

## WAVEMETER G7.

Date of design:-- 1933.  
 Frequency Range:-- 5,000 - 25,000 kc/s. in two ranges:--  
                   Lower range:-- 5,000 - 12,000 kc/s.  
                   Higher range:-- 12,000 - 25,000 kc/s.  
 Reference:-- Admiralty Handbook of W/T (1931) paragraph 852.

G7 has been designed to supersede G13, since greater accuracy can be obtained with the former as it is placed in an aluminium screen (15), employs a coupled mutual coil and coupled pea lamp, and calibration curves are provided.

The tuning inductance is wound in two unequal parts (1) and (2), well spaced apart. The tuning capacity consists of two variable condensers of unequal value (3) and (4) mounted on the same spindle, which completes electrical contact between them. A range switch (5) marked in kc/s. switches in on the higher frequency range the smaller inductance (1) and smaller condenser (3). On the lower frequency range the larger inductance (2) is switched in in series while the larger condenser (4) is placed in parallel with condenser (3), thus maintaining the ratio of L to C.

The condenser scale is fitted with a mechanical vernier (16) which can be clutched in or out by means of a disengaging arm (17). The condenser scale is graduated in arbitrary divisions, one hundred occupying one semi-circle of the scale. By means of the vernier tangent screw one twentieth of each division can easily be read so that a very high accuracy of reading off is obtainable.

G7 can be used either as an ordinary wavemeter for tuning transmitters, or in conjunction with oscillator G31 for obtaining receiving adjustments. For this reason the rectangular coupling coil (9) is provided with two alternate sets of sockets, one set being for the "transmitter" position (8), with the coil down, the other for the "receiver" position (7), with the coil up. These pairs of sockets (7) and (8) are connected in parallel to the mutual coil (6), which is coupled to inductance (1). It is important to keep these sockets clean as dirt affects the calibration.

The coupling coil (9) carries a small metal contact (10) which is insulated from the coil. In the "transmitter" position this contact (10) makes on the spring contacts (11) and so completes the circuit to operate the pea lamp (14), since a visual indication of tuning is required. In the "receiver" position, an aural indicating device in the G31 is used and the pea lamp circuit is therefore broken to avoid damping. The pea lamp is coupled to both inductances (1) and (2) by single turns (12) and (13) respectively.

The use of these two positions of the coupling coil necessitates two separate calibrations and the calibration book supplied will be found to have two sets of curves, one marked "Transmitter Position" and the other "Receiver Position". These books contain curves of condenser scale readings against frequency in kc/s.

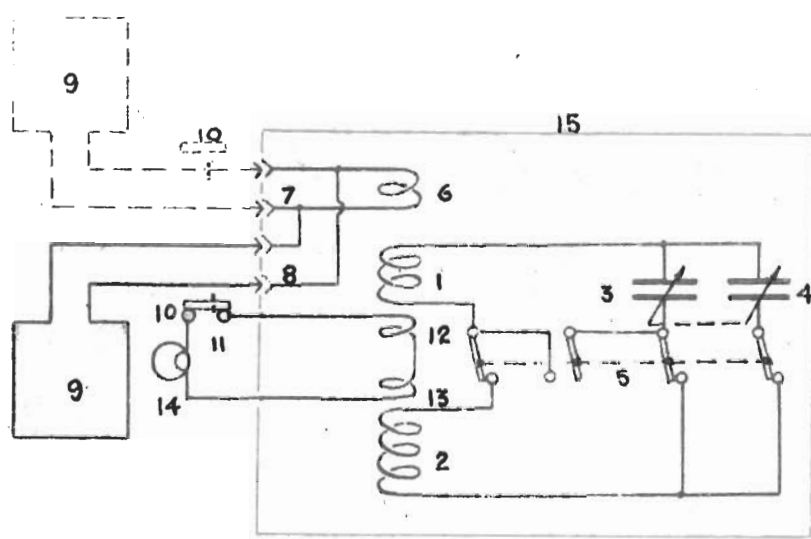


FIG. A.

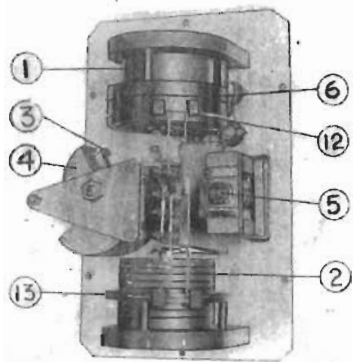


FIG. B

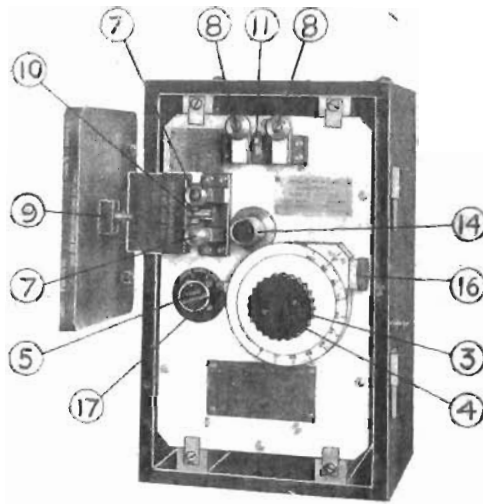


FIG. C

# WAVEMETER G 8.

GA9

Date of design:- 1900.  
Frequency range:- 1,500 - 6,000 kc/s. in two ranges:-  
Lower range:- 1,500 - 3,000 kc/s.  
Higher range:- 3,000 - 6,000 kc/s.

G8 has been designed to supersede G12, since greater accuracy can be obtained with the former as it is placed in an aluminium screen (15), employs a coupled mutual coil and coupled pea lamp and calibration curves are provided. G8 is very similar to G7, as can be observed from the notes.

The tuning inductance is wound in two equal parts (1) and (2), well spaced apart. The tuning capacity consists of two variable condensers of equal value (3) and (4) mounted on the same spindle, which completes electrical contact between them. Two small semi-adjustable condensers (18) and (19) are permanently connected in parallel, one across each variable condenser, and are used for controlling the overlap between the two ranges obtainable by the range switch (5). After adjustment in Signal School they are securely clamped and must not be altered. A range switch (5), marked in kc/s., switches in on the higher frequency range inductance (1) and condensers (2) and (18). On the lower frequency range the inductance (2) is switched in in series while the condensers (4) and (19) are placed in parallel with condensers (3) and (18). A mechanical vernier (16) with a disengaging arm (17) is fitted to the condenser scale for accurate reading off, as with G7.

G8 can be used either as an ordinary wavemeter for tuning transmitters, or in conjunction with oscillator G21 for obtaining receiving adjustments. For this reason the rectangular coupling coil (9) is provided with two alternate sets of sockets, one set being for the "transmitter" position (8) with the coil down, the other for the "receiver" position (7) with the coil up. These pairs of sockets (7) and (8) are connected in parallel to the mutual coil (6), which is coupled to inductance (1). It is important to keep the sockets clean, as dirt affects the calibration.

The coupling coil (9) carries a small metal contact (10) which is insulated from the coil. In the "transmitter" position this contact (10) makes on the spring contacts (11) and so completes the circuit to operate the pea lamp (14), since a visual indication of tuning is required. In the "receiver" position, an aural indicating device in the G21 is used and the pea lamp circuit is therefore broken to avoid damping. The pea lamp is coupled to both inductances (1) and (2) by single turns (12) and (13) respectively.

The use of these two positions of the coupling coil necessitates two separate calibrations and the calibration book supplied will be found to have two sets of curves, one marked "Transmitter Position" and the other "Receiver Position". These books contain curves of condenser scale readings against frequency in kc/s.

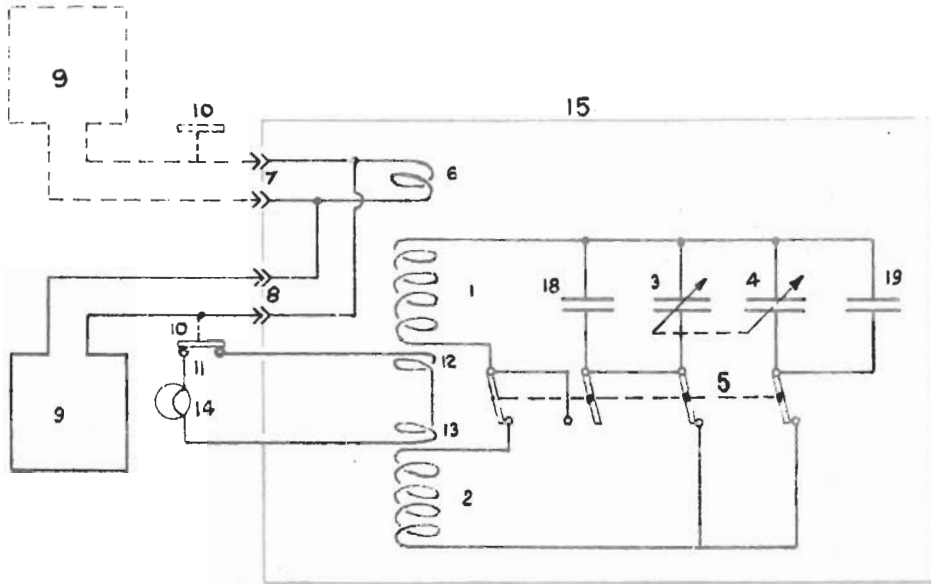


FIG. A

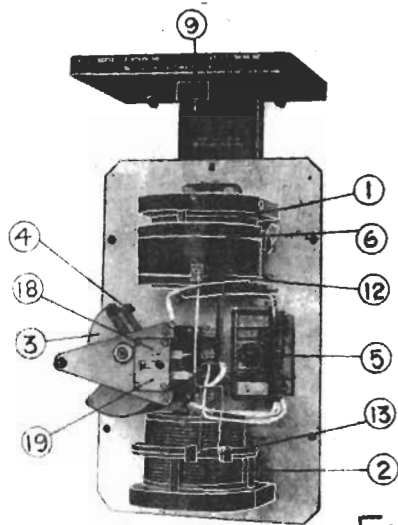


FIG. B

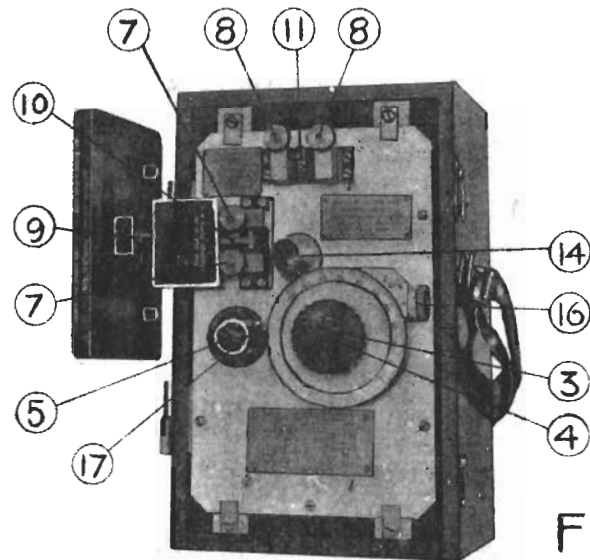


FIG. C