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Due to the particularly high quality of associated circuits, the adjustment of trimmers, etc., is fairly critical; in fact, a very small adjustment of a trimmer will have a large bearing on the performance of the set.

I.F. TRIMMER ADJUSTMENTS. The position of the four I.F. trimmers is shown in the component location diagram. Each must be aligned to the basic frequency of 472.5 kc/s. To accomplish this, connect an output meter and the loudspeaker to the receiver. The "hot" side of the test oscillator should be connected to the grid of the AK2 octode through an 0.5 uF 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 472.5 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 seven trimmers for the radio-frequency alignment are underneath the chassis and are classified in the component location illustration as follows:—

- Broadcast Aerial trimmer.
- " R.F. trimmer.
- " Oscillator trimmer.
- " Padder (C11).
- Shortwave Aerial trimmer.
- " R.F. trimmer.
- " Oscillator trimmer.

The adjustment of the broadcast and shortwave R.F. trimmers is an entirely separate operation, and the broadcast section alignment should be carried out first. Before proceeding with R.F. adjustments 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 and earth terminal of the receiver.

("E" and "A2" should be bridged.)

Proceed further as follows:—

BROADCAST ALIGNMENT.

- (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 output meter.
- (d) Adjust the **broadcast oscillator trimmer** until a maximum output is recorded.
- (e) Adjust test oscillator to 1400 kc/s and set dial of receiver to same frequency. Adjust **broadcast aerial trimmer** and **broadcast R.F. trimmer** for maximum output on meter.
- (f) Adjust test oscillator to 600 kc/s and tune dial of set to same frequency. Adjust **broadcast padder (C11)** 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).

SHORT WAVE ALIGNMENT.

- (a) Move wavechange switch on set to shortwave position.
- (b) Adjust test oscillator to 16.5 metres and tune dial of set to same wavelength. Adjust **shortwave oscillator trimmer** for maximum output.
- (c) Adjust test oscillator to 19 metres and set dial of receiver to same wavelength. Adjust **shortwave aerial and R.F. trimmers** for maximum output on meter.

NOTE.—The shortwave section of this receiver is equipped with a fixed padder and consequently the above-mentioned adjustments are all that is required for optimum performance. If the service oscillator in use does not cover 16.5 and 19 metres, it is inadvisable to attempt adjustment of the shortwave trimmers.

REPLACING CHASSIS.

Before replacing the chassis see that the wave-change switch arm is properly mounted on its spindle. See also that the rubber sleeve is properly in place in the forked part of this arm so that the switch arm is insulated from the switch proper.

After the chassis is placed in the cabinet, see that the chassis is far enough forward so that the wave-change switch knob can be fitted without drawing the arm away from the chassis. The chassis securing bolts may now be tightened, the speaker plug replaced, and the other knobs fitted to the respective spindles.



PHILIPS RADIOPLAYER

MODEL 6702

A.C. OPERATED FOR BROADCAST AND SHORT WAVE RECEPTION.

SPECIFICATIONS.

(Subject to Alteration Without Notice.)

Voltage Rating (power Supply)	220-260 volts A.C. 40-60 cycles.
Tuning Range	200-550 metres. 16.5-51 metres.
Intermediate Frequency	472.5 kc/s.

VALVE EQUIPMENT.

R.F. Amplifier	AF3	R.F. Penthode
Frequency Converter	AK2	Octode
I.F. Amplifier	AF3	R.F. Penthode
A.V.C. & Demodulator	AB2	Diode
Audio Amplifier	AF7	Penthode
Power Amplifier	EL5	Power Penthode
Tuning Indicator	EM1	Cathode Ray Tuning Indicator
Rectifier	AZ3	Indirectly Heated Rectifier
Dial Lamps	6 volt	Auto Tail Lamps (single contact)

INSTALLATION. Full instructions for the installation of Model 6702 are contained in the instruction book supplied with each Radioplayer.

VOLTAGE ADJUSTMENT.

The power transformer may be adapted for A.C. mains of 220-240 or 260 volts by means of a switch located at the rear of chassis. It is important that the receiver should be operated with the transformer switch set at the correct position in accordance with the mains voltage in the locality.

DISMANTLING THE SET.

1. Disconnect power plug.
2. Remove knobs at front of cabinet (recessed grub screws). Remove also the wave-change switch knob by unscrewing the lock-nut with a suitable spanner. This will free the wave-change switch arm so that it will remain on the chassis when it is withdrawn.
3. Withdraw loudspeaker plug from back of chassis.
4. Unscrew the four bolts holding chassis to floor of cabinet.
5. The chassis may now be withdrawn, but in doing so care should be taken to tilt the chassis so that the cathode-ray tuning indicator assembly will not foul the cabinet.

REMOVING LOUDSPEAKER.

If it is desired to remove the speaker, this may be accomplished by withdrawing the speaker plug from the chassis and unscrewing the four woodscrews securing the loudspeaker.

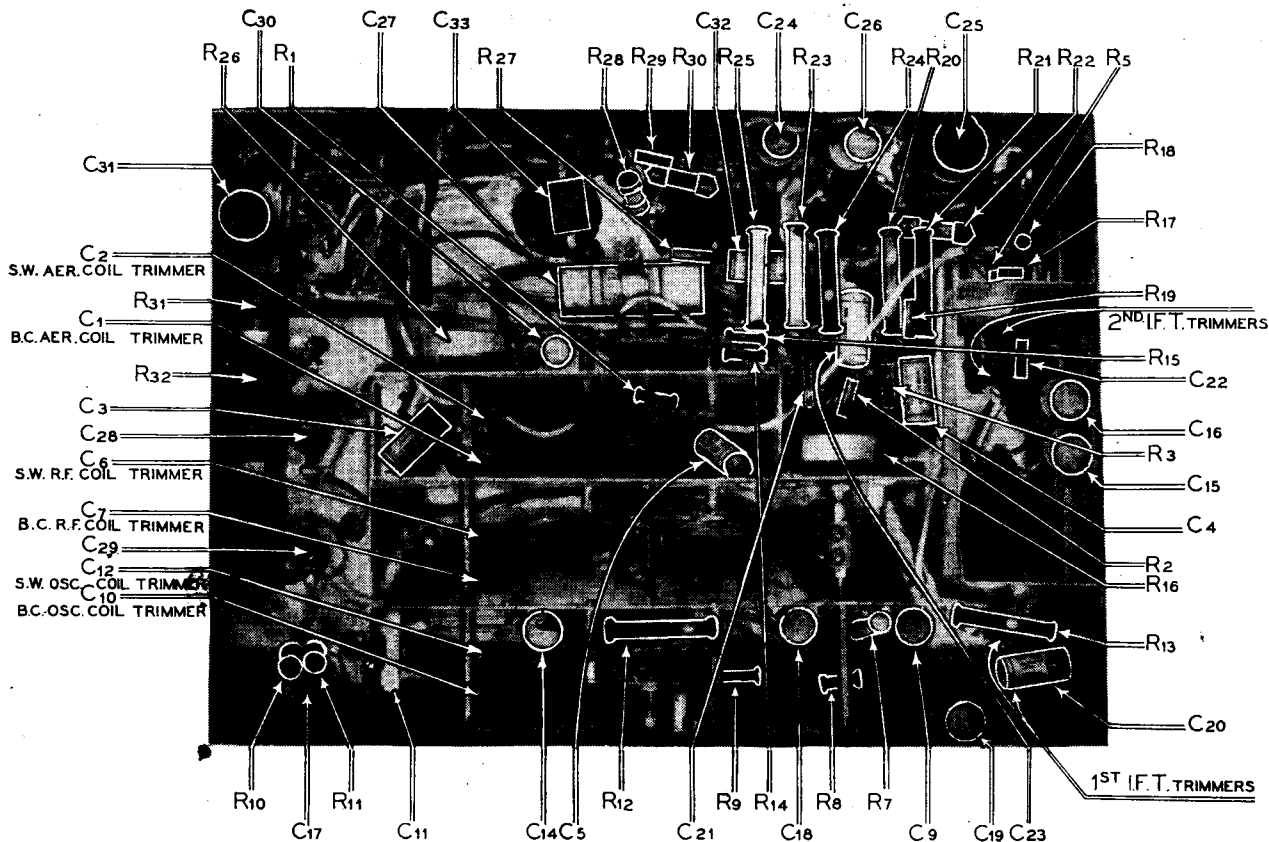
ALIGNMENT.

Precise alignment is vital to the proper functioning of this receiver. All adjustments are located underneath the chassis. There are four trimming adjustments for the intermediate frequency amplifier and seven for the R.F. portion of the set (three short-wave trimmers, three broadcast trimmers, and the broadcast paddler). These trimmers are accurately adjusted at the factory and sealed. Alignment will be retained unless the receiver is 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, although these effects may also be caused by other faults such as defective valves.

The correct performance of this Radioplayer can only be obtained if the set alignment is achieved by the use of reliable test apparatus and no attempt should be made to tamper with the trimmers unless a suitable oscillator and visual output meter is available, together with a competent operator to carry out the work.

(Continued on back page)

COMPONENT LOCATIONS



COMPONENT PARTS

CONDENSERS.	RESISTORS.
C, C, C, 3 gang condenser	R1, R3, R5, R14, R17 0.5 megohm ½ watt
C1 Broadcast aerial trimmer	R2, R4 2 megohm ½ watt
C2 Short wave aerial trimmer	R18 1 megohm ½ watt
C3, C4, C20, C24, C30 0.05 uF paper	R6, R9 50 ohm ½ watt
C5, C23, C32 0.02 uF paper	R7 300 ohm ½ watt
C6 Short wave R.F. trimmer	R8 50,000 ohm ½ watt
C7 Broadcast R.F. trimmer	R10, R11, R13 50,000 ohm 1 watt
C8 Special condenser located under gang	R12 5,000 ohm 1 watt
C9, C14, C15, C16, C18, C19, C26 0.1 uF paper	R15 0.1 megohm ½ watt
C10 Broadcast oscillator trimmer	R16 0.5 megohm potentiometer
C11 Broadcast padder	R19 1.5 megohm ½ watt
C12 Short wave oscillator trimmer	R20 10,000 ohm 1 watt
C13 0.0045 uF mica	R21 1,600 ohm 1 watt
C17, C29 32 uF electrolytic	R22 27 ohm ½ watt
C21, C22 0.0001 uF mica	R23 0.25 megohm 1 watt
C25, C31 25 uF electrolytic	R24 0.1 megohm 1 watt
C27 0.25 uF paper	R25 25,000 ohm 1 watt
C28 16 uF electrolytic	R26 0.25 megohm potentiometer
C33 0.004 uF mica	R27 2,000 ohm ½ watt
	R28 250 ohm 1 watt
	R29 500 ohm ½ watt
	R30 150 ohm ½ watt
	R31 15 ohm wire wound
	R32 25,000 ohm voltage divider

SERVICE DATA.

MODIFICATIONS.

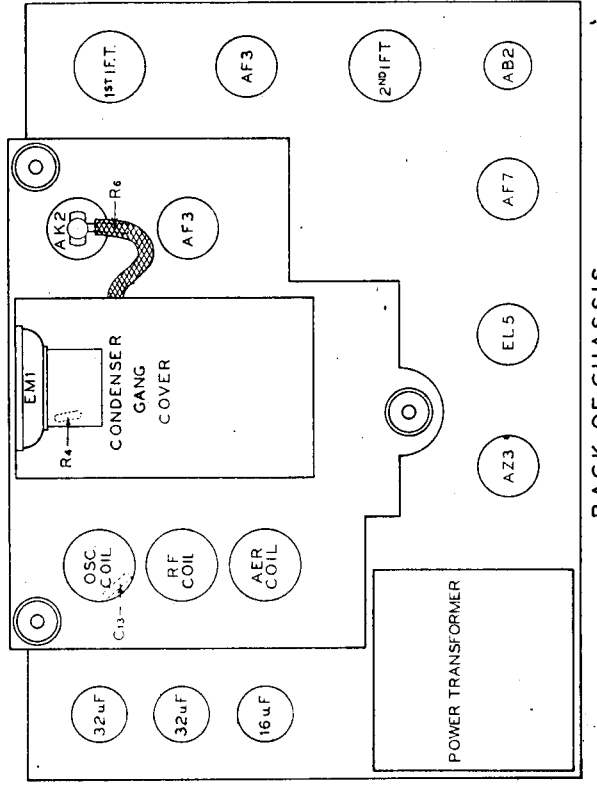
In some 6702 chassis the negative side or "can" of condenser C29 is joined to chassis ("earth").

VOLTAGE ANALYSIS.

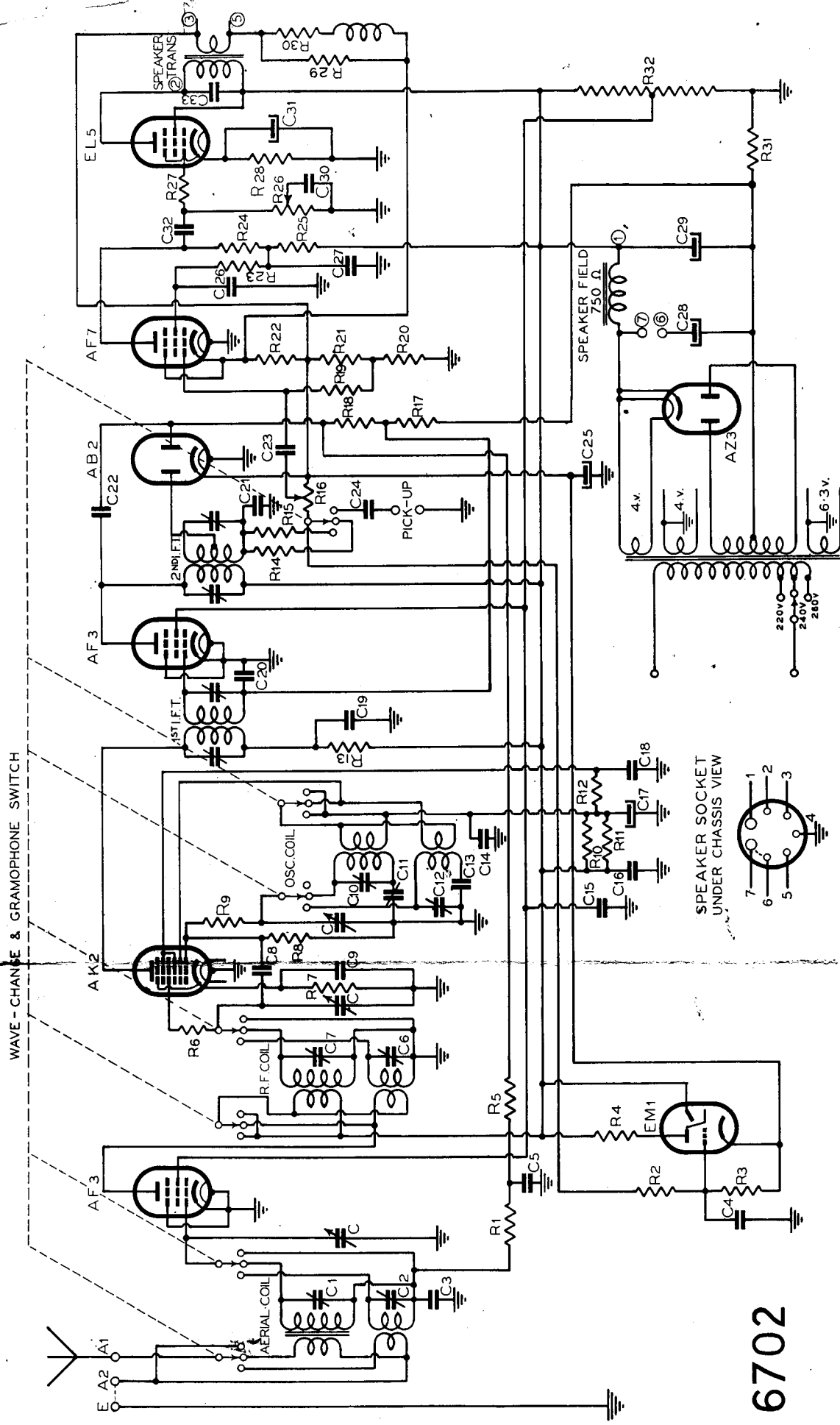
Valve Type	Plate Voltage	Plate Current	Screen Grid Voltage	Cathode Voltage	Heater Voltage A.C.
AF3	250	7.5mA	85	0	4.0
AK2	180 (osc. plate G2=90 v.)	1.1mA	75	2.2	4.0
AF3	250	7.5mA	85	0	4.0
AB2	—	—	—	17	4.0
AF7	80	1.2mA	65	17	4.0
EL5	240	70mA	250	18	6.3
AZ3	—	—	—	—	4.0

NOTE.—The above mentioned voltage values are measured between the socket points indicated and chassis with the receiver in the no signal condition and with the volume control at zero. Voltages are measured with a 1,000 ohm per volt voltmeter and may vary as much as 10% from the figures quoted.

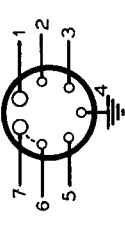
CHASSIS LAYOUT



BACK OF CHASSIS



SPEAKER SOCKET UNDER CHASSIS VIEW



SOCKET CONNECTIONS VIEWED FROM BOTTOM OF BASE.

