

# A TIMING DEVICE FOR DIRECT CURRENT NEW JERSEY LIGHT TRAPS

E. C. TURNER, JR. AND UNUS F. EARP<sup>1</sup>  
Dept. of Entomology, V.P.I., Blacksburg, Va., 24061

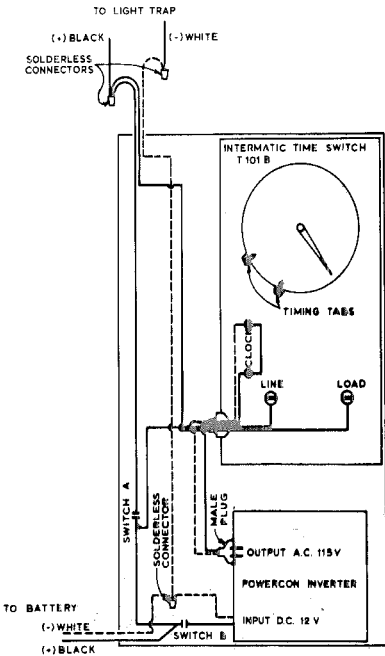
The New Jersey light trap is a standard survey instrument for mosquitoes and various other Nematocera. These traps come equipped in two general styles. One is operated on AC current and the other is operated on a 12-volt DC automobile battery. The AC light trap can be obtained with timing devices so that it can be turned on and off automatically at a certain time of day or night. The advantage of a trap with a timing device is that the trap can be operated for a known time interval without the immediate presence of an operator. It can be used to determine the time of activity of night-flying insects. These timing devices have not been available for the more portable DC traps.

In Virginia, studies on the diel activity of *Culicoides* made it desirable to have a timing device for DC New Jersey light traps. Much of the trapping was done in isolated areas, where electrical outlets for AC traps were not available. The device described below and shown in Figure 1, was designed to combine the advantages of DC portability and an AC operated timing device.

- MATERIALS
- 1 electrical junction box, 8" x 12" x 4"
  - 1 box connector, KO size, 3/4 inch
  - 2 pendant feed-thru switches



FIG. 1.—Timing device installed on light trap.



NEW JERSEY LIGHT TRAP  
D.C. TIMING DEVICE

FIG. 2.—Wiring Diagram.

<sup>1</sup>Professors of Entomology and Agricultural Engineering respectively.

- 3 solderless connectors
- 4 round-headed stove bolts and nuts, size #4,  $\frac{3}{4}$ " long
- I two-prong male electrical plug
- I intermatic time switch, Model T101B—International Register Company, 4710 West Montrose Avenue, Chicago 41, Illinois (most electronic supply companies stock this timer)
- I CDE powercon vibrator inverter, Model 12SP2A, DC input 12 volts, AC output 115 volts, V60CPS (can also be obtained from electronic supply companies).

PROCEDURE. The electric timer is bolted into the electric junction box which in turn is bolted to the New Jersey light trap. The wiring is connected as shown in Figure 2.

The AC current from the vibrator inverter operates the timer switch (.25 watts). The trap itself operates on DC from the battery. To use the timing device, switch B is closed and switch A is opened. The clock switch then operates

the trap. When the timing device is not needed, the trap can be used directly by closing switch A and opening switch B.

Our experience has shown that the weakest point in this wiring set-up is in the inverter. If the battery is allowed to run down or is too weak, the points in the vibrator of the inverter tend to arc and burn out. It is desirable to keep a supply of extra inverters in case this should happen. It is also advisable to run these timing devices only on fully charged batteries.

Timing devices as described above have been operated successfully in Virginia for the past two years, both in mosquito surveys and *Culicoides* studies.

SUMMARY. A timing device has been described for use on 12-volt DC New Jersey light traps. By using a 12-volt DC input and 115 volt AC output vibrator inverter, the AC operated time switch can be operated. The trap itself is operated on 12-volt DC current. When the batteries are allowed to run down or are too weak, the points on the vibrator in the inverter tend to arc and burn out.