

Fig.3 Construction of the VHF load resistor; note that for 300 ohm operation, the lower terminal should have its insulating skirt removed so as to short to the case, which should in turn be earthed as described in the text. See Table 1 for details of the resistors.

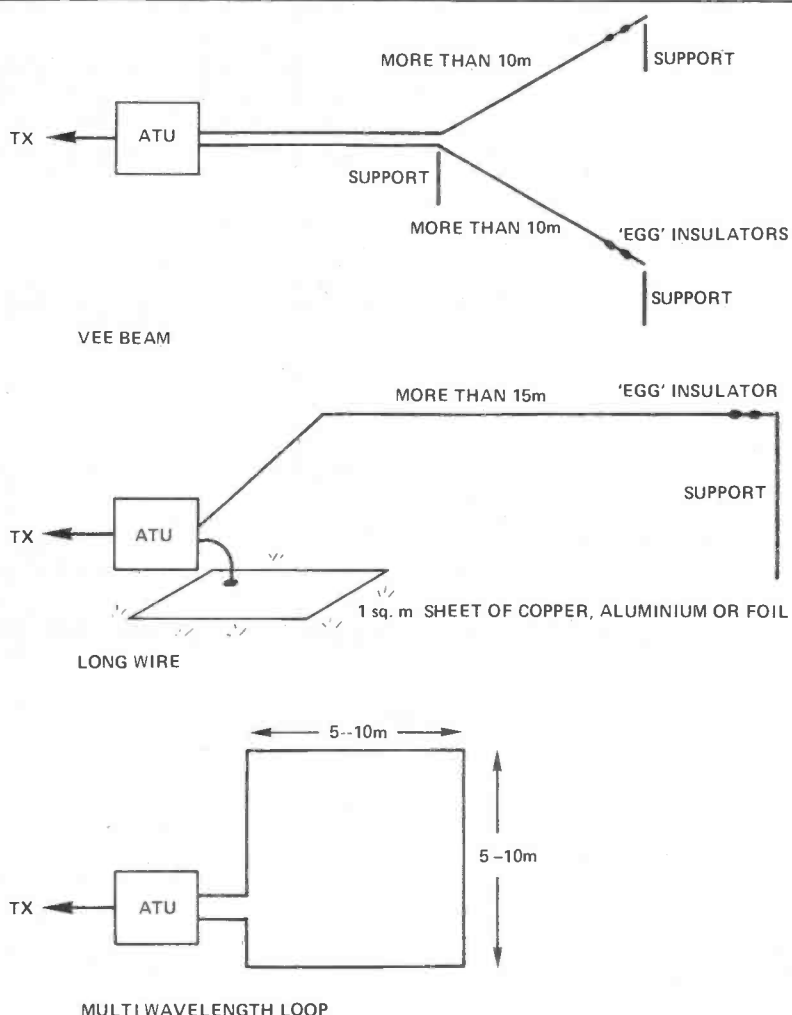


Fig.4 Other antenna options: (a) Vee beam; (b) long wire; (c) multi-wavelength loop.

invisible antenna with gain, one that would take very accurate gun fire to bring down!

The only criteria for use of any antenna at VHF is whether there are highly inductive or frequency selective 'reactive' components likely to reflect back the RF power we want to feed into it.

For instance, its no use trying to load up a base-loaded CB antenna, or an HF beam with traps on VHF. Likewise HF dipoles with ferrite baluns are not going to get our signal very far.

With the tuning unit to be described later we could use a G5RV-type HF antenna (*preferably fed with open wire feeder as ribbon type feeder is beginning to get a big 'lossy' at VHF — Editor*).

Do ensure, however, that the feeder isn't knotted at the top or, again, you have yourself an RF choke. Speaking of G5RV's, one station recently commented that he would prefer a G5RV in the clear to a nine-element beam stuck on the roof. The few dB less performance was worth the 10dB difference in price.

An Antenna Tuning Unit For 2m

There is no point constructing antennas if they cannot be fed with RF. At HF every station uses an ATU to match the impedance of the generator (transmitter) to the load (antenna). Why should VHF be any different?

ATUs are not used as widely as they should be at VHF, which is surprising as rigs have NO means of matching different load impedances, unlike nearly all HF rigs with their 'tune' and 'load' controls. Antennas are rarely their stated impedance; also, they will vary considerably in impedance from one end of the band to the other, thus varying the VSWR of the antenna. In addition, have you ever noticed the variation in the VSWR of a 2m beam as it is rotated? This is due to the effective change in proximity of nearby metallic objects — such as drainpipes — which will affect the radiation pattern of the antenna and thus its impedance.

The ATU of **Figs 5 and 6** is a general purpose 2m matching unit capable of being used with 'long wires' and co-axial and open wire (balanced line) fed antennas. It comprises a pi-network with $\frac{1}{2}$ wave balun transformer. When used for coax or a single