

A LOW POWER NAVAL TRANSMITTER

TYPE T.N.5A

The demand for low power transmitters suitable for installation on tugs, naval pickets and motor boats is rapidly increasing and in connection with this the Marconi Company has developed a small transmitter, known as the T.N.5A, which can also be used as an auxiliary set on larger vessels.

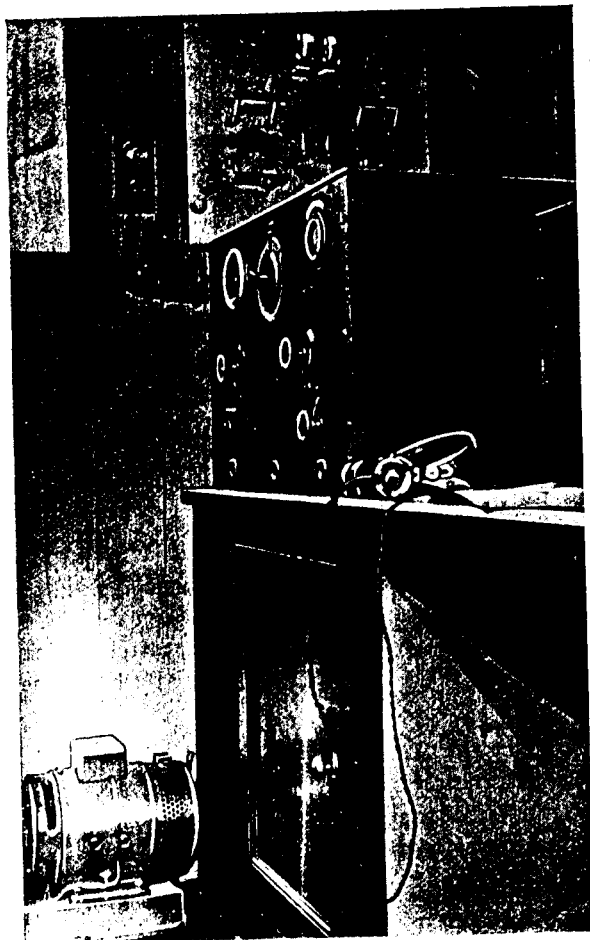
THE type T.N.5A transmitter is designed for signalling by telegraphy only either on the I.C.W. or C.W. systems. A photograph of the transmitter installed in a naval tug is shown and the simplicity and compactness of the design will be

apparent. All the controls are mounted on the front of the transmitter, including a power regulating control, and the component parts are fitted in a rigid iron framework and enclosed by protecting panels.

The transmitter is designed to cover a waverange of from 400 to 1,200 metres, and the working range over sea under ordinary conditions when using full power is of the order of 100 nautical miles.

The transmitter is nominally rated as a 200 watt set, this being the approximate power supplied by the H.T. D.C. generator which is used for supplying the voltage to the anodes of the valves. The standard motor generator supplied with the set delivers a high tension voltage of 800-1,500 volts at 150 m/a, and a low tension voltage of 8-12 volts at 12 amperes.

Alteration of power is



accomplished by increasing or reducing the H.T. voltage and, if necessary, by altering the coupling between the closed circuit and aerial circuit. 2 type M.T.II valves are used in the transmitter.

Technical Description.

A wiring diagram of the set is given in Fig. 1 and the circuit will be seen to consist of a high frequency oscillator and low frequency modulator for I.C.W.

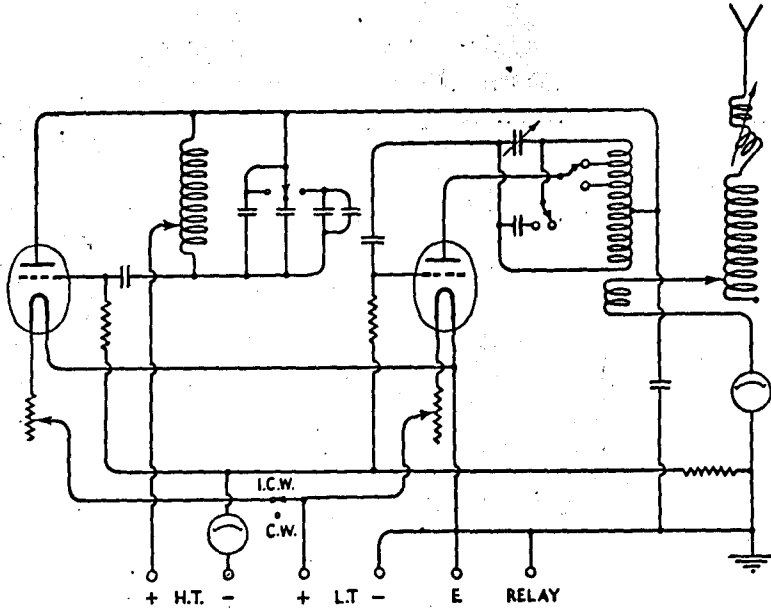


FIG. 1.

signalling. The high frequency valve is fed through a portion of the low frequency tuning inductance and the H.T. supply to the anode of the high frequency oscillator is thus modulated at audio frequency. A choice of 3 notes is provided on the audio frequency oscillator, and the required note may be selected by a switch which connects one of three condensers across the oscillating circuit. Normally the three notes provided are 600, 900 and 1,200 cycles per second.

In the case of continuous wave working the filament of the modulator is switched off and the feed to the high frequency oscillator is then unmodulated. The aerial tuning inductance is provided with a number of tapping points for coarse wavelength adjustment, and a variometer for final adjustment. The aerial circuit is coupled to the closed circuit of the high frequency oscillator which is tuned by means of a variable condenser.

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Keying is accomplished by inserting a high resistance in the common lead from the filaments which are earthed to the grids of the two valves and the negative high tension. A relay is provided for this purpose and contacts for "listening through" are also mounted on this relay and switch the aerial from the transmitter to the receiver during "space" periods.