

A.: This may be due to a poor choke. Try increasing the number of reaction turns or a different choke.

SUPREMA (Wellington): I have a four-valve set and am using an A425 in the first audio. I find that there is a very objectionable whistle.

A.: This whistle is due to your using an unsuitable valve in the first audio. A425 is designed for a different class of work from what you are using it for. Use a different class of valve in its place and your trouble will disappear.

PURUKI (Picton): Owing to an accidental short-circuit I burned out a condenser in my eliminator, but after a short time the choke burned out. Can a suitable one be obtained ready-made that I might instal myself, or could I make one? It is very small.

A.: Your best plan would be to make a choke such as described in the 1931 "Radio Guide." You would need to pick out one of the standard chokes from the table given in the chapter on chokes that would fit into the space you have available. This, when built, would serve the purpose as well as the one originally in the set.

OUTSPAN (S. Dunedin): I have built the "Outspan" circuit and am getting good results, but I believe a certain amount of damping is taking place in the coils. Could you give me particulars for valve base coils?

A.: Valve base coils will really be quite inefficient owing to their shape. However, if you want to try them they will be as follows for .00035 condensers: 32 d.s.c. wire; secondaries, 90 turns; primaries, 40 turns; aerial coil, 30 turns.

2. Could you arrange to publish an article on the design of primary coils?

A.: Yes, we shall see what we can do in the matter.

3. Would a stage of push-pull such as described in the "Guide," using ordinary transformer, be suitable for the "Outspan"?

A.: Yes; it would be better, however to use a push-pull transformer next to the speaker. If you already have the ordinary transformers, you can use them.

N.R.B. (Kerikeri).—I have a factory built wireless set. Could you send me the circuit of an aerial tuner?

A.: An ordinary wavetrap would suit your purpose, though the commercial "Reesonator" would be better.

2. Will you inform me when your 1931 "Guide" will be published?

A.: It was published just five weeks ago, and a full-page advertisement has been regularly appearing in our magazine announcing that fact. Just for the time being we are short of copies, having sold out our first edition, and are waiting the second, which will be ready in a day or two.

H.W. (Waipukurau).—I have a receiver of my own layout, consisting of Schnell detector and two audio. I was recently fiddling around with the set full on, and the coil right out. I disconnected the earth from the variable condenser, and then to my amazement heard Morse on the telephone. Reaction control had no effect on the signal strength or note, and neither had the tuning condenser. Half an hour later the signal was still going strong. Hand capacity had quite an effect, though the grid filament potentiometer had a very slight de-tuning effect.

A.: Had you broken the lead to the grid potentiometer you would have had no signals, as with this closed the circuit becomes a vacuum-tube volt meter, and some part of the choke is resonating at a harmonic of the incoming signal. Further, by varying the potentiometer which in-

creases or decreases the bias oscillation is caused to stop and start. By placing a coil in the circuit and disconnecting or insulating the grid pin or contact, local broadcast can be heard. Try it.

HOOK-UP (Matamata).—If I increase the number of turns on the primary for the "Outspan," what should I expect as regards amplification and selectivity?

A.: Generally the effect of increasing the number of primary turns is to increase sensitivity and decrease selectivity. There is a point, however, at which further turns on the primary only cause the set to become unstable.

2. What value of resistances and condenser should be used in an r.c.c. outfit using s.g. detector?

A.: The exact value will have to be found by experiment, but the following will give you a basis. Use a 100,000 ohms resistance in the plate circuit, a .5 coupling condenser and a .5 megohm grid resistance.

3. Would H 610, followed by S 610, and hooked up to L 610, make a satisfactory set?—Yes.

(Note.—I find the "Outspan" very sensitive, and quite selective. I have had several Americans at speaker strength.)

Learning by Experience

Aerial Resistance

TWO experiences I have had lately; one a rather expensive item, might be of interest. I was adding a stage of audio to my short-wave set, the transformer had its four terminals in a row on top, B + G bias, G. and P. I was experimenting with the grid bias and disconnected the wire from the bias terminal, and a slight movement caused

this wire to make contact with the B + 90 volts. There was a flash, and three good valves went west. Moral, always disconnect H.T. when tinkering with your set.

My second experience goes to show how necessary it is for a good insulated aerial. I built up a kit set for a friend, and it worked well at my house. When I connected it to my friend's aerial reception was poor. I took it home again, tried it again. All O.K. Back again to my friend's house, no better result than before. I suggested his aerial may be leaking to ground, so I tested my aerial with a megger. The reading was infinity. When I tested that of my friend all I could get was 6 megohms, so that he was losing about 70 per cent. of his signal strength. We unhooked the aerial at the lead-in and got the infinity test. The whole trouble was at the lead-in, which was a piece of wood nailed to keep the aerial from touching the spouting. After this all was satisfactory. In discussing the subject with a friend I suggested making a test of his aerial, when we found a resistance of only 4 megohms. When the aerial was disconnected it read infinity. His lead-in through a brick wall was the source of much energy being lost. No one was more surprised than he. In my opinion, one of the main causes of bad reception is an inefficient aerial. A megger test is the most conclusive one that can be applied to any installation. —T. P. Sewall (Christchurch.)

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