3. When I put my finger on the framework the tone becomes deeper and clearer. Should this be?

A.: No; try connecting the earth where you place your finger, and if the result is the same leave the earth in some way connected to the metal cabinet. If not it would be advisable to get someone to have a look at your set.

R.E.G. (Auckland): I am troubled with heterodyne interference with 2YA. It is due to the local station, which, however, operates on a frequency very much removed from 2YA. I reported the interference, and have received a reply that it has not been noticed elsewhere.

A.: Apparently your trouble is due either to a fault in the screen-grid valve or to a reflected frequency. A wavetrap tuned to the interfering station's wavelength would probably be effective, and you should try altering the direction of your aerial. Try another valve in the s.g. socket.

D.X. (Dunedin): Can an audio transformer with a burnt-out secondary be put to any use?

A.: It can be employed as part of an output filter when a small power valve is used in the last stage. It can be used as an audio-frequency choke elsewhere in the set under similar conditions.

2. Can the enclosed circuit be improved?

A.: It is unusual not to have the screening grid by-passed to earth; in other words, you should have a .5 mfd. condenser between B+ 67.5 and earth. It is unusual, too, for the s.g., working as detector, to be followed by transformer coupling. R.C.C. is the more usual. However, you have been getting good results, and that is everything.

E.J.C. (Marton): My set distorts badly.

A.: See "Distortion" in the "Radio Guide," as it may be due to a large number of causes. The correct voltage for the output valve PM2 is 12 with 150 on the plate. For other voltages the bias is proportional.

2. I have the eliminator in close proximity to the s.g. valve with no shield between. Would this affect reception?

A.: It will probably cause instability. The s.g. valve should be shielded from the power supply.

3. There are several small stations that I would like to get. Is there a list, with addresses, in the "Guide"?

A.: Yes, the full addresses are given of all Australian and New Zealand broadcast stations, while adequate addresses are given for the American stations.

4. Several people in this locality are troubled with a bad power leak. To where can I make complaint?

A.: The District Radio Inspector, Wellington.

5. What value of condenser is required for the wavetrap described in the "R.R." of March 6—A.: .0005.

6. 22 and 18 gauge d.c.c. wire is given. What gauge s.w.g. would this be?

A.: D.c.c. is, so to speak, a species of s.w.g. wire. D.c.c. relates to the covering meaning double cotton covered, so that by 18 gauge d.c.c. we really mean 18 standard wire gauge double cotton-covered wire, but you see d.c.c. is ever so much shorter.

H.C. (Waimate): I have the core of a toy transformer Can I use it to supply filament voltages for all types of valves?

A.: The laminations are fairly small for the job they are called upon to do, and it is doubtful if the window would take all the winding. However, here are the particulars. The primary would need to be 2000 turns of No. 30 gauge wire; for the secondaries you can compute the number of turns at 11 turns per volt. The gauge wire you use for the secon will depend upon the amount of current you wish to draw from the transformer. You could not take much

BEGINNER (Dunedin): In my all-wave set I am using PM2DX, one l.f. and B205. Is this a good combination?—Yes.

2. Do I have a good set?—Yes.

3. I have a 2 x 2 accumulator each 60 amp. hours. Using the set for 4 hours a day, how long should the charge last?—A month.

4. I am using a "B" eliminator. What fixed resistances and condensers do I need?

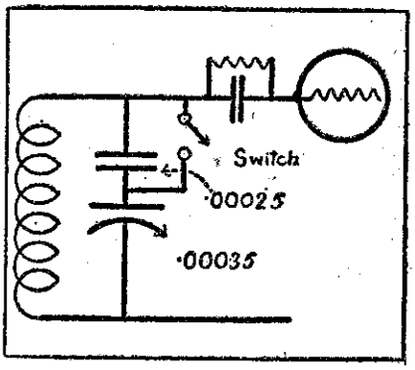
A.: See any of the last three "Radio Guides."

5. Would an electrolytic condenser be better than mica condensers?—Yes, if it is of the correct capacity, say, 16 mfds.

6. Will I destroy headphones when using a "B" eliminator?

A.: No, but if your last valve passes a fairly large current you should use an output filter.

7. What is the correct way to put earphone cord clips into the plug?



A.: You must trace out your jack clips and see what goes to positive.

8. On shortwave oscillation is ploppy. How can I alter this?

A.: By trying different grid-leaks and if necessary a different grid condenser. Alter the detector voltages, trying different valves, if necessary bringing the grid return to a variable point between positive and negative, as shown in the "Diff. Four."

9. What is the best value condenser to use in (a) shortwave sets, (b) all-wave sets?

A.: Shortwave .0001 or .00015; (b) .00035. Use the switching arrangement shown herewith to reduce the effective capacity.

10. Is a .00005 condenser quite suitable for reaction?—No, it is too small.

11. Should I use a different grid leak for broadcast and shortwave?

A.: Yes, broadcast 2 megs., shortwave 10 megs.

12. Can reaction be used satisfactorily with a power detector?—Yes.

13. How long should my aerial be?—Total 100 feet.

14. What is the proper value of resistance to bias suitably a 224?—4000 ohms.

15. Would a Bluespot 66R unit be quite O.K. with my valves?—Yes.

16. What gauge wire should be used for aerial and earth?—7/22.

17. Why should I get 2YA in two places 1½ deg. apart?

A.: It is due probably to an effect set up by your set oscillating.

TIM (Havelock): For some time I kept my set stored in a dry place, and when I turned it on, although the valves lit, I could not get anything through for about three hours, and then Wellington came through weakly. When I put the voltage up from 90 to 135 and the "C" battery to 9 volts the tone and volume dropped.

A.: Although difficult to define the cause of a trouble so unusual, we would imagine that although you tested the batteries they are at fault. Test both "A" and "B" batteries again after the set has been operating a while. Batteries must be tested on load to determine their efficiency otherwise without seeing the set we cannot offer any solution.

JACK (Wellington): Is a filter affected by the placement of the smoothing condensers in relation to the choke?

A.: Yes; a condenser should be on either side, and not both on the one side.

NOVICE (Christchurch): My set uses 6—201A valves. Should it have a power valve in the last stage?

A.: It most certainly should have a power valve in the last stage. One of the 172A type is quite suitable. It must, of course, be adequately biased.

2. How can I tell the last stage?

A.: The last stage is the one that is nearest the speaker. Trace the plate lead of the last valve socket, and you will see that it goes to one of the speaker terminals and not to a transformer or resistance.

3. Which speaker is the most suitable, horn or cone?—Cone.

4. What is the difference between a neutrodyne and a heterodyne set?

A.: It is a long story and has been told in full, with illustrations, in the 1931 "Guide." Both sets work on an entirely different principle up to the detector stage, when they are alike. It is really a repetition of the broadcast station itself, within the set, only the radiations are not allowed to go on to the aerial.

5. What stations should I be able to receive?

A.: That depends upon your locality. You should be able to get the Australians quite satisfactorily.

6. Explain the Beverage aerial.

A.: See the "Radio Record" for October 3, 1930.

Q.R.M. (Waikato): The generator of a nearby picture plant has been causing interference with my set. Can it be stopped?

A.: Yes, it should not be allowed to cause interference. If you cannot get satisfaction with the management, write the District Radio Inspector, Auckland. Do not, however, incorporate the paragraph referred to in your second paragraph.

PORTABLE (Wgtn.): We have not tested the apparatus to which you refer, but we suspect it would be more expensive to operate than a.c. apparatus.

2. Would it be possible to use an Addaphone with this?—Yes.

E.N. (Napier): Who are the agents for Pilot super watt?

A.: Harrington Ltd., Willis Street, Wellington.

2. What is the cost without the cabinet?

A.: It is sold as a kit set with a small cabinet for about £27.

3. What sort of a set is it as far as strength goes?

A.: We have not tested it.

H.N.S. (Waihi): What would be the cost of converting my factory-made set with honeycomb coils to the Outspan Five? At the present time I am using five 201A valves.

A.: We do not know how much it would cost, as it would all depend upon the number of parts from your old set that could be used. You would certainly have to have a new set of coils, which, however, are not expensive.

2. How long should my 100 amp. hr. battery last without being charged?

A.: About 50 or 60 hours.

3. How long should the "B" batteries last?

A.: This depends upon the drain of your set and the type of battery used. We have given a very complete table in the "Radio Guide," together with explanatory matter which should interest you. Based upon two to four hours' service daily, a super battery should last you about 10 months.

4. Would the Daniell set charger be suitable to charge my set?

A.: No, it is intended only for sets with a small "A" current.

XYZ (Auckland): Can you tell me if and how a battery s.g. set can be converted into an all-electric to be used from the direct supply?

(Concluded on page 30.)