Colorado Science and Engineering Fair

2025 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: Unmanned Aerial Vehicle Iteration: IX

Finalist's Name: Vaughn Bankston

School and City: Mancos High School, Mancos

Sponsor's Name: Dallas Bankston

Category: Engineering

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Engineering goals; Flight characteristics (has to be controllable in a wind tunnel), Must be remote-controlled or autonomous, has to cost under or even to $250 (final design, excludes test models), Control surfaces must work seamlessly with controller or brain, Crash resistant, Generates Lift. This will be accomplished through multiple iterations. First iteration was crafted from glue laminated styrofoam and was cut to shape the fuselage. Wings were sanded from one piece of styrofoam. Second iteration had the same wings and fuselage as the first but a tail end was glued on from another plane. Third iteration was made using foam core ribs, basswood dowels, chipboard, and the same styrofoam from previous iterations. This however was a hollow fuselage fitted with a VEX microcontroller and receiver attached to two servos in the wings. The fourth iteration was a proof of concept. I attached cardstock to the wings and bent them to see if I could achieve roll. Iteration five was the attachment of new wings and better ailerons. Iteration six was a different design of aileron. Iteration seven was the absence of rear rudders. Iteration eight was the attachment of one rudder. Iteration nine was the current iteration and was the attachment of a new rudder and horizontal stabilizers. I met four of six intended Goals, Flight characteristics, Must be remote-controlled or autonomous, Control surfaces must work with controller or brain, Generates Lift.

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: Date:

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.**