



ALL **RC** GUIDE

RC Starter *Field Guide*

What you need to know before your first flight — labels, specs, mistakes, and what to do when things go wrong.

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RTF · BNF · PNP

What the label means before you buy

Three letters that separate a plug-and-fly experience from an expensive parts order.

QUICK ANSWER

RTF = everything in the box. BNF = needs your transmitter. PNP = needs transmitter, receiver, and battery. Start with RTF.

LABEL	WHAT'S INCLUDED	WHAT YOU STILL NEED	BEST FOR
RTF RECOMMENDED	Plane, transmitter, battery, charger — everything to fly today	Nothing. Open box, charge, fly.	First plane. Zero RC background.
BNF	Plane with receiver built in — no transmitter	A compatible transmitter (usually Spektrum DSM2/DSMX or FrSky)	Pilots upgrading to a second plane who already own a transmitter
PNP	Plane, motor, ESC, servos — no radio gear, no battery	Transmitter + receiver + battery + charger	Experienced builders who choose their own electronics
ARF / KIT	Airframe only (partially or fully unassembled)	All electronics + building time + skill	Builders. Not a beginner path.

A note on BNF transmitter compatibility: always confirm the protocol before buying. HobbyZone and E-flite BNF planes use Spektrum DSMX. FrSky planes require an FrSky or OpenTX transmitter. Mixing protocols = no connection.

If you're buying your first RC plane, RTF removes every barrier. You can always upgrade your transmitter later — and your BNF next plane will bind to it.

How to Read RC Plane Specs

Wingspan, motor KV, battery rating — what each number actually means for a beginner.

SPEC	UNIT	WHAT IT TELLS YOU
Wingspan	mm / m	Bigger wing = more lift, more stability, slower stall speed. Beginner sweet spot: 900mm–1.2m. Smaller planes are faster but punish mistakes.
Motor KV	RPM/V	RPM per volt at no load. Lower KV (800–1400) suits bigger props and trainer-style planes. Higher KV (2000+) = fast, small prop = sport/racing.
Battery cells	S (2S/3S/4S)	Each S = 3.7V nominal. 2S ≈ 7.4V, 3S ≈ 11.1V, 4S ≈ 14.8V. Use the cell count the manufacturer specifies — never exceed it.
Capacity	mAh	Energy stored. More mAh = longer flight, more weight. RTF kits include the right size — don't go heavier without checking the all-up weight limit.
C-rating	C	Max continuous discharge rate. 25C × 2200mAh = 55A max draw. Trainer planes rarely exceed 15–20A — a 25C pack is more than enough.
Flight time	min	Manufacturer estimates at moderate throttle. Real-world: subtract 20–30% for wind and full-throttle passes. Land at 3.7V/cell minimum.

BEGINNER TARGET SPECS

- Wingspan 900mm–1.2m · stable wing loading
- Motor KV 900–1400 · prop-driven, not speed-driven
- 3S LiPo · 1500–2200mAh · 25C minimum
- Flight time 12–20 min per charge (RTF spec)

The 3 Beginner Mistakes That cause most first crashes

These aren't theory. They're the patterns that show up in every beginner crash report.

01 Throttle panic at the wrong moment

When the plane dips or turns unexpectedly, the instinct is to add throttle. In a nose-down dive, full throttle accelerates the descent into the ground. The correct response — reduce throttle, level the wings, then climb — is the opposite of the panic reflex. This is muscle memory that a simulator builds. A maiden flight doesn't.

FIX → 5+ HOURS IN A SIMULATOR BEFORE MAIDEN FLIGHT

02 Flying in wind above skill level

Beginner-class planes (900mm–1.2m wingspan) are stable in light wind — up to around 15 km/h (Beaufort 2). Above that, gusts create orientation confusion: the plane appears to hover, drift sideways, or reverse. Most beginners misjudge this. If the grass is moving and bending, stay on the ground.

RULE → WIND ≤ 15 KM/H FOR FIRST 10 FLIGHTS

03 Skipping the pre-flight check

Loose prop nut, reversed aileron servo, low battery — all of these cause crashes that happen in the first 10 seconds of flight. A 90-second pre-flight check eliminates 80% of mechanical failure modes. It feels unnecessary until it isn't. See the checklist on the next page.

FIX → RUN THE CHECKLIST ON PAGE 6 BEFORE EVERY FLIGHT

Pre-Flight Checklist

Run this before every session

90 seconds before takeoff. Skipping one item is how most mechanical failures happen.

- ☐ **Transmitter on first, then plane battery**
Always power sequence: TX on → connect plane. Never the reverse — brief uncontrolled motor spike.
- ☐ **Battery charge $\geq 90\%$ · secured in bay**
Shake the fuselage — if the pack moves, it will shift CG mid-flight. Re-strap.
- ☐ **Control surfaces move correctly**
Right stick right → right aileron up, left down. Elevator up → tail down, nose up. Check all four.
- ☐ **Prop: no cracks, spins freely, nut tight**
A cracked prop will vibrate and can delaminate under load. Replace at first sign of damage.
- ☐ **Throttle to full — motor responds immediately**
Stand behind the plane. Check for unusual vibration or noise. A rough motor = inspect or don't fly.
- ☐ **Throttle cut / failsafe active**
Turn TX off with motor running — throttle should drop to zero. If not, configure failsafe before flying.
- ☐ **Wind check: ≤ 15 km/h for first 10 flights**
Use your phone's weather app or watch the treeline. Sustained gusts above 20 km/h = ground day.
- ☐ **Flight area clear of people and obstacles**
200m minimum from spectators during initial climbs. Identify your abort direction before throttle-up.

After a Crash

What to check immediately

The order matters. Do this in sequence — don't skip to the airframe inspection first.

STEP 01 **Don't touch — check for motor spin**

Approach from behind. If the motor is still running, keep hands away from the prop arc. Only disarm once the prop has stopped.

STEP 02 **Check the LiPo for swelling or heat**

A hot or puffy pack means damaged cells. Do not charge it. Place it on non-flammable ground (bare dirt or pavement) and observe for 10 minutes before moving it.

STEP 03 **Disconnect battery — TX off**

Unplug the battery connector before handling the plane. TX second. This prevents an accidental throttle spike while your hands are inside the fuselage.

STEP 04 **Inspect in order: prop → motor → control surfaces → airframe**

Prop: cracks or bent blades → replace before next flight. Motor: spin by hand, feel for roughness or grinding → sign of bent shaft. Servos: move linkages by hand, confirm no binding. Airframe: run fingers along the fuselage and spar — cracks that aren't visible are often felt first.

FIELD RULE

A damaged prop flown again will fail at speed. A cracked airframe can delaminate mid-flight. If in doubt, don't fly — field repairs with CA glue and tape take 20 minutes. A second crash takes seconds.

Where to Fly

Fields, rules, and airspace basics

The wrong location will ground you mid-session. Find your spot before you charge your first pack.

AMA CHARTERED FIELDS – BEST OPTION

Academy of Model Aeronautics chartered fields have designated flight lines, frequency boards, and experienced pilots. Most allow guests. Find one at modelaircraft.org/field-finder.

What you get: pre-cleared airspace, mentors on-site, insurance coverage for members, emergency protocols already in place.

FREE TO VISIT

GUEST PILOT OK

AIRSPACE PRE-CLEARED

FAA RULES – WHAT EVERY PILOT MUST KNOW

400 ft AGL maximum altitude outside of FAA-authorized areas. **3 miles from airports** unless you have LAANC authorization (free via B4UFLY or AirMap). Never fly over people or moving vehicles.

Register your plane if it weighs 250g+ at faa.gov/uas (\$5 / 3 years). One registration number covers your entire fleet.

400 FT MAX

3MI FROM AIRPORTS

FAA REGISTRATION 250G+

LAANC FOR CONTROLLED

B4UFLY APP – CHECK BEFORE EVERY SESSION

FAA's free app (iOS + Android). Enter your GPS location and flight date — returns a traffic light result: green (fly freely), yellow (restrictions apply), red (authorization required). Takes 30 seconds. Use it every time.

FREE

IOS + ANDROID

GPS-BASED

YOU HAVE THE FOUNDATION.

Now go *deeper.*

This guide covered the essentials. The full RC Planes Guide on AllRCGuide goes further — simulator recommendations, specific trainer models compared, motor and battery selection by use case, and how to progress from your first flight to your first solo aerobatic maneuver.

[Read the Full RC Planes Guide →](#)

01 **Simulator guide**

Which free and paid sims actually translate to real-world stick skills — and the exact settings to match your RTF trainer.

02 **Trainer comparison**

AeroScout S2 vs E-flite Apprentice S2 vs Turbo Timber: which beginner plane fits which profile.

03 **Progression path**

A structured 12-session plan from box-fresh RTF to confident solo pattern work.

Starter Kit

Four things worth having

RTF TRAINER · #1 PICK

HobbyZone AeroScout S 1.1m RTF

SAFE technology, AS3X stabilization, panic recovery.
Everything in the box — transmitter, battery, charger.

[amazon.com](#) ↗

TRANSMITTER · UPGRADE PATH

Spektrum DX6e 6-Channel Transmitter

DSMX 6-channel. Binds to all BNF E-flite and HobbyZone planes — grows with your fleet.

[amazon.com](#) ↗

CHARGER · FIELD ESSENTIAL

LiPo Balance Charger

Balance-charges 2S–4S LiPo packs. Never charge a LiPo without balance leads connected — extends pack life and prevents swelling.

[amazon.com](#) ↗

FIELD KIT · CRASH RECOVERY

RC Repair Tape

Lightweight foam-safe repair tape for field fixes — wing leading edges, fuselage cracks, hinge reinforcement.

[amazon.com](#) ↗**DISCLOSURE**

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RC STARTER FIELD GUIDE

Safe skies and *smooth landings.*

The best way to get better is to fly — consistently, carefully, and with a pre-flight check every single time. See you at the field.

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