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Questions and Answers

RASTUS (Christchurch).—What is meant by stations heterodyning?

A.: For a full explanation of the term, "heterodyning" see chapter 2 of the 1932 "Radio Guide." When approximate frequencies are generated at the same time a third frequency, known as the beat or heterodyne frequency, is set up. Coming down to mother earth it means that if two stations have wavelengths approximately the same, and can be simultaneously brought in by your set, a third wavelength would be set up, which sounds in your speaker as a whistle.

2. Could I use a .0001 condenser with the "Sparrow Hawk" one without altering the coils?—Yes.

DETECTO (Auckland).—If you wish to construct a pushpull output transformer your best plan would be to consult the chapter on output transformers in the 1932 "Radio Guide." We could give you the specifications, but there are many factors entering into the design of these transformers which, unless you are aware of them, would give you trouble. It would be quite satisfactory to use two 201A's in pushpull with a.c. on the filament, but you would not get a very great output.

F.S.R. (Christchurch).—What valves would you recommend for a four-valve B.D.?

A.: The 221 type of valve (or the 201A) in all sockets except the last, where you should use a semi-power valve of the B605 class.

M.S.A. (Pahiatua).—Is it possible to eradicate the interference caused by brushes on a dynamo?

A.: Yes; the procedure was fully described in the "R.R." of August 14, 1931.
2. The volume from my five-valve set is weak. Could you advise?

A.: Look through the "Causes of Weak Volume," outlined in the "Radio Guide." In the absence of further particulars we can do very little to help you.

DOUBLE JAY (Trentham).—Will a "B" and "C" eliminator do for the Multi Mu Three described in the "Guide"?

A.: No, the output of this eliminator is insufficient for a pentode valve, which takes 30 mamps at 250 volts.

2. Would a trickle charger be of any use for a filament supply?—No. The proper method of obtaining power supply is by constructing a special powerpack to suit your requirements. Particulars of the powerpack can be obtained from the article on the subject.

G.B. (Clive).—Of the two sets you mention we have tested the latter, which is British made, and are quite satisfied with the results of our test. It is an excellent product. We know nothing of the other one.

2. Which are the best valves for any set?

A.: Rather a sweeping question. Use the types recommended by the manufacturers—the best known makes only.

H.B. (Christchurch).—Can specially matched coils instead of the specified intermediate be used for the Cathode Super?

A.: Yes; it is not imperative that the specified intermediates be used. So long as the condensers and coils resonate on a suitable intermediate frequency, any condenser coil combination can be used, the connections remaining unaltered.

102MC (Christchurch).—I wish to erect two aeriels. What is the minimum distance between the parallel flat tops to prevent mutual induction?—Six feet.

2. The leads in are not parallel. Can they be brought any closer than the minimum distance in one?

A.: It depends what you mean by not parallel. The best plan is to keep them as far away as possible, and if they happen to be closer than desirable you at least

have the satisfaction of knowing you have done your best.

3. Are three insulators a foot apart sufficient?—Yes.

HAM (Timaru): We could supply you with a circuit only. In the "Radio Times" electric sets will be described from time to time, and you should find one to suit your requirements.

CRYSTAL (Dunedin): I find I can get better results on my multi-valve a.c. set by using a crystal between the top of the grid coil and the grid of the valve.

A.: How are you bringing about detection otherwise? You are not using a grid leak and condenser and for power grid detection the value of the resistance in the cathode of the 224 should be at least 20,000 ohms. Power detection is the best to use when a pick-up is incorporated.

DYNAMO (Waitomo Caves): When I remove one of the push-pull valves the set works as well as with two.

A.: A set with one of the push-pull valves removed will always work, but the volume the set can handle will be considerably reduced and usually the quality suffers.

2. Since adding p.p. the first audio valve will not take any negative grid bias, whereas before it would take 3½ volts.

A.: Try raising the voltage on the audio valve and decouple the plate supply by the means of a 600 ohms non-inductive resistance by-passed to earth.

3. Would it be advantageous to incorporate p.p. after the second det. of the Super Six?

A.: Yes; a 3½-1 ratio transformer should be used.

F.H. (Gisborne): I cannot get the "Radiogram Five" to work.

A.: Check up on the grid leak connections thus: The "G" terminal of the regenerative transformer should go to the side of the grid condenser which is not connected with the valve. The other side of the grid condenser connects with the valve and with the grid leak. Reverting to your sketch, the connections should be from "G" to the centre terminal of the combined grid-leak condenser, from the lower end of the grid terminal of the valve; not as shown. Make certain you have these connections right. If they are correct, there is nothing we can suggest other than systematically searching your set for faults. Are you quite certain you have the connections of the screening grid correct? In an American valve the grid is on top, whereas in the English the plate is on top. It seems to us, however, that your trouble lies in the grid circuit of the detector.

T.W. (Auckland): Some time ago I built the "Super Six," but the tuning has been very broad.

A.: This is apparently due to an incorrect loop. Use the best Litz wire and connect the loop by as short a lead as possible to the appropriate terminals on the set. The oscillator dial should be slightly out of step with the r.f. dial.

RADIO (Wellington): We are sorry we cannot discriminate between commercially-made receivers.

L.A. (Wellington): If a radio engineer has attended to your set and left it unsatisfactory, there is not a great possibility of our being able to advise you what to do by correspondence. The best plan is to worry him until you get what you want.

(Continued on page 22.)