

TRANSMITTER T21C

Y5

Date of design:- 1933.
Frequency range:- 120 - 375 kc/s.
Power supply:- Dual purpose generator, 120 watts 1200 volts and
40 watts 10 volts.
Associated wavemeter:- F. A. T. W3.
Valves used:- Two V. T. 1A.
Approximate range in miles:- 150 miles.

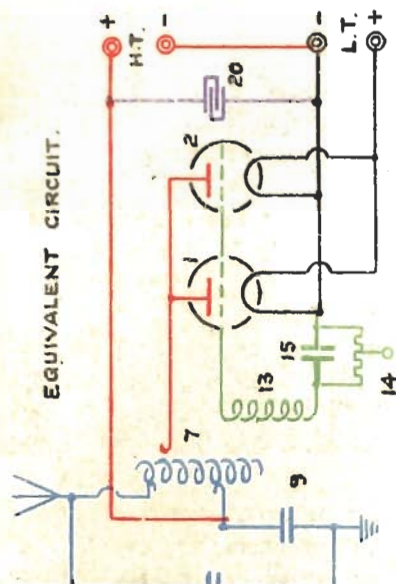
Wave form	Method of producing oscillation	Nature of circuit	Grid excitation.	Feed	Aerial excitation	High oscillating potential electrode
C.W.	Self	Tuned circuit between anode and filament.	Mutual inductive	Series	Direct inductive	Anode

Transmitter T21C is a modified form of the Transmitters T21A and T21B. With the exception of the keying, the modification does not constitute changes in design, but only in certain details of construction to enable the transmitter to be used with a dual purpose generator in place of a single purpose generator and filament battery.

Transmitter T21C is an L/F transmitter and is employed for purposes requiring medium long range. The transmitter is mounted together with receiver "Tf Modified" in a crate. This crate is removable so that an alternative crate containing the H/F transmitter T48 and receiver 547 can be fitted in its place.

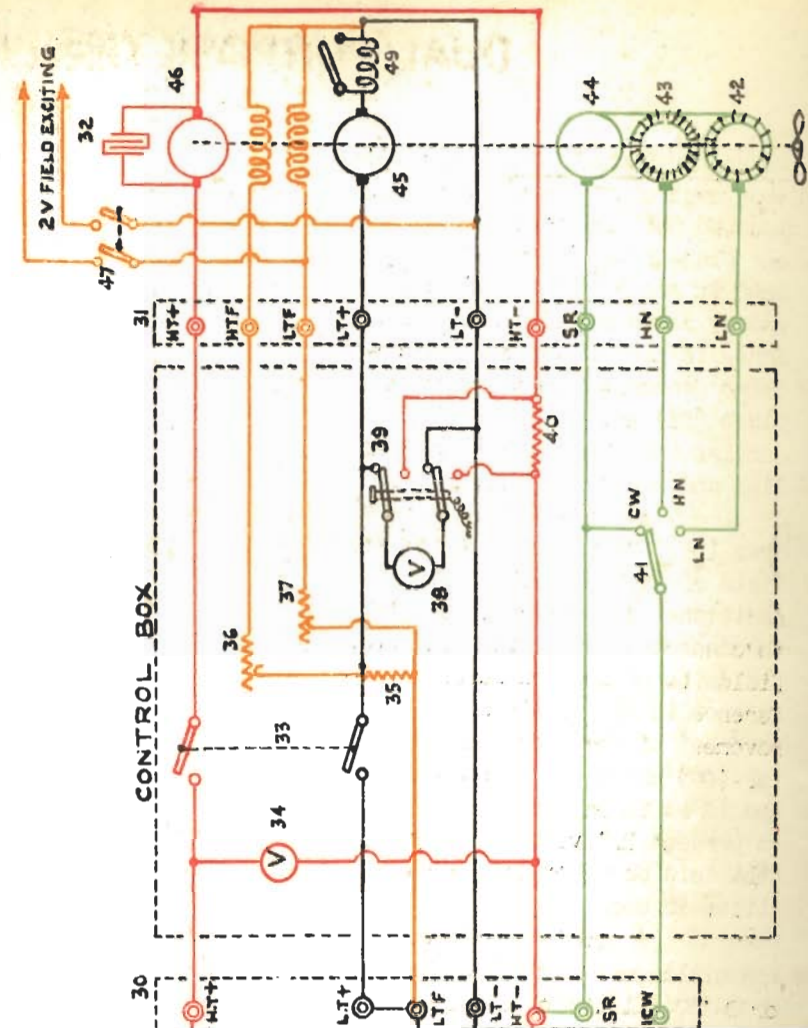
Y 4

TRANSMITTER T21C



EQUIVALENT CIRCUIT.

Fig. 6



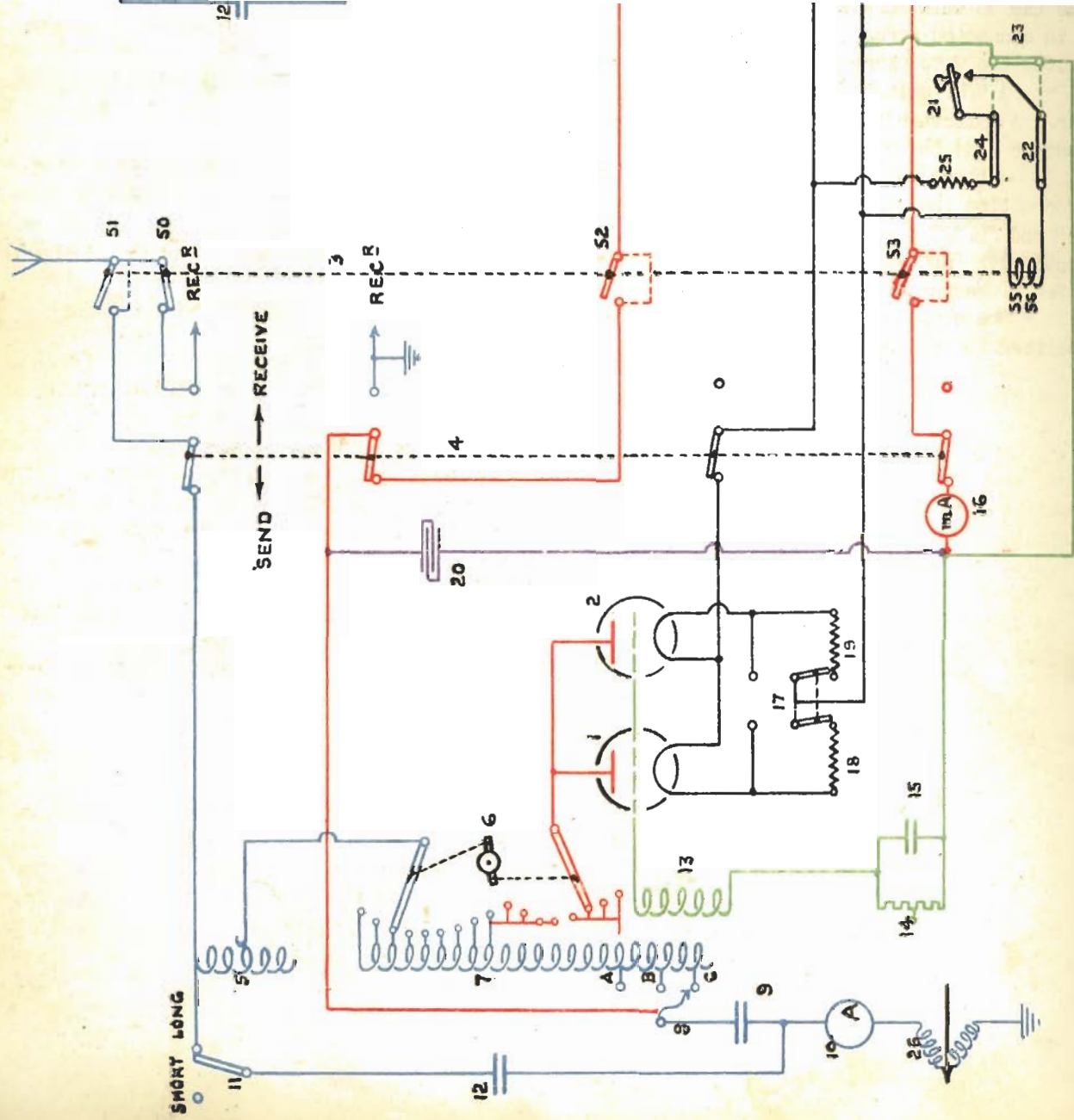


FIG. 4.

Operation and Tuning. Connect the generator to the control box and the control box to the transmitter. See that the switch (17) is in the 10 volt position. Put the control switch (33) to "OFF", set the wavelength switch (6) to the approximate adjustment given on the transmitter and insert the earth plug (8) in the correct socket.

Put the control switch (33) to "ON" and adjust the field regulators (33) and (37) so that the H.T. and L.T. voltages are 1000 volts and 10 volts as shown in the voltmeters (34) and (33) respectively.

Make the send-receive switch (4) to "send".

Press the key (21) and see that readings are obtained in the aerial ammeter (10) and the H.T. milliammeter (16). The latter should not read more than 60 mA.

Tuning is now carried out with the R. A. F. wavemeter W3 (see page Y8), the angle of the wavemeter coil (58) being set to a suitable angle to give the necessary glow in the wavemeter pea lamp. The "L" - "S" switch (11) is put to the required position, coarse adjustments are then made on the aerial coil (7) by the wavelength switch (6) and fine adjustments by the fine tuning coil (5). Final tuning is obtained on the variometer (23).

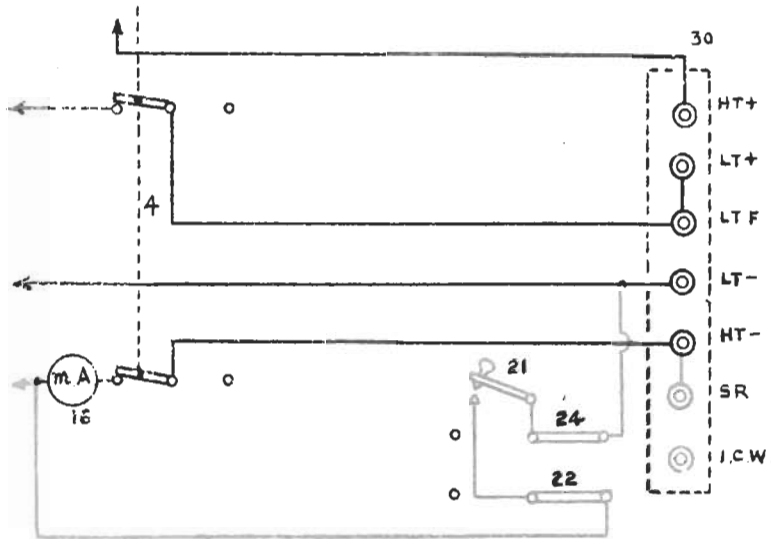


Fig. d.

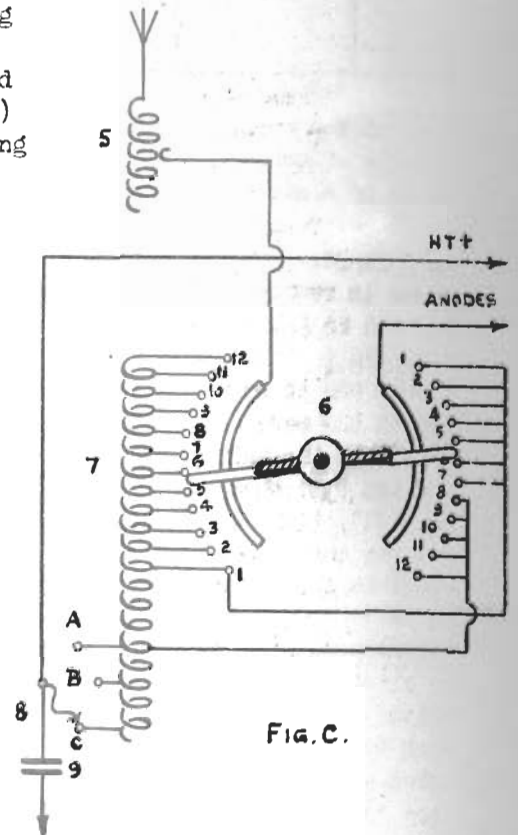


Fig. c.

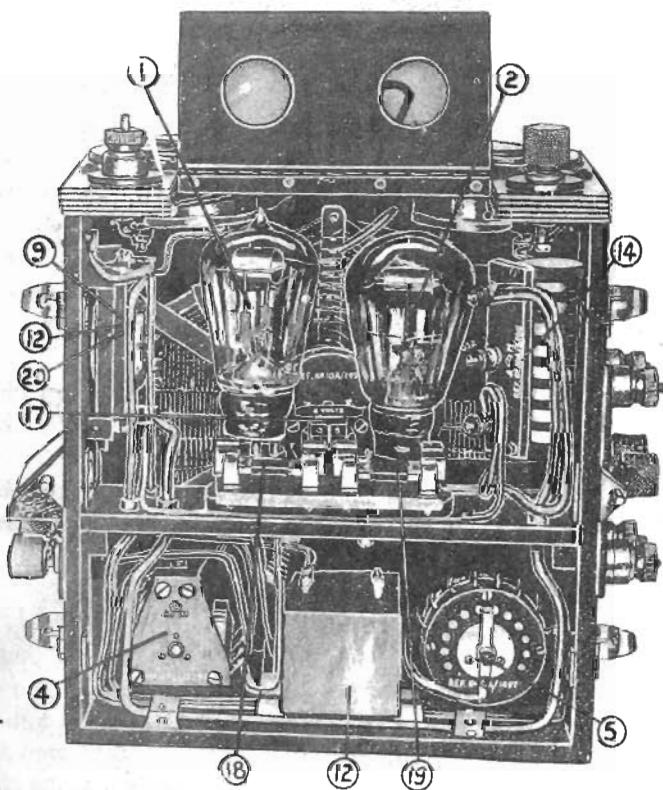
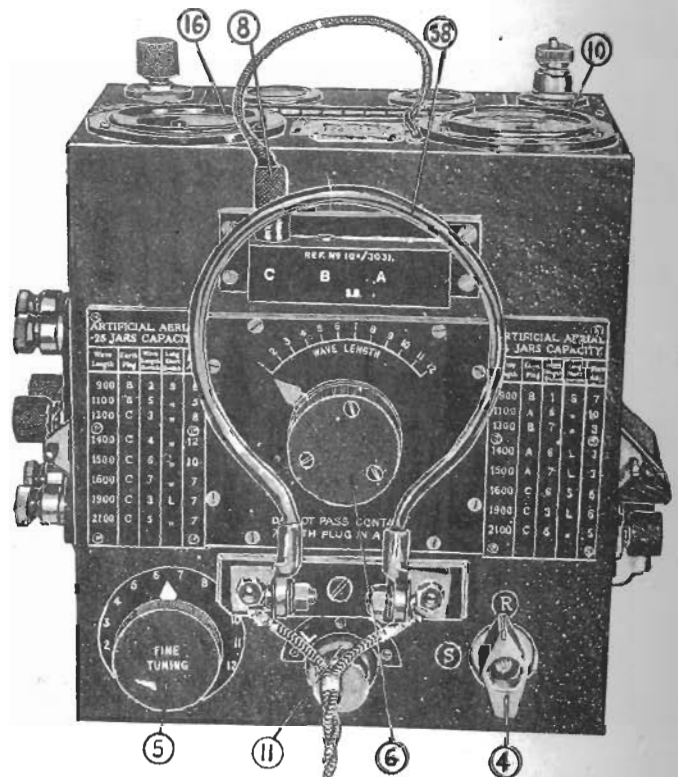


Fig. e



TRANSMITTER T21C

LISTENING THROUGH KEY

The Listening Through Key (3) fitted with T21C and TF is shown in figure g. If secured direct to the instrument panel its adjustment is seriously affected by aircraft vibration; it is therefore normally hung on a bracket with a suspension cord.

The signalling key (21) completes the 6-volt circuit to energise the bobbins (55)(56) of the L/T key (3). When a D.P. generator is fitted, the L.T. supply is used for this and a 3 ohm resistance (25) is inserted to give correct voltage (see figure a.).

When the bobbins (55)(56) are energised the armature (57) is attracted and causes a bowing of four steel blades (50)(51)(52)(53), each of which carries a tungsten contact. The blades control the following circuits:-

- | | |
|--------------------------|----------------------|
| (50) Receiver Aerial | (52) H. T. Positive. |
| (51) Transmitter Aerial. | (53) H. T. Negative. |

The key must be adjusted so that the energising of the hobbin causes action in the following sequence:-

- (50) break, (51) make, (52) make, (53) make.

A small additional spring behind blade (50) is fitted to ensure a good contact on the receiver aerial.

Should the listening through key magnetic unit become defective (or should, for any reason, listening through not be required) signalling may be carried out by:-

- (a) Removing the magnetic unit and inserting adaptor (54) in position shown in figure h.
- (b) Working the send and receive switch (4).

The making of the H. T. circuit and the change over of aerial is now controlled by the S/R switch (4). The hand key, no longer connected to the hobbin circuit, now forms a make and break which directly interrupts signalling by breaking:-

- (a) The H. T. negative supply.
- (b) The grid circuit.

Note. Care should be taken when removing the magnetic unit that the H. T. supply is out off by the switch (20).

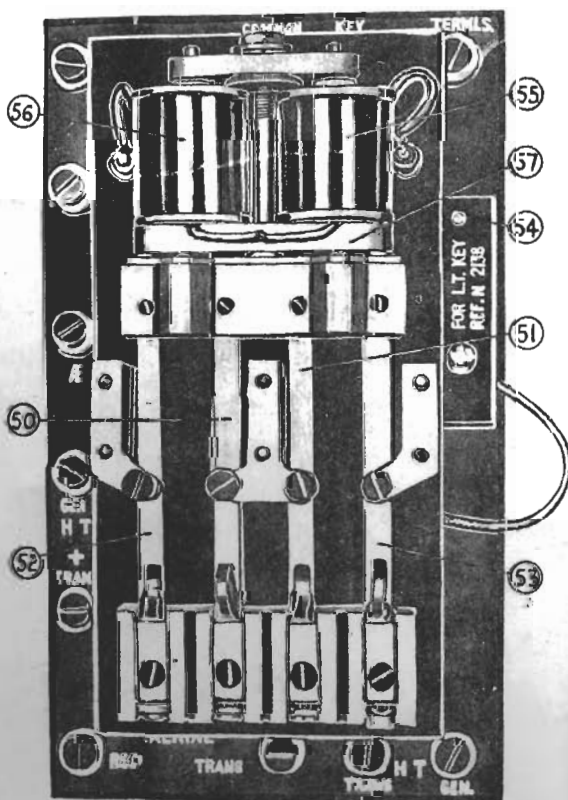


Fig. g

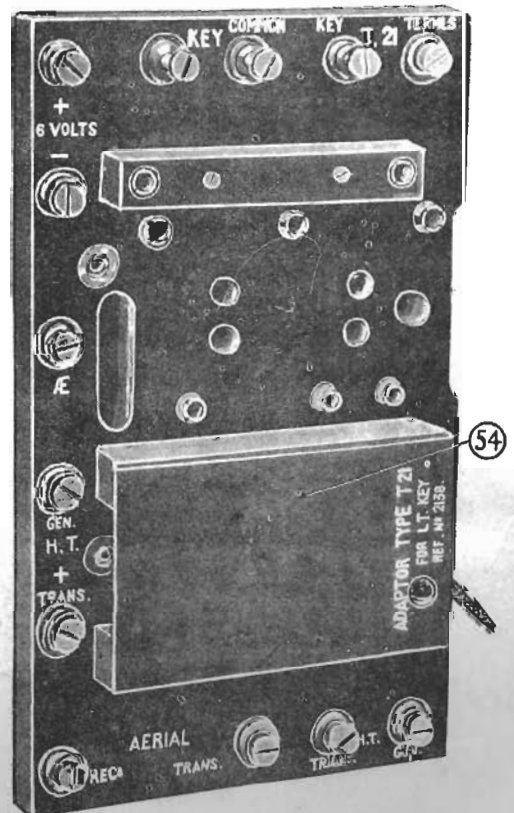


Fig. h