

the secondary winding and put on more turns, or should I procure a larger one?

A.: It is unnecessary to purchase a new one, simply double the number of turns on the secondary. The transformer will then deliver about 20 volts, which will give a higher charging rate.

To Prevent Distortion.

"BACK BLOCKS" asks the following questions:—

My three-valve set distorts when it has to handle any volume; would a pentode in the last stage prevent this?

A.: A power valve would be the better; see the answer to J.L.S. and the article on the pentode in the latter pages of this issue.

What is the price of a pentode?—Usually 37/6.

Would you recommend an alteration in the value of the grid leak?

A.: A variable grid leak is recommended only in the case of "all wave" receivers, and where distance is to be obtained. It could be mounted on the panel.

Mounting a Milliammeter.

A CORRESPONDENT from Norfolk Island asks: "In what position could a panel mounting milliammeter be mounted?"

A.: Mount it on the panel so as to give balance as far as the other components thereon are concerned, and connect one leg to B+ power and the other to the positive terminal of the speaker.

"Should a one mfd. condenser be placed across the B battery whether this be wet or dry?"

A.: Yes, it is advisable.

An All-Wave Set.

"W.M." (Hawke's Bay) asks the following questions to the combination one-valve receiver described by "Pentode" recently. First, could it be made into an all-wave set. If so, how?

A.: It would be rather complicated, but "Pentode" will describe a very simple one shortly.

Could a "B" eliminator be used?—Yes. Would "C" battery improve reception. If so, where will it be applied?

A.: Yes, slightly. Break the connection between the transformer and the rheostat, and put the battery in here, the positive to the rheostat and the negative to the transformer.

How much wire is needed for wiring in feet, and what is meant by insulating sleeving?

A.: Insulating sleeving (or spaghetti) is composed of an insulating material built up in the form of a narrow tube (like household spaghetti) and this can be slipped over the wire to insulate it properly. About 6½ feet of wire would be necessary to wind the aerial and the reaction coils.

Are the measurements for the panel correct, or should they be 12 x 6?

A.: A printer's error. The size should have been 12 x 6 x 3/16ths, but the mistake is, fortunately, obvious.

What are the measurements for the baseboard?

A.: 12 x 9 should be sufficient.

What gauge wire should be used for the coils and how much?

A.: A quarter of a pound of double cotton covered wire should be ample to complete the job.

Screen-Grid Booster.

"CONSTANTINOPLE" (Matamoras) has constructed "Megohm's" screen grid booster, but cannot get it to work. He has altered the coil to a squirrel cage type, and wonders if this has anything to do with it. Signals are no louder than without the booster, and at the same time has become very unstable. The valve lights brilliantly for a while and then glows to normal again; if the booster is shaken the same thing will happen. "I think the filament must come into contact with the control grid."

A.: It certainly appears as though the valve is at fault. Have it tested and at

the same time check over all the filament wiring. It may be that the electrodes of the valve are unsteady, and there may be a bad connection in the filament wiring. The correspondent has not stated how the booster is applied to his set. It may be that it is incorrectly coupled. The different coil should not affect this.

Changing the Value of a Condenser.

"W.B." (Eastbourne) asks how he might convert a .0005 condenser into a .001.

A.: Connect a .00025 fixed condenser in series with a .0005 variable, or connect a .001 fixed condenser in parallel with a .00025 variable condenser. There

ENQUIRIES HELD OVER.

Many inquiries and suggestions relative to the Screen-Grid Valve have been advanced during the week. These have been held over and will form the basis of a future special article.

is the alternative of removing plates on a .00025. The number of plates for different values was published in the "Beginner Corner" some time ago, and will be republished.

An Eliminator Transformer.

"J.F.T." (Hataitai) has built a battery eliminator, and wonders why it will not work. He includes a diagram which is all right except for the fact that the transformer has no secondary, and the valve is an ordinary receiving valve instead of a rectifying valve. He states that if he places his fingers across the terminals marked "high" he can "get a good kick," and yet it won't work the set.

A.: We are not surprised that the correspondent should get a "good kick," seeing that he was taking 230 volts unrectified. A secondary should be wound on the transformer and this secondary winding centre tapped and connected to a rectifying valve. Full details of a good eliminator will be published in the "Listeners' Guide."

Sundry Points.

"W.N." (Auckland) asks for an all-wave circuit. One will be described by "Pentode."

Would such a set give louder signals than a detector and one stage audio on both broadcast and short waves?

A.: It should do.

Would a wave-trap be necessary?

A.: On the short waves, no broad tuning with a screen grid employed in a broadcast receiver is the great difficulty of that valve, so that a wave-trap would be almost essential, unless devices were incorporated in the set to overcome this broad tuning.

"ALL-WAVER" (Wellington) wants particulars of an all-wave set. He is referred to previous inquiries.

Incorporating the Screen Grid.

"D.C.D.T." (Katikati) asks for details to apply a screen grid to the Browning Drake. Details were given in Vol. 12, No. 37, but the full details will be given in the "Radio Listeners' Guide" in the "Adapted Screen Grid Browning-Drake."

New Zealand Broadcast Stations.

"P.A.H." (Timaru) writes: Can you tell me where the following stations broadcast from?—

420 (Barnett's Radio Supplies, Dunedin).
42L (Radio Service, Dunedin).
42M (J. B. MacEwan, Dunedin).
2BE (Sydney).
9XL (Schenectady, New York).
WGNR (probably WENR, Chicago, Illinois).

Detector Tapping.

"W" (Runanga) writes: I have an eliminator, but am not quite cer-

tain where to put the brown covered wire from the set.

A.: This is usually the detector tapping and should be placed on the 22½-45 tapping.

Details of a Horn.

"A.D." (Christchurch) writes: Could you supply the details for a horn for a Baldwin unit?

A.: The best plan would be to build an exponential horn as described by "Switch" some considerable time ago and recently described in the issue of January 11.

A Noisy Rheostat.

A RHEOSTAT is one of the most simple yet one of the most important pieces of radio apparatus. It can act as a switch, and it is indeed advisable that it should be used as a switch, and it can be used to dim the filaments of the valves, to lengthen their life, and to reduce volume, although this latter is not particularly wise, as a certain amount of distortion is introduced when

the filaments are turned back very much below their stipulated voltage.

A defective rheostat will cause an annoying crackling in the receiver when adjustments to fit are made. There is nothing more annoying in operating a receiver than to find the filament control is "wobbly" or hard to be "nursed" in order to prevent loud crackling noises.

There is no need to endure this annoyance, for a new rheostat can be purchased for a very trifling sum, and fully repays such an expense. But it is not always necessary to go to this expense. Adequate pressure of the spring upon the resistance element—but not undue pressure—are essential points in the smooth operation of the rheostat. Examine this piece of apparatus if it is giving trouble, and see that the moving arm makes a good solid contact with the resistance. Press it down into position, or bend it slightly to obtain smooth but adequate pressure and operation.

UNLESS your aerial is a very short one there is little or no advantage in using two wires for it, while if two wires are used they should be spaced about 6ft. apart, in order to derive any advantage from the second one.

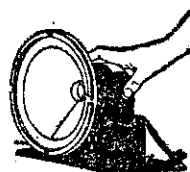
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