Questions and Answers

Intermittent Reception.

F.W.W., Auckland, writes: "My receiving set, made by a wireless expert, has been giving me excellent results for the last six months. I have recently replaced the batteries, putting in heavy duty for the light duty type. The reception comes through clear, but with a hissing noise, which fades away, to return with great volume."

ANSWER.—It appears that there is a faulty component in the set, probably the transformer. Test this by the 'phones and battery method, at the same time check over all the wiring and the rheostat by this method. Test the C battery.

Accumulator Gives Short Service.

A.J.M., Marton, writes:—"I am the owner of a 6-valve set, and wish for information concerning the charging of my A and B batteries. I use a reliable charger, but find that it has formed heavy deposits on the plates, and the space at the bottom of the cells is entirely filled with silt. The battery does not hold its charge. The B battery seems to be going the same way."

ANSWER.—It appears that the deposit is causing a short circuit The deposit must be cleaned out. Shake up the accumulator, and empty out its contents. Now fill it with distilled water or rain water, shake up again, and tip out. Repeat this process until no more silt is found to leave with the water. Refill with distilled water, and sulphuric acid at a density of 1.25. The battery should then hold its charge. Much light was thrown on this subject by an article in the "Beginner Corner" some few weeks back. The correspondent would be well advised to turn up this article, as it will probably help him in his troubles.

A.W., Rotorua, writes complaining that his battery will not hold its charge for more than two evenings' programme.

ANSWER.—Here it appears that there is a short circuit. Silting such as the above correspondent complains of may be taking place, but at the same time some foreign body may be inside the battery, and be causing a short circuit. Portion of one of the plates may have fallen loose, and similarly causing a "short." The case is one for a battery expert, but the correspondent will be well advised to try the remedy suggested to A.J.M., as the trouble may be really quite simple to locate.

Set Difficult to Neutralise.

R.D.P., Dunedin, writes complaining that his 5-valve neutrodyne set, using commercial coils spaced round on a celluloid former, is difficult to neutralise.

ANSWER.—It is evident that the coils are too efficient. There is not enough loss, and some of the energy is re-radiating. There are two solutions, first, completely shield the receiver. Within the next fortnight "Pentode" will describe a fully shielded 5-valve neutrodyne receiver, which will use commercial coils. Neutralising here will not be difficult, because of the shielding. The details to be given by "Pentode" will be applicable to the set owned by the correspondent. Second, place a 2 to 3 thousand ohm resistance in the grid leads of the radio frequency valves.

The Baffle Board.

G.L., Otago, writes:—"I would be much obliged if you could give me information regarding the baffle used in connection with the dynamic cone loudspeaker. I have a baffle of the standard size, and wish to construct my set behind this and near the speaker. Will this work all right, or will the vibrations from the speaker interfere with the set?"

ANSWER.—Providing the speaker is not closed in at the back, everything will be all right. At the back of the speaker there must either be an opening, or a mesh, so that the sound waves may have free access. The set can be built on a shelf over the top of the dynamic cone speaker.

Dead Ends.

TWO correspondents, "N.D.C." (Auckland) and "H.G.U." (Christchurch), complain that they are unable to bring in stations on low wavelengths. In one case difficulty in bringing in 3YA on 306 metres is encountered, while in the south, 3ZC cannot be brought in. In each case, aerial and earth equipment is quite good.

ANSWER.—It would appear that the aerial coils in both cases are too long, with the result that the higher frequencies cannot be brought in. Again, the tuning condenser which controls the first coil may be of too small a capacity. Nothing smaller than .0005 should be used to cover the broadcast band. The suggestion then is to reduce the size of the aerial coil and use a .0005 condenser.

Fluctuations in Main Current.

I HAVE bought recently a 6-valve all-electric set and an expensive dynamic speaker. I am getting fairly good results, but think that perhaps they may be improved upon. Sometimes when the set is in operation the volume will begin to fade and the music or speech will become distorted. This is not an ordinary fade. The signals never fade right out, and the distortion and fade never lost more than a few seconds. I know practically nothing about radio, but think that this might be caused through fluctuation of the power in the A.C. mains. The firm from whom I bought the speaker (6-volt with rectifier) suggested that if fluctuation became a nuisance I should float 6-volt A battery across the speaker. Is this right?—NEW CHUM (Foxton).

ANSWER.—The trouble is most likely caused through fluctuations in the voltage of the power, and the best course for the correspondent is to lodge a complaint with the Power Board. If he puts his case before them and ask that the power from the mains be tested with a high-quality volt-meter while his set was operating, he could check up his reception with the voltage as registered by the meter. If it were noticed to fall as the station faded out, he could take it for granted this was the cause of his trouble. A 6-volt battery across the speaker would have the effect of making up for the deficiency in the current due to fluctuations, but care would have to be taken that the rectified current registers 6 volts.

Regarding Short-wave.

E.A.McP. (Owaka) asks regarding a short-wave receiver:

1. Could Ferranti AF5 transformers be used?

ANSWER.—By all means. The AF5 is a good class of transformer.

2. Would it be an advantage to use A415 in the detector socket?

ANSWER: Particularly with the short-wave set, it is difficult to state any one valve for the detector. The great point is to get smooth reaction control, and this is governed by the detector valve in use. A415 gives high magnification, but its effect on reaction cannot be stated without it having been tried in the particular circuit, and under the circumstances more applicable to the case in point.

3. Could double grid valves be used as audio amplifiers?

ANSWER.—Not satisfactorily, although some good circuits have been tried out with these valves. They are more suitable as single stage amplifiers for crystals, as they are unable to handle great volume.

4. Could 'phones be plugged in after the first audio valve, and, if so, would an out-put filter be necessary to reduce body capacity?

ANSWER.—The first half of the question may be answered in the affirmative, and the second in the negative.

5. Could you let me know the firm making the condenser connectors?

ANSWER: Ganged condensers for short-wave reception are altogether unsuitable, and at the present time condenser connectors are rather hard to obtain. The coming season may see more of them on the market.

A Trickle Charger for Batteries.

A.J.M. (Wellington) asks for details of how to make a trickle charger for B batteries. He wishes to use the electrolytic method of rectification.

ANSWER: This is the most unsatisfactory type of rectification for B batteries. It is rather "messy," and the electrolyte needs a great deal of attention. In the "Listeners' Guide," which will be published within the next five weeks or so, there will be a special chapter which will cover the construction of transformers, for battery chargers, eliminators, etc., in a most comprehensive manner, and we can do no better than refer our correspondent to this if he wishes to construct a charger.

2. Could you give me the size of the coils for a short-wave set to tune from 15 to 40 metres? They are to be tuned with a 00025 condenser.

ANSWER: Two coils will be necessary. To tune between 15 to 30 metres, wind 3 turns on the secondary and 4 on the tickler, while to tune between 30 and 45 metres 6 turns will be needed on the secondary and 5 on the tickler.

Tuning with a Loop.

I WONDER if you could put me right as regards a little trouble I am having in trying to operate my set from a loop. The set I am using is one of my own construction, employing two stages of S.G.R.F. and one of A.F. The