

A MARCONI NAVAL TRANSMITTER

TYPE T.N.3

In THE MARCONI REVIEW published in December of last year a short description of a Naval Transmitter Type T.N.1 was given. A further modification of this set has been designed using a coupled aerial system, but with the same input and output power ratings. This transmitter has been given the type title of T.N.3 and will be described in the following article.

Similar switching devices to those used on the T.N.1 are incorporated in this new transmitter, and although, of course, extra controls are needed for the coupled aerial circuit, it is almost as easy to handle and adjust as is the T.N.1.

The salient features of the T.N.1 which have been enumerated in the article referred to above, such as robust construction, large waverange, etc., have been kept in the T.N.3 transmitter, and in addition, the coupled aerial circuit permits far greater selectivity to be obtained.

THE Type T.N.3 transmitter has been designed to cover a waverange of from 400 to 3,000 metres with a power of three kilowatts to the magnifier anode. The interchanging of the various combinations of inductances and condensers is accomplished from the front of the panel of the transmitter, and the various switches, etc., are provided with interlocking devices, to ensure the correct combinations and to prevent accidental damage when under power. Safety gates also automatically cut off the power when opened.

Power Supply.

The following machines are provided for the power supply to the transmitter :—

1. Motor alternator for H.T. supply.
2. Motor alternator for filament supply.
3. Motor generator for grid negative supply.

A small motor interrupter is also used for transmission on I.C.W.

The H.T. supply for the anodes of the valves is obtained by the transformation and rectification of the A.C. generated by the motor alternator. Double wave rectification is employed and two valves, type M.R.7a, are used as the rectifiers.

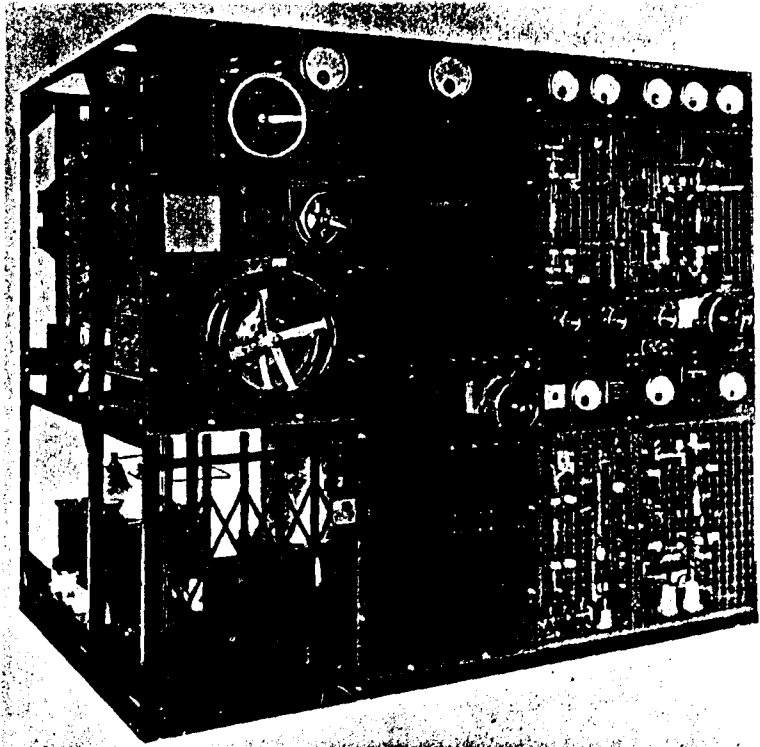
A Marconi Naval Transmitter.

Circuits.

The circuits of the T.N.3 are similar to those described in the case of the T.N.1, and can be divided, as there, into four groups :—

1. The rectifier system.
2. The drive.
3. The magnifier.
4. The absorber.

These need no special description apart from what has been already given in con-



T.N.3 Transmitter.

nection with the T.N.1. The aerial circuit is, however, in the case of the T.N.3 entirely distinct from the closed circuit, and consists, as will be seen from the diagram of connections (Fig. 1), of a variable aerial tuning inductance, two fixed aerial series condensers, a tuning variometer, a variable coupling system to the closed circuit, and an aerial ammeter.

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Keying.

Keying is by the absorber valve method, and is accomplished by the reversal of the potential on the grid of the absorber valve. The scheme of grid negative

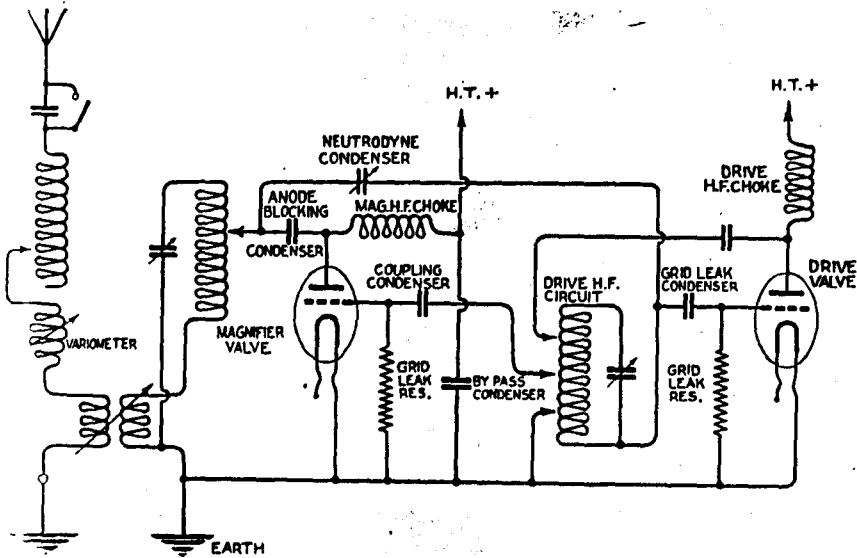


FIG. 1.

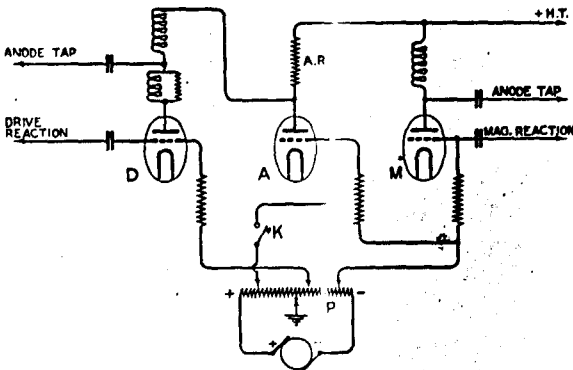


FIG. 2.

supply to the valves is shown in (Fig. 2), and it will be seen that, when the key K is closed the negative potential on the absorber valve A is changed to positive. The other valves D and M can have their grid potentials adjusted by the tappings on the potentiometer P. This keying relay K functions, of course, in the opposite sense to the manipulating key.