

QUESTIONS AND ANSWERS

T.W. (Paeroa): It would not be possible to adapt your commercial receiver for short-wave reception, though you could use a converter such as the "Lekmek A.C. Converter" (described in the July "Radio Times") in conjunction with your set, with good results. You could obtain a circuit diagram of your set from any modern service manual.

"EARTHQUAKE" (Seddonville): I have built a 45 volt "B" battery from flashlight batteries as described in the "Radio Record" of September 21. My set has two wires connected to the 22½ volt terminal. On which unit battery should I connect these wires to get 22½ volts?

A.: To the positive terminal of the fifth battery from the negative end.

"MEGO" (Hanganiki): Your set is operating quite normally. The hissing you can hear when the volume control is turned full on is due partly to valve hiss, but mainly to static and general "mush" picked up by the aerial. The hissing is most pronounced when the volume control is turned full on, as the set is then in its most sensitive condition.

"MR. X" (Christchurch): Of late my set has developed rather a bad hum, which is much worse sometimes than others. Also, when a very high note is reproduced there is a suggestion of a rattle in the speaker.

A.: This sounds as though the output valve needs renewing, or that the voice coil of the speaker is a little "off centre." Re-centering it is rather a delicate operation, and hence it is suggested that you return your set to the agents for overhaul.

"OMSK" (Whakatane): What is the meaning of the term "diode bias"? I understand it means the biasing of the triode section of a duplex valve.

A.: The resistor shown in your sketch is the diode load resistor, which in a diode detector serves the same purpose as a grid leak in a leaky grid detector. In diode detection, signal voltages appear-

ing across this load resistor constitute the bias applied to the grid of the triode section of the valve. Thus, the end of the load resistor connected to the bottom of the last i.f. transformer secondary becomes more or less negative to earth—i.e., to the cathode—depending on the strength of the received signal. The action of the diode detector is very fully explained in the July "Radio Times" in an article entitled "The Theory of the Diode."

B.A.H. (Wellington): The set you are planning to build would give only a very indifferent performance, as the circuit contains a number of minor errors. Why not build up the "Modern Midget Four" described in the September, 1933, "Radio Times" or the "DX Economy Three," described in the last September issue?

DX297 (Wanganui): A book which covers the elements of short-wave reception very well is the "Amateur Transmitter's Handbook," 1934 edition. This may be obtained from the Te Aro Book Depot, Courtenay Place, Wellington.

H.O.C. (Niho Niho): Is it possible to cut out reception of second harmonics? They are very annoying when one is dxing.

A.: They could be eliminated by using a wave-trap, but there would be no point in doing so, as the stations on adjacent frequencies would be trapped out as well.

2. Does 3ZE, Greymouth, broadcast at night now?

A.: On Saturday nights only, from 9.15 to 11 p.m.

3. Do European stations have any special times to announce their calls?

A.: No, announcements from these stations are generally irregular.

"CRYSTAL" (Inglewood): What is the range of the "Selectra" crystal set described in the "Radio Times"?

A.: Ten to fifteen miles is usually regarded as the maximum distance over which a crystal set will provide good headphone reception. However, there are many exceptions to this rule, as was proved by the series of letters published in the "Radio Record" several months ago from readers, who claimed that they could pick up even Australian stations on a crystal set without any additional amplification whatsoever. Apparently, locality plays an important influence on crystal set reception, though of course an efficient aerial and earth installation is always of the first importance.

3. What would be the cost of building this set?

A.: About 35/-, including headphones.

G.B.W. (Auckland): An ordinary carbon resistor of the brand you mention would be quite satisfactory. It should be sealed in a glass tube, as you suggest, to shield it from exposure to the weather.

2. What is the direction of Daventry from Auckland?

A.: Roughly, E.N.E.

"IGNORAMUS" (Te Awamutu): I have a two-valve set which gives good signals while it is oscillating, though reproduction is apt to be distorted. However, as soon as I turn the reaction con-

trol potentiometer past the point of oscillation, volume drops considerably. Is this quite in order?

A.: You should never listen to any station while your set is oscillating, for three reasons. The first, and by far the most important, is that by so doing you are interfering with the reception of your neighbours for miles around, and this in itself should be sufficient reason for you to keep your reaction control turned back. However, in addition to creating interference in this way, you are also spoiling your own reception by attempting to listen while the set is oscillating, for signals are not as loud as when the control is set just below the point of oscillation, and also, as you admit, they are distorted. A reaction control of any type rarely, if ever, operates so that it is at the optimum setting when turned full on. There are a number of factors which determine the best setting for a control of this type, the most important being the number of turns on the reaction winding; type of detector valve used; the amount of plate voltage applied to the detector; size of grid leak and grid condenser, etc. All these have an influence on the optimum setting of the reaction control. If it is operating correctly, then when it is advanced slowly, a setting should be found where a hissing noise commences and the set sounds "live." When the control is rotated a little further, the noise should increase in intensity and then usually a soft "plop" is heard. This indicates that the set is oscillating, and so the reaction control should never be advanced as far as this. With the control set in its correct position, you should not be able to hear a whistle as the station carrier is passed over—just a "swish-swish." If possible, you should try and add a screen-grid r.f. stage to your set. This will not only give you much more powerful signals, but also it will eliminate the possibility of your set interfering with other people's reception.

A.G. (Auckland): We cannot undertake to check over wiring diagrams. In any case, yours could not be checked thoroughly as the coil connections are

(Continued on page 27).

Information Coupon

(To be used with all requests for information.)

Name of set

Model

Name

Address

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