

### LOW COST, LOW PRESSURE SPRAY SYSTEM FOR LARVICIDING FROM A VEHICLE

JOHN N. SHERICK

Orange County Vector Control District, P. O. Box 87,  
Santa Ana, CA 92702

E. L. GEVESHAUSEN

Southeast Mosquito Abatement District, 9510 S. Garfield Ave., South Gate, CA 90280

The Orange County Vector Control District and the Southeast Mosquito Abatement District have used an air compressor system powered by a vehicle engine in their community drainage spray vehicles for many years. In the past we have used right-hand drive Willys Jeep® DJ3, International Harvester Scout® 800A or Scout II for this purpose. Currently, we are using a Scout II with 6 cylinders, 258 CID, and V8-304 CID engine, short cab, automatic transmission with right-hand drive. To provide pressure we have used various types of air-cooled, water-cooled, engine-driven air compressors, such as, Bendix-Westinghouse,® Models 400, 500, and 600, air or water cooled; Wagner® Remote and Integral Dome Rotary, air or water cooled. This system has been described in Kimball and Thompson 1967.

Problems in the use of these different types of air compressor systems are as follows: increased coolant temperatures with water-cooled compressors, compressor lubrication, lack of space in engine compartment, and lack of pulley drives due to smog emission system required on present day engines, non-availability of brackets for installation of heavier automotive air compressors, difficulty in obtaining parts, and the fact that the Wagner rotary air compressor is no longer manufactured or repaired.

Southeast Mosquito Abatement District came up with the idea of using a 2-cylinder automotive air conditioner compressor to compress air for spraying operations. Orange County Vector Control District has adopted this system but with one added feature to make the system fully automatic. The 2-cylinder air conditioner compressor is installed by using the vehicle manufacturer's listed mounting brackets, pulleys, and drive belts. Availability of this equipment is generally good, and it costs less to purchase than to manufacture at your facility.

Each District has purchased these units from the local auto wreckers with friction drive pulley and hose fittings and miscellaneous hardware attached. York®, Fordco® and Tecumseh® 2-cylinder compressors have generally been used. Cost of Bendix-Westinghouse rebuilt models with an exchange is \$110 to \$140 per unit without drive pulley as compared to \$25 per unit for a used automotive 2-cylinder air conditioner air compressor with friction drive clutch attached.

Modification of the compressor unit is accomplished by adapting an intake filter assembly on the air intake port of the compressor. A 3/8 inch galvanized pipe tee is connected into the air discharge line to the spray tank. A Penn® Air Pressure Switch, P/N 2232-3701 is fitted into one side of the 3/8 inch pipe tee. The Penn air pressure switch is normally a part of the Coleman® 12 V

air pressure pump that maintains water pressure for recreation vehicle showers and restrooms and is available at your local recreational vehicle dealer. The Penn pressure switch has three adjustments and will allow the operator to adjust cut-in/cut-off and amount of pressure desired. A 2-position switch Cole-Hersee, P/N 5007, and Pilot Light, P/N PL-19-12V, are installed in the dash panel of the vehicle. Wiring circuit is connected from ignition/accessory circuit of vehicle to the 2-position switch and pilot light. Wiring is then connected from switch and pilot light to Penn air pressure switch then to the air compressor friction clutch wire connector.

Operation of the compressor is controlled by a 2-position switch. Pilot light indicates that system is on. Penn air pressure switch controls the amount of desired air pressure and automatically cuts on or off the operation of friction clutch of the air compressor.

Advantages of this type of system are: Operator can turn the compressor system on or off, compressor system automatically controlled by Penn air pressure switch, ease of installation and availability of ready made components for installation, and maintenance of compressor is simple.

This system has proven successful in pressurizing a 50-gal tank using Spraying Systems Company spray equipment and Flit MOL® at 40 psi regulated pressure for community spray operations. Compressor recovery time and pressure is maintained rapidly. However, there may be a problem if a continuous high volume of air pressure is needed. Sufficient air pressure is available for operation of granule gun spraying as described in Kimball and Thompson 1962.

#### References Cited

- Kimball, J. H. and A. H. Thompson. 1962. Orange County compressed air granule gun: design and operation. Proc. Calif. Mosquito Control Assoc. 30:82-86.
- Kimball, J. H. and A. H. Thompson. 1967. Thiokol Swamp Spryte equipped with automatic compressed air spraying units for applying granules and liquid insecticides. Mosquito News. 27(3):420-422.

### OBSERVATIONS OF PREDACIOUS ORGANISMS IN RELATION TO MOSQUITO OCCURRENCE IN THE FIELD.

W. JOHNSON and E. SHERBURNE,  
Metropolitan Mosquito Control District,  
1802 Como Ave., St. Paul, Minn. 55108

During the 1976 mosquito breeding season records were kept of known mosquito predators found in mosquito breeding sites and the mosquito densities associated with each. A random sample of 221 sites inspected had 1 or more of the following predators: