

A.: It is not necessary, but it improves the selectivity and cuts down the noise level.

Note: The 2-R.F. Browning-Drake occasions some people a little annoyance as far as neutralising is concerned, but with the addition of parallel-feed and by-pass condensers between "B plus" R.F. and earth no difficulty should be experienced. The writer has heard several of these sets that have been carefully built. They have been neutralised and give very fine results as far as sensitivity and tone are concerned.

#### Questionable Batteries.

I HAVE a two-valve all-wave regeneration set, writes "C. McF." (Dunedin). My "A" battery is new, but a 45 volt "B" battery has had ten months' use. Reception has weakened considerably of late.

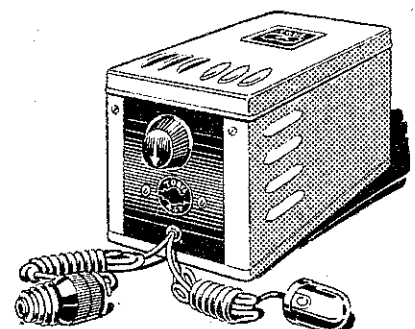
A.: Replace the 45 volt block and add another to make 90 volts. Examine the grid condenser and grid leak. If handy to a dealer, have the valves tested. Carefully examine the set for poor contacts between the valves and the sockets for corroded joints or terminals. Inspect the tuning-condenser for a short-circuit.

#### Tetrode Amplification.

WISHING to help a beginner with his first set, I would like you to answer the following questions concerning the Tetrode Crystal Set and Amplifier described in your issue of August 9.—"Kauspanka" (Hastings).

1. Would this set give good speaker reception at Hastings of the New Zealand stations?

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A.: This is asking rather much of a one-valve set. It should give good reception from Wellington and 'phone reception of the other stations.

2. Would a screen grid give better results and could this be operated on 22½ volts?—Decidedly not.

3. Would the amplifier for a crystal set from the "Listeners' Guide" give as good results?

A.: The two circuits are identical with the exception of regeneration added to the more recent set, which is the better.

4. Would a galena crystal be more sensitive to louder reception?

A.: Being more sensitive will be slightly louder, but would be very annoying when tuning.

5. There is no earth shown in the diagram. Is a connection to "A—" as advised in the "Record" the only one required?

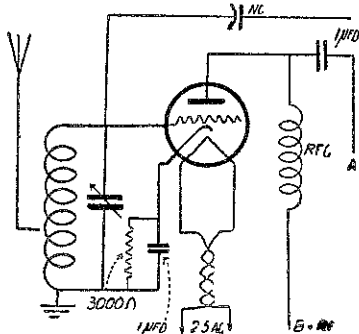
A.: It has been shown in the lay-out diagram, but unfortunately omitted in the theoretical diagram. Terminal No. 5 should be grounded.

6. Is a tetrode suitable for an R.F. amplifier?—"Yes."

#### Adding a Stage of A.C. Radio.

A. C.9" (Palmerston North) who owns a three-valve A.C. set, wishes to add another stage as a booster. He does not wish to alter his set.

A.: Accompanying is a diagram of such a booster, using the 227 type of valve.



Its construction should not present any difficulties.

#### Transformer Problem.

"N. D.P." (Southland) asks concerning power transformers:

1. Would a rectifier of an "A" battery eliminator rectify high voltage at approximately 400 volts, passing 100 milliams.—No.

2. Could a battery charger transformer be reversed to make a step-up transformer for transmitting purposes, providing a bank of resistance lamps were placed in series parallel to break down the voltage of the lines to that of the normal transformer secondary?

A.: A bright idea certainly, but unfortunately not a very happy one as far as the lighting bill is concerned. By this method, you are running to waste about five times as much electricity as you use. Construct a properly designed step-up transformer as per the "Listeners' Guide."

3. Which is the best way to rectify the current?

A.: For very high voltage two 281's, or their equivalents.

4. What is the drop occasioned in voltage by the rectification.

A.: With a valve as rectifier, it is very small. Take the difference between plate rating and output rating.

ON board the Graf Zeppelin there is a ciphering and deciphering machine to guard the secrecy of passengers' private messages. The machine sends a succession of letters unintelligible to anyone save the possessor of the deciphering apparatus. When the Zeppelin first flew over the Atlantic she used this machine to send private newspaper dispatches.

## Microphone Trials Wireless Wanderings

### For Aspiring Broadcast Artists

SINCE the advent of the Australian Broadcasting Company, it has been their policy to place the best available talent before the listening public, and, realising the stupendous task that lies before them in the lack of first-class broadcasting artists, they have recently inaugurated what they term a Trial Day.

This is a day set aside for aspirants desiring to achieve success in the realms of broadcasting, and every artist is given a trial to ascertain his, or her, suitability for the work. One of the greatest difficulties for intending aspirants to overcome, is for them to remember that softness is the keynote of successful broadcasting, as their performance is intended for the entertainment of listeners who are individually domiciled, and who are not members of one immense audience.

The studio is specially constructed for this type of work, having sound-proof walls draped with heavy black curtains to absorb echo, and prevent resonance. The only persons in the room during the trial are the accompanist and the artist. The sound is picked up by the microphone, amplified, and conveyed to the loudspeaker in the adjudicator's room, where the quality of the performance is judged. Those who are suitable are engaged, and those who show promise are invited to join the newly inaugurated Microphone class held once a week under the direction of an expert.

This commendable innovation will certainly materially increase the amount of talent at present available, and first-class programmes, with widespread variation, should result.

LIGHTS will soon be installed on all radio masts of the Radio Corporation of America to safeguard aviation. The corporation has previously refused to do this, but has now decided to spend £25,000 if necessary to install danger lights on its towers. This decision was come to in view of the exigencies of the situation, for the failure to light the thirteen 400 feet masts at New Brunswick has been a menace to all pilots flying the air-mail course.

BY the use of headphones and a specially constructed microphone, an experimenter has listened to the sounds made by grubs while devouring apples. It is understood that the noise they made in spitting out the pips came through at loudspeaker strength.

AT a meeting of Hamburg shipping companies it was stated that technical difficulties in the way of wireless telephonic communication with ships at sea had been removed, but there were still obstacles in the way of fitting passenger vessels with the necessary telephone apparatus on account of expense. Experiments are now being made with fishing vessels, and it is asserted that as the use of the telephone does not require any special skill, this will render unnecessary the carrying of a wireless operator.

NEW YORK taxis of the most modern class are now being equipped with a radio-receiver which is capable of receiving any programme within a radius of a hundred miles to the enclosed passenger compartment. The set is all-electric and operates on the battery of the car, which has been enlarged to "feed" the set as well.

RADIO is proving the rage in Russia. The Soviet is offering every encouragement by reduced fees and by the donation of free sets. In a little over a year the Soviet Government placed orders with the General Electric Company of New York for £120,000 worth of radio supplies.

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