

Questions and Answers



Aerial Efficiency.

I AM using a crystal set and a bar amplifier with a 100ft. aerial, approximately 30 feet high. Would reception be improved if I erected another aerial, so that the two formed the sides of a triangle having a 50ft. base, the leads-in being at the apex. The height would in both cases be the same.—A.P.G. (Silverstream).

A.: When using a crystal set every addition to aerial efficiency affects materially the output of the set so that the improvement should have a beneficial effect upon the strength of your set.

Screen Grid Detector Two.

WOULD you supply me with the name and issue of the overseas magazine containing the description of the screen grid detector two?—L.H. (Christchurch).

A.: It was published in "Popular Radio and Aviation," a journal which is now not in existence. The magazine has been returned to its owner, and as far as we can recall the description appeared in the August, 1928, number.

Selecting a Dynamic Speaker.

WISHING to purchase a dynamic speaker, F.H. (Westport) asks if one operated directly from the mains can be used with a battery set, and if this is better than the 6-volt type.

A.: So long as you have the A.C. power available it matters not how your speaker is energised. The A.C. type of speaker is far the better investment for anyone who has not an accumulator and facilities for charging it.

Output Filter Choke.

I HAVE two transformer cores, one an E shape and the other a shell. Which is the better for making an output filter choke? What gauge of wire and how much would be required?—A.G.C. (Te Aroha).

A.: The E type marked in your diagram A is the most suitable as it contains more iron. Wind on as much 36 gauge wire as possible. If double-cotton covered there is no need for insulation between the layers.

Shortwave Adapter.

WOULD the adapter described in the "Listeners' Guide" be suitable for use with a screen grid three-valve set, and would it give as good results as "Round the World" two?

A.: Our experience has been that the "Round the World" two has been the most successful short-wave receiver (excluding the screen grids) that yet we have published. The "Round the World" two would give you excellent results, but as a start try the adapter described in the Guide. Omit the fixed condenser between the plate and A+.

2. Can I use a .0005 and a .0001 condenser instead of .0002 and a .00035?—C.B. (Nelson).

A.: A .0005 is far too large for short-wave work. The .0001 condenser is to be preferred for tuning, and for this the table on page 103 has been prepared. Nothing larger than a .00025 should be employed for reaction.

Transformer Design.

CAN you give me the details for building a transformer to deliver 20,000 volts at 20 milliamperes? asks A.J.M. (Kelburn).

A.: We are afraid that the electric light authorities would not greet with pleasure any project such as this. When it is understood that a difference of potential of 20,000 volts will cause a spark 2in. long some idea of the difficulties in building and the danger attached to such a transformer it can be understood why it would not be permitted. There is no apparent reason why a transformer of these dimensions should be required. Has the correspondent committed an error?

2.: In the A.C. hand-book there is an article dealing with the construction of a crystal set and amplifier. Two condensers are specified for smoothing. Would not one electrolytic suffice?

A.: The usual electrolytic condenser is suitable only where small differences of potential are employed. They can be used successfully only in "A" battery circuits.

A Would-be Experimenter.

I HAVE been experimenting to find some other form of detector than valves are crystals. I happened to stumble across the discovery that iron filings become a conductor of electricity when a magnet is brought near to them. The iron filings are in a glass tube and care must be taken that they are not too tightly or too loosely packed. I have lit lamps by holding a strong magnet a foot away from the tubes. Could this idea be embodied in an adjustable grid leak? The resistance can be controlled by the distance of the magnet from the tube. Could this idea be used for an adjustable grid leak?—A.C. (Ohakune).

A.: You have not made clear the results of your experiments. When you speak of iron filings and a system of detection it seems that you have happened across the coherer type of detector which preceded the crystal. We think that you have merely happened across well-known electric and magnetic facts in unusual circumstances. A grid leak of this nature would be very noisy.

Silk Diaphragm Speaker.

I HAVE made up the silk diaphragm speaker without success, writes E.L.D. (Christchurch). In nailing the silk to the frame should it be drawn drum-tight and then painted? I have been doing this and then painting it, but the silk has been slipping.

A.: You are right in drawing it drum-tight before painting, but unless the silk is of good quality and nailed very evenly all round you will get trouble by splitting.

2RF Browning Drake.

I INTEND building a 2RF Browning Drake, but would like to be cleared up on the following points, writes G.C. (Dunedin):—

1. What is the size of former and gauge of wire for chokes for the parallel feed?

A.: "Cathode" has dealt very fully with the theory and construction of choke coils in an article which will in all probability be published in next week's issue—at the latest it will be published within a fortnight.

2. The receiver has four condenser controls and three rheostats. Could I make

the set one-dial control or lessen the control without losing a great deal of efficiency?

A.: The first and second RF condensers can very conveniently be ganged, the moving plates in each case being connected together and to earth. One rheostat can be made to control both RF valves, and if valves of the same voltage as the accumulator are used, there is no need for the rheostat controlling the audio stages.

3. To control the RF stages a variable high resistance of 20,000 ohms should be included in the RF plate supply with a by-pass condenser to B—. Is this a good method of controlling volume?

A.: Yes, but the simplest method is to take out all rheostats except the detector and control volume by a variable resistance 0 to 500,000 ohms shunted across the aerial and earth terminals.

One-Valve Set Required.

ALTHOUGH I have been a reader of your paper for close on 12 months, I have never seen a description of a one-valve set. Could you publish one?—"New Chum" (Hastings).

A.: The combination set was described in the "Radio Record," volume 2, No. 39 (April 12). Small regenerative receivers are not looked upon with any great favour by the Post and Telegraph Department. Although small, these receivers are capable of creating a great deal of interference, and there is always a temptation for the user to endeavour to bring in a station that is really beyond his power. A great deal of annoyance to listeners with larger sets who can, under normal circumstances, enjoy these stations, is the result.

Battery Charging.

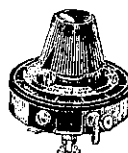
I HAVE a battery charger with which I charge a 6-volt 30 amp. battery, but



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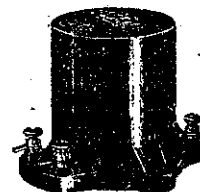
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