

## IN BRIEF.

ZL 1AP (Te Awamutu): Thanks for the information, but the error has been previously corrected.

## Baffle Board for Dynamic Cone.

COULD you give me particulars regarding the size of baffle and cabinet, to house a dynamic power 6 volt D.C. unit. I have the unit, but am not sure of the dimensions.—E.K. (Lyttelton).

ANSWER: The dimensions were given in Vol. II, No. 24. The optimum size for a baffle board for the unit in use is 2ft. 6in. x 1ft. 10in. of 1in. timber. A cabinet can be made to house both speaker and set, the set being on a shelf above the speaker. The size of the cabinet should not be smaller than that specified for the baffle board.

## Leclanche Batteries No. 2.

I WOULD be grateful if you would give me information re above. I can purchase very reasonably sufficient Leclanche wet batteries to give 90 volts. These are the same as the New Zealand Government uses in 'phones. Would this B battery be any good for my 5-valve Browning-Drake? I am told that the amperage would be no use for radio. Would you advise wet battery?—J.A.M. (Dannevirke.)

ANSWER: In Vol. II, No. 25, "Pentode" went to some length to explain the construction and the operation of primary batteries, of which the Leclanche cell is a type, and the correspondent cannot do better than to refer to this article. In answer to the questions: Yes, such a battery of cells could be used for the B battery, but there is the factor of maintenance and bulk. These cells require a fair amount of attention, especially because

of corrosion, while five dozen would require approximately eight feet square of space, a factor to be considered. These two factors would have to be balanced against the greater service, for the very small current draw would render them very efficient as far as length of service was concerned.

Actually, a "dry" battery is composed of Leclanche cells with the liquid concentrated into a paste. While the size of each cell is necessarily reduced to allow of a battery of reasonable proportions being constructed, the voltage remains the same, i.e., 1.5 volts per cell. Reduction of size means reduction of ampere hours or life of the battery, so that one would expect the batteries made to supply the greatest drains would be the largest. This is actually the case in the A, B and C batteries. The A cell most nearly approaches the wet Leclanche in point of size, and is so made to withstand the greatest amperage drain. The B is next in point of size per cell, while the C, which has but little drain, has the smallest cells. This explains the varying sizes of B batteries, e.g., heavy duty, etc.

In short, the advantages of the wet battery is its greater life and capacity but this is offset by the greater attention and space it requires.

## Signals Very Weak.

AT present I am working a five-valve set and am getting very poor results. It is very well situated, the aerial being on a hill overlooking the sea. The masts are 110 feet apart and 50 feet in height. Station 2YA is the

## Questions and Answers

best, and 4YA I cannot hear at all, though situated in the South Island. The Australians I can hear only on the 'phones. The batteries are quite in order, as I have had them tested. What type of set do you think would give the best results and what is the optimum height for the aerial, and what kind of wire should be used? 2YA has been great lately. Would it be possible for the announcer to give us the results of the Test cricket after the clock chimes eight in the evening. The Wanganui relay was perfect. Are we going to hear Dalton's Orchestra again, and when? They were great last week.—"AMATEUR."

ANSWER: Apparently there is something in the set which is not performing up to scratch; possibly there is a burnt out transformer. A case of signals being considerably weakened through this and other associated causes was related in our "Beginner Corner" a week or so ago. A systematic overhaul of the set is recommended, and this should be proceeded along the lines suggested by "Pentode" this week. The Australian stations are very weak at this time of the year, but it appears that there is more than this wrong with the set. To recommend any set and say that it would be capable of daylight reception of any station or stations would be making a claim that would be very difficult to substantiate. Usually a set with a radio stage of screen grid, and a pentode or two power valves in push-pull, will give very good results, providing it is carefully constructed. Pentode will describe such a set in a future issue. The question of aerials was dealt with in our special issue, and the correspondent could do no better than to procure a copy of this issue if he does not already possess one. The reference number is Vol. II, No. 22.

## Slope of Aerial.

MY aerial is suspended between two 30ft. masts. I am thinking of raising the end mast another 10ft., thus having a sloping aerial. Would you advise me to do this?—N.L. (Miramar).

ANSWER: The optimum arrangement for the aerial is to have both ends equally high, but where it is not possible to raise the lead-in end to any great height it is wise to raise the other end as high as possible in order to compensate for the lowness of the lead-in end. In no consideration should the distant end be lower than the lead-in end.

## Neutralising With 2R.F. Stages.

I BUILT two stages R.F., described by "Megohm" in "Radio Record" issue of May 25, 1928. I cannot stop the R.F. valves from oscillating. I have tried different capacities of neutralising condensers and have reduced the number of turns on primary, but all to no advantage. The valves in use are 201A in R.F. stages and Phillips 615 in detector. I have reduced primary from 15 to 12 turns and I have 15 turns on the tickler. Could you please offer a suggestion to help me?—C.H. (Christchurch).

ANSWER.—This correspondent is not alone in writing in to ask for help in the neutralising of two R.F. stages

receivers, so we feel some justification in treating the question fairly fully.

The first consideration is the valves, and in this respect the correspondent has erred. Reference to the notes of Mr. Fear's lecture before the Wellington Amateur Radio Society will show that the valves used are rather unsuitable for the radio side of such receiver as the 2 R.F. Browning Drake. The 201 type of valve is expressly stipulated by the makers to be a detector or amplifier, and has an internal resistance rather too low to be suited to the position given to them by the correspondent. In general a high impedance valve such as the 119 type should be used. Suitable valves were suggested by Mr. Fear and published in our issues of October 19 and 26, which the correspondent would be well advised to refer to. Reference to these notes will show that he has the wrong number of turns on the tickler. The 201 valve requires 17 turns, while the 199, 25.

As to the method of neutralising the usual balancing operation should be used, that is, the Rice method. Another suggestion is to take the grid return from the first radio frequency transformer through the r.f. choke to a biasing battery of 3½ volts. Each valve should be neutralised separately.

## Noise in Receiver.

Could you enlighten me in any way as to the cause and correction of the nuisance which I have experienced with my set from time to time, not very regular. I have a three-valve set, about five months old, batteries all O.K. The noise sounds like a planing machine in some timber mill or very loud beam wireless.—I am, etc., PUZZLED (Auckland).

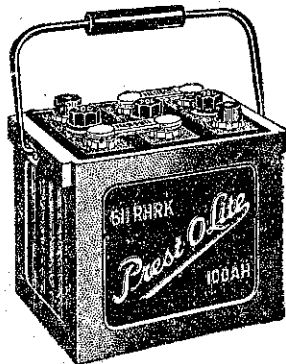
ANSWER: It is quite likely that the noise is originating outside the receiver and it sounds like a power leakage. The correspondent should ascertain whether any of his neighbours are having the same difficulty in which case it is for the district engineer to settle. However, if this is not the case, the correspondent would do well to overhaul his set as "Pentode" describes in this issue. It is quite possible that the grid leak or the grid condenser is at fault. Were the grid leak the trouble a "motor boating" effect would be the result. This would give a noise or series of noises in the speaker resembling the undulations on the exhaust of a motor-boat. All the grid returns should be checked for breaks or imperfections.

## Capabilities of a Four Valve.

WOULD a four-valve regenerative set give me good speaker strength from the American stations, providing I have a good aerial and earth, and 112 volts on the plate? Would I get speaker strength from the Australian stations if I used a loop aerial?—"GRID" (Blenheim).

ANSWER: It is impossible to say what a receiver will do; so much depends on the components used and the handling the set is subject to. It is quite possible for a radio owner in one locality to get Japan on one valve, while for another with three valves it is an impossibility. It is very doubtful, however, that a loop aerial will give the Australian stations on the loud-speaker. Watch the DX notes, as quite frequently the types of receivers used are described and the locality is always given.

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