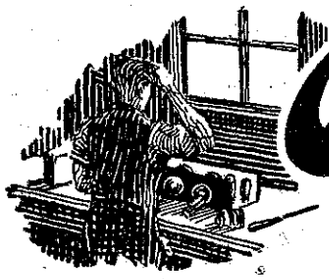


Questions and Answers

In Brief.

E.Z.C. (Palmerston North).—Broadcast band, 98 turns; 100-250 metres, 28 turns; 40-100 meters, 14 turns. Your condenser has a capacity far too large for short wave. Try .00025. See "Radio Record," August 23, page 30, 31.

Changing Valves.

"R. B." (Reefton), has recently inserted two non-American valves in his American receiver, and he finds that the set goes dead.

A.: These are the wrong valves, for they are designed for tuned anode coupling. Use 199's, and nothing else, in this receiver.

Valves Queries.

IS it possible that my valves, which I have been using for over two years, are not giving as perfect reproduction as formerly? asks "Valves" (Rodney).

A.: After 1000 hours the majority of valves begin to lose their emission. Some go considerably longer than this, but this is the exception rather than the rule.

2. What are the symptoms, apart from loss of volume, of valves losing their emission?

A.: The only symptoms are a general weakening of reception.

Motor Boating.

"R. V.S." (Waipukurau) asks the cause and remedy of motor boating, in a resistance coupled amplifier.

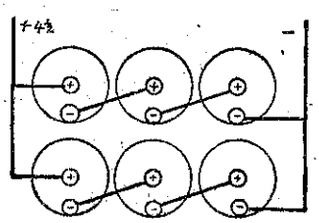
A.: Motor boating in resistance coupled amplifiers was fully dealt with in our issue dated August 16, 1929 (page 25).

Eliminator Output.

"EXPERIMENTER" (Auckland) raises a point in connection with an answer to "Question-Mark" in our issue of August 9, concerning the output of a Philips eliminator. The B eliminator has an output of 30-35 milliamps. at 150 volts. The A eliminator was stated to run four or five valves delivering 2 amps. This latter part of the statement is quite obviously a typographical error. The output is not definitely stated on these transformers, but would run out somewhere about 5 amps.

Dry Batteries for the "A."

"SCREENGRID" (Motueka) asks if dry batteries may be used for a three-valve set, the total A consumption of which is .18 amps.



A.: Use six dry cells in series parallel, as per the accompanying diagram.

Extension Speaker.

AT what distance is it possible to carry an additional speaker, asks "Interested" (Tolaga Bay).

A. Used with an output filter, a speaker can be used up to 300ft.

2. Would this affect the volume?

A.: Not appreciably.

3. Would an extra charge on the batteries be required?—No.

Battery Potential on Crystal.

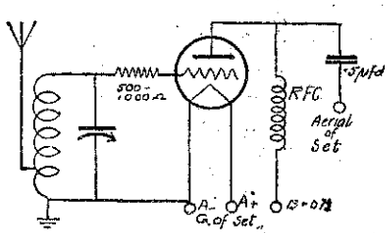
IS it practicable to add battery potential to a perikon type of crystal detector?—"Dector" (Wellington).

A.: No. Battery potentials are usually applied to assist the passage of signals through a carborundum detector. Other types of crystals are too sensitive.

R.F. Booster.

I HAVE built the R.F. booster, writes "A.G.F." (Dunedin), but cannot apply it to my kit set without the danger of blowing the valves.

A.: Construct the booster with parallel feed, a diagram of which is appended. This can be quite safely applied to any receiver not already employing R.F. stages. Where R.F. stages are employed, it will be advisable to increase the audio. This should materially add to the distance getting ability of the set, which, however, appears to be not normal.



Trouble with R.F. Booster.

"CONSTANTINOPLE" (Matamata) has made the R.F. booster with parallel feed, but cannot get good results.

A.: Insert a resistance between 500 and 1000 ohms in the grid lead of the booster. This will neutralise it and enable the filament to be tuned up higher.

Primary Cells as Chargers.

WOULD four or six Leclanche cells connected in parallel charge a 2-volt cell if it were connected for 18 hours every second day? We, in the country, are faced with the grave difficulty of getting our batteries to the charging station. I have seen quite a few cars disfigured by battery acid.

A: The Leclanche cell will run for about 20 minutes only without polarising, so that it will be unsuitable for charging an accumulator. If a battery were tightly corked and stood upon a piece of board, or better still, in a small box which were padded with some absorbent material, the difficulty could, to a very large extent, be overcome.

Electrolytic Rectifier.

I LISTENED to good advice, states C. R. McK. (Tauranga) and purchased an eliminator with an electrolytic rectifier. The liquid in these cells has thickened to a jelly, and the voltage has dropped so low that I cannot receive the Australian stations. Could I recharge with ammonium phosphate, or could I adapt the wiring so as to use the Ratheon valve? What should be the strength of this solution?

A: In this case, your good advice was bad advice. A cheap eliminator with electrolytic rectifier is less economical than "B" batteries. Your case is quite typical. All you can do is to empty out the solution and fill the pots with fresh saturated solution of ammonium phosphate, and if the electrodes are worn replace them. Keep the aluminium and the lead as pure as possible and float a thin layer of light oil on the surface of the liquid. It would not be possible to adapt the eliminator to use a Ratheon valve, though it might be possible to use the transformer in a half-wave circuit such as that described by Pentode a little while ago. This would not deliver a great amount of current.

Valve Combinations.

"M.D." (Canterbury), in his search for quality, has replaced the American valves in his American receiver with English power valves. He finds now he cannot neutralise the set, and voice is very much distorted.

A.: It is quite unnecessary to use big valves in any but the last stage. Their introduction into other stages causes the "B" battery to run down rapidly, or (if an eliminator is used) the voltage to drop. In addition, the windings of the transformers are saturated with current, and the distortion occurs. The grid swing to be accommodated by anything but the last stage valve is very small, and any general purposes valve will suffice. There are other considerations, such as matching and amplification that give advantage for special valves for special positions. For this reason the correspondent should have used three PM5's where he has used PM6's if he wishes to use this make of valve. However, in an American set we would strongly advise the use of a 201A valve or its equivalent. Certain makers are now turning out valves with exactly the same characteristics as these, and these only should be used to replace the American valve.

Strong Humming.

I HAVE completed the small eliminator described in the "Record" some time ago, but find a very strong hum present. How can I reduce this? asks "C.W.M." (Auckland).

A.: Insert another audio frequency choke, and by-pass condensor in the lead direct from the rectifying valve.

Strong Audio Howl.

ON testing my set, four valves with pentode in the last stage, a strong