



Colorado Science and Engineering Fair

2024 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Stealth Aircraft Aerodynamics

Finalist's Name: Tynan Lohman

School and City: Liberty School Joes

Sponsor's Name: Ms. Linda Fogale

Category: Physics & Astronomy (PHYS)

Division: Junior (6th - 8th grades)

Abstract (250 words or less):

The purpose of this project was to find out if stealth design affects the aerodynamics of the jet. The project consisted of 3 tests for 3 different aircraft. One F-35 and two F-16s. One of the F-16s has ordinance (Bombs, Missiles, etc.). The hypothesis is that the F-35 had worse aerodynamics and lift than the F-16s due to being bigger. The 3 tests consist of a pressure test to make sure it has the same pressure for all of the planes, a smoke test to simulate airflow around the aircraft, and a lift test. The lift section is tested by the aircraft on a stilt that sits on a piece of foam or cardboard. That cardboard is then glued to the stilt or stick. The stilt or stick sits on top of a scale. Then after that you take a reading of the plane's mass without airflow going from the fan. After that readings will be taken to see if the mass of the plane changed while airflow is going. Then that reading will be calculated into the lift by subtracting the before and after. The results show that the F-35 had way better lift than any of the other aircraft. But the F-16 without ordinance had more consistency than both.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature: *Tynan Lohman*

Date: *April 11th/2024*

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.