



Cessna Aircraft Company
Raytheon Missile Systems
AIAA Foundation

2011 CONTEST PRE-TECH & FLIGHT CERTIFICATION

University: _____

Team: _____

Inspector (name and Signature): _____

Date: _____

1. Systems

Pass Fail Verify that the receiver is powered by a separate NiCAD or NiMH battery (not by the propulsion battery)

Pass Fail Verify the motor/servos/wheels/landing gear are secured w/:safety wire, loctite, or nylock nuts

Pass Fail Verify all control rods are of the proper gauge/strength, and are securely attached to control horns

Pass Fail Verify all control horns are properly secured to the control surfaces

Pass Fail Verify control surfaces and wing-surfaces are of adequate flutter & aero-elastic resistance

Use this space to write up any non-compliance:

2. Propulsion System

Pass Fail Verify propeller and hub/pitch mechanism commercial availability and their mounting integrity

Pass Fail Verify all propulsion is provided by an unmodified commercially available electric motor

Pass Fail Verify that an ATO or Blade style **20** Amp fuse is connected to all positive battery terminals

Pass Fail Verify fuse is externally mounted ahead of a pusher propeller or behind a tractor propeller

Pass Fail Wires from battery pack to speed controller are adequate gauge, and are the same gauge as those from the controller to motor

Pass Fail Verify no bare wires are visible, and all connections are shrink-wrapped, or fully-insulated

Use this space to write up any non-compliance:

3. Propulsion Battery (check all flight packs to be used)

Pass Fail Verify all battery connectors are fully insulated

Pass Fail Verify commercially available and visible NiCad or NiMH batteries

Pass Fail Verify there is shrink wrap over all contact points & solder joints

Pass Fail Verify all propulsion battery packs are less than **3/4** lb

Use this space to write up any non-compliance:



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4. Tip Test

Configure battery equipped aircraft with heaviest payload

Pass Fail

Verify aircraft in this configuration is < 55lbs

Pass Fail

Have students lift the aircraft from the wingtips, at the CG without structural damage

Pass Fail

Verify aircraft has a CG Mark for both empty and loaded (and that it is correct & reasonable)

Use this space to write up any non-compliance:

5. Range check and failsafe validation

<input type="checkbox"/> 2.4GHz	<input type="checkbox"/> 72Mhz	72MHz Channel Assigned:	
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One member must hold the a/c while the pilot walks away a distance equal to the manufacturers recommended range with either the antenna down for 72 MHz or at reduced RF output power for 2.4 GHz radios. Check bystanders safe then arm motor while behind the prop. Verify all controls work properly:

<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Start with fuse pulled, cycle throttle verify no engine/prop movement/propulsion and verify all controls work properly		
<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Verify the area is clear and install the fuse. Apply 1/4 power, have the pilot check the following responses:		
<input type="checkbox"/> Right Roll	<input type="checkbox"/> Left Roll	<input type="checkbox"/> Right Yaw	<input type="checkbox"/> Left Yaw
<input type="checkbox"/> Nose Up	<input type="checkbox"/> Nose Down	<input type="checkbox"/> Throttle cutoff	<input type="checkbox"/> Throttle back to ¼

Verify Lost-Link works properly by turning off the Transmitter(s):

<input type="checkbox"/> Throttle closed	<input type="checkbox"/> Full up elevator	<input type="checkbox"/> Full right rudder	<input type="checkbox"/> Full right aileron	<input type="checkbox"/> Full flaps down
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Use this space to write up any non-compliance:

Flight Certification

Inspector (name and Signature): _____

Date: _____

The following items must be completed successfully to begin on-site tech inspection at the contest:

1. Technical Inspection Follow-up

Pass Fail Verify correction of non-compliant Pre-Tech items

2. Successful flight validation

Pass Fail Verify competition aircraft has flown a complete successful flight including a minimum of:

- Hand Launch
- Flight pattern containing at least one left and one right 360 degree turn while maintaining altitude
- Landing within a designated area with no damage to aircraft