

EDDYSTONE KILODYNE 4

FEATURES. *Type.*—Four-valve "straight" short-wave receiver for battery operation. *Circuit.*—Screen-grid H.F. amplifier, grid detector with reaction, L.F. amplifier, pentode output valve. *Controls.*—(1) Tuning, with 100-degree slow-motion dial. (2) Reaction with slow-motion dial. (3) On-off switch. *Price.*—Set of parts (including valves) £9 1s. *Makers.*—Stratton & Co., Ltd., Eddystone Works, Bromsgrove Street, Birmingham.

A Sensitive and Stable Short-wave Receiver

THE design of receivers for short waves is an art requiring a good deal of experience, and there are few firms who can claim as long an association with short-wave work as Messrs. Stratton & Co., Ltd.

Their latest model covers wavelengths from 12½ to 2,000 metres, and although quite good results are obtained on the ordinary broadcast wavebands, it is on its performance on short waves that the set must be primarily judged.

The model tested was designed for battery operation, and the measured H.T. and L.T. currents under working conditions were 15.5 mA. at 148 volts and 0.65 amp. at 2 volts respectively. From the first moment of switching on there could be no doubts as to the sensitivity and range of the set. All three short-wave ranges appear to be equally efficient in this respect, though the apparent sensitivity will vary according to the time of day or night. After sunset the middle and higher ranges gave better results than the lower range, but in the afternoon the 12-26-metre band produced some very lively signals. Conditions were not too good for really long-range reception at the time of the test, but Schenectady W2XAF on 31.48 metres and Pittsburgh W8XX on 48.86 metres were definitely identified. European broadcasts, on the other hand, were exceptionally free from fading, and Rome (2RO), on 25.4 metres, was quite as reliable and gave as good quality of reproduction as the local B.B.C. station.

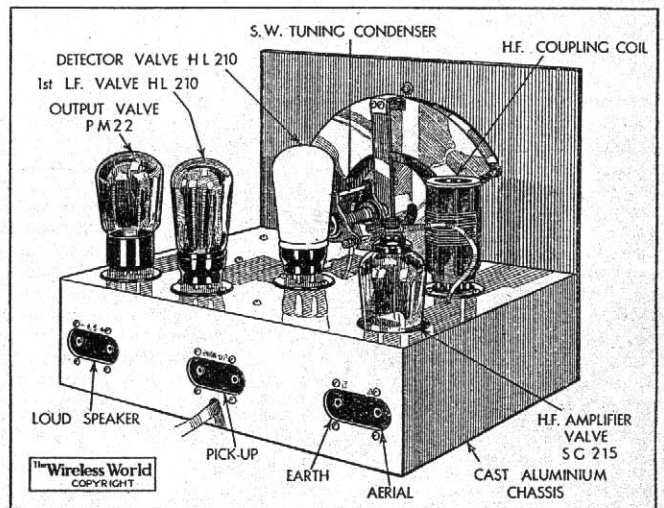
We were very favourably impressed with the low level of background noise and the

stability of the set in general. Hand capacity effects are entirely negligible provided a reasonably short earth lead is employed, and there is no tendency for the tuning to drift. Reaction is beautifully smooth on all waveranges, and nowhere was there any trace of blind spots or threshold howl.

The set is not calibrated as sent out, but the constructor should have no difficulty in preparing his own charts from the settings of a few known stations. Our own curves gave the following ranges for the three short-wave coils in the set tested: Coil LP, 12.2—24.9 metres; Coil Y, 20.9—43.7 metres; Coil R, 40.1—85.6 metres. The medium-wave broadcast coil (6G) covered 211—468 metres. Calibration is considerably simplified by the fact that stations appear at only one setting and there is no second channel duplication as in some superheterodyne short-wave receivers.

There are four valves in the circuit, the

first of which is a screen-grid amplifier with an aperiodic choke in its input circuit. This valve, besides giving considerable amplification, acts as a buffer which renders the tuned circuits independent of aerial capacities. Transformer coupling is employed between the screen-grid valve and the grid detector, and reaction is applied to the H.F.

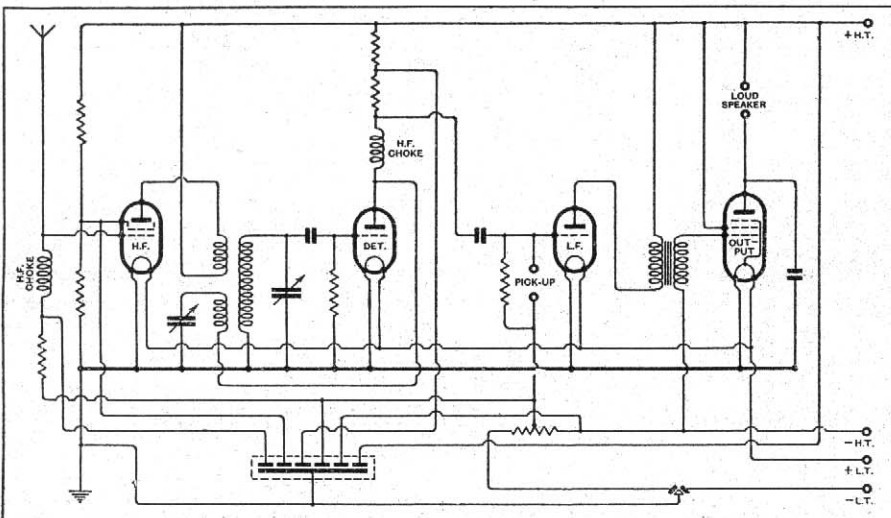


The chassis is simple in design and has for its foundation a solid aluminium casting.

transformer. Between the detector-valve and the pentode output valve there is a high magnification L.F. stage which is resistance-coupled to the detector and transformer-coupled to the output valve. Grid bias is obtained automatically from a resistance included between -H.T. and -L.T.

The chassis is an aluminium casting finished in grey cellulose. In addition to giving great mechanical rigidity, the possibility of parasitic noises due to loose joints is obviated. The tuning condenser has also been chosen to overcome the possibility of contact noises and the flexible pigtail connection is carried through a hollow spindle. Substantial bearings at each end of the condenser are mounted in moulded "Keremet" end plates. A 22:1 slow-motion dial gives easy control of tuning and a very open 100-degree scale has been provided. The reaction condenser itself is also fitted with a slow-motion movement and a small divided scale. Tuning coils are of the plug-in type and are fitted with six-pin non-reversible bases. The phenol fibre front panel provided is only about 1/8 in. thick, and care should be exercised to avoid damage before the chassis is fitted to a cabinet.

The set is supplied as a kit of parts together with coils covering wavelengths from 12½ to 92 and 230 to 490 metres. The long-wave coil is an extra. There is also an A.C. mains kit costing £15 3s., including valves.



Complete circuit diagram. Automatic bias is included and the by-pass condensers are mounted in a single block.