

The Choice of a Receiving Aerial

To some a discussion on the type of aerial they shall use is futile—they have nothing but Hobson's choice. But the average listener has a choice, even if only one out of two, say, indoor and outdoor, and to this section those few remarks are addressed.

With conditions so variable it is impossible to lay down hard and fast rules about aerials for wireless reception. One has always to consider the type of set he is using, his locality, and his proximity to the broadcasting station.

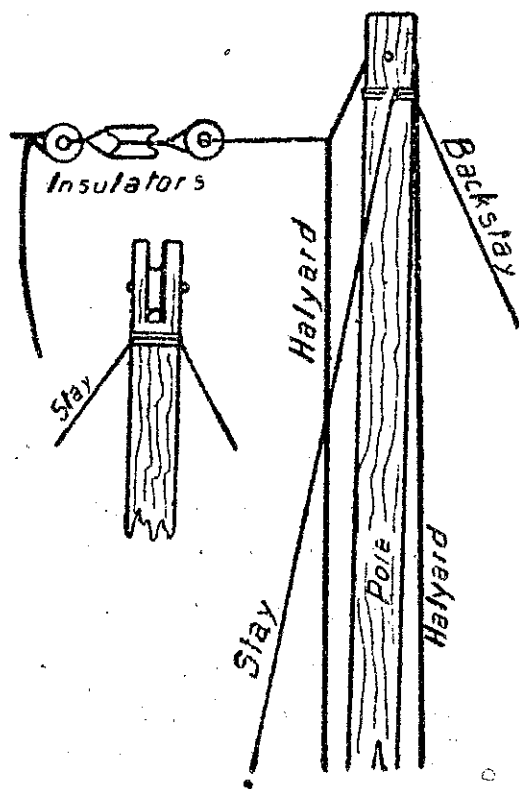
The first problem, however, that confronts the intending licensee is, "Shall I erect an aerial or use an inside antenna?" (antenna being a more suitable term for inside aerial). Great things are claimed for indoor antenna, but except in exceptional cases they are inferior to a good outside aerial.

Quite frequently a letter comes from a correspondent: "My set works better from an indoor aerial than an outdoor. No difference is noticed when I connect up my aerial." Recently such a letter was answered by an English paper by a pithy statement: "Then there is something wrong with your set or your aerial."

A long technical discussion of why this should be so is uncalled for here. The reader, anxious to get on with his aerial, wants facts, so considering that the greater majority of readers are going to erect an aerial they will be considered first. The loop will be considered in a future issue.

Kind of Wire.

A NOVICE intends to erect an aerial. His first problem is, What kind of wire shall he use—fencing wire, stranded wire, bare, covered or enamelled, or plain copper wire?



The first type can be readily dismissed, for compared with copper, galvanised iron is not a good conductor. The main problem lies in the selection among the copper wires. Electricity travels along the outside of each wire, or strand, so that the greater the sur-

face the better the conductor, this would place the stranded before the plain.

Unprotected stranded wire will corrode and tend to cover in the extra surface provided by the stranded wire. In this way it loses its efficiency. Then the wire should be protected. If each wire in the cable were protected from its neighbour, the collecting surface would be at a maximum, so that wire with each strand insulated would be the best. This would be rather expensive so that a compromise is made and each strand enamelled.

Summing up, it seems that the best wire is stranded and enamelled say 7/22.

The Length and Height of the Aerial.

THE next consideration is length. This depends on two factors: (a) type of set to be used; (b) location of receiver.

A. Type of set to be used.

If a short-wave set is to be operated a short high aerial should be used, but we will not dwell on that point, for most beginners use something more simple than the short-wave receiver.

The aerial for the broadcast receiver depends on the number of valves. In general the longer the aerial, the greater the signal strength, the more the noise and the flatter the tuning will be.

With a crystal or a small valve set where only the local station is desired, a long aerial should be employed, where

possible, say 100 to 150 feet, and even 200 feet would not be too great.

Three valves using reaction will find 100 to 120 feet quite sufficient.

Four valves with one stage of radio amplification 80 to 100 feet.

Five-valvers will find 60 to 75 feet ample, while six valves and more require nothing longer than 40 to 50 feet.

In each case the lead-in is added to the length of the actual aerial.

Country listeners will no doubt have little difficulty in securing these lengths, but the city owner will probably have trouble. His best plan is to get as near as possible to the length given that is providing he is not troubled with interference.

B. Locality.—The city owner will find that a long aerial will collect more noise from power-lines, etc., than signals, so that he may have to shorten the aerial considerably. If selectivity is required a short aerial, say, 45 to 50 feet, employed with a wave-trap, should be the optimum length for the city dweller.

TO reduce static two aerials might well be employed, a short, low one and a high, long one, with a change-over switch. When static is bad it is futile to try and listen to distant stations, the local is bad enough, especially if the receiver is any distance from it.

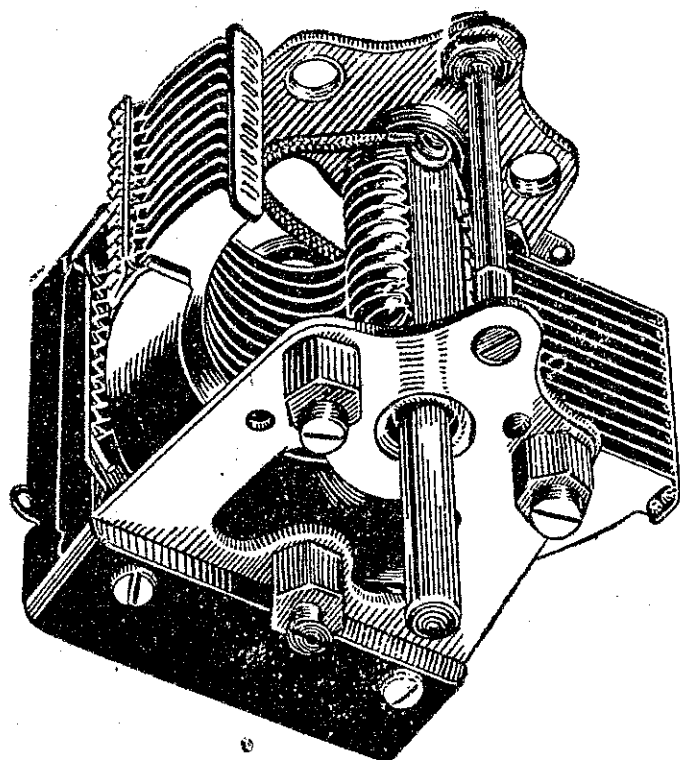
STATIC, as was stated in last week's article, decreases rapidly as the earth is neared, hence the endeavour to work from underground antenna. Signal strength decreases, though not to the same extent as does the static. Hence to overcome the difficulty use a lower, shorter aerial on the local station in times when this interference is bad. By a low aerial is meant 10 to 15 feet from the ground.

Type of Aerial.

THERE are several types of aerial, the inverted L, T, multiple wire hoop and cage are the best known. The pros. and cons. of the L and T were fully considered in our issue of November 2, 1928, and space will not allow of reiteration. Readers will do well to turn back to this number, as directional effect is fully considered—and it is important.

Multiple wires are effective if separated by six feet and separated by hard wood supports. Likewise the hoop aerial, where the wires are separated by hoops of insulator substance.

Another type was suggested by a correspondent in our issue of Decem-



Superstratylene Condenser.
An Emmeo Product.

The Condenser of Precision and Efficiency

This improved Condenser, with its cast Bakelite base and improved brass frame, gives absolutely correct minimum and maximum capacities. Perfect insulation, true alignment, easily adjustable brass frame, cut-away brass plates in both Stator and Rotor, pig-tailed, and adaptable for either base or panel mounting, adjustable cone bearings.

MADE BY ELECTRICITY METER MFG. CO., LTD.

Exclusive Factory Representatives:

139 Clarence St. Sydney
TELE. BW 1328

Manufacturers
products

Sugden Place off Little Collins St.
MELBOURNE

Exide BATTERIES

MEAN DEPENDABILITY.
Installed at 2YA Wellington

All sizes. From 9/- each

EXIDE SERVICE STATION

79 Kent Terrace, WELLINGTON