

# Aviation Uses in Wildlife Agencies and How to Get Started

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*Abstract:* Over the past decade, Florida has undergone rapid suburbanization of its borderline wilderness areas. New airspace restrictions and low-level flight restriction over what are now populated areas have increasingly impeded aerial wildlife research and law enforcement patrol with fixed-winged aircraft. During the same decade, domestic marijuana cultivation in Florida's wilderness areas, especially Commission-maintained wildlife management areas, has increased dramatically. Enter now the federal government's plan to surplus over 3,000 helicopters, including parts and tools over a 5-year period. How to justify a transition from fixed-wing operations to a mix of fixed- and rotary-winged operations, how to acquire the helicopters, how to operate and maintain them, and how to make it all work within a limited budget are the foci of this paper.

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Aviation assets have been used in law enforcement for a very long time. The City of Miami was probably the first law enforcement agency to use aviation in the 1920s; a second aviation unit was formed in New York City shortly thereafter.

The Florida Game and Fresh Water Fish Commission (GFC) began using aviation not only as a law enforcement tool, but also as a biological research tool in the 1950s. The Commission's aviation section started out with military surplus airplanes and has grown in both size and scope ever since. The aviation section is currently operating 4 Cessna 172s, 1 Cessna 182, 1 Partenavia P-68, 2 Bell 206BIIIIs, and 4 Bell OH-58s. The aviation section has not only proven cost effective, but "just plain effective" over the years.

Conservation agencies have an obvious need for aviation services in their law enforcement role. All of the GFC aircraft are used routinely for both day and night patrol. With the vast acreage of wildlife management areas and national forests located within the state, aircraft provide an effective patrol method. Aircraft are capable of directing the limited number of wildlife officers on the ground to areas that are active and away from those areas that do not currently have any activity. This leads to an increase in officer productivity; not only in the number of contacts, but also in the number of arrests.

Aircraft are also used on a routine basis for search and rescue efforts. With the

number of wilderness areas and the number of water bodies available to residents and tourists, it is inevitable that lost and overdue outdoor users will occur. Aircraft have proven to be tremendous time savers in this arena. Once again, aircraft are able to eliminate large unproductive areas, concentrating the search effort in the most likely-find areas. This drastically reduces the time required for a search and increases the likelihood that the subjects will soon be found and with minimal exposure to the elements.

Florida's wilderness areas are not only attractive to law abiding citizens looking for a true wilderness experience, they are also attractive to those individuals who are looking to grow a very high dollar, but illegal, cash crop of marijuana. Much of the marijuana grown in Florida is grown on public lands. The likelihood of the crop being located is relatively low because of the remote areas involved. The likelihood of the grower being caught is even lower because the land is accessible to so few people.

This is where the aviation section steps in. The aviation section locates hundreds of thousands of dollars worth of marijuana annually. With every flight conducted over prime growing areas, every flight is virtually a marijuana eradication flight. The location of the marijuana is relayed to a wildlife officer on the ground. The decision is made to either cut the crop or begin surveillance on the crop and catch the grower.

Many times, our aircraft are used for surveillance. This is usually done with the airplanes because of the amount of time they can cover without the need for refueling. Subjects have been tracked the length of the state in the past without one incident of compromise. These medium-altitude surveillance flights are very effective and reduce the total number of officers needed for the surveillance.

The primary function of the aircraft is to enhance officer safety. The aircraft can not only locate the everyday user of Florida's outdoor opportunities; the aircraft can also locate individuals committing crimes. A wildlife officer can approach a criminal with the knowledge that he has, in fact, committed a crime. The officer knows where the subjects are currently located and if someone is hiding. He will know if the subjects are armed and with what type of weapon. He will also be aware on a psychological level that he has immediate backup available from the aircrew. The criminal also knows that he no longer has the situation of being pitted against one wildlife officer alone in a remote location, but rather he is being watched by the "eye in the sky," and his chances for a successful escape are few.

## **Multi-use**

The aircraft provide flights for every division within the Commission. Around 1/3 of all flights are flown in support of the Division of Wildlife with the Division of Fisheries flying a smaller portion. In times of tight budgets, with the average civilian helicopter renting for around \$400 per flight hour, the aviation section pays for itself with the savings derived from the payments from other divisions. In the last year alone, the aviation section saved approximately \$180,000 by providing biological research platforms at cost rather than someone else's profit. The flights flown include everything from eagle nest surveys to alligator nest surveys.

This brings up the discussion of cost effectiveness. How cost effective are aircraft

in the arena of supporting the state's wildlife? The Bell 206BIII's are currently being operated at \$160 per flight hour including fuel, oil, maintenance, hangar, and all other costs associated with the direct operating cost of the aircraft. The Cessna 172s are operating on an average of \$40 per hour, with the Partenavia and the Cessna 182 costs being slightly higher.

In order to make a cost analysis fair, we will use the most expensive aircraft for comparison. The Bell 206BIII will normally patrol an area at approximately 100 mph. The aircraft is capable of travelling much faster, but 100 mph is a good speed to use in order to get the maximum visibility from the airframe. In most terrain in Florida, the aircrew can effectively patrol an area approximately 1 mile on either side of the aircraft. The net result is an area of 200 square miles patrolled per hour. Now, we will throw in the salaries of the crews. Just for comparison, let's say that every wildlife officer makes \$15 per hour including benefits. With a crew of 2 people, the total cost of the helicopter for 1 hour is \$190.

Let's compare this with the cost of a vehicle on patrol. Let's put 1 wildlife officer in the forest and say he will travel 5 miles in an hour and will probably be able to view an area 100 feet wide. Using the government cost of vehicle operation of \$.32 per mile, the vehicle will cost \$1.60 to operate, and when you add in salary, this patrol costs \$16.60. In that time the officer covered less than .1 of a square mile. Now we can place additional officers on hard roads with good visibility. Let's say that the officers on the hard roads are travelling at 60 mph and can see .25 mile on each side of the road. This officer can cover 30 square miles of area in an hour. The cost of the vehicle operation would be \$19.20, and adding in the salary, the total cost would be \$34.20. We would need a total of 6 officers performing this patrol to cover approximately the same area as the helicopter.

Six officers will cover 180 square miles of hard road at a cost \$205.20 along with 1 officer in the forest at a cost of \$16.60. The total for this patrol is \$221.80. For this \$221.80, .1 of a square mile of forest and 180 square miles of hard road were patrolled. The helicopter patrolled 200 square miles of forest, swamp, hard road, and behind fences for \$190.

The aircraft can never replace the officers on the ground, but they are a useful support tool. If the aircraft are used appropriately, they can reduce the time wildlife officers spend looking in areas that do not have any activity and increase patrol time in the areas with activity, thus increasing productivity and efficiency.

## **Starting Your Own Program**

Now that we have shown aircraft can be cost effective and increase productivity, how do you get into and support an aviation operation? There are numerous ways to start. First, you need the personnel. There should be at least 1 extremely knowledgeable person who is not only a fairly experienced pilot but someone who also has experience with law enforcement and aviation as a team. This person must be able to handle a lot of administrative duties and must be able to work within a budget. Odds are that most agencies already have someone with these qualifications. This person should be made responsible for building the aviation unit.

How do you get the equipment to put you in the air? One way is to buy it outright. A new helicopter that can perform the missions you want will cost between \$850,000 and \$1.2 million. This is not usually an option with most agencies. A used helicopter can be acquired for as little as \$200,000; still a sizeable investment.

There are 2 other options available. The first is acquiring an aircraft through the Federal Government's GSA program. The aircraft available through this program are usually federally owned and operated or are seized aircraft. The cost to the agency is usually around 10% of the original book value and the aircraft may be in a variety of mechanical conditions. Some of the aircraft are nearly new and some will need practically everything replaced. This is where your knowledgeable aviation expert comes in. Once you acquire an aircraft through this program it is usually sold "as is." You have to ensure that you have funds available to get the aircraft operational and then to maintain it. Failure to operate the aircraft may result in the Federal Government repossessing the aircraft from you. Once your name is on the list for one of these aircraft, you can expect a multi-year wait before receiving it.

Another option is the Federally sponsored 1208 Program. The idea behind the program is to place federal surplus military aircraft into the hands of local and state law enforcement agencies for the purpose of drug interdiction. The military surplus aircraft are also "as is." They will not be the most cosmetically appealing aircraft, but they will be in flyable conditions. These aircraft must be used in a counter-drug role. As mentioned above, practically every flight being flown in Florida has a counter-drug back drop to it and this would probably ring true with most agencies in the southeast.

The rules and regulations associated with this program are constantly changing. When Congress authorized this program, they did not include any rules as to how it was to work. Through years of trial and error, rules have been developed along the way. Not all of the rules are written, and some policies are made as instances occur.

Currently, the basic rules provide that any agency with a counter-drug role may apply for the aircraft. The aircraft are issued not on a first-come first-serve, but rather on an "as needed" basis. The agency showing the greatest need gets the aircraft first. There is no limit to the number of aircraft you can request, but you must show that you have the funds, personnel, and a facility to support the aircraft.

The aircraft used to become the possession of the gaining agency after one year of operation. The federal government has since changed their minds on this and the current ruling is that the agency may operate the aircraft as long as they want, but when the agency is through with it, it must be turned back into the federal program for disposal. This will again open up a whole new set of rules as to the condition of the aircraft when it is turned in. Since agencies are just now starting to receive aircraft under these rules, it will probably be some time before the rules on turning them in are written.

### **Equipping Military Aircraft for Civilian Use**

The aircraft will not be equipped with any radios, so the first expense to the agency will be to install all communications and navigations packages. The aircraft will also need a thorough inspection. Military maintenance is a very good program,

but the military does not usually assume any civil liability. You may also want to set aside some money for paint unless olive drab green is appealing to your agency.

The waiting list for these aircraft is not as long as the GSA aircraft waiting list due to the sheer volume of the aircraft being released from the military surplus system. You can usually expect to receive your aircraft within 18 months of the application. This time may vary based on how well you have demonstrated your need.

Your aviation expert will also notice something odd about the paperwork you receive with your aircraft. There is no airworthiness certificate. This does not mean that the aircraft is not airworthy. The military has probably been operating that airframe for close to 30 years before you got it. But the aircraft has never been through the Federal Aviation Administration's (FAA) certification process. The aircraft was built to military specifications and not to FAA specifications. The parts that were placed on the aircraft over the last 30 years have met military specifications, but did not ever receive FAA approval because there was no need.

What does the lack of an airworthiness certificate do to your operation? There are both positives and negatives. First, the good things. Since the aircraft has already been using military parts, you can continue to use military parts. These parts are free from the Federal Government just like the aircraft. There are numerous Defense Reutilization Marketing Offices (DRMO) located throughout the United States. Excess parts are returned to these facilities and are available on a first-come, first-serve basis. You may not find everything you need to keep your aircraft flying, but trading parts is allowed among agencies participating in the program. Odds are, someone will have what you need. One of the major costs of operating aircraft is parts. By taking advantage of this opportunity, you can drastically reduce your operating costs. Many of the surplus parts are brand new.

There are several negative operational impacts regarding the lack of an airworthiness certificate. According to the FAA, you must operate your aircraft under the definition of a "public aircraft." What does this mean? I'm not sure and I don't believe the FAA is all that sure. I do know that you will be allowed to perform most of the missions that you would expect as a wildlife agency. The pilot and crew will be able to perform law enforcement, biological and geological survey flights, search and rescue flights, and other related missions. However, you can not use it for executive transports; that is, to fly the agency head from one site to another for a meeting or to fly the governor from the Capitol to the airport.

Can you get an airworthiness certificate for your aircraft? It really depends on your model of choice. Most agencies are interested in the Bell OH-58, which is very similar to the Bell Jet Ranger. If this is your model of choice the FAA says an airworthiness certificate is next to impossible, and at the very least, cost prohibitive. If you choose the Bell UH-1, there are civilian operators that will get an airworthiness certificate issued for between \$150,000 and \$200,000; about the same cost as a well used civilian model. Once you get the airworthiness certificate, forget using the military surplus parts. Using military surplus parts on an aircraft with an airworthiness certificate is definitely a bad idea. As soon as you place the first military surplus part on an aircraft with an airworthiness certificate, you just made your airworthiness certificate null and void.

Another area to be wary of is inventory control on your aircraft and parts. The Federal Government will be very interested in where your aircraft are housed and what they are being used for. You must ensure that your aviation unit is actively engaged in drug enforcement. They will also be very interested in your aircraft parts. As mentioned before, you can trade parts with other agencies participating in the 1208 Program. Be very careful while you're conducting your trading. There are numerous agencies that are receiving surplus equipment that are not participating under the 1208 Program, such as the U.S. Forest Service. You may not trade with them. There have also been some agencies that decided that selling surplus parts is a good idea; it is not. When you trade or use a surplus part, make sure you document it. If the Federal Government even gets a hint of improper use of the aircraft or parts, you could be out of the surplus business while it all gets straightened out.

The military surplus system is a good way to get started with a highly effective aviation support for a natural resource agency. It is probably even a better way to expand an already existing aviation unit. Be prepared for some initial sticker shock when your unit begins the refurbishment of the aircraft. Including maintenance, paint, radios, and a new interior, expect to spend in the vicinity of \$30,000 per airframe. Once your administrators get over the initial shock of the cost and you are given the opportunity to prove the aircraft, I believe everyone will be left smiling.

If you decide to get into or expand your aviation program, please remember safety. The life of your program and the lives of many other programs depend upon the safe operation of your aircraft. Accidents can happen, but you must ensure that everything possible has been done to prevent them.

The procedure for applying for either the GSA or 1208 Program varies from state to state. I would recommend that you contact your state coordinator for surplus property. The application is easy and is not very time consuming. The benefits will far outweigh any drawbacks to both of these programs. Take a look at your needs. If you have been using aviation assets in the past, the benefits to these programs are obvious. If you have not used aviation assets before, please consider the possibilities and the increased effectiveness of your officers and biologists.