

## Training season is ON!

With Spring and the start of daylight savings time we get more daylight in the evenings. Thus we can resume our training program. How does it work:

**When:** Tuesdays and Thursdays after work. For many of us this is after 5PM and as soon as we can get to the field. These we call *Instructor Evenings*. What if it rains or is too windy – we can not fly model airplanes in the rain or when it is too windy, so *Instructor Evenings* are weather permitting.

**Who can you expect to see at the field:** Club instructors who can make it in time to the field. They have red tags which read *Flight Instructor*. Some guys don't like to fly other people's airplanes but are a wealth of information and can help the flight instructors with preflight checks on the airplane. These "shy" guys carry a *Preflight Instructor* tag. If all flight instructors are busy helping others and you need help or advice about your airplane – ask a preflight instructor.

Also, on *Instructor Evenings* you can expect to see other students who are learning how to fly their airplanes in a controlled manner. If there are more students than instructors, you will have to wait for your turn with an instructor. Can you use the same instructor every time – the general answer is yes but we try to get you to work with more than one instructor so we can be more objective on your progress. Each instructor has his own way of saying the same thing and many things can be done correctly in more than one way. The more "tricks" you learn, the better. And at the end you need two instructors who have worked with you to sign your solo proficiency card.

### What do you need:

**1. Airplane...** no, it can not go 100+ MPH, it can not be a jet, it can not be a warbird or an aerobatic airplane. To learn the basics of controlled flight you will need the ugly, boxy, high wing, some dihedral in the wing trainer airplane. "Why this type of an airplane?" – you may ask. Because it is easier to fly, has self-stabilizing tendency, flies relatively slow so you have more time to react or your instructor has more time to pull it out of the awkward situation you put it into.

Size of the airplane – typical for our field are 40 to 60-size trainer planes. What does that number mean? This is the typical displacement (in 1/100 of the cubic inch) of the engine, suitable to power the airplane. Normally we use 0.40 to 0.46 cu.in. engines in 40-size planes and 0.60 cu.in. engines in 60-size airplanes. "Can we use a 60 engine in a 40 plane?" – you may ask. Yes, but for trainers we would avoid it, reason being "throttle management". Too much power is not always good. It always requires good throttle management, something which beginners still do not have.

Why this size? Why not larger or smaller airplanes? Our field is relatively small. For training purposes it is not big enough for trainers larger than 60-size. Why not smaller? Because larger airplanes tolerate wind better. If you have a smaller trainer airplane you will stop flying it when winds exceed 3-4 MPH. A typical 40- to 60-size trainer is still flyable in a training session in winds up to 8 MPH. We live in the Midwest where it is rarely calm. So if you

come to the field with a small trainer airplane you will get less flight hours due to those breezy days you will encounter during your flight training.

**2. Radio, AKA transmitter** – it should be buddy box capable. Our club uses a buddy box training system. We, the instructors, usually carry to *Instructor Evenings* one or two of the most popular brand buddy boxes and cables for them. These brands being Futaba and JR/Spektrum. How does that system work? The buddy box is just a simple 4-channel radio, which can not transmit a signal. Otherwise it looks exactly like your transmitter. It connects to your transmitter with a special cable. The instructor holds and uses your radio, which we call Master radio, while you, the student, hold and use the buddy box, which is also sometimes called Student or Slave radio... No, you won't be treated by your Master... uh, I mean instructor as a slave. 😊

Your buddy box capable radio has a momentary switch or a button. It also has a trainer port where we plug the buddy box cable. The trainer switch being momentary means it is spring loaded and as long as it is engaged - pulled, pushed or pressed, the Master radio transmits to the plane the input from the buddy box. Yes, that means that when the instructor has engaged the training switch or button you are in control of the airplane. But what happens when you get in trouble? No, you say, it won't happen! Well, let's just *assume* you get in trouble. All the instructor has to do is let go of the training switch and he regains control of the airplane.

What if you got an airplane which came with a transmitter which is not capable of buddy boxing? Unfortunately instructors will not be able to help you in this case. Why not hand over the radio? Because it takes time to do this, sticks get bumped which causes the airplane to get in an even more awkward attitude thus more likely to crash. And we do not want your airplane to crash. Your trainer airplane is a tool – both for you and your instructor. It is the tool used to learn the basics of flight.

Don't forget to charge fully the batteries in the transmitter and in the airplane the night before you come to the field!

### **3. Field equipment:**

➔ a **tie-down** and an anchor. The tie-down is usually a piece of rope tied in a loop. The anchor is usually a big screwdriver. The rope goes around the tail of the airplane and around the anchor. It prevents the plane from moving forward when the engine/motor is running. You can get one of the fancy forks made specifically for this purpose.

➔ if your airplane uses a glow engine you will need a **glow driver**, AKA igniter, glow stick and so on. It connects to the glow plug and energizes it. When the glow plug is energized, there is fuel in the engine (engine being primed before applying power to the glow plug) and we spin the prop, the heat of the glow plug causes the fuel to fire and this starts the engine. Once the engine is running you can remove the glow driver. The interaction of the fuel with the hot filament in the glow plug not only ignites the fuel but it also keeps the filament hot for the next combustion cycle.

There are two major types of glow drivers – one is just a connector with a cable, the other one does not have a cable. The one with the cable attaches to a power panel, which provides approx. 1.2V to the glow plug. The other type has a rechargeable battery in its holder. If you are using the

second type of glow driver you will need a **Sub-C NiCd cell** and a **charger** for it. Many glow drivers come with the charger; some even come with the NiCd cell but others don't so you'll need a NiCd cell for those as well.

- to spin the glow engine you will need either a **chicken stick** or an **electric starter**. The chicken stick is a piece of wood stick with plastic cover on one end. The other end might have a fancy handle. The chicken stick is the equivalent of your finger flipping the prop with the "slight" difference that if the prop hits the stick, it (being the stick) will not complain. Your fingers are something else – keep them for better use and not for flipping the prop when the glow plug is energized. The other way to spin the prop is by using an electric starter. The starter usually operates on 12 volts and has a built-in spring loaded switch (a button).
- a **12 volt battery** – usually a sealed lead-acid battery. It provides power to your starter. In case you are using a power panel and a glow driver with a cable, the battery provides power to the power panel as well. It also will power an electric fuel pump (see further down) if you decide to use one. You will also need a **charger** for it. You can not use the NiCd charger for your glow driver. Keep these chargers at home and don't bring them to the field but make sure all your batteries are charged when you come to the field – those in the transmitter, airplane, glow driver and 12V battery.
- a **power panel** – if you decide to use a glow driver with a cable.
- **fuel** – this is a mixture of oil (provides lubrication to the engine), methanol (the main ingredient which provides power) and some nitromethane (which aids in running reliability). Fuel is usually marked with some percentage on the label – something like 5%, 10%, 15%. This is the amount of nitromethane in the fuel. Typical fuels used at our field are 10% and 15%. Both work well in our engines so it is up to you which one to pick.
- you need to get the fuel from the fuel bottle into the airplane tank before each flight and the remaining fuel in the tank after the last flight for the day back into the fuel bottle. To do this you can use a **fuel pump**, some **fittings** for the fuel bottle and **fuel tubing**. There are two types of fuel pumps – manual and electric. There is a handle on the manual pump which you turn in one direction to pump fuel from the bottle into the tank and in the other direction to move the fuel from the tank to the bottle. On the electric pump there is a 3-position switch. In the middle position the pump is off, in each of the end position the pump moves fuel in one direction or the other. Electric pumps use 12 volts – from the same 12V battery I wrote about above and usually through a power panel, also mentioned above.
- a **spare glow plug** and a **glow plug wrench**.
- if your trainer airplane uses an **electric** motor, you won't need a glow igniter, chicken stick or starter, fuel pump, fuel, power panel and 12V battery. You will need at least two **fully charged battery packs**. The number of charged packs you bring to the field will determine how many flights you will have on your airplane. If you bring only one pack you will get to fly your airplane only once which is not enough for one instructor session to make enough progress. I strongly recommend 3 fully charged flight packs as this is the typical number of flight per Instructor Evening for each student at the field. Even if you fly an electric airplane, I also strongly

recommend that you bring a **tie-down** and an anchor. Anytime a battery pack is connected to an electric airplane it must be treated as live and ready to spin the prop.

- a **spare prop** and **tools** needed to change it.
- any **tools** you may need at the field – screwdrivers, pliers, cutters, wrenches, hex drivers/keys, etc.
- **first aid kit** with mostly band-aid – hopefully no one at the field would have to use it.

**4. Aircraft Permit** from the DuPage County Forest Preserve – required to fly at the Springbrook Prairie Model Aircraft Field and any other Model Airfield in the DuPage Forest Preserves.

### **What will happen when you show up at the field?**

The first time you show up with your trainer airplane, transmitter, field equipment and Forest Preserve permit, an instructor will inspect your airplane for airworthiness. If the plane is not airworthy you will have to go back to the assembly board. If it is something simple and easy to fix at the field, the instructor will do it.

If the instructor considers the airplane ready to fly, he will take it up in the sky for its maiden flight. During this flight the instructor will trim the airplane and make sure the plane responds to all controls the way it should. The instructor may land, do some adjustments and take the plane up in the sky again to make sure it is properly adjusted. After the maiden flight the instructor will inspect the plane again to make sure nothing came loose, cracked or broke. Then if there is still enough daylight, you may have a chance to fly the plane on the buddy box. There is a lot to do before and after the maiden flight of an airplane so don't be disappointed if you don't get to fly your airplane on the first *Instructor Evening* you show up at.

At your first *Instructor Evening* you will be presented with your own Flight Log booklet. This is how instructors keep track of your flight training progress. It also describes shortly what you will learn during the basic flight training. If the instructor forgets to give you your personal Flight Log booklet, remind him about it. Sometimes we get busy on an *Instructor Evening* and forget about the Flight Log booklet.

Below is the Instruction Program for 2012 and a list of all current flight instructors.

See you at the field!

Ivan Cankov  
Chief Flight Instructor

## Instruction Program 2012

The Prop Masters R/C Aero Club provides basic (solo) training as well as advanced training in particular fields in which our club members are interested. The training is divided into the following categories:

**Pre-Flight Training:** The Pre-flight Training is part of the Basic Training, where beginners are taught the field rules and etiquette, how to setup and inspect their planes before and after flight.

**Basic Training:** Beginner pilots are taught the field rules and etiquette, how to setup and inspect their planes, taxi, take off, fly the plane in controllable manner and land successfully.

**Scale Flight Instruction:** Aimed towards pilots who have already soloed and want to fly scale model airplanes alike their full-size counterparts.

**Pattern and 3D Flight Instruction:** For pilots who want to improve their skills in pattern and 3D aerobatics.

**Electric Advisors:** This is a group of club members with extensive knowledge in electric flight. They can provide valuable information to those interested to get into flying electric models. Unlike glow and gas powered planes where changing one component can improve the characteristics of the model, electrics are more complex as the upgrade of one component can lead to an (expensive) upgrade of several other components.

Club members, interested in the advanced training should contact directly the instructors who provide the training in the category they'd like to improve their skills in.

### List of instructors:

Instructor	Pre-Flight	Basic	Scale	Pattern	3D	Electric Advisor
Hank Bourassa	X	X				
Tom Camp	X	X				
Ivan Cankov	X	X				X
Dave Carlson	X	X				
Dave Cotton	X					
Larry Dudkowski	X	X				X
David Engel			X			
Victor Miller	X	X				
Bob Mosinski	X	X		X	X	
Mick Pfeifer	X	X				