

# THE USE OF HELICOPTERS IN MOSQUITO CONTROL IN LOUISIANA

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The use of helicopters in Louisiana mosquito control began before there were organized districts. Helicopters furnished by the Navy and Coast Guard were employed in the surveys that led to the establishment of the Orleans and Jefferson programs.

Each of the three Districts which have used helicopters extensively has done so for a different primary reason:

Plaquemines Parish for routine inspection and mapping; Orleans Parish for breeding site inspection prior to larviciding; and Jefferson Parish for adultciding and larviciding.

Plaquemines Parish is a large (15×90 mi) parish, approximately 90 percent marshland, very little of which is easily accessible. To inspect this area adequately by conventional means would require about six two-man teams, each equipped with vehicle and boat. The helicopter has made it possible to carry out the inspection program with two teams, each consisting of a trained biologist and a sub-

professional inspector. One outstanding advantage of this setup is that the biologists have an intimate, firsthand knowledge of all the breeding areas.

Orleans Parish depends on paris green larviciding for a major portion of its flood-water mosquito control program. Since timing of application is so important, the helicopter is used to great advantage in this work. Immediately after a rain, inspectors are sent out by helicopter to rapidly survey known breeding areas for degree of flooding and presence of larvae. This information is recorded on maps and the larviciding program for the particular brood is formulated. Thus the helicopter enables complete larviciding plans to be made within 24 hours after rainfall occurs. Without the helicopter and under conditions of a general rain, some breeding areas could not be inspected before the larvae were in advanced instars which are unaffected by paris green.

Jefferson Parish is one of the most rapidly growing suburban areas in the

nation. Most new home construction is in subdivisions which have sprung up in a checkerboard pattern. This leaves pockets of thick vegetation which harbor adult mosquito populations and are not accessible to ground fogging equipment. Aerial ULV treatment is ideal for this situation. The areas to be treated are, by FAA standards, congested, and would require a multi-engined fixed-wing airplane. However, the work can be done by helicopter with a suitable margin of safety to occupants of the areas treated. The slow-flying and hovering capabilities of the helicopter permit precision application of the spray. The ship used for the spraying is equipped with electrically-driven Mini-Spin™ nozzles which produce suitable spray particle size even at low airspeeds.

The versatility of helicopters is demonstrated by the secondary uses for which the Louisiana districts have employed them.

Jefferson Parish has used the helicopter for personnel transport, reconnaissance, and paris green larviciding. In the latter operation, the helicopter is used for treating isolated pockets of breeding that occur in the populated areas. The two airports in the parish are unsuitable for use in this operation, one being remote from the areas to be treated and the other a busy international airport. The helicopter's vertical takeoff and landing capability makes it possible to utilize vacant lots as landing areas and treat these breeding areas from the air without ferrying over long distances to load material. The dispersal apparatus used in this operation is a modified electrically-powered seeder which flings the granules in a wide swath at slow airspeeds.

Plaquemines Parish has used its helicopters as airborne heavy-equipment service vehicles. Besides five pieces of conventional earth-moving machinery, the District operates two amphibious draglines. All of these machines are radio equipped and when a breakdown occurs the operator can call headquarters for assistance. Often the necessary repair parts and/or mechanic are at the machine

within minutes and the machine is back in operation within the hour.

The amphibious draglines operate in areas where low tides often make it impossible to reach them by boat. Under these circumstances, it was formerly necessary to carry fuel to the machine on foot in 5-gallon cans, sometimes over long distances. With a 15-20 gallon per day fuel consumption, this was a time-consuming daily operation. The helicopter, with a cargo sling installed, flies a 3-day supply of fuel in drums to the dragline and sets it on the pontoon. Thus an operation which formerly took a dragline crew 3-4 hours per week now occupies about 10 minutes per week of their time.

The helicopter has also made it possible for supervisory personnel to fly to a job-site, pick up the operator and give him an aerial view of his operation. This has proven much more effective than having the operators work solely from maps. Often it has resulted in last-minute changes which have made a ditching project more effective.

The capabilities of vertical take-off and landing, slow flying and hovering, and carrying of external sling loads have caused the helicopter to be used for many day-to-day operations, especially in Plaquemines Parish which owns its helicopters and always has them available for use.

The list of uses to which the helicopters have been put is almost endless. Among the most valuable services rendered have been inspection of the protection levees around populated areas, inspection of major public works projects, and disaster work. When Hurricane Betsy struck in 1965, the helicopters were used around the clock transporting medical personnel and supplies, searching for survivors, transporting insurance adjusters, locating and herding stray cattle, patrolling against looters and maintaining surveillance of fly and mosquito populations.

Orleans and Jefferson Parishes lease their helicopters from commercial operators. The average cost is \$80.00 per flight hour including fuel, pilot and insurance.

The contractors sometimes require a minimum annual guarantee and usually require a 24-hour notice. Plaquemines Parish operates two helicopters at an average of \$35.00 per flight hour including all maintenance and insurance costs but excluding pilot's salary. Both pilots are mechanics and when not flying or doing aircraft maintenance they perform other work for the District.

Self-ownership has the advantage of full-time availability of the aircraft allowing it to be utilized in numerous ways, especially under emergency conditions. Also, there are many areas of the country

where commercial helicopter operators are not as available as in South Louisiana.

The rapidly expanding helicopter industry is now producing helicopters in many price ranges making ownership feasible for more districts than in the past. Whether self-owned or leased, the helicopter can be a valuable asset to almost any mosquito control program. While it may appear that helicopters are expensive to operate, they make it possible to do things that could not be done by other means for any amount of money, and generally result in a savings by increasing efficiency.