

Questions and Answers

"AMPERITE" (Taranaki): I have made up a simple shortwave set and it will not oscillate. I have tried all the usual cures, but can only make it work properly by placing my hand on the r.f. choke.

A.: Try another r.f. choke. Although you are using a good one, this is possibly at fault. If you can get your set to oscillate only by putting your hand on it on certain bands, it looks very much as though this is the cause of the trouble. Break the connection between the primary and the secondary. Failing this, bring in the aerial through a fixed condenser of about .0001 to the top of the grid coil. Take the lead from the choke to the fixed plate of the reaction condenser instead of from the plate of the valve.

DX180C (Invercargill): Can I use two 201A's in push-pull, as per my diagram?

A.: Theoretically your scheme will be quite practicable. It is questionable, however, if you would get good results.

2. Using 18 volts bias, about what would be the drain from 105 volts h.t.?

A.: We do not have a curve of this valve available, but believe it to be about 2 mamps. for both valves.

3. How does one calculate the impedance of a speaker for matching purposes? Would the d.c. resistance be of any use for calculating ratio of output?

A.: We are afraid there is no practical way for calculating impedance. It is necessary to measure it, and to a degree it is quite independent of d.c. resistance. Impedance is built up on this factor and reactance, being the product of inductance, frequency, self capacity and a fixed quantity. If you are using a magnetic cone speaker you could use a 1-1 transformer, and you would not be far out.

"BUNG" (Hamilton E.): I intend to add more cells to my Edison B battery. What is the strength of the potassium hydroxide solution, and how much lithium hydroxide is added?

A.: The electrolyte consists of 21 per cent. solution of potassium hydroxide. Lithium hydroxide is added in the proportion of 50 grams per litre. Do not attempt to make these solutions up yourself—any chemist will do it for you for next to nothing.

2. I am enclosing a sample of the substance I use for spreaders. What is the material, and where could I procure it?

A.: It appears to be a composition bakelite. Your best plan would be to send

a sample to a well-known dealer and ask him if he can procure it for you, and at what cost.

C.G.M. (Wellington): Could you give me the constants of the shortwave adaptor shown herewith?

A.: Particulars of the coils could be found from any standard list. For instance, if you are using two .00015 condensers, one at C1 and the other at C2, the coil particulars would be as follows:—

Band.	Prim.	Seco-ary.	Re- wire.	Re- wire.
9-15	2	2½	26 d.s.c.	3
15-28	5	6½	26 d.s.c.	5½
28-50	6	8½	26 d.s.c.	10½
50-100	12	76½	26 d.s.c.	11½

Wind the primary with 30 d.s.c. The other components will be as follows:—R1, 25,000 ohms; C3, 225—5 mfd.; L4 ordinary shortwave r.f. choke; C4 an .0001—.001 mfd. condensers.

2. What is the "J" feature referred to in the adaptor?

A.: We do not know; it is a reference evidently to a commercial device.

"MUG" (Wanganui):—I am desirous of eliminating a.c. hum from the power transformer. Would shield and earthing same cure this?

A.: First make certain that all the laminations are tight. Slacken off the nuts holding them together, and if necessary pack with extra stallo. Drive a wooden wedge in between the core and the winding, only make certain that in doing this you do not injure the latter. Shielding and earthing a transformer would certainly make it quieter.

3AR (Waitetuna):—What are the correct types of valves used in the "Radio Gram Five"?

A.: A screen grid valve, a special detector, a g.p. audio and a high gain power valve.

2. What is the correct B voltage for the same set?

A.: You want from 90 to 120 volts, preferably the latter, with a grid bias according to the valve used in the last stage. This will probably be in the region of 12-15 volts.

3. Can the coils for the "Radio Gram Five" be purchased ready made?

A.: Yes, any dealer will make them up for you.

"JOEY" (Hokianga):—Would the wire sample enclosed, be suitable for a lead-in direct from my aerial?

A.: Yes, it would make a good lead-in, but there is little point in insulating it so heavily. If you have some on hand use it. If you intend to buy it, use enamelled, it is much cheaper. Covered wire prevents corrosion of the aerial.

B.S.D. (Wanganui): Would it weaken a power transformer to join the winding?—No, provided the joint is carefully soldered and insulated.

2. I have a 1½ in. x 1½ in. stalloy core, the sizes being 4½ in. x 2 5-8 in. Would the number of turns for this core be the same as for the 150 watts size in the "Guide"?

A.: Yes.

3. In the "Guide" you say to precede a pentode by a first audio stage is generally looked upon as a scheme for inviting instability. Does this statement also apply to preceding push-pull pentodes by a first audio?

A.: No; in this case you have a much greater available grid-awing and consequently can use pre-audio stages, e.g., the 5 watts amplifier described in the 1932 "Radio Guide."

DX21W (Ohakune Junction): When tuning from 1500 kc. with the volume control fully open the set breaks into oscillation, and increases in inten-



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