

## Our Mailbag

(Continued from page 8.)

the foot again on the return journey nothing but one long bellow of thunder comes through the set—in fact, all-electric sets in Opoho, even a quarter of a mile from the tramline. Those in authority ignore all appeals to have the system repaired and earthed, stating emphatically that the tramways were first on the field and therefore radio must get along as best it can. They admit the tramway system could be fixed to give out only a minimum of interference to radio, and also admit that the cost would be moderately light. They absolutely refuse to do anything, not even if radio listeners were to contribute a portion of the cost. Only a bombshell of Press agitation will move them. We would like to see "The Radio Record" and "The Radio Log" agitating for similar legislation to be passed in New Zealand as is law in several other countries. In some lands nothing electrical is allowed to interfere with radio reception. Trust that an abler pen than mine will come to the aid of listeners in similar districts to Opoho and fight for the rights of radio.—Notata (DX480C).

### Import Duty.

MR. BURT, of Kohukohu, in his letter in the "R.R." dated 7/8/31, said that the receivers are as cheap in New Zealand as in the United States of America, but, according to a letter I have just received from U.S.A., this is not so. One well-known make of receiver is sold in New Zealand for £48, and this same receiver can be purchased in American for 45 dollars, or approximately £9. Another make which is sold in New Zealand at prices ranging from £49 to £55 is sold in U.S.A. for £24.—R.B. (Wellington).

### More Popular Music.

GENERALLY I am well pleased with the programmes broadcast by the "A" stations, but a correspondent in the "R.R." brought up a point about the popular type of programme. These have, during the last month or two, faded away. The only popular broadcasts we get are on Friday, 1YA, with Reg. Morgan's Orchestra; Friday, 4YA, a little popular music; Friday, 5YA, on Saturdays with B. Moody's Trio. Where are the old-time dances we had from 4YA once? Where are the good dance bands? We all enjoy them when they do come

on. Could we not get some new dance records in the dance sessions? The present ones are good, but one gets tired of the same over and over again. I have no complaints about the afternoon sessions. These from 2YA are especially good.—M.D.H. (Oamaru).

## Answers to Correspondents

SUBSCRIBER (Southland): Mr. and Mrs. Lockhart are the real names of the performers and are not the same as "Adam and Eve," whose names are not available.

A. BAKER (Russell) writes commending the enterprise of the R.B.C. in arranging the cricket broadcast. He wishes to thank especially Messrs. Ball and Drummond, of 2YA, for their prompt broadcasts. Their efforts can more fully be appreciated when one realises that only a few years ago such achievements were totally unheard of.

## Diagnosis of Radio

(Continued from page 15.)

tube. In the tube are two springs, the wire goes from one to the metal sleeve and from the other to the tip of the jack, which is insulated from the metal tubing. When we put the jack in the plug the tip contacts the bent spring and the body the sleeve, and so, by pushing our phones or speaker tips into the two springs in the hollow ebonite, we can bring them into contact with the circuit of the set.

The jack can be arranged so that when the plug is pushed in, two other springs are brought into contact with one another. This is known as the single filament jack. The second set of springs cannot electrically contact the first set. A piece of ebonite or other insulating compound pushes the two springs together. If we connected a filament circuit to the two top springs these could be made to act as a switch every time we inserted or withdrew the plug.

A single closed jack is such that, when the plug is pushed in, the spring moves away from a third spring and

breaks the contact. This jack could be used for a gramophone and radio combination.

The next type is the double filament jack. This is really a very complicated piece of apparatus. When the plug is pushed home several things happen at once. Two circuits are broken and two are closed simultaneously. The use of complicated jacks, such as these, unduly complicate and hamper wiring.

It is unwise to use a jack of this nature in order to plug in the first audio stage. If you want to be economical when you are using your set on a local station, arrange the aerial as we have shown in the "Outspan Five" and the "Radiogram" set, so that the radio valve can be cut out. You will find this will eliminate the jacking processes which, by complicating the wiring, quite spoil the set and make it unstable.

## Try This

AS we have now very nearly come to the end of all the parts we can use in a radio set, let us have a little revision. Take a pencil and paper and see if you can draw the theoretical circuit for the following:—

A crystal, aerial connected to the top of a coil, the bottom of which is connected to earth. Now indicate an "A" battery, show the two poles joined to either end of a fixed resistance. Draw a three electrode valve with a potentiometer across the filament. Take the centre tap to earth. Now turn back to the last two or three weeks of the "Radio Record" and you will see if you are right.

Once we have completed the various parts of the set we shall go on to talk about how radio circuits are built up, and before long you will be drawing and understanding the different types of circuits used in radio work. You will find that you will naturally look at the theoretical circuit and not at the lay-out when you come to decide whether a set is good or not. Next week, too, we hope to deal with a few questions that were raised by one correspondent. He found that after reading the "Diagnosis" he could go through his set and understand how everything was working until he came to the first audio transformer and found that it behaved in a manner in which it should not behave. But really, it is behaving correctly. We wonder if before next week he will be able to think out exactly what happens.

## Questions and Answers

(Continued from page 14.)

A.: Yes, but it would be preferable to use two form condensers, instead of the fixed condenser shown. A wave-trap will cut out only one station at one time, and you will have to alter it if you want it to sharpen up the other station.

W.J.H. (Wellington): It would be preferable to raise the lead-in end of your set. The experiment of cutting out the insulators would be worth trying. You may, however, pick up more noise, and the set would be less selective. Yet there are occasions when long aerials are satisfactory.

2. Would an earth attached to a water-pipe with a 25ft. lead be better than a tin copper tube wound with copper wire, buried to a depth of 5ft, with an insulated lead of 15ft. to the set?

A.: We are inclined to think the latter would be the better.

3. The aerial and earth terminals on the set are about an inch apart. Can any leakage of waves occur through the earth instead of getting the full power to the set? Would binding with insulation tape be of any assistance?

A.: Theoretically a little power does escape through the aerial and earth terminals being close together. It would be better if you used armoured cable where they approached one another and grounded the armour. However, we do not think taking everything into consideration, that this alteration would be worth while.

J.G.M. (Gisborne): Will I have to buy a license if I get a crystal set?

A.: Certainly, all radio-receiving gear from the humble crystal set to the mighty super-heterodyne must be licensed. However, if you already have a set, you do not need to get another license.

E.J.A.H. (Napier): Could you give me the values of the following condensers:—Variable condenser with 17 plates?

A.: It would depend upon the size of each plate. It is probably a .00025.

2. With 28 plates?—Probably a .0005.

3. Differential condenser, four moving and three fixed plates?

A.: You do not state whether they are separated by air or mica di-electric. If they are mica di-electric it is in all probability a .0002.

AUDIO (Blenheim): Owing to my 40-foot aerial being well screened by trees, my set is not proving very efficient on DX work. Would the addition of a resonator make any appreciable difference to long-distance reception?

A.: It would help you slightly, but would not overcome the screening effect of the trees.

E.B.C. (Auckland): Could you supply the circuit of a screen-grid super het. adapter using battery valves in place of a.c.?

A.: We cannot make any promise in this respect, but will see what we can do.

AIRMAN (Paerata): Could you give me the qualifications necessary for (a) a "B" class station; (b) an experimental station?

A.: A "B" class station operates on the broadcast band, and the license for such is issued to private firms or persons who guarantee to operate for a certain number of hours, and adhere to those hours. An experimental station is issued only in special cases, such as to electrical firms or advanced students in radio telegraphy, colleges, etc. It is rarely granted to private individuals, and only when it is considered the applicant is sufficiently advanced in radio engineering to experiment profitably.

PETER (Pahiatua): Could I put a battery-operated r.f. to my set and use the parts of a commercial one-valve set?

A.: It will not be practicable to do so.

# RADIO DIRECTORY

## What to Buy and Where

### CITIES.

ACE & HAMMARLUND SETS, Johns, Ltd.  
WESTINGHOUSE Rectifiers Chancery Street, Auckland.

BURGESS RADIO BATTERIES, All Radio Dealers.

LOFTIN-WHITE AMPLIFIERS Stewart Hardware Ltd.,  
Courtenay Place, Wellington.

MULLARD VALVES ..... All Radio Dealers.

RADIOLA RECEIVERS and Farmers' Trading Co., Ltd.,  
Expert Radiola Service ..... Hobson Street, Auckland.

### COUNTRY TOWNS.

PHILIPS VALVES AND  
APPARATUS ..... All Good Radio Dealers.

**Mullard**  
THE MASTER VALVE

Embodies all improvements  
known to Valve Manufacturers.