

as high as conveniently possible using insulators for supporting the two ends of the wire.

If attention is centred in one specific short-wave broadcast band, performance can be optimised at this frequency by cutting the aerial to a predetermined length. Overall lengths for the main broadcast bands are as follows: 49 m. : 76 ft., 31 m. : 48 ft., 25 m. : 39 ft., 19 m. : 30 ft., 16 m. : 26 ft., 13 m. : 21 ft. Overall lengths (in feet) for other bands can be calculated by dividing 468 by the frequency in megacycles.

When using a twisted flex feeder of the type described above one feeder wire is connected to the "A1" socket and the other to the "AE" socket. The special shorting plug is removed and can be stored in the "A2" socket to avoid loss. The same connections are employed when using a standard flat twin transmission line. Coaxial feeders are unbalanced and are connected as follows. Braid to "earth" terminal, inner wire to "A1", shorting plug in position between "AE" and "earth" terminal. On the lower frequencies the dipole can be operated as a single-wire aerial by strapping together both the feeder wires and connecting to the "A1" socket. This will give greater signal pick-up and increase the versatility of the aerial.

In some cases it will be found that reception can be improved if an earth connection is made to the "earth" terminal. One benefit is a reduction of locally generated electrical interference especially when listening on the lower frequencies in the tuning range. The earth lead should be as short and direct as possible connected to a water pipe or an external earth rod.

**Aerials for F.M. Reception:** In the case of a permanent installation it will usually be found best to employ an outside aerial except when the receiver is situated very close to the transmitting station. A wide variety of commercial designs are available, but one should be selected of a type which is most suited to local conditions. Such an aerial will have a coaxial feeder which should be terminated with the plug supplied and connected to the "F.M." aerial socket.

For F.M. reception in regions of high signal strength an indoor aerial will usually suffice. The simplest type of indoor aerial takes the form of a short piece of insulated wire some 4-6 ft. in length connected to the "A2" socket. Its position will have quite a marked effect on reception and some experimentation is called for if optimum results are to be achieved.

Greater signal pick-up and reduced background noise are features of the dipole aerial already referred to in connection with A.M. reception on the short-wave bands. A dipole suitable for receiving F.M. signals in the V.H.F. band is relatively small and can be conveniently made from a length of ordinary twisted flex. Unravel some 30 in. at one end and straighten the two wires to form a horizontal top with an overall length of approximately 60 in. Tape the flex to prevent further unravelling. The remainder of the lead will serve as the feeder; one wire being connected to the "A2" socket and the other to the "earth" terminal.

As with the single-wire aerial, various positions should be tried for best