

The Proximity of Aerials.

2FB (Northland) writes: "Would two aerials crossing one another affect one another?"

The effect, if two sets of equal strength were connected up, would be to weaken the signal strength of both, one acting as a blanket to the other.

If a stronger and a weaker set were each connected the strong set would become slightly weaker and the weak one stronger. The explanation lies in the fact that a set to receive signals must oscillate and these oscillations go on the air. If the set is correctly neutralised these will not interfere with other sets except as in the case just mentioned. The set on each aerial must be tuned to the same frequency, that is to the same station. The oscillations from the stronger set are picked up as well as the original signals from the station and further amplified.

A Corner for Beginners

— By Observer —

Signals Becoming Fainter.

"I HAVE a No. 2 Brownie crystal set which has been working all right till a few days ago—now it can hardly be heard, sometimes not at all, while on a wet day it works wonderfully." The writer then adds that aerial, earth, phones, crystal and cats whisker are all right. However, this last statement

is open to doubt, for what else could there be to go wrong? The clue seems to be in the last few words quoted—wet weather.

Water is a good conductor and if a poorly insulated aerial wire touches anything wet running to earth the signals are lost. Conversely, if water, or something wet, comes between two ends of a broken wire the ends become electrically connected.

Applying this idea to the problem, it would seem that either the aerial or the earth wire has broken within the insulation and that during wet weather the insulation, becoming wet, acts as a conductor. If it is rubber covered the rubber would have to be broken to admit the water.

Again the connection between the ground wire and the ground may have become corroded and only when water soaks between the clamp or wire and the ground is there a connection. The earth, too, may be in a dry place needing watering. The connection between the lead-in and the aerial may be corroded, and the same may be happening as was suggested with the earth. This connection should be soldered. It is then impossible that such a phenomenon should occur.

It is fairly evident that the trouble is a faulty connection outside. All these should be carefully examined.

Economical Valves.

THE next query concerns the duplication of a 6-volt storage battery by four 1½-volt dry cells. The valve used was UV200, requiring 1 ampere of filament current at 5 volts and 22½ volts plate. To use dry cells for this valve would involve a great expense—the consumption being so heavy. It is doubtful, given the 22½ volts plate, if anything better than the double-grid valves can be recommended. There is a splendid valve, "Micro-Bigril," which may be difficult to obtain, but which gives splendid results with a consumption as low as .06. Philips make two double-grid valves in the two and four volt series, A241 and A441, which should give good results with low plate voltage. They, too, are very economical.

Indoor Antennae.

"WHAT is the best indoor antenna (aerial) for a crystal set, and what range would this set have with a one-valve amplifier?" A new indoor antenna was described on page 28 of "Radio Record," October 26, 1928. This should be worth trying and reporting on.

Other indoor antennae are: Wire wound round the wall, across the ceiling, or under the carpet, or an antenna similar to an aerial (outside antenna) strung in the roof. None of these latter are as good as an aerial.

As for range, users of a crystal and one-valve amplifier should not expect more than the local station, particu-

larly if an indoor antenna is to be used. A little while back Australian stations, at loudspeaker strength, were reported from a crystal and two valves, but this is not the rule, and nothing but the local station should be expected from such an outfit.

Concerning Push-Pull.

ANOTHER correspondent, W.P. (Dunedin), asks several questions regarding push-pull amplification. Readers are referred to the constructional article by "Pentode," regarding this method of amplification, but the following are relative here:

(1) "Are there any disadvantages, or objection, to 'push-pull' L.F. amplification?" No.

(2) "Can 'push-pull' transformers (with five terminals) be used as ordinary ones—in their proper places by ignoring the centre tappings?" Yes—but the volume is not so great as if an ordinary transformer were used.

(3) "Would 'push-pull' be all right in last stage of the 'Browning Drake' receiver in 'Radio Listeners' Guide'?"

This method of amplification, used instead of the final audio valve would give additional volume and greatly improved tone. It is well worth while embodying this method, especially where only 120 volts are available for the final valves.

(4) "If two 2-mfd. condensers are strongly recommended in a circuit using B battery, are they necessary, or advisable, when using B eliminator?" No, they are embodied in the eliminator.

(5) "Is it characteristic of the B-D. circuit that it is harsher in tone than other four-valve circuits, or is it due to home construction?" There is no reason why B-D. should be harsh, especially if the push-pull amplification is used. According to Mr. C. C. Fear, a local authority, they are unequalled for volume and tonal quality. Home constructors are liable to cause harshness by having an unsuitable valve in the final stage. A power valve with anything up to 400 volts plate (at least 150), or push-pull is an essential of good tone.

Paralysed Valves.

C.C. (Pukekohe), writes asking advice on the following:—"Due in some cases to misuse, such as, for example, the use of too much 'A' battery, and in other cases the result of many months of service, 201A valves become paralysed, either wholly or in part. This paralysis is generally shown by a gradual weakening of signal strength, although the batteries appear to be at normal strength. Before throwing away these valves it may be as well to try the effect of rejuvenating them, which can be done in a very simple way. The only materials required are a UX valve socket, an old 'B' battery, and two short lengths of wire.

"The valve is placed in the socket, and two wires from the filament binding posts are connected across 22½ volts on the 'B' battery for a period of 45 seconds. The valve is then taken from the socket and replaced in the set, from which the 'B' battery has been disconnected, and the filament rheostat is turned on full for a period of about ten minutes or longer.

Great care should be taken to see that the valve does not remain connected across the 22½-volt battery more than 45 seconds or it will be burned out. An old valve rejuvenated in this manner will frequently give as good results as a new one."

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