

own experiments in this direction, coupled with the remarks made in overseas journals, indicate that this is not an easy task. However, we suggest your removing the .02 condenser and the earth connection. By taking the screen voltage from the amplifier you are asking for trouble. This must be taken from a separate resistance connected with the power pack. By taking another drain through the resistances provided you are altering their value for the other current flowing through them. Continue your experiments and let us know your results. It would be worth trying with the grid-leak and the condenser removed.

TERMINAL (Dunedin)—I found that 4ZL tuned in quite distinctly on a frequency near 7ZL. Would this be an harmonic, for I understand harmonics can be only multiples of the fundamental frequency?

A.: It cannot be, as you suggest, an harmonic, so we suspect that it is a reflected frequency, that is, the waves from the station have been striking a nearby object and re-radiating the natural frequency of that object.

S. R.A. (Nelson): Is it possible to buy short-wave coils for my set, or could I make them.

A.: It would be better for you to buy them, because we do not happen to know the numbers of turns for all the coils. One coil the details were published in the "Radio Record" a few months back.

— Would the set take another audio stage? It has already a stage such as described in the "Record."

A.: No. Two stages of transformer doubled audio are the maximum, unless push-pull is employed.

3. Would a dynamic speaker run from the mains be satisfactory for this set?

A.: Yes, dynamic speakers are now fairly sensitive and are satisfactory on small sets.

PUZZLED (Petone): I have constructed the "B" eliminator from the 1929 "Guide," but it has burnt out

the filament and the plate on one side of the rectifier. I have tested the transformer and can find no signs of a short circuit.

A.: To test for a short circuit obtain a voltmeter and a "C" battery. Arrange so that the battery and meter are in series and that when the free end of the voltmeter is brought into connection with the free end of the battery a full-scale deflection results. Attach either the free end of the voltmeter or the battery to the centre tap winding and then bring the other side of the meter into contact with the laminations and the frame. If there is any reading, then there is a short circuit. There will be a reading slightly less than directly across the battery when the free terminal is brought into contact with the end of the secondary. By making careful observations, the drops on each side of the secondary can be compared, and if the centre tap is in the proper position this will be about the same. If there is a difference the centre tap is not correct, and it will be necessary to rewind the secondary.

2. Is it necessary to have sufficient resistance to drop the 230 volts on no load?—No.

3. Is it necessary that the filament wire of the rectifying valve should be centre-tapped?

A.: Yes, either the mechanical centre through rewinding or the electrical centre by using a 60 ohms centre-tap rheostat and using a centre tap of this. The value (60 ohms) is not critical.

A. B.C. (Timaru): I am building the L.W. amplifier and wish to know if the following coils are right for the radio valves:—

Aerial coil: 30 turns 22 D.S.C. Space 3-16in.

Secondary: 80 turns same gauge, 2½in. former, .000375 condenser.

Second coil: Secondary 80 turns, primary 40, 36 enamelled close wound and placed inside the secondary coil.

Third coil: Same as No. 2.

A.: The primary is possibly a little high. If you remember an article in the "R.R." a week or so back, the question of primary coils was discussed. However, you can start with the large number and reduce to a smaller one. Probably the primary on the same former as the secondary would make a better transformer.

NOVICE (Kilbirnie)—My set has started to give me more static than music. I replaced the valves, but it is just as bad.

A.: Have your eliminator tested for it sounds something like a broken-down filter

A.: The latter is to be preferred. 7. If you are publishing a tuner, when will it appear?

A.: As soon as we can get it to work properly.

CURIOUS (Masterton). The valves have been changed in my factory-built receiver. Is the original plan superior to the adapted one?

A.: The designers' specifications would probably be slightly less sensitive than those now used, but the "B" consumption would be increased under the new combination.

2. Are the valves now used in proper sequence?

A.: Providing you do not get feed back and audio howling due to over-amplification on the audio side of the combination they would be quite satisfactory. The bias on the last valve is decidedly inadequate; 12 volts at least should be applied to B406.

3. Are the connections right?

A.: The connection going to the first audio valve should be better from the 90-volt tapping, that is, the connection between the 45-volt battery and the 22½.

4. When removing the speaker plug I frequently get a sharp shock if I touch the transformer at the same time.

A.: Your set apparently does not use an output transformer, and although you might get a nasty shock, no harm can come of it.

Z. L.D.X. (Palmerston North). How many turns are required for valve base coils to cover the 110 to 200 metres band by using a .00015 variable condenser?

A.: 20 turns of 2½ swg. dsc. Primary and tickler 45 turns of 20 swg. dsc. secondary.

2. How many mls do A415 and three 201A's take?

A.: This depends upon the bias and voltage. Find out these and look up the tables in the 1930 "Radio Guide."

3. Can a "Formo"-condenser .00035 be made into a .00015?

A.: Yes; reduce the number of plates to nine.

4. How many watts does an electric induction gramophone motor and the Loftin-White consume?

A.: About 25 watts.

5. You recently published a diagram of an adapted Daniell cell-charger. How



MR. R. TALBOT.

whose wide experience with motors is being made available to listeners in a series of talks from 1YA.

condenser. Try replacing the grid-leak and examine carefully for loose connections.

2. I used to be able to get the Australian stations, but now I can get only 2YA.

A.: This sounds like a broken-down condenser or defective grid-leak and condenser.

SCREEN-GRID (Wellington).—Which is the better pick-up for use with the Loftin White (and here three are enumerated)?

A.: We do not know the characteristics of these pick-ups, as we have not tested them. All are first-grade.

2. Which would be the better speaker—a silk diaphragm or a cone, with an 18in. baffle?

A.: The latter, particularly if the baffle was increased in size to 20in. or more.

3. An American magazine says it is not practical to use the screen grid detector if other stages are placed in front. It advocates using transformer coupling following the detector. If this is so, which is the best combination of valves.

A.: 224's should be the best combination, but adding radio stages to the L.W. is a difficult task.

4. Would one stage of s.g.r.f. followed by a 227 detector be as good as a 5-valve Browning Drake?

A.: It should be, if everything works right, but you would have some fun in getting it to work.

5. Is it a difficult job to build the L.W. and to keep it adjusted?

A.: No, our laboratory model was entirely home-built, including the transformer and choke. It goes perfectly with very little adjustment. Sometimes adjustment in the hum balancer has to be made when changing from radio to gramophone, but this would not be so if it were properly shielded.

6. Would strong tin or sheet iron be suitable for shielding?

LISTENERS must attach this coupon to all queries sent to the Technical Editor (Box 1032, Wellington). Questions arriving without it are likely to go astray or be delayed.

Name of set

Number of Valves

Name

Address

Nom de plume

To be kept in subsequent inquiries.

Date

Please Note:—

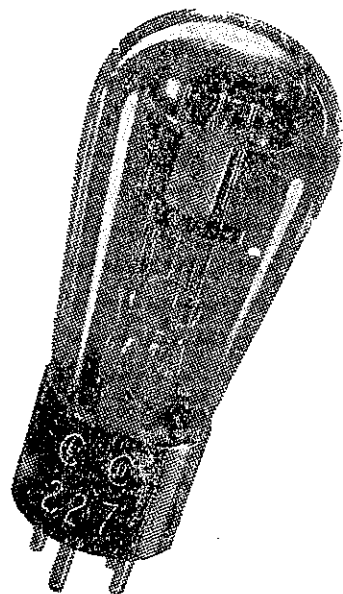
(1) Be specific and brief, tabulating, if possible.

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

(3) We do not design circuits, but accept suggestions for feature articles.

Solving trouble, as different from advice, is difficult by correspondence and while letters are given every consideration, answers are not necessarily correct—they are only our opinion based on the matter supplied, which may be quite inadequate. Intricate and involved specifications cannot be supplied without a specialist's fee.

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