

# Questions and Answers



**S.L.M. (Greymouth):** My differential adapter will oscillate over the whole range of 40 and 80 metre coil, using a .00035 condenser, but it will only oscillate over a small range when the .0001 is in series with it.

**A.:** There are two things to try, (a) increasing the number of turns on the tickler coil, (b) the use of a small series condenser in the aerial circuit.

**2.** The differential condenser has a very appreciable effect on the tuning.

**A.:** This is quite unusual, but it would be impossible to attribute it to a definite cause without experimenting with your set. If you get the reaction number of turns correct you may find that this trouble will disappear.

**3.** In a tuned plate circuit, at what

frequency band would the impedance of an average coil and condenser most nearly match a s.g. valve?

**A.:** At medium wavelengths.

**JAYEM (Kelburn):** I built the Radiogram Five, but am not satisfied with the result. When I use the detector valve and audio frequencies, the local stations come in well, but with the r.f. stages I can just hear 2YA and 2ZF.

**A.:** We are afraid we cannot tell you what is wrong. Obviously there is some wrong connection in the radio stage, and it is a case of hunting round and experimenting until you find it. Have the valve tested in another set.

**2.** If I have too much reaction the set develops a howl, which stops when I de-

tune the condenser in the detector circuit.

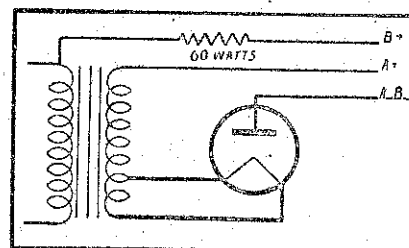
**A.:** This is due to the voltage on the detector being wrong. Either reduce the voltage by altering the tapping on the eliminator or put a higher resistance in series with the detector lead.

**3.** Is it quite in order to use grid bias supplied from the eliminator instead of bias resistance?

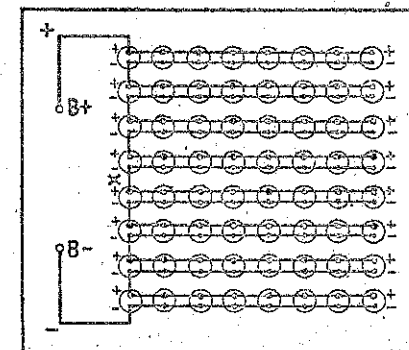
**A.:** Yes, instead of earthing the grid returns carry them to an appropriate tapping on the eliminator, and earth the centre taps on the filaments.

**PROGRESS (Pahiatua):** Can I use a tungal battery charger to charge both "A" and "B" batteries, and how can it be done?

**A.:** Most tungal chargers are like the one in the diagram and employ a resistance lamp to break down the charging rate for the "B" batteries. If yours is



not wired like this the only way you can charge the "B" battery without pulling down the transformer is to find out the maximum voltage that the low tension



winding will supply, and break the "B" battery up into units of this voltage and charge them in parallel. In other words, if it will deliver a maximum of 12 volts and you have a 90-volt "B" battery you would have to divide it up into eight sections, and each section will contain eight cells. These are arranged in parallel and the charger connected. The diagram illustrates the idea.

**2.** How can I overcome harshness in a Browning Drake?

**A.:** If properly constructed and a good speaker and power valve used, the B.D. will not be harsh. It is all a matter of adjusting your valves to operate under the best conditions. Use a power valve of the B405 class and bias it with about 12 volts if you are using 90 volts "B." You have not stated what type of speaker you are using. This may be at fault.

**SPEAKER (Auckland):** I have a crystal set with a 2-valve amplifier. When I use a 15 feet extension cord on the speaker it still whistles at 380, but when I earth one of the terminals the noise ceases. Is this detrimental to the batteries?

**A.:** Unless you are using an output filter of some description, yes. Try the use of a one or a half mfd. condenser between one of the leads and earth. This should by-pass the squeal without short-circuiting your batteries. If, however, you are using an output filter, you are doing no harm.

**JUNK BOX (Petone):** I have built a shortwave adapter which goes satisfactorily, but when the plates of the aerial condenser touch, 2YA comes in. Why is this?

**A.:** According to your circuit everything appears to be in order. The system will be fairly broad in tuning, and is sharpened up by the aerial condenser. When, however, this touches, the tuning becomes very broad, and what is probably one of 2YA's harmonics comes in strongly.

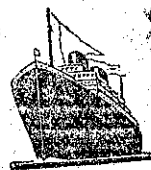
**2.** My set is a three-valve, and as I have been troubled with audio howl, I have tried all the usual cures without success. I believe the trouble is in my transformer, but I do not want to be rash, and buy a transformer until I know for certain.

**A.:** We agree with you on two counts: (1) That the trouble is in one of the transformers, and (2) that you should not buy until you are sure. Try this: Reverse the positions of the transformers, putting the low ratio first and the high ratio second. Having done this listen-in to the first stage and see if the howl persists. If it does and you still cannot find the cause you will have to pull the set down and rebuild it. By the way, a jacking system for the first valve frequently introduces audio howl. (Note: We have noted your request for tips and jottings, and will try to get this column going again.)



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