

# THE USE OF RADIO IN LAW ENFORCEMENT

By GEORGE T. BROWN

In the beginning, let me say that this will be a short, and I hope, to the point discussion on the use of radio in Game and Fish Law Enforcement in Tennessee.

In Tennessee we have had a state-wide radio system in operation since 1959. We believe that it is one of the most modern, if not the most modern in the Southeast. This system consists of eleven (11) base stations, thirty (30) automatic repeater stations located at strategic points throughout the state, two hundred sixty-three (263) mobile units which includes five (5) portable units, two 50-watt units mounted in boats and four radio equipped airplanes.

Base stations are located at Memphis, Jackson, Nashville, Crossville, and Knoxville.

Our system operates on three frequencies. One of these is known as the "Operational Network" and transmits on 151.325 megacycles and receives on 159.240 megacycles. This network carries traffic of all field personnel, including our Law Enforcement Officers. The second network, known as the "Administrative Channel," transmits on 151.445 megacycles and receives on 159.300 megacycles. This channel carries administrative traffic from officials, general offices, and station to station traffic. In addition to these two networks, we have 14 mobile units which contain a third frequency. These units talk direct to any base station, any relay, any airplane, or any car, including car to car between themselves if they are in range of each other, and are assigned to staff members and a few key personnel. Twenty-seven of the thirty relay stations on the operational, or field personnel network are strategically located on high vantage points throughout the state to give an overall coverage of approximately 94%.

Five kilowatt auxiliary gasoline-driven generators are located at each base station and a great many of the vital relays so that if commercial power fails at any of these points the generator will automatically start and continue to furnish power until such time as the commercial power supply is again in operation, at which time the generator will automatically switch off and return the unit to the commercial power source.

The 263 mobile units are made up primarily of 252 automobiles, 4 airplanes, 2 boats, four 5-watt portable walkie-talkies, and one 30-watt portable undercover unit mounted in an RC Cola portable ice chest, such as is commonly used for cold drinks on outings and picnics. This ice box unit has been very successful in undercover work.

This briefly gives you a resume of our system and how it operates. I am not a radio technician, and I cannot discuss with you the technical phases of our system, however, after giving you additional information on the different ways we have used the radio in actual Law Enforcement work, I will be glad to attempt to answer any questions you may have.

The order in which I have listed the use of our radio system in actual Law Enforcement work is not indicative of the importance of the particular problems. They were listed merely as they came to mind.

## DEER POACHING

We are bothered in Tennessee, as I am sure the most of you are, with the illegal jack-lighting of deer. This usually occurs around fields which have been sown to some type of cover crop or permanent pasture.

We work this poaching problem by actually placing two officers in or very near the field itself and in a position that they may observe what takes place. These men are usually equipped with what I have previously referred to as our "ice box" unit, and it is not their purpose to actually arrest the violators, but merely to notify vehicles which we have stationed at cut-off points on access roads several miles away. If a deer is killed in the presence of this observation unit, they then attempt to get a description of the vehicle and radio this information to our cut-off units.

We have been quite successful in this plan and as a general rule, we pass up minor violations such as shooting from the road, shooting from the vehicle, etc., in an effort to apprehend the poachers with the deer. Then we confiscate

all equipment, including the vehicle, and the penalties range from \$50.00 to \$500.00 fine and thirty days to eleven months and twenty-nine days in jail.

I will give you an example of how this operation works. Recently we had two officers staked out observing a field where violations had been reported. These officers observed a '57 Chevrolet with a faulty rear taillight, drive up to the field and proceed to shine the field with a portable spotlight. A deer was observed, a shot fired, and the officers actually saw the deer fall. The poachers then loaded the deer into the vehicle and left at a high rate of speed. Our cut-off car was notified, however, the poachers eluded them and apparently got away. Some two hours later a vehicle of the same general description and with a faulty taillight was observed in the approximate vicinity of the violation. The vehicle was stopped and inspected. Hair and blood samples were taken from the trunk of the vehicle. A blood sample was taken from a gun case which was in the vehicle. One of the men's pants contained suspected blood stains and these were also taken. This evidence was submitted to the F.B.I. laboratories in Washington for chemical analysis, and it proved out as we had suspected.

On the basis of this information we were successful in confiscating and selling this vehicle.

#### ILLEGAL FISHING

We also use our radio equipment to good advantage in our efforts to apprehend persons fishing illegally, and especially commercial fishing.

Once the illegal fishing gear (this usually consists of net or basket) is located, an officer is stationed at a point where he can observe the gear when it is being run. He is armed with a portable radio and if necessary, a high-powered spotting scope. Once he observes the equipment being run or fish being taken, he notifies other officers who with their radio equipped boat are hid at some distant point. The officer in the boat moves in and makes the actual arrest.

#### UNDERWATER SPEARFISHING

In the last couple of years a new type of sport has come into its own in Tennessee. This is the use of underwater spearfishing equipment by both scuba and skin divers.

The taking of game fish by this method is prohibited, and consequently, a problem developed. Some of our reservoirs contain forty or fifty thousand acres, and as you can readily see, it would be difficult for a detail of officers to check this entire area as often as it might possibly need checking.

We found that the airplane could spot these divers from 2,000 feet up by the bubble trail and could then, through the means of the radio, direct our officers to the exact spot the spearfishing was taking place. On one occasion the plane actually observed fishermen throw illegally taken strings of fish away. A radio equipped boat was dispatched to the scene and the pilot of the plane was successful in directing the officers to the exact spot where spearfishermen had thrown out the evidence. The officer who was an experienced diver was successful in recovering this string of illegally taken fish. The end result of this activity was stiff fines being meted out to the offenders along with the confiscation and sale of their diving equipment.

#### DOVE HUNTING

One of our big problems with dove shooting is, I am sure, mutual with most of you. This problem is the tendency of the dove shooter to exceed the established limit.

It is quite difficult for us to apprehend the hunter with the doves until such time as he is actually on his way home from the hunt. We have staked out on these dove hunts with officers using portable radios, and they in turn relay the information to officers out on the road as to make, model, etc., of the vehicles leaving the hunt. Under these conditions we have a legal right to stop the vehicle and to ask for an inspection of the hunters' licenses and bags. This method has proven quite successful in apprehending this type of violator.

In addition to the examples already given, we use the radio to good advantage in numerous other ways. A radio equipped plane can patrol many miles of a creek for seining in a comparatively short time. If violations are noted, by the use of the radio an officer can be dispatched to the trouble spot immediately.

We also use our radios to good advantage in combating the taking of rabbits at night by the means of automobiles.

The radio is used to check out alibis given by violators when apprehended. Often the alibi can be completely torn down while still in the presence of the violator. This has a demoralizing effect and often results in the plea of guilty and confession from the defendant.

The use of the radio enables us to maintain a closer supervision and control over our field personnel through base station reports. District Supervisors have only to contact our base station dispatcher in order to get an up-to-date report on the activities of his men.

In closing, I might add that there are also some problems associated with the use of the radio. We sometimes feel that there is a waste of time and mileage by officers congregating unnecessarily simply because they are able to communicate with each other so easily. We feel that sometimes an officer will possibly let a violator get away while he is waiting for another officer whom he has called to assist him. This occurs, we believe, because the situation did not warrant the use or need of the second officer in the first place.

I could go on with instance after instance where the radio has proven to be probably the most useful tool we have in Tennessee in actual Game and Fish Law Enforcement work, but, I believe, my allotted time is expired.

In closing, if there are any of you who have questions pertaining to our system and its use, we will do our best to answer them for you. Please bear in mind that as was previously stated, I am not a radio technician and I make no attempt to go into the technical operation of our system. I extend to you all a cordial invitation to visit us and look over our system. At that time, our engineers will be glad to answer any questions you may have and explain any phase of the technical operations to you.

Thank you.

## **OPERATION, CARE AND MAINTENANCE OF OUTBOARD MOTORS**

*By* BRAXTON SLAPPEY  
*Johnson Motors*

The outboard motor has always been considered a self contained power unit. It has its own ignition, carburetion, cooling, gear shifting and a propeller for propulsion.

However, in the last few years it has grown larger, more powerful and more complicated with alternators, automatic chokes, thermostats, battery ignition on some models, etc. But, basically, it is still a self contained power unit. The general use and maintenance factors remain the same.

Of prime importance is the fuel mixture used. Generally, the outboard is designed to operate on regular gasoline. Higher octanes offer little or no advantages. The less lead in the gasoline, the cleaner it will burn.

We recommend using a reputable outboard oil or a regular SAE #30 grade automotive oil (not heavy duty). Avoid the use of low price, third grade (ML) oil.

The mixing of the gasoline and oil is very important. Do not pour the oil into an empty tank as it will stick to the bottom of the tank and will not mix properly. This will lead to raw oil in the carburetor which will cause failure to start or at least hard starting. Or you may get raw gas in the cylinders which will increase the wear factor and/or cause powerhead failure due to absence of lubrication. The recommended procedure is to put in some gas, then the oil and then finish filling with gas and shake or agitate for blending. Pre-mix fuel, when available, is certainly recommended. (Always the same.)

On most of our motors the ignition is from a flywheel magneto which is in reality two magnetos in one container, the flywheel. We use a coil, condenser and a set of points for each cylinder. On the four-cylinder models we use both