

Fig. 1. A diagrammatic sketch of a portable insect chill table (longitudinal view).

source of forced air is fitted into the air hole. The source of forced air is a matter of choice. We have most commonly used either a small squirrel cage fan powered by a variable speed 12V DC motor attached to a car battery or the fan system associated with the portable windtunnel described by Mount et al. (1976). A portable, 12V DC powered car vacuum cleaner wired in reverse or a cylinder of compressed air can be substituted as an air source; but, these sources must be checked to insure that they will provide a low, constant air flow (ca. 10 cm/sec has been most suitable for our purposes). The air forced into the chest flows up through the crushed ice and out through the sorting tray opening in the lid of the chest. The drain hole should be open during operation to allow excess water collecting in the bottom of the chest as the ice melts to flow out.

Before mosquito sorting is initiated, air should be allowed to flow through the chest for 10–15 min or until the temperature of the air flowing out through the sorting tray opening stabilizes at 2–8°C, which we have found safely immobilizes mosquitoes and other Diptera. Once this air temperature is reached, place insect samples (anesthetized initially by CO<sub>2</sub> or exposure to cold) into the sorting tray. As sorting proceeds, the amount of the ice remaining in the chest and the temperature of the air flowing out through the sorting tray should be checked periodically. Depending upon the ambient temperature, 4.5 kg (10 pounds) of crushed ice should be sufficient to support 1.5–2.0 hrs of continuous operation. If the temperature at the tray begins to read above 8°C, more ice should be added or a small amount of rock salt may be mixed with the remaining ice.

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#### A MODIFIED LECO REMOTE CONTROL PANEL MOUNTED OUTSIDE THE TRUCK

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Several safety problems were noted by Georgetown County Mosquito Control ULV truck operators concerning the inside cab-mounted Leco Remote Control Panel.<sup>1</sup> These included: the concentration of adulticide

<sup>1</sup> Lowndes Engineering Company, Inc., Valdosta, GA 31601.

odors, possibility of adulticide lines breaking or leaking, and insufficient lighting of the remote control panel. A modified Leco Remote Control Panel Swing-Arm apparatus was developed by our staff which eliminated these problems.

### MODIFICATION PROCEDURES

Modifications were made to the Leco Remote Control Panel as shown in Fig. 1. First, a 16-in. galvanized pipe, 1.5 in. in diam (c) was inserted into a 3/8 in. notch (b) in the Leco Remote Control Panel Stand (a). Nine equally spaced 3/8 in. holes were drilled along the length of

the galvanized pipe. The pipe was lubricated with grease, and a cotter pin (e) was inserted through both sides of a 3/8 in. hole, the pin was then rested in the notch on the remote control panel stand.

Second, items (f) through (k) were aligned. A polyvinyl chloride (PVC) tee fitting with 1.5 in. inner diam (k) was affixed with PVC pipe glue to a 19 in. PVC pipe with a 1.5 in. outer diam (j). The tee and pipe combination was then attached into the non-threaded portion of galvanized pipe 6 in. in length with a 1.5 in. inner diam (i). The threaded end was secured into the 90° galvanized elbow (h). Attachment of (h) through (k) was made to a 14 in. galvanized

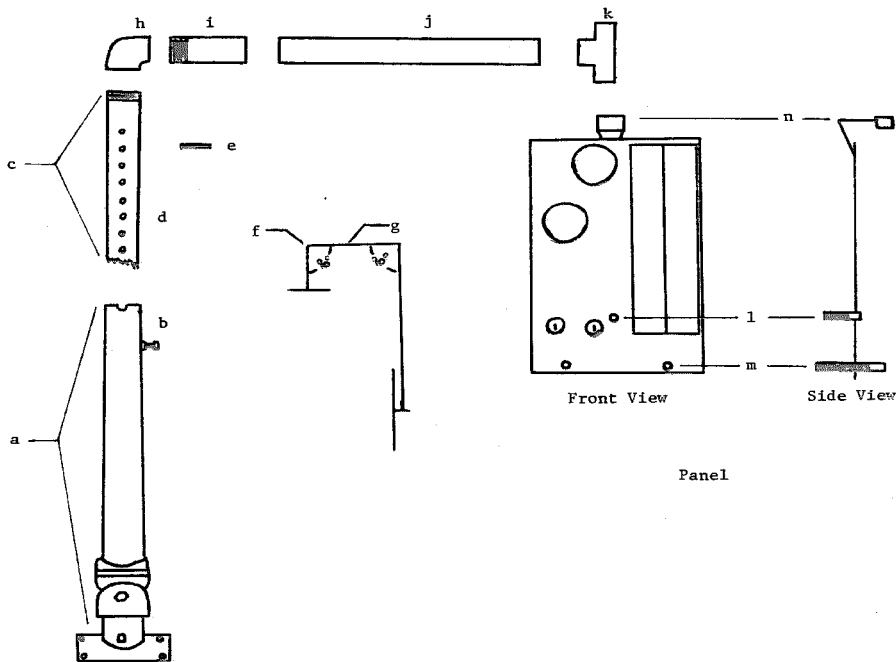


Fig. 1. Modified Leco Remote Control Panel.

**PARTS LIST:** a—Remote Control Stand, b—3/8 in. notch in Remote Control Stand, c—16 in. galvanized pipe, 1.5 in. diam, d—Nine 3/8 in. holes in pipe, e—Pin for cotter, f—90° elbow galvanized (female), 1.5 in. diam, g—14 inch galvanized pipe, 1.5 in. diam, h—90° elbow galvanized (female), 1.5 in. diam, i—6 inch galvanized fitting, 1.5 in. diam, j—19 inch PVC pipe, 1.5 in. diam, k—PVC tee fitting, 1.5 in. diam, inner diam, l—Locking screw from panel to PVC tee, m—Resting bolts with cut tubing on ends, n—light assembly for better viewing of flow temperature, etc.

pipe 1.5 in. diam (g) followed by the addition of another 90° elbow (f). This was then joined to (c) above.

Finally, the remote control panel was joined to the PVC tee via a bolt (1) affixed at the panel end then inserted through the aperture of the tee and secured by washer and nut combination. Two threaded bolts were placed at equally spaced intervals on the base of the remote control panel. These bolts (m) were not permanently fixed, but remained in an adjustable mode. Three-eighths in. diam tubing 0.75 in. long was placed on ends of the bolts extending on the front side of the remote control panel. A coat wire hanger was used for a light brace modification (n). It was attached and bent (from the back of the remote control panel), forward enough so that visual capacity was adequate for the entire panel (when the lamp was attached.)

### DISCUSSION

The modified Swing-Arm remote control panel, adulticide tank and broadcasting unit were all bolted down onto a sheet of 0.75 in. plywood. This plywood-mounted assemble could be, therefore, changed from one truck to another if necessary. The drilled holes in the galvanized pipe allowed for adjustment of heights in the Swing-Arm to fit windows of other trucks. The cotter pin-notch assembly

provided a locking function so that the arm could be swung back out of the window. The 3 adjustable bolts (1 and m) will fit the grade of any truck window ledge. The 3/8 in. diam tubing was utilized to keep the rested bolts (m) from scratching the surface of the window ledge. A trailer mirror was added to the driver's side window to give protection to the Swing-Arm panel. It also increased driving safety by enhancing the viewing area behind the truck. Exiting from the truck was done with relative ease by lifting the arm assembly out of the notch. The cost of implementing the Swing-Arm modification, mounting on plywood and installation of a trailer mirror was \$35 to \$40 per truck.

In conclusion, utilization of the Swing-Arm modification has eliminated all complaints from the ULV spray drivers. There has been little capital outlay except for limited maintenance. Because of the Swing-Arm's adaptability, down-time has also been reduced and efficiency increased. The Swing Arm Remote Control Panel was an answer to our adulticide operational problems.

### ACKNOWLEDGMENT

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