

Fig. 4. Detail of Cx.

meters and '50 ohm Systems', every amateur used an RF ammeter for tune-up).

The Rest

Tx/Rx switching is taken care of by a four pole, two-way miniature toggle switch. SW4a allows the antenna to be switched between the PA and the associated receiver. D¹ and D² serve to protect the receiver

against transmitted energy, although at the 2-3 watt level there is little likelihood of damage. SW4b is wired to provide a closure on transmit so as to 'Mute' the receiver, but some receivers need an open circuit instead. Wire this as appropriate. SW4c provides main power switching.

Adjustment

Connect the transmitter to a power meter and switch on. Adjust Lx and Cx for maximum power into the meter. This should occur close to the centre position of the two rotary switches. Check the output; it should be close to the power achieved earlier when testing without the 'atu'. Similarly the total power drawn from the supply should be about the same.

If desired, carefully advance RV1 to give a maximum power output of 3 watts. There is very little difference in communications performance between 1 watt and (say) 5 watts, so choose a power level that satisfies your ego, but doesn't gobble up the lantern batteries too rapidly.

Next adjust RV2 and RV3 for medium brilliance from their associ-

ated leds.

Finally select a value for R5 that give a pleasant level of sidetone from the small piezo bleeper.

Tuning Up

As mentioned earlier, the actual antenna impedance is of little consequence, as long as it is within the matching range of the built-in atu. Point 'X' in Fig.1 is nominally a 50 ohm point, but cannot be 'got at' when the transmitter is operational, so knowledge of the vswr at this point isn't going to improve your signal. Your only concern is get the maximum power into the antenna, and this will occur when the maximum antenna current is flowing. Fig.5 the tuning led 'truth table' has been included as a guide to the antenna impedance and any piece of wire close to a ¼ wave (or dipole close to ½ wave) should produce a 'medium impedance' indication.

Conclusion

This transmitter has given good account of itself on hiking and camping expeditions. The usual antenna is

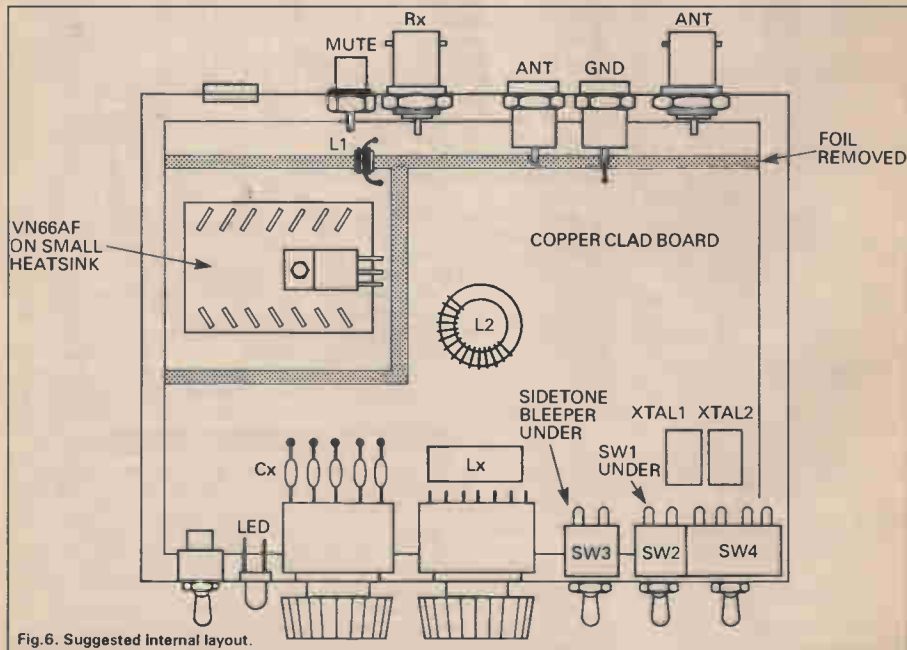


Fig. 6. Suggested internal layout.