



Cornwall Aero Modellers

NEWSLETTER

February 2017

Club Executive

President: Karl Kingston
Vice-president: Rick Besner
Treasurer: Roger Belanger
Secretary: Mike Cafferky
Field manager: open
Events: Jack Dikland & Merv Blizzard
News editor: Frank Reaume
Safety Officer: Frank Reaume

The monthly meeting of the club was held on February 13th at Minimax.

- The financial report was presented and adopted.
 - Some discussion about the field took place. It was noted that the snow blower needs repair, and one generator is kaput. It was agreed that a quote to replace the main gate should be forwarded to the solar firm. Finally, Merv will be adding fans to the charging station to hopefully prevent overheating of the storage batteries.
 - The club will adopt membership badges that John M. will print up.
 - The club will set aside funds each year to be used for lawn mower replacement.
 - Fun flies and float flies will continue to be held, as they are an excellent source of revenue for the club.
 - Following up on a suggestion by Nick M., some club members will be setting up a display at the Cornwall Science Fair on April 1.
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The club treasurer is now accepting dues for the 2017 season. Please remember that the dues should be submitted no later than March 31.

Also, any member who wishes to fly outdoors at the field, or indoors at the Dome, after January 1, 2017, must have his MAAC membership renewed prior to that date, in order to be covered by proper insurance.

Correction:

In last month's newsletter, it was mentioned that Spektrum transmitters should be updated to the latest 1.12 firmware. However, Jack D. mentioned to me that this is incorrect – the update is actually version 1.11. Just another senior moment, I guess.

World F3P Championships:

The best indoor flyers in the world converged on Strasbourg, France in mid-February to demonstrate their skills before a panel of judges.



For the third year in a row, Gernot Bruckman of Austria emerged as the #1 pilot. Congrats!

Now, all you Dome flyers – with a lot more practice, maybe one or more of you can qualify for the Canadian team heading off to next year’s championship contest.

Nostalgia Corner:

Back in the early days of r/c, most people flew with reed systems or with the new proportional radios that had just come on the market.

Most of those early r/c flyers devoted their efforts to learning aerobatics and participating in “pattern” contests. A large number of flyers also built and flew scale models.

Here is a link to some 1963-65 pattern invitational contests put on by the Detroit RC Club. Some of the great aerobatic pilots of that era, Ed Kazmirski, Hal DeBolt, Jim Kirkland, Tom Brett, Don Lowe, etc. are featured. Most of those fellows designed and built their own pattern planes, such as the Taurus, Apogee, Beachcomber, etc.

Considering the rudimentary radio equipment in use at that time, these guys flew quite well. In fact, Tom Brett of the Detroit club garnered 1st place in the 1962 FAI F3A World Championships held in England that year.

<https://www.youtube.com/watch?v=qgZ-aniocoE>

Here is a video of model aviation (mostly free-flight and control-line) shortly after ww2, when Plymouth Motors sponsored an international contest in Detroit. The aim was to get youngsters interested in model aviation as a worthwhile hobby. The event drew hundreds of competitors and spectators. Those days are long gone, unfortunately.

<https://www.youtube.com/watch?v=SmB42jsImj8>

Back in the early 90's, an excellent airplane kit was introduced to the market. It was the Ultrasport, and was available in 40 size, 60 size, and 90 size. Although many flyers purchased and built these planes, and loved the way they flew, the design was soon discontinued.

Now, however, an ARF kit of this superb aircraft has appeared – it is the 55” Ultrasport 46. Reasonably priced at \$200USD.



Anyone looking for a great flying machine - look no further than this beauty.

HobbyKing has just come out with a good-looking electric 3D foamie, at a reasonable price (\$111USD). It is a complete package, motor, esc, servos, prop, etc. Runs well on a 3s, 2200mah lipo, but if you want to try a 4s, you might want to upgrade the ESC to a 60-70A version to carry the extra current.



Recently, Model Airplane News published a nice article on their blog, entitled “Radio Secrets”. Some tips regarding radio setup were published in last month’s newsletter. Here are a few more ideas to help you understand your radio:

First of all, when holding your radio during your flight, it’s a good idea to have the “standard” position on all switches be “away” from you. Another way to say this is to have the switches located on the top of your transmitter toward the back of the case and those on the front of the transmitter toward their top position. Establishing this allows you to always return to your most comfortable flying parameters should your flight get on the edge of your control abilities for whatever reason.

Exponential, simply stated, in our radios gives stick inputs a softer “feel” around the center of stick travel. The greater distance we move the stick away from center, the less effect any programmed expo has. Expo works in concert with rate settings and is another piece of the puzzle in getting your radio controls exactly the way you want them.

Sneaking up on how much expo to use is a good way to do it if you’ve never tried it before. Entering a 10% value would be a good start. You will hardly notice that amount of input on the bench or in the air. But once you figure out the procedure for setting it, there’s no mystery about going into the menus and increasing it to +15 or +20, or even more. Some of the best pilots use +70 or more on expo to fly 3D. Most sport flyers will and should be in the range of +20 to +40. The type of aircraft you fly will determine how much expo you should use, if any. Even trainer aircraft and novice fliers can use some expo to advantage.

Have no fear of exponential. The softer feel around stick center will make you a smoother flier; just don’t overdo it. For most helicopters, it’s a must. For most sport aircraft and sport fliers, it really helps a lot in advancing your flying skills.

Dual rates are one of the neat features of our modern radios. The elevator dual rate switch is usually in the upper left front corner of the transmitter; the aileron switch is in the upper right front corner; and the rudder switch, if you have one, is in the upper right top. The purpose of these switches is to establish a limited servo travel position when the switch is moved to either of its two positions. For example, the switch “away” from you might give 100% servo travel, and if you click it toward you, your dual rate setting might provide 70% travel of that same servo (surface). Here’s a specific example. Let’s say you are flying a tail-dragger and that you need to input small amounts of rudder on takeoffs. You might program your standard position rudder rate at 70% of available rudder throw (the switch would be away from you, toward the back of the transmitter). Your second rate might be 100% (or even more) so that when you want to fly aerobatics, clicking the switch forward will give you almost double the throw on rudder. The result of this setup is that your ground handling and basic maneuvers will be very smooth on your standard setting, but your rudder authority for maneuvers will be very powerful on your high rate setting. The amount of travel that you set needs to be adjusted after flight experimentation. As you know, servo arm and surface horn length are also factors that control surface deflection amounts. Programming “rates” are the final step in tuning your aircraft to your liking.

Dual rates are not to be ignored! This feature is an important component provided by our modern radios that make us smoother, more accomplished fliers. They are easy to program, and even the beginner-level transmitters sport dual rates. Top shelf radios have triple rates! Several radios can combine all rates on one switch. In my opinion, that’s a really nice feature that might be used *after* you program individual rates/switches and get them where you want them. Then, one switch sets all three surfaces to do either high or low settings, or any combination you want.

Mixing presents more of a challenge. It also requires more patience to get it the way we want it, but the effort is worth it.

Most modern radios feature mixing circuitry. Some radios even have pre-programmed mixes. One of the examples of how mixing can help make you a better pilot is the knife-edge mix between rudder and elevator. Knife-edge flight is a very cool maneuver, and really cool when you don’t have to constantly input elevator to hold the plane in position as it flies down the flight line on its side! So how is this accomplished?

Let’s start by assuming you have the rate switch the way you want it. That means it’s set to hold the nose of your aircraft up a bit and level with the ground as the plane flies by you rolled over on its side. You might have fine-tuned your “normal” rate setting to achieve this. Now let’s get more specific. Let’s say you are at the field, and the

wind is blowing right to left. You are going to fly your knife-edge maneuver from left to right, into the wind. You enter by giving the aircraft right aileron, making it bank to the right a quarter turn, and left rudder to hold up the nose. All is going well at first, but in a second or two you see the nose of the plane going off line and pulling toward the canopy as you fly by. You need to correct with a bit of down-elevator. After a few passes, you get the feel of what is required to make the knife-edge look good. But you are constantly correcting, and the fly-by looks ragged when you over/under-correct. The solution to this condition is a rudder/elevator mix.

What you need to do is program about 5% of down-elevator to automatically input into your aircraft when you hold rudder. Since you don't want this to happen all the time when you use rudder, you put the mix on a switch on the transmitter. Now, just before entering knife-edge, you hit the switch, roll a quarter turn, and when you enter your rudder command, the elevator deflects downward to whatever value you have entered in the mixing program. Five percent is a good starting point, but it may take more or less, and sometimes it may even take a "negative" mix, meaning the plane was moving toward the landing gear, not the canopy. In that case, you program up-elevator mixed with rudder. It sounds complicated, but it really isn't. The best advice is for you to read the manual that came with the radio, and try it on the bench, then out at the field. I like to take some written notes also, so when I get to the field I can remember what I did, and how to add or subtract more input if necessary.

There are many mixes you can use. Flap/elevator is a common one, and so is aileron/spoilers. Give mixing a try; like rates and expo, you are going to like it when you get it right.

Most important, any radio inputs or changes should be done by you, the modeler, owner, and flier of the radio and aircraft. It's OK and even preferred if someone with experience is looking over your shoulder, giving instructions or making suggestions, but don't let them make the changes. Hands-on experience is a basic tenet of effective learning. Master your radio; don't let it master you!

