

Questions and Answers

"F.B." (Umawera) has a six-valve battery set and complains that one of the valves had tape round it when it was bought, and asks if this will interfere with its performance.

A.: Probably the valve is only a little loose in its socket. It will not be impaired because of the tape.

2. Of the six valves four light and two do not—are these valves exhausted?

A.: No, they have an inside covering of mercury which prevents any glow from being visible.

3. Enclosed is a diagram. Are the valves correct?

A.: Interchange Nos. 1 and 5.

4. Can I substitute one of the valves with a screen grid?

A.: No, a special circuit is needed for the screen grid valve.

5. Only one "B" battery, one "C" battery, and one accumulator 100 volts was sent with the set. Would there be any improvement by using more "B" batteries?

A.: Your specifications are confusing. The accumulator you refer to is probably a 6 volt 100 amp. hour capacity. If it is a 100 volt "B" accumulator and used in series with the battery, then you have ample voltage. If you have only 45 volts "B," you will require at least two more batteries and take tapplings for the various valves, as shown on the battery diagram which accompanies the set.

"F.B.T." (Palmerston North) asks if a 2-amp. "A" and "B" battery charged can be converted into an eliminator?

A.: Probably the transformer of the "B" battery can be employed in an eliminator. It depends if it will supply sufficient current at a high enough voltage for your requirements. You will need a separate rectifier, which for a small set may be an ordinary power valve. The "A" part of the equipment can be used in conjunction with a suitable choke and condenser as an "A" battery eliminator. A suitable arrangement has been described in this year's Guide.

"H.P." (Wellington) has a Cossor Melody Maker, and wishes to enlarge the set with an extra valve. What other parts would be required?

A.: You will need a transformer, a valve, and a valve base, and either an output jack or two terminals.

2. Can I put this in the set?

A.: There would probably not be room. You would possibly spoil the layout. You could make a neat little

great progress. The amateur enthusiast is rapidly vacating the field and is becoming a "ham" or buying an electric set.

The radio business is passing from the small expert dealers to the music houses, who are employing specialised service men to look after the sets when once they are installed. Technical questions are not asked by the buying public so that the salesmen are no longer versed in the technicalities of radio. Probably for this reason the writer was told that a certain receiver used three stages of 245 in the r.f. amplifier.

attachment that would not look conspicuous.

3. When I tune in distant stations there is a loud howl, but when I put my hand on the cabinet it cannot be heard.

A.: Is the set earthed properly? Have you tried connecting your earth to the cabinet as well as to the usual terminal? Has the noise always been there? If not, what caused it? You see, you are not giving us quite enough information.

"R.P.I." (Lyttelton) is intending to construct the "B" accumulator described in the 1930 Guide. He wants to know if a car generator driven by a petrol engine can be used.

A.: Yes. Arrange the tubes in series, parallel, so that the voltage of those in series will be equal to the voltage delivered by the generator. Put resistance in series until the charging rate is down to about 60 milliamperes.

2. How long would be required for a weekly charge?

A.: This depends on how long you use it, and what the capacity of your set is. If the charging rate is about double the consumption you will need to charge about the same number of hours the set is in use.

"M.H.M." (Christchurch) asks if 4-volt A.C. valves are recommended in preference to 1.5, 2.5 and 1-volt valves.

A.: 1.5 volt valves are very little used now, but 2.5 and 5 volt are equally as good as 4-volt.

"H.R.A." (Auckland) asks where porous pots for Daniells' cells might be obtained.

A.: We do not know of anywhere except the Telegraph Division of the Post and Telegraph Department. Unfortunately they seem plentiful in some places and rare in others. There are no substitutes, although possibly an electrician might be able to supply a few used pots.

2. What is the number of the "Radio Record" in which the article by "Hard-Up" appeared?

A.: June 6, 1930.

"M.H.M." (Christchurch) submits a diagram of a 4-valve A.C. B.D., and wishes to know how to add the extra stage. We have returned his diagram suitably inscribed.

2. Can the Hammarlund-Roberts coils now in use be utilised in this circuit?—Yes.

3. What other coils will I require in adding the extra R.F. valve?

A.: An R.F. transformer, a duplication of the aerial coil without the tapplings, in the case of the H.R. In the case of the B.D. coils it is a duplication of the regenerative without the tickler.

4. What is the output and voltage of 3002. eliminator?

A.: Maximum 150 volts 30 milliamperes.

5. Could this eliminator combined with a filament transformer successfully work a dynamic cone speaker?

A.: That depends on the amplifier you intend to use. It could operate a single medium power valve or even two smaller power valves in push pull.

Tips and Jottings

Detecting Distortion.

AN excellent test for the detection of distortion is to connect a milliammeter in series with the plate of the output valve. The needle should remain comparatively steady, the maximum permissible variation on either side of the mean being about 10 per cent. If the needle is constantly kicking toward the right it is probable that the grid bias is too high for the amount of "B" battery current used. The bias voltage should be adjusted from time to time as the "B" voltage drops. Should the needle kick toward the left, more grid bias voltage should be applied.

When Using Small Drills.

SMALL drills very often cause a good deal of annoyance to the radio constructor, for many of them obstinately refuse to be gripped adequately by the chuck of the brace. In such instances the usual practice is to bind paper round the drill, or else to pack some material or other into the jaws of the chuck. A better method for enabling a small drill to be gripped

securely by the brace is to wrap several turns of insulated wire round the end of the drill.

Home-made Screens.

SOME set builders dislike the construction of metal screens owing to the necessity of cutting fairly thick copper or aluminium sheet. A certain amount of skill in metal work is also required to make a neat turnover at the bottom of the screen without the aid of proper forming tools. A simple plan is to make a screen former from three-ply wood, and to cover it with copper or aluminium foil, which may be easily cut with scissors. Rivets may be used to attach the metal to the plywood, and small bolts passed through the top of the screen will enable connections to be made to it. If desired, bare wires may be passed through the screen without fear of "shorts." This is accomplished by drilling small holes in the wooden part of the screen and large ones in the foil. One marked advantage of this method of screen construction is that no difficulty will be experienced in making soldered connections, because the metal is a good deal thinner than that usually employed for screens.

RADIO DIRECTORY

What to Buy and Where

CITIES

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| AERIAL MASTS | Domestic Radio Co., Ltd.,
305 Queen Street, Auckland. |
| ALTONA & HAMMARLUND-ROBERTS SETS. | Johns, Ltd.
Chancery Street, Auckland. |
| BROWNING DRAKE SPECIALISTS | F. J. W. Fear & Co.
63 Willis Street, Wellington. |
| BURGESS RADIO BATTERIES, | All Radio Dealers. |
| KING RADIO RECEIVERS ... | F. J. W. Fear & Co.,
63 Willis Street, Wellington. |
| LOFTIN-WHITE AMPLIFIERS | Stewart Hardware Ltd.,
Courtenay Place, Wellington. |
| MAJESTIC RADIO RECEIVERS | Kirkcaldie & Stains,
Wellington Agents, Lambton Quay. |
| MULLARD VALVES | All Radio Dealers. |
| PILOT 1930 PARTS—PILOT SUPER WASP KITS, GILFILLAN, KELLOGG and ATWATER KENT SETS | Harrington's, N.Z., Ltd.,
138-140 Queen St., Auckland.
40-42 Willis St., Wellington. |
| RADIOLA RECEIVERS and Expert Radiola Service. | Farmers' Trading Co., Ltd.,
Hobson Street, Auckland. |
| STEINITE RADIO | G. G. Macquarrie, Ltd.,
120 Willis St., Wellington. |

COUNTRY TOWNS

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| MAJESTIC, ATWATER-KENT AND RADIOLA ELECTRIC SETS | Radio House, Hamilton.
G. S. Anchor, Manager. |
| PHILIPS VALVES AND APPARATUS | All Good Radio Dealers. |