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TWO USEFUL VEHICLES

THOMAS D. MULHERN AND E. CHESTER ROBINSON [1]

INTRODUCTION. Mosquito control agencies perform a variety of operations which frequently require nonstandard vehicles. This is so when the usage demands alternate off-the-road operation over rough land, and high speed operation on the highway and through urban areas. This also occurs where the same vehicle must be used alternately as a mobile base for spray equipment and as an inspection or transport vehicle. This report describes two such vehicles which have been developed by the Alameda County Mosquito Abatement District, using information gleaned from a number of sources, including commercial suppliers, other mosquito control organizations, and the ingenuity of the personnel of the District.

FLAT PROFILE TRACTION TIRE. To provide the extra flotation necessary for off-the-road operation over agricultural or sandy land, various devices have been em-

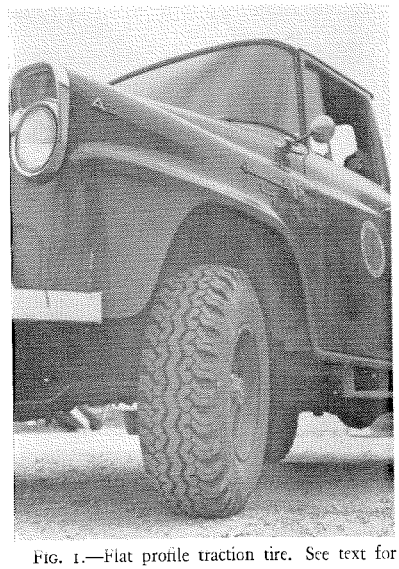

FIG. 1.—Flat profile traction tire. See text for data.

[1] This report was prepared by Thomas D. Mulhern, Technical Consultant, Mosquito Control, Bureau of Vector Control, California State Department of Public Health, from data provided by E. Chester Robinson, Manager, Alameda County Mosquito Abatement District, Oakland, California.

ployed, such as dual wheels, multiple axles, and airplane or "doughnut" tires. Each system has some merit, and some features that are objectionable. Therefore, the flat profile, high traction, high flotation tires illustrated in Fig. 1 were immediately studied when they became available, as another means of providing for this type of service. In order to use them, it was necessary to have special wheels made to allow clearance for the steering gear and axle components of the trucks. The wheels were designed to space the tires so as to maintain the normal tread width of the truck.

TABLE 1.—Carrying capacity per tire Goodyear nylon 8-ply tire, size 10 x 16.5

Speed	Pressure	Capacity
	Short haul service	
10 mph	55 psi	3370 lbs.
30 "	55 "	2920 "
30 "	25 "	1840 "
	Highway service	
60–65 mph	35 psi	2010 lbs.
60–65 "	60 "	2750 "

The specifications of the tires are as follows: Goodyear Tire Company Number 180 852–110, Nylon 8-ply tubeless tires, Xtra-Grip Tread, size 12 x 16.5, normal operating pressure 25–60 psi. At the time this report was prepared, no capacity data were available for this new 12 x 16.5 size tire. However, the following data were available for the smaller 10 x 16.5 size, and one may estimate that the larger size would have a capacity 10 percent to 20 percent higher (Table 1). The tires were balanced after installation. They perform exceptionally well on the highway, at speeds up to 65 mph, with no special steering problems. In off-the-road service, traction and general performance are highly satisfactory. Because of the flat, heavy tread, long service is expected, and high strength and flexibility are inherent because the tire body is of nylon.

The wheels were custom made to fit the 1957 International pick-up truck on which they were mounted. The wheels and tires are of larger diameter than the original tires, thus allowing somewhat more ground clearance, an added advantage for off-the-road service.

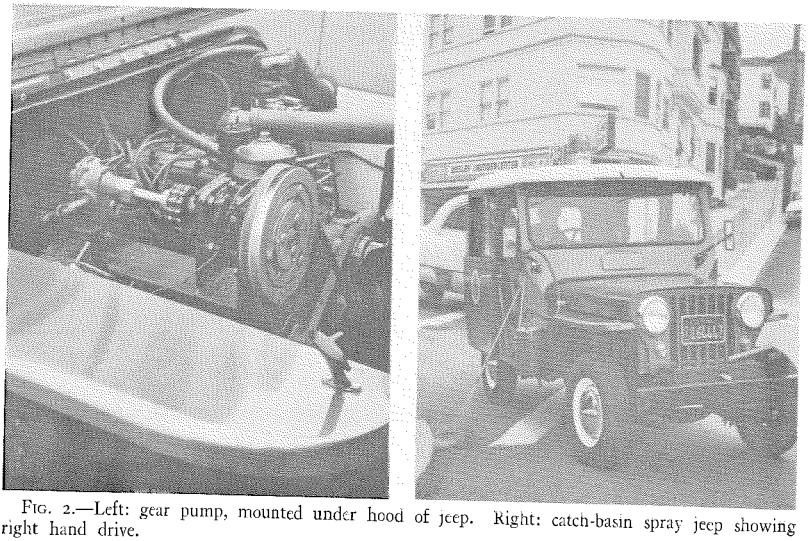

FIG. 2.—Left: gear pump, mounted under hood of jeep. Right: catch-basin spray jeep showing right hand drive.

CATCH BASIN SPRAY JEEP. The newly assembled "standard" catch basin spray Jeep (Fig 2, right) has been evolved through the experience of the District in building and operating a number of units designed for maximum safety and convenience. An average of about 400 catch basins per day are treated on the congested high-traffic streets of Oakland and other urban centers. The basis of the unit is a right-hand drive Jeep Dispatcher, with automatic transmission. The 50-gallon insecticide supply tank is of fiberglass, rectangular in shape, and designed to fit the space in the back of the Jeep. It has a quickly-removable locking bronze cap and base, rated at up to 250 psi as manufactured by the OPW Manufacturing Co., Cincinnati, Ohio, and specified as follows: Cap, #OPW 633-F 1½" bronze base, #OPW 634-B 1½" bronze. The plumbing includes the usual line strainers, pressure regulators, recirculating agitators, etc. The pump is a ½" bronze gear pump, mounted under the hood of the Jeep. It is driven at crankshaft speed through a vee-belt, the driven sheave of which is mounted on a magnetic clutch (Fig. 2, left), manufactured by Pitts Industries, Inc., P. O. Box 14233, Dallas 34, Texas. Clutches of this type have given very good service in similar spray pump installations. They were first used in California mosquito control by the Orange County Mosquito Abatement District.

To contribute to safe operation, a rotating, flashing, yellow safety signal which operates continuously when the Jeep is in spray service is mounted on the roof of the cab. The signal light was made by the Trippe Manufacturing Company, Chicago, Illinois. A large "caution" sign for the rear of the Jeep is supported by pipe sockets welded to the back bumper. When the Jeep is not in spraying service, the caution sign is reversed, and the opposite side carries only the decal insignia which identifies the District.

CULICOIDES (DIPTERA: CERATOPOGONIDAE) ASSOCIATED WITH POULTRY IN VIRGINIA [1]

DONALD H. MESSERSMITH [2]

This study was a part of a research project being conducted at Virginia Polytechnic Institute to determine the arthropod vectors of avian infectious synovitis, a disease of poultry. Therefore, this investigation was concerned with determining which species of *Culicoides* are associated with poultry and to what extent they are feeding on domestic chickens and turkeys. This information would indicate which species, if any, might serve as potential vectors of this disease, because they are known to be vectors of other diseases. In addition, a survey of *Culicoides* in Virginia was made to investigate their distribution, bionomics and life histories. A report of this work is in press.

It is known that several species of *Culicoides* are avian feeders. Reports of *Culicoides* feeding on wild birds have been published by Painter (1927), Arnaud (1956), and by Hicks (1959). More specifically Jellison and Philip (1933) re-

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