

The theory mentioned was formulated by Sommerfield, but only takes into account absorption by the earth's surface, it being impossible to include the effect of trees or buildings, so that the effect of these is ascertained separately, and added to the calculated density.

Adjacent Power Lines.

NOT much data is to hand regarding possible screening of receiving aerials by overhead power lines. From the foregoing examples it does not appear possible for such lines to have any appreciable screening effect upon an aerial, unless the conditions are exceptionally hard, such as a position very close to the lines, the latter being considerably higher than the aerial. And in such a case, the interference from hum would quite likely be a much more important matter for concern. And the writer recalls an interesting report sent in during the "fading" test last year. This came from the owner of a five-valve set residing close to a large mining plant

employing probably 2000 horse-power, all from electric motors. High-tension wires supplying the district entered a sub-station near at hand, and amongst all this, the receiver functions without interference, which is surprising, when the small things that will upset most receivers are considered.

Screen-Grid Valve for Short-wave.

IN his notes last week Mr. Sellens mentioned that he had not been very successful with the screen-grid stage. It is only fair to mention that this stage, so Mr. Sellens informed the writer, was not added according to specifications published in the "Record." It is not expected that everybody will successfully work any new circuit immediately, but in cases where trouble is experienced, a little time spent in experimenting with different plate and screen voltages, chokes, etc., will soon put matters right.

Tips and Jottings

Improved A Accumulators.

SMALL A accumulators can easily be made from discarded plates by carefully cutting up with a hack-saw. Strips of lead are then soldered to the top ends, these strips to rise at least three inches, where they can be connected, all positives and all negatives. Wooden separators can be used, or strips of ebonite or celluloid to separate the plates. The whole of the plates can be bound round with two strips of celluloid joined with celluloid cement, which must also be liberally applied to any soldered joints that will be below the surface of the acid.

A Useful Vernier Dial.

A GOOD and inexpensive (8s. 6d.) vernier dial is the "Indigraph," an Igranite product. A useful point about this dial is the fact that it will grip any spindle from 3-16 up to 1/4-inch owing to a handy clutch movement which is secured by means of two small spanners supplied. It fits the Ormond spindle, and this the writer found very handy recently, when unable to obtain an Ormond dial. Efforts to fit another dial failed, owing to want of clearance at the back to take the nut, whereas the Indigraph fitted without the slightest trouble. Illumination of the dial is simply carried out by a small bulb within the receiver, shining through the white celluloid dial. Friction drive, 8 to 1 ratio.

A-Box Filters.

SOME time ago mention was made in this column of the A-box filter, or high capacity condenser, which smooths out the low voltage current from A battery charger so that it may be applied direct to valve filaments. This filter also makes the construction of an ABC eliminator a fairly simple matter. We shall be glad to hear of some enterprising firm importing this useful accessory.

A Ferranti Year-Book.

THE Ferranti Year Book for 1928 has come to hand, and contains a fine review of the Ferranti radio products—iron-cored chokes and audio transformers, including push-pull. The book contains useful tables of valve and transformer combinations for every purpose, a four-valve receiver, an a.c. receiver circuit, a push-pull amplifier, and other power circuits.

The Stroboddyne

A RECENT new circuit, which is claimed to be an advance on the super-heterodyne, has been invented by M. Lucien Chretien, of Paris, and is given the name of "Stroboddyne." The receiver desires its name from the stroboscopic effect, which is well known in optics. The stroboscopic effect may best be explained as follows:—Imagine a reed is vibrating at 30 vibrations per second, and we look at this reed through narrow slots in a rotating metal disc, these slots being equally spaced around the disc and the disc rotating exactly once per second and having 29 slots.

In this way we obtain 29 views per second of an occurrence which is taking place completely in 1-30 of a second. The result is that the occurrence at which we are looking has completed

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one cycle and 1-29th of the next, and in this way it appears to be performing its evolutions at a frequency of one per second instead of 30 per second. We are thus able optically to "slow it down" so that we can observe its details.

No Grid Leak.

In the case of the "Stroboddyne" a somewhat analogous electrical principle is used. The circuit operates not by the use of different frequencies beating as in the case of the super-heterodyne, but by furnishing a conductive path for the signal at suitable intervals only. These intervals are provided in an oscillatory circuit.

It is claimed that with the "Stroboddyne" the valve used in the circuit functions as an oscillator control, and also as an amplifier, with an increase in sensitiveless. No grid leak is employed, and with an aerial only a few feet in length considerable volume of signals is obtainable. In the circuit at present constructed eight valves are used.

ADDING SCREEN - GRID VALVE TO SHORT-WAVE ADAPTER

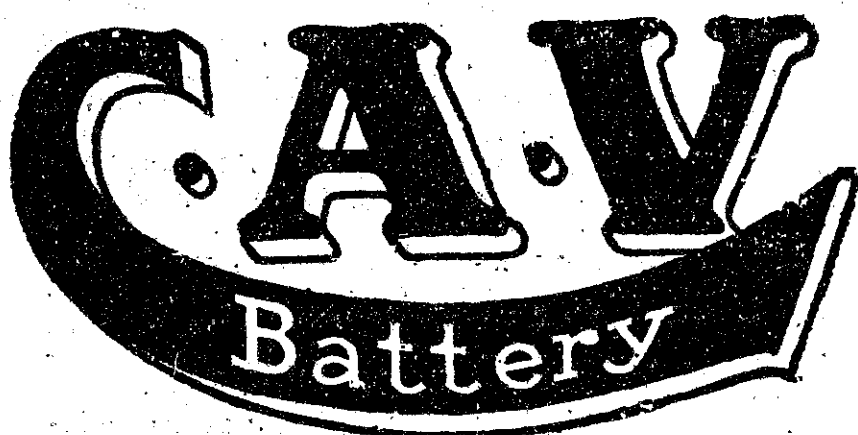
IN reply to a number of inquiries, it may be stated that the most effective way of applying the screen-grid valve to the Record short-wave adapter, or to any other with the same circuit, is to make up the screen-grid R.F. stage as described on June 29. This section is then to be fastened to the left-hand side of the adapter by means of inch strips of wood screwed underneath, making one complete unit.

It should be specially noted that the same pole of the A battery must be earthed as is done in the broadcast receiver itself, which is usually the negative, whilst the diagram of the adapter shows A positive earthed as in the full receiver, which is the usual practice.

Alterations in the adapter of position of grid-leak, and connections for 90 volts B and addition of .002 fixed condenser are explained in the article.

The secondary coil used in the screen-grid stage must be a duplicate of the one in the detector stage. The aerial coil and operating spindle is removed from the detector stage to the screen-grid stage.

Both screen-grid and detector stage should be separately screened with 28's copper, including the back of panel, to secure best results. For the detector stage the copper screen can be screwed underneath to save lifting components off the board.



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