

A yellow ROV (Remotely Operated Vehicle) is shown floating in water. The ROV is constructed from yellow plastic tubing and has several red and white sensors or cameras attached to its top. A white circular camera lens is visible in the center. The ROV is connected to a yellow cable that runs across the water's surface. The background shows a concrete structure, possibly a dock or pier.

Affordable ROV's

By

David Baker

President of On the Water Inventing Co.

- At MIT, one kid wanted to build a SeaPerch. If he was building one, I decided I would build one too for the fun of it.

SeaPerch



Purpose

- To be a fun toy to play with in the pool

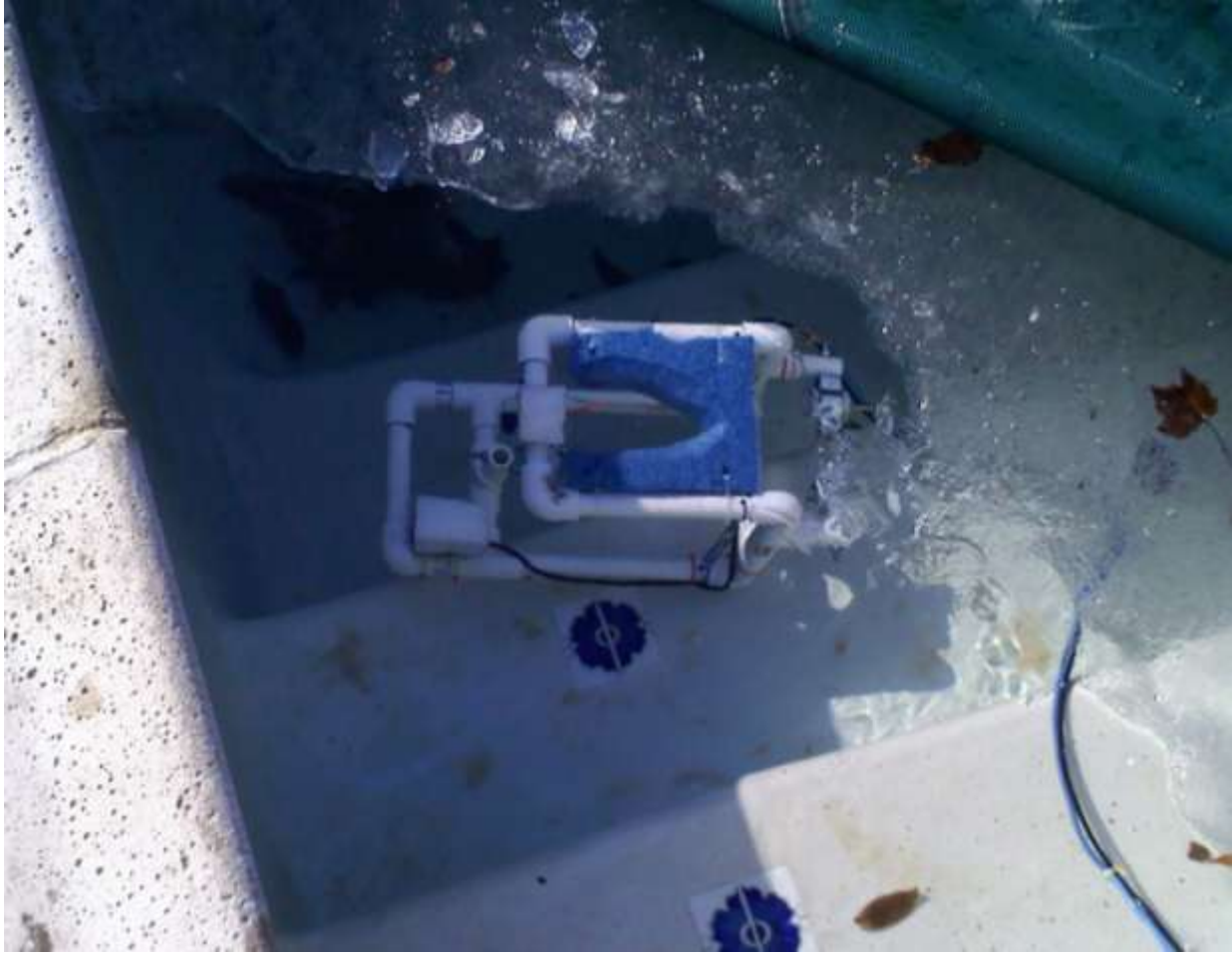
- Great for a pool, not so good for research in dark murky water
- Small, fast, controllable, cheap, light
- \$100 total

Testing



Playing in the pool





Playing with the SeaPerch in the Charles



Basic design

- Anything you want. Just glue PVC pipe together in a shape that you like and can mount motors to propel your SeaPerch in whatever direction you please. Then mount the motors, ballast it, and make a controller for it and your good to go.

- Ed Moriarty, an instructor at MIT Edgerton Center wanted an ROV to help him teach a class at the Alaskan Summer Research Academy (ASRA), a summer camp in Alaska

SeaCow I



Purpose

- To be a self contained semi-autonomous ROV which you would just hook up to a controller and run.

- \$1000 total
- Great for carrying test equipment and playing in the pool. Not good for murky water. Buoyancy problem.

testing



Playing in the pool



Basic design

- A sealed “torpedo” hull connected by a frame to three motors and two float tubes electronics inside hull for completely self-contained semi-autonomous operation.

Going away party



Time in Alaska

- The SeaCow taught kids about sealed hull ROVs and that they could possibly build one



Final result

- It was a failure. Although we successfully got a sealed hull, we were not able to put the electronics in the sealed hull due to the fact that it was too small because it was completely filled with BB's to weigh it down which was necessary because the float tubes added too much buoyancy and we couldn't make it sink.

- When I built the SeaCow I, I got invited to go up to Alaska the next year, so I did with...you guessed it...another ROV

SeaCow II



Purpose

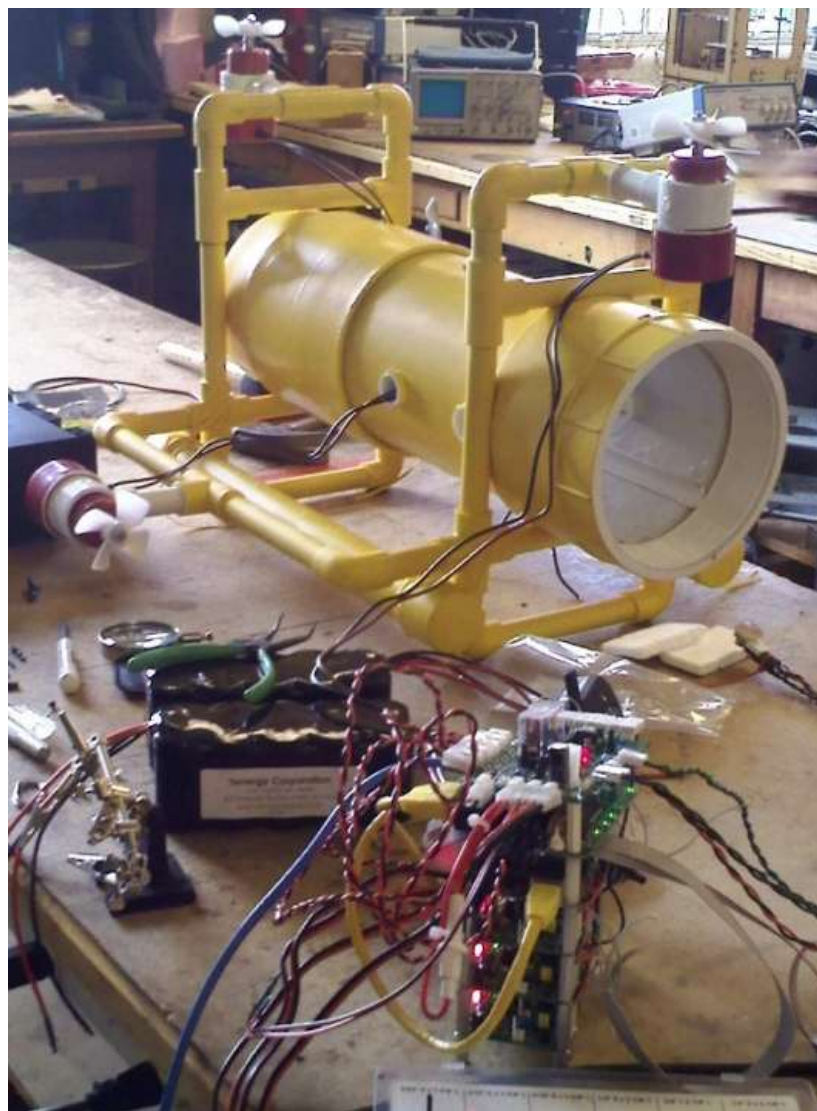
- To be what the SeaCow I couldn't be and to take sensor readings (salinity, turbidity, pressure, and temperature) about water parameters for a class in Alaska

Building

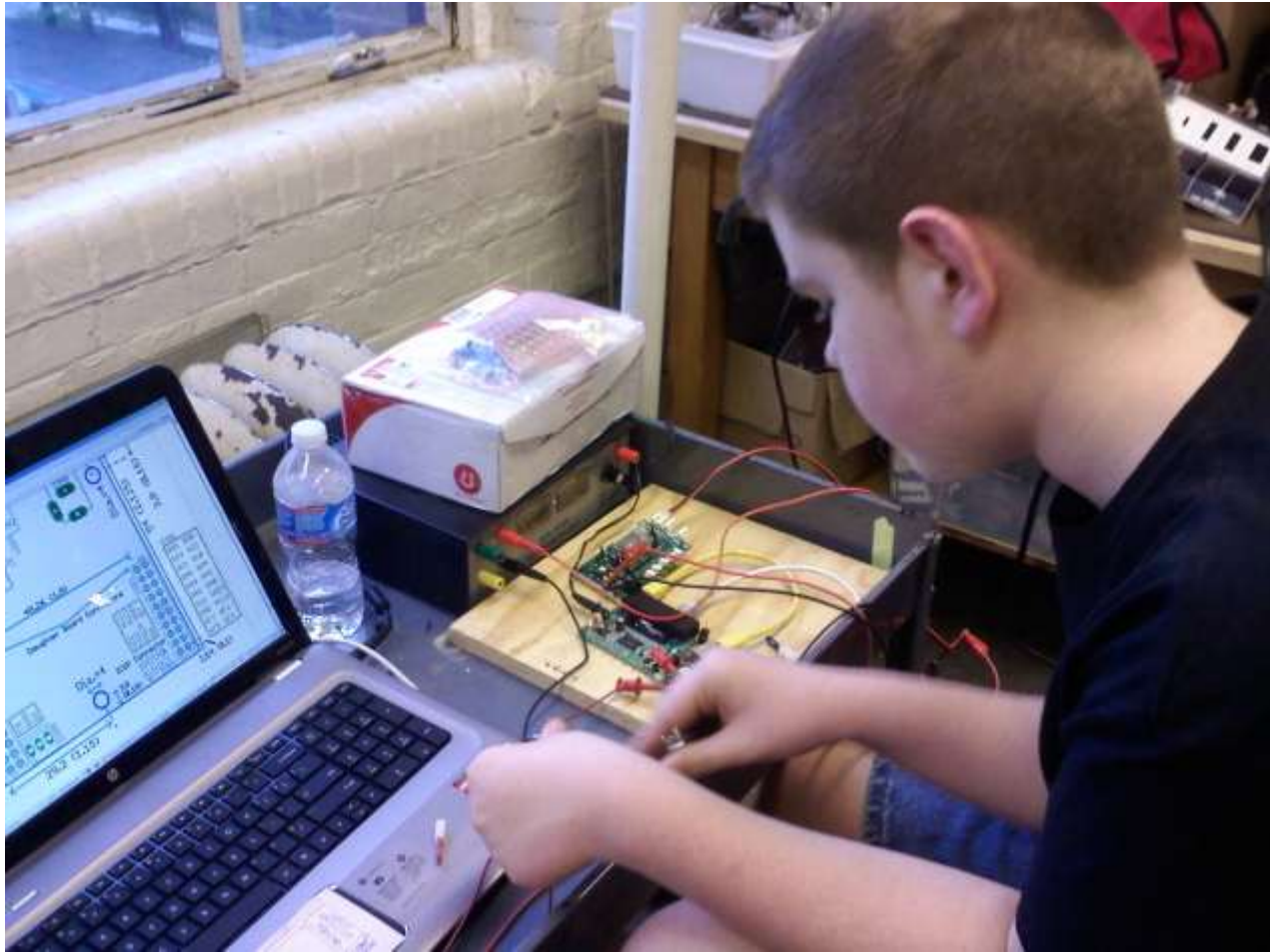






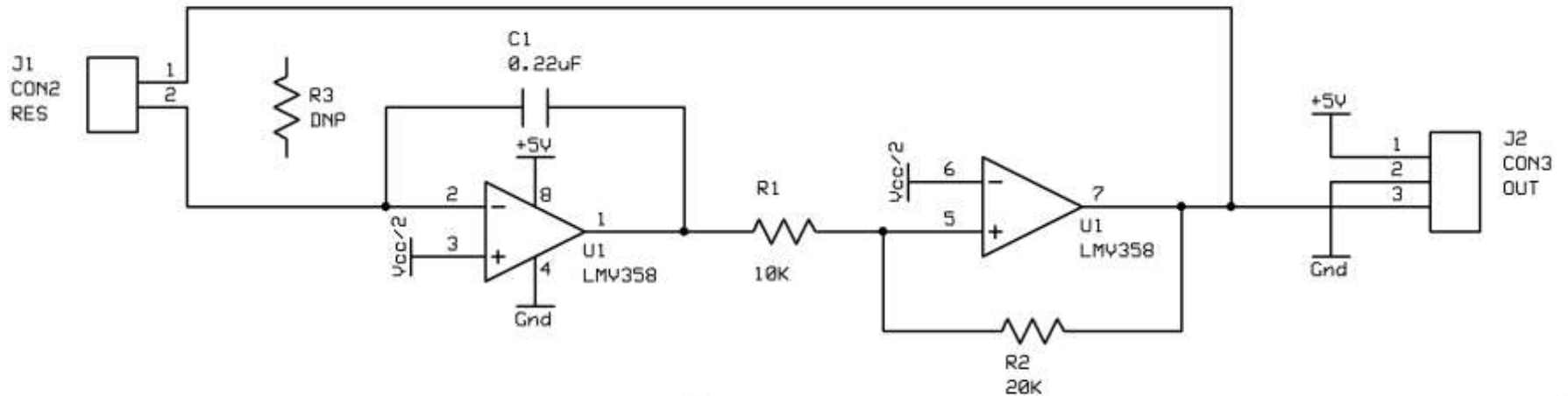






Sensors

Salinity



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Sea Cow II AUX Board

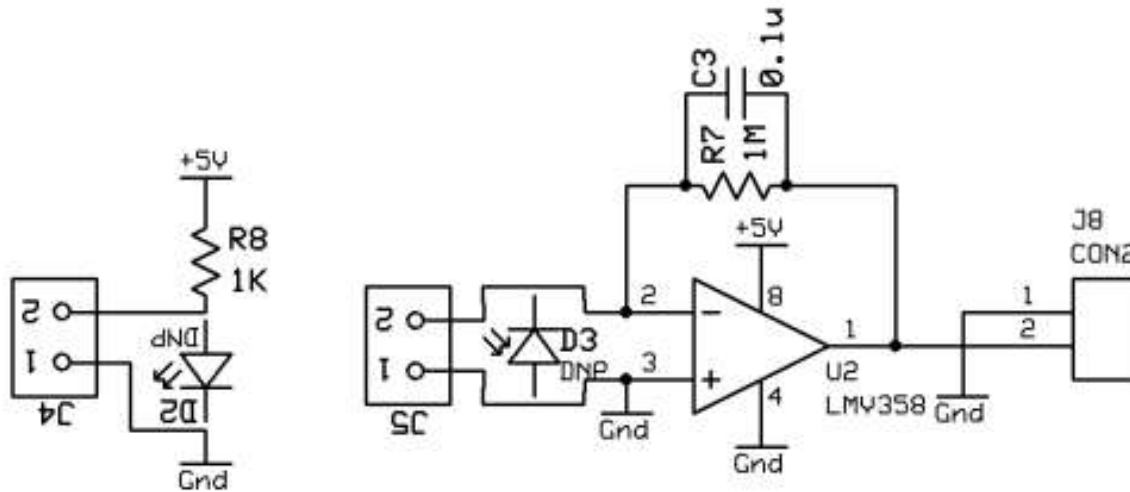
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Turbidity



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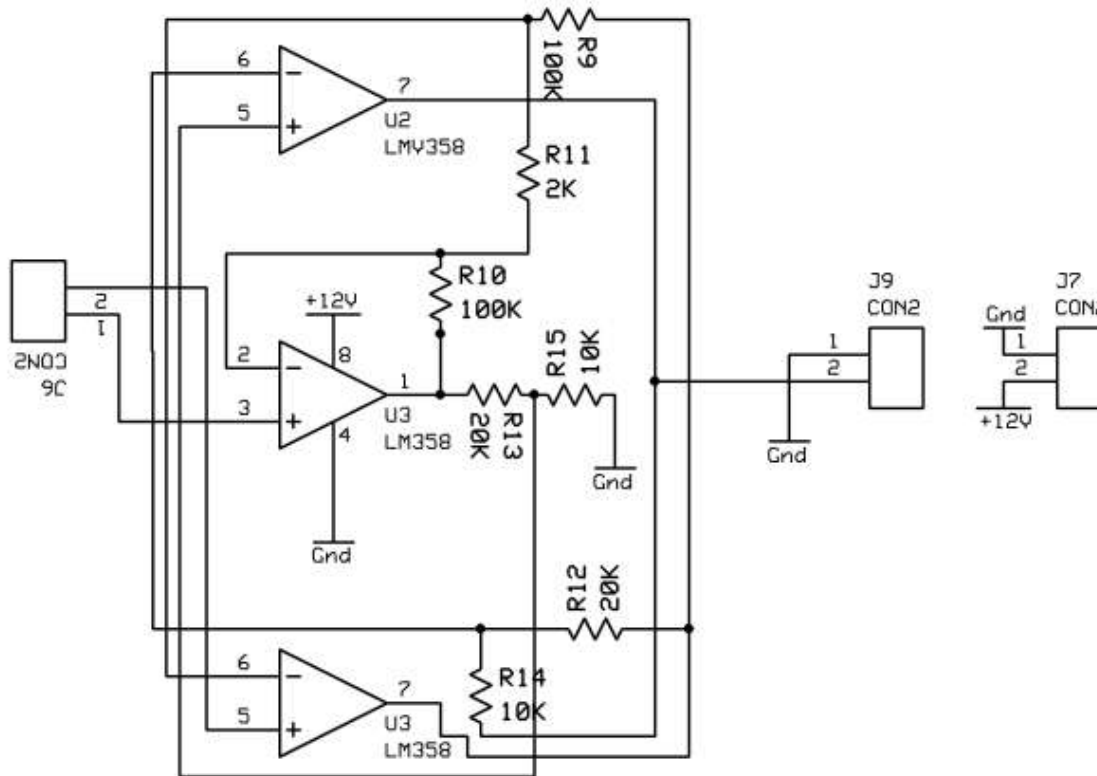
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Pressure



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Testing



The finished product



In Alaska









Basic design

- A sealed hull with the electronics, batteries, and camera attached by the frame to the four motors and the two weight tubes

Final result

- It achieved it's goal and did every thing it was supposed to do – it was a self contained sealed hulled semi autonomous ROV.

Thank you

Questions?