



Design, Build, Fly! Aircraft Design Challenge



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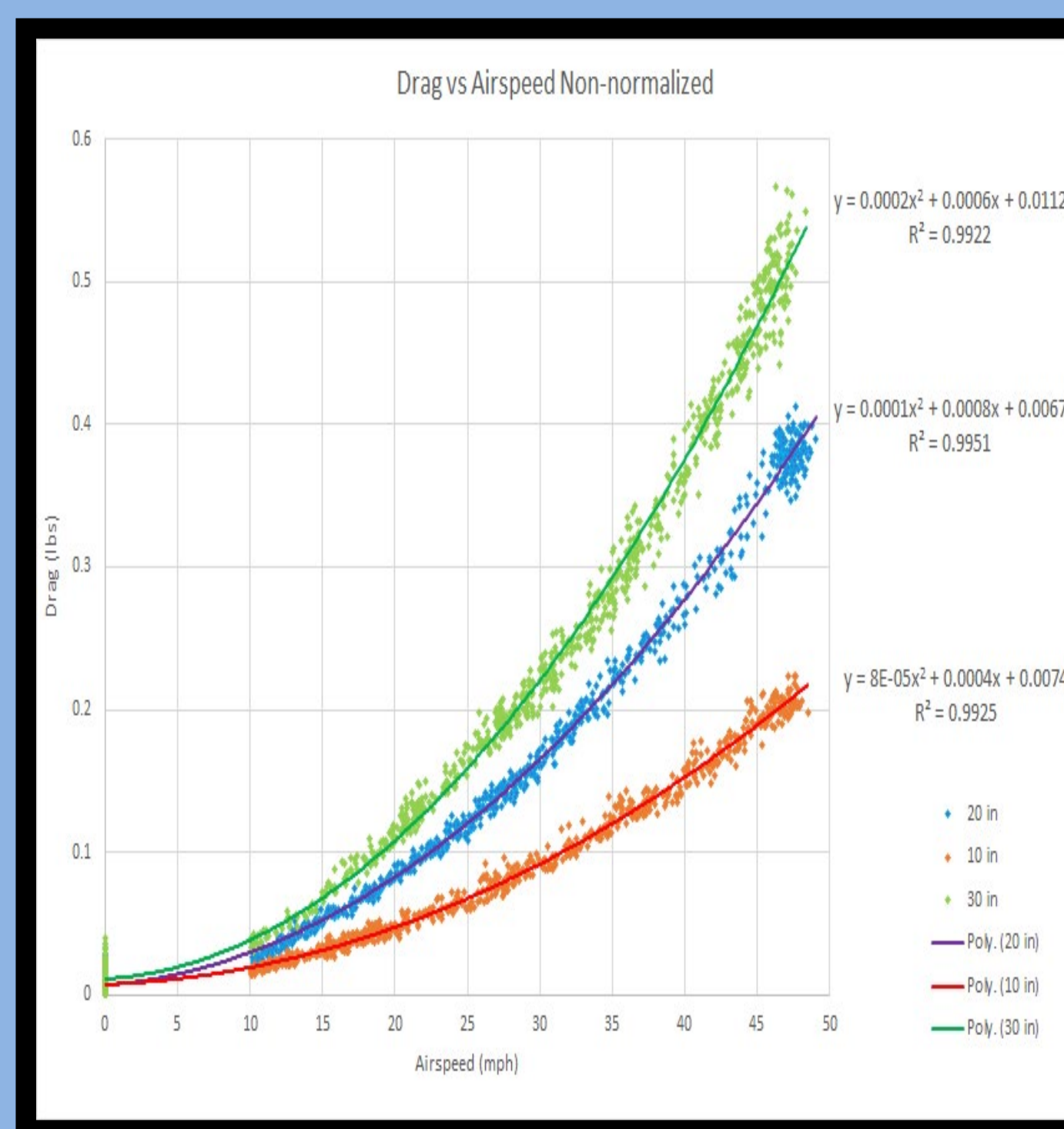
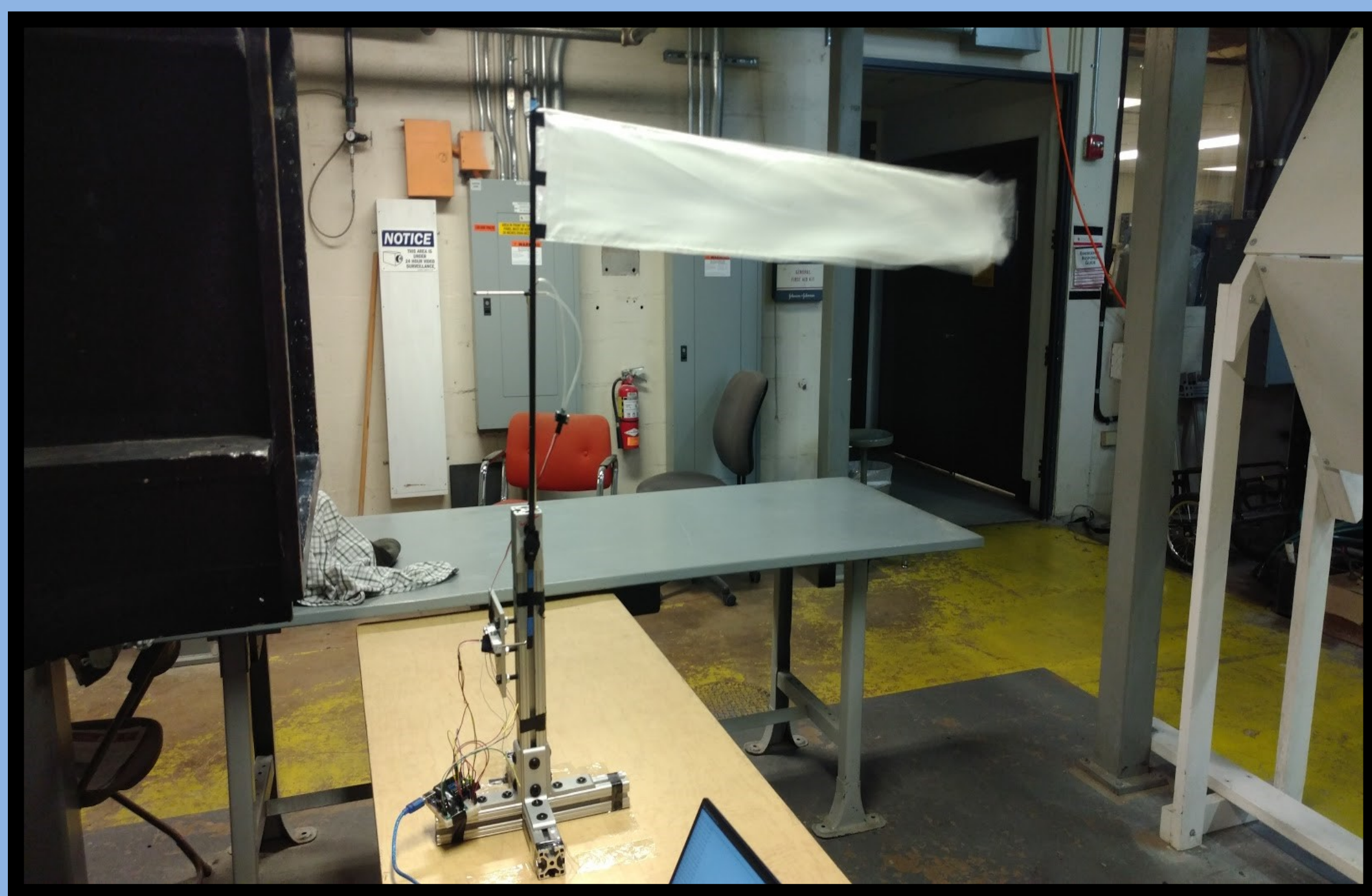


Introduction

- Each year the American Institute for Aeronautics and Astronautics (AIAA) hosts a national design competition for teams to create a remote-controlled aircraft to complete missions
- I worked with a group of senior aerospace engineering students to help design and manufacture the plane

Roles

- Worked with the aerodynamics sub-team
- Designed wings and high-lift devices
- Designed and built a wind tunnel test stand to obtain readings for drag forces on the banner
- Programmed the drag stand to export data directly to a spreadsheet
- Used hotwiring techniques to manufacture the wings



Data Analysis

- Using the test stand, 3 different banners were tested in the wind tunnel to find drag at various airspeeds
- The 10 in. banner produced the least amount of drag at each respective velocity and was chosen for the final design

Learning Outcomes

- Although we never got to compete or finish the final version of the aircraft, I consider myself lucky to have had the opportunity to work with this group of seniors and learn more about the principles of aircraft design
- I am excited about volunteering again next year so that I am able to contribute more to the project
- Specifically, I gained experience in manufacturing techniques, programming, 3D modeling, and collaboration

Thanks to all the seniors who taught me so much about aircraft design and to AIAA for hosting this competition