The oscillatory circuit (see figure hh.) consists of a variable condenser (171) with its two halves in parallel giving a maximum capacity of 320 cms, and one of a series of four plug-in coils. The latter are specially designed to prevent frequency drift as the coil becomes heated by the oscillatory current.

The frequency ranges of the four coils are as follows:-

Frequency range.	Coil.	No. of turns.
2,900 to 6,900 kc/s.	9A	9
5,500 to 12,000 "	4A	4
7,500 to 18,000 "	2A	2
15,000 to 21,000 "	1A	1

It may be found that when using Coil 9A the circuit will not oscillate over the whole range of the tuning condenser (171). To obviate these "blind spots" the centre (H.T.) tapping on the coil should be moved one turn nearer the grid end of the coil.

The grid of the valve (4) is insulated from the H.T. supply by the condenser (172) and a grid leak resistance (51) of 10,000 ohms is connected between grid and filament. The primary tuning coil (170) is earthed at its centre point through the condenser (175) which also acts as a R/F by-pass condenser across the H.T. supply. The primary and aerial circuits are coupled by means of the small fixed condenser (169).

The aerial circuit consists of a variable tuning condenser (168), a tapped tuning coil (48) and a series parallel switch (167) which connects them in series or parallel as desired.

A wavemeter coupling bar (153) is fixed near the primary coil (170). The amount of coupling between the primary circuit and the wavemeter is controlled by the variable condenser (154).

Operation and Tuning.

1. Set the L/F – H/F C.O.S. (6) to "H/F".
2. Plug in the appropriate tuning coil (170) for the frequency required.
3. Set the filament voltage to the correct value for the NT1 valve (4) by means of the rheostat (54) and adjust the output from the H.T. alternator to a value not greater than 140 volts.
4. Connect the appropriate wavemeter to the terminals (155) and (156).
5. Press the transmitting key and measure the wave frequency. If incorrect, adjust the primary tuning condenser (171) until the required frequency is obtained. To ensure a suitable current in the wavemeter it will probably be necessary to adjust the wavemeter coupling condenser (154). On the higher frequencies a small value and on the lower frequencies a large value of this condenser will be required.
6. When the correct frequency is obtained in the primary circuit tune the aerial circuit by adjusting the aerial tuning condenser (168) and aerial tuning coil (43) until maximum current is obtained in the aerial ammeter (44).

   The lower frequencies usually require the "series" position of the series-parallel switch (168) but the higher frequencies may require either "series" or "parallel" position according to whether the aerial is electrically equivalent to an even or odd multiple of a quarter wavelength.

TRANSMITTER 3 K M.

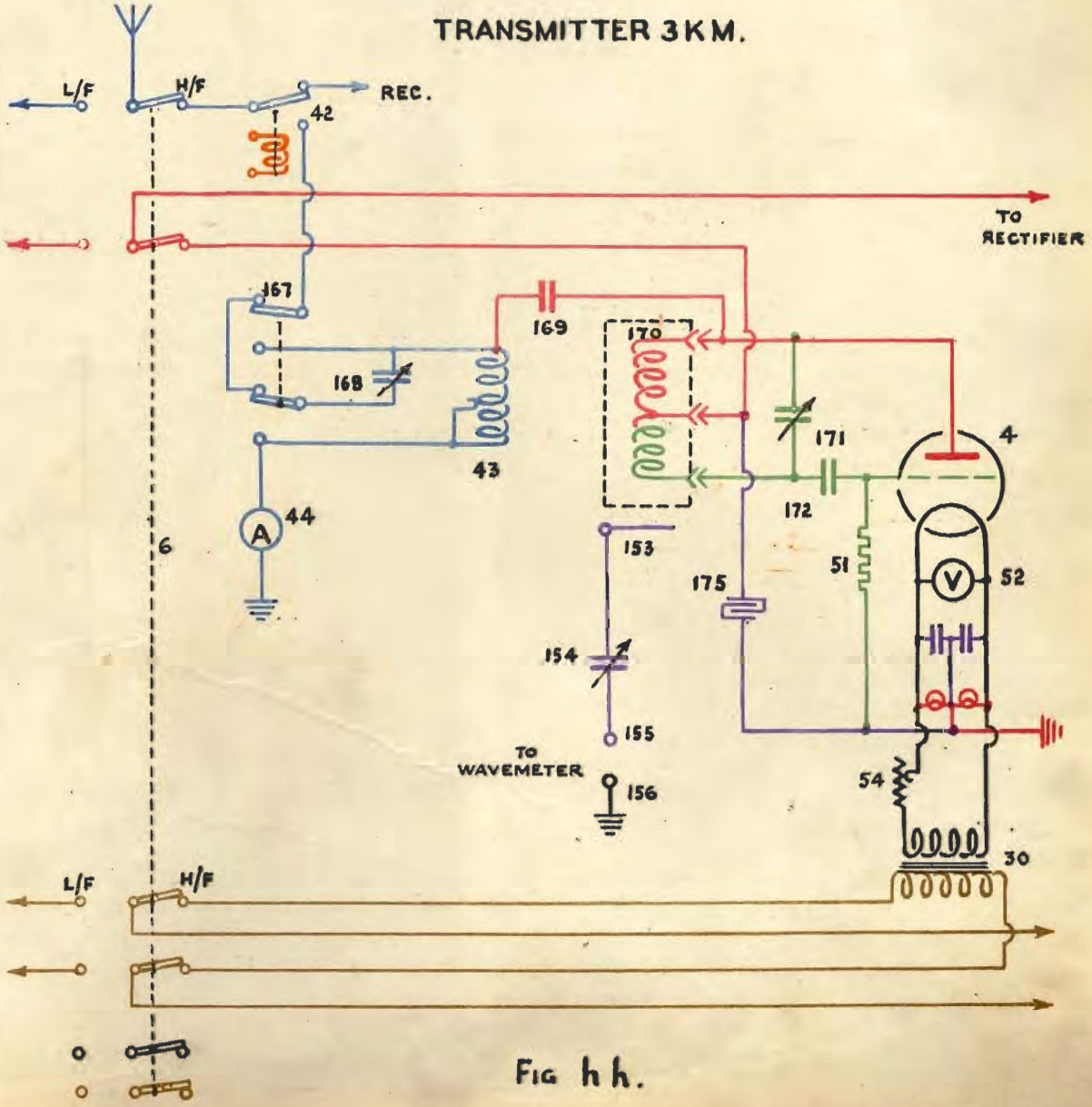

Fig h h.