

# Getting Started in R/C Flying



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If you are considering taking up our hobby (or coming back to it after a time away), the Stetson Flyers Flight School can enable you to earn your Stetson Wings, allowing you to fly independently at our field. We have experienced instructors who can help you acquire the skills and knowledge needed to fly radio-controlled model aircraft safely and enjoyably.

Stetson Flight School main sessions are held on Tuesday evenings, getting under way in May, when the field dries out and the weather improves, and running till late September, when sunset gets too early for evening flying. Our aim is to turn out fully qualified pilots within this roughly 20-week period.

Registering as a student at Flight School requires that you be a member of the Stetson Flyers Club and of the Model Aeronautics Association of Canada (MAAC). This ensures that we are protected by adequate liability insurance, operate within a strict safety code, and comply with all applicable government regulations. Upon joining, your initial MAAC status is automatically Student. When you fully meet the requirements for Stetson Wings it will be changed to Pilot — Fixed Wing.

However, you don't need to be a member to contact us with questions or to come out to the field to talk to us and see what it's all about. You might like to try out a little R/C flying with dual instruction on one of our trainers. Please use [CFI@StetsonFlyers.com](mailto:CFI@StetsonFlyers.com) to get in touch.

**The number of places at Flight School is limited, so it's a good idea to register early.**

## Ground School

Before the flying sessions start, a one-evening Ground School session will introduce students to R/C flying and to training at the Stetson Flight School. Check the website for details: <http://www.StetsonFlyers.com>.

Key topics include the basics of R/C flying (models, radios, batteries, etc.), plus an introduction to Transport Canada Regulations, MAAC Safety Code and Club Rules. We will also discuss the training process and the field layout. Such matters are stressed throughout the Flight School experience and students will be tested on them before they can earn their Wings. Please make every effort to get off to a good start by attending this session (but you can still join Flight School even if you miss Ground School).

## Flight Training

Regular Flight School sessions are held on Tuesday evenings, starting at 16:30 and running until about 30 minutes before sunset. Other flying at the Club field is suspended for this period. The first regular session of Flight School takes place in early to mid May, depending on weather and field conditions. We will post details on the website and contact registered students.

Communication with students is by email. All registered students are notified each Monday evening regarding the weather outlook for Flight School the following day. Confirmation (or cancellation) is sent to students on the day of Flight School, by noon whenever possible, but uncertain weather may mean that we hold off the decision until as late as 15:00. When Tuesday weather is unsuitable for flying, Flight School may be deferred to Wednesday.

Students are encouraged to come as early as they can to Flight School sessions and to put in as much flying time as they feel comfortable with (you don't have to be there the whole time). At regular Flight School sessions, several instructors are normally available, and students are assigned to whomever is available when they are ready to fly.

To provide more flying time for students, we try to arrange at least one additional Flight School session each week, usually first thing Saturday or Sunday morning (timing may vary from week to week). At these sessions, students share flying time with other members.

We also encourage individual students and instructors to get together for instructional sessions outside Flight School time. The onus is on the student to make such arrangements. Don't be afraid to ask but remember that instructors are volunteers and under no obligation.

During much of your training you will use a dual instruction arrangement, with the instructor on the master transmitter ready to take over if you get into trouble. When your training is well advanced, you may be permitted to "go solo". This means that you can fly without the dual instruction setup, though you will still be under the supervision of an instructor.

**Students are only permitted to fly at the Stetson field under the supervision of a recognized instructor.**

In the late stages of training, you will be required to move up from your basic trainer to a more advanced aircraft. This can be an opportunity to purchase or build your next model, or you can transition to flying one of the aircraft the Flight School keeps on hand for this purpose. If you are interested in flying fuel-powered models, this is your chance to learn to operate and fly one of the school's traditional engine powered trainers. Please talk to us about choosing a suitable aircraft for this stage.

When you have mastered this more advanced model, electric or fuel, you will be ready for the flight test portion of your Wings qualification. Our aim in all this is to make sure you that when you graduate, you are well launched in your development as an R/C pilot.

For the flight test, you will be required to demonstrate to one of the club's examiners your skill in precisely flying a schedule of basic maneuvers, including takeoff, flying the circuit, touch-and-go, horizontal figure-8s, and landing. In addition, you will take a written test of your knowledge of essential club and MAAC operating rules and procedures. As noted below, you are also expected by this time to have acquired a Transport Canada Drone (RPAS) Pilot License.

On successful completion of the requirements, you will be awarded your Stetson Wings and allowed full use of the Stetson flying field. Your MAAC status will be upgraded from "Student" to "Pilot — Fixed Wing".

Flight School does not provide training for helicopter, multi-rotor (drone), or glider flying, but after you have acquired your Fixed Wing pilot qualification, we can put you in touch with club members who can help you to learn such additional skills.

## Trainer Aircraft

As a Flight School student, you will need your own aircraft and equipment for training. It's important that you have a properly designed basic trainer that has appropriate flight characteristics, is suitable for flying at the Stetson field, and is tough and easily repairable. Stetson Flight School recommends two aircraft, both of which use Spektrum radio systems:

**E-Flite Apprentice STS:** This 1.5m model has long been a mainstay of R/C flight training.

**HobbyZone AeroScout:** A newer, smaller (1.1m) and less expensive trainer.

We recommend that, if possible, you purchase the RTF (Ready to Fly) version of such a trainer, which normally includes a basic DXs transmitter at a major discount.

Other trainers and R/C systems may be available, but it is highly advisable to check with Flight School to determine their suitability for Flight School use. Most R/C models do NOT make good trainers!

The only small trainer that we consider suitable for the Stetson field is the **HobbyZone Apprentice STOL S 700mm**. This little plane with big wheels can manage on our grass runway and has flight characteristics similar to its bigger counterparts. We consider this model to be a fun supplement to one of the standard size trainers mentioned above, not a substitute. Note that the RTF version of this plane includes a transmitter that is not usable in a Wireless Trainer setup. The plane itself, however, is fully compatible with regular Spektrum radios.

Used examples of the recommended trainers and related equipment may also be available from former students or on Kijiji. Feel free to contact us for advice before spending money.

Flight School normally has available for student use an example of each of the recommended trainers, so if you are uncertain about choosing a trainer just come along, talk to us, and give one or both models a try.

## Stabilization

Nowadays, most trainers, including those mentioned above, have optional self-levelling stabilization systems that take much of the effort out of flying. In the Spektrum radios, this capability is called **SAFE** (Sensor Assisted Flight Envelope) **Beginner** mode. While this feature can be useful for introductory flights, however, it gets in the way of learning the fine skills of piloting. Accordingly, at Flight School we have students move to full control (**Experienced** mode) as quickly as possible and don't allow the use of SAFE and the like during the Wings flight test.

Another form of assistance, called rate stabilization generically and **AS3X** by Spektrum, is far less intrusive and does not interfere with pilot control. It simply smooths out flight by reducing the effects of wind turbulence. In the trainers mentioned here, and many other models, AS3X is active full time. Flight School fully approves the use of AS3X, including during flight tests.

Our aim is to ensure that flyers in our Club develop proper piloting skills and are not reliant on artificial levelling stabilization.

## Radio Systems

Choice of compatible radio equipment is very important for training. Stetson Flight School normally uses models equipped with Spektrum radio systems, which are particularly well suited to dual instruction training and are well supported should problems occur. They are readily available locally.

In most cases, a given brand of transmitter will only be compatible with its own or a few after-market receivers. However, some transmitters (such as certain ones from RadioMaster) can work with a range of different protocols including Spektrum (DSMX). They may therefore offer a viable solution for some Flight School students and are compatible with the recommended trainers. They are good quality and offer excellent value, but they require more technical involvement on the part of the user in updating the software, setting up the model and making any required equipment repairs. Most people find that their programming is, at least initially, more demanding than Spektrum's. Note that wireless dual instruction with these radios requires an additional plug-in module. If considering this option, please talk to us first, as there are several critical choices to be made.

There are numerous other radio systems available, such as Futaba, Jeti, FrSky, and FlySky. These all work well, and as you progress in the R/C hobby you may find that one of them would serve your interests better, but Spektrum compatibility is preferred for Flight School training.

## Dual Instruction

Training requires two compatible radios to enable dual instruction. The master transmitter, linked by radio to the aircraft, is in the hands of the instructor, who can transfer control to the

student's radio — and take it back instantly. The two radios are linked wirelessly (or by wire for older equipment).

If you buy one of the ready-to-fly (RTF) trainer packages mentioned above, you will already have one transmitter. The DX's radio that's standard in these packages makes an excellent student radio in a wireless trainer setup (but lacks a connector for wired setups). However, given its limited capabilities, it is not a good choice if purchased at the full retail price.

To be self-sufficient from the start, you may wish to purchase (new or used) a modern, fully programmable transmitter, such as the Spektrum NX8, NX6, DX8e or DX6e (The NX7e can also be used but requires the addition of an internal receiver at significant extra cost.) This will serve as the instructor radio initially and become your main radio when you go solo. You will need such a radio when you progress beyond your basic training and want to fly more than one model.

Or your instructor may be equipped with a transmitter that can serve as the master radio in a wireless trainer setup (though this limits your training flexibility).

Alternatively, Flight School has several older radios for loan to students as part of a wired or wireless trainer pair.

Pairing up radios for training can be complicated and there are endless combinations. That's why we ask that when you register for Flight School, you let us know what equipment you already have (if any) and that you talk to us before you make any further purchases.

## Other Equipment

**Three batteries** are the minimum requirement if you are to put in a reasonable amount of flight time at each session. Using the standard size battery (3200 3s for Apprentice, 2200 3s for AeroScout), three batteries will give you about 30 minutes total flying time without charging. This should be your minimum aim for each flying session.

Note that batteries can vary considerably in quality, specifications, and features. Reliable brands include Spektrum and Gens Ace. Again, we recommend that you attend ground school and/or talk with us first as there are significant differences among batteries.

You will also need a **charger** suitable for LiPo batteries. RTF packages may or may not include a battery and charger.

Charging at the field is possible with the right equipment, but most people charge at home. Be sure to follow the safety precautions, as lithium batteries can be dangerous if not managed properly.

An essential piece of equipment for electric flying is a **battery checker**. This must always be available to check the state of the battery before and after every flight.

Finally, an **R/C flight simulator** such as Real Flight or Phoenix can greatly assist with some aspects of training if used regularly and seriously. Images of the Stetson field are available for use in either of these simulators for greater realism. While the full Real Flight is pricy, less expensive “trainer” versions are available and Phoenix is now available free online (though you will need a cheap USB adapter to connect your radio to your computer). Note that most simulators are designed to work with Windows computers.

## Transport Canada Requirements

Radio-controlled model aircraft and their support equipment are defined as “remotely piloted aircraft systems” (RPAS) by Transport Canada and thus are subject to Part IX of the *Canadian Aviation Regulations*. Consequently, to fly R/C independently you must possess a **Transport Canada RPAS Pilot Certificate (Basic)**. This requires you to pass an on-line multiple-choice test covering a wide range of aviation topics. It’s not difficult, but it does require preparation.

As well, all **models weighing 250g or more must be registered with Transport Canada** before they are allowed to fly; the registration number of the model must be displayed on its exterior.

For Flight School students, this means that from the start of training **your aircraft must be registered with Transport Canada and you must maintain flight and maintenance logs**. While a student, you will always fly under the direct supervision of a qualified R/C pilot. Thus, you do not need a Transport Canada Pilot Certificate to begin training. However, before you are allowed to fly solo, take the flight test for your Stetson Wings or graduate from Flight School, you must have acquired the certificate. You should therefore plan to take the Transport Canada test during your Flight School training. We'll provide further information at Flight School.

## Bottom Line

Learning to fly R/C models is a demanding undertaking, but an extremely satisfying one. If you’re interested but still wondering if it’s right for you, come on out to the field and have a go on a dual instruction setup with one of our instructors. Be sure to make contact first (see below).

Incidentally, young people can make excellent R/C students if they have the necessary interest and parental support (though they can’t get a Transport Canada pilot license until they reach 14). Kids are welcome at Flight School! Get in touch for more information.

*Nigel Chippindale, Chief Flying Instructor*

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