

# MARCONI NAVAL RECEIVER

## TYPE R.g.27

*This receiver has been developed for use as a Naval Receiver covering a waveband of 150-3000 metres in 4 ranges. The design is such that overall efficiency and performance is maintained with minimum cost.*

*Its use will not of course be limited to Naval purposes, and it is anticipated that the demand for an inexpensive receiver covering this waveband will be met by the Type R.g.27 receiver.*

THE R.g.27 receiver Fig. 1 consists of one screened grid high frequency amplifier coupled by means of a tuned anode circuit and condenser to a detector and followed by 2 low frequency amplifiers. The first of these low frequency amplifiers is always in use, but switching is provided in order to give either periodic audio frequency amplification or tuned note filter amplification at 1,200 cycles. The second low frequency amplifier may be switched on or off at will and is a straight forward untuned transformer coupled amplifier. The detector is capable of self oscillation in order that reception of C.W. signals shall be possible. The aerial circuit is not tuned and the coupling arrangements to the first valve will be described later.

The wave range of the receiver is from 150-3,000 metres and is covered by 4 positions of the range switch.

The input circuit to the high frequency valve Fig. 2 is tuned by a condenser which is permanently ganged to the condenser tuning the detector grid circuit. This ganging effects a considerable simplification in the tuning of the receiver. The method of aerial coupling has been so designed that the ganging of the 2 tuned circuits is correct for a wide range of the electrical constants of the aerial, although the actual design is such that the 2 circuits are correctly ganged when the capacity introduced between the aerial and earth terminals of the receiver by the aerial is .0002 mfd. Any aerial of from 40 to 100 ft. will give satisfactory results on this receiver, these figures referring to single wires sloping from the receiver at approximately 60°. A volume control in the form of a resistance in the screen grid valve filament circuit is incorporated in this receiver which has the effect of increasing either the selectivity or volume of the instrument. As the signal strength is reduced so the selectivity of the high frequency stage is increased. A double ended arrow engraved round the volume control knob is marked volume in one direction and selectivity in the other, and a compromise between these two factors can be obtained for any particular working conditions.

A voltmeter is provided in the circuit, reading up to 5 volts for filament voltage, and up to 150 volts to enable the H.T. supply volts to be checked.

*Marconi Naval Receiver. Type R.g.27.*

**Valves.**

Two alternative arrangements of valves can be adopted. In the first only 2 types of valves are needed, viz :—one 2-volt screened grid high frequency valve type S.215 and three type H.L.210 valves. A more usual arrangement consists of follow-

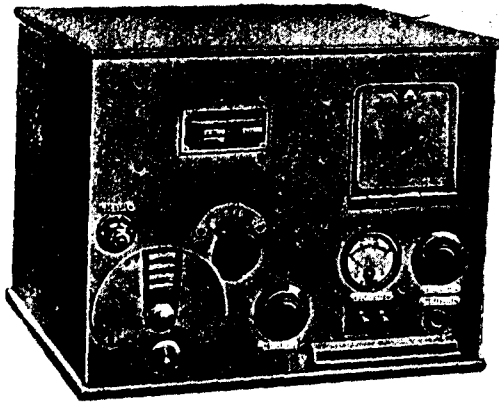


FIG. 1.

ing the S.215 high frequency amplifying valve by a DEH.210 valve as detector, and two DEL.210 valves as note magnifiers. When this latter arrangement is used greater output volume is obtained and to effect the change it is only necessary to

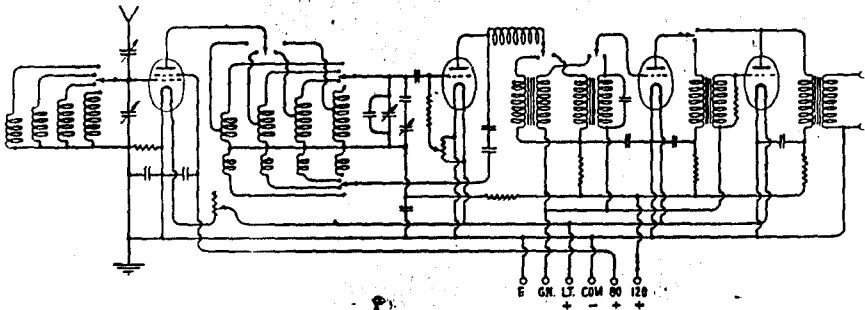


FIG. 2.

increase the grid negative on the low frequency valves. The grid bias, of  $\frac{1}{2}$  volt, to the high frequency valve is obtained from the filament battery so that no internal negative grid battery of special size is necessary.

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Accessibility has been treated as of prime importance and by undoing 4 finger screws it is possible to remove the set from its base which will normally be fixed by shock absorbers to the bulkhead. This removal at once exposes to inspection all switch contacts, variable condensers and low frequency components. Similarly by undoing finger screws the lid of the receiver can be removed giving full accessibility to the high frequency inductances, the connections between these, and the range switch and all valve holders.

In addition a simple method is provided whereby the panel carrying all valve holders and low frequency components may be detached from the instrument case giving complete accessibility to these components.

Valves can be inserted by removing the top lid of the receiver but a hinged drop door is also provided on the front panel for this purpose.