January 1939

BURNDEPT LIMITED

Note No. 26a

LIGHT GUN FACTORY, ERITH, KENT

SERVICE NOTES

Table Model C.N. 290 and

Radiogram Model C.N. 303

ALL WAVE SUPERHET (18 watt Models)

(For A.C. Mains).

Wavebands :—13·5–50, 50–180, 175–550, 750–2000 metres.

Alignment Instructions.

For accurate alignment a test oscillator or signal generator and an output meter are required.

I.F. Alignment.

The frequency used for I.F. Amplification is 473 KCs. The signal generator should be set to this frequency, and its output connected between the control grid of the 6L7G valve and the earth line, with a ·25 megohm resistance connected between control grid and chassis. Short circuit the oscillator section of the gang condenser. Adjust the output of the signal generator so that a convenient deflection is obtained on the output meter. Trim the secondary circuit of No. 2 I.F. transformer, following up with the primary circuit, and then No. 1 I.F. transformer secondary and primary for maximum response. When the trimmers are correctly adjusted, remove the lead shorting the oscillator section of the gang condenser.

Signal Frequency Alignment.

Connect the signal generator to the A and E sockets of the receiver. Each waveband should be aligned in turn, commencing with band 4 and following up with bands 3, 2 and 1 in that order. For each waveband the procedure is as follows :—

The receiver and the signal generator is set to the lower "Trimming" wavelength and the oscillator trimmer adjusted until the signal is tuned in. The grid trimmer is then adjusted for maximum output.

Then the higher "Padding" wavelength is injected from the signal generator, and the signal tuned in on the receiver. The padding condenser is then adjusted while rocking the gang slightly each side of the received signal to obtain the optimum output. Return to the lower end of the waveband and re-trim and re-pad again, repeating the process until trimming has little effect on the padding and vice-versa.

A fixed padder is used on Band 1, and therefore only the grid and oscillator trimmers need be adjusted. On this band trimming is exceedingly critical and great care should be taken to see that the pressure of the trimming tool is not affecting the process. Care should be taken to get the right channel when trimming this band or calibration and performance will not be good. The first tuning point on the trimmer is the correct one.

The following are the points at which trimming and padding on each waveband should be carried out :—

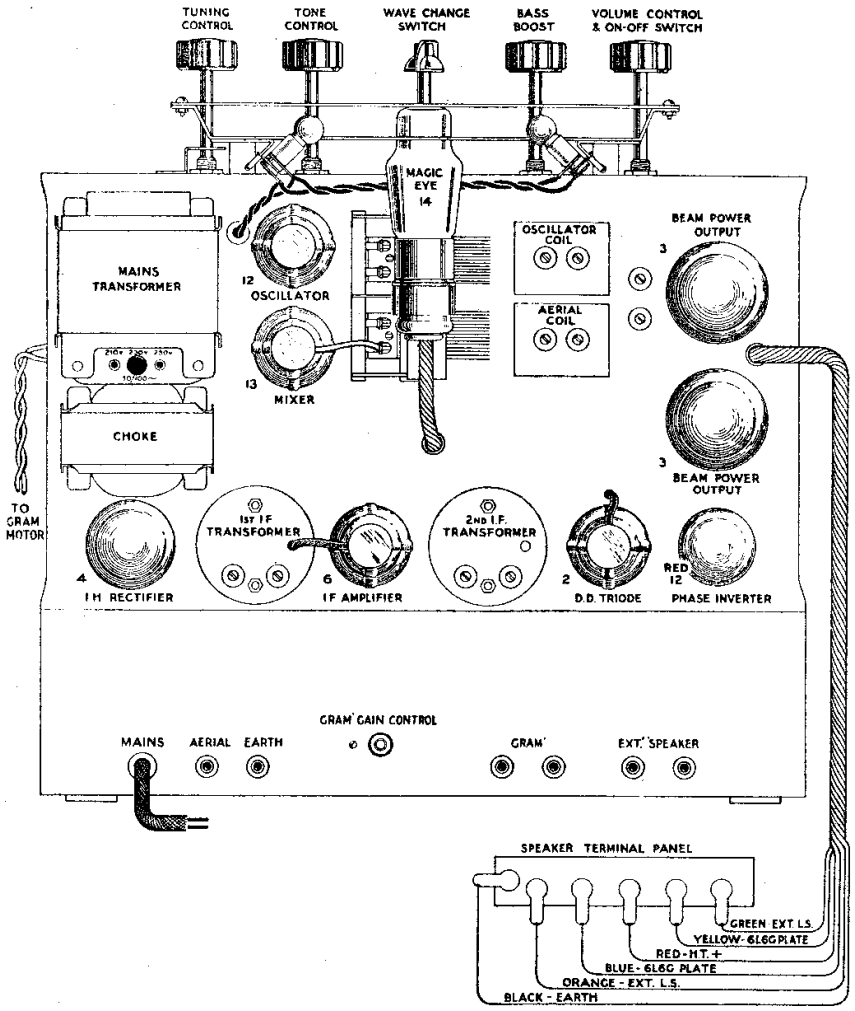
Band.		Trim.		Pad.
1	....	13·5 metres	....	——
2	....	50 ,,	....	170 metres.
3	....	200 ,,	....	550 ,,
4	....	1000 ,,	....	2000 ,,

On band 1 a 30 to 40 micro-micro-farad fixed condenser is preferable in place of the normal type type of dummy aerial on the signal generator.

TRIMMERS INDICATED ON UNDERSIDE VIEW OF CHASSIS.

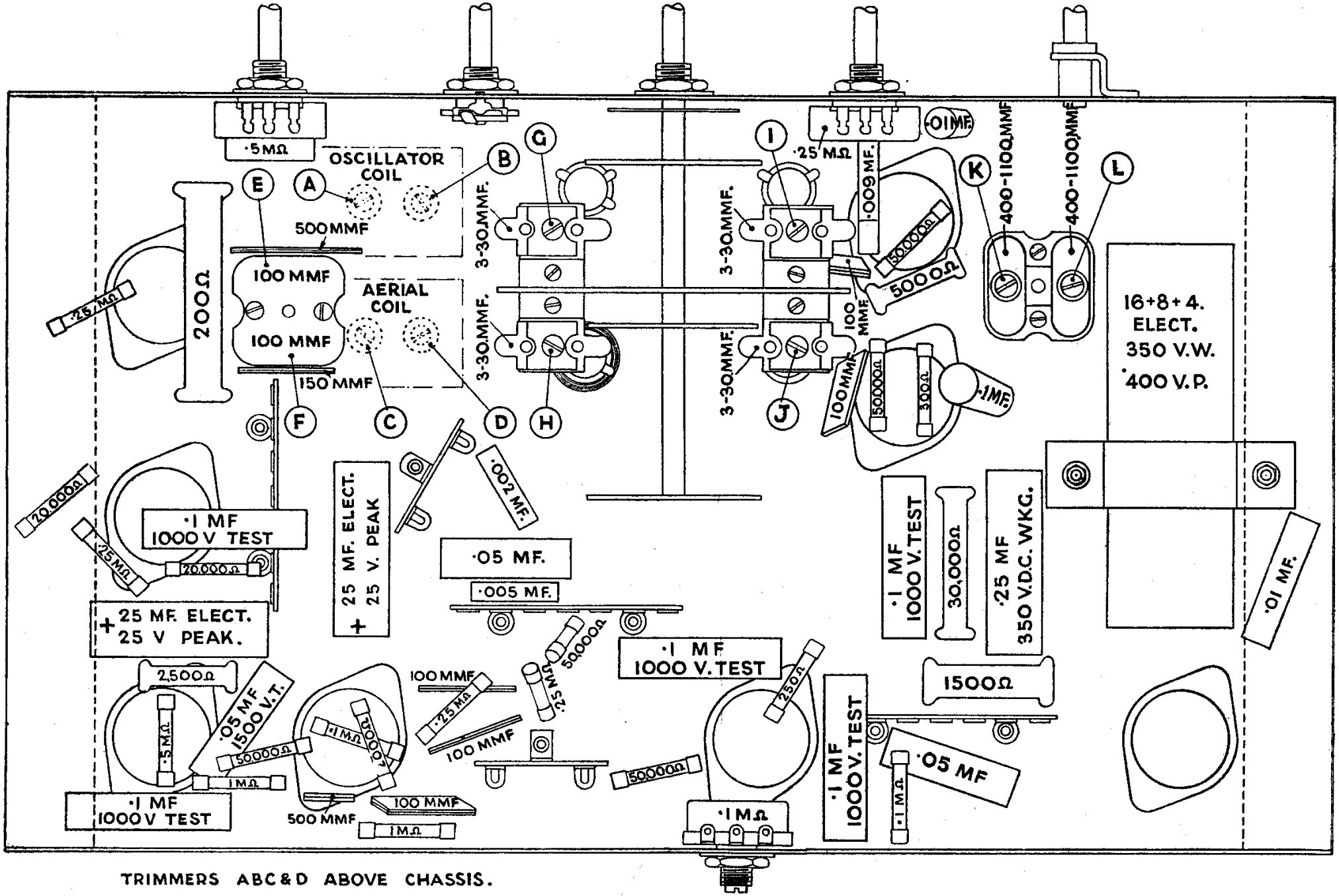
Band 1	Oscillator Trimmer		I
Band 1	Aerial Trimmer		J
Band 2	Oscillator Trimmer		G
Band 2	Aerial Trimmer		H
Band 2	Padder		K & L
Band 3	Oscillator Trimmer		A
Band 3	Aerial Trimmer		C
Band 3	Padder		E
Band 4	Oscillator Trimmer		B
Band 4	Aerial Trimmer		D
Band 4	Padder		F

PILOT LAMPS—Two 6·5v. ·5 amp.



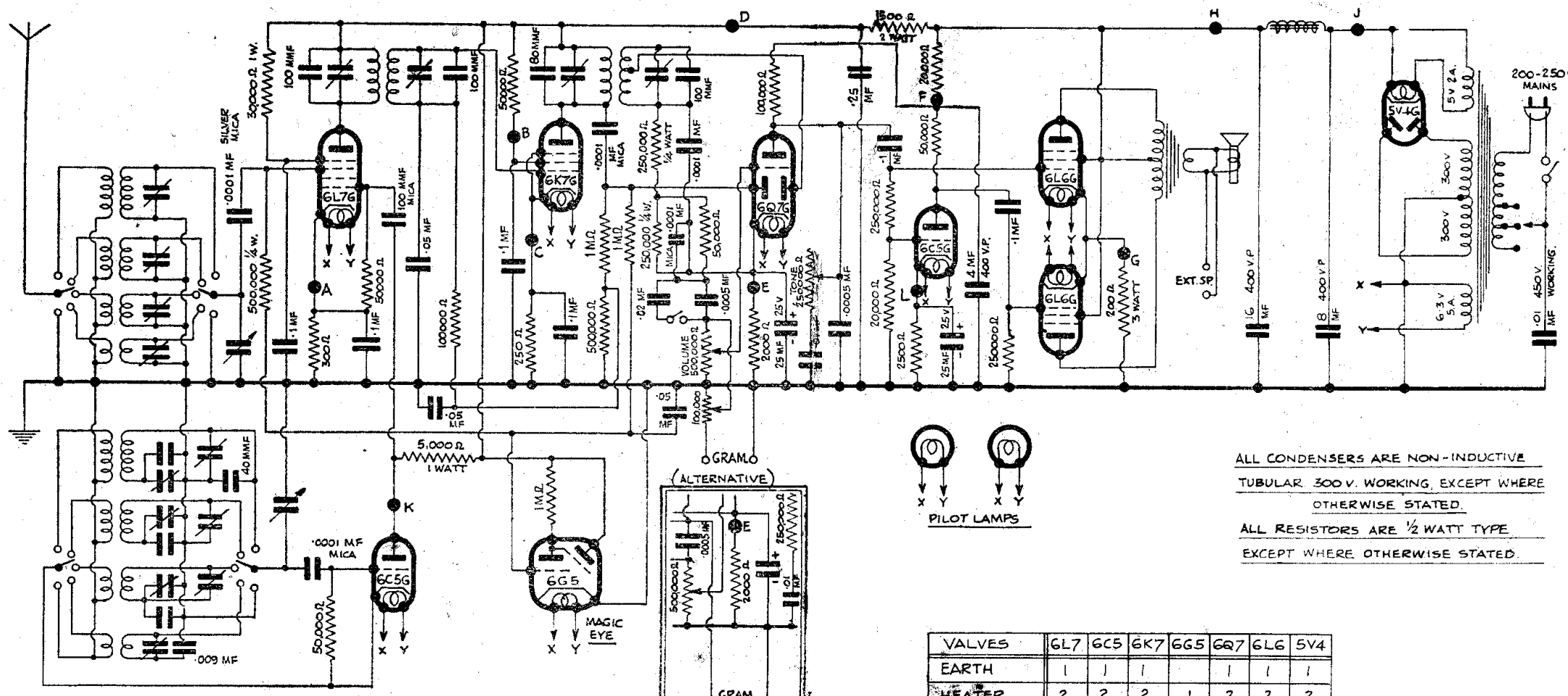
ABOVE CHASSIS VIEW C.N. 303.

UNDERSIDE VIEW OF CHASSIS.



TRIMMERS ABC&D ABOVE CHASSIS.

FOR RADIO-GRAM ~ MODELS ONLY. (C.N. 303.)



ALL CONDENSERS ARE NON-INDUCTIVE TUBULAR 300 V. WORKING, EXCEPT WHERE OTHERWISE STATED.

ALL RESISTORS ARE ½ WATT TYPE EXCEPT WHERE OTHERWISE STATED.

SYM.	VOLTS	MILLIAMPS
A	2·0	6·7
B	110·0	2·1
C	2·5	10·0
D	225·0	27·0
E	1·0	0·5
F	180·0	2·5
G.	19·2	96·0
H	275·0	125·5
J	300·0	127·0
K	185·0	7·7
L	4·5	1·8

AVERAGE VOLTAGES WITH UNIVERSAL "AVO" AT POINTS INDICATED & EARTH, UNDER 'NO SIGNAL' CONDITIONS

VALVES	6L7	6C5	6K7	6G5	6Q7	6L6	5V4
EARTH	1	1	1		1	1	1
HEATER	2	2	2	1	2	2	2
"	7	7	7	6	7	7	8
PLATE	3	3	3	2	3	3	4&6
SCR'N'D GRID	4		4			4	
SUPPRESSOR "			5				
CATHODE	8	8	8	5	8	8	8
CONTROL GRID	9	5	9	3	9	5	
INJECTOR "	5						
DIODE					4&5		
TARGET				4			
REF. No	13	12	6	14	2	3	4