



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Calder J.C. Block	Project Number S0103
Project Title Hydrodynamics	
Abstract Objectives/Goals The purpose of this experiment was to discover if different boat hull shapes affect drag, acceleration, and velocity Methods/Materials 14 PVC U-yoke sides with connectors, 6 38-inch PVC pipes with holes, 10 38-inch PVC pipes without holes, 11 12-inch PVC pipes, 6 5-inch PVC pipes, 2 PVC straight coupling, 8 PVC 90 degree elbows, 1 CPVC pipe, 1 6 meter vinyl tank, 6 wooden planks, 18 wooden spacer blocks, 2 splash guards, 1 line guide pulley assembly, 2 pulley block assembly, 4 machine screws, 4 wing nuts, 1 30 foot pulley line, 1 Aqua Trak Data Wheel Interface, 1 Laptop Results In both the 100 g trials and the 400 g trials The Red Boat had a greater velocity and acceleration than The Blue Boat. However in the 100 g trials The Red Boat had greater drag than The Blue Boat. In the 400 g trials The Blue Boat had greater drag. Conclusions/Discussion The hypothesis was mostly correct The Red Boat had greater acceleration and velocity than The Blue Boat, however in the 100 g trial The Red Boat had greater drag than The Blue boat.	
Summary Statement The experimentation of different boat hull shapes and how they affect movement.	
Help Received Used Ribet Academy Engineering Lab under the supervision of Mr. Shirajian	