

July 1937



Note No. 17

LIGHT GUN FACTORY, ERITH, KENT

SERVICE NOTES

Model C.N. 270

**BATTERY "ALL WAVE" BANDPASS
RECEIVER.**

Wavebands :—13·5—49·5, 75—210, 200—550, 900—2,100 metres.

To examine the underside of the chassis, remove the detachable bottom of the cabinet.

Instructions for removing the chassis from the cabinet are given on the label affixed to the inside of the cabinet.

ALIGNMENT INSTRUCTIONS.

A signal generator covering wavebands 13·5—48·5, 75—210, 200—550, and 900—2100 metres is necessary.

Make sure that the pointer travels fully to each end of the scale.

Inject a 250 metre signal into A2 with the aerial pre-set condenser screwed up moderately tight. With the waverange switch at medium waves (range 3), turn the tuning pointer to 250 metres on the scale, and with the volume control at maximum and reaction well advanced adjust the main anode trimmer (b) for maximum output. Then adjust the main grid trimmer (a) similarly. These trimmers are placed under the chassis at the front, and access to them is obtainable through holes in the top of the chassis near to the ends of the tuning scale.

Next adjust the aerial trimmer on the gang condenser. This will probably be screwed up tightly, in which case the additional aerial trimmer (d) under the chassis should be adjusted for maximum output. During this process reaction should be advanced as far as possible without oscillation actually taking place.

Check calibration by injecting various signals from 250-500 metres.

Switch set to long waves (range 4) and inject a 1,000 metre signal. Tune to 1,000 metres on the scale, and adjust L.W. anode trimmer (f), L.W. grid trimmer (c) and L.W. aerial trimmer (h) for maximum output, keeping the reaction advanced as before.

Check calibration at various points.

Switch set to medium—short waves (range 2) and inject a 75 metre signal. Tune to 75 metres on the scale and adjust M.S.W. anode (e) and grid trimmer (g) for maximum output, still keeping the reaction advanced as before.

Check calibration at various points.

The short wave range (range 1) has no separate trimmers, but slight adjustments may be made by alteration of position of the leads to the grid and anode of the VP2 valveholder relative to the rest of the wiring under the chassis.

COMPONENT VALUES NOT INDICATED ON THE CIRCUIT DIAGRAM.

		Ohms.
Aerial Coil (S.W.1)	between points 4 & 5	·15
" " (S.W.1)	1 & 2	very low
" " (S.W.2)	5 & 6	·35
" " (S.W.2)	2 & 3	1·2
" " (M.W. & L.W.)	3 & 4	3·5
Band-pass primary coils (M.W.)	6 & 5	4·5
" " " (L.W.)	5 & 4	19
" secondary coils (M.W.)	6 & 5	4·5
" " " (L.W.)	5 & 4	19
Reaction Coil (S.W.1)	5 & 4	·15
Anode Coil (S.W.1)	1 & 2	very low
Reaction Coil (S.W.2)	5 & S4	·35
Anode Coil (S.W.2)	4 & 5	1·2
Reaction Coil (M.W. & L.W.)	6 & 1	2·7
Anode Coil (M.W.)	3 & 4	4·5
" " (L.W.)	4 & 5	19
H.F. Choke		170
Speaker Speech Coil		1·75
L.F. Transformer Primary		1050
" " Secondary		5750
Output Transformer Primary		625
" " Secondary		·5

VALVE TYPES.

No. 1 Mullard VP2 (Metallised) No. 2 Mazda HL2 (Metallised) No. 3 Mullard PM22D

PILOT LAMPS.

2 M.E.S. Type 2·6v. 3A.

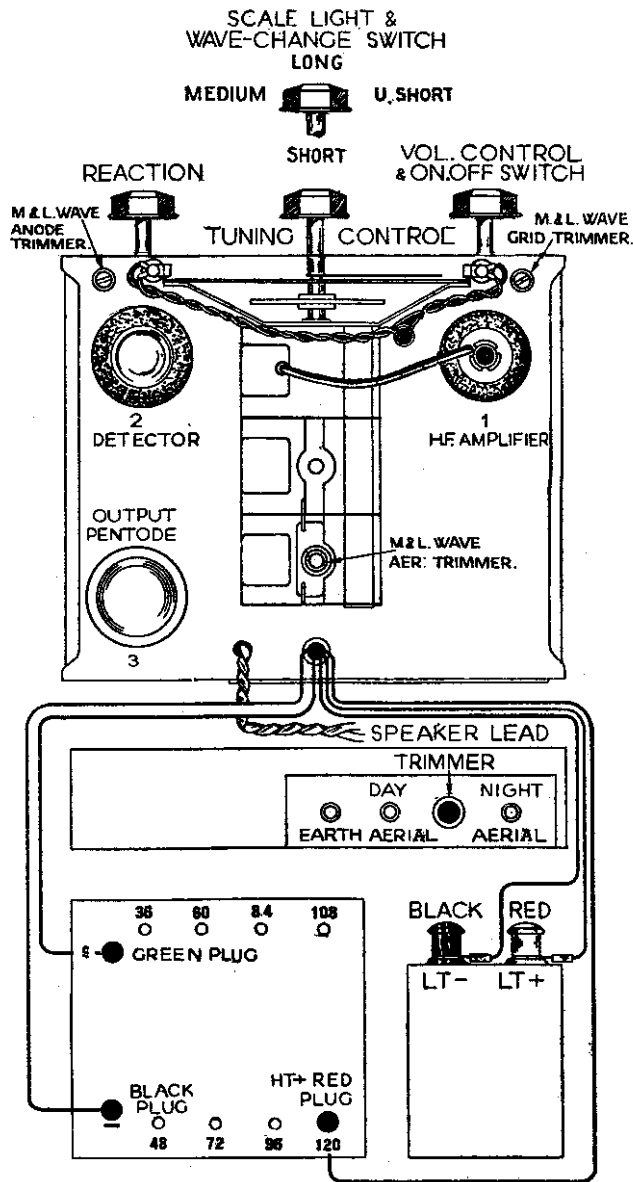
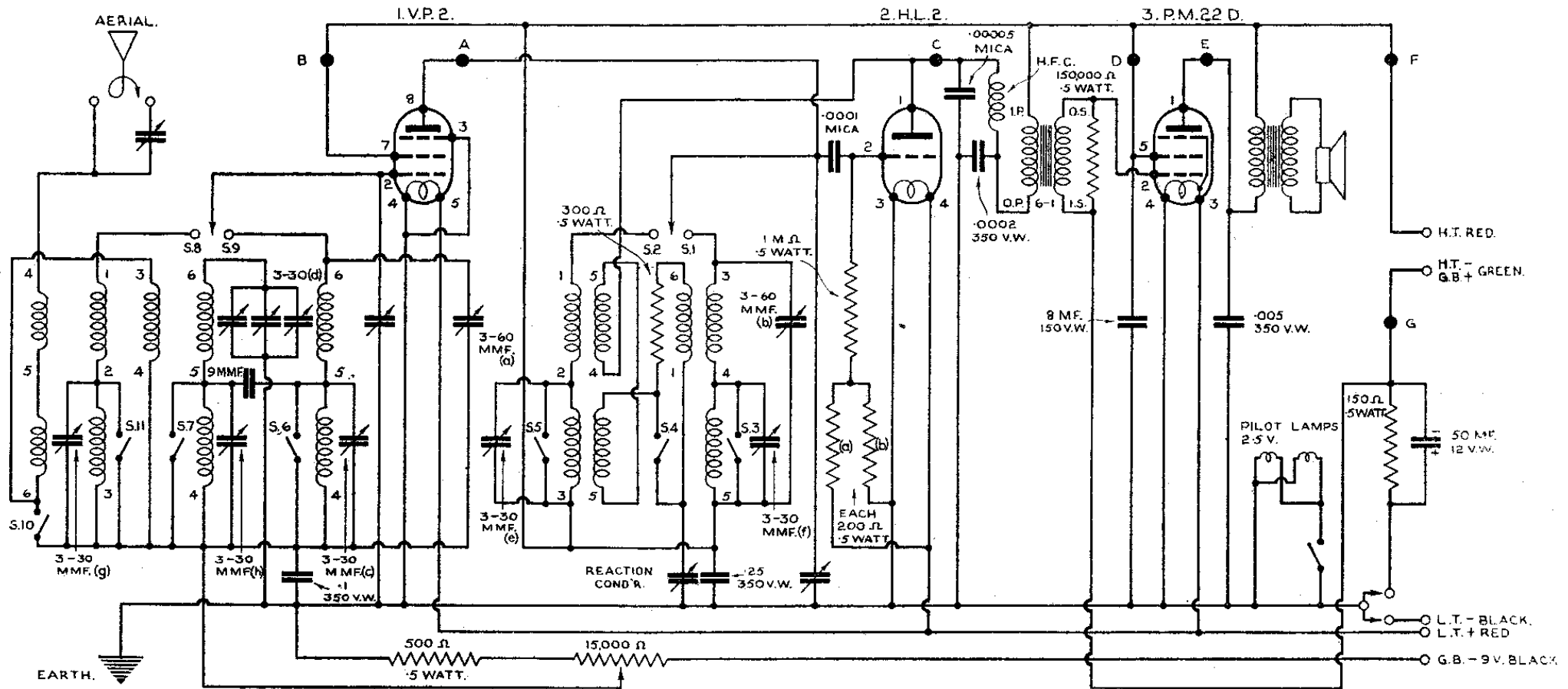


Fig. 1. Top View of Chassis and Connections.

CIRCUIT DIAGRAM OF MODEL CN 270



VALVE.	V.P.2	H.L.2	P.M.22 D
REF. N ^o	1	2	3
METALLISING.	1		
HEATER.	4	3	3
HEATER.	5	4	4
SCREEN GRID.	7		5
SUPPRESSOR GRID.	3		
CONTROL GRID.	2	2	2
ANODE.	B.T.C.	1	1

AVERAGE VOLTAGE FIGURES OBTAINED WITH UNIVERSAL AVOMETER BETWEEN POINT INDICATED & EARTH UNDER NO SIGNAL CONDITIONS WHEN USING 120V. BATTERY INCORPORATING G.B.

POINTS	VOLTS	CURRENT M/A.
A.	109	1.5
B.	1	.5
C.	105	3
D.	109	.5
E.	105	4.5
F.	109	10
G.	-2	10

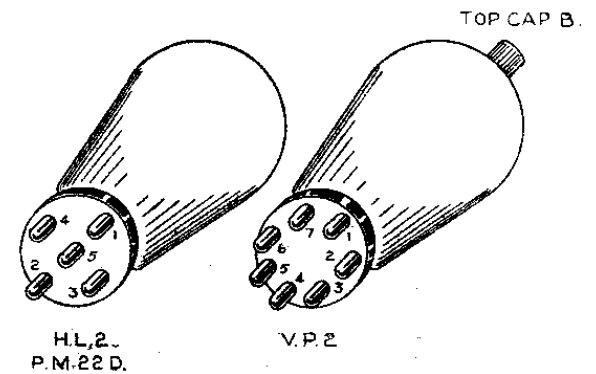
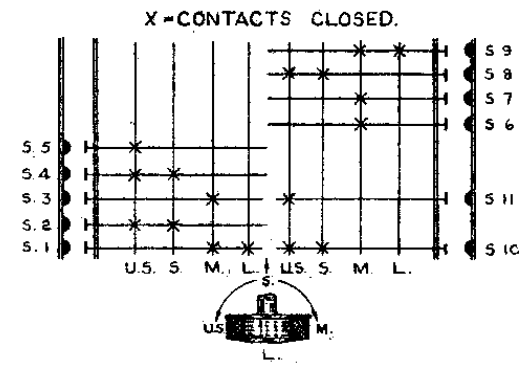
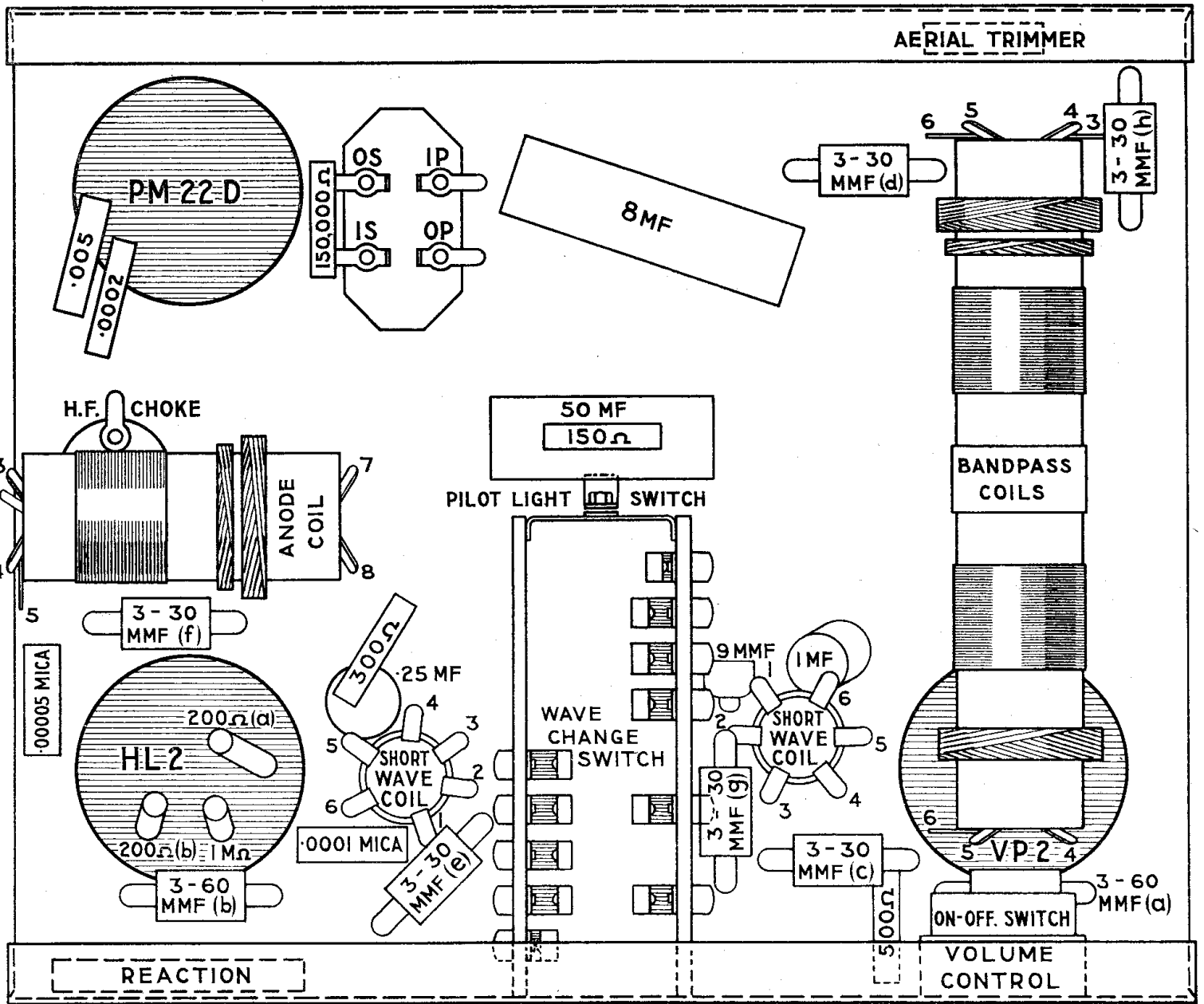


Fig. 2



UNDERSIDE VIEW OF CHASSIS.

Fig. 3.

SERVICE DEPT.