberglass
- Weight estimate of Hull + Lid is 13.26 Kg or 29 lbs. (SolidWorks material estimate)

# Status Update

Unable to manufacture B.O.A.T at Gulf Coast

- Must make mold and layup B.O.A.T by hand

Begin testing

- Hull
- Sensors + integration w/ EE students



# Assessment Plan

## Floatation

- Observe floatation capabilities
- Floats for at least 30 mins
- Floats at desirable stability

## Stability

- Does it sit level?
- Does it flip when force is applied.

## Sub-Systems

- Test the LiDar tilt mechanism
- Test the propulsor hot-swaps

## Operation

- Does the boat work after EE integration?



# Floatation and Stability

Possible locations to test the boat include:

- Gulf Coast Pool
- The Bay

Can test as early as the 19<sup>th</sup> of July depending on:

- Boat being manufactured
- Weather
- Authorization

# Sub-Systems and Operation

Prototypes consists of:

- The Propulsor Hot-Swaps
- The LiDar tilt mechanism

The testing can begin...

- After the B.O.A.T has been constructed
- EE has integrated their components

# Safety Plan

Safety concerns that are present in testing

- Person falling in water
- Boat flipping/sinking
- Boat getting stranded in the middle of water
- Boat catching on fire
- Collision between boat and obstacles

# Safety Plan

Avoiding those concerns

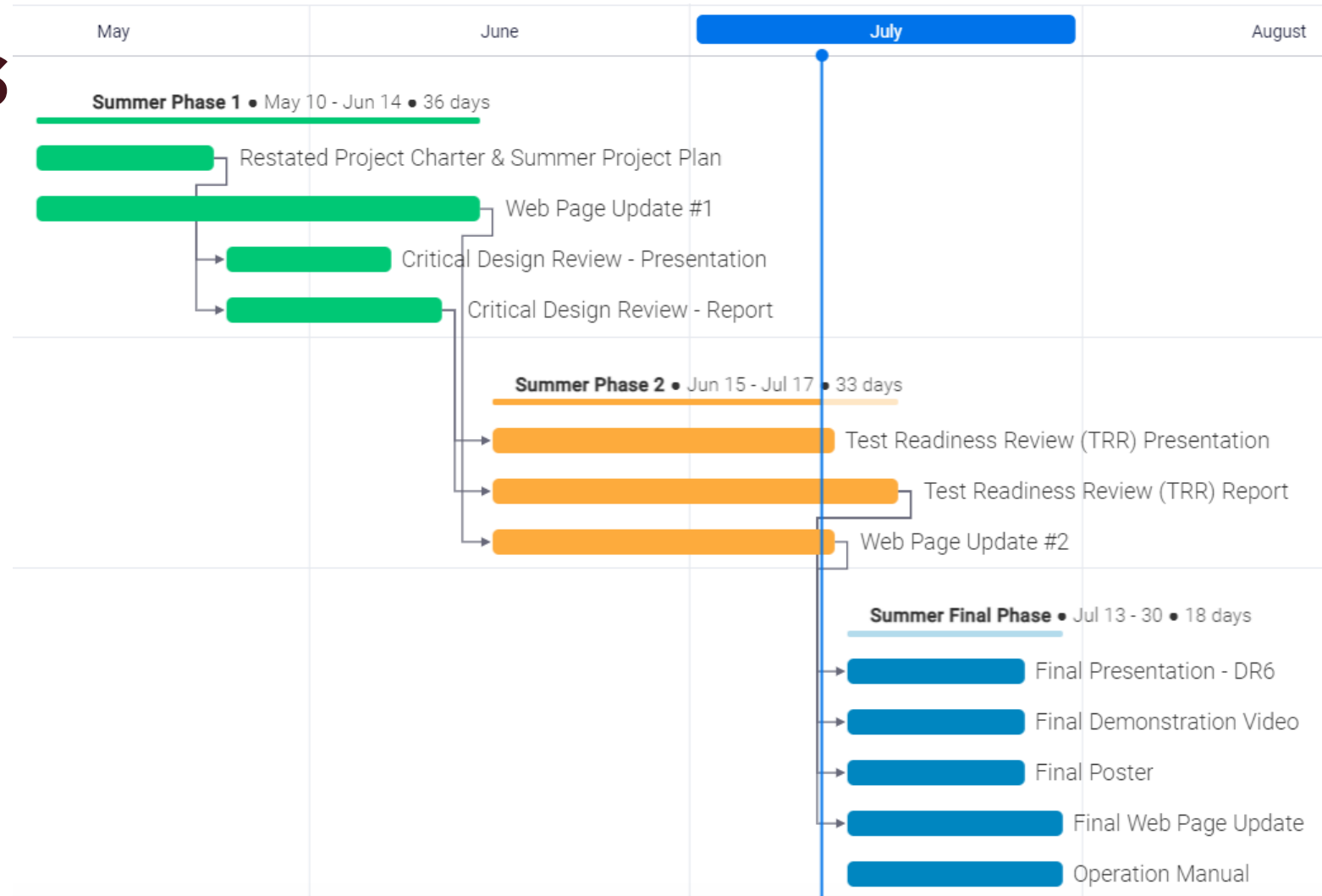
- No running near water, also have floatation devices on hand
- Ensure boat is fully charged, connections are secure
- Start at low power, move to high power
- Have a fire extinguisher on hand
- Clear unwanted obstacles from water

# EE Integration

- The Electrical Engineers will be writing the code and handling software
- The Mechanical Engineers will assist with wiring/hardware as needed
- After hull fabrication is completed we will hand off to EE for the completion of electrical integration.

# Remaining Items

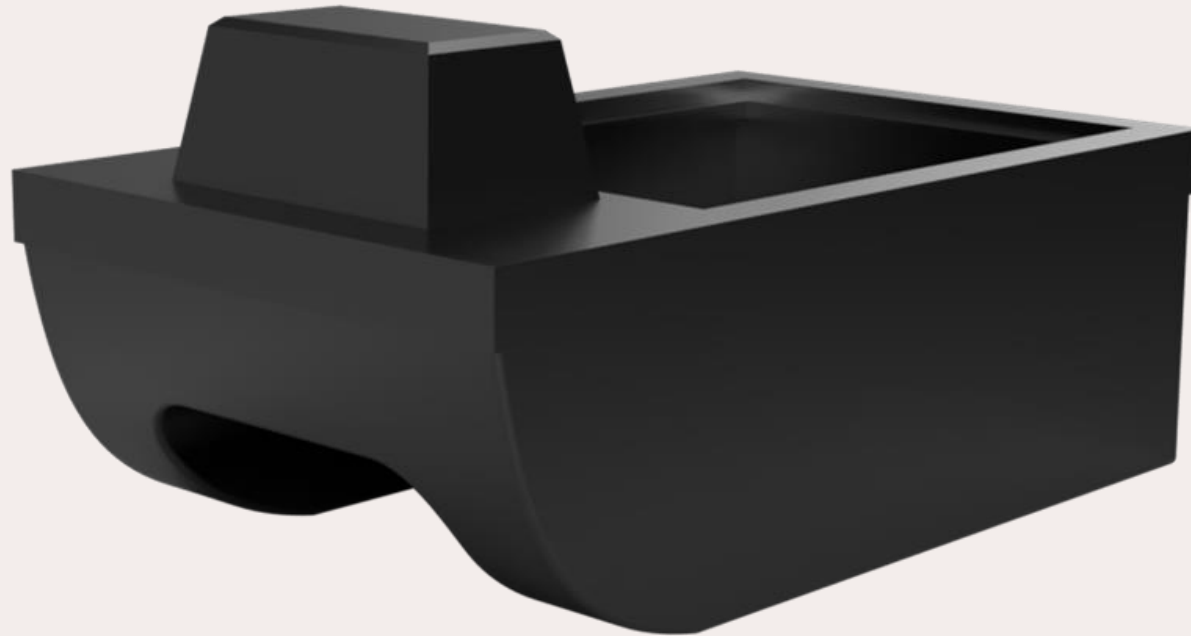
- Lid and Hull Fabrication
- Final Presentation - DR6
- Demonstration Video
- Final Poster
- Final Report
- Create Operation Manual
- Finalize Webpage







# Questions?



**B.O.A.T**  
(Best of All Time)