

Questions and Answers

(Continued from page 17.)

to use the milliamps, but if you do, you connect one to negative and one to milliamps.

RADIO (Stratford): Your alterations are in order, and except the use of a 1mfd. condenser between the plate of the first audio valve and earth. If you did this you would cut out all signals. If you want to by-pass the jack, by-pass the B+ to earth.

2. Would a 200 henries audio impedance be high enough to spoil operation?

A.: No, it would be quite satisfactory.

3. Can you give me details for making coils for the broadcast band?

A.: These have been published many times, and we advise you to look up some of the back issues of the "Radio Record" or the "Radio Guide." A table is given in the 1930 "Guide" which should help you to design your own.

JACKO (Otahuhu): I have built the "Sparrow Hawk" One and have been successful in logging the Auckland stations, but have not yet been able to get any other shortwave stations. There appear to be dead spots on the dial.

A.: To remove the dead spots, take a few turns off the primary coil, and you will find then that the set will oscillate more readily, and you will be able to get further afield. Failing that,

try different valued condensers in the aerial. The usual value is about .0002.

2. Why can I receive better when my battery is almost discharged rather than when it is in full voltage?

A.: Because your valves work better at a slightly lower potential than their rated value. Incorporate a resistance in the "A+" or "A—" lead and so control the voltage to the valves. You will then get better results.

3. Can I use phones on my big set without damaging them?

A.: It would be unwise to do so. You would need an output filter.

R. Z. (New Plymouth): I have been unable to get the "Neutron Four" to function. What is "T" of the regenerative? It appears from one diagram and in the text to be the top of the primary coil, and in the other the top of the regenerative.

A.: "T" as is shown quite clearly in the regenerative diagram, is the top of the tickler coil. If you look more closely into the bottom sketch you will see that "T" is not the top of the primary, but that the dotted lines extend beyond the last line representing the primary coil. On page 18, third column, six lines from the bottom, the "T" position should read the "P" position. A line has been dropped in the first column, under the second paragraph of page 21, under the heading "Under Baseboard Wiring." The paragraph should read:—

"A connection is taken from this point (the F— terminal of the detector socket and the moving plates of the detector condenser) down through hole number 5, along underneath the baseboard to hole number 6, where it connects with F of the regenerative. A connection is made between this point and one lug of the 1 mfd. condenser."

Yes; "N" and "end" are synonymous.

Why you cannot get the set to go is a puzzle; we have known several who have constructed and have had great results, e.g., see a letter in this month's "Log." We have built it ourselves and it is giving excellent service. Try to locate your trouble. Put your finger on the grid-leak and see if you get a buzzing in the speaker. If you do not, there is something wrong in the audio system and this should be checked over. Pull the power valve out and see if you get a plop in the speaker. Probably you will. Go back to the first audio, pull this out, and you should hear the contact being made. If the audio system is all right, bring the aerial in to the fixed plates of the detector valve and see if you can pick up anything. This would indicate a fault in the r.f. stage. Therefore the only way is to make a systematic search of your receiver until you find the trouble. The circuit is a really good one, and, apart from the two small inaccuracies which do not seem to have worried many people, no difficulty has been found in the construction of the set.

E.L.S. (Bombay): Is it necessary to show one's method in arriving at an answer to questions such as the first on page 29 of the "Radio Times"? For instance, I work by a slightly different method from you, and arrive at the same answer.

A.: Unless the method is specifically asked for, there is no limitation as to which one will be employed. The one used by us is the more usual for two resistances in parallel, or two capacitors in series. However, it is exactly the same as the one you use, only we have taken it a step further,

2. How do you arrive at 6 mls from 210 —

the equation — X 1,000—evidently 15,000

a printers's error.

A.: Yes; by reading the context it is 210

quite obvious that it should be —

35,000

ohms. We think, however, very few would go wrong over this point. It is really quite a small one. Nevertheless we are very sorry it crept in.

3. How often will the Servicemen's Examination be held?

A.: We understand that it is to be held twice yearly.

4. What do you consider to be a good publication for intending servicemen?

A.: There are many publications that will help to obtain a real understanding of service work. One of the best we have come across is Ghirardi's "Radio Servicing Course." Another good book is "Testing Radio Sets," by Rayner. Another, "Servicing the Superheterodyne" by Ryder, and for general understanding of the principles of radio Henney's "Principles of Radio."

J.S.J. (Lower Hutt): I cannot cut out Wellington on my "Neutron Four." It spreads practically all over the place, and I get 2ZW at about 10. 3YA comes in at 19, while the Australians of note cannot be heard while 2YA is on the air. I get the best results in the locals by using aerial No. 1, shifting off the radio frequency valve. I put a .002 condenser in the aerial, but it only made a slight difference. How can I sharpen the selectivity?

A.: Selectivity can usually be improved by increasing the grid bias on the first valve. However, this should not need to be greater than 7.5 volts. Selectivity to a large extent depends upon the aerial and the way the coils are made, and this explains possibly why we were able to eliminate 2YA and bring in the other stations nearby without any difficulty. A .002 mfd. condenser in the aerial is much too large. Try a .0002, or even a .0001 mfd. However, if you cannot get the set to work properly, use a wavetrap between the aerial and the set and cut out 2YA by that. Probably you have some of your old parts, and could quite easily make the trap up without further expenditure.

Prolonging Life of Rectifiers

ALL types of rectifying valves should be operated under conditions that provide good ventilation. Valves of the 80 or 81 variety may be housed in metal cabinets provided holes are drilled in the cabinet. Heavy-duty rectifiers, such as the type 866, should not be boxed in a metal cabinet. They should be mounted in breadboard fashion and placed in a safe location where there is free access of air. When their maximum output, it is sometimes necessary to force circulation around the bases by means of an electric fan. With these valves, as with any rectifier valve, the rated filament voltage should be carefully maintained. Running filament at lower than normal specified voltage shortens the life of the valve. All rectifiers of the mercury-vapour type should be given ten or fifteen minutes to heat up before the plate voltage is applied.

Mr. Radio Fan Puzzled. Want the latest? "Tune in" on these publications at

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- Leutz & Gable's "Short Waves," 19/- (A wonderful book on subject).
- "Radio Amateur Handbook" (Handy's 9th edition), 6/6.
- "Radio News," Oct., Nov., Dec., Feb., March, April, May, June, 2/- each.
- "Q.S.T.," Sept., Oct., Nov., Dec., Jan., Feb., March, April, May, June issues, 2/- each.
- Scott's Broadcast Time Chart (including log and complete list of world's long and S.W. stations), 7d.
- "Wireless: The Modern Magic Carpet," by Ralph Stranger, 5/- (New stocks just arrived—The "Radio Record" and Mr. Dawson, Philips Lamps, say no set owner should miss this.)
- "Radio Call Book and Technical Review," (formerly Citizens' Call Book Quarterly), 2/-.
- "Mathematics for Practical Man," by Howe, Simplicity itself, 10/9.
- "Radio: A Study in First Principles," by Burns, 15/- (Simple and clear).
- "Elements of Radio Communication," by Morecroft, 18/6.

(Please note there is a rise of approx. 65 per cent. on all American publications, and don't blame us.)

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- Christchurch: A. T. Williams, Bookseller, 35 Cashel St. W.
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