

RADIO DIRECTORY

What to Buy and Where

AUCKLAND

- ATWATER-KENT RADIO** .. Frank Wiseman, Ltd.
170-172 Queen Street, Auckland.
- ALTONA & HAMMARLUND.** Johns, Ltd.
Chancery Street, Auckland.
- ROBERTS SETS.**
- AMPLION LOUDSPEAKERS** . All Radio Dealers.
- BREMER-TULLY RADIO** .. Superadio, Ltd.,
147 Queen Street, Auckland.
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- CE-CO VALVES** .. All Radio Dealers.
- FADA RADIO** National Electric & Eng. Co., Ltd.
Customs St.; Radio Supplies, Symond St.
- FEDERAL, MOHAWK, GLOBE** Federal Radio House,
8 Darby Street, Auckland.
- FERRANTI RADIO COM-
PONENTS** A. D. Riley and Co., Ltd. Anzac
Ave., Auckland, and all leading dealers.
- GILFILLAN AND KELLOGG** . Harrington's, Ltd.,
138-140 Queen Street, Auckland.
- GREBE RADIO** Howie's,
Dilworth Building, Custom st., Auckland.
- MARCONI ECONOMY VALVES** All Radio Dealers.
- MULLARD VALVES** ... All Radio Dealers.
- RADIOLA RECEIVERS** Farmers' Trading Co., Ltd.,
Hobson Street, Auckland.
- RADIOTRON VALVES** All Radio Dealers.
- RELIANCE BATTERIES** (N.Z. Made) Reliance Battery Mfg. Co., Ltd.,
96 Albert Street, Auckland.
- T.C.C. CONDENSERS** A. D. Riley and Co., Ltd. Anzac
Ave., Auckland, and all leading dealers.

COUNTRY TOWNS

- BROWNING-DRAKE SALES AND SERVICE** J. H. Sinclair,
Otane, H.B.
- CROSLEY ELECTRICAL AND BATTERY MODELS** The Forrest-Crosley Radio Co.,
Ltd. Cuba Street, Palmerston North.
- CROSLEY RADIO SALES AND SERVICE** D. A. Morrison and Co.
The Avenue, Wanganui.
- GAROD, CROSLEY, RADIO AND ACCESSORIES** The Hector Jones Electrical Co.
King and Queen Streets, Hastings.
- GILFILLAN, FEDERAL, STANDARDYNE AND GARRARD ELECTRIC RADIO — ALL ACCESSORIES** W. M. Pitcher and Co.
Hamilton.
- GREBE, CROSLEY AND RADIOLA SERVICE** E. Dixon and Co., Ltd.,
Hawera.
- RADIOLA DEALER AND SERVICE** G. C. Carrad.
140 The Avenue, Wanganui.
- ROLA CONE SPEAKERS** J. B. MacEwan and Co., Ltd.,
Federal Radio Dealers, New Plymouth.
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers,

Glossary of Wireless Terms

From week to week we give here a section of the glossary of wireless terms from the "Listener's Guide."

NEGATIVE.—Every cell or battery of cells has two electrodes or poles, a positive and a negative, which are usually clearly marked respectively "+" and "−". The positive pole is often further distinguished by red paint, and the negative by black or blue paint. In any instrument or compound employing a permanent magnet (such as a telephone receiver) polarity is generally indicated and should be observed. Positive, or +, corresponds with the north pole of the magnet, and negative, or −, with the south pole.

NEUTRODYNE.—Originally an American circuit in which, by the use of tiny adjustable condensers, the inherent capacity existing between the internal electrodes of the valves is neutralised. Properly used, a neutrodyne receiver is much more manageable for long-distance, ordinary broadcast wave reception than a set in which such neutralisation precautions are not taken.

OHM'S LAW.—A fundamental electrical law, conceived by George Simon Ohm (1787-1854), an electrician of fame, affording computation of one of the following:—Resistance, voltage, current—if the figures for the other two are known. According to Ohm's Law: Current (in amperes) equals voltage divided by resistance (in ohms); resistance (in ohms) equals voltage divided by current (in amperes); voltage equals current (in amperes) multiplied by resistance (in ohms).

OSCILLATING VALVE.—A valve so operated that it will produce oscillations. This is usually accomplished by means of a reaction coil coupled back from the plate circuit to the grid circuit, thus sending back properly timed impulses capable of exciting the grid of the valve and thereby sustaining the action and reaction effect indefinitely, energy being drawn from the batteries or current generators in use. An improperly operated receiving set, unless it is correctly neutralised or balanced by neutralising condensers, will cause the detector wave to oscillate and thus energise the aerial, occasioning interference with other listeners. A definite test is to turn the tuning dial or dials of the receiver slowly, and if the station being listened to moves smoothly from minimum to maximum and minimum again without a sound of a whistle which alters in tone precisely in step with the movement of the dial, then the receiver is clear of interfering effects designed to distort or ruin the reception of signals either on the set in question or others in close proximity.

A good rough-and-ready test for oscillation is to wet the finger and touch the aerial terminal with it. If a loud "click" is heard every time the finger both touches and leaves the aerial terminal, you can be certain the set is oscillating and causing interference with other listeners.

OSCILLATING CURRENT.—Has the same characteristics as alternating current, but takes place at a radio frequency. See "Alternating Current."

Tips and Jottings

Crystal and Amplifier.

A RUNANGA (Greymouth) constructor, who is a beginner, has built the crystal receiver with amplifier described on July 6, using a Harlie crystal, and reports getting 2YA on several nights as his first station. This correspondent inquires as to the maximum capabilities of the receiver, but this cannot be given, as there are so many factors to take into consideration. A receiver such as this is quite capable of sometimes receiving Australian stations, conditions all being favourable, but no guarantee of any kind can be given. Several experiments showed that the specified number of aerial turns gave best results.

The Last Valve.

IF it is suspected that the power valve may be losing its emission, the point can easily be settled by any listener who owns a milliammeter reading up to 20 or 30 milliamps. A reading should be taken when the valve is new by placing the meter in the plate circuit, and if the indication agrees with the plate current stated on the manufacturer's leaflet at the particular voltage, all is well. Readings taken at subsequent intervals should show the same reading under the same conditions, and when a drop is recorded, if plate voltage is correct, the valve may be at fault.

Drilling Ebonite.

A DIFFICULT thing to do is to drill ebonite with a hole over 1-8 in. in diameter, and finish with the hole in the exact spot required. The shape of a Morse twist drill at the point makes it very inclined to cut more to one side than the other, pulling the drill from centring on the punched

mark, and thus displacing the hole from its true position. After punching a mark with the centre-punch, a small drill may be used to enlarge the depression, and give the larger drill a start. This depression should have a diameter not less than the straight portion on the point of the large drill to be used. A rose countersink can sometimes be used to advantage to enlarge the punched mark before drilling. Some such precaution is very necessary when drilling a set of holes such as may be required to take four contact pins for a short-wave secondary and tickler.

Aerial Stays Not Insulated.

IT is not necessary to use insulators in aerial stays unless the aerial is only a few yards from a transmitting aerial. In such a case the insulators are inserted not for the benefit of the broadcast aerial or reception, but to prevent them from absorbing energy that should radiate further afield from the transmitting aerial. The stays of transmitting aeriels are equipped with insulators for the same reason. There can be little gain by inserting an insulator in the centre of a stay, the top of which is connected to an iron mast whose lower extremity is buried in the ground.

Amplification Factor of a Valve.

THE amplification factor is the measure of the control exercised by the grid upon the plate current, and is very easily found from characteristic curves. If the readings obtained show that a rise of .5 milliampere in the plate current is produced by an increase of 10 volts in the plate voltage, and that with the plate voltage steady a similar rise can be obtained by making the grid 1 volt more positive, then changes in the grid voltage have ten times the effect of changes in the plate voltage and the amplification of the valve is 10.