



Newsletter of The River Valley Flyers

Club #948

**November 2020**

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**From the Presidents Shop:** It won't be long now until the snow starts falling again this year, oh wait; that has already happened several times in the last month. Let's hope for a little more fall weather and some nice sunny days yet this season to get outside before we are forced to hibernate inside of our homes for the winter. The forecast is calling for some warmer temps in early November, so maybe we will still have a chance to get outside yet for some late season flying.

I hope everyone had a great summer despite all that is going on this year. I did not make it out to our flying site as much as in other years, but I did get in a lot of flying this summer. I will say that I had about half my airtime with my RC airplanes and helicopters, and the other half was spent flying my new camera quadcopter, which is something that I just started flying this spring. I did not think that I would enjoy flying the quadcopter as much as I do, but the aircraft is quite stable even with a fair amount of wind, and the photos and video that it captures

are really quite spectacular. The flight logs on it now show that it has now been in the air over sixteen hours since I started flying it in early March. I just want to add that it is still very different to fly than any of the other model aircraft that I have. So far, I did not have any crashes with my quadcopter this year, but I did manage to crash two of my helicopters this summer.

Just a reminder to everyone who is getting ready to renew their club membership for 2021 to please be aware that we have increased the club dues for 2021. With the lack of any fundraising events this year and increasing costs to functions in the club, we have decided to increase the dues to offset our future expenses. We would also ask that when you pay your club dues, either in person or by mail, to please fill out the club membership form completely even if you are a longtime member. This will help keep our club records up to date, as addresses, e-mail address, and AMA numbers may change with time, and this will keep our records current. Please fill out the form attached to this newsletter and mail it to our club treasurer at the address on the form.

Our final field maintenance day for 2020 was held on October 13<sup>th</sup>, and that will be the final field mowing for the year also. Thank You to everyone who came out to help out that day. The flying surface is in good condition as we head into winter, even though we have some type of burrowing animal on the north and east ends. Maybe he will leave before next season.

It is just about time for the building season, so I hope you have something picked out for a project this winter. I have been looking at a few possibilities myself, but will need to find something that I will really want to fly next season. I'm looking for something with a fair amount of power, but yet very agile also if it a fixed wing. I'm also considering a new helicopter build, as I think my Trex 500 is unfixable due to a lack of parts for it after the summer crash. Keep us informed on what you are working on this winter by sharing it with us in the months ahead. We would like to start having our monthly club meetings this winter via a video chat like Google Meet. Although this is something new to learn and use, it does not seem too hard to master and presents some great possibilities to stay in touch. We could get started by trying a practice meeting some afternoon or evening to try it out. It can be done from your computer, your laptop or tablet, or any other portable device with a camera and microphone. It might also be a good way to keep in touch this winter with projects that we are working on.

That's all I have for this month, let's have the November meeting via Google Meet on Wednesday, November 4th at 6:30 P.M. I will send all members in the club an invite to that meeting, and you may choose to join in Watch for more info on this coming soon. Hope to see you maybe at the field yet or at the next meeting.

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](mailto: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](http://www.RiverValleyFlyers.org)

# Anatomy of First Person View (FPV) — What’s needed for that “from the cockpit view”.



Once you get involved with RC airplanes, it doesn’t take long for you to hear the term “FPV,” and many have already discovered how much fun this onboard video feature can be. The acronym “FPV” stands for “First-Person View,” and the equipment needed to enjoy that “from the cockpit” video experience has become one of the most popular add-on packages available today. There are several kinds of RC aircraft that now come with First-Person View function as standard equipment, you can add aftermarket FPV gear to your aircraft if it isn’t equipped with it. Let’s take a closer look.



**Hobby King's RC832 5.8GH plug and play FPV set comes with everything you need except a monitor.**



**There are several sources for aftermarket FPV equipment, and here is an excellent 2.4GHz setup using mixed and matched brand products.**

## **BASIC OPERATION**

FPV requires a mini video camera, a video signal transmitter, a video receiver and a video monitor or video goggles. As with anything else involved with RC, it is always going to be easier to start with a complete FPV package where everything is designed to work together. If you buy each part by itself, you will have to figure out how to make all the connections with a custom homemade wire harness, or adaptor, which may require soldering wires and connectors together. As a rule, for your first time out, stick with a plug-and-play package.

## Video Camera



**Available in all shapes, sizes and price points, whichever camera you get will have to be wired to your airborne power source and the FPV transmitter. Note Spektrum's ultra micro FPV camera to the left comes with a built-in transmitter and antenna.**

Most of the compact lightweight cameras used in FPV setups come with inexpensive plastic lenses. Once your system is set up, you may have to focus the camera so you have a sharp video image. Most have a removable/adjustable lens, and to focus it you have to loosen a set screw and then carefully screw the lens in or out to bring the video image into focus. It is also here where you can improve your optics, as there are replacement lenses available made of glass and with different viewing specs. For the best experience, use a wide-angle lens.

## Airborne Video Transmitters



**Transmitters for FPV systems are relatively small and compact. Some quads come with the equipment integrated while others can be upgraded with aftermarket add-ons. Transmitters produce a lot of heat, so be sure to install them where there's proper airflow to cool them down.**

This is the part that converts what the camera sees into a video signal that can then be transmitted down to the FPV ground station. The camera is connected to the transmitter with a wire lead and it is important to match the wires properly. With a plug and play setup, you simply plug the connectors together. For a mix and match, the color of the wires becomes very important. The wiring for FPV is the same as with all electronics. The black and red wires are the ground (-) and power (+) wires respectively. The other wires leading from the camera will be yellow (video signal) and if there is a fourth (white) wire, it will be the audio signal.

### **WARNING**

It is very important to first attach the antenna before applying power to the transmitter unit. The antenna is required to load the unit's circuitry. If you apply power to the unit without the antenna attached, you can overload and burn it out. If in doubt, always follow the directions.

### **Ground-based Video Receiver**



**Your ground station can be anything from a set of goggles that have a built-in receiver to a table top supporting the FPV receiver of your choice. Various antenna arrangements are used and here you can also fine-tune choices for the best signal reception possible.**

This is the matching part to the transmitter that receives the video signal transmitted from the FPV-equipped aircraft. It too is equipped with one or two antenna, and they should also be connected. Once the video transmitter and camera are powered, some transmitters will automatically lock on the video signal while others have a switch for selecting the clearest, strongest signal. Some cameras/transmitter may also have channel select switches. Matching the channels provides the best signal reception.

## **Monitors**



**When it comes to seeing what your FPV camera is looking at, you have a lot of choices. Standard at monitors are very popular and like the smaller one to the left, can plug into your ground-based receiver. The larger one below with dual antenna is a combination of monitor and receiver. It even has built-in rechargeable batteries!**

The ground-based video receiver will have an output jack that plugs into a standard AV (audio/video) cable. The cable connects the monitor to the receiver unit. Again, you have to match the colors of the jacks, yellow for video and white for audio if your FPV camera/transmitter is equipped with a microphone.

## **FPV Goggles**



**The ultimate in “geek swag,” FPV goggles are the coolest way to experience FPV video. The white Cinemizer OLED goggles from Zeiss (left) are top of the line headgear. The Fat Shark goggles above, are less expensive and are available in complete packages. Notice its mushroom antenna, the goggles have a built-in FPV receiver.**



**Here's a close up of the optics in the Zeiss goggles. They are very high quality and the focus is adjustable.**

A popular alternative to the flat monitor, are one-size-fits-all FPV goggles. These come in varying levels of quality and they provide a virtual experience of the video viewed directly with split images, one for each eye. Basic goggles have fixed focus and most cannot be used by people who wear glasses. It is best to wear contact lenses as the goggles do not fit over glasses.

There are also high-quality goggles that, much like a set of binoculars, have adjustable eyepieces for focus and pupil position for each eye.

There are also combo sets for both goggles and monitors that combine the viewing part of the system with the receiver all in a single unit. They have an antenna jack, and some also have rechargeable battery packs incorporated into them as well so all you have to do is put them on and turn them on to see the FPV video image.

## **POWER**



**Power systems for your FPV system, as well as the wire leads and connectors, should all be compatible. Of course you will also need a battery charger for the battery pack(s) you use for power.**

Once again, if you use a plug and play package you don't have to worry about getting your setup up and running. Most airborne units can be run with a wire harness plugged into between your aircraft's battery pack and speed control. You can also supply a separate battery pack to power your FPV equipment if your aircraft can handle the additional weight. In general, additional weight means less flight duration. You don't need to include a power switch, just plug in the battery to turn on your system.

## **BOTTOM LINE**

Whether you want to try piloting your aircraft using a live down feed "from the cockpit" view or you just want to give your friends a virtual "ride," First-Person View provides a lot of fun and excitement. This electronic bird's-eye view provides a new perspective of the world around you. Give FPV a try; you'll never look at RC aircraft the same way again.

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## **SAFETY REPORT**

Hi guys,

I'm attaching a video I think you will enjoy, actually 2 videos. Probably best to read the article first then download the video. What I want to get across is the fire that developed and the

nearby grass (just like our field) that could have ignited and created a disaster. Not really a laughing matter guys! Read on.

A scale model of a [Reaper drone](#) rumbled down the runway and lifted into the gray Canadian sky, powered by a plastic propeller and a lithium-ion battery. When the tiny plane crashed back to earth a few seconds later, white smoke began rising from the wreckage. “Why is it on fire?” one of the hobbyists asked the other, moments before bright orange flames began shooting from the crash site.

The weary reply, captured on video, was: “Battery.”

Small, potent lithium-ion power packs have transformed the world of radio-controlled model aircraft, much as they have allowed smartphones to get thinner, power tools to work longer and electric cars to go farther. But a [pair of serious incidents](#) involving rechargeable batteries in [Boeing 787 Dreamliners](#) have highlighted what model-airplane hobbyists long have known — lithium-ion technology comes with inherent dangers.

Considering the sheer numbers of lithium-ion batteries — more than 4 billion rechargeable cells were made last year, according to industry figures — fires are not common. After a battery-powered [Chevy Volt ignited](#) after a test crash in 2011, federal investigators said electric cars were no more vulnerable than gas-powered vehicles, more than 20 of which catch fire each hour in the United States.

Yet some risk persists, and the results can be startling. When a cellphone battery overheats — a rare event — it can eject itself with a loud “pop,” leaving singe marks behind. Lithium-ion battery packs can have prolonged fires as each cell, typically the size of a man’s finger, gradually ignites.

“It could be a smoke bomb. It could be a flamethrower,” said Gerard Back, a senior engineer with Hughes Associates, a fire-protection company in Baltimore that investigated the Volt incident. “I’ve seen

them look like every type of firework you can imagine.” I’ve had buddies blow the ends of their fingers off with them,” said hobbyist Craig Pitcock, 41, who posted to YouTube a video of the fiery crash of his [F-4 Phantom model](#) in an Arizona field. “It’s incredible, the voltage.”

Just a “y’all be careful now” wake up call guys. We have no need for a fire at the field especially you flyers that prefer to fly nearly out of sight. I know your eyes are a lot younger than mine but realize how far you will be from the crash site and how long it will take for you to get there with a fire started?

Larry Chamberlin

Safety Officer

RVFRC



# Mastering the Rolling Loop



Kick up your aerobatic performance with this deceptively-easy-looking maneuver, the Rolling Loop. A challenging maneuver, the pilot, needs to utilize all the control inputs while performing it smoothly. A basic loop can also be described as a 360-degree circle. When you perform a loop with one integrated roll, you need to match the quadrant points. For example, you must have 1/4 of the roll complete by the time you are at the 90-degree point of your loop (see diagram). You will then need to have 1/2 of the roll complete by the time you are at the 180-degree point of your loop. Similarly, 3/4 of the roll must be complete at the 270-degree point of your loop, and you will have fully completed the roll when you have completed the full 360-degree loop.





## LET'S TALK ABOUT THE "ROLLING LOOP"

When performing a maneuver such as the rolling loop, you will notice a great demand for rudder authority (especially on the downward segment of the maneuver). With this being said, make sure that your model's rudder servo has enough torque and that there is no rudder play of any sort (from gear slop, etc). Once you have catered to these needs, begin the maneuver.

As with all new maneuvers, perform them at a high altitude until you become familiar with them. Also, most pilots naturally prefer to roll in one direction. If you prefer to roll right, for example, it is best to roll right when you do this maneuver the first few times. After you have become proficient, you will be able to roll either left or right when you execute the rolling loop.

Begin by orienting your model parallel to the runway. In the language of aerobatics, we call this position relative to the runway the "Center." When the model approaches the "Center" of the aerobatic box, begin the maneuver.

1. In this example, we will perform the maneuver from left to right. We will roll left, so when left aileron is initiated, you must be at a high power setting (throttle settings will vary depending on your model's power to-weight ratio) and begin to add enough rudder (right rudder) to make the model perform the first 1/4 loop.
2. Continue to hold a little of aileron. You will, however, need to add power and change your rudder deflection accordingly to maintain a round shape (for the loop).
3. At times, you will need to change your aileron input. Some models react differently when rudder is applied (for example, the roll rate may change). Be cautious with your control inputs, and above all else, make sure that you reach your cardinal point. In this step, you are 25 percent complete with

the loop, and therefore, your model should be in a perfectly vertical attitude.

4. At this point, begin to decrease the rudder input so that the model will “fall” over the top of the loop to maintain the round shape. You will, however, have to keep on the rudder at different points so that the model tracks straight (in heading).
5. Now, at approximately 50 percent complete with the rolling loop, decrease throttle, as you will soon enter the downward leg of the maneuver. Regarding elevator input, get ready to push, and remember to stay on the left aileron for a constant roll rate.
6. Keep on the left aileron (ever so slightly), and begin to add left rudder to maintain the geometric shape. Your goal is to have the model in a straight downward attitude when you approach the 75 percent completion point of the loop (as seen in the next step).
7. You are now at the rolling loop’s 75-percent completion point. Go heavy on the rudder input (meaning, a lot of input will be required), as you need to keep the round shape of the maneuver. Also, you may have to change the aileron rate when you add extreme rudder. Last, remember to make any corrections with the elevator to keep the model tracking straight (in heading).
8. To reach your cardinal point (where you first began the maneuver), you may need to add more throttle and rudder input. Also, now is the time to begin to decrease your aileron (when you approach the “Center”) to complete the maneuver.

The maneuver is complete! Take a breath, and enjoy the rest of your flight!

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## 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](mailto:oconnorfam1@gmail.com)

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## 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 1<sup>st</sup> 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 1<sup>st</sup> 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)