SUPER-HET. (Christchurch).—I have just been trying-out a super-heterodyne receiver, and find I can get the two local stations at several points on the dial. Why is this?

A.: This is due to cross modulation and shock oscillation (we are calling it that for the want of a better name), features which showed themselves in the earlier super-heterodyne receivers. Your set should not have either of these faults. If you are buying a new receiver specify multi-mu valves, which will, to a large extent, do away with the complaint.

NORTHERN PATROL (Dunedin).—Will a 50-watt transformer be suitable for a transmitter using two 245 valves in push-pull with 350 volts on the plate?

A.: If you intend to use only the two 245 from this transformer it will be quite satisfactory.

2. I have two condensers with 28 plates, and I want to reduce to .0005 and .00035 capacity. How many plates would I need to take off?

A.: The present value of the condenser is .0005; to reduce to .00035 take off your moving four fixed plates.

3. Would choke G in table D, "Radio Guide," be suitable with a 50-watt transformer?

A.: It would be quite satisfactory, but if you are going in for transmitting, why not build the heavier one, as before long you will no doubt increase your power?

J. C. (Dunedin): What metal rods are used in Balkite charger?

A.: Lead and Tantelum.

2. I have a four-valve set. Can I add another valve as shown in the accompanying sketch?

A.: You would gain nothing if you did. You are merely connecting the two output valves in parallel. This method would give you a slightly greater undistorted output, but would not amplify your signals to any greater extent.

HAMISH (Christchurch): I constructed the S.W. battery set described in the 1930 "Radio Guide," and have had good results, with the exception of a tendency to over-oscillate. I tried a differential condenser instead of the resistance control, but failed to get oscillation of any description. Should I have altered the set in any way?

A.: You should have tried the plate lead to the other set of fixed vanes in the differential condenser, bringing the connection from the tickler to the lower set of vanes. Apart from this, however, it is probable that there are insufficient turns on the coils now that you have installed a differential reaction, which system needs a far greater number of turns than does the ordinary condenser controlled type.

W.A.O. (Christchurch): You could obtain armoured flex probably from L. B. Scott and Co. or A. E. Strange, of your town. Failing either of these two people Ballingers, Fears or C.A.S. in Wellington, and Johns in Auckland.

NOISE (Christchurch): Would I derive any advantage from putting 2 "A" batteries in parallel?

A.: If they were dry cells you would find that they would last longer than two sets of batteries used one after the other.

2. Would it be worth while my building a full-wave crystal set?

A.: It is purely an experimental set. You might get good results and you might not.

3. Are there any 1929 "Guides" to be had?

A.: Yes. There are still a few.

NEOPHONE (Wellington): I constructed the Loftin-White amplifier, but it is insensitive. The hum control has no effect and I had to short out the 775 ohm. resistance to get any results.

A.: There is something wrong with some of your resistances, probably in the bias chain or the 775 ohm. one. Have them checked over and also check over for any short circuits. Are you quite certain that one of your condensers is not wired in the wrong position? If this were so you would notice the symptoms about which you complain.

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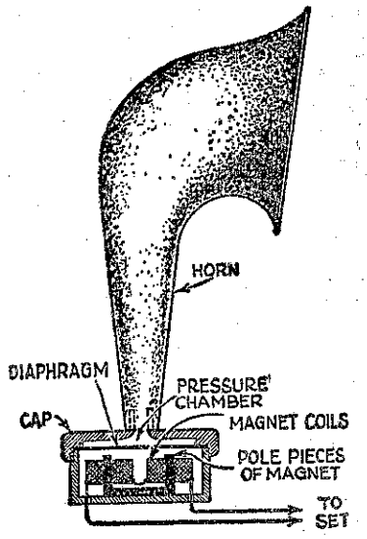
Diagnosis of Radio

(Continued from page 9.)

it; it moves backward and forward. It can deliver a great deal more volume than could the cone and, furthermore, it can reproduce a wider range of sound.

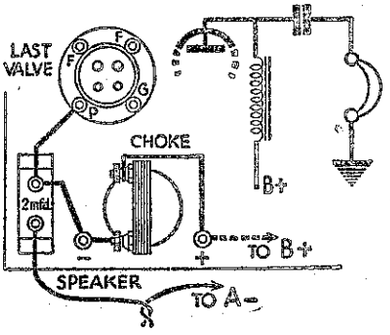
(4) The inductor dynamic. This resembles the cone speaker, but the armature is balanced so that it will not strike the pole pieces when called upon to handle great volume. It moves parallel to them. This speaker has a very good response and can handle almost as much volume as the moving coil.

One other type remains, and that is the condenser speaker, which relies upon the attraction and the repulsion of two plates. This type of speaker has not become very popular, although it has a good frequency response and can take a large amount of current without distorting or rattling.



A Horn Speaker.

A good cone speaker can be obtained for a very reasonable sum nowadays, so it is quite unwise to buy a horn. A little while ago it was thought that the horn speakers were far more sensitive than the cone, but this is not so. A good cone will give better quality with volume equal to that of its predecessors. When selecting a cone speaker, listen for the low as well as the high notes. Do not expect to get the quality your neighbour does from a £50 set, because in that set a moving coil loudspeaker is used. However, a good cone speaker should reproduce a wide range of notes and should be very sensitive.



If intending to buy a moving coil speaker, be quite certain that it will reproduce the high notes well. Many moving coils, particularly the earlier ones, were prone to exaggerate the bass and produce a bloomy sound of which one would become very tired after a short time. An accentuation of the bass may sound very pleasing when one has been accustomed to thin reedy notes of earlier types of loudspeakers, but before long it becomes very tiring.

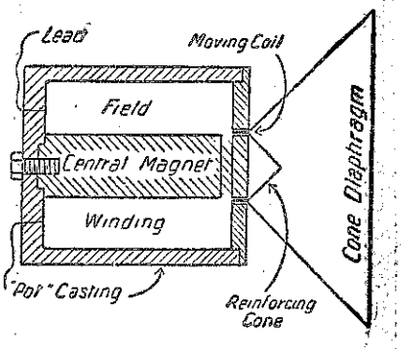
If the top notes sound clear, pure and ringing the speaker is a good one. It might be as well to test for the bass by playing an organ solo.

If you have electric light the speaker may derive its current direct from the mains. The six-volt type, which can be energised from the battery, has quite gone out of date. For those who do not have the electricity an inductor dynamic speaker will prove to be the best bargain. These do not require any field current, and consequently will not impose a drain upon a battery. A dynamic speaker of the six-volt type takes quite an appreciable amount of current from your accumulator, and you will find that it will need recharging fairly often. As a practical proposition the condenser speaker is not worth worrying about.

We have now gone through most of the items that one encounters when examining the circuit of a radio set. In our next instalment we hope to show how a circuit is built up. We hope before this series is concluded to point out the salient features of a good set as set down in the theoretical diagram.

It is hoped to republish this series, together with typical questions and answers, in a booklet to be known as "Questions and Answers in Radio."

If, before we conclude this series, anyone wishes any further points made clear, would they write to the Technical Editor, Box 1032, Wellington.



A Moving Coil Speaker.

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STANDARD SIMPLEX CONDENSER

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