

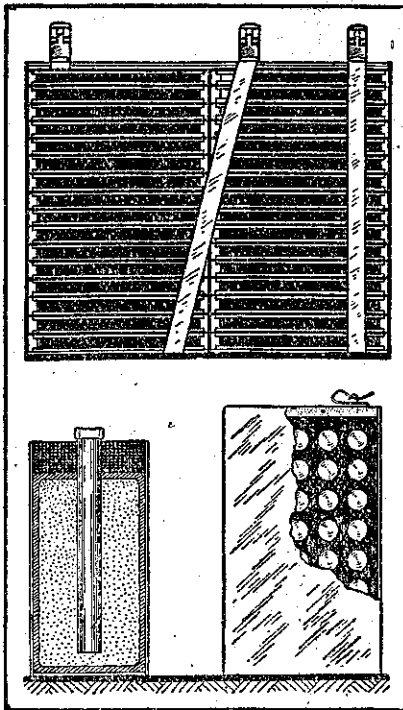
cates where the negative of the "A" battery charger is to be connected. In other words, there should be four columns of cells. Never let a wet battery run anywhere near flat, as considerable damage will be done.

Dry batteries work on a principle entirely different from wet batteries. It has been found that certain chemicals and metals if combined in a certain way will force an electric current through a circuit. This knowledge has been made use of in the dry battery. Dry batteries are a type of wet cell, but different from the storage battery. The individual cells of a dry battery each deliver one and a half volts. The amount of current which such a cell or collection of cells can deliver depends upon the size of the cells themselves. "C" batteries then are made up of small cells, "B" batteries of larger cells, super "B" batteries have larger cells again. In the layer built battery the cells have been done away with and the chemical elements are arranged in layers. By doing this much space can be saved.

There is another type of battery which we shall only touch upon, and that is the air cell. This works upon an entirely new principle, and these batteries are admirably suited to low voltage valves requiring a small current. They last for some two years.

Batteries are grouped in three classes—"A," "B," and "C." We shall explain in the paragraph dealing with valves the function of each one of these, so we shall not anticipate that section.

Here are a few hints concerning batteries:—

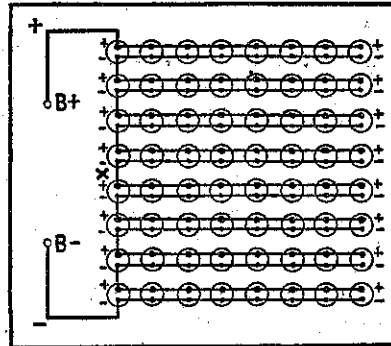


Sections of a layer-built and an ordinary "B" battery. Of the latter, each cell delivers 1½ volts.

1. Treat wet batteries with respect and care. The plates are made up of very small pieces of lead which can be shaken from the grill holding them. If a piece of lead comes loose it is likely

to cause an internal short circuit and ruin the battery.

2. Always see that the "B" battery is large enough to supply the current it will be called up to do. Rather, be over-sized than a little under-sized. When your "B" battery begins to sweat



it is an indication that it is nearing the end of its useful life and must be discarded.

3. Do not connect an old battery with a new one, hoping to drain the last out of the old battery. You will surely spoil both reception and the new battery.

4. If you hear a crackling in your speaker and the battery is old, you can take it for granted that it needs to be renewed. Sometimes a 1 mfd. condenser connected between B plus and B minus will cut out some of this noise, and so extend the life of the "B" battery.

5. Do not let the level of the solution in a wet battery fall below the level of the tops of the plates. If this happens

## Wavelength Calibration

THE following is my experience in attempting to calibrate my receiver, thus enabling me to locate stations, previously unheard, first of all from a graph. I found after much experimenting that the wavelength of any station, multiplied by 2/7, minus 44, gave me the dial reading for that station. My three tuning dials (on a five-valve battery set) range from 0 to 100 degrees. The following are a few examples:—1YA, 329 m., works out to 50 degrees on my set. It comes in at 50½. 4QG, Brisbane, 395 m., works out at 69. On my set it comes in at 69. 2YA, 416.4 m., gives 75 (nearest whole number), while on my set it comes in at 74½.

Below 2UE (40, 40, 40 on my set), the numbers vary, and the calculation does not therefore apply. This is mainly due, I expect, to there being three dials on my set. In an endeavour to pick-up my first American I made the necessary calculation, and tried KGO, San Francisco. I heard it almost immediately. KGO, 380 m., works out to 64½, which is the reading at which it comes in. The subtraction number would vary on receivers of different makes (using 0 to 100 divisions), but the scheme is still workable. For instance, where XYZ might find his dials read 66 for Brisbane, instead of my 69, he would obviously subtract 47, not 44, as with me. Curiously enough, no other fraction I have tried will produce the even results that 2/7 does. I discovered it purely by chance.—"Northern Enthusiast" (North Auckland).

fill the battery up again with distilled water, or, if this is not obtainable, with rain water collected in an earthenware vessel.

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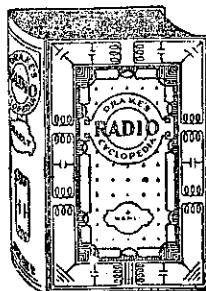
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