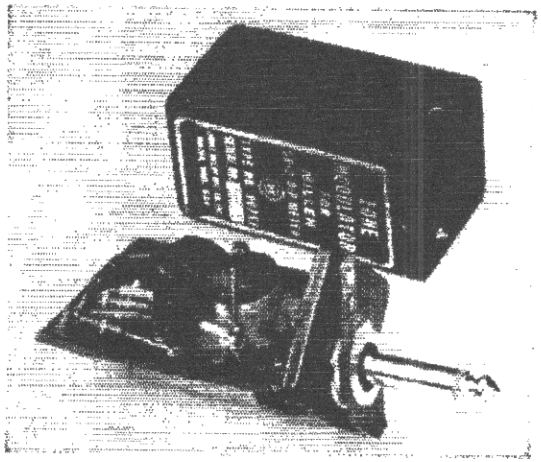
Millen Tone Modulator for G.D.O.

THE Type 90751 Tone Modulator is a transistor audio oscillator powered by a self-contained mercury battery. It is designed specifically for modulating the Millen Grid-Dip Meter, by being plugged into its headphone jack, but can be used for a number of other jobs around the ham shack.

The circuit diagram is shown in Fig. 1. Basically, the circuit is a transistor *RC* phase shift oscillator, designed to oscillate at about 850 cycles, with output taken from the tap on L_1. L_1 is not a fundamental part of the oscillator circuit but is used for coupling the oscillator to the grid circuit of the g.d.o. A unique on-off switching arrangement is used: when the unit is plugged in, a ring-shaped spring around the plug shank is pushed back against the plug base to close the battery circuit and thus turn on the tone oscillator. (The fiber shim shown in the photograph between the ring and the base prevents the switch from being closed accidentally during handling prior to use.) All components, including the mercury battery, are mounted on a flat phenolic board. The large circular component at the center of the board is the tapped inductance, L_1. The 2N107 transistor, Q_1, is just to the left of L_1.

The tone oscillator can be used with a key for code practice, and has sufficient power output to drive a pair of headphones without amplification. It can also be plugged into the mike jack of a phone transmitter to provide a tone for modulation checks and for generating m.c.w. emission. The waveform, although not purely sinusoidal, is good, and the output into a high-impedance load is slightly under 1 volt peak.



The Millen Tone Modulator for grid-dip oscillators is built to fit a standard phone jack.

The Tone Modulator measures 4 × 1¼ × 1¼ inches over-all and weighs 4¼ oz.

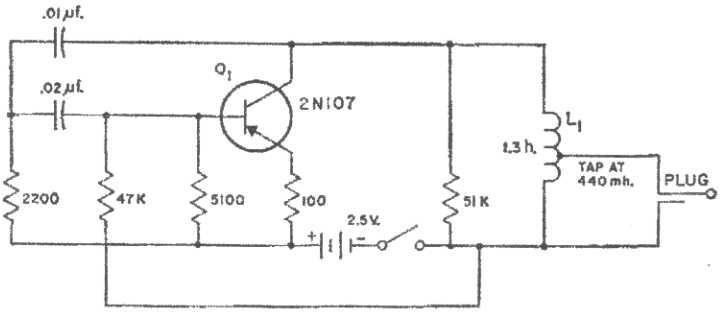


Fig. 1—Diagram of the 90751 Tone Modulator.