

Pilot Briefing

Mid Hudson Radio Control Society



Volume 7, Issue 7

July 2015

Upcoming Events

Aug 1
Walkkill Field Meeting

Aug 17
Board Meeting

Club Officers

President
Warren Batson

Vice President
Peter Jagich

Secretary
Flavio Ambrosini

Treasurer
Fred Dimaria

Membership
Rob Stubbs

Directors at Large
Bob Allen
Ron Revelle
Otto Loorents

Field Dir-Walkkill
Ron Revelle

Field Dir-Redwing
Rob Schulze

Safety Officer
Jerry Rohling

Flight Instructor
Warren Batson

News Editor
Jer Milosek

President's Corner

Hi members,

By now you all should have received my updated note for the Red wing field. The board is looking at some other options within the town of Lagrange at this time. The board also will be forming a field finding committee and would welcome some members on the committee. With trying to keep up with everything I failed to mention in my update note that the Red Wing field is up for sale. This new news was a surprise to all the board members. The asking price is 4.5 million and the problem neighbor has approached Red Wing Sand and gravel about purchasing the property. So use of this property has potential to be another deal like Hopewell, where we get a 2 week notice to vacate.

If anyone has interested in helping the field finding committee please contact any of the board members.

I will follow last month's newsletter article with a follow on about improving one's flying skills. So here goes.

As an instructor and proficient pilot, I get asked to do maiden flights on many of the member's new creations. Most maiden flights go very well but on occasion there are heart pounding moments. Over the past 48 years in this hobby I have flown many different aircraft types and have developed a 6th sense of how much flight control is needed for a given type aircraft. What I see is, that too often, many of these maiden aircraft are set up with way to much control surface movement. While I am a firm believer in having more control movement on these first flights because of the unexpected wing warps, CG problems, etc.

I also want to make sure the aircraft can be flown in a tamed manner. So my approach is to use the features in my computer radio transmitter to help me achieve the 2 goals of a maiden flight. Have enough flight control for the unexpected and have a smooth controlled flight.

I achieve these 2 goals by using a combination of dual rates and exponential programming features. First let's talk about dual rates. I set up my low rate to what my experience tells is reasonable flight surface movement. Then I set the high rate from 50% to 100% more control surface movement, depending on weather this is a low or high performance type aircraft. This insures that I will have enough flight control movement to control the aircraft for those heart pounding moments that do happen from time to time.

My next goal is to have a controlled flight or (taming the control surfaces). For this I use the Exponential feature. This feature allows for nonlinear movement of the transmitter stick movement based on a percentage that you program into the radio. Let say I program in +15% exponential into my radio. I am looking to have less stick movement in the first 15% of my stick which translates to less flight surface movement and smoother flying. On my Spectrum radio this less control movement percentage is +15%. NOTE: this plus or minus percentage is brand specific so you have to read the instruction for your brand of transmitter. Hope I have made this clear, If not let me know and I will have more discussion on this.

So my Low dual rate would have +15% expo, my high rate would have about +50% expo. I use this setup on all 3 primary flight controls of elevator, aileron & rudder.

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President's Corner continued....

So here is a typical set as you would see it in my computer radio setting with 100 being normal surface control movement and % number being the Exponential percentage. +50% percent again meaning I do not get 1 to 1 Tx stick to servo movement till I reach 50% stick movement from the normal center point.

Low rates

Elevator 65 expo at +15%
Aileron 65 expo at +15%
Rudder 65 expo at +15%

High Rates

Elevator 100 expo at +50%
Aileron 100 expo at +50%
Rudder 65 expo at +50%

Again remember the expo % number might be Minus (-) or Plus (+) depending on radio brand. If you use the wrong plus or minus % in your transmitter you are effectively making the stick movement more sensitive at the center point. And I have seen this more times than I care to mention. Futaba is minus (-) for less sensitive and JR/ Spectrum is plus (+) for less sensitive around the stick center point.

I have been using this setup to maiden my new aircraft for many years and it has never failed me.

There are some people that do not like to use the exponential function sighting they can use their fingers to control the stick movement. I applaud those that can, but I will go on record here by stating that probably 80% of all RC pilots do not have that kind of finger control, myself included. So why not use the transmitter's features to make you a better pilot. After all, why did you spend all that extra money on a transmitter with all its bells and whistles?

The use of exponential is especially useful for landings. By using Expo you can get rid of the twitchy roller coaster landing approaches often seen at any RC flying fields.

I hope you find this useful and if you do not understand any of it please feel free to ask me to demonstrate the effect on the controls surfaces while at the field.

Warren Batson
President MHRCS

Team USA and F3A Championships

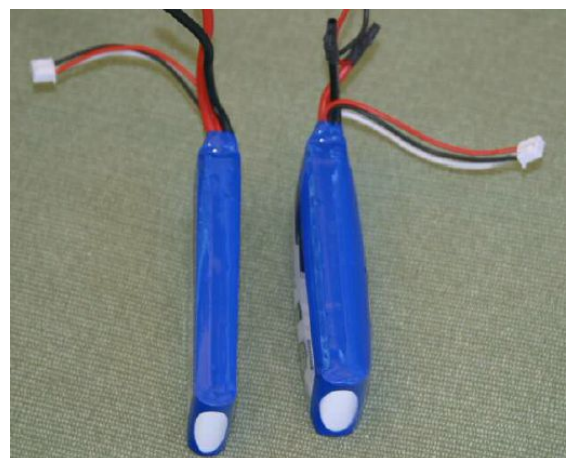
In Switzerland, August 6 thru 16. You can get the latest from this website:

<http://teamusa2015.weebly.com/>

Be sure to put the link in your favorites.

Puffing

After flying Tuesday July 21, I went to charge my xmtr battery immediately on arriving home from the 1 hour drive from Walkkill Field. When I took my Hitec transmitter out of its travelling case the battery lid in the back fell off. Its held in place by those tabs with ridges on the edge. The lid was forced off by the puffed LiPo. The puffing had to happen during the hour drive home. Compare the puffed battery right with the one on the left.



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Programmable transmitters require more power to operate, that's why manufacturers switched to LiPo or Li Ion batteries from NiCd/NiMh. This battery was only 2 years old. Transmitters do not abuse the battery like an electric motor does, the current drain is far less and very constant compared to one used for an electric motor.

- Does your transmitter require charging more frequently?
- Does the voltage drop sooner?

These are signs your transmitter battery is on the way out, better replace it than replace your model.

Programmable Transmitters

With the advent of programmable transmitters its very important you have it properly programmed.

IT IS THE RESPONSIBILITY OF THE OWNER !!!!

It is not the responsibility of the instructor. There are simply too many manufacturers, each with their own unique interface for the instructor to be familiar with. The owner should at least bring the manual to the field if he does not know how to program the transmitter. This gets even more important on the new trainer systems that employ "SAFE TECHNOLOGY." I've seen experienced instructors have extraordinary problems with models employing safe technology because the student failed to inform the instructor it was installed and the model behaved differently than what the instructor was telling it. It lead the instructor to believe the model had a system failure when it was only making the corrections the technology was calling for.

Programming the transmitter is just as important as getting the correct surface direction when moving the stick.

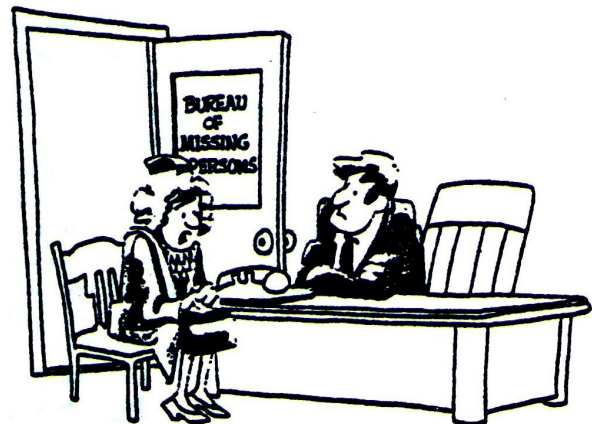
YouTube.com is a good place to look for instructions on how to program your specific transmitter.

For example, A Spektrum DX9
<https://www.youtube.com/watch?v=KWiKyAMJD74>

If you use a modern transmitter like an old fashion 72mhz 4 channel system, you are truly missing out on features that will make your flying experience more pleasurable.

Great care must be used when you program your transmitter. You can put a bug in your transmitter that will crash your aircraft. I am so paranoid about my transmitter that I will not allow anyone to mess with it. The danger is that they can inadvertently change the settings and not know it. Now when I fly I have that bug just waiting to point my aircraft at the earth.

I can put a bug in your transmitter and it'll take you days to find it. If I can do it, so can everyone else.



"Last time I saw him, he was down in his workshop crying over some silly transmitter instructions"

Good Video Series

A series of 23 videos explaining system setup with Spektrum gear. The principles are applicable to Airtronics, Futaba, Tactic, Turnigy, et al.

All you need to do is pay attention and listen.

Scroll down after the screen is displayed and you'll see 5 videos across the screen, select the one you want and then go up and click on the arrow to start.

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To get the next 5, click on the right arrow on the 5th displayed video; do this 5 times to get to the end.

This well prepared series includes mixes for flaps, retracts, steerable nose wheels and more that will benefit your model.

<http://www.horizonhobby.com/ar636-6-channel-as3x-reg%3Bsport-receiver-spmar636>

Cub Fans

Cub fans & scale aficionados need to visit this site:

<https://plus.google.com/photos/117575609519596084132/albums/6134595170397215889>

All done by a woman.



Sailplanes

Let me share with you a communication I had with Ray Meyer regarding selecting an entry level sailplane.

Jer,

Bob mentioned you might contact me. These days essentially all gliders are ARF. The only real difference is the effort to install flight controls and motor. Based on your experience there are several that I have seen fly well enough to be in an ALES contest but are not complex or overly expensive (ala moldies).

The 3M span offers soaring performance and the capacity to carry reasonable size motors and batteries. As you can imagine price is a big variable so the

examples here are reasonable. These are Ultracote covered open bay wings with some carbon and kevlar in the leading edge of some of them.

A good place to start is Esprit Models, www.espritmodel.com/f5j-aleslmr-electric-sailplanes.aspx

Also, Soaring USA at: www.soaringusa.com/home.php

The Grafas 3.1 at \$535 is a very good flyer: www.espritmodel.com/grafas-31e-f5jales-arf.aspx

It has ailerons and flaps which are necessary for a decent glider. It does not have the D-tube formed carbon/kevlar LE but is also less expensive. The Gracia is a V-tail version. The wing loadings are likely to be 6-8 oz/ft. The specs are notoriously unreliable for weight.

The significant step up in performance is the Pulsar 3.2 or 3.6 Pro which offers sophisticated design and construction: www.espritmodel.com/pulsar-3-2e-pro-arf.aspx

This is also carried by Soaring USA. When you order we should talk as there are factors to consider. There are also 2.0M and 2.5M versions which are cheaper. The 2.5 is a nice compromise in performance and price.

Motors are another variable. The more expensive but lighter NEU 1107 or 10 with a 6.7 gearbox is what most of us are using. A Kv of 4100-4500 is best for our purposes. If you go with an out runner to save \$ than MVVS or Hyperion make that are suitable but heavier. Then the Kv needs to be about 600. One also has to be sure the diameter of the motor will fit the nose cone. Also the NEU1105 is an option for lighter airframes such as 2.5M.

The moldies are more expensive and usually heavier. It depends on how much you want to spend.

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CG For Large Aircraft

Some links to look at:

<http://www.ultimate-jets.net/products/xicoy-digital-cgmachine>

http://www.flyinggiants.com/forums/showthread.php?t=184879&utm_source=newsletter&utm_medium=email&utm_content=Click%20here%20to%20learn%20more.&utm_campaign=June23%20FG%20Mass

It happened at Walkill Field

It was Thursday, July 16, a cold and windy day, so cold guys were putting on jackets, more like an early October day. Bob Magee had his glider way up when we heard him yell for Ed Popko to come to his aid. The glider was caught in very strong wind and rising even higher. Bob couldn't get it to descend because of the wind and while watching it, I saw it go inverted. No doubt about it, the V-tail was pointing down, not a good attitude for a glider.

Earlier in the week Ron Revelle had the wings of his Radian tear off while in the air. Ron thinks he got caught in some extraordinary strong wind. He reported the fuse came down like a lawn dart.

Moral of this; **Do Not Mess With Mariah.**

Latest Lyme Disease

<http://news.yahoo.com/study-show-high-risk-areas-lyme-disease-growing-184946078.html>

Check yourself thoroughly after each flying session. It's your health.

Aerodynamic Theory

Interesting discussion of aerodynamic theory and flying wings re:Northrop XB-35 and Horton 0229 at:

http://www.rcscalebuilder.com/forum/forum_posts.asp?TID=23770&PN=1&TPN=1

Avro Vulcan

<http://foxtrotalpha.jalopnik.com/the-last-avro-vulcan-bomber-flyingjust-pulled-off-an-a-1718892290>

Miscellaneous Thoughts

- Check your new mix before flying by watching the resulting servo movement on the monitor screen of your transmitter sometimes referred to as receiver output. Treat your aircraft's flight after putting a mix in as a maiden flight. There's a lot riding on it!
- Have you set your transmitter to give you an alarm when your flight pack drops?
- Have you set the proper voltage to give the alarm? Its based on your battery chemistry. That's why we discussed cell voltage back in December.
- Epower guys can get an audible alarm from the ESC when the motor battery drops below a threshold that is programmable. It also pulses the motor to get your attention. What alarms are available if you use gas? Head temp should be among them.
- Retract users could use an air pressure monitor.

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Using a BEC with a Buffer Pack

A buffer pack is a pack run in parallel with a BEC. I think Kontronik was the first to advocate use (that I know of any way). Basically, it absorbs big hits, and provides a failsafe in the event the BEC or the flight pack (typically a solder connection) fails.

So, you can run your BEC at 5.6V, and run an 800mAh Eneloop pack in parallel. BEC will keep the pack charged without overcharging it. Set your voltage alarm to 5.0-5.2V. If the alarm goes off, check your RX voltage. If it stays below 5.5-5.6V, and keeps dropping, your BEC failed and you are flying on your buffer pack.... Land now!

I think most ESCs are compatible with buffer packs, but I'd check on a per/model basis to make sure.

Making a Plug for a Fuselage

I understand the process up to the point of joining the halves, I'd like to know how they get inside with the tape and epoxy when putting the sides together. If you have a link please send it to: milosek@localnet.com

<https://www.youtube.com/watch?v=20aNPDAcvYM>

Also the build thread at:

<http://www.rcuniverse.com/forum/rc-pattern-flying-101/11461465-audax-f3a-new-project-2013-a.html>

A big "Thank You!" to Flavio for his layout and artwork on the MHRCS Newsletter. He is responsible for making it an eyecatcher.

Jer
Newsletter Editor