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## JEEP MOUNTED MIST BLOWER

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The Marin County Mosquito Abatement District has built and has been using a one-man operated mist blower. This rig is a self-contained unit and is operated by the driver of the jeep. Most of the important features can be seen in the 2 views shown in Figure 1.

The motor, blower, and pump are mounted on a 1/4-inch steel plate, 12" x 36". This plate is fastened by four bolts and is placed over the left rear fender of the jeep. Originally, the jeep had two extra leaves in each rear spring. After installation of the mist blower, it was found that two additional leaves had to be added to the left rear spring.

A 4 1/2 HP Lawson gasoline engine (4-cycle, 1 cylinder) is placed directly behind the left side of the cab of the jeep. The power is supplied to the pump and blower by pulleys and belts.

A 1/2-inch Flex-Roller pump is mounted beside the blower with a bypass. It pumps insecticide from a 50-gallon tank located in the center of the jeep directly behind the cab. The liquid is pumped through a flexible rubber tube to the discharge end of the blower. A removable #5 whirljet nozzle is firmly attached near the center of this discharge pipe and sprays the material into the air stream. The insecticide is pumped at the rate of about one gallon per minute. A valve in this line controls the spray; it is operated by a lever from the driver's seat.

The blower is a war surplus unit and puts out approximately 600 cubic feet per minute at 4200 rpm. It is attached immediately behind the motor and blows toward the rear of the jeep. The discharge opening is 4" x 6", reduced to a 5 inch circular pipe. This is fitted to a rotating 90°, 5-inch elbow. With the aid of bicycle sprockets and a bicycle chain, this discharge pipe can be rotated by a crank located to the immediate left of the driver; thus, the mist can be directed straight up, straight down, horizontally away from the jeep, or in any intermediate direction.

A "T" joint with a valve is placed just beyond the discharge end of the pump, connected by a length of hose with the old gun-type nozzle for catch-basin or other spraying.

Another "T" joint and valve is located by the intake end of the pump. This is attached to another length of hose, which can be put into a ditch or any other convenient body of water and used to suck up water for refilling the insecticide tank. The intake end of the refilling hose is inclosed with a fine screen to eliminate debris from the tank.

Two of these rigs were built and mounted on jeeps last fall and have been in almost continuous use. No trouble has been encountered; on the contrary, the results have been far better than during the past years of marsh spraying. The opera-

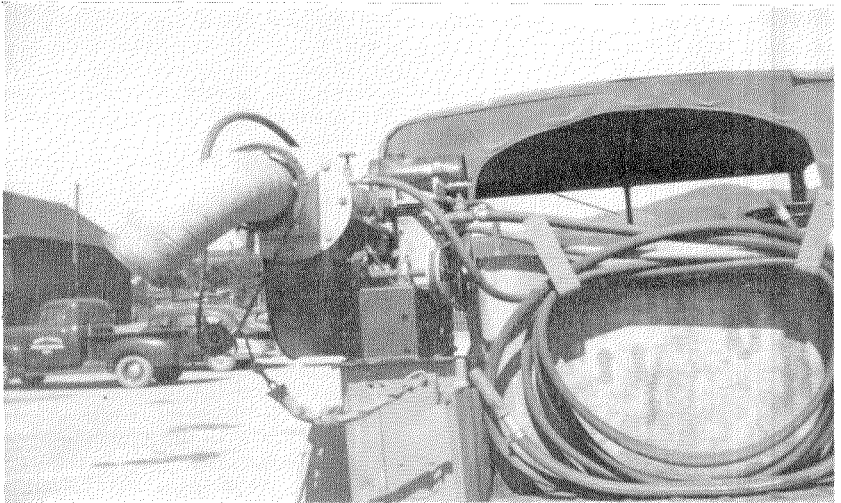
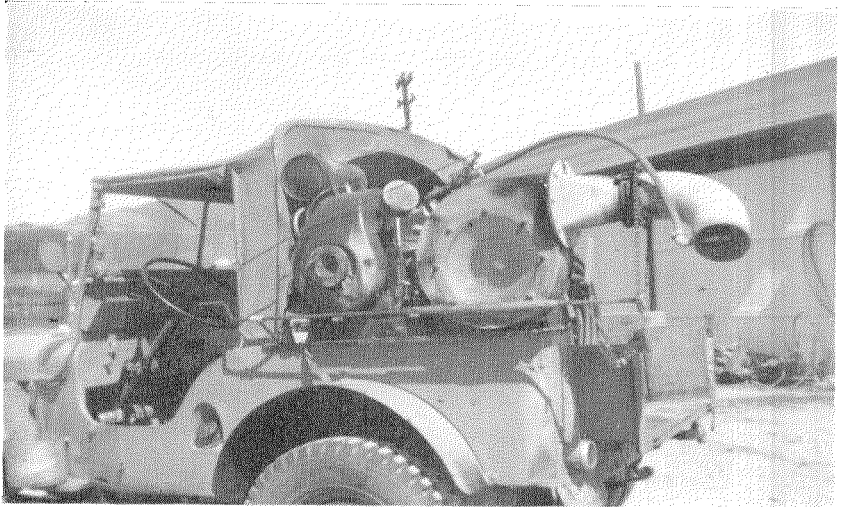


FIG. 1. Side and rear views of jeep-mounted mist blower.

ion is easy on the driver, and the coverage of ditches or open water is far superior to that obtained in other types of spraying.

If the jeep is close to a ditch and the slower discharge is approximately 7 feet from the water, the milky colored insecticide can be seen to penetrate the water to a depth of about 5 or 6 inches due to the high wind velocity.

A marshy field was pre-treated last November with this mist blower. Only one part of the field was treated (about

30 acres). In past years the whole field has produced mosquitoes yearly. This year, in January, no mosquitoes were found in the treated portion while the untreated portion produced *Aedes squamiger* larvae over its entire area (about 40 acres).

Under ideal conditions a 99 per cent kill has been obtained—a distance of 90 feet in open marsh land with one pass of 1¼ per cent DDD against third and fourth instar *Aedes dorsalis*.

## THE L-20 AS A VEHICLE FOR AERIAL DISSEMINATION OF INSECTICIDE BY THE U. S. AIR FORCE

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A review of the history of aerial dissemination of insecticides in the Air Force shows a progression of developments in spraying equipment and a succession of operational aircraft modified to function as effective vehicles.

Installation of spray kits on aircraft adds to their gross weight, shifts the center of gravity, and usually leaves the airplane too cluttered for other uses. In addition, those parts of the kit which of necessity must either protrude from within the airplane or be mounted outside the fuselage interrupt the flow of air around the airplane. This in turn affects the control of the aircraft. Spray kits are continually being developed, however, for those cases where control of insects affecting the health or morale of personnel cannot be achieved with ground control methods or equipment. The researches of the Air Force on the development of kits for the dissemination of both liquid sprays and impregnated granules from the L-20 or "Beaver" are presented below.

Experience in Korea during the sum-

mer of 1951 demonstrated the applicability of employing both large, twin-engine aircraft and liaison-type airplanes to provide coverage of the varied ecological habitats of disease-transmitting mosquito populations present in enormous geographical areas. First the L-5 and later the T-6 were modified through the addition of various disseminating kits to spray front line installations and other areas not readily accessible to the larger C-46 aircraft.

In 1951 the Air Force placed an order with DeHavilland Aircraft of Canada, Limited, for delivery of its newly designed "Beaver." This aircraft has become subsequently labelled the L-20 by the Armed Services and has been accepted by the Air Force as the light airplane most desirable for aerial dissemination work.

In 1953 the principle of dual coverage learned in Korea was incorporated into the operations of the USAF Special Aerial Spray Unit based at Langley Air Force Base, Virginia. Heretofore all spraying accomplished by this unit, whose mission