

SUB - SECTION

RI

TYPE 44

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Transmitter	4L	4H with attachment
Date of design	1928	1925. Attachment 1930.
Frequency range	272 - 1429 kc/s.	375 - 1765 kc/s.
Power supply.	1½ kW Motor generator.	Ships Mains or 6 volt battery.
Valves used.	Two NT1	Two NT1B
Associated wavemeters.	1492B or G9	1492B or G9
Approximate range in miles.	100	10
Reference page.	F77	F53.

Type 44 is a low power valve transmitting set consisting of a main transmitter 4L and a low power transmitter 4H. The set is fitted in the second office of flotilla leaders.

POWER SUPPLY.

There are two boards which control the power supply; Board 2L Input Output (see figure c) and Board 2L Instrument and Fuse (see figure a).

**D.C. Supply.** The D.C. supply is from each side of the ring main to a ring main C.O.S. (40). The supply to the motor generator starter (41) is from the busbars and is controlled by a D.P. motor supply switch (42). A pair of fuses (43) are connected in the supply to the starter and an ammeter (44) and additional fuse (45) are connected in the negative lead. The ring main C.O.S. (40) and the motor supply switch (42) are fitted on Board 2L Input Output (see figure c). The ammeter (44) indicates the input current to the motor generator (48). It is fitted on Board 2L Instrument and Fuse (see figure a.) but its shunt is fitted on Board 2L Input Output.

**Motor Generator.** There is only one motor generator (48) fitted. It has two outputs, one supplying 1.5 kW at 800 volts for H.T. and the other 1.25 kW at 21 volts for the filaments. The machine is fitted with a W or Z size automatic starter (41) (see page MA3 or MA9). The start-stop pushes (46) (47) are fitted on Board 2L Instrument and Fuse. A fuse (45) is fitted on this board for remote control of the start-stop pushes.

The H.T. and filament outputs from the generator (48) are connected to a double two pole switch (51). This switch (51) connects the H.T. and filament supplies to the transmitter 4L, so that the two supplies are made by one handle. It is fitted on Board 2L Input Output and is marked "H.T. - L.T. supply." A double reading voltmeter (49) and its resistance (50) are connected across the 800 volt H.T. supply, and a voltmeter (59) is connected across the 21 volts filament supply. The voltmeters (49) (59) are connected to the machine side of the H.T. L.T. switch (51) and indicate the two voltage outputs from the motor generator (48). They are both fitted on Board 2L Instrument and Fuse. A 0.75 ohm resistance (58) is connected in the filament supply to adjust for the length of leads between the generator (48) and the transmitter 4L.

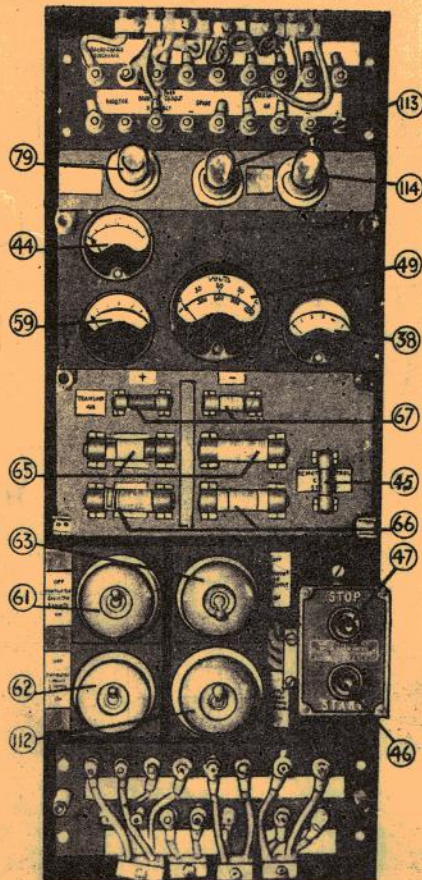


FIG. a.

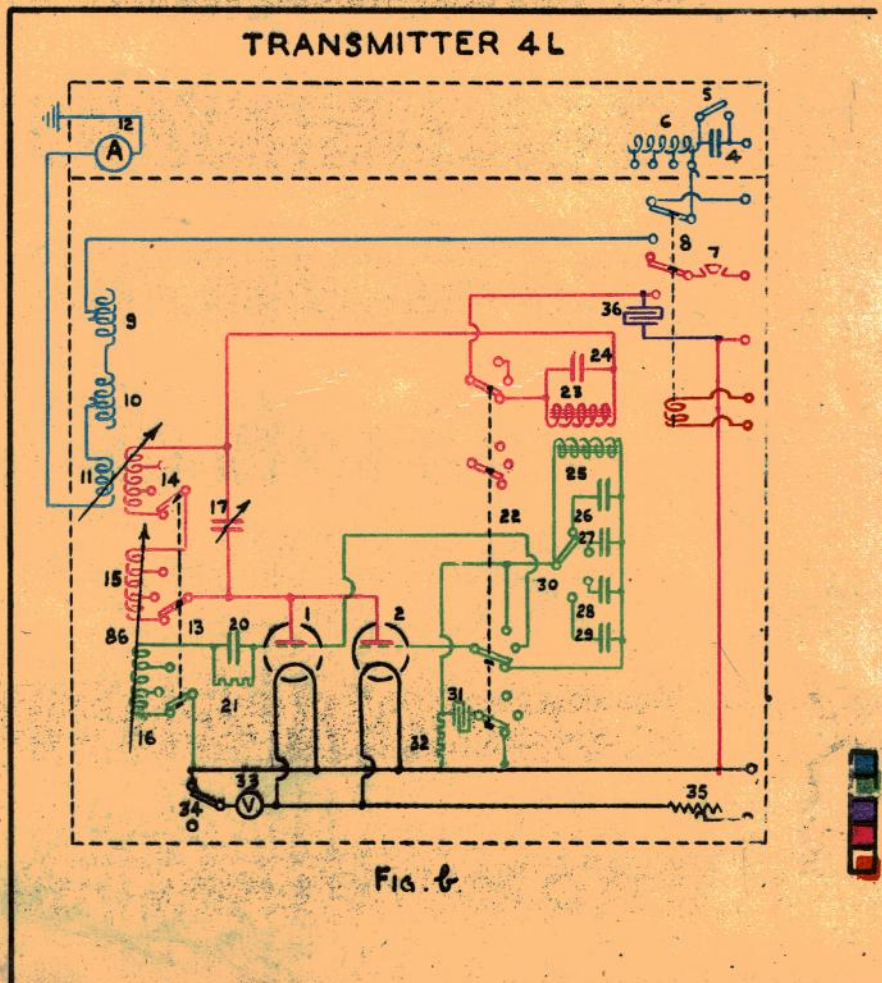


FIG. b.

# TYPE 44

## TRANSMITTER 4L

Wave form	Method of producing oscillations	Nature of circuit	Grid excitation	Feed	Aerial excitation	High oscillating potential electrode
I. C. W.	Self	Tuned circuit between anode and filament.	Mutual inductive	Series	Mutual inductive	Anode

Transmitter 4L is the main transmitter fitted in Type 44. It is of low power and is fitted complete in a panel on top of Board 2L Input Output (see figure c.)

Transmitter 4L is merely transmitter 4K with the C.W. - I.C.W. switch (22) locked in the I.C.W. position and provision made in the grid, anode and aerial circuits for an increased frequency range i.e., 272 - 1429 kc/s instead of 500 - 1429 kc/s. The quick wave change device is also omitted.

Transmitter 4K is fully described on page ~~200~~ <sup>RJ3</sup> and only the modifications for transmitter 4L are described here.

H.T. Supply. The H.T. supply from the H.T. - L.T. switch (51) is through a cushioning unit 2K. The door giving access to the lamps (54)(55)(56)(57) and the condenser (52) is secured by a mechanical lock controlled by the H.T. - L.T. switch(51). The door cannot be opened until this switch is in the "off" position.

An anode ammeter(38) and by-pass condenser(39) are connected in the H.T. supply and are fitted on Board 2L Instrument and Fuse. These are not fitted with Transmitter 4K in Type 45. Filament Supply. The filament circuit is not altered.

Oscillatory Circuit. The range switch (13) has a third position added, the positions being marked "Long", "Med" and "Short". These positions, which refer to wavelength, cover the following frequency ranges:-

"Long" 272 - 462 kc/s, "Med" 417 - 938 kc/s, "Short" 811 - 1429 kc/s.

This is arranged for by adding extra turns to the coils (14)(15)(16) and by fitting one extra tapping on coils (15) and (16) and three tappings on coil (14). An extra contact on switch (13) enables the "Long" position to be switched in.

Aerial circuit. The aerial circuit has an additional inductance (6) and aerial condenser(4). The inductance (6), condenser(4), condenser switch (5) and ammeter (12) are fitted in a separate attachment secured to the top of the transmitter 4L (see figure c.). A C.O.S. (3) is fitted in the aerial circuit to connect the aerial to either of the transmitters 4L or 4K. The listening through switch (109) in the aerial circuit is operated from the main W/T office (see page ~~204~~ <sup>R68</sup>) and earths the aerial when the main set is transmitting.

Tuning. Tuning is carried out as for transmitter 4K.

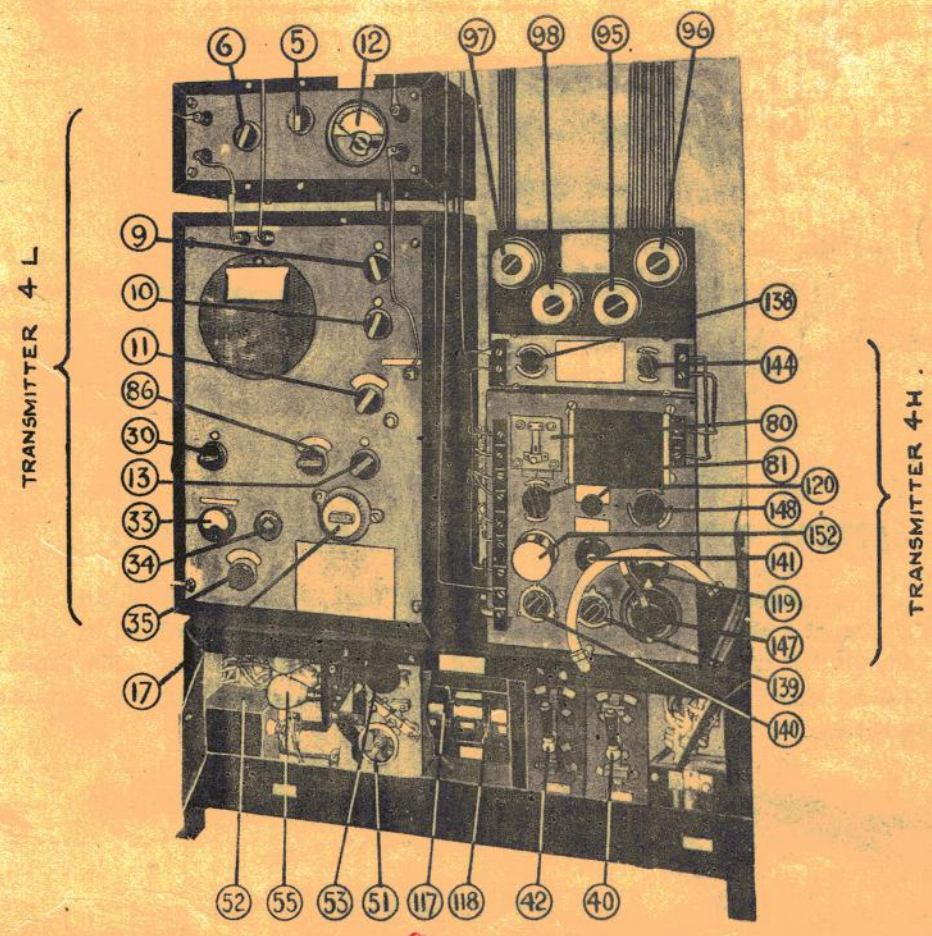


Fig c

BOARD 2L INPUT AND OUTPUT.

# TYPE 44

## TRANSMITTER 4H.

Transmitter 4H is the low power transmitter fitted with Type 44. It is also fitted with Type 37 and is fully described with that set on page 259. It uses the same aerial as the main transmitter 4L, aerial changing over arrangements being carried out by the D.P. C.O.S. (3). The key C.O.S. (75) changes the signalling circuit.

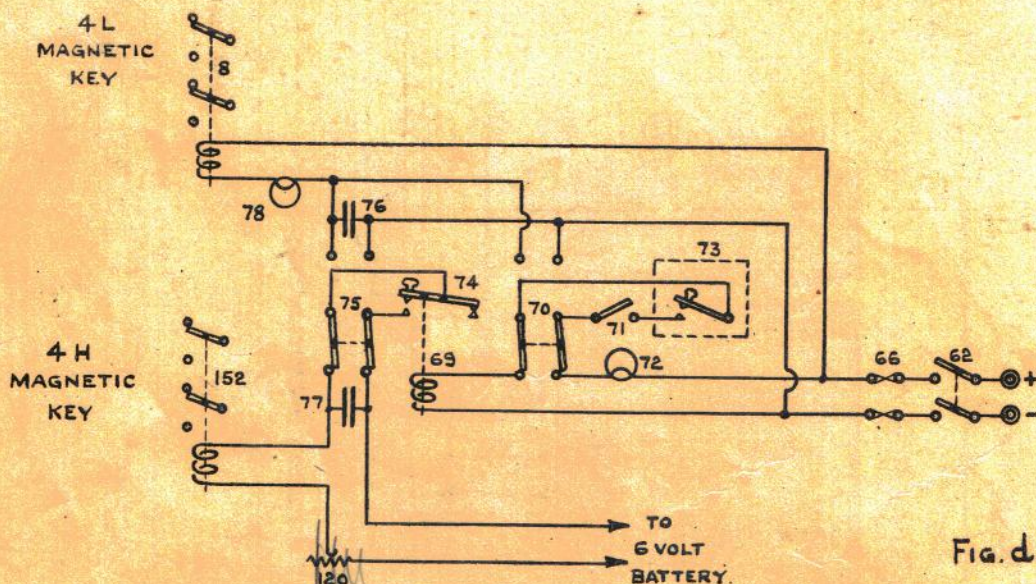
### D.C. AUXILIARY CIRCUITS.

The D.C. auxiliary circuits are controlled by three switches (61)(62)(63) fitted on board 2L Instrument and Fuse, and are labelled as follows:-

- (61) Ventilator Radiator Lights.
- (62) Charging and spare.
- (63) Transmitter 4H H.T. supply.

D.C. Signalling Circuit. Signalling from the set is carried out by means of the key (74) which is connected in the circuit to the bobbin of the magnetic key of either the 4L or 4H according to the direction in which the C.O.S. (75) is made.

For remote control of either the 4L or 4H, the key (74) is used as a master key and is operated by the bobbin (69) which is in the circuit of the remote control key (73). This circuit also includes a key switch (71), C.O.S. (70) and lamp (72) and is fed from the switch (62) through fuses (66). This arrangement of a master key is necessary, as it would be impracticable to connect the remote control key in the 6 volt circuit of 4H and still have enough current to work the magnetic key (152). There is, however, no objection to connecting a remote control key in the bobbin of the 4L magnetic key (8) and this can be done by reversing the position of C.O.S. (70). This provides an alternative method of remote controlling the 4L, the master key (74) not now being used.



BATTERY OUTFITS AND CHARGING ARRANGEMENTS.

The charging arrangements for Type 44 are shown on page NE9 battery outfit EF.

The supply for the charge-discharge switches (97) (98) is controlled by the D.P. switch (62), the rate of charge 7.5 or 15 amps is controlled by the switch (112). Both these switches (62) (112) are fitted on board 2L Instrument and Fuse, and the charge-discharge switches (97) (98) on top of the transmitter 4H.

# TYPE 44

R15

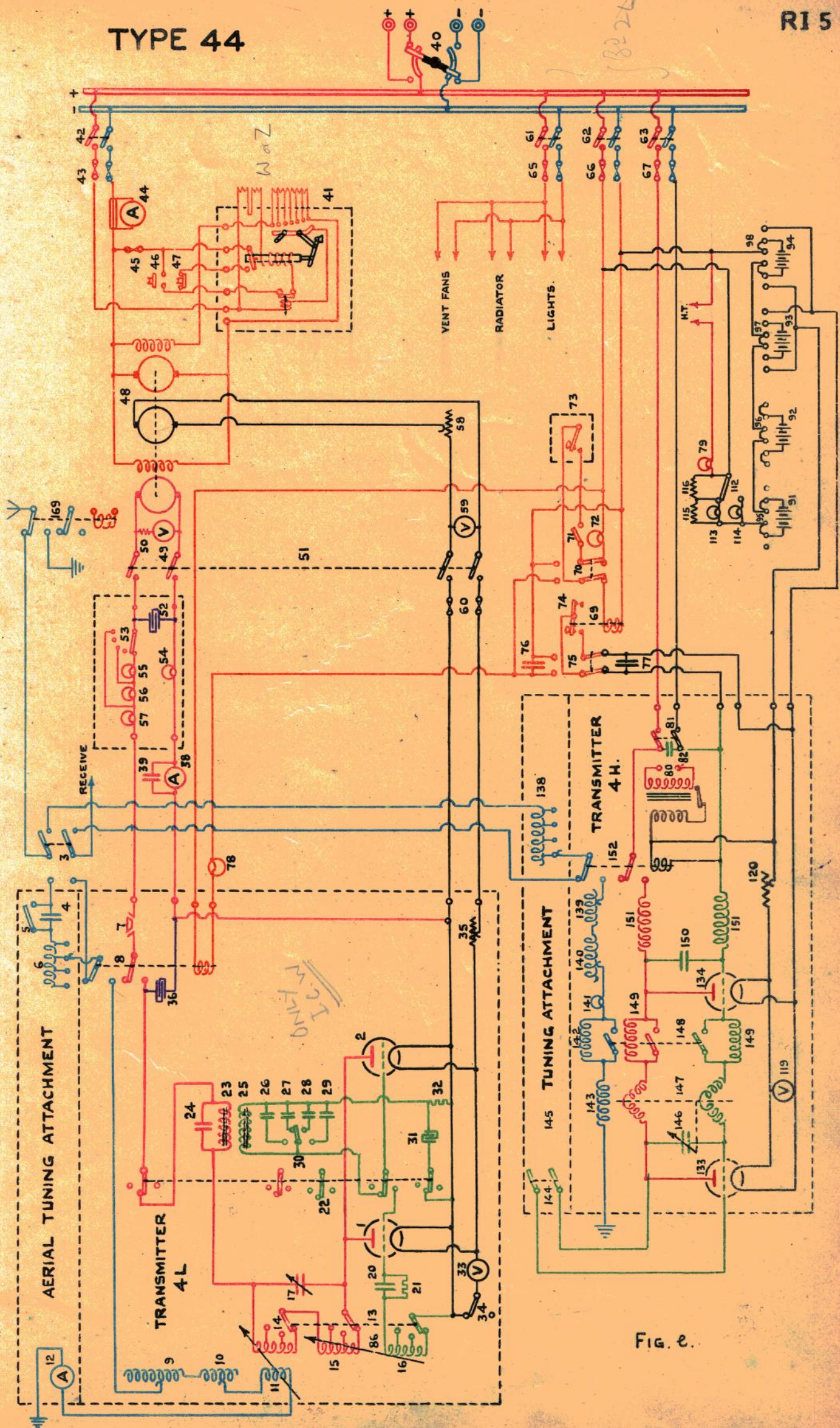


Fig. 2.