Rescue Hydro-Board

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Problem Identification

Lifeguards need an easier and more efficient way of reaching drowning victims in large bodies of water. Currently, lifeguards manually swim out to the victim and must carry them to shore. Because of this, the lifeguard is fatigued and may not be able to provide the best help to the victim after delivering them to shore

Technical Specifications

Thrust Force of the Motor: 30 lbs; 133.45 N

Run Time : 75 min @ top speed and 10 hr @ low speed

Charge time: 45min

Battery Specifications: 25.9 V LI Batteries

Weight of Board + Passengers: 435 lbs

Top speed: 7.5 mph

Future Vision

As technology advances, stronger motors, more efficient batteries, and lighter weight technology will be available for incorporation to the board. With more advances to the board, distressed victims can be reached more easily with less effort.

The vision of the second-generation board is to incorporate AI into the operating system. The goal behind creating an autonomous jet surfboard would be to make a self-driving and docking jet-surfboard. This would allow for the first responder to attend to the victim while the board navigated back to the shoreline.

Competitive Analysis

Indirect competitors could be any sort of water-type vehicle. These include jet-skis as well as traditional rescue boards and surfboards. Jet skis allow a user to get out to the ocean quickly; however, they are mainly used for personal reasons and are too big and heavy for lifeguard personnel to easily maneuver and use.

Some other possible competition are other companies that have a similar design, but different intention. These boards; however, are mainly for recreational and personal use.

Product Development Process

The entire first semester saw the team design and plan the building of their hydro-board.

The beginning of the second semester saw the team look into suppliers for their different parts, such as their motor, buoy system, and surfboard.

The end of the third semester saw the team receive all of their supplies and begin assembly of the hydro-board.

Lessons Learned

Supplier Research:

The team learned that researching multiple suppliers will help if an unexpected event happens and their original supplier is not longer able to supply their product.

Standards:

The team needed to learn about the multiple standards and quality specificatios that needed to be followed when designing and building their product.

Gantt Chart