

Tempe High School

Water Buffaloes

1730 S. Mill Ave., Tempe, AZ 85281



Team members

Bahrán Abraham

Estevan Bustillos

Ethan Czuppa

Richard Campos

Ashley Noble

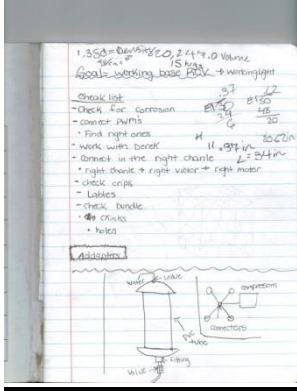
Brian De La Cruz

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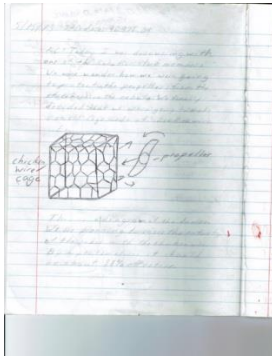
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Abstract

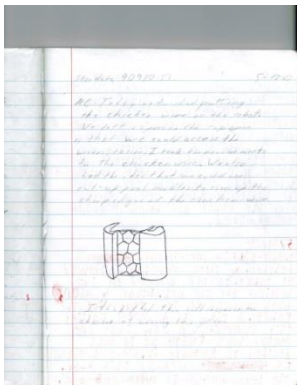
High school students met and worked during the school year and summer on a robot for the 2013 National Underwater Robotics Challenge (NURC). While some of their work was easy and straightforward, the students continued to encounter new problems after solving the previous issue. The students worked well together and though arguments occasionally occurred, everyone contributed in one form or another to the improvement of the robot. All of the teens agreed that this was a fun but difficult mission and one which they will remember for years to come.



5/15/13 (Wednesday)-Richard Campos: Today I was discussing with one of the robotics club members about how we were going to protect the propellers from the streamers in the nebula. We finally decided to make a small cage around the robot made of chicken wire.



5/17/13 (Friday)-Richard Campos: Today we finished putting the chicken wire on the robot; we left a space on the tube open so that we could access the wires more easily. I took the measurements for the chicken wire so that it could be as accurate as possible. We had an idea to use cut up pool noodles to cover up the sharp edges of the chicken wire.



5/22/13 (Wednesday)-Brian De La Cruz: It's the last day of school and our team celebrated the beginning of summer break. Ethan, our head of mechanical, talked with one of our mentors and they discussed ideas on how to improve the robot. Jose and Anthony helped anyone who needed it since they didn't know what else they could do. It seemed as though everyone was having a great time, parts for the robot were made, placed, or removed.

5/29/13 (Wednesday)-Brian De La Cruz: Three members showed up today, along with our teacher and a mentor. Bahran, the club president and technical person, worked on the wiring for the robot. Ethan and our mentor both worked on two vital parts for the robot, a motor and the claw. Earlier this summer, we noticed that one of the old motors on the bot was rusty, so we decided to replace it with a new one.

5/30/13 (Thursday) - Ethan Czuppa: Today we finished tapping the extra wires onto the tether. The idea is that giving the larger motors the larger wires will reduce the loss of power from power source to motor. After watching the Typewriter Repairmen videos, I'm a little worried that the chicken wire used to shield the motors will inhibit us more than free us from entanglement. As for our manipulators, well, it moves, but its gripping power is quite pathetic. We're still experimenting with the grip and gear reduction ratios, we'll hopefully have it up and running soon. It's constant, which is great progress compared to last year, it is however, bulky and cumbersome, and may affect how successful our attempts are at getting the bot to be neutrally buoyant. We will hopefully finish fine tuning the claw and begin building our other attachments which will open the antimatter chamber and drag the Burgess from the nebula, that's all for now.

5/31/13 (Friday): Work continues slowly as we are again without three members who are taking Summer School classes. Main focuses today include the propulsion motors and the camera along with associated wiring and the tether. Due to time constraints for submitting this engineering notebook, this will be the last entry.

Sponsorships

This year we self-funded all costs from previous year's Student/Team Fund Account which had been raised through AZ Tax donations from parent and community resources.