

that half of the resistance by judgment of quality when listening to good volume on the loudspeaker. Try the effect of using both the 3-volt and the 4½-volt taps on the C battery.

Best results have been obtained with a valve of not less than 50,000 ohms impedance, with 90 volts on the plate, connected to a good make of audio transformer with high inductance primary. This combination gives very fine reproduction, brings out the bass well, at the same time giving prominence to the melody, with a general brilliant effect. Much lower plate voltage results in a weakening of high notes and want of clarity in the bass. The same may be said of lower impedance valves tried, which at their best did not appear to come up quite to the higher impedance one, especially

up, the local station is received, and with it down the pick-up may be used.

The lead from plate of valve connects to the primary of first audio transformer, and the other primary terminal of transformer to detector B positive voltage.

Preceding remarks concerning the valve apply equally when using the pick-up, but as the amplification is great when using the detector valve, soft gramophone needles should be used. The soft tone Tungstyle semi-permanent needles are quite suitable, but for use with an amplifier only the loud tone would be required. A volume control, potentiometer pattern, must be provided to be placed across the pick-up leads, and room could no doubt be found for this on the panel if desired.

Connections to the A battery must be made so that the main switch for the receiver also switches off the supply to the unit, so that the potentiometer drain is cut off when the receiver is not in use.

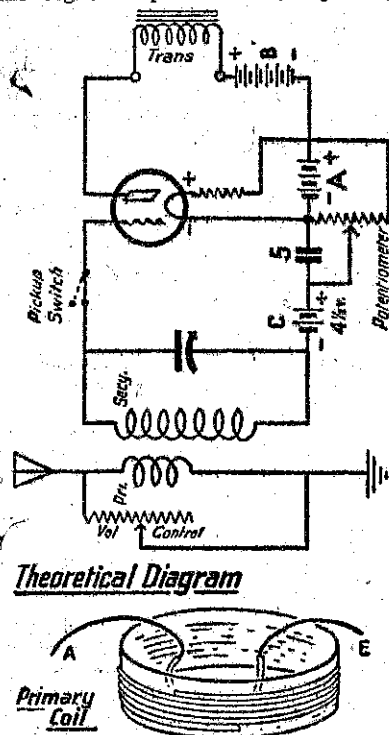
The ideas of different individuals vary greatly as to the valve to use for detection, and how to use it, and though in a recent article, the writer made a few general remarks upon the subject, the best advice to constructors is to spend a little time in finding out which valve and voltage best suits their own conditions, remembering that small changes often have a big effect upon results.

If the use of a scratch filter appears necessary, do not trouble to put one in, but take it as a reminder that the audio equipment may possibly need a little improvement. It is an easy matter to replace mediocre transformers by good ones, and is always worth while. Present-day records have very little scratch—perhaps it would be more correct to say "practically none."

Pick-up connections are shown dotted in the diagram, and if a pick-up is not to be provided for, these connections and the small two-way switch are omitted.

The method of connecting and disconnecting the unit to the amplifier by switching or otherwise must be arranged to suit the conditions. A jack controlling filament and plate supplies would also cut out the potentiometer. The plug would be connected to the amplifier, and would be inserted in another jack to connect the amplifier to R.F. and ordinary detector. Another method is to connect the arm of a two-way switch to the plate terminal of the transformer primary, the tickler to one contact, and plate of local detector to the other. The switch then changes over for local and distance. Batteries are then separately cut off. If the local filament is cut out with the rheostat, then only the A and B supply for R.F. and detector stages of the receiver remain to be provided for.

The writer feels certain that constructors of this unit will find that they have taken a good step forward on the path of better reproduction. In our next issue a further article on this topic will appear.



when using the pick-up. Too high a voltage tends towards scratchy tone.

Connections for Pick-up.

THE method shown for connecting a gramophone pick-up allows the changing from local to gramophone or vice-versa by merely throwing over a small two-way switch which is situated at the top of the panel. When the pick-up is in use the tuning coil is entirely disconnected from the grid circuit, so that there is little chance of hearing the local station in the background if it is working whilst the pick-up is in use. Terminals may be provided at the side of the panel for the pick-up tags, one of these connecting to a lower switch contact and the other to A negative. If a pick-up is to be used, the wire from coil top to grid is cut at XY, and the two ends are connected over the top of coil to X and Y respectively on the switch. With the switch

D.X. Notes

Identification Wanted.

I HAVE heard a station from 10 p.m. onwards, the last few Thursday evenings, with market reports, vocal items, and later band numbers. The call sounded like KCRM and the wavelength given was 43.53 metres. The announcer was American. Would it be KZRM, Manila, Philippine Islands? —"Puzzled" (Wellington).

An American to Identify.

I HAVE recently heard an American station, but have not heard his

call. The voice and music comes in very plainly on the loud-speaker, but although I have waited patiently for him to announce his station, I have not yet heard him do so. Unfortunately fading occurs when a musical item is completed and volume returns after he has announced. This station has been broadcasting, at intervals, a description of the St. Louis Robin endurance flight, which lasted 420 hours 21 minutes. The signals came through very plainly at times and I would be more than obliged if you could tell me who and where the station in question is.—"Beginner" (Hastings).

RADIO DIRECTORY

What to Buy and Where

CITIES

- | | |
|---|--|
| AERIAL MASTS | Domestic Radio Co., Ltd.,
Strand Arcade, Auckland. |
| ALTONA & HAMMARLUND-ROBERTS SETS. | Johns, Ltd.
Chancery Street, Auckland. |
| ATWATER-KENT RADIO .. | Frank Wiseman, Ltd.
170-172 Queen Street, Auckland. |
| DAYTON All-Electric Radio ... | Superadio, Ltd.,
147 Queen Street, Auckland. |
| BURGESS RADIO BATTERIES, | All Radio Dealers. |
| CROSLY RADIO | Abel, Smeeton, Ltd.,
37-39 Customs St. W., Auckland. |
| FERRANTI RADIO COM-PONENTS | A. D. Riley & Co., Ltd.,
Anzac Avenue, Auckland, and all leading Dealers |
| CROSLY SETS | Lewis Eady, Ltd.,
Queen Street, Auckland. |
| LOUDSPEAKER AND TRANS-FORMER REPAIRS | A. E. Strange,
404 Worcester Street, Christchurch. |
| MULLARD VALVES | All Radio Dealers. |
| RADIOLA RECEIVERS. | Chas. Bennett, Ltd.,
619 Colombo Street, Christchurch. |
| RADIOLA RECEIVERS and Expert Radiola Service. | Farmers' Trading Co., Ltd.,
Hobson Street, Auckland. |
| RADIO REPAIRS AND SERVICE | E. G. Shipley,
185 Manchester Street, Christchurch. |
| DIAMOND DRY BATTERIES | Royds-Howard Co.,
553 Colombo Street, Christchurch. |
| COUNTRY TOWNS | |
| CROSLY RADIO | J. C. Davidson,
Main Street, Pahiatua. |
| CROSLY SETS | F. H. Jellyman, Ltd.,
Devon Street, New Plymouth. |
| CROSLY RADIO | D. A. Morrison & Co.,
Victoria Avenue, Wanganui. |
| MAJESTIC, ATWATER-KENT AND APEX ELECTRICAL SETS. Also Bremer-Tully, Radiola and Browning-Drake | Radio House, Hamilton.
G. S. Anchor. Manager. |
| PHILIPS VALVES AND APPARATUS | All Good Radio Dealers. |

Mullard

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