April 2018 Newsletter

Upcoming Events:

- May 3 – Membership Meeting
- May 19 – Hendersonville Fly-In
- June 7 – Membership Meeting
- June 9 – MTRCCA Spring Fly-In – Peeler Park Club Field
- June 16 – Warbird & Classic Fly-In – Cane Ridge Club Field
- July 5 – Membership Meeting
- August 2 – Membership Meeting
- August 11 – Model Aviation Day Fly-In – Club Field
- August 24-25 – MTRCCA Fall Fly-In – Dickson Airport
- September 6 – Membership Meeting
- October 4 – Membership Meeting
- November 1 – Membership Meeting
- November 3 – MTRCCA Swap Meet – Antioch, TN
- December 7 – Membership Meeting
- January 3, 2019 – Membership Meeting
- February 7 – Membership Meeting
- March 7 – Membership Meeting

Prez Sez:

Hard to believe that one third of this year is already gone. Wow, time really flies…well, at least something is! We have had a few good days for flying this month but it has still been hit-or-miss with this crazy weather.

On Saturday, April 21, we held our spring field maintenance day. We had a really good turnout of helpers and we got quite a bit accomplished. There are pictures later in the Newsletter showing some of our progress. We removed the trees west of the north end of the runway. This really opens up the landing approach when landing from that direction now. We also removed the large stump that was located on the extended runway center line to the north of the runway. It was a bear to remove. There are a couple of other stumps that we worked on but they are not completely removed. We will finish them up later. We power washed the club's picnic tables, chairs, and bleacher. We sanded and sealed the four starting stations. They look really good now. Sometime soon John D. will replace the protective carpeting on the starting stands to complete their refurbishment. We also reorganized things in the storage container. Items that members need ready access to are now in the front area and the remainder are behind the locked dividing gate. There are a few remaining

Continued…

https://www.facebook.com/groups/mprcf/

www.mprcf.com

April Meeting Minutes:

The meeting, held at O'Charley's, was called to order by Dan Wandell @ 6:11pm. There were 13 members present. There was one guest.

The March meeting minutes were accepted as published in the Newsletter.

The March Treasurer's report was read and accepted.

There were 2 new members added since the last meeting.

Old Business:

Upcoming local events:

- Fly Away Cancer Fly-In – April 28 – Tullahoma Club Field
- Joe Nall Week – May 12-19
- Association Fellowship Fly-In – June 9 (rain date 6/10) – Peeler Club Field
- Warbird and Classic Fly-In – June 16 – Cane Ridge Field

Field Development:

Since March Meeting:

- Partially completed the grading at the road gate for erosion control
- Created a swale at the south end of the pit area for erosion control
- Starting stations repaired

Continued…

Prez Sez (cont.):

amaintenance items that we need to complete but we will get to them as time permits.

There are several events coming up at our fellow Association clubs. On May 19, the Hendersonville R/C Club will hold their Spring Fly-In at their field at Sanders Ferry Park in Hendersonville. See the flyer attached. On June 9, the Association will hold its annual Spring Fellowship Fly-In at the Music City Aviators field at Peeler Park in Madison. See the flyer attached. And on June 16, the Middle TN R/C Society will hold its Warbird and Classic Fly-In at their field at Cane Ridge Park in Antioch.

On April 28, our friends at the Tullahoma club held their benefit fly-in to support patients in need at Tennessee Oncology. A number of us attended and we all had a great time. They had a good turnout and raised quite a good sum for the patients and their families.

Well…that's it for this month.

Dan

April Meeting Minutes (cont.):

Pending Actions:

- Remove trees at north approach
- Remove stumps in runway at the north end
- Remove rocks and other debris in the east runway perimeter
- Add "X" to runway ends
- Install giant scale starting stations
- Install sign with field's address and emergency responder phone numbers
- Fix runway area erosion. Need to determine the drainage solution.
- Seed runway

Field Maintenance Items:

- Finish fixing drainage at the entrance gate and field gate – Clint volunteered to grade the entrance area to fix the drain issue and will assist with the field gate area.
- Clean tables/chairs/bleachers
- Relocate pilot stations more to the south
- Install first aid box/fire extinguisher either inside or outside of container

We will hold a field maintenance day on Saturday, April 21 to tackle as many of the above items, and others, as we can. An email will be sent out later.

Swap Meet:

This was a successful event. Net profit was in line with prior years. We sold 88 8ft tables, which was the equivalent of 141 5ft tables that we used to sell. This was the most ever. Everyone who volunteered to help was thanked for their time and effort.

Airplane Setup for Gerry R.:

Have purchased an e-Flite 1.2m BNF T-28 and batteries. Richard R. donated a LiPo charger. No purchases remain. We come in $94 under budget. The airplane will be presented when it can be coordinated with Gerry.

Storage Container:

A lock was installed on the inside gate and the container code was changed to the same as the entrance gate codes. Members can now access the container to make use of items. An email will be sent so advising the members.

Charging Station:

- We have batteries and some of the electronics.
- John D. has installed the exterior charge shelf, which looks great!!
- The remaining equipment needs to be purchased and installed. The budget remaining is $526.35.
- Storage container venting/cooling solution needs to be investigated.

Continued…

April Meeting Minutes (cont.):

Garage Port(s):

Inquiries were made with several suppliers: Watson's Portable Buildings, MetalMax Steel Buildings, Horizon Steel Structures and Eagle Carports, etc. Further evaluation will need to be made to determine size, number of units, and placement prior to purchase. Once the weather breaks, a meeting will be held with any interested members to make these decisions.

Club Orientation Airplane:

The donated "Sport 40" ARF has been mostly assembled by Mark C. Thanks Mark!! Greg D. volunteered to finish it up including the installation of the electric motor setup that was purchased at the Swap Meet. Myron N. donated a Spektrum receiver to be used with this plane. Thanks Myron!!

TN Veteran's Home Presentation/Field Visit:

The TN Veteran's Home, located in Murfreesboro near the VA, asked if the club could make a presentation to their residents and allow them to visit the field sometime. Dick T. and Doug H. volunteered to handle the details. No action yet.

2018 Events:

- The club will hold a Model Aviation Day event (together with Cane Ridge) on August 11. The sanction has been acquired.

New Business:

May Meeting Location:

The May meeting will be held at the field if the weather is okay; otherwise, it will be held at O'Charley's.

Meeting adjourned at 7:34pm.

Photos from Field April ‘18

Club Meeting !

May 3rd 6:00 PM @ Field

Photos from field April ’18



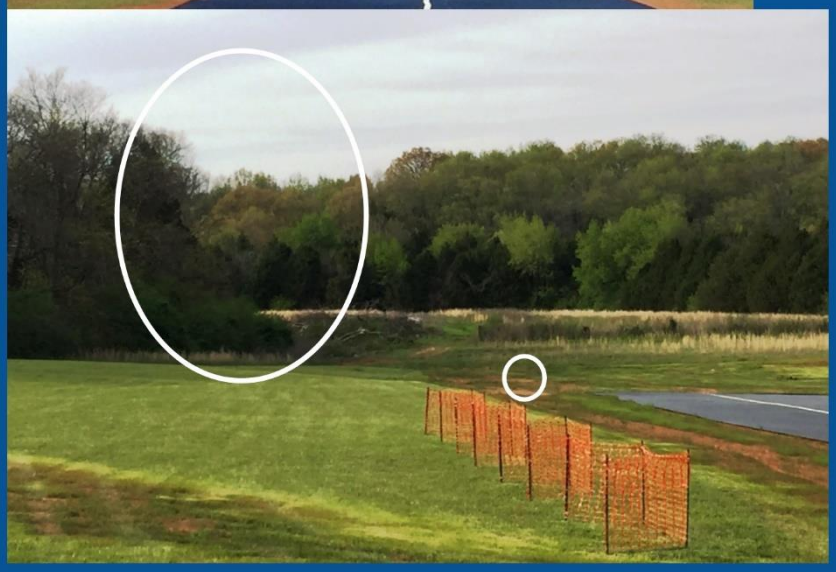




A Few of the Work Day Improvements

Organized

Gone



Cleaned & Sealed

Do you have used metal shelving that you could donate to the club? We could use shelving of any size for inside of our container to help keep things organized. If you do, let us know at mprcflyers@gmail.com.

Thanks!!

Hendersonville R/C Club's

Additional Details at www.fly-hrcc.org

AMA
Charter No. 704

2018 Spring Fly-In

Saturday, May 19

10:00 AM 'til ?

(Rain Day is Sunday, May 20)

Come and Join the Fun!
Free Introductory Flights!

Fun for the Family!
- *Disc Golf*
- *Playgrounds*
- *Picnic areas*
- *Old Hickory Lake*

One of the Most Beautiful Fields In Middle TN!

- **Airplanes, Helicopters, & Quads**
- **Electric, Glow, & Gas**
- **All sizes welcome!**
- **$10 Landing Fee Donation**
- **Prize farthest travel**
- **Prize for pilot's choice**

**Note: Proof of current AMA membership is required to fly solo.*
We're sorry, but gas turbines are not allowed to fly at our field.

MIDDLE TENNESSEE R/C CLUBS ASSOCIATION

13th Annual Fellowship Fly-in

9 June 2018

Hosted by the Music City Aviators

Peeler Park Madison, TN

GPS: 36.201863 -86.656487

The Field is on Overton Rd off of Neely's Bend in Madison

This event is for ALL AMA Member Pilots and All AMA Safety Code compliant R/C Models Including Turbines Electric, Gas or Glow - all are Welcome. Foamies To Giant Scale!

- **$10 Landing Fee**
- **Cash Door Prizes**
- **Food Concessions**
- **Registration @ 7:30 - Pilot's Meeting @ 9:00**
- **Spectators Welcome**
- **Contact Dick Tonan For Additional Info dtonan@mac.com**

Article

Written by Terry Dunn
Give your aerial videography a new view
How-to
As seen in the July 2017 issue of Model Aviation.

RC airplanes and tiny cameras are a great combination. I've enjoyed putting digital video cameras on my models for several years. This is not an article about FPV flying (which is also fun). The cameras I'm referring to record the flight onto a memory card. I can then upload the files to my computer to watch, edit, and share.

In the beginning, I was always careful to mount the camera so that none of the host model could be seen in the resulting footage. I only wanted to see the landscape below. I gradually began positioning the camera to include more and more of the model in the shot. These days, my favorite footage has the model itself as the focal point.

My current fleet of airborne cameras has much improved image quality over those I used just a few years ago. They are much smaller and lighter. Good-quality cameras have become so small that it is not uncommon for me to carry two cameras at once, even on a park flyer.

I will illustrate my techniques for mounting small cameras to foam airplanes. You can certainly use cameras on airplanes made of balsa, fiberglass, or nearly anything else. The only limitation I've found is models with internal combustion engines. The vibration of glow and gasoline engines almost always causes fuzzy, unsalvageable video footage. Electric-powered foam models are definitely the most receptive camera platforms, so they are an ideal starting point.

Many models are capable of carrying a small camera. It's helpful to start out with an airplane that has at least a 40-inch wingspan, such as this Hacker Fun Master.

Choosing a Camera

There are many good, lightweight action cameras from which to choose. GoPro cameras are extremely popular, yet, as small and lightweight as they are, GoPro's Hero series cameras are slightly heavy for my taste. The Session series cameras are smaller and lighter. They're currently a popular choice for mounting to racing quadcopters. They might work well in this application too, but I've never used one.

My current camera of choice is the RunCam 2. It is small, lightweight, inexpensive, and it performs well. The RunCam 2's lens is on the smallest face of the camera. This helps cut down on the unavoidable aerodynamic drag that results from strapping a camera or two onto your airplane. I've used other cameras with a similar form factor, such as the Mobius Action Cam, and Foxeer Legend. Any of those three cameras will work well with the techniques presented here.

There are several small, high-definition video cameras on the market. The author's current favorite is the RunCam 2.

One of the reasons that I prefer the RunCam2 is that it has a Wi-Fi interface. Using the RunCam app on my phone, I can see a real-time view through the camera lens while I'm setting up the camera (not during flight). This lets me aim the camera to frame my shots with no guesswork. I know exactly what parts of the airplane will be in the shot and I can make adjustments accordingly.

There are several options for resolution, frame rate, and field of view (among others) that can be selected within the RunCam app. I typically choose to record video at 1080p resolution at 60 frames per second. I like to use the widest field of view. You can also shoot high-resolution still photos with the RunCam 2. When doing this, I set the camera's time-lapse option to snap a photo every 3 seconds.

Choosing a Model

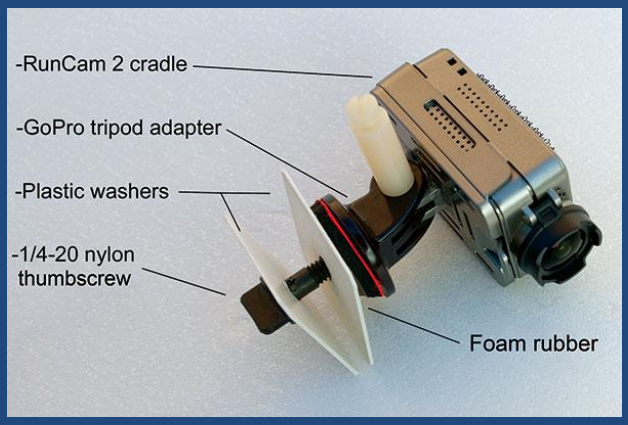
I've mounted cameras to countless different models throughout the years. There is a variety of applicable platforms. I suggest that you start out with a model having a wingspan of at least 40 inches. This will usually give you plenty of lifting capacity for one or two cameras without seriously affecting the flying qualities.

It doesn't seem to matter whether you choose a high-wing trainer, a low-wing sport airplane, or even a warbird. As long as it can carry roughly 2 to 4 ounces of extra weight (and most models of this size can), you're good to go. With a little experience, you'll soon figure out what types of models work best for you.

The most significant factor when selecting or setting up a model for camera duty is vibration. If you're running an unbalanced propeller or have a slightly bent motor shaft, the resulting video footage will probably end up distorted and unusable. There are tons of other benefits to having a vibration-free power system (better performance, longer equipment life, less airframe fatigue, etc.), but it's a key requirement if you want to capture video worth watching. Make sure things are tuned up and running smoothly.

Mounting Options

There are infinite possibilities for mounting a camera on your model. I've used nothing more than hook-and-loop tape on many occasions. Most of the time, however, I utilize a few simple bits of hardware. The RunCam 2 includes a plastic cradle that tightly holds the camera. The cradle has an insert that can accept a 1/4-20 male fastener, which is the standard fastener for camera tripods. An optional mounting kit includes an alternate insert that mates with GoPro mounts. I prefer to use the GoPro insert because of the variety of GoPro-compatible mounts that are available.



The author's preferred mount for the RunCam 2 includes the camera cradle, a GoPro tripod adapter, a disc of foam rubber, and a 1/4-20 nylon bolt with plastic washers.

The setup that I use most often consists of the RunCam 2 cradle with GoPro insert, and a plastic GoPro tripod adapter. The tripod adapter has the interlocking fingers of a GoPro mount on one end and female 1/4-20 threads on the other. This configuration has two advantages over using the cradle alone.

It elevates the camera above the model by roughly an inch, which generally provides a better point of view. This system also allows you to adjust the pitch angle of the camera. That capability can be useful when framing your shots.

Using a tripod adapter elevates the lens above the model's surface and gives you freedom to tilt the camera.

GoPro mounts use a 10-32 screw with a plastic handle to tighten the pitch joint. The screw threads into an acorn nut that is seated on the mount. I like to replace the stock screw with a 2-inch 10-32 nylon

screw that has a 1-inch spacer threaded onto it. The spacer provides a gripping surface so that you don't need tools to tighten the screw. I also replace the acorn nut with a standard 10-32 nut. Using the nylon hardware shaves approximately 1/4 ounce from the mount. It's not a huge amount, but why carry around the extra weight?

I use 1/4-20 nylon bolts to attach the mount to the airplane. This means that I have to drill a hole through the airframe. A sharpened 1/4-inch diameter brass tube works great for cutting clean holes into all types of foam. You simply push the tube into the foam with a slight twisting motion.

If you're worried that holes will scar your airplane, you might be surprised by how subtle a 1/4-inch diameter hole can be. I don't usually bother to conceal the holes when they're not being used, but you could always fill them or cover them with tape.

The thickness of the foam determines the required length of the mounting screw. A handy feature of nylon screws is that they are easy to trim to shorter lengths by rolling them under a razor blade. I've amassed a collection of 1/4-20 nylon bolts in many lengths. I also have a number of foam and plastic spacers that I can use in lieu of cutting a screw to a specific length.

When you tighten the screw into the mount, it will probably compress the foam slightly and might leave an indentation. To help alleviate this, I use large-diameter washers made from scrap pieces of sheet plastic. Product packaging is a great source for this plastic. I also like to add a 1/8-inch foam rubber disc between the plastic washer and tripod adapter.

Camera Placement

Different airframes require different camera mounting strategies. Some are definitely more versatile than others. One mounting position that seems to work well on most airplanes is the outer wing. Unless the airplane has an extremely short wing or very long fuselage, you can aim the camera inward and get the entire fuselage in the shot. It's a fun perspective to watch.

A properly positioned wingtip camera can frame the entire airplane in the shot.

I often drill one mounting hole near the wingtip and another at roughly midspan. I then mirror those holes on the opposite wing. This gives me a lot of flexibility for different shooting angles. Simply make sure that there are no servo wires or internal spars in the way before you start drilling with the brass tube.

Whenever you use a wing-mounted camera, you'll also need to have a counterbalance on the opposite wing. The easiest solution is to use a second camera. If you only have one camera, however, you can simply use an equivalent weight.

The author glued lead to plywood to counterbalance the weight of a wing-mounted camera.

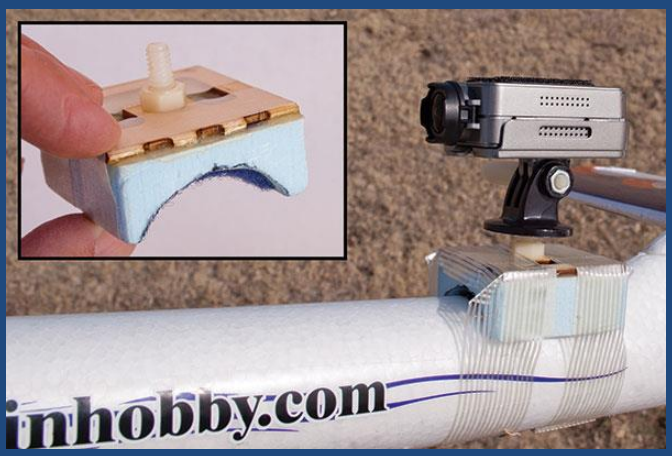
I made a counterbalance by gluing lead weights to a small piece of scrap 1/8-inch plywood with a 1/4-20 blind nut. The ballast assembly weighs the same as a mounted RunCam 2 and uses the same 1/4-20 nylon bolts for attachment.

Fuselage-mounted cameras can sometimes be trickier. That's because flat, easily accessible mounting spots are rare. Before drilling any mounting holes, you'll want to make sure that you can get the 1/4-20 bolt into place and have access to tighten it. Areas near battery hatches are usually good spots. You can actually mount a camera directly to the hatch, but make sure that the hatch is mounted securely!

It is helpful to mount fuselage cameras near battery hatches for easy access to the mounting bolt.

Many fuselages have a rounded top surface, which can make it tough to secure the flat-bottomed tripod mount. Sometimes replacing the plastic washer with an extra layer of foam rubber is sufficient to stabilize the mount. In more extreme cases, I'll make a hasty arch-shaped adapter out of scrap foam. The inside of the arch approximates the curvature of the fuselage while the top side of the arch is flat. Again, placing foam rubber between the fuselage and arch is helpful.

I've also used a variant of foam arches in areas where it isn't feasible to run a mounting bolt through the fuselage, such as the rear of a glider. I epoxy a short 1/4-20 bolt to the arch. This holds the camera to the arch. I then attach the arch to the airframe with rubber bands, hook-and-loop straps, and/or tape—whatever makes sense for each application.



The author fabricated a foam arch to adapt his camera mount to this sharply curved fuselage.

As with wing-mounted cameras, fuselage cameras often upset the airplane's balance. Sometimes, there is sufficient flexibility in battery placement to achieve a center of gravity (CG) location. Other times, you'll have to add weight or another camera to regain the CG. If you need to add more than an ounce or two of ballast, you should reconsider your camera location.

Some of my airplanes don't seem to fly any differently, even when carrying two cameras. Others have a significantly different feel with only one camera. It's hard to predict what the effects will be. Of course, simply the additional mass of a camera and any ballast will change the model's stall speed.

With a camera on the wing, you can expect that the aircraft will start and stop rolls more slowly. Fuselage cameras might impact the pitch response or pitch trim of a model. My advice is to treat a newly equipped camera-carrying aircraft just like a new model. Feel it out with a conservative mindset.

Conclusion

Adding an action camera to a foam airplane is a fun way to see the RC hobby from a new perspective. The latest generation of small action cameras can give you great high-definition footage of your model. They are so small and lightweight that you might not even notice them tagging along.

The mounting methods discussed here are only a few examples of the endless, creative possibilities they offer. Pick up one or two of these cameras, grab your favorite foamie, and channel your inner Spielberg.

—Terry Dunn
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