AERIAL PHOTOGRAPHY

This brightly lit DJI S800 shows FLYSAFE's lighting standards for visibility.

We took this image of a lake in Minnesota 150 feet above ground level, well below the 400-foot limit.

LEARN THE BASICS OF SAFELY TAKING PHOTOS ALOFT

by Charles Eide
Photos by the author

I grew up flying RC models. The day my first AMA card came in the mail, I knew there was no turning back.

As the years passed, I got into the film production business, and I now run a company called EideCom Media, which creates and produces some amazing commercial work.

When I began to see radio control technology get to a point where cameras could be mounted on aircraft and get decent footage, I had to go deeper.

My company began adding cameras to the 800-size helicopters that we built and we shot some ground-breaking footage. During the past few years, this technology has changed and evolved to make flying easier, safer, more reliable, and more stable.

We began receiving phone calls from RC enthusiasts wanting to know how to do what we were doing, so we decided to start the first Radio Control Aerial Photography safety course: FLYSAFE (see "Sources" listing). We have learned a lot, and in this article I will share how to stay safe and how to get great footage.

With thousands of flights and hundreds of hours of RC experience, getting into RC aerial photography may appear to be the natural next step for some pilots. There are many people, however, who want to get into it but have never flown RC. Either way, following are some tips on which to focus.

Focus on Your Flying Fundamentals

When you shoot aerial photography, you must be able to safely and effectively fly. Many people today fly with the assistance of a GPS.

Flight systems are becoming more complex to help pilots, but there is no substitute for the fundamentals of flying. Don't let your flight computer or other automation become a crutch. If you are not comfortable flying, get a simulator and acquire a practice machine.

Invest in Quality Equipment

If you want to shoot good aerial photography, when it comes to equipment you get what you pay for. Quality

equipment comes with increased reliability and safety.

At FLYSAFE, pilots are taught to put red lights on the back of their aircraft and white or blue lights on the front. You want to be able to easily decipher your model's direction and orientation when you fly.

Failsafe should be set up because it is an important function in RC aerial photography. You want the added layer of safety in case your radio cuts out or you lose your downlink signal. Failsafe should be set up in your receiver and your flight controller.

Fly Line of Sight

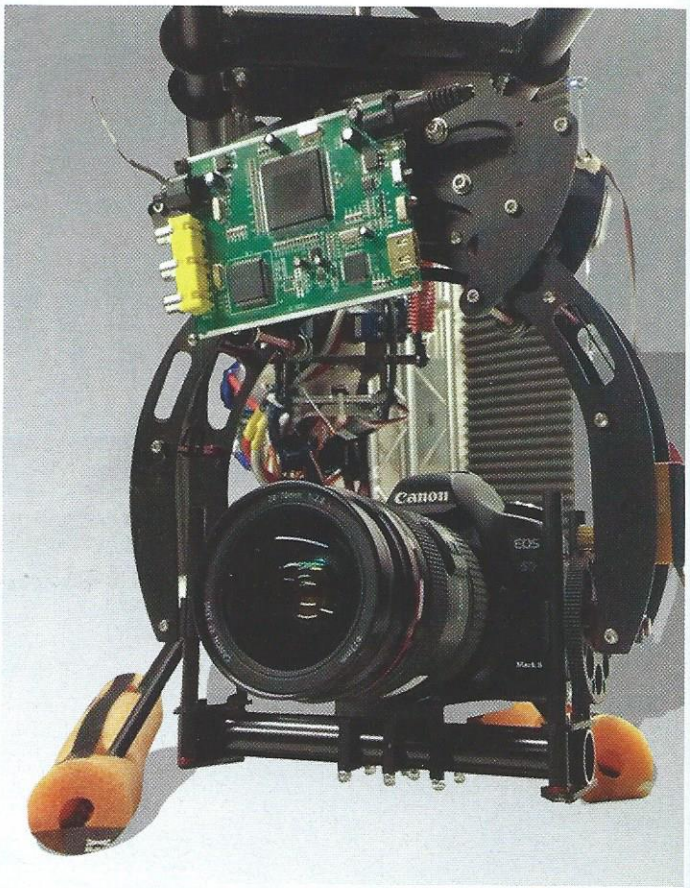
If you invest in quality equipment, flying FPV can be fun, but it's not 100% reliable. In the event of a signal loss, you could be in trouble. Always fly line of sight and only use your downlink as a reference. A spotter should also be used.

Accidents can happen and you don't want to end up on the news, so never fly over people. The truth is, no matter how great of a pilot you are or how good your equipment is, things go wrong. Don't fly over people and you won't crash into them.

Be a safe pilot and teach others to be safe. The more you advocate for the safe operation of RC aerial photography, the better.

Time Your Flights and Monitor Voltage

It's a good idea to set up a timer on your transmitter so you can time every flight down to the second. Always land



This helicopter gimbal is made to carry larger cinema-style cameras.

This beautiful winter real estate photo was shot in mid-January in 20° temperatures.

with at least one minute of reserve. This ensures your safety and that of your equipment.

I recommend flying with voltage monitors with an adjustable audible alarm. You can purchase them for less than $10 each online.

Remember that it's easy to depend on technology. Watch your altitude, don't fly higher than 400 feet, and don't fly near airports. Fly line of sight and know your limits and those of your machine. Remember that we *must* respect aviation regulations for the continued safety of general and commercial aviation.

Find a Helper

I recommend having a safety pilot with you at all times. This means there are two sets of eyes watching for potential issues. Consider having one person fly and the other operate the camera. *Always* focus on safety.

How to Capture Great Shots

I have discussed flight and safety, so let's explore how to take great footage.

How can you see what the camera is shooting? My company has a video ground station that provides real-time video feed with flight data and camera data for filming videos and shooting photos—improving accuracy and efficiency. There are many ways to accomplish this.

Some cameras, such as the GoPro, have a limited-range Wi-Fi signal. My company uses the Iftron Technologies 500MW 5.8 GHz downlink transmitter and Diversity Pro Receiver setup.

Choose a Platform to Fly

Are you flying a hexacopter, quadcopter, octocopter, helicopter, or fixed wing? Multirotors, when correctly built, are the safest and most reliable option.

EideCom Media has an 800-size helicopter that we occasionally employ to lift heavier cameras. Our hexacopter is used more than the helicopter because of its ease of setup, flight times, and other safety reasons.

My employees love to use the DJI S800. It's clean, integrated, and well designed. There are many other great options. Your platform will dictate which types of cameras and gimbals (the devices that hold the cameras) you can use.

We took photos at a golf and country club with the permission of the owners.

Stability Is Everything

This is especially true if you are shooting video. In the RC aerial photography industry, many companies are

Michael Danielson (L) and Rob Cherry work on a helicopter on location. An open

introducing new camera-stability technology that makes things easier. I like the DJI Zenmuse. The beauty of the product is its seamlessness. It is made for specific cameras, making triggering the camera easy. It also simplifies converting the video-out signal for real-time monitoring from your ground station.

PhotoShip One offers a new system called the Phoenix. It's a brushless drive gimbal that uses technology similar to the Zenmuse. I have ordered a Phoenix gimbal and am excited to get my hands on it.

Frame Your Shot

If you are shooting video, don't over-control the camera. If you are shooting still photos, get a variety of angles and take plenty.

Blurry photos are inevitable because of the nature of flight. The better your gimbal, the fewer blurry shots you will take. Set the shutter on your camera to a setting that is higher than $^1/_{250}$ second to take crisp shots.

Invest in a Good Camera

GoPro cameras are adequate for the average RC aerial photographer. If you want your photos to stand out, use a better camera. I recommend the Sony NEX-7. Expect to pay $500 to $2,000 for a quality camera, plus the cost of lenses.

For the

The aerial photography makes while respecting other

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SOURCES

FLYSAFE
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Iftron
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PhotoShip
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GoPro
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