SERVICE DATA

PHILIPS RADIOPLAYER MODELS 3052A—3252A

INSTRUCTIONS, SPECIFICATIONS AND ALIGNMENT PROCEDURE

OPERATING INSTRUCTIONS

This model is a five valve dual-wave receiver which is designed for operation from 40/60 cycle 220 to 260 volts alternating current only. Before despatch the voltage is set on the 240 volt tap of the transformer. Should operation be desired on 200/230 or 250/265 volts, the power flex should be moved to the correct tap on the transformer.

For efficient operation it is necessary that the receiver be equipped with an aerial. For average reception where the receiver will be in close proximity to powerful stations an aerial of up to 50 feet in length is quite adequate. However if distant stations are required use an aerial of up to 100 feet in overall length (this includes lead in). Use 3/20 bare copper wire if possible, solder all joints and insulate from supports. The correct connection for the aerial is to the lead marked " Aerial ".

The four controls on the front of the cabinet from left to right are :—

1. **Wavechange Switch** .. This switch has two positions :—
   a. Turned to left or anti-clockwise, Broadcast.
   b. Turned to right or clockwise, Short Wave.

2. **Volume Control** .. For increase turn to right or in a clockwise direction.
   For decrease turn to left or in an anti-clockwise direction.

3. **Tuning Control** .. This operates the dial mechanism and serves to select the desired stations.

4. **Tone Control** .. .. This switch has three positions :—
   a. Brilliant.
   b. Mellow.
   c. Bass.

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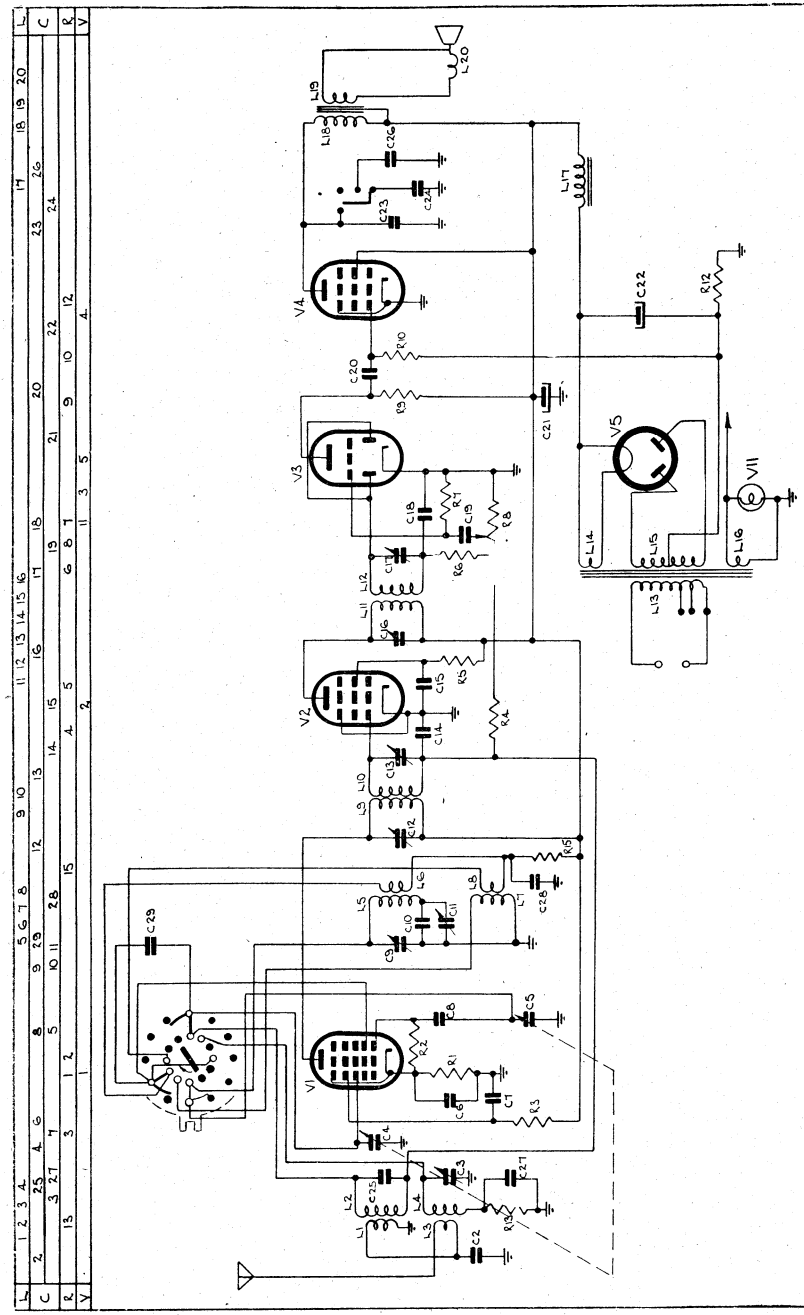

CONDENSERS.

No.	Value.
C2	65 mmfd mica
C3	30 mmfd trimmer
C4/5	Standard tuning condenser
C6	·05 mfd
C7	·01 mfd
C8	100 mmfd
C9	30 mmfd metal trimmer
C10	260 mmfd ± 5% mica
C11/13	125 mmfd trimmer
C14	·05 mfd paper
C15	·01 mfd paper
C16/17	125 mmfd trimmer
C18	100 mmfd
C19	·002 mfd paper
C20	·01 mfd paper
C21	32 mfd electrolytic
C22	16 mfd electrolytic
C23	·006 mfd paper
C24	·02 mfd paper
C25	30 mmfd trimmer
C26	·006 mfd paper
C27	·0035 mfd mica
C28	·01 mfd paper
C29	3 mmfd

MISCELLANEOUS COMPONENTS.

Description.	Code No.
Dial glass	35/460
Switch clicker plate	72/523
Switch section	73/013
Switch tone control	93/352

VOLTAGE ANALYSIS.

No. on Diagram.	Valve Type.	Plate.	Screen.	Osc. Plate.	Bias.
V1	6J8G	198	52	104	— ·3
V2	6U7G	198	55	—	—
V3	6B6G	113	—	—	—
V4	6F6G	175	198	—	— 12
V5	5Y3G	280 v. A.C. per plate.			

Unfiltered B + 260 volts.

All D.C. voltages except bias and unfiltered B + are measured with a 1,000 ohm per voltmeter used on 250 volt range. Other voltages are measured on the appropriate range.

Voltages may vary ± 10% from figures indicated.

COILS.

No.	Ohmage.	Description.	Code No.
L1	31·5 ohms	Aerial coil	42/740
L2	3·55 ohms		
L3	2·38 ohms		
L4	·095 ohm		
L5	2·40 ohms	Oscillator coil	42/263
L6	1·48 ohms		
L7	·10 ohm		
L8	·74 ohm		
L9	7·3 ohms	1st I.F.	42/319
L10	7·3 ohms		
L11	7·3 ohms	2nd I.F.	42/423
L12	7·3 ohms		
L13	65·1 ohms	(C to 220 volts 55·8 ohms) (C to 240 volts 60·5 ohms)	44/269
L14	·216 ohm		
L15	500 ohms		
L16	·180 ohm		
L17	1,500 ohms	Speaker complete	45/371
L18	500 ohms		
L19	·70 ohm		
L20	·80 ohm		
L18	500 ohms	Speaker transformer	44/342
L19	·70 ohm		

RESISTORS

No.	Value.
R1	50 ohms
R2	50,000 ohms
R3	70,000 ohms
R4	2 megohms
R5	100,000 ohms
R6	50,000 ohms
R7	5 megohms
R8	·5 megohm potentiometer
R9	100,000 ohms
R10	250,000 ohms
R12	250 ohm w.w. or two 500 ohms
R13	·5 megohm
R15	20,000 ohms

ALIGNMENT INSTRUCTIONS

General Notes.

Accurate alignment has been carried out at the factory, and due to the design of coils and associated apparatus, adjustment will be necessary only if the receiver has been roughly handled, or it has been necessary to change coils.

For accurate alignment it is necessary to use first class equipment, consisting of a signal generator and output meter.

All trimmers used for alignment purposes are of the improved wire type, with the exception of the B.C. oscillator which is air dielectric.

Coiled wire trimmers, have been found to retain their original setting over long periods, even when subjected to extremes of temperature. This, of, course, accounts for the permanence of calibration and alignment of this receiver.

In the case of alignment being necessary, care should be taken, not to unnecessarily remove turns from trimmers, as it may be difficult to replace them.

To make sure it is necessary to remove or add turns, place the finger close to the trimmer. If the output rises, it shows that greater capacity is required, i.e. turns must be added. If the output drops, it indicates alignment is correct or the capacity must be reduced. This can be ascertained by carefully removing one or two turns.

I.F. Alignment.

I.F.'s are aligned for maximum gain and should be carried out as follows :—

Step 1. Connect an Output Meter from the plate of the 6F6G (pin No. 3) to chassis, feed an incoming signal of 472·5 Kc to the grid of the I.F. valve 6U7G, through the usual dummy (1-4 mfd).

Step 2. Adjust secondary and primary trimmers C17 and C16 in that order for maximum deflection.

Step 3. Feed the I.F. signal into the converter valve grid (6J8G).

Step 4. Adjust secondary and primary trimmers C13 and C12 in that order for maximum deflection.

Step 5. Check adjustment of trimmers C17, C16, C13 and C12 in the order given.

R.F. ALIGNMENT.

Broadcast.

Step 1. Set the dial pointer as follows :—Fully close the tuning condenser and adjust the pointer to correspond with 200 on the escalator scale.

Step 2. Feed a signal of 1,500 Kc through a standard dummy antenna and turn the tuning condenser until the pointer reads No. 19 on the escalator scale.

Step 3. Adjust the B.C. oscillator trimmer C9 for maximum deflection on the output meter.

Step 4. Alter the test frequency to 1,400 Kc, tune to this frequency and adjust the aerial coil trimmer C25 for maximum deflection.

Step 5. Alter the test frequency to 600 Kc, tune the receiver to this frequency, and adjust the padding condenser C11 for maximum deflection. During this operation it is essential the tuning condenser be rocked to ensure correct alignment. See note on alignment by means of aperiodic amplifier.

Step 6. It will now be necessary to repeat steps 2, 3, 4 and 5 until no alteration is necessary to the trimmers.

NOTE.—As a rather high capacity (125 mmfd) is used for the padder trimming condenser C11, it is preferable that this adjustment be carried out by means of an aperiodic amplifier. If an aperiodic amplifier is not obtainable, an auxiliary receiver can be used.

Alignment with an aperiodic amplifier is the same as that previously outlined except for the adjustment of C11.

PROCEDURE FOR ALIGNMENT USING APERIODIC AMPLIFIER.

Step a. Disconnect output meter from receiver being aligned and connect to output of aperiodic amplifier or auxiliary receiver.

Step b. If an auxiliary receiver is used, connect its aerial terminal to plate of the 6J8G (pin No. 3) through a ·01 mfd condenser and connect the earth terminals of both receivers. Alter the test frequency to 600 Kc and tune the auxiliary receiver to this frequency.

Step c. Stop the oscillator of the receiver being aligned by shorting the tuning condenser oscillator section (front).

Step d. Tune the receiver being aligned for maximum deflection (at the above frequency 600 Kc).

Step e. Disconnect the amplifier or auxiliary receiver, remove the oscillator short, being careful not to move either the generator setting or receiver tuning.

Step f. Disconnect output meter and reconnect as formerly, i.e. to plate of 6F6G and chassis.

Step g. Adjust padding condenser C11 for maximum deflection. Under no circumstances must the gang be rocked during this adjustment.

Step h. Refer to step 6, with the exception that no further adjustment should be made to C11.

Shortwave.

Step 1. Turn wavechange switch to short-wave position and provide an incoming signal of 17·8 Mc/s (16·9 metres).

Step 2. Adjust aerial coil trimmer C3 for maximum deflection. During this operation it is essential that the tuning condenser be rocked to ensure correct alignment.

NOTE.—The oscillator operates at a lower frequency than that of the incoming signal so that of the two signals tuneable the one lower in frequency is the correct one for alignment.