

Disconnecting Batteries.

HERE is a little story with a moral: Two youthful radio enthusiasts, entering the shop of a well-known radio expert, asked for five valves. As the dealer had supplied their set, he knew they were not constructors, and asked if they had had a mishap. "Oh, no! the valves just went out. Father is sure they are done, they have been giving service for six months now."

The dealer was doubtful, and cross-questioned the purchasers, but they were quite confident the valves had just burnt out. So a modest £4 was paid for the five new valves—the boys went away thinking of the enjoyment they were to share that night.

They had been advised to have their receiver tested before inserting the valves, but, disregarding, they put in their valves and turned on the switch.

A flash lit the cabinet—£4 "gone west." A lesson bought is a lesson taught—this time the set was taken to be tested—a by-pass condenser had been burnt out, and had caused a short. That was all, but at what a cost it was discovered. But what was the reason?

An "expert" had told them to disconnect their B batteries in order to prevent leakage through the valves when the set was not in use. This they did, but somehow the leads became confused.

If the set is provided with a switch it will cut out both batteries. If the rheostat is turned off the result is the same.

A New B Battery.

REFERENCE has been made to the value of testing the cells of the B battery for crackling. The difficulty has been that most blocks jump from the negative to 16½ or 22½ volts, and one cell defective ruins the block. A new block, obtainable from Messrs. Lawrence and Hansen, has appeared. It is prepared specially to allow of the meeting of this difficulty. The battery can be very simply taken apart and each cell tested—a defective cell can be replaced or bridged over.

Closing Down.

WHAT would be the effect of endeavouring to stop a car by jamming on all four-wheel brakes without first turning off the benzine? Imagine,

then, the effect of switching out your set when it is going "t top." Valves injured, transformer windings burnt out—a host of troubles arise from lack of this precaution. By turning off the controls marked "volume," "rheostat," the set is gradually steadied down, just as a properly-treated motor-car.

Volume Control.

VOLUME control, especially when a multivalve set is used on the local station, may to the beginner present serious difficulties. Loud music is usually distorted, and if this is tolerated one's ear is abused, and radio condemned. Of the methods of reducing volume, the simplest, perhaps, is to disconnect the aerial. This will be found most effective in all but with a shielded set. Here the shielding prevents the coils receiving the waves.

Disconnecting the earth may be effective, but is liable to cause distortion.

Use of a Crystal.

ANOTHER very satisfactory method of controlling volume is to employ a crystal (permanent is most satisfactory) instead of the radio frequency (H.F.) valves and the detector. For anyone who knows something of a set, such a device could be easily fitted. This could be switched in at will.

The effect then would be that of a two or three-valve amplifier with a crystal. Splendid results have been accomplished by this simple device, but for the novice disconnecting the aerial is recommended.



Insulators.

AN owner, who had for some time operated his set satisfactorily, removed from his place of residence. Although he came nearer the station he found on setting up his set that his volume on all stations had decreased considerably. The difficulty was discussed by many—none could offer an explanation, till a relative—an expert—came to his aid. Briefly looking to the set, he satisfied himself that nothing was amiss, but on going out of doors the trouble was obvious. The aerial and the staywire passed through the same hole in the insulators, while the lead-in passed through the other. A few moments rectified the mistake.

An insulator is provided with two openings, one for the stay wire, the other for the aerial. Care should be taken that they do not connect—that is the reason of an insulator.

In erecting an aerial it should be noted that the stay wire passes through the opening farthest away from its point of attachment to mast. Similarly the aerial should pass through the opening nearest the mast. This allows the aerial and stay wire to pull into the centre of the insulator, instead of in the opposite direction. This prevents the insulator from snapping.

Weighting the Aerial.

THOSE who erect their aerials in windy places (e.g., Wellingtonians) will do well to arrange that the aerial wire is weighted so that it may give in a heavy gale but not unduly sway.

This can be best effected by passing the aerial stay wire through a pulley and down the mast, weighting the end by several pounds (a sash weight). Care must be taken to ensure that this is well insulated to prevent contact with the aerial. A glass insulator is probably the safest, though the ordinary porcelain ones are quite satisfactory.

Ascending the Mast.

THE Fijian who scales tall smooth trunked trees by the aid of a rope passed round himself and the tree has set an example to radio owners.

Just recently someone, evidently inspired by the dusky savage, was seen ascending his mast by this means, but he used some of the refinements of civilisation. A bag was slung over his shoulder containing short lengths of timber, nail and a hammer. With these a ladder was being constructed "en route," but the added precaution of a rope was being taken.

Watch Guy Ropes.

ROPES do not make ideal stays, but where employed should be constantly watched, as one rough night may bring the mast down through the guys breaking. This usually happens when an extra special programme is on the air.

Cases of this happen quite often and are decidedly annoying.

Silent Night.

IN a certain Wellington home the wireless is the feature of the day—or night. Only a simple receiver is used—its limit being 2YA. Failure causes disappointment from the youngster who wants to hear the bedtime stories to the head, for whom the news (especially the sporting) is of paramount importance.

The set had for some time been functioning well, but just occasionally the crystal had given trouble.

But one day it wouldn't go! The family radio man was not due home for some time, so the younger female members tried their hands. The crystal was taken to pieces, brushed, put together again, the aerial and earth reversed, likewise the speaker terminals. One or two battery connections were altered—but still no sound.

In desperation they awaited their radio man. At last his footstep—now all would be right.

Amidst the chorus he learned that the set would not go. On opening the cabinet he saw the reason. A few minutes put the connections right and adjusted the worn crystal, hoping at least for weak reception, for the crystal was badly damaged, but still no sound. Batteries were tested, the aerial examined and the valve tested—all O.K. What a puzzle—then a brilliant suggestion: What was the day? Wednesday.

Crackling in Reception.

QUITE frequently static is blamed for this annoyance, but it may be caused by any of the following:—(1) Loose B battery connection. (2) Dirty connections. (3) Exhausted cells in the B battery. One defective cell in a block of 50 volts may cause considerable annoyance. (4) Exhauster C battery.

It is advisable on purchasing a set to learn which is which among the batteries, and where they are connected. Armed with such knowledge the owner can do a great deal of his own trouble tracking.

Testing Batteries.

FOR good reception the testing of batteries is a necessity. A voltmeter is almost an essential, but in many cases a torch bulb will do the job even better than the voltmeter. Where a B battery is tapped at frequent intervals and provided with a wander plug, the 3½-volt bulb is an efficient means of tracking down a faulty cell, e.g., one that is causing crackling. Batteries tapped as indicated are usually provided with taps every three or four volts from the negative.

To test such a block it is necessary to bind a piece of wire (fuse wire is excellent) to the screw portion of the bulb base, and to place the bottom of the bulb in contact with one of the taps and connect the wire with the adjacent one. If it lights brightly and remains bright the cells in that locality are in good order. If, on the other hand, the lamp lights die away, it can be presumed that a cell lying between the two taps is defective. These should be permanently bridged (connected with wire), and it will be found that the block will again work faithfully.

Disaster to the lamp will be the result of testing more than two adjacent taps at once.

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