Mission Statement:
The goal of the UAV Airframe C project is to design, construct and test an open source, open architecture, unmanned aerial platform to support aerial imaging systems. Airframe C is a second generation airframe project expanding upon the previous efforts of the P09232 UAV Airframe B Senior Design Group.

Key Project Goals:
- Ability to carry a 15 lb payload
- Open architecture to integrate with a variety of systems
- Open source for future applications
- Ability to remotely control aircraft and payload
- Flight time of 20 minutes

Wing Design:
- NACA 9412 is selected to increase lifting capacity
- Plane body was increased in length to offer better input from tail control surfaces
- Wing span was shortened to decrease bending moment
- Control Surfaces were analyzed to determine proper size and placement

Structural Design:
- Carbon Fiber Wing Spars used to strengthen wing and reduce deflection
- Wing was further re-enforced with a fiberglass skin
- Cargo bay located under wing to maintain balance regardless of cargo
- Expansion bays present throughout tail to support additional flight equipment
- Baltic Birch was used in the main body structure to increase load bearing ability
- Balsa was used throughout the plane to minimize weight
- Body, tail, and control surfaces were covered using Top Flight™ Monokote

Propulsion Selection:
- A 3250 Watt Turnigy Electric motor is used to turn a 26 x 10 inch propeller
- 4 Zippy 5S 20C 5000 mAh Lithium Polymer Batteries provide 10000mAh flight power at 37 Volts
- Initial tests proved 26 lbs of static thrust and a wide open throttle static run time of 10 minutes
- Simulations estimate flight times in excess of 20 minutes

Final Testing:
- Taxi Testing and Skip testing were performed on April 24th, 2010.
- First flight at Hasman Field in Spencerport, NY on April 24th, 2010 with crash landing
- Second flight at North Hampton field in Spencerport, NY on May 6th 2010 with 2 successful flights and landing.
- Second Flight with successful aerial photography.
- All testing thus far has been without cargo

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