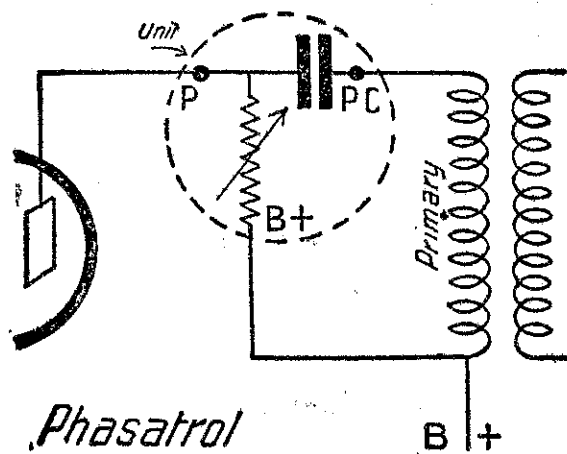


necessary to find out the correct position of the detector by reversing it. Only one side of the switch would then be required.

Complete units comprising the crys-



tal, potentiometer, by-pass condenser, and dry cell can be purchased at the dealers.

Notes on the Frequency Test

IN the past two issues the writer has pointed out in a general way how constructors may get upon the track of lost tones, high or low, in their receivers. At the same time, one or two other matters connected with good reproduction were mentioned because they are the subject of many inquiries by correspondence. Quality reproduction is what we are all striving after, and whilst improvements are being made with a special object in view, very frequently improvements can be made simultaneously in another direction.

Special note should be made of the fact that the loudspeaker is not always to blame, and before it is changed the receiver itself should come under careful scrutiny. As a rule, the chief causes of lost or under-amplified notes will be found in the audio system, including sometimes the speaker.

Judgment of quality and tone depends very much upon one's musical ear, so that there is room for very wide divergence of opinion between two persons, apart from individual preference for certain types of music. Very fine reproduction is possible, but not always easy of attainment. Nevertheless it should be the aim of every constructor to continually alter and improve the receiver with a view to approaching nearer the goal.

Judge carefully the sound of music and speech delivered by the loudspeaker. Is it free from "wooliness," tinny, or raspy tone, and are all frequencies from the highest violin and cornet notes to the deep notes of the pipe-organ naturally and pleasingly reproduced? Hearing reproduction from other receivers, that is, good ones, is a help as hearing a receiver with a tone and range better than one's own, at once supplies a standard to aim at for the meanwhile, and the higher that standard the better.

Helpful hints on the subject will be continually published, and at an early date it is hoped that particulars will be published of a high quality amplifier.

Charger Transformers.

WHEN making transformers for battery charging purposes an essential point is the tight packing of laminations. Any looseness will make itself heard by an objectionable "rattle" or rough hum, which may cause a suspicion that something more serious is amiss. A liberal coating of shellac on the laminations fulfils two useful purposes: firstly, the prevention of eddy currents in the core, and secondly the deadening of mechanical rattle. Correct arrangement of the clamps and tightening screws will do the rest, provided the laminations are carefully packed tight inside the spool containing the windings.

Tinfoil Fuses.

A CORRESPONDENT who has used tinfoil fuses for some time calls attention to the fact that some cigarettes are packed in foil that is not suitable for fuses. The sample enclosed is of a hard, "rattly" type, resembling aluminium, with embossed striped pattern. Constructors making this type of fuse should see that they use the soft, or real tin or lead type of foil.

Indexing Constructional Articles.

AS soon as time permits, an index to the main constructional articles, etc., will be printed in the "Record" to facilitate looking up back numbers.

A Useful Catalogue.

FROM Wiseman's, Limited, Auckland, a well-printed catalogue has been received. The well-known Atwater-Kent receivers are listed and described. A description of the New Zealand-built "Courier" sets deals with receivers from one valve up, including a 4-valve high and low wave. A general list of components, eliminators, chargers and sundries completes the catalogue, which intending purchasers would do well to obtain.

B Battery Resistance.

AN old, run-down 80-volt B battery may have an internal d.c. resistance of over 1000 ohms compared to 4 ohms for a new battery. No wonder an old battery can cause unsatisfactory reception. The d.c. resistance of a B accumulator is almost negligible, though the a.c. resistance may not necessarily be so. The advantage is that it remains fairly constant.

Noisy Reception.

IF reception is marred by crackles and noise, and the set is suspected, disconnect the aerial, and if the noises are still present, the receiver is the culprit. To test for faulty connections or loose joints, pound the table with the fist, lightly, and listen. If the noise is affected, carefully touch around the internal wiring points, wobble the valves in their sockets, listening all the time. This will locate bad connections. Clean valve legs with glass-paper occasionally. If the trouble is not located, it may be caused by the batteries, broken-down audio transformer winding, or numerous other things.

Insulated Wire Supplies.

LARGE stocks of insulated wire for radio and electrical purposes are carried by the Lawrence and Hanson Electrical Co., Ltd., 35 Lower Cuba Street, Wellington. The firm also specialise in the well-known Sterling loudspeakers several patterns, including the popular "Baby Sterling."

Tips and Jottings

Short-Wave Tuning.

LISTENERS who find difficulty in tuning their short-wave sets can make matters easier by using a dial of higher ratio than that at present in use. A variable condenser of .0001 capacity is often used to facilitate tuning, but if substituted for one of larger capacity would alter the number of turns required on tuning-coils, and would also necessitate an extra coil or two.

Audio Volume Control.

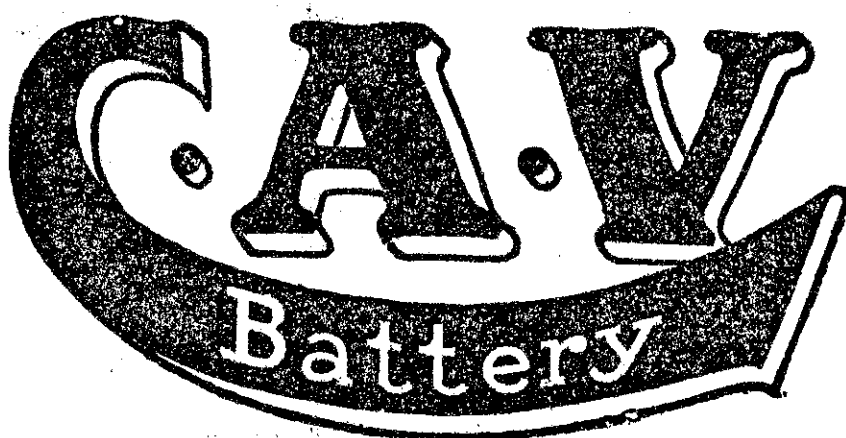
CONTROL of volume by means of a variable resistance across the speaker leads or any part of the audio system is very unsuitable for a receiver capable of giving good volume. If signals increase, the detector is overloaded, and distortion occurs, and no amount of reduction by shunting the audio output will remedy matters. The R.F. filaments are the only ones to use for volume control, and they should not be dimmed too near the point where distortion begins.

Request for Reflex Circuit.

A CORRESPONDENT sends in a request for articles on the crystal-reflex type of receiver. As a general rule this type of circuit is not a success for home construction, and was developed when valves were £2 each, on the score of economy. Greater satisfaction will be gained by commencing with a couple of valves than with one valve and a crystal.

"Improving" Factory-built Set.

A CORRESPONDENT signing himself "Distance-getting," has a six-valve set with six 201A's in the sockets, and asks how reception can be improved. A power-valve could be placed in the last audio stage, a B605 being recommended for this particular set. The radio frequency valves should be kept as at present, as a different type of valve requires re-neutralisation of the receiver. Many factory-built sets can be improved by adding a power-valve and also by putting in better audio transformers, but beyond this it is just as well for the average listener to let well alone.



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