



SPARKS RC Club Member Handbook

Performing an Annual Pre-Flight Inspection SMH – 020

Doing a thorough **preflight safety check** at the start of each flying season is essential for safe and reliable operation of your RC airplane regardless of whether it's **glow fuel**, **gasoline**, or **electric powered**. It's also a great idea if you purchase a used plane or after major repairs. Here's a comprehensive checklist grouped into **general** items and **power-type-specific** checks:

✓ GENERAL PRE-FLIGHT CHECKS (All Aircraft)

1. **Airframe Inspection**
 - Look for cracks, warping, or damage to the fuselage, wings, tail, and control surfaces.
 - Check covering or skin for looseness or tears (especially after winter storage).
 - Make sure all bolts, screws, and glue joints are secure.
2. **Control Surface Functionality**
 - Check for free, smooth, and full movement.
 - Ensure no binding or slop in hinges or linkages.
 - Confirm secure servo connections and no stripped gears.
3. **Receiver & Radio System**
 - Charge and cycle receiver and transmitter batteries.
 - Perform a range check with the transmitter.
 - Inspect antennas for fraying or damage.
 - Rebind receiver to transmitter if needed.
 - Confirm fail-safe settings are correct (throttle to idle or off).
4. **Control Linkages**
 - Ensure pushrods, clevises, and control horns are secure and not cracked.
 - Ensure no excessive play; all linkages should feel solid.
 - Use thread locker on metal-to-metal connections.
5. **Landing Gear**
 - Check for loose wheels, bent gear, or cracked mounts.
 - Ensure tailwheel/nosewheel tracks straight and steers properly.
6. **Balance & CG**
 - Recheck center of gravity with battery installed.
 - Check CG with fuel tank empty. You don't want the plane to go tail heavy as fuel burns off.
 - Adjust if needed due to battery aging, fuel tank repositioning, etc.
7. **Wing Attachment**
 - Make sure wing bolts or rubber bands are fresh and secure.
 - Inspect for hidden wing root or spar damage.

🔥 GLOW FUEL-SPECIFIC CHECKS

1. **Fuel System**
 - Replace old fuel; glow fuel absorbs moisture.
 - Check for fuel line brittleness or cracking; replace if soft or stiff.
 - Inspect clunk movement in tank; ensure it's free to move.
 - Pressure lines from the muffler must be intact.
2. **Glow Plug**
 - Remove and inspect; replace if dull or not glowing bright orange.
 - Clean carbon deposits from the plug hole.



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3. Engine

- Oil and rotate the engine by hand; check for rust or rough bearings.
- Clean out carburetor if gummed from old fuel. Brake cleaner is best for glow or gas.
- Prime and test run on the ground before first flight.

GASOLINE-SPECIFIC CHECKS

1. Fuel System

- Replace aged gasoline; ethanol content may cause varnishing.
- Replace old Tygon fuel lines.
- Check the carburetor diaphragm if the engine hasn't run in months.

2. Ignition System

- Test ignition module with a fresh battery.
- Inspect all the wiring and spark plug cap for corrosion or wear.
- Check the spark plug gap and replace it if needed.

3. Choke & Throttle Linkages

- Make sure they're secure and allow full range of motion.

ELECTRIC-SPECIFIC CHECKS

1. Batteries (LiPo/Li-ion)

- Inspect for puffing, swelling, or damaged leads.
- Balance charge all batteries before use.
- Perform internal resistance check if possible.

2. ESC & Motor

- Ensure ESC is properly calibrated and cooling is adequate.
- Check motor mount bolts and prop adapter.
- Spin the motor by hand to feel for smooth bearings.

3. Propeller Safety

- Double-check prop is balanced and tightly secured.
- Always power up with the model restrained or prop off during initial testing.

4. Connectors

- Inspect solder joints and connectors (XT60, EC3, etc.) for wear or looseness.
- Verify there are no shorts or corrosion.

OTHER IMPORTANT TIPS

- Always have a fire extinguisher nearby, especially with glow/gas and LiPo-powered models.
- Log flights or issues in a maintenance notebook.
- Replace rubber bands, glow plugs, or fuel tubing if they're more than a year old.
- Update firmware on transmitters or telemetry systems if applicable.
- Always do a final control surface check and range test at the field before your first takeoff. 