

QUESTIONS AND ANSWERS

T. W. (Petone): A dual wave-trap will be described in the August "Radio Times."

236A (Auckland): I have on hand two audio transformers, four valves—an A442, 415, 409, and a 405—a .00015 mfd. and two .0001 mfd. tuning condensers. Has a short-wave set been described which will incorporate these components?

A.: Yes. The "Sellens" short-wave set, described in the "Radio Record" dated April 17, 1931.

2. I have an a.c. 6-valve superhet. Would it be as good a dx receiver as a six-valve T.R.F. set?

A.: Yes—perhaps a little better.

Note.—Use 1 mfd. fixed condensers of high test when connecting phones to your set.

"IKE" (Piriaka): I have a two-valve set of the high frequency type. The battery terminals are marked LT+, HT+1, HT-, LT-, HT+2. What batteries and valves will I need?

A.: Do you mean your set employs a high frequency stage, or is a high frequency, i.e., short-wave, set? If the latter, then two 230 type valves will be suitable. You will require a 2-volt accumulator and a "B" battery of 90 volts minimum. "HT+1" should be connected to the 30 or 45-volt tapping, and "HT+2" to the maximum voltage.

E. G.S. (Timaru): What is the reason for banging on the top side of the dial when volume is turned full on? I have had the condenser plates washed with a special solution and the volume control cleaned, but this stops the noise for only a few days.

A.: What do you mean by the "top" side of the dial? It is probable that your trouble is due to a defective volume control, which should be replaced.

J. B. (Lower Hutt): I have built the crystal set described in the 1931 "Guide," and reception with one pair of phones was good. Recently, however, a friend gave me another pair and these, when connected to the set with the others give good reception themselves, but greatly weaken volume of the first pair.

A.: The second pair of phones is evidently of much lower resistance than the first pair. Try connecting them in series, i.e., connect one tip of each pair to a phone terminal and connect the other tips together.

J. C. (Invercargill): I believe in one of the early "Guides" a device was described which, when attached to a broadcast set, turned it into a transmitter. Could you give me further details?

A.: You are evidently confusing this with the "Sparrowhawk" short-wave adaptor, described in the 1931 "Radio Guide." The purpose of this device, however, is to permit reception of short-wave stations on a broadcast set.

— (Wadestown): My reception of outside stations during the evening is spoilt by morse interference from the wireless station on Tinakori Hills. Can you suggest a remedy?

A.: Are you sure the interference is from ZLW? It may be from a nearby

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amateur transmitter. Your best plan would be to call in someone who understands morse to read the call sign. If the interference is from an amateur transmitter, the only remedy is to approach the owner of the station and ask for his co-operation. If it is from ZLW, however, we doubt very much that it is—there is very little you can do, except purchase a more up-to-date receiver.

"GREENHORN" (Oamaru): The dial of my set is graduated from 0 to 100. How can I calculate kilocycles from this?

A.: Your best plan would be to make a graph, plotting kilocycles, from 550 to 1500 k.c., against dial readings. Then jot down the numbers at which the principal New Zealand and Australian stations come in, together with the frequencies on which they operate. Plot these points on the graph and join them up with a straight line or a smooth curve. Then if you know either the dial reading or the frequency of a station you can find the unknown quantity by reference to the graph.

O. C.S. (Hamilton): I have a home-built T.R.F. set employing a 57 as detector, r.e.c. to a 56 first audio. I cannot adjust the bias voltage on the 56 correctly. At present I have a 2000 ohm resistor in the cathode lead, which gives 33 volts bias. I have changed valves and also resistors, but with no better results. The plate voltage on the 56 is 250 volts, applied through the primary of an audio transformer. The voltages have been tested with a high quality 1000 ohms per voltmeter. What is the cause of this over-bias?

A.: Evidently some little fault not apparent from your question. According to your figures the 56 is drawing roughly 16.5 mls., but if properly biased it should take only 5 mls. The bias on a 56 with a plate voltage of 250 should be 13.5 volts, and from this the value of the bias resistor in the cathode lead works out at 2700 ohms. You would find that a 3000 ohms resistor would give better results than the one you are using.

"NILREM" (Dunedin): I have a 7-valve home-built a.c. receiver, the circuit of which I enclose. What is the approximate drain in milliamps?

A.: About 85 mls.

2. I understand the 245 valve takes approximately 34 mls. Does the push-pull "A" class amplifier employed take current equivalent to 1 valve or the total of both?

A.: Approximately the total of both, i.e., from 60 to 70 mls.

3. I am troubled with a slight hum. Would the alterations I have shown reduce this?

A.: You could try the extra smoothing you have shown, but there are several alterations which will probably cure the trouble without resorting to this. First of all connect a .25 mfd. by-pass condenser between the junction of the 2 r.f. cathodes and earth. Secondly, try increasing the by-pass condenser across the bias resistor in the detector cathode lead to .25 mfd. This resistor could also with advantage be reduced to 25,000 ohms. Also try reducing the detector plate feed resistor to 250,000 ohms.

"QUERY" (Palmerston North) and C.D.A. (Feilding): We cannot advise readers to make drastic alterations to commercial sets, as this should be undertaken only by qualified servicemen. Even then alterations such as you both suggest are rarely to be recommended.

D. B. (Ngatira): Where can I obtain the circuit of a five-valve battery receiver employing two stages of screen grid, r.f. detector, and two audio stages?

A.: You could build the "Outspan Five," but unfortunately the issue of the "Radio Record" in which it was described is completely sold out. You would



Information Coupon

(To be used with all requests for information.)

Name of set

Model

Name

Address

.....

.....

Nom de plume

To be kept in subsequent inquiries

Please Note:—

(1) Be specific and brief, tabulating, if possible.

(2) Write legibly, and on one side of the paper.

(3) We do not design circuits.

(4) Limit three questions unless 1/- is enclosed.

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