

# Safety in the Air Starts on the Ground



Over the course of a flying season model aircraft can be damaged by crashes, transporting models to and from the flying field, vibration from engines, wear and tear, fuel leaks and effects of moisture and temperature changes. In addition, sometimes we may inadvertently adjust something on our transmitter leading to strange flight control movements. Checking your aircraft and radio system is important for safety and is a requirement.

## Aircraft Maintenance Checks

Before the beginning of the flying season and periodically conducting maintenance checks at home can identify items needing attention and will maximize your flying time and enjoyment at the flying site.

Before a system check is performed or before handling the propeller ***ensure that the ignition is off, glow driver off, or the flight battery is disconnected. Then remove the propeller.***

- Check for fabric rips, tears, and crinkles which may show signs of damage. For foam model check for impact damage.
- Check for the security of the wing as it attaches to the fuselage.
- Vertical and horizontal stabilizers firmly attached to the fuselage.
- Motor/Engine securely attached to engine mount and firewall.
- Firewall securely attached to the fuselage.
- Look for play when you try to move the spinner side to side or rock the propeller.
- Ignition wire in a gas engine not directly touching against cowling.
- Gas tank is cleaned of sludge, rubber stopper is not degraded, no cracks in stopper plates; fuel lines have no leaks and are secured to brass tubing, engine and muffler.
- Cowling secure and in good condition.
- Canopy/battery compartment cover locks into place.
- Velcro straps needing replacement.
- Pull on the control surfaces to ensure that they are firmly attachment to airframe.

- Landing gear, wheel pants and tail wheel secured, don't wobble.
- Wheels securely attached to the landing gear and moving freely.
- Ailerons, flaps, elevators, rudder(s) move freely and in the correct direction.
- Servos, arms, linkages, clevises, pushrods and horns secure with minimal play.
- Speed of servos are the same for dual servo-controlled flight surfaces.
- Inspect the battery for any signs of swelling, damage or corrosion.
- Propellor has no chips, is balanced and is securely attached to the engine/motor.
- Servo wire and servo wire connectors are color coded.
- With the battery installed, verify that the aircraft C of G is within the manufacture's recommendations.

## **Pre-Flight Checks**

Having an accessible pre-flight check list will help you to prepare your model for a safe and uneventful day of flying. Establish a routine and always check things in the same order.

### **Model Assembly**

- Line up wire connections correctly.
- Wing securely attached to fuselage.
- Servo wire clips installed.
- Receiver battery voltage check.
- Flight battery voltage acceptable (normally fully charged).
- Canopy/battery compartment cover securely attached and locked into place.

### **Control Check**

- With the model restrained, turn on the transmitter and power receiver.
- Transmitter battery voltage within acceptable range.
- Stand behind the model and check all controls for correct movement and direction. Don't just wiggle the sticks. Many models have been lost because of reversed controls.
- Pull** elevator stick: elevator moves **up**; *push* stick; elevator moves *down*.
- Left** rudder stick: rudder moves **left**; *right* stick, rudder moves *right*.
- Left** aileron stick: **left** aileron moves **up**; *right* aileron moves *down*.
- Right** aileron stick: **right** aileron moves **up**, *left* aileron moves *down*.
- Check for low, medium add high rates.
- Check throttle cut if applicable.
- Listen for any unusual sounds in the electronic system

## **Range Check**

- Conduct a range check in accordance with your transmitter instructions.

## **Fail-Safe**

Electric models:

- With the model restrained**, transmitter on, and model powered, partially advance the throttle. Turn off the transmitter. The motor should stop.

Gas and Glow:

- If you can clearly see the throttle servo: with the transmitter and receiver on, note the low throttle servo position and advance the throttle. Turn off the transmitter. The servo should return to its low throttle position.
- If you cannot see the throttle servo: **restrain** and start the model and partially advance the throttle. Be prepared for the application of full power and turn off the transmitter. The engine should go back to idle. If the engine accelerates to full power, immediately turn the transmitter on, wait for the link to be re-established and kill or return the engine to idle.
- If the test fails, re-bind the receiver with throttle stick low and retest.
- Check any other fail-safe conditions that you may have set on your control surfaces.

## **Between Flights**

- For hard landings check aircraft over for structural damage.
- Anything beyond a minor repair should be done at home.
- Check for propellor damage
- Make any necessary control surface adjustments
- Make any necessary adjustments to engine.
- Disconnect battery or power off onboard switch.
- 'Used' batteries clearly marked or placed in used battery box.
- Combustion aircraft fueled up.
- Radio turned off and under bench
- Aircraft facing into wind to avoid flipping over.