



Team #35: Subaquatic ROV

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Sponsor: Patrick Laley

PROJECT OBJECTIVES

- Create a proof of concept design for project sponsor, Patrick Laley
- Produce a working underwater ROV that can complete the following:
 - Full Range of Motion
 - Retrieve Lost Golf Balls
 - Provide visual feedback

MANUFACTURING/ASSEMBLY



C&C Frame



Welded Housing Clamps

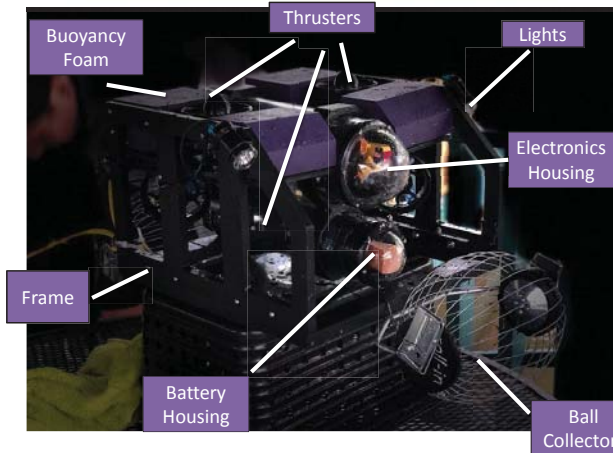


Thruster Mounts



Epoxied Electronic Connectors

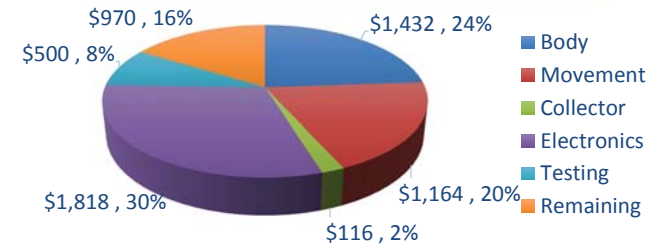
ASSEMBLED PROTOTYPE



CONTROL HARDWARE



BUDGET BREAKDOWN

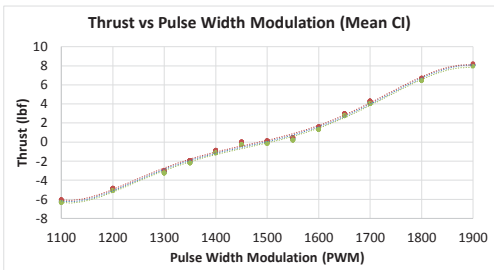


TESTING AND VALIDATION

Thruster Power

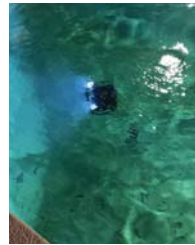


Thruster Test Device



- Testing for thruster strength performed in a tub attached to scale
- After analysis, thrusters performed close to manufacturer strengths

Full Systems Tests



ROV During Pool Test

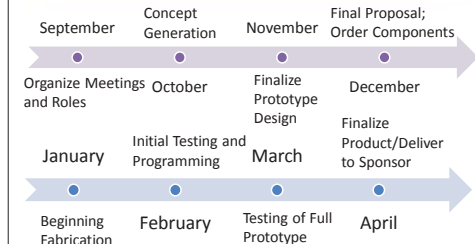


ROV During Pond Test

Results of Full System Tests					
Average Output Thrusts per Thruster (lbf)					
Down	Up	Planar (Forward & Reverse)	Strafe (lbf)		
9.83	7.49	4.23	3.72		
Other Characteristics					
Battery Life (min)	Operating Speed (ft/s)	Rotational Speed (rev/s)	Collection Rate (ball/min)	Collection Rate	1 Dive= 5 min
34.75	1.65	0.39	1.29	6.43	
Measurable Specification Goals (x)					
Thrust (lbf)	Battery Life (min)	Mobility (ft/s)	Retrieval Rate (ball/min)		
x ≥ 4	x ≥ 60	x ≥ 1	x ≥ 1		

- ROV was placed in a pool for operations testing
- Once all data was taken, ROV was brought to the LSU Golf Course to test collection
- Numbers displayed are an average of 7 test runs

PROJECT TIMELINE



CONCLUSION

The deliverable meets all requirements by:

- Traversing water with full range of motion
- Video feedback
- Golf ball collection

Adviser: Dr. Warren Waggenpack