

PHILIPS RADIOPLAYER

MODEL 6620

SPECIFICATIONS.

(Subject to alteration without notice)

Voltage Rating (power supply)	195-260 volts A.C. or D.C.
Tuning range	200-550 metres
Intermediate frequency	462.5 kc/s.

VALVE EQUIPMENT.

Frequency Converter	CK1—octode
I.F. Amplifier	CF2—R.F. Penthode
A.V.C. Demodulator and Audio Amplifier	CBC1—diode triode
Power Amplifier	CL2—Power Penthode
Rectifier	CY2—indirectly heated
Regulating Lamp	C1—Barretter
Dial Lamp	250 volts 15 watt small B.C. Pilot

INSTALLATION. Full instructions for the installation of Model 6620, are contained in the instruction book supplied with each Radioplayer.

THE BARRETTTER or Iron Hydrogen Regulating Lamp represents a new development in Receiver design, the function of which is to regulate the current in the filament circuit so that variations in the power supply have no detrimental effect on the useful life of the receiving valves.

The use of the Barretter furthermore enables the receiver to be operated on any voltage from 195 to 265 volts, A.C. or D.C., without circuit alteration. The Barretter replaces entirely the series resistor employed previously in A.C./D.C. receivers.

SAFETY PRECAUTIONS. Every care has been taken to ensure that the Model No. 5625 is safe in operation. The Radioplayer is fitted with a two-pin plug and receptacle which disconnects the power supply from the set when the protective back of the cabinet is removed. The aerial lead is isolated by the provision of series condensers. It is, however, necessary to exercise due care in the installation or servicing of the Radioplayer.

IMPORTANT. DO NOT MAKE ANY ADJUSTMENTS TO THE AERIAL OR IN ANY WAY TAMPER WITH THE BACK OF THE RECEIVER WITHOUT FIRST REMOVING THE POWER PLUG. ADJUSTMENTS TO TRIMMERS, ETC., UNDER "LIVE" CONDITIONS, SHOULD ONLY BE CARRIED OUT WITH INSULATED TOOLS, AND CARE SHOULD BE TAKEN TO AVOID PERSONAL CONTACT.

DISMANTLING THE SET.

1. Disconnect power plug.
2. Remove back cover from the cabinet.
3. Remove knobs at front of cabinet (recessed grub screws).
4. Withdraw loudspeaker plug from socket behind electrolytic condensers.
5. Unscrew the four bolts holding the chassis to floor of cabinet. The chassis may now be withdrawn from the cabinet.

REMOVING LOUDSPEAKER. If it is desired to remove the speaker, this may be accomplished by unscrewing the four woodscrews securing same.

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ALIGNMENT. Precise alignment is vital to the proper functioning of this receiver. There are four trimming adjustments provided on the intermediate frequency transformers and three in the octode tuning circuits (two at the gang condenser together with the padder). These trimmers are accurately adjusted at the factory, and will retain the alignment unless affected by abnormal climatic conditions or unless alterations have been made to the trimmers or wiring for service purposes. Incorrect alignment is usually indicated by loss of selectivity coupled with poor sensitivity. The correct performance can only be obtained if the set alignment is achieved by reliable test apparatus, and no attempt should be made to tamper with the trimmers unless a suitable service oscillator and visual output meter is available.

I.F. TRIMMER ADJUSTMENTS. The position of the four I.F. trimmers is shown in the chassis layout diagram. Each must be aligned to the basic frequency of 462.5 kc/s. To accomplish this, connect an output meter to the receiver. The "hot" side of the test oscillator should be connected to the grid of the octode CK1 through an 0.5 μ F. condenser and the "earth" side of the oscillator should be joined to the receiver chassis. The normal grid clip should remain on the cap of the valve. Tune the oscillator to exactly 462.5 kc/s. Advance the volume control to full on position and adjust the receiver tuning control to a point where the condenser plates are fully engaged. Increase the output of the test oscillator until a slight indication is observed on the output indicator. Then adjust the two trimmers on the 2nd I.F. transformer for peak receiver output. Next adjust the two trimmers on the first I.F. transformer for maximum indication on the output meter.

During these adjustments the output of the test oscillator should be regulated so that the output is as low as possible. This will prevent errors in alignment due to the A.V.C. action. The I.F. trimmers should be gone over again to ensure that mutual coupling has not displaced the original adjustment.

R.F. TRIMMER ADJUSTMENTS. The two trimmers on the gang condenser are indicated as oscillator and aerial trimmer in the chassis layout illustration. The padder, indicated as C4 in the component location photograph, is accessible for adjustment from underneath the chassis. Before proceeding with the R.F. adjustment, see that the dial pointer just coincides with the end of the scale when the tuning condenser plates are fully engaged. Attach the output of the test oscillator to the aerial lead through an 0.5 μ F. condenser. The "earth" side of the oscillator is joined to chassis.

Proceed further as follows:—

- (a) Connect output meter to output of set and turn volume control to maximum.
- (b) Adjust test oscillator to 1500 kc/s., and tune receiver until pointer indicates 1500 kc/s. on dial.
- (c) Increase test oscillator output until a small indication is given on the output meter.
- (d) Adjust the oscillator trimmer on gang condenser until a maximum output is recorded.
- (e) Adjust test oscillator to 1400 kc/s. and set dial to same frequency. Adjust aerial trimmer on condenser gang for maximum output on meter.
- (f) Adjust test oscillator to 600 kc/s., and tune dial of set to same frequency. Adjust padder C4 for maximum output.
- (g) If padder has been altered very much it will be advisable to return to 1400 kc/s. and recheck alignment as per para. (e).



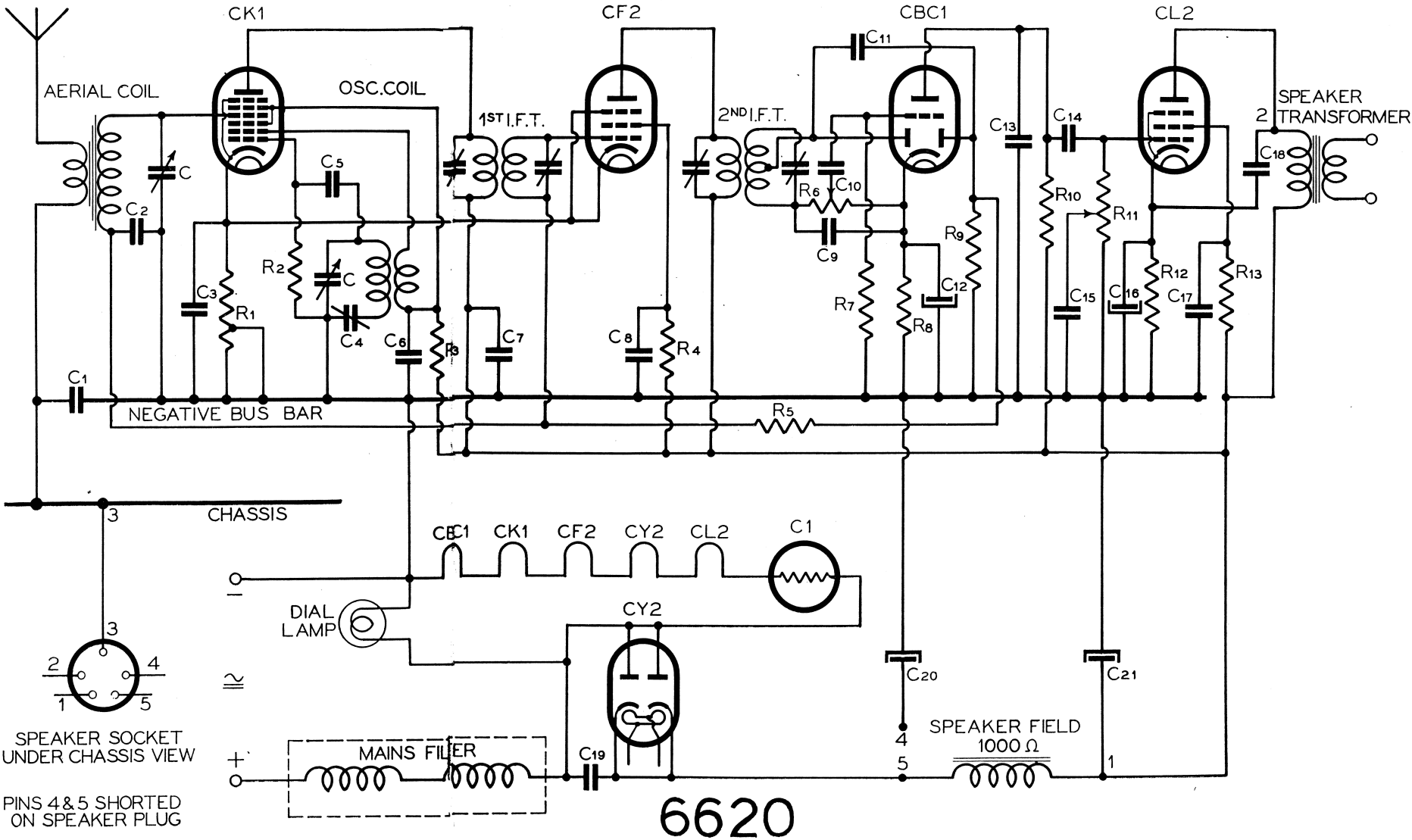
VOLTAGE ANALYSIS—240 Volts A.C. Supply.

Valve Type	Plate Volts	Plate Current	Screen Volts	Cathode Volts	Osc. Plate Volts	Heater Volts
CK1	230	1.3	73	2.4	73	13
CF2	230	4.5	104	2.4	—	13
CBC1	100	.4	—	3	—	13
CL2	207	40	105	17	—	24
CY2	—	—	—	—	—	30

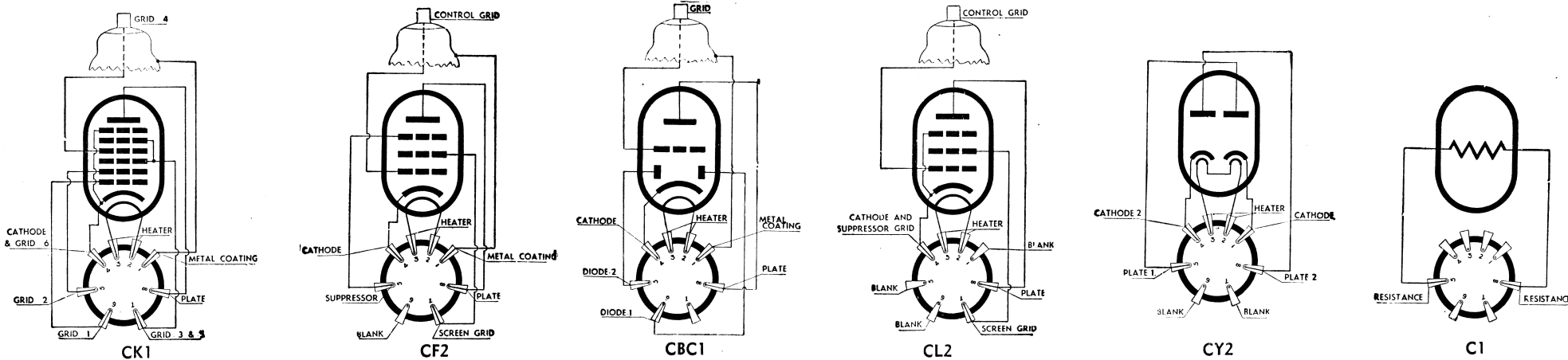
VOLTAGE ANALYSIS—240 Volts D.C. Supply.

Valve Type	Plate Volts	Plate Current	Screen Volts	Cathode Volts	Osc. Plate Volts	Heater Volts
CK1	197	1.1	68	2	68	13
CF2	197	3.8	80	2	—	13
CBC1	90	.3	—	2.5	—	13
CL2	180	34	100	15	—	24
CY2	—	—	—	—	—	30

NOTE.—The abovementioned voltage values are measured between the socket points indicated and the negative bus with the receiver in the no-signal condition and the volume control at zero. Voltages are measured with a 1000 ohm per volt voltmeter, and may vary as much as 10% from the figures quoted for the same line voltages. Variations in line voltage or the use of D.C. as an alternative to A.C. will also have some bearing on the measured voltages.

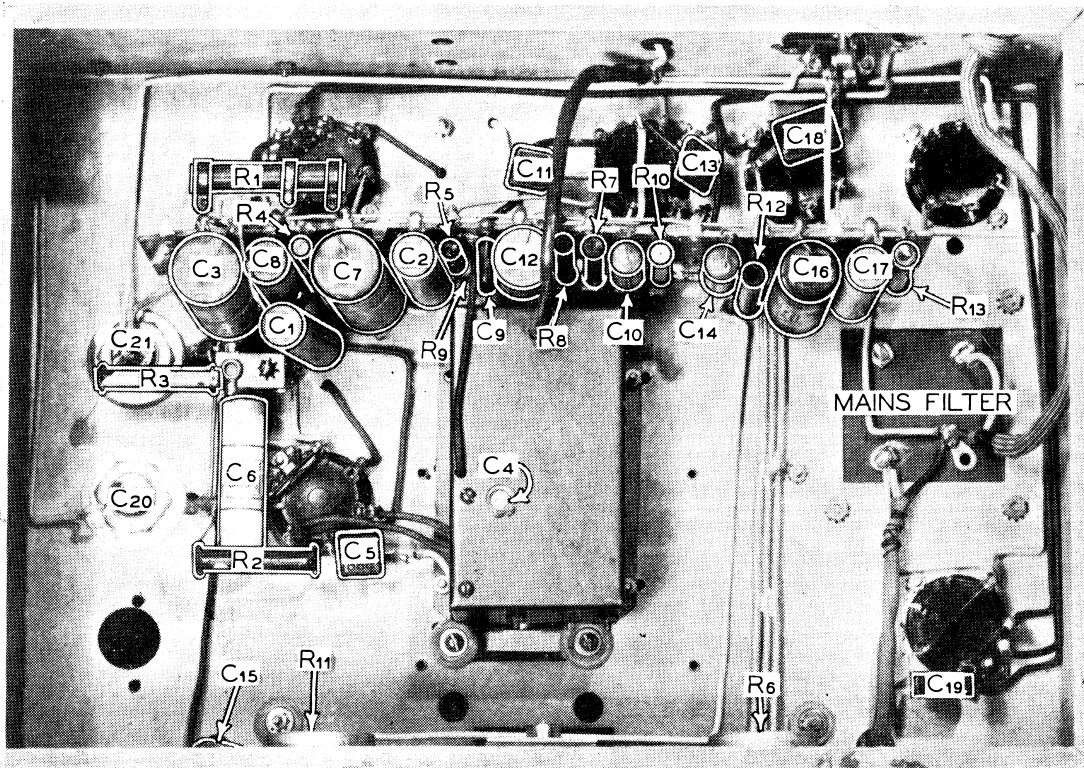


SOCKET CONNECTIONS VIEWED FROM BOTTOM OF BASE.



SERVICE DATA.

COMPONENT LOCATIONS.



COMPONENT PARTS.

CONDENSERS	RESISTORS
C, C Two gang condenser	R1 400 ohm wire wound
C1 0.05 μ F. paper	R2 50,000 ohm 1 watt
C2, C6, C8, C17 0.1 μ F. paper	R3 30,000 ohm 1 watt
C3, C7 0.5 μ F. paper	R4 100,000 ohm 1 watt
C4 padder	R5 1.0 megohm $\frac{1}{2}$ watt
C5, C11 0.0001 μ F. mica	R6, R11 0.5 megohm potentiometer
C9, C13 0.00025 μ F. mica	R7 1.0 megohm 1 watt
C10, C14, C15 0.02 μ F. paper	R8 10,000 ohm 1 watt
C12, C16 25 μ F. electrolytic	R9 0.5 megohm $\frac{1}{2}$ watt
C18 0.004 μ F. mica	R10 0.25 megohm 1 watt
C19 0.01 μ F. mica	R12 400 ohm wire wound
C20 8 μ F. electrolytic	R13 25,000 ohm 1 watt
C21 24 μ F. electrolytic	

SERVICE DATA.

COMPONENT LOCATIONS.

