

Website of the Month

This month's website is not a traditional RC website, but some club members order engine bearings and other mechanical items from them to support their RC hobby. It is called McMaster Carr. Wikipedia describes McMaster Carr as "McMaster-Carr offers a collection of mechanical, electrical, plumbing, and utility hardware not usually located from a single source." Here is the link:

<http://www.mcmaster.com/#>

Do you have a favorite website? If so, let me know and I will put it in the newsletter. Favorite online store, how to build, how to fly, etc- send me the link! My email address:

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Training Column

As promised in last month's Pilot Talk, the following informative article was written by our very own **Steve Kolet**. I recommend EVERY club member read through it. For new members, the article serves as a good primer. For the veterans in the club, the article is a good "refresher". Thanks Steve!

Sometimes we take for granted all the information and skill acquired through years of flying radio control models. When you are starting out in the hobby, we assume that a newcomer knows very little and experienced club members offer a considerable amount of information and help. Many hobby shops, catalogs, and manufacturers have tip sheets for beginners. They list equipment you must have, should have and might want. That guidance is very useful for getting things together. You may have an experienced modeler help check or build your first model. The club instructors will check your model, test fly it and help you learn to fly. The Academy of Model Aeronautics provides many useful services. However, sometimes a seemingly minor omission can result in the loss of a model or personal injury. The following are some considerations which will help inexperienced and experienced modelers get a plane ready to fly.

So your plane is built, covered, and looks great! You have installed the engine, fuel tank, radio, and control linkages. You are ready to go to the field with it. But let's stop and back up for just a bit. Make sure all control surfaces are free and move easily without the servo/control linkage hooked up. If there is binding or stiffness, investigate and eliminate it. When installing the servo output arms for flight controls, neutral position should be perpendicular to the servo case to insure equal travel in each direction. After installing the

flight control linkages/pushrods, make sure the servos do not stall out at full travel in either direction (hum or buzz in the servo indicates servo is pushing against immovable force—it will drain your flight pack quicker). Do the same for the throttle linkage. This is usually the hardest linkage to set up correctly—you are trying to match the servo throw to the carburetor throw. Some of the newer radios have a procedure for doing this setup. Older radios require you to do a bit of testing to get it right.

What kind of clevis do you have on your plane? The kit manufacturer probably supplied a hardware pack or list. Nylon is adequate on all control linkages, etc. for up to .40 size planes. However, a metal clevis is stronger and would be a better choice for any planes larger than .40 size (at least on rudder, elevator and ailerons). Most of us feel that metal should be used on .60 size and larger planes. Make sure each clevis is closed fully on the control horn, carburetor arm, etc. and use a keeper of fuel tubing, shrink tubing, etc on each clevis to be sure it doesn't open and come off. If you use a clevis on each end of a control rod or linkage, use a small nut jammed against one clevis to insure the pushrod will not turn and change trim or for the clevis to come off...a small drop of loctite blue on the threaded nut is insurance. If you have a clevis at the servo end of a control linkage, check to insure there is no binding at the "pull" end of servo travel. If there is binding, you need to change the linkage set up.

After you get to this point, install the wing and check the balance of the plane with all radio equipment, engine, **EMPTY** fuel tank, etc. installed. It should balance per the plans/instruction manual. If not, use the minimum weight at the greatest distance from the balance point to bring the plane into balance. If you need to cut into the fuselage to permanently install the weight and then repair the access hole, do it. You may get away with a nose heavy plane, but a tail heavy plane is a crash.

Check the flight controls and throttle for correct operation. With all transmitter trims in the neutral position, check that all control surfaces are in the neutral position. Straddle the plane facing forward. Pull the elevator stick full aft and check that the elevator trailing edge moved up. Then push full forward and check the elevator trailing edge moved down. The elevator throw should have been equal in each direction. Move the aileron stick full **LEFT** and observe the **LEFT** aileron trailing edge moves **UP** and the right aileron trailing edge moves down. Move the aileron stick full **RIGHT** and observe the **RIGHT** aileron trailing edge moves **UP** and the left aileron trailing edge moves down. The ailerons should move the same amount up and down. Move the rudder stick full **RIGHT** and observe the rudder trailing edge moves

RIGHT. If you have a steerable tail wheel, it should move the same as the rudder. If you have a steerable nose wheel, the front of the wheel will move to the right. Now move the rudder stick full **LEFT** and check the rudder trailing edge moves **LEFT**. Again, a steerable tailwheel will follow the rudder. The front of a steerable nosewheel will move to the left. The amount of control surface throw should follow the plane manufacturer recommendations. Make sure the control throws are as the kit manufacturer or instruction manual states. Last, push the throttle stick full forward and check the engine carburetor is open fully. Pull the throttle stick full aft and check the carburetor is almost completely closed off. Slide the throttle trim full aft and the carburetor should close completely. Set the throttle trim back to neutral.

Here is a bit of operational knowledge. Most trainers are high wing with considerable dihedral in that wing. They are relatively slow and stable. The stability makes them a bit easier to control and the slow speed gives you a chance to think while learning to fly the plane. Many high wing trainers use rubber bands to hold the wing attached to the fuselage. The kit manufacturer and/or rubber band manufacturer usually tell you to use a **MINIMUM** of 8 to 10 bands to attach the wing to the fuselage. . Most of us recommend a **MINIMUM** of 12 bands. You should be using Number 64 bands and most of us like the gum rubber bands. We use them in a pattern which uses an “X” placement for the last one or two bands on each side. This makes us feel that the bands will not pop off in flight. Now, a question is, “ How many times can you use the bands?” There is no great consensus about that. However, the bands weaken and stretch with exposure to model fuel, gasoline, and sunlight. If you choose to reuse the bands, consider washing them in water with a little dish detergent and then dry them or dust them with talcum powder or clean kitty litter to get some of the fuel out. I don’t recommend using them more than a second time. I admit that I have reused bands the next day after washing them. However, I feel insecure about it and always add a few new bands. Then I throw the entire bunch away as it is difficult to tell which are used and which are not. A new set of bands each day is cheap insurance.

These engines really turn and have a lot of power! Balance your props (and spinner if possible) to minimize vibration. Make sure the prop nut is **TIGHT**. It is **HIGHLY** recommended that you use a restraining strap, field stand, etc. when starting your model. Make sure the model is against the forward stop so it cannot lurch forward as it starts. Keep starter cables, tools, rags, etc. clear of the prop arc and the immediate area. At VFSS, we keep all the planes pointed at the runway and in a relatively even line in front of the “pilot observation area”. Speaking of running engines, make sure the engine runs at both full throttle and idle with the plane in a nose high attitude. This check is usually best accomplished near the runway using

one person on the radio and one person holding the plane. If this is done in the pit area, careful where the prop wash goes. Now, with the engine idling, slide throttle trim to full aft and the engine should stop running. Find a field marshal (yellow cap) and have your plane and engine sound checked.

Now, your plane is ready for the first flight. Have fun.

See you at the field.

Alan Fry
Training Coordinator