

ever, for quality PM256 would be better. It would need a higher bias. You cannot do much to improve the flat tuning, but you could try a formo-densor in series with the aerial, varying the capacity for the best effect.

2. Could you recommend any correspondence school or person who would give me a little practical instruction in radio, and is there any book on sale which would explain the radio terms?

A.: You could receive instruction from Johnson's Wireless School, Wellington, and you would find the "Radio Listeners' Guide" a good help for learning the terms. The 1931 publication is on the way now.

"FAIRY" (Palmerston North): Results are disappointing when my four-valve B.D. set is used with an inductor dynamic speaker. A horn speaker goes splendidly with easily twice as much volume.

A.: Have you had the inductor dynamic speaker and your own tested on another set? The comparison should be interesting and will tell you more than you can find out by experimenting with your own set.

2. Will the baffle 2ft. 9in. x 2ft. have anything to do with the efficiency?

A.: No, the tone will be affected slightly, but that is all. The baffle is quite efficient.

3. Are 90 volts sufficient?

A.: No; to get the best of tone from the inductor dynamic you need 125 volts at the least.

NOTE.—"I am quite agreeable to wait a week or so if you have a large batch of inquiries," says our correspondent. Thank you very much. We wish

all our correspondents would adopt the same attitude. Quite a number get quite annoyed if they do not receive an answer in a week when, especially at this time of the year, replies are likely to be held up.

"RADIO-STUTTERS" (Southland). The speaker appears to stutter, but the eliminator still hums and I get a squeal from the grid-leak when touched. If I turn the set off and then on again it goes all right for a while, and then repeats the performance. It goes quite satisfactorily at night.

A.: We cannot understand why it should go all right at night and not during the day. On the surface the trouble appears to be in the radio stages. It may be a fault in the radio plugging from your eliminator. Possibly there is a broken down or defective condenser there. Concentrate upon the radio frequency stages and look for defective or dry joints, loose connections, valve pins not making proper contact. Try bringing the aerial into the grid of the grid-leak. If this set works satisfactorily in this division, then the trouble is definitely in the radio stages.

G. T.C. (Wellington): What is your opinion of the enclosed circuit?

A.: We cannot tell; you have sent the theoretical diagram but not the layout. If you want a real good set build the Differential One or Two, which we will be describing this and next week.

2. Will a five to one and a three to one transformer be satisfactory?

A.: Yes; use the five to one for the last stage.

3. Would the valves be satisfactory, two L210, and P215?—Yes.

4. What would be the resistances in ohms?

A.: Which resistances? If the impedances of the valves L210 is 12,000 and P215, 5000.

J. E.W. (Lower Hutt): What power pack voltage is needed to supply the L.W. with two 245 valves in parallel?

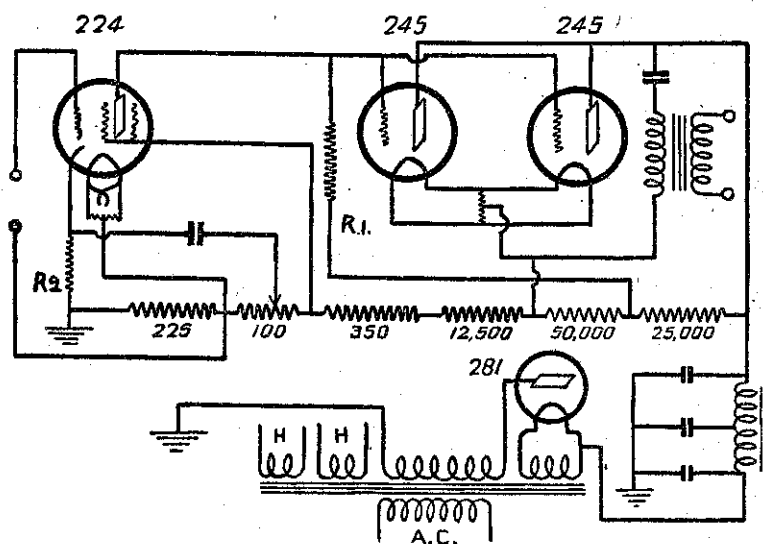
A.: The same as for a single 245, that is 425 volts, but your power pack must be capable of supplying 60 mamps.

2. What is the actual voltage on the plates of the 245's after allowing for the voltage drop to the 245?

A.: We had quite a good deal to say about this when we were describing the "Home-made Three" in our issue of December 6 last year. From this description you should be able to manufacture your resistances without any difficulty.

R. H. (Avondale): I submit a sketch of two alternate situations for an aerial. Which do you think would be the better?

A.: The second aerial (the one you have marked "D"). It is more direct and does not pass over the house. Furthermore, your lead-in would be shorter.



Amended diagram of parallel output for 245 valves in the Loftin-White amplifier. The bucking condenser has a capacity of 1 mfd.

A.: There are 250 volts or thereabouts on the plate of the 245's, and 180 on the screen grid plate.

3. Could I use Ferranti wire wound resistances so long as they were of the value specified?

A.: Yes, providing they will pass 60 mamps.

4. Should there be a condenser between the arm of the potentiometer and the cathode of the screen-grid valve?

A.: Yes; it was inadvertently missed out by our draughtsman. It is the same as for the single 245 output valve.

5. What is the value of the blocking condenser in the primary lead of the output transformer?

A.: 2 mfd.

6. I take it that the parallel circuit is quite safe to build and is practical and not theoretical?

A.: It is perfectly safe, for it is practical as well as theoretical.

"DENTACOLL" (Dunedin): I am troubled with crackling in my set, and I have tried almost everything, including changing the transformer to eliminator. This occurs when the aerial and the earth is not being used. I am using a home-built eliminator.

A.: You seem to have tackled all the usual troubles and we are really at a loss to give you any help. The C battery could cause the trouble, and we presume you have tried replacement. Furthermore, the first stage jack is not past giving trouble. Cut it out of the circuit altogether and then try it. The C—voltage should not be equal on both valves. Try the eliminator on another set. It may be a troublesome condenser in that. Failing all these, rebuild the set along modern lines. It is really very old-fashioned.

2. What six-volt valves should I use?

A.: Use a g.p. valve in the r.f. and first a.f. stages, a special detector, and a power valve of the 605 type.

"RADIO" (Shannon): I wish to construct temporary resistances in cardboard. Could you give me the dimensions?

2. I have not been able to get any Australian stations yet.

A.: You have not stated the type of set you are using. In any case Australian stations are very weak at the time. They cannot be picked up until very late at night, and even then they are not very satisfactory.

3. What is the significance of the dial numbers?

A.: They are only degrees of a circle, and have no connection with the frequency or wavelength.

4. My set has a tendency to whistle or growl.

A.: If this is the case you should contact the dealer from whom you bought it. Some commercial sets will do this if forced, but it should not be strong enough to interfere with the tuning.

5. Is there any literature available on the number of stations and their whereabouts, and what is the best radio book for a beginner to buy?

A.: You will find the "Listeners' Guide" is an excellent publication on both these scores. The 1930 has been sold out, and the 1931 is in preparation. It should be out in the beginning of April.

6. Should the aerial be continuous to the set, or the lead-in soldered to the aerial?

A.: It would be better continuous.

A. B. (Wellington): Where can I obtain a copy of the R.R. of March 7?

A.: If you cannot get one from a book-stall you can get it from our office.

2. I have built R. W. Three, but I can only pick up two American stations.

A.: You should be able to do better than this as most of our correspondents have been able to get a very wide range. Try increasing the detector or use another valve in this position. Try the effect of a higher grid-leak.

3. I am about three hundred yards from a very high hill. Would this cause poor reception of American stations?

A.: In all probability, yes. Hills have peculiar effects upon reception, and one

RADIO DIRECTORY

What to Buy and Where

CITIES

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|---|----------------------------------|
| ACE and HAMMARLUND SETS, | Johns, Ltd. |
| WESTINGHOUSE Rectifiers | 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 | Harrington's, N.Z., Ltd., |
| SUPER WASP KITS, GILFILLAN, KELLOGG and AT- | 138-140 Queen St., Auckland. |
| WATER KENT SETS | 40-42 Willis St., Wellington. |
| RADIOLA RECEIVERS and | Farmers' Trading Co., Ltd., |
| Expert Radiola Service. | Hobson Street. Auckland. |
| STEINITE RADIO | G. G. Macquarrie, Ltd., |
| | 120 Willis St., Wellington. |

COUNTRY TOWNS

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| MAJESTIC | Radio House, Hamilton. |
| | G. S. Anchor. Manager. |
| PHILIPS VALVES AND | |
| APPARATUS | All Good Radio Dealers. |