



—By courtesy, "The Dominion."

AERIALS ARE IMPORTANT

Points people usually forget

Broadcast from 2YA by

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HERE is probably no portion of the outfit that enables one to hear broadcast reception that is subject to more comment than the aerial and the earth system. They are vitally important if good reception is to be enjoyed. Nevertheless, they frequently receive very scant attention and it is not unusual for listeners to forget the aerial so long as signals can be received. In fact they will blame everything else possible before ever thinking about it, and it is marvellous how far some folk will go before suspecting that essential part of the outfit. I was rather amused by a story told me by a country acquaintance who had not long installed his set. It went splendidly for a while, then became very weak indeed. They looked over the aerial as they had been told, but could discover nothing amiss so had to call in a dealer. A couple of hours of baffling search ensued without result. The set was even substituted, but no improvement. Then, and not till then, was the aerial properly inspected. Yes, the trouble was there all right—a partial connection between the aerial and the earth where the wires passed under the window. And this is only typical of a dozen other examples I could mention, so the aerial and earth are really important.

I think, before we discuss the practical points in connection with aerials a brief explanation of the function of an aerial should be of interest. In dealing with the transmitting station last week I explained how the aerial and the earth are really two plates of a huge condenser. This applies equally well to the receiving aerial and earth and if those plates are not as big as they should be, are faultily insulated, or are otherwise not efficient, then a good deal is going to be missed.

Between the aerial and the earth is the tuning coil in the aerial circuit of your set and the waves collected by the aerial have to find their way through this before they can get to earth. By offering a high resistance to one set of waves the others cannot find their way to earth and conse-

quently only the one station can be heard.

NOW, we will consider some of the practical points in erecting an aerial. The first is the site. In this most people, particularly the townsfolk who have only a small section and have to erect their aerial wherever there is room, have little choice. Where possible, get it clear of objects that are connected to earth. If the wire must pass over a roof, very close to a down pipe or a tree, the efficiency will be lowered. Hills affect an aerial, for they, and trees, too, for that matter, cast a shadow as it were, over the aerial.

Keep the installation away from power and telephone lines and, if possible, have the aerial at right angles to high voltage electric lines. Many

people are seriously handicapped through being too close to lines and pick up a great deal of noise, but they will find if the aerial is made fairly short and kept at right angles the noise will be minimised.

For the present do not worry about the directional effect. We shall have more to say about that later on. Having now a rough idea where your aerial should be erected, let us consider next the length. This varies according to the type of set used. For receivers using six or more valves 40 to 50 feet is ample. For five valves 60 to 70 feet, four valves 80 to 100 feet, three valves 100 to 120 feet, one valve and crystal 120 to 150 feet. Measurements have shown that after 100 feet the amount of signal pickup in proportion to the increase in length is very small and, except in cases such as crystal sets, where every available impulse must be collected, there is nothing to be gained in having a long aerial. In fact, it is a decided disadvantage with big sets, particularly as regards selectivity. By selectivity I mean the ability of sets to separate one station from another.

THE height is also very important. An aerial should be as high as possible, not necessarily from the ground but from the nearest earthed object. (Concluded on page 27.)