UtahStateUniversity

Utah Water Research Laboratory

AggieAir Airworthiness

The current version of the AggieAir platform has been subjected to more than 50 hours of flight tests and has proved to be safe and robust. To ensure consistency from aircraft to aircraft, each one is built using the AggieAir Aircraft Builder's manual and tested using very strict testing procedures. After an aircraft has been initially proven airworthy, more tests are made before each flight to insure the aircraft maintains airworthiness. Furthermore, each aircraft undergoes a maintenance schedule to avoid mid-air component failure. Records are kept on the individual components of each aircraft and used to update this maintenance schedule.

Initial Testing

Ground Tests

1. Balanced
2. Trimmed
3. Motor/Prop Screwed on Tight
4. Good RC Quality
5. Elevons Move Correctly
6. Throttle Moves Correctly
7. Good Data Link
8. Correct Position
9. Good GPS quality
10. Correct Orientation

Air Tests

1. Trimmed Correctly
2. Autopilot is Tuned Well
3. Good GPS quality
4. Test Max Roll and Pitch

Ongoing Tests

Preflight Tests

1. Balanced
2. Trimmed
3. Motor/Prop Screwed on Tight
4. Good RC Quality
5. Elevons Move Correctly
6. Throttle Moves Correctly
7. Good Data Link
8. Correct Position
9. Good GPS quality
10. Correct Orientation
11. Full Batteries
12. Retriever on

Maintenance Schedule

1. Replace motor every 100h of flight
2. Replace servos every 100h of flight
3. Replace propeller every 10h of flight
4. Retape the aircraft every 50h of flight

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