

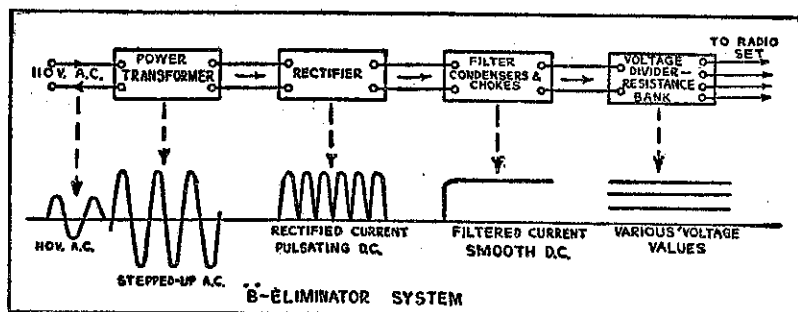
the a.c. voltage from the mains to any value of direct current.

Recapitulation

AND now, perhaps, we can see, even if vaguely, how a set as a whole operates, and how the various components play their part in converting the weak, rapidly oscillating current radiated by the station, into real music and speech. We have seen how the aerial collects as many of the vibrations as possible, and how, in spite of the fact that these impulses are only too ready to skip the short distance between the aerial and the earth, they are passed on to the set. The aerial coil and the tuning condenser select the station desired by the operator, and they are passed to the grid of the first valve. They are magnified by this and the following valves until they are ready to be detected. Magnification before the detector is spoken of as high frequency or radio amplification. A coil and a valve suitably connected are known as a stage. It is a tuned stage if a condenser is used across the coil.

When the signals reach the detector their form is altered. The rapidly pulsating vibrations which have carried the slower currents from the transmitting station are no longer wanted, and they are stripped away.

Further magnification takes place by means of transformers (usually) and



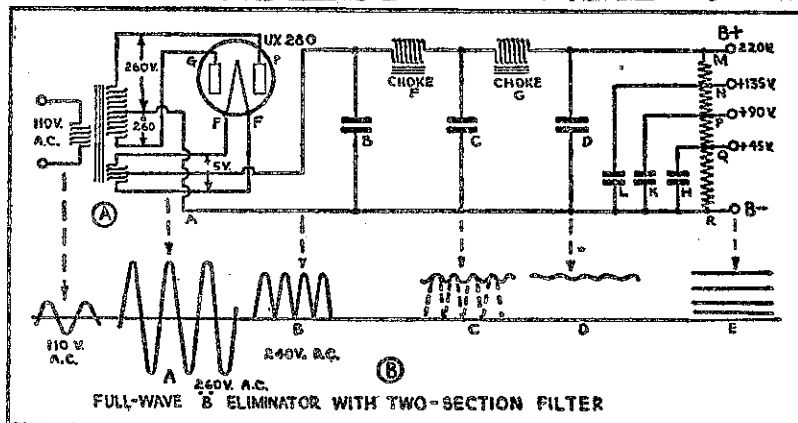
This sketch illustrates the principle of the eliminator. Note that there are four distinct groups of apparatus.

valves until the signals are strong enough to work a loudspeaker. The current in the audio stages should be the exact replica of the current in the microphone. It is the disturbances caused by the voice or instrument changed into electrical vibrations. If these electrical vibrations are reconverted into sound we can hear, and the miracle of radio has been performed. This last step is performed by the loudspeaker.

Before a signal can be magnified power must be utilised, and this may be

supply is direct, and as the mains voltages are a.c., a system of rectification has to be employed. Usually the rectification process is carried out by a valve, but this valve in no way magnifies the current, so that when we speak of an eight-valve set "including a rectifier," a seven-valve set is really meant. The eighth valve can be regarded as the modern high tension or B battery.

We now come to the end, and it is hoped that some, at least, have a little more insight into the working of a radio receiver than they had previously.



If you have studied the diagram at the top of the page you will have no difficulty in recognising the components in this eliminator circuit, and in understanding how they work.

drawn from batteries or the mains. Both systems are very similar. In the battery type of set, the filaments of the valves are heated by a direct current of electricity. In the mains valve the filament is heated because of its proximity to a wire, kept hot by virtue of its being connected with the mains through a suitable transformer. If we applied this current directly to the filament there would be a hum. In both battery and a.c. set the high voltage

It is hoped, too, that theoretical radio diagrams will present less of a puzzle than they did formerly.

A RECITAL is to be given at 3YA on Sunday, October 11, by Hubert Carter, the well-known tenor. Associated with him will be Merle Miller (mezzo-soprano) and Esme Stevens (soprano). 'Cello and harp solos will be included in the programme.

N.Z. Short-wave Club Notes

IN reply to numerous letters from members and non-members, and, in due fairness to the amateurs who have been helping the cause of radio by means of club notes and technical data, I have to explain that, owing to an error in my last notes, it appeared that the stations concerned were conducting broadcasts. This was not the case, as they have been most particular in conforming to the regulations; any notes which I sent out were given on the understanding that the operator could excise anything that might appear to constitute a breach.

It must be admitted that all radio clubs, whether transmitting, short-wave or DX, are encouraging and advancing radio in New Zealand. Doubtless the movement is educational. The clubs, in their own particular sphere, are swelling the number of license-holders and helping to create employment. Therefore, the more publicity the clubs receive, the more popular radio will become.

Each year sees more boys entering the field of radio. They are eager to learn and, by talking of what they know and what they hear, help to increase the popularity of radio. In this connection the Y.M.C.A., by means of their hobbies competition, are serving the purpose of not only encouraging an educational and useful hobby, but are helping radio generally.

The main object of the New Zealand Short-wave Club is the advancement and the betterment of radio in New Zealand. While we keep our members posted monthly with the latest news and lists of stations, we endeavour to assist all short-wave enthusiasts, especially those who are unfortunately out of work and those situated in the backblocks, where the mails may be delayed.

I have to thank the many who have written, also those who are reporting to the "Log" and "Record" short-wave page, for their notes, enabling us to check up information that otherwise might be missed.—Yours, A. B. McDonagh, Secretary N.Z. Short-wave Club, 274 Cuba St., Wellington.

Empire Broadcasting

A LONDON paper mentions "a report from a very reliable source that the B.B.C. is about to start important shortwave experiments. . . short-wave transmissions on 18 metres are being prepared at Daventry," as "they are feeling rather sore at the way their Empire broadcasting scheme has been shelved by the Colonial Office."

THE installation of "Masonite" throughout the walls of the 1YA studios is completed, and the station and transmission rooms are now being renovated. In addition to improving the sound effects greatly, the "Masonite" is also a noticeable improvement decoratively.

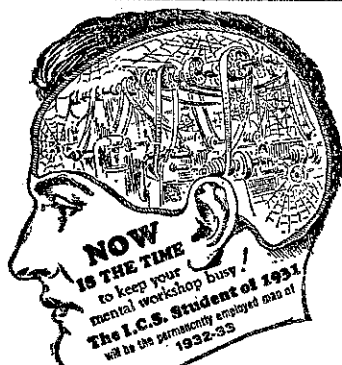
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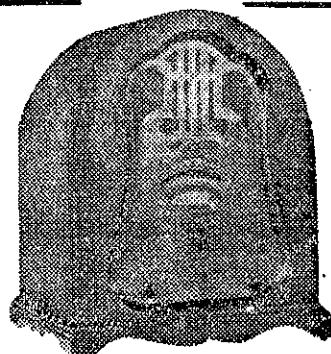
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