QUESTIONS AND ANSWERS

T. (Christchurch): It is fairly evident that both tuning condensers you have tried are of appreciably smaller capacity than .00035 mfd.—they are probably .00025 mfd. The former capacity will adequately cover the broadcast band. You are evidently getting all the volume that can be obtained from a one-valve set, which is not much. Also, the set must be os-cillating or you would not be able to pick up 1YA in your locality.

G.H. (New Plymouth): I have just bought a multi range voltmeter. and on checking over the voltages in my set I find that there is 125 volts difference between the two positive terminals of the electrolytic filter condensers in my set. Should this be so?

A.: Yes. It is due to drop through the speaker field, which evidently has a resistance of 2500 ohms. Calculating the resultant current drain from Ohm's Law, this means that your set takes roughly 50 milliamps, and this is about correct for the valves used. Hence there is nothing wrong. It is because of this large drop in the speaker field that power transformers are wound to give an initial high voltage of about 375 voits. Subtracting the voltage drop in the speaker field, this means the usual 250 volts is supplied to the receiver after smoothing.

J.C.H. (Hamilton): When I turn my set on there is a spluttering noise in the speaker and also a blueish glow in the 80 rectifier. This spluttering was not very noticeable several months ago when it first occurred, but has now become much worse.

A.: Evidently one of the wet electrolytic filter condensers, most prothat nearest the rectifier, bably down. The addibroken has current drain imposed on tional the rectifier is overloading it, and if the set is run in this condition for any length of time the 80 will be ruined. There is also a strong possibility that the high tension secondary winding of the power transformer will be burnt out. The defective condenser should be replaced without delay.

"AJAX" (Nelson): I built a threevalve battery set some time ago, and had very good results with it until several months ago, when it started to blast on heavy passages. It has steadily become worse.

A. Either the power valve has lost its emission or the bias battery has run down, most probably the former.

2. Could I fit a P240 valve in the place of the present P220 and get good results?

You would get an appreciable increase in volume by making this change, though the P240 is a little more expensive to run. It needs from 12 to 14 volts bias, draws 10 mils. plate current, .4 amps. filament current, as against the P220's 5.5 mils. "B" and 2 amps "A."

3. Could I fit some form of volume control in the H.T. lead, and if so, how? A. No. this is not practicable. The

simplest method of fitting an external volume control is to connect a differential condenser in the aerial. Connect the aerial lead to one set of fixed plates, the earth lead to the other and make a third connection between the moving plates and aerial terminal of your set.

C.V.T. (Wellington): My reception of some stations, including the new 1YA, is not what it might be. However, I find that by connecting the aerial and earth wires to the aerial terminal, volume increases appreciably. Does this harm the set in any way?

A. No, not at all. It sounds as though either your aerial or your earth is very inefficient, most probably the latter. It would be worth your while to have your set re-aligned.

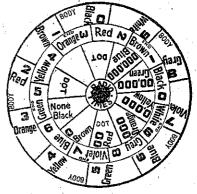
"INTERESTED" (Wanganui): The very early type of crystal set. using two tapped windings and no tuning condenser, was not as efficient as the modern type, as, for example, the "Selectra" crystal set described in the August, 1933 "Radio Times." If you wish to experiment with large diameter formers, then you could make a start by building the receiver described in the following. On 3-in diameter former, wind 65 turns of 24 d.c.c. wire, taking taps at 20, 30, 40 and 50 turns. Tune the whole coil with the .00035 mfd. condenser that you have on hand. Connect the aerial and the crystal to each of the taps in turn, to determine which combination gives the best results, both as regards sensitivity and selectivity.

S.G. (Auckland): I have built up the "Tiny Tim" with an audio stage, and find it works fairly well. However, with the short-wave coils the 20metre coil will oscillate only from 80 to 100 degrees on my dial; the 40-metre coil from 60 to 100; and the 80-metre from 20 to 100. The moving plates of the tuning condenser are fully when the dial reads 100 degrees. I find that the set is very microphonic on the short-wave bands. Can this be-

A.: Have you tried other values of grid leaks? We have found that with some makes of these resistors, the actual values vary appreciably from those printed on them. A higher value than the one you are at present using would most probably cure the trouble 5 or 6 megohms is not too much for short-wave work. You could also try moving the reaction winding on each coil a little closer to the secondary. With regard to the microphonic howl, are you sure you are not confusing this with threshold howl, which in sets suffering from this fault occurs just when the reaction control is being advanced towards the point of maximum sensitivity? To cure this try connecting a resistor of from 50,000 ohms to 250,000 ohms across the secondary of the audio transformer. the highest possible value that will effect a cure. If the detector valve you are using is microphonic, you could cure the trouble either by fitting a lead cap over the top of the valve or else substituting another valve

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