

and found himself side by side with an aeroplane (21), his buddy hasn't seen it yet. The picture was enlarged and entered in evidence in Federal Court. The numbers on the boat were visible, the hunters could be recognized and the prop wash seen. The sheriff and his buddy both entered a plea of guilty.

Gentlemen, we hope that this paper and these slides have provided some ideas that may be useful to you in your own wildlife law enforcement program.

AIRCRAFT EMPLOYMENT IN WILDLIFE LAW ENFORCEMENT

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North Carolina has made valuable use of airplanes in its wildlife law enforcement program since 1947, and you might suppose that by this time every facet of their employment would have been thoroughly explored. To the contrary, North Carolina Wildlife Protection Supervisors keep asking for assistance from our pilots which involve new activities that are sometimes surprising. For example, last year after the hunting season had closed, some folks in southeastern North Carolina began setting traps for quail—the small slattered model with a figure-four trigger with which all of us are familiar. The district supervisor requested assistance and forty-eight of these devices were located from the air and either destroyed or confiscated by ground personnel, resulting in the arrest and conviction of several persons. On another occasion, when one of our pilots observed a firelighter in operation in the wee hours of a cold December morning, he radioed to patrol cars nearby, and they immediately gave chase. The poacher's automobile was a fast, late model with a good driver and efforts to stop him were unsuccessful. The pilot, watching the activity from above, decided some drastic action was necessary. He passed the speeding car, made a 180° turn and dived on the car, blinding the driver with his landing lights. The car almost ran off the road as it came to a sudden stop. The pursuing officers arrested the violators, and they subsequently were fined \$250.00, and the car and guns were confiscated.

Although all aerial work is carefully planned and painstakingly executed, many instances end on a humorous note, such as the time two fleeing violators took refuge in an outhouse. Each time they attempted to leave, the plane would make a low pass and they would duck back in. They were held there until ground officers arrived and made the arrest. Another time a violator ran to his housetrailer home but could not get in because his wife had gone shopping and had locked the door. By the time he had broken a window glass—and cut his hand badly—a patrol car arrived and he was taken into custody. When two out-of-season quail hunters were spotted going toward a house with their dogs and shotguns, the pilot radioed a patrol car several miles away. Knowing the men would soon be in the house, he decided to detain them with an air show. He dived, rolled, looped, performed lazy eights, chandelles, and put his head out the window and yelled for help, whereupon the violators stopped and stood open-mouthed waiting for the seemingly inevitable crash. The patrol car arrived and took them into custody. As he departed the area the pilot was sure the violators were shaking their fists at him.

North Carolina's aerial night consists of two Pipe PA-18 Super Cubs fully equipped for night or day patrol. This type aircraft was

selected primarily for its ability to fly low and slow and because its tandem seating and high wing affords excellent visibility to each side. Also, operating costs are very reasonable. Maintenance, hangar rent, and fuel make the total cost of operation approximately \$7.30 per hour, or about 7.7 cents per mile, which is only a trifle more than the cost of operating an automobile. The planes are piloted by one full-time patrol pilot and the Assistant Chief of the Division of Protection, with an occasional assist from the Division Chief.

Our methods of aerial operations may vary from those in other states, so I would like to take a few minutes to describe them. They have proven to be very effective for us.

The first step is scheduling of the work. In August of each year, a memorandum is sent to our nine supervisors requesting that they make a list of preferred dates for utilization of aircraft throughout the hunting season. These requests are compiled and the two aircraft are scheduled so as to make maximum utilization of the aircraft.

For example, from July 1, 1964 to April 1, 1965 our supervisors requested airplane assistance on 351 days—which certainly indicates that they believe air patrol is important. Of this number of requests we were able to schedule only 241 flights, due to our limited number of aircraft, a condition which we hope to alleviate soon. Approximately 30% of the flights are night operations, and the rest are daytime. Experience has shown that about 25% of the schedules will be cancelled due to inclement weather. When this happens the ground units work the area to be patrolled without aircraft assistance. Also, emergency work takes priority over scheduled routine patrol. When an aircraft is needed in an emergency, the schedule is altered or dropped to allow for the emergency work.

Upon arrival for a scheduled flight the pilot, supervisor and ground personnel—which usually consists of three or four cars with two officers per car—get together and make plans for patrolling a given area. The pilot is assigned an observer who is thoroughly familiar with the area to be patrolled and will operate the radio. The cars are assigned to a particular route to travel and do not deviate from it until called from the aircraft. The routes all lead in the same general direction, usually along parallel roads insofar as possible. The airplane flies an "S" pattern across all the routes. The cars are instructed to travel at a rate of speed that will keep them as close to the aircraft as possible. Ground personnel are asked to periodically give their relative position to the aircraft, using the clock system. Any hunting activity sighted is reported to the nearest vehicle. This method results in field checking of nearly everyone hunting in the area, and often results in apprehension of violators who would otherwise go undetected. During 1962 and 1963, 300 prosecutions were credited to aircraft assistance in our State.

In many cases the pilot or observer must testify in court. For this reason it is imperative that they never lose sight of the violator until ground personnel arrive and identity is verified, or the chain of evidence will be broken and no conviction will result. Keeping the violator in sight sometimes requires exceptional skill on the part of the pilot and observer because a large number of our North Carolina violators get itchy feet as soon as that little airplane is sighted. To be able to direct officers to a man hidden in a honeysuckle patch or a kudzu thicket requires eyesight that is almost uncanny.

This patrol method also works well when checking for fishing violations. Many of our patrol boats are radio-equipped and when suspicious action is sighted on our lakes and reservoirs we call the nearest unit to investigate. When checking pre-season trout fishing, the plan is modified somewhat because it is impossible for an automobile to stay close to the airplane in mountainous country. In this type of patrol, cars are stationed close to streams that are flown according to pre-arranged plans, and they are called if any fishing is observed. Trout flying is tricky and exceptional care must be taken to avoid

strong down drafts and fog-shrouded valleys that are prevalent in mountain terrain. The aircraft are always flown downstream because the plane cannot always climb at the same rate as the streams ascend. This type of flying is extremely tiring and a pilot should not fly trout streams for more than three hours at a time without a rest.

Patrolling for night deer hunters has become one of our most important activities. In this operation, patrol vehicles are staked out in strategic locations, well hidden under blackout conditions. The plane is flown at an altitude of about 3,000 feet, as slowly as it will fly and still be maneuverable, which is about 60 miles per hour. This altitude gives the pilot and observer an excellent view of a large area, usually about 10 square miles. If an automobile is observed firelighting the pilot circles, making his turns always to the rear of the suspect to avoid detection, and keeps the car under surveillance until enough evidence is obtained to warrant stopping it for a check. Again, the nearest car is called and the suspect is stopped by use of siren and red light. If loaded firearms or bows and arrows are found in the car, proper action is taken considering the evidence and circumstances.

The aircraft are used extensively for other Divisions of the Commission and we also help other State agencies when they request it. We have helped the Division of Forestry in forest fire detection and control; the State Highway Patrol in locating stolen vehicles and searching for criminals, and we assisted them in setting up a system for checking speeders from the air. We have assisted the Prison Department in locating escaped inmates. In our own organization the planes are used for game surveys, timber surveys, search and rescue, transportation, and photography.

Needless to say, during all aerial operations all safety precautions are taken and all FAA Rules and Regulations strictly complied with. The planes are equipped with seat belts, shoulder harness, crash helmets, flares, first aid kits and survival gear, and it is mandatory that all safety equipment be used as provided. In 17 years of flying there have been no fatal accidents and only one accident when the occupants of the aircraft received personal injury. This is a commendable record when one considers that our two planes are flown between 900 and 1000 hours per year.

An airplane is only as good as its pilot, and North Carolina exercises utmost care in its selection of pilots. Not only must he be an excellent pilot with a commercial airman certificate but he must also have served as a North Carolina Wildlife Protector for a minimum of three years. We feel that even if we could employ Eddie Rickenbacker, he could not do an effective job for us if he did not possess a vast knowledge of all the laws, rules and regulations peculiar to hunting, fishing and boating. When a pilot knows all the phases of a wildlife protector's work and is aware of what he is asking a protector to do when he radios him to investigate a violation, then, and only then, can he excel as a wildlife pilot.

Gentlemen, I have been employed by the North Carolina Wildlife Resources Commission for nearly fourteen years and have seen it evolve from a handful of officers (many of them farmers who only took the job as a sideline, with no uniforms, no cars, no boats, no sidearms and almost no pay) into a Division of 150 well-trained, dedicated officers who are furnished the best equipment money can buy. We have come far and I am looking forward with much anticipation to what the next eight or ten years will bring. The good people of North Carolina now look on us as a useful, modern, and necessary Department of State Government; and as long as we do the very best we can with what we have, I can think of only one phrase that will apply to our rate of achievement—that is "The Sky is the Limit."

Thank you, and happy landings.