

## Laboratory Test

## Atwater Kent Model 60

C. & A. ODLIN, LTD., have supplied us with an Atwater Kent receiver, Model 60, and during the last few weeks we have been able to test this to our satisfaction. In connection with this receiver, it is interesting to note that it was the first of its type introduced into the country.

The circuit comprises three stages of a.c. screen grid, detector (227), resistance coupled to the first audio, also 227's and two 245's in the last stage. Rectification is accomplished by a full wave 280. Detection is carried out by the grid condenser method.

On lifting the lid of the receiver one cannot help noticing the very neat and efficient appearance. All the components are shielded in uniformly enamelled metal covers. The valves are not an exception. The result is a very robust receiver, perfectly shielded, and humless. On reversing the receiver, and removing the protecting plate, the wiring is disclosed. The few components in this part of the receiver are well constructed so that trouble in this direction will not be likely.

There are three controls: the tuning control, which, by means of a brass belt, moves the four tuning condensers and the illuminated dial graduated in degrees and kilocycles; a volume control, and a local station switch. Our tests reveal that the marked frequencies were slightly in excess of the frequency of the stations received. Volume is controlled by a variable resistance connected in the circuit of the auxiliary grid of the second and third radio amplifiers.

The local station switch taps the primary inductance of the second R.F. transformer, so that either the whole or part of this coil can be placed in the circuit at will. Volume is thus greatly reduced without introducing distortion. On the local station, however, it was found that other means had yet to be taken to sufficiently subdue the signal. Connecting to the terminal marked "short antenna" a length of insulated lighting wire and twisting this round a convenient place outside, we found formed a very effective aerial for use on the local station. Even then the set worked better—that is, volume was more controllable and quality better maintained when the earth connection was removed.

The sensitivity of the set is greater by far than that of our standard model, in fact it surpasses in this quality any set we have yet tested. During the summer months in which reception is notoriously had a fairly representative log of stations was received. A calibration curve is published showing the major stations received and their positions on the dial. Far more volume than required was obtainable from all New Zealand "A" stations, as well as on several of the smaller. Christchurch could be brought in on the very small aerial previously mentioned, and

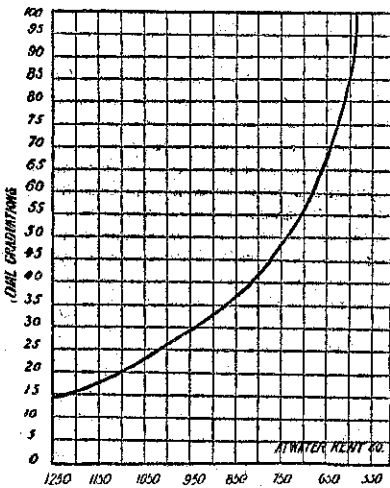
by using this static was very much subdued.

Following is a selection from the stations received, with the dial reading for each:—2YB, 13; 1ZB, 20; 2ZF, 23; 2UE, 24; 3YA, 27; 1YA, 33; 2BL, 36; JOCK, 39; JOGK, 47; 4QG, 48; 2YA, 55; 2FC, 65; 4YA, 67; 3AR, 75; 2ZK, 80; 7ZL, 88.

Selectivity was good and by using a 130-foot aerial, 2FC could be brought in when 2YA was operating.

The tested voltages were as follow:

	Screen Plate
1st Radio Frequency	140 180
2nd Radio Frequency	10-120 165
3rd Radio Frequency	10-120 165
Detector	110
Audio	160
Power	260
Filaments (average)	2.45



Calibration curve, showing the relationship between frequency and dial reading.

There is an entire absence of hum while the set is perfectly stable even on the higher frequencies.

Accompanying the set was a dynamic speaker which can be used with no other; likewise no other speaker can be used with this set. Being low set, the speaker has a delightfully mellow tone.

## A.C. Valve Response

## Noticeable Time-Log

WITH a battery-operated set, throwing the switch that turns on the current results in immediate action. If the set is tuned to a station, music, or speech issues from the loudspeaker in a fraction of a second. This is not true of modern sets operated by alternating current. There is a lapse of anywhere from ten to thirty seconds between the throwing of the switch and the first sound from the loudspeaker. The delay is caused by the slow heating of the relatively thick cathode element in valves such as the type 227 and 224. Many attempts have been made to decrease the time lag, but an improvement in this direction is worth while only if it can be accomplished without affecting the efficiency of the valve and the length of its life. In any event, decreasing the time lag below the present figure is of relatively little importance. Most people will not object to waiting a fraction of a minute for the start of a period of musical or other entertainment to which they may listen for several hours.

## RADIO DIRECTORY

## What to Buy and Where

## CITIES

- AERIAL MASTS** ..... Domestic Radio Co., Ltd.,  
300 Queen Street, Auckland.
- ALTONA & HAMMARLUND-ROBERTS SETS.** Johns, Ltd.  
Chancery Street, Auckland.
- AMPLION LOUDSPEAKERS** . All Radio Dealers.
- BURGESS RADIO BATTERIES**, All Radio Dealers.
- CROSLEY RADIO RECEIVERS** G. G. Macquarrie, Ltd.,  
120 Willis Street, Wellington.
- CROSLEY RADIO** ..... Abel, Smeeton, Ltd. Rep.: G. MOSE,  
James Street, Hangar.
- CROSLEY RADIO** ..... Abel, Smeeton, Ltd.,  
27-29 Customs St. E., Auckland.
- EMMCO RADIO PRODUCTS** Johns, Ltd.,  
Chancery St., Auckland.
- EMMCO RADIO PRODUCTS** Thos. Ballinger & Co., Ltd.,  
Victoria St., Wellington.
- EMMCO RADIO PRODUCTS** L. B. Scott, Ltd.,  
Worcester St., Christchurch.
- KING RADIO RECEIVERS** .... F. J. W. Fear & Co.,  
63 Willis Street, Wellington.
- LISSEN RADIO PARTS AND KITS** ..... All Radio Dealers.
- MAJESTIC RADIO RECEIVERS** Kirkcaldie & Stains,  
Chief Wellington Agents, Lambton Quay.
- MULLARD VALVES** ..... All Radio Dealers.
- PILOT 1930 PARTS AND KITS, ETC.** ..... Abel, Smeeton, Ltd.,  
27-29 Customs Street East, Auckland.
- PILOT 1930 PARTS—PILOT SUPER WASP KITS, GILFILLAN, KELLOGG and ATWATER KENT SETS** ..... Harrington's, N.Z., Ltd.,  
133-140 Queen St., Auckland.  
40-42 Willis St., Wellington.
- RADIOLA RECEIVERS** and Farmers' Trading Co., Ltd.,  
Expert Radiola Service. Hobson Street, Auckland.

## COUNTRY TOWNS

- CROSLEY RADIO** ..... J. C. Davidson,  
Main Street, Pahiata.
- CROSLEY SETS** ..... Abel, Smeeton, Ltd. Rep.: C. RUSCOE,  
409 Devon Street, New Plymouth.
- CROSLEY RADIO** ..... D. A. Morrison & Co.,  
Victoria Avenue, Wanganui.
- MAJESTIC, ATWATER-KENT AND RADIOLA ELECTRIC SETS** Radio House, Hamilton.  
G. S. Anchor, Manager.
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers.

Have you obtained your copy of the "N.Z. Radio Listener's Guide"?

Dealers and booksellers 2/6; Post Free 2/9—P.O. Box 1032, Wellington. Available everywhere.