

Erecting A Beverage Aerial

Full details for erecting a Beverage aerial are given in the accompanying article,

THOSE anxious to improve their dx reception will find that the Beverage aerial offers plenty of scope for experiment. Several readers who have tried it have reported that their reception of long-distance stations has been considerably improved, and that they have logged many new stations at good volume which previously they

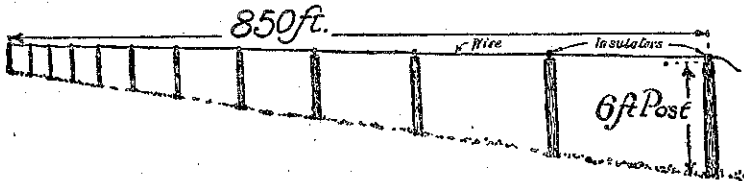
and you wish to hear a station at the top of the scale (say, 550 metres) your Beverage will have to be 551 metres (roughly, 597 yards). That length will also take care of the stations whose wavelengths are less than 550 metres.

"The height is not at all important. It must, of course, be off the ground.

be of the order of 100 micro-henries for the 200-metre system. The chief merit of this antenna resides in its directional properties and the immunity it provides from static disturbances; a theoretical examination shows that as an antenna it has no special virtue, at least over ground of average conductivity.

"But the directional property may be frequently of great use; an example of this was furnished by the recent trans-Atlantic tests conducted by the American Radio Relay League, in which the antenna was employed with some absolute success in receiving the signals.

"The surge impedance of a line of these dimensions is approximately 550 ohms. The latitude 200-600 ohms is prescribed to allow variation."



had not been able to pick up. This aerial has one serious drawback, however. It is between 300 and 400 yards long, and as it should run in a straight line, plenty of room is essential.

For the benefit of those inquiring in this week's "Questions and Answers" columns for details of the Beverage aerial, we are re-printing below a description (published in the "Radio Record" dated October 3, 1930) of this type of aerial.

"Avoiding technicalities as far as possible, let us start with the actual transmitting station. This sends out a series of waves in all directions. These waves have been measured from crest to crest and the length ascertained and described in metres (one metre equalling, roughly, 39 inches).

"It might be more accurate to say that it is the distance from the lowest trough of one wave to the lowest in the succeeding wave, that is measured—hence 3YA on 306 metres means that the distance from the crest to the crest of the following wave is 306 metres, or, approximately, 331½ yards. Now, if you construct an aerial 332 yards in length, every portion of one complete wave from 3YA will fall once on that aerial and you will obtain every particle of energy it is possible for that wave to give you.

"The length will be slightly greater than the length of the wave of the station farthest up the wavelength scale possible of reception by your receiver. In other words: If your set covers stations broadcasting on anything between 200 and 600 metres

The wire could be laid along the tops of posts forming a fence (in a straight line) so long as the wire was insulated from contact with the post. Any old wire seems to be good enough.

"One enthusiast uses 14 or 16 s.w.g. galvanised iron ordinary fencing wire, strained by a fencing strainer. The aerial (a) must be all in one piece; (b) must be in a straight line; and (c) must be earthed (through a resistance of 750 ohms) at the far end. As a resistance of this value is not easily obtainable, two 400-ohm potentiometers in series would do. By moving the sliding arm of the second potentiometer you will obtain a total resistance approximating 750 ohms.

"Then the lead-in must be insulated on its way to the set, exactly as in the case of the normal aerial. Finally, as the Beverage is acutely directional it must be located so as to point in the direction from which signals are principally desired. If Indian and other stations between the listener and Bombay are preferred the aerial should be run out directly north-west from the house. If Americans are preferred the direction would be almost north-east."

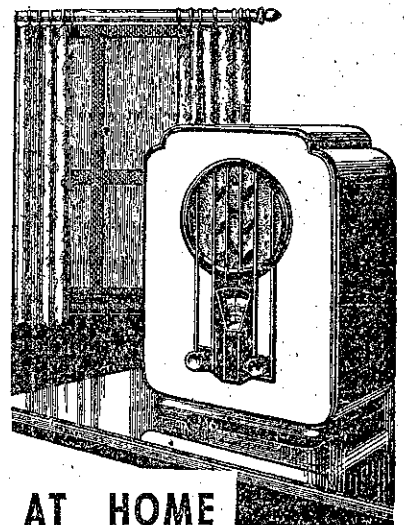
Another description of this type of aerial, taken from an overseas publication, runs as follows:—

"The Beverage Wire.—This modification of the single-wire antenna, proposed by Mr. H. H. Beverage and described in United States Patent No. 1,381,089, has for its principal object the reduction of interference from static and other stations by means of its sharply directional characteristic. It consists of a single horizontal wire of equal length to the wavelength to be received (or an integral multiple thereof).

"One end of this is grounded through a resistance approximately equal to the 'surge impedance' of the line (200 to 600 ohms for a line about 10 feet high, No. 16 s.w.g. wire, at radio frequencies), and the other end is connected through an inductance to the ground in the usual way. The receiving apparatus may be coupled to this inductance.

"The system has theoretically a well-defined directional characteristic, and receives best from a direction toward the end grounded through the resistance. The inductance to be used may

A 500-kilowatt transmitter has been licensed for Acuna, Mexico.



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