Loooops & Lies

Newsletter of The River Valley Flyers

Club #948

December 2020

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From the Presidents Shop: After the cool and somewhat snowy month we had to start the fall in October, the weather warmed up nicely in November. There were even a few days in early November that felt like we were still in late summer, with sunny skies and warm temperatures. This felt pretty good, knowing that it will shorten up our Wisconsin winter that is coming in the months ahead. I hope you were able to get outdoors and enjoy the short break from reality. I am optimistically hopeful that this winter will not be as cold and snowy as usual.

The outdoor flying season is just about over for another year, although I know a few of you who will still be out until the snow gets too deep to fly in. The problem with winter flying for me is the cold on my bare hands, and my fingers usually freeze even during a quick three-minute flight when the temps dip to freezing or below. I have tried using several different style gloves in the past, but they all seem too thick for me to be able to feel the sticks on the radio. Perhaps this winter I will

have to find a way to overcome that obstacle, and do some winter flying again, at least at my home in my recently expanded yard.

There is not a lot of news items to report this month, just that the 2020 club officers are now also the 2021 club officers. Thanks to all who serve in these roles. Please be aware that the dues have increased slightly for 2021 when you are renewing your membership, and please help us out by filling out the information sheet when sending in your dues, even if you sent that information to us last year. Thanks also to all you who helped keep the club operating efficiently this past season with your donation of time and labor. I am looking forward to a better year in 2021.

Over the past few months, I've been trying to understand the FAA's Remote ID requirements and how it will be implemented into this hobby in the near future. I am also trying to understand what that will mean for our club, and what obstacles we will need to overcome if this goes through as written. The current radio equipment that we are using to fly our models will probably require some kind of an upgrade to be able to transmit an ID while airborne, or some kind of device added to the aircraft to make that possible. In order for the radio system in the aircraft to feed that information back to the ground, it would need to have some type of telemetry system on board, similar to the telemetry system on a recreational-commercial drone. When or if this system comes, I hope it isn't too complicated or expensive to upgrade to, and integrated into the hobby slowly. I would think that it could be phased in as we upgrade radio equipment, and not just make our current equipment obsolete. Just something to watch in the months ahead.

I hope everyone has some type of winter project to keep busy with this winter season, either a new build or a rebuild of some kind. I have started repair on my Trex 500 helicopter that was demolished in a summer crash. The main frames are cracked, and because of its age, some of the parts for it aren't available. I may have to make a few of the parts myself, or may just opt for a newer model of the 500 size, and save some the good parts from the old one for the newer one. I hope that you too have found something to tinker with this winter.
I just want to wish everyone a Happy Holiday season in the month ahead, and to wish everyone a Merry Christmas for 2020, and a Happy New Year for 2021.
We will again have our December monthly meeting on Google Meet on Wednesday December 2nd at 6:30 P.M. Watch for your invite in your email. If you want to do a practice Meet, or if you aren't quite sure how to get onto this platform, feel free to contact me and I will help you get set up for it. I hope we can use this platform to keep in touch this winter season too. See you then.
Don

Eagle Tree Announcement

After nearly 18 years of having fun with fellow pilots, Eagle Tree will be closing. We will continue to take orders via our web shop (for in-stock items) through September 30, 2020. Warranty service will continue through October 31, 2020.

For warranty service or other inquiries, please open a web ticket with us at http://ticket.eagletreesystems.com/ or email us at support@eagletreesystems.com

We'd like to thank our many friends and customers who have supported us over the years. Be safe and stay well.

Upcoming Area Events

If anyone hears about any up coming events, please let me know. (Rick Ida)

Also, check out our Facebook page at https://www.facebook.com/groups/124394500927324

River Valley Flyers Monthly Meeting Notice:

The monthly meeting? Stay tuned for email updates!

Website: www.RiverValleyFlyers.org

Increase Battery Life

When it comes to electric aircraft, one of the key components is your battery pack. It is the only power source to keep your aircraft in the air, requires constant maintenance, and if not watched it will most likely be the first thing that needs to be replaced. But with

the right care and careful monitoring, a battery pack will most likely last for quite some time. So if you are looking to add some extra time to your battery pack's lifespan, read on and learn some expert tips on the care, feeding and maintenance of that vital aircraft element, the LiPo battery pack.

UNDERSTANDING C-RATING (IT ISN'T JUST A PASSING GRADE!)

The C-rating designation on a battery pack lets you know just how much energy you can safely pull from that pack. LiPo battery packs can release amp draw based on the requirement of the power system. However, because there is no regulator to limit the amount of power draw from the battery, the system can actually pull too much from the pack, causing it to puff up or be destroyed. This is why understanding C-rating is so critical to maintaining the health of your battery pack. The other key essential is that you need to have some way of monitoring the amount of amperage being pulled from the pack.

The designated C-rating on a pack tells us how much amperage you can safely pull from that power source. The most common one is 20C, which means that you can pull out amperage up to 20 times the size of the battery pack. A 4200mAh battery that is rated at 20C can discharge up to 84,000mA, or 84 amps.

The C-rating will be clearly marked on the label of the battery so that the pilot will know exactly what they are buying.

KNOWLEDGE IS POWER!

Using a watt meter allows you to get real-time power usage of your aircraft while the system is in use. Of course this reading is done on the ground. If you want data reading during the flight, telemetry systems are the way to go.

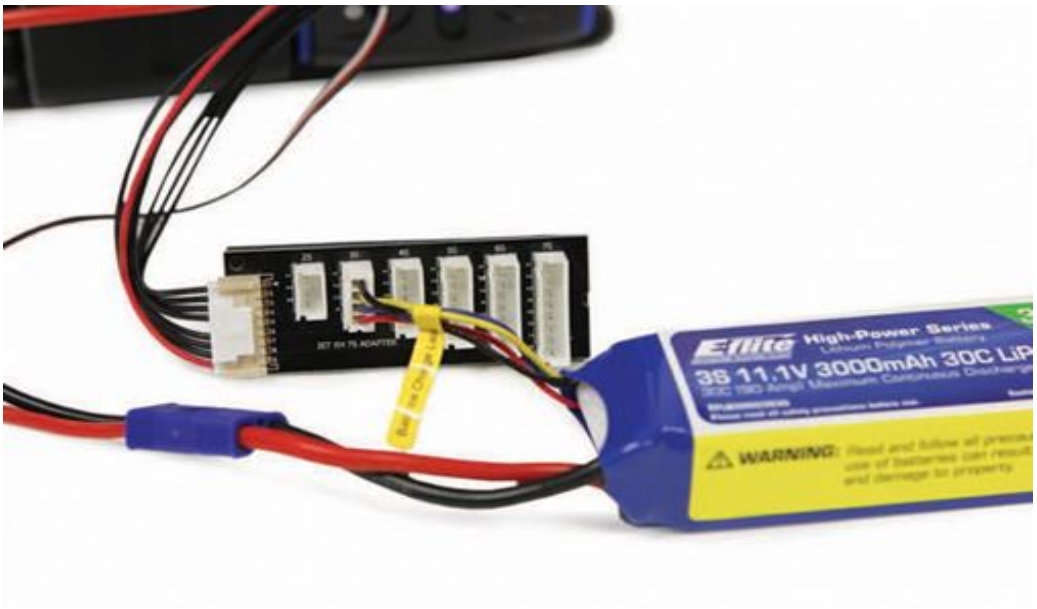
How do you know how many amps your power system is pulling? Purchase a watt meter and measure amperage draw of your system when it is first installed. A better way is to take advantage of many radio systems out there that are capable of real-time telemetry. By monitoring the pack throughout the flight you can easily see exactly what the power system is pulling and when it requires peak performance from the battery pack.

PRO ADVICE

Here is Mike getting his latest electric plane ready for its first flight.

Our long time contributor Mike Gantt has this to say about C-rating: “Most of us want more power, and a higher C-rated battery will ‘deliver more energy,’ and that means higher performance. The most important difference between batteries with a different C-rating is the fact that the higher rated batteries suffer less from voltage drops under load. This ability to maintain a higher and more consistent voltage is what typically generates the high performance we enjoy. This is also where my speed controller’s cut off came into play. When a lower C-rated battery’s voltage dropped down to a certain level, my speed control is programmed to shut down, which helps to save my batteries from dipping into too low of a voltage.”

Save your battery by not running at full draw all the time. While it is possible to run your battery at full C-rating, you shouldn't. By keeping the amp draw to about 75% of the full C-rating amount, the battery will run much cooler and will last longer than if you constantly pull the amps at maximum level. If possible, try to match the battery pack to a power system that will constantly pull amps at about 75-80% of the pack's C-rating.



In order to charge over 1C safely the charger will have to be rated for rapid charging and have a balance board for your pack.

CHARGE RATE: THE OTHER C RATING

The standard for most battery packs has been to charge them at a 1C rating. However, charging a higher C-rated pack can often times be completed in less time, as the higher C-rated packs can be recharged using a higher charge current. Some packs can have a "max charge rate" of 12C, which can shorten charge times

considerably. Is this safe? Yes, but as usual always balance-charge your packs regardless of charge rate and use a battery charging bag or other container while charging. Even military surplus store bought ammo cans can be used as a great charging box and for battery storage afterward. A high-quality charger usually delivers high-quality results and will have a charging system with built-in balance ports.

Additional safety devices include a temp-monitoring probe, a battery-powered smoke detector set close by the charging station for an added alarm, and a fire extinguisher that can put out an electrical fire. For the safety and longevity of your battery pack, when possible always charge your battery at 1C, which is 1 times capacity and this usually takes about 20 minutes to an hour. Doing this will extend the life of older packs. Finally, no matter how you charge, remain in the vicinity so if any charging issues should happen, you can immediately rectify the situation.

BATTERY STORAGE

Although it is a good idea to label your batteries when they have a storage charge, it is also a good idea to always charge

the battery pack with a storage charge. Then top them off the night before use at the regular charge rate.

There are some other things you can do for long-term LiPo storage that will prolong the life of a battery pack. How and where the packs are stored is perhaps the biggest factor in prolonging their performance. Keep batteries in a cool dark environment and not in a place with temperature extremes such as a car, a trailer or a non-insulated storage shed. High temperatures will destroy a battery in short order, so always keep battery packs out of the sun and heat. The other extreme is allowing packs to freeze; this will also damage them beyond repair. A refrigerator that maintains a temperature of about 40 to 45 degrees is the perfect place to store packs (but don't use the kitchen refrigerator that has food in it!). Allow the packs to come to room temperature before using or charging them.

LiPo batteries will self-discharge at a very slow rate; but over time, they will lose their charge. Packs that go completely dead, or fall below 2.5 volts per cell, can be damaged beyond repair and become useless. Never store a discharged battery for a long period of time. Also, don't store a fully charged battery because the cells will drift and discharge at different rates; this will result in a pack where the cells have become out of balance from one another. If left unbalanced, the cells in this battery pack will continue to drift farther apart after each charge and discharge cycle. The best thing to do is put the batteries away with a "storage charge" of about 3.85 volts. This gives each cell enough voltage to keep it stable for long-term storage. Now the cells will discharge at a similar rate and maintain a better-balanced pack over time.

Many packs get a little puffy; this can come from them getting a little hot during the flight, or many other reasons. However, a little puffiness will not harm them; the key information on the health of the battery is how well it charges and holds on to that charge. If the pack is charging ok and the battery seems to perform normal, keep an eye on it and make sure it does not get overheated. Check the temperature of the pack after the flight, and make sure there is enough airflow over it as needed. If the pack is puffed up so that all of the wrapping is very tight, with no give when you push on it, then that is a different story. In that case the battery will most likely not be performing as well as it used to with a fair drop off in charge input and discharge output. Then you likely have a bad battery that will need to be replaced.

BATTERY TERMINOLOGY

mAh Milliamps hour (mAh) is often used to refer to the output capacity of battery packs. This is the amount of current you can expect to pull from your packs during normal operation. Think of mAh as how much flight time you have from the pack. A smaller battery, like a 2400mAh pack, will provide a shorter flight time than a larger pack, such as a 4200mAh pack.

VOLTAGE Voltage is often used to increase the power to the motor. Supplying more voltage to the motor will make it spin faster and will produce more rpms for the prop. Motors will have a kV rating on them; this means that for every volt you supply to the motor, it will spin that kV value faster. The faster the prop moves, the more speed and power you'll get from the plane. A simple way is to think of battery voltage as power and performance.

2P3S, etc Battery packs have cells arranged in different configurations; this is often referred to as series (S) and parallel (P). When connected in series, the negative terminal of one cell connects to the positive terminal of the next cell and so on. If you have 3 cells connected in this manner, it's called a 3S pack. A series-connected pack supplies more voltage than a single cell, and the amount depends on how many cells are connected in this way. In this example, the 3S pack has 3 cells × 3.7 volts, which is equal to 11.1 volts.

In the parallel-connected pack, all of the cell's positive terminals are connected and all of the negative terminals are connected. A parallel-connected pack is used to supply more current than a single cell, and the amount depends on how many cells are connected in this way. In our example, if you have 2500mAh cells and they are connected 2P, then you have 5000mAh. Therefore, as a result, your 2P3S battery would be a 5000mAh 3-cell (11.1 volt) battery pack.

PARTING THOUGHT

All battery labels should have a complete description of the battery size and chemical makeup, C-rating and voltage.

These tips from our pros should give you a few more good flights from your battery packs. Try them out and remember knowledge is power, or in this case more power and a longer life.

SAFETY REPORT

Hello fellow model aviators,

Just a few thoughts to ponder maybe as you have time in the Emergency Room with nothing else to do...

Brain

Your brain is the most important tool that you have. I have never known anyone who I thought was too intelligent. Therefore, I have never known anyone who could afford to kill off their brain cells. No matter how smart a person is being even smarter wouldn't be a bad thing. Chemical fumes can be as bad or worse than drugs and alcohol and can cause serious neurological damage, particularly super glue fumes. Take appropriate measures to protect yourself. Usually protecting your brain involves wearing an appropriate mask.

Eyes

There are people in the world who have done amazing things without eyesight. While I envy their motivation and determination I don't want to join their ranks.

Hands and limbs

Do not take your hands for granted. Losing only a portion of a single finger is a life-altering event. Generally speaking a person would have to be really talented to remove a digit with hand tools, but with power tools, an accident can happen in a heartbeat and there's no turning back the clock.

Model airplane propellers can do extremely horrific damage.This includes propellers on electric motors as well which are even more dangerous because they can start up by flipping the receiver switch on, accidentally or intentionally, your fingers won’t know the difference! Glow engines cannot start themselves except in the rare instance that the piston is stuck at top dead center, there is the

proper amount of vapor in the head and the piston pops out hard enough to compress the vapor into another explosion the next time round. Of course that's a theory. I don't know anyone who has ever seen it happen.

Regardless of how the engine or motor started, if the model is not under control when it happens then you immediately have a very dangerous problem!

On the brighter side of things, I received the notice from the FAA as a reminder to update my UAS registration. Just thought I'd pass along the "how to" information they so graciously provided when they established a Drone Zone account for me! I suppose a bunch of you guys are in the same boat as me with regards to Drone Zone registration being due. It appears to be painless 'crept for the $5!

Just a friendly reminder to y'all.

Your FAA UAS registration is going to expire in the next 30 days. Renew Now!

The official website for registration is the FAA's DroneZone.

We noticed that you registered your UAS before the FAA launched the DroneZone, so you may have never been to the DroneZone. Have no fear! When the FAA launched the DroneZone, an account was established for everyone who was already registered.

How can I access my DroneZone account to renew?

Reset your password:

- Go to the DroneZone.
- Click LOG IN on the top right corner of the page.
- Click on Forgot Password.
- Enter the email address you used when you first registered your UAS with the FAA.
- Follow the prompts in the password reset email to access our account. Check your junk / spam box.

Renew your registration:

- Use the top, center menu to navigate to the recreational flyers dashboard (click either Part 107 or Recreational Flyer, as appropriate).
- Click on RENEW from your dashboard.
- Follow the prompts to complete your registration renewal.
- Pay the $5 fee to complete the transaction.

That didn't work, what do I do now?

If you cannot access your account, you will not be able to renew your registration. In this case you'll have to open a new DroneZone account and re-register your UAS. You'll be issued a new registration number and will need to change the markings on your UAS.

Register on the DroneZone:

- Go to the DroneZone and click on REGISTER.
- Enter your email address and set a password to create an account.
- Check your email for the validation message from the FAA.
- Follow the prompts to complete your registration.
- Pay the $5 fee to complete the transaction.
- Get a copy of your registration certificate.

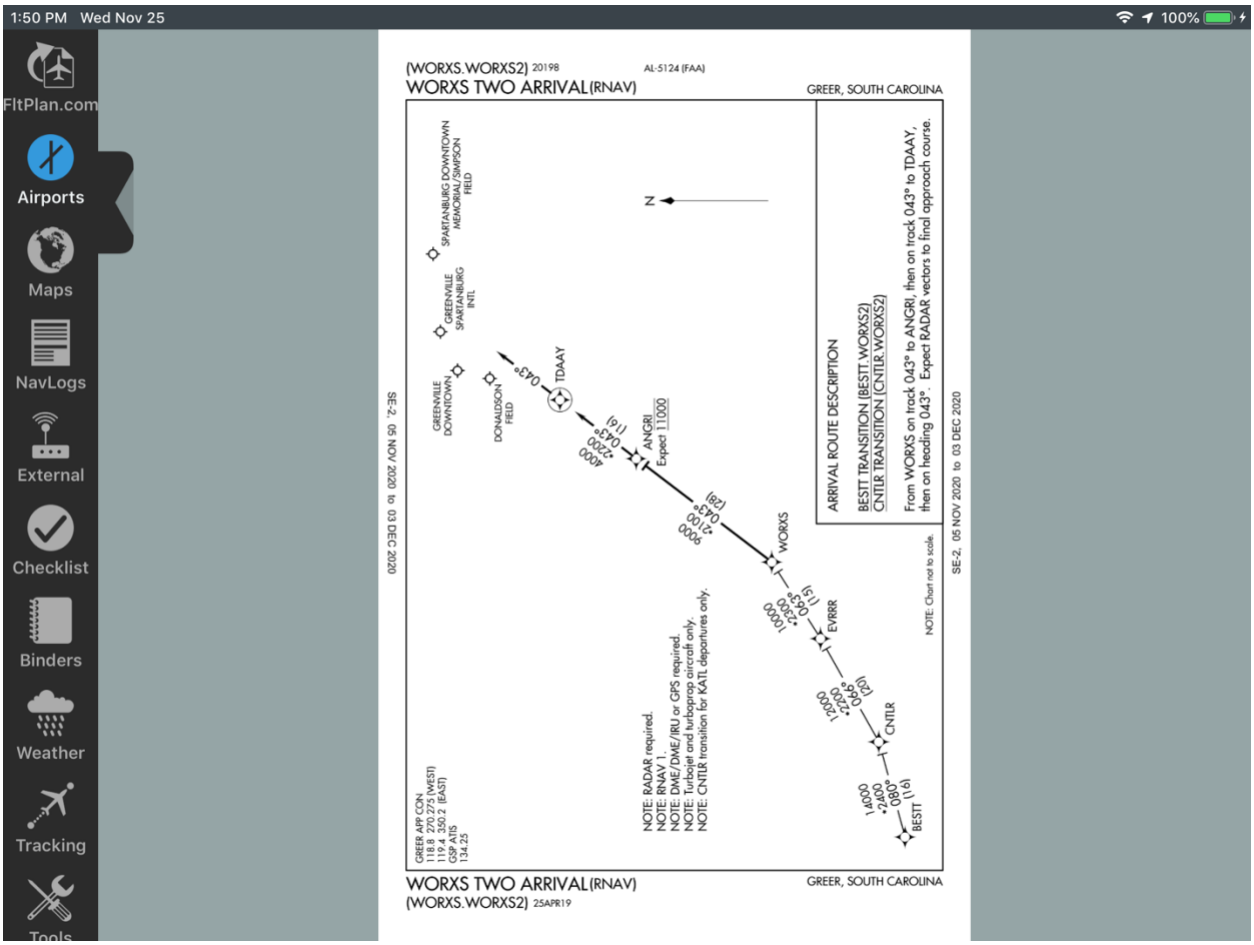
Still having problems?
Send your registration number, full name, and address to UASHelp@faa.gov and put **RENEW 2020** in the subject line.

And last but not least we have another edition of our friendly, neighborhood, STAR for entry into the full scale Navigation Management box . I just recently ran across the WORXS 2 standard terminal arrival route for the Greer, South Carolina Airport.

It includes the fixes: BESTT CNTLR EVRRR WORXX ANGRI TDAAY.

I assume there is a backstory to that arrival but I have no idea what it is or what the controller might be angry about...

Here is a copy of the approach plate, have fun...



Larry Chamberlin

Safety Officer

RVFRC

FOR SALE (let me know when sold - Rick)

I have 2 brand new still in the package 1100kv motors complete with motor mount and prop adapter. I ordered them and then found out I didn't need them.

Asking $8 each.

Thanks.

Don Horne

Hobby Eagle A3-L Stabilizer, basic 2D, 3D style. New, decided to use a different brand. Cost about $19.00, asking $10.00
Thanks
Rick Ida

For Sale Continued…

FlightLine F7F-3 Tigercat 1600mm (63” wingspan)

It comes with the upgrade landing gear-not installed

I fly it with 2-4000mAh 4s batteries. It flies great. Batteries not included

I also have some spare prop blades

It has Callie Graphics “King of the Cats” graphics

It is in excellent condition.

$300 with Admiral Receiver(RX600SP) which has gyro and recovery

Bob O'Connor oconnorfam1@gmail.com

Nailing the Snap Roll

The snap roll is an advanced maneuver that you'll first encounter in the IMAC Sportsman sequence. It evolves into more difficult variations in the upper classes of competition. It is one of the most difficult maneuvers in which to consistently achieve a high score because it requires a keen sense of timing, throttle management and exit correction. In addition, every plane seems to snap differently owing to its CG location and wing placement, i.e., low wing, mid wing, or high wing.

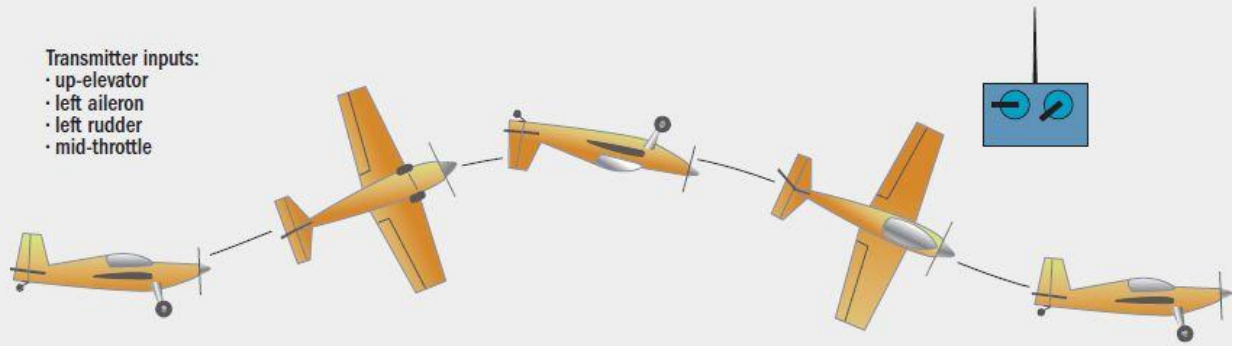
If you want to achieve a good snap roll, practice is mandatory. The snap roll is an auto-rotation maneuver in a stalled condition. During a snap, one wing is stalled while the other is accelerated about the roll axis. This creates a sudden roll-rate acceleration that you can't obtain by simply inputting aileron. To achieve this condition in a model, several inputs must be given, including elevator, rudder and aileron. Pilots of full-scale planes will scoff at the idea of adding aileron because it is not required when they deal with wing loading figures in the range of 35 pounds per square foot. Our models, however, typically carry a wing loading

of from 20 to 40 ounces per square foot, so their flight dynamics are different from those of full-scale planes.

FLYING THE MANEUVER

The simplest snap is known as the “inside snap.” This maneuver is performed from the upright position and is induced by adding elevator, rudder and aileron. Before you try this maneuver, be prepared for your plane to rotate at least twice as fast as it does during a typical aileron roll. You probably won’t even see your plane perform the maneuver because it happens so quickly. Instead, you will barely have started your control inputs when you’ll immediately have to think about recovery.

FIGURE 1. “INSIDE” SNAP ROLL: ENTER AND EXIT STRAIGHT AND LEVEL AND AT THE SAME ALTITUDE



Make sure that you have enough altitude to allow mistakes! Now take the airplane to a comfortable altitude at least 100 yards in front of you, parallel to the runway. Enter the aerobatic zone and fly to the center of the box at mid throttle (not full throttle). From level flight, perform an inside left snap by simultaneously applying up-elevator, left rudder and left aileron for 1 to 2 seconds.

Recover from the maneuver by neutralizing the sticks and immediately adding right rudder to correct your loss of heading. Maintain the mid-throttle setting throughout the maneuver.

FINESSING THE MANEUVER

There are several places where a little finesse will go a long way.

Most pilots bury their sticks in the corners of their transmitters to snap their planes. This typically creates a stall in which too much energy is depleted, and recovery is very difficult. This condition is known as “snapping too deep.” Your goal is to fly through the maneuver with enough inertia to allow the airflow to re-attach to the stalled wing on demand. To accomplish this, you will need to decrease the elevator and/or rudder input until your plane just barely snaps. The only way to find this point is to practice it. When you find the perfect combination of elevator, rudder and aileron, practice it over and over until you can easily duplicate it.

Pictures from the Field

River Valley Flyers Model Aircraft Club

2021 Membership Form

The "River Valley Flyers" are a model aircraft flying group interested in all aspects of Model Aviation and are located in Central Wisconsin. We are a chartered Academy of Model Aeronautics [AMA] club. All club members must also be AMA Members. We maintain a flying site in southern Portage County in the Township of Grant in the Central Wisconsin area.

Membership Categories and Dues

Full Adult Membership.... $50
Age eighteen years and older by January 1st of the year of application. Includes voting rights and club field usage rights.

Family/Group Membership.... $55
All members covered by a Family/Group Membership must have a direct spouse or offspring relationship, Father-Son, Husband –Wife and or Junior Member. Includes voting rights [except for junior members] and club field usage rights.

Junior Membership.... $15
Under age eighteen years old by January 1st of year of application. All junior members need to be sponsored by a Full Adult Member even though they are not related by an offspring relationship. Includes field usage rights but no voting rights.

Guest Membership.... $30 For someone who belongs to another local club but wishes to access our field for flying as well. Includes field usage rights but no voting rights. Must send a copy of current AMA and Local Club Membership Cards with application.

MEMBERSHIP APPLICATION (PLEASE PRINT CLEARLY)

Please bring completed application form below with proof of AMA to RVF meeting or mail to:
Bob O'Connor 2220 Lovewood Drive Wisconsin Rapids Wisconsin 54494
Make checks payable to **River Valley Flyers** (Only Cash or Check Accepted)

Name: _____

Address: _____

City: _____ Zip: _____

Phone: _____ E-Mail_____

AMA#_____ Membership Category: _____

Dues Enclosed: _____ (Cash or Check Only)