Testing Condenser Insulation

FIXED condensers are worse than useless in a receiver unless their internal insulation is sound. This is specially important in H.T. battery shunting condensers, and those who have electric supply mains available can test any doubtful condensers in the following way. Cut one of the leads to a lamp, leaving the other lead intact, and connect the ends of the cut lead to the terminals of the condenser. The lamp and condenser are then in series, and when the switch is put on, the lamp should not light if the condenser di-electric is sound. Any fixed condenser should be able to withstand safely the 220 volts of the mains, so that no damage will result from the test. In the event of a fault in the dielectric, and a consequent contact between two adjacent plates of the condenser, the lamp will light, acting as a safety resistance.

RADIO DIRECTORY

What to Buy and Where

CITIES

ALTONA & HAMMARLUND-ROBERTS SETS.	Johns, Ltd. Chancery Street, Auckland.
ATWATER-KENT RADIO ..	Frank Wiseman, Ltd. 170-172 Queen Street, Auckland
BREMER-TULLY RADIO ..	Superadio, Ltd., 147 Queen Street, Auckland.
BURGESS RADIO BATTERIES,	All Radio Dealers.
CROSLEY RADIO	Abel, Smeeton, Ltd., 27-29 Customs St. E., Auckland.
CROSLEY SETS	Lewis Eady, Ltd., Queen Street, Auckland.
FERRANTI RADIO COMPONENTS	A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.
GREBE RADIO	Howie's, Dilworth Building, Custom st., Auckland
MULLARD VALVES	All Radio Dealers.
PREST-O-LITE. Car and Radio Battery Service	L. J. Purdie & Co., Ltd. 97 Dixon Street, Wellington.
RADIOLA RECEIVERS and Expert Radiola Service.	Farmers' Trading Co., Ltd., Hobson Street Auckland.
RADIOTRONS AND MARCONI VALVES	All Radio Dealers.
T.C.C. CONDENSERS	A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.

COUNTRY TOWNS

ANCHORADIO, BREMER-TULLY, RADIOLA, BROWNING-DRAKE, AND ATWATER-KENT RADIO	Radio House, Hamilton G. S. Anchor, Manager.
GREBE, ROGERS, CROSLEY, RADIOLA AND KING SERVICE	E. Dixon and Co., Ltd., Hawera.
CROSLEY RADIO	J. C. Davidson, Main Street, Pahiatua.
CROSLEY RADIO	F. H. Jellyman, Ltd., Devon Street, New Plymouth.
CROSLEY RADIO	D. A. Morrison & Co., Victoria Avenue, Wanganui.
PHILIPS VALVES AND APPARATUS	All Good Radio Dealers.
SIEMENS BATTERIES, RADIOLA DEALER AND SERVICE	G. C. Carrad. 140 The Avenue, Wanganui.

Improving Radio Reception

Points that are Usually Overlooked.

LOUDSPEAKERS of the horn and cone types suffer a gradual loss of efficiency where the output leads of the speaker are wrongly connected to a set with no output filter. Under these conditions the steady anode current of the last valve tends to demagnetise the magnets of the loudspeaker unit. This results in weaker and weaker signals as time goes on, and it may be some time before you realise what is happening.

It is then generally too late to reverse the connections and the only thing to do is to return the unit to the agents who, in most cases, will repair the damage for a small charge. The same thing, of course, happens to the 'phones if wrongly connected to the receiver, and, if possible, they should be compared with another pair known to be in good condition.

Saving the Speaker.

AN improvement which is well worth while making in all sets where the last valve is a power valve is to substitute choke bypass output for direct output to the loudspeaker. This modification consists of a special output choke, wired in the anode circuit of the last valve, one side of the loudspeaker being connected to one end of this choke through a 2-mfd. fixed condenser, and the other side to L.T. negative. Full description of this was given last week.

This obviates all risk of leakage when the loudspeaker leads are extended to other rooms and, there being no direct anode current through the loudspeaker windings, the magnets cannot be demagnetised. The efficiency of the output system is also considerably improved.

Important Accessories.

THE importance of such accessories as H.T. and L.T. batteries is apt to be overlooked. Too often the efficiency of these accessories is taken for granted and the receiver blamed for poor results and defective quality. The B battery is more often than not the source of such troubles, due chiefly to its high internal resistance producing low-frequency instability and even oscillation at audible frequencies. The internal resistance of dry batteries increases considerably as they become run down, and is sometimes quite high even in wet cell and accumulator batteries due to one or more defective cells.

It will, therefore, repay you to overhaul very thoroughly all your batteries and sources of power supply, replacing dry B batteries by fresh ones, preferably of large capacity (heavy duty). Search carefully for and replace cracked or leaky containers in wet and accumulator batteries, and clean up any busbars or terminals which have suffered corrosion through creeping of the electrolyte.

When testing your B batteries with a voltmeter it is as well to remember that a cheap instrument may give very misleading readings. Such a voltmeter might take quite a considerable current, more than the total plate current of your receiver, and certainly more than is good for the battery. Under such excessive load the voltage of the B battery, as measured by the voltmeter, is much less than its actual value when working under normal conditions.

Whether you decide to instal a new B battery or not, it is essential to go over every B wander-plug, cleaning them up, and, where necessary, gently prising apart the split pins so that they fit firmly and soundly in the battery sockets. I have known of cases where insecurely fitting wander-plugs have been responsible for some queer and erratic faults.

The same attention should be given to all battery connections with the view to obtaining clean and firm contacts at all points of attachment to the battery, whether A. B. or C.

In the majority of cases the filament current supply will be derived from accumulators and the principal attention required here will be to the terminals and connecting lugs. These should be removed, any corroded parts scraped clean, and when replaced all terminal parts should be well smeared with vaseline. As in the case of B batteries, it is just as important to ensure a sound contact at the points of attachment.

Your Battery Leads.

FOR preference, leads to the accumulator should be fitted with substantial spade terminals, thus making quite sure of a large area of firm contact. Before the winter season commences it is well worth while having your accumulators overhauled at a recharging station, where expert attention can be given to any faults which may be present.

When you are feeling more satisfied about the general health of your batteries, it is as well to examine all the battery leads as a final precaution. These are quite important connections and should not be made with haphazard lengths of any wire which comes first to hand. The best wire for such leads is high quality flex of generous gauge, soundly insulated and covered. In any case you should examine each battery lead to see that the insulating covering has not deteriorated.

Neglected Terminals.

THE attachment points at the receiver end should also receive the attention of a piece of fine emery paper. Very often the leads to the set are made to terminals right at the back of the cabinet where thy remain neglected and forgotten. Under these conditions the amount of tarnish and corrosion which can take place is surprising.

All this dirt must, of course, be removed, and terminals and the ends of battery leads brightened up with emery paper, following up with a light smear of vaseline, which prevents further corrosion, and actually improves contact, despite the fact that it is itself an insulating substance; exactly how it does it is still something of a mystery, but the fact is a well-established one.