

IT is not possible to supply plate voltage direct from a rectifier. The reason, briefly, is this: To charge a battery, there are two essential operations. (1) The reduction of the voltage of the mains to that of the battery to be charged. This is brought about by a step-down transformer. 2. The "rectifying" of the current from alternating to direct. This may be brought about by several means—by a valve, by an electrolytic, or by the vibrating method. This current is fed direct in the battery to be charged.

Eliminators carry the process one stage further. After the rectifier comes a filter which removes the pulsations from the pulsating direct current furnished by the rectifier, and leaves a smooth flow of direct current. To convert an electrolytic charger into an eliminator this filter, a system of chokes and condensers, must be added.

In practice, it has been found that there are other modifications, which render the electrolytic rectification rather unsuitable for the eliminator.

Distortion from 2YA.

CAN you please tell me what is wrong with my set when it only distorts on 2YA? My set is a three-valve regenerative receiver, and I receive all the other stations, such as the Australians, Americans, and New Zealanders with good clear volume on the speaker. — "CLEAR RECEPTION" (Blenheim).

There are two solutions to this problem: (1) 2YA is putting out distorted signals, in which case the trouble would be just occasional—at least it would not happen every time 2YA is tuned in.

(2) That the set or the speaker cannot handle the output supplied from 2YA. In the set the trouble may arise from the incapacity of the last valve to handle the output, in which case a larger capacity valve should be used. A semi-power valve would be suitable. Again, the transformers may not "have a straight curve," that is to say, they will not handle a great deal of volume with a semblance of uniformity.

The batteries may be low or out of proportion. Try the C to make certain that it is up to strength. This would cause chronic distortion when a great current was to be handled.

Loss in the Loud Speaker.

"WHAT is the meaning of demagnetise? Is there any way of putting it right or of preventing the same thing happening again?"

ANSWER.—Probably the cause of this trouble is that the loudspeaker has been connected in circuit the wrong way round. That is to say, its positive terminal has been connected to the negative of the set, and its negative towards the H.T. positive.

When this is done the steady current running through the loudspeaker tends to destroy the permanent magnetism inside the loudspeaker. Generally this takes a fairly long time—several months in many cases—but if the connections are not corrected the permanent magnet of the speaker becomes almost useless and inoperative. Fortunately the makers of the instrument will generally put it right for you for a small charge, but failing this it can be re-magnetised by one of the firms specialising in that class of work.

A CONNECTION to earth is not always necessary or beneficial for short-wave work.

A Corner for Beginners

By Observer

CORRESPONDENTS are requested to observe carefully the following points. Failure to observe these may mean delay in answering and even the loss of the communication.

1. Addresses.—All technical correspondence, whether inviting reply or not, must be addressed: "The Technical Editor," "N.Z. Radio Record," Box 1032, Wellington.
2. Each letter to bear (inside) the department to which it refers.—Construction, Crystal Corner, Questions and Answers, or General.
3. Letters inviting reply must be accompanied by a stamped and addressed envelope, but the right to answer any letter through the columns is reserved. Correspondents should watch the columns carefully as one letter may be answered in more than one section.
4. Advice requiring discrimination between factory-made sets or between makes of components cannot be given.
5. All letters to be signed, but a nom-de-plume may be added.
6. Reports for the DX Club to be addressed: "DX," Box 1032, Wellington.

A Novel Earth.

T. PASCOE (Auckland) writes describing a type of earth that should appeal to listeners who have a difficulty in obtaining a good earth through bad soil conditions. He writes: "I have read with interest the reports of your readers on 'Copper Earth.' I have used this type of earth for nearly three years, and heartily endorse the praises which have been given it."

Mr. Pascoe's earth is briefly this:—The ground connection is established through the use of a discarded copper. A hole was dug in the ground (loose, volcanic soil) and the clay was placed in this, so that it would come round the sides of the copper, making a good contact between it and the earth. The copper was then sunk in this, and filled with coke, so that it might be 4in. below the surface of the ground. The copper was then covered with a sheet of corrugated iron, in which a hole was made. Through this hole a bottle with the bottom knocked out was placed, so that the upper end was clearing the surface of the ground. A piece of wood was placed in the bottle to keep the passage clear.

The correspondent states that the use of the clay very much improved the connection.

Artificial Static.

A GREAT deal of so-called static can be traced to a faulty B battery, even though it may read 45 volts, and to all outward appearances is apparently in good condition. When a B battery is run down internal noises are the natural expectation, although some of the batteries die very quietly.

To test for a noisy B battery, proceed as follows:—

Disconnect the batteries from the set, testing one at a time. Connect one cord tip of a pair of head phones to one terminal of the battery, holding the other tip tightly in the hand and with the forefinger and thumb of the

same hand grasp the other battery terminal. If a steady crackling sound is audible, you may rest assured that the disturbance resides within the battery. Do not connect both receiver tips directly across the battery, as it will invariably ruin the phones.

Position of Aerial.

RECEPTION differs in different parts of any city, and the variation in reception is appreciable. Some stations are received with exceptional intensity. Other stations are poorly received. Adjacent buildings cast shadows which manifest a decided influence upon reception at any one point.

If the best results are to be obtained every possible means must therefore be exhausted to so arrange the outdoor aerial that the stations are received with uniform intensity. This means that the aerial must be made non-directional to the stations received with exceptional intensity and directional to the stations poorly received in the neighbourhood.

C Battery Flat.

I NOTICED while reading questions and answers in the "Radio Record," Vol. 11, No. 30, that one of four readers is having the same trouble with his three-valve set as I had, and of which I wrote you some time ago about (Vol. 11, 28). He signed himself "Puzzled," Christchurch.

Firstly, I wish to thank you for your information in regard to my own trouble. Secondly, I wish to state for the benefit of "Puzzled" that I took my set to an expert for overhaul, and the only thing that was wrong was that I was in need of a new C battery. This was installed, and since I have had perfect results.—F. COGLE (Launceston).

Both correspondents complained of noisy sets. In the case of the Christchurch correspondent, the noise was proved to lie in the set itself, and

manifested itself by a grating sound whenever the set was turned on. It appeared that there was something wrong with some of the components. Our present correspondent complained of a planing noise, and was advised to overhaul his set testing for breaks. It was stated that the batteries were all OK, so it was taken for granted that the C was up to scratch.

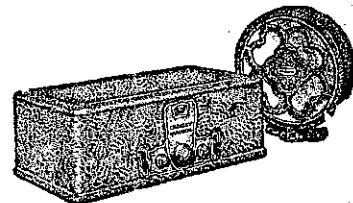
This emphasises the necessity to keep a careful check on all the batteries, not forgetting the small C, which quite commonly is placed within the cabinet and is likely to be overlooked. Batteries cause more trouble than any other component in the set, and need regular and careful attention.

Trouble Shooting.

DO not use an L.F. amplifier which has no grid-bias battery in it. It is out of date, and can easily be altered.

REVERSING the connections to your L.F. transformer may be an old-fashioned plan, but nevertheless it is often very effective in reducing the hum due to electric-light mains.

THE use of too much filament voltage may cause a valve to lose its emission, and is one of the commonest causes of poor reception.



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