



# Questions and Answers



## Valve Troubles.

I HAVE a 4-valve factory-built receiver and cannot get results, writes "W.G.D." (Pio Pio). I have replaced one of the valves by another, not of the same make, and I find that it is too sensitive, and makes the set difficult to control. I have tried one of the original valves in its place, but can barely hear 2YA.

A.: Have you had the valves in the original set tested? We do not advise replacement by anything other than the same type of valves that were used in the set, which means that a 201A will be the best for the radio position. Probably, the one you have been using is old, and has lost its amplification. Take your speaker along to someone else who has a radio set and see if it is all right.

## Leclanche "B" Batteries.

WOULD Leclanche cells be suitable for "B" battery, and are they as efficient as dry batteries? asks "A.G." (Motukaraka).

A.: We should not advise them. The Leclanche cell is expensive in upkeep, is cumbersome, and is troublesome to look after. Dry "B" batteries would be very much better.

## Kilocycles and Wave-lengths.

HOW may I find a station when it is listed under kilocycles or metres? asks "G.A.K."

A.: You must either find by approximation or by drawing a calibration curve. To find a station by approximation you will need to make a list of the stations you receive frequently and their dial readings. From these you can get the approximate position of the station you wish to find. The other method is far more accurate. It is necessary to have a piece of squared paper and divide it up as was shown in the diagram accompanying the report of the Atwater Kent receiver in our issue of January 24, 1930. Mark the dial readings along the side and the kilocycles along the bottom. Take the stations you know and find the line repre-

senting their frequency or approximate it from those given, go up this with a pencil until you come to the horizontal line representing the dial reading, and indicate the point by a dot. Join up the several dots by an even curve. You may then find the dial reading for a new station merely by obtaining the frequency and going up this line until the curve is met, then travelling in a horizontal position until the dial reading is indicated at the side.

## Valve Combinations.

I HAVE a five-valve receiver, and as the valves have been in use three years I have decided to replace them. I am intending to use three DEL610's and two DEL610's. I wish to lower the "A" consumption without raising the "B" consumption. Could you suggest a better combination? writes "Sparks" (North Auckland).

A.: We should advise the use of DEL 610 in the first four stages and either DEP610 or P625A in the last stage. You will probably increase the "B" consumption slightly, but these valves are not particularly heavy on this current. We have written to you concerning your first problem.

## Crystal and Valve with Three-valve Performance.

I HAVE had good results with this receiver, having logged most of the Australian and New Zealand stations, writes E.T.D. (Petone). Now I have shifted to another part and find that I cannot receive 1YA and 3YA. 2YA tunes in about the middle of the dial.

A.: Take off a few turns from the secondary coil and you will find that the stations will come in more satisfactorily.

## Charger as "A" Eliminator.

WILL a battery charger used as an "A" eliminator harm either the charger or the sets? asks W.F.S. (Dunedin).

A.: No harm will be done if the voltage delivered by the charger is that required by the valve. You will prob-

ably find, however, that humming will be too strong. An electrolytic condenser shunted across the charger output terminals should render it suitable.

## Round-the-World Two.

COULD you answer the following questions re Round-the-World Two? asks W.H.Y. (Herekino).

## Questions and Answers

READERS of the "Radio Record" who are in difficulties about reception or set construction are invited to write to our "Questions and Answers" department for help. We particularly wish to assist those who know little about radio, as very often there is some very slight trouble which spoils completely one's enjoyment of the programmes.

Correspondents are asked to observe the following courtesies:

1. Write legibly.
2. Make your questions brief and to the point; do not make apologies for writing, and, where possible, tabulate.
3. Do not ask for a reply by post unless a stamped and addressed envelope is enclosed. Even in these circumstances, we reserve the right to answer any question through our columns.
4. Do not ask us to design circuits or send detailed layout diagrams; but we can offer advice regarding circuits.
5. Address all technical correspondence: "The Technical Editor, P.O. Box 1032, Wellington."

1. Are .0001 and .00025 variable condensers suitable, or would the number of turns on the coil need adjusting?

A.: The .0001 condenser cannot be used unless the coils are redesigned.

2. Is a commercial high-frequency choke suitable?

A.: Yes, but for better results build one along the lines described by "Cathode" in his article on high-frequency chokes.

3. Is the .001 grid condenser O.K.?

A.: It is too large.

4. Will a .00032 mfd. variable condenser be small enough to be put in series with the aerial?

A.: No, you will need to take out all the plates except two or three.

5. In mounting the coils should they be exactly  $\frac{1}{2}$  in. apart?

A.: If they are closer reaction will be more violent; if they are further apart it will be weakened.

6. I have connected up an experimental set using the above components and the sets will oscillate only feebly and without the aerial connected I can just hear two or three more stations. I have tried 409, 2 405, B406, A425 in various position, but I could get signals only on PM3 and PM4's.

A.: Your difficulty is probably caused through using the condenser with a

capacity too large in series with the aerial. Furthermore, the choke may not be functioning properly. You probably find the best combination of valves indicated in this week's "Radio Record."

## Short-Wave Adaptor.

CAN I use a shortwave adaptor with my factory-built receiver.—"J.B.H." (Otago).

A.: Yes.

## Instability.

I HAVE a three-valve Kitset for which I have recently obtained short-wave coils. I can now get morse quite well, but on all other wavelengths the set is uncontrollable.—"Short-wave-howl" (Ratanui).

A.: It is evident that the voltage on the detector is too high. If you examine the circuit carefully you will see the anode feed to the detector going to the first audio transformer. This leaves a green condenser and goes straight down to the "B+" terminal. Break this connection and put in a variable resistance of a few thousand ohms. You have then a means of lessening the plate voltage, and this will probably solve your trouble. Other methods include the use of a series resistance in the grid circuit of the first audio valve and the use of a higher grid leak.

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