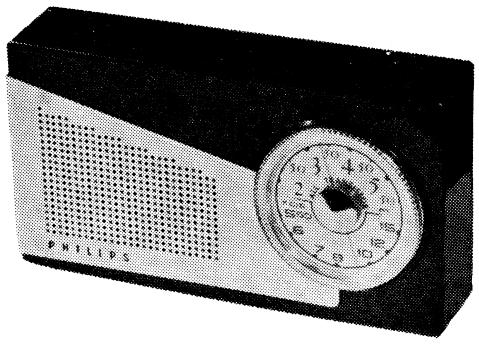
PHILIPS RADIOPLAYER

MODEL 225

SPECIFICATIONS

(Subject to alteration without notice)

Tuning Range .... 517-1622 kc/s
Intermediate Frequency 455 kc/s
Power Supply—Battery 6V.—4x1.5V. type 915 or 3915
Battery Consumption ... Approx. 8.5mA without signal
Approx. 30mA for 50mW output



TRANSISTOR EQUIPMENT AND VOLTAGE/CURRENT ANALYSIS

Transistor Function	Transistor No.	Transistor Type	Collector		Base Volts	Emitter Volts
			Volts	mA		
Frequency Converter	TR1	OC44	5.3	0.3	1.1	1.2
1st I.F. Amplifier	TR2	OC45	4.8	0.42	0.42	0.27
2nd I.F. Amplifier	TR3	OC45	4.3	0.9	1.2	1.0
1st Audio Amplifier	TR4	OC71	3.2	0.55	0.67	0.57
2nd Audio Amplifier	TR5	OC75	4.8	1.6	1.1	0.94
Push-Pull Audio Amplifier	TR6	OC72	6.0	1.6	0.19	0.03
Push-Pull Audio Amplifier	TR7	OC72	6.0	1.6	0.19	0.03
Demodulator	X1	OA95	Germanium diode			

Voltages measured with an "20,000Ω per volt" meter on the 10V range.

TO REMOVE CHASSIS FROM CASE

Release screw from rear of cabinet case. Remove rear case and withdraw batteries. Remove knurled screw (centre of dial scale) and withdraw tuning knob and dial scale. Recover spring and felt washer. Unscrew the three countersunk screws securing front case to tuning gang and extract chassis.

Replacement is a reversal of the above procedure, however, the following points should be observed. When re-inserting the chassis, care should be exercised to ensure that the chassis is correctly positioned in the two locating cut-outs situated in the front case adjacent to earphone plug connection entry. Ensure that the tuning knob is correctly positioned on gang spindle and that the tension washer located between knurled screw and tuning knob is so positioned that the depressed sides fit in the two slots provided. When inserting chassis in case following replacement of tuning gang or case assembly, temporarily loosen the two cheese head screws securing gang to mounting bracket. Tighten the three countersunk screws attaching front case to gang and then retighten the screws securing gang to mounting bracket.

REMOVAL OF POTENTIOMETER

Remove chassis from case (see "To remove chassis from case"). The screws securing the potentiometer to the receiver chassis are partly hidden by capacitors C8 and C20. The anchoring lugs securing the capacitors are tapered allowing the pigtails to be lifted from the lugs. It is necessary to unsolder capacitor C20 together with resistor R16 from their combined anchoring point (adjacent to driver transformer). Release capacitor C8 likewise and carefully move the components to one side allowing access to screws securing potentiometer. Care should be exercised when applying heat to the anchoring lugs as excessive temperatures may damage the transistor and electrolytic capacitors.

ALIGNMENT

Because of the compactness of this receiver, it is necessary to remove the chassis from the case when re-alignment is necessary (see "To remove chassis from case").

I.F. Alignment

With volume control at maximum and gang in open position (minimum capacity), apply a 455 kc/s signal via a .1μF capacitor to TR1 base. Peak I.F.T. cores in the following sequence:—

3rd I.F.T.
2nd I.F.T.
Repeat operation.
1st. I.F.T.

Do not re-adjust slugs.

R.F. Alignment

Before commencing R.F. alignment, adjust aerial trimmer (C4) to maximum capacity.

Connect generator via a 4,700Ω resistor to TR1 base. With the gang in closed position (maximum capacity), set generator to 512 kc/s and peak oscillator coil slug. Turn gang to full open position (minimum capacity), set generator to 1630 kc/s and peak oscillator trimmer C3 (front section of gang).

Set generator to 600 kc/s, tune receiver to this frequency and peak rod aerial by carefully adjusting the position of aerial coil on the ferroxcube rod. Set generator to 1500 kc/s, tune receiver to this frequency and peak aerial trimmer C4 (rear section of gang).

Repeat operation until alignment is satisfactory. Seal aerial coil former to rod.

PARTS LIST

CAPACITORS

No.	Description	Code No.
C1, 2, 3, 4	2 gang tuning with trimmers	49.002.22
C5	0.04μF 150V paper, A.E.E. type W99	
C6, 11, 17	Part of I.F. transformers	
C7	3,300pF 100V "Styroseal"	CZ.074.412
C8	25μF 6V electrolytic	CZ.099.809
C9, 10, 13, 14, 15	0.047μF $^{+80\%}_{-20\%}$ 33V ceramic, Hi-K	CZ.097.901
C12	54pF ± 2% ceramic	C302.AC/54E
C16	18pF ± 1pF ceramic	C302.AB/M18E
C18	1,000pF 100V "Styroseal"	CZ.072.805
C19, 21	2μF 6V electrolytic	CZ.099.209
C20, 23	10μF 6V electrolytic	CZ.099.210
C22	80μF 6V electrolytic	AC5711/80
C24	4,700pF 100V "Styroseal"	CZ.074.413
C25	0.1μF ± 25% 150V paper, A.E.E. type W48	

All tolerances are ± 20% unless otherwise specified.

RESISTORS

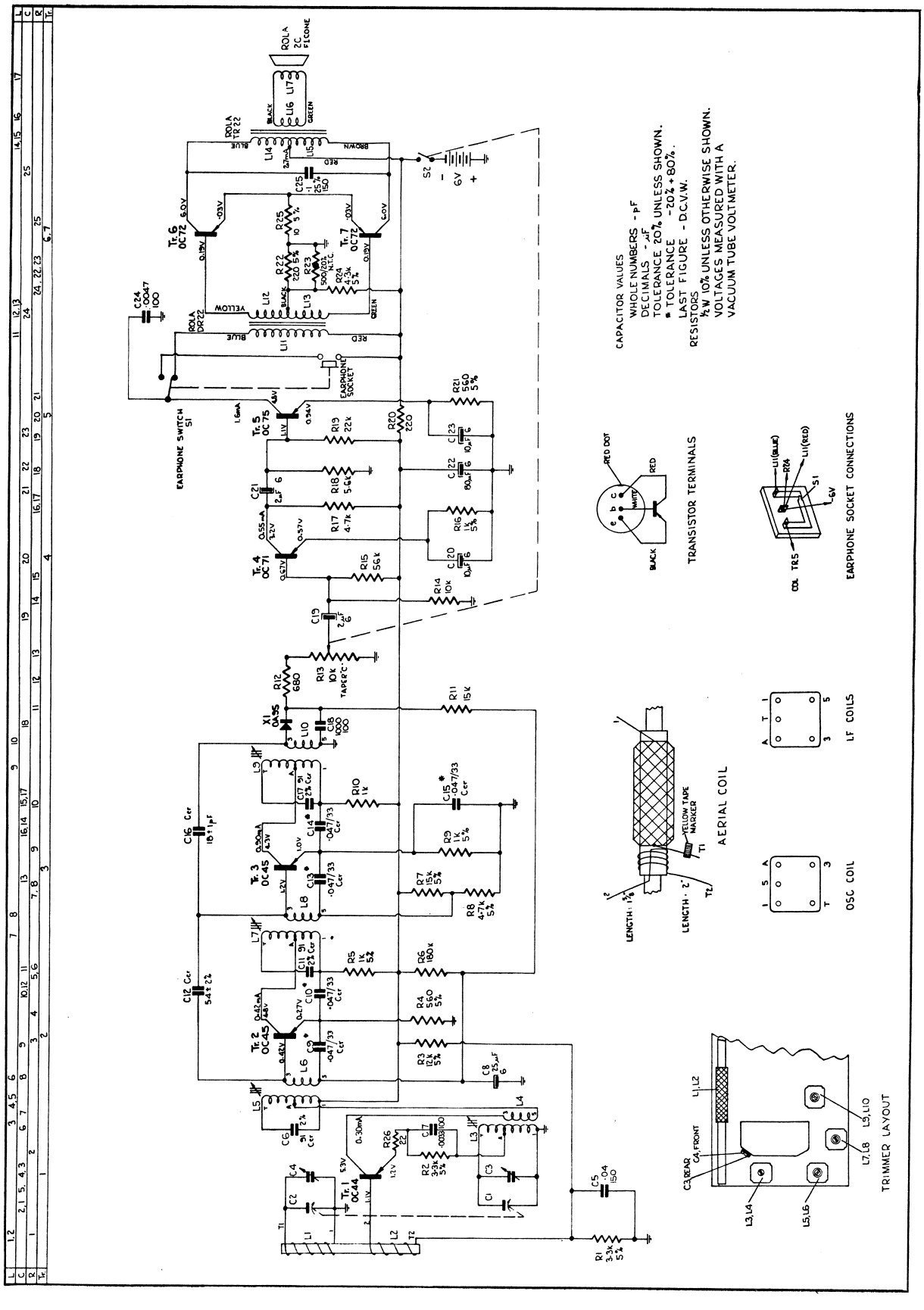
No.	Description	Code No.
R1, 2	3,300Ω ± 5% ½W carbon	
R3	12,000Ω ± 5% ½W carbon	
R4, 21	560Ω ± 5% ½W carbon	
R5, 9, 16	1,000Ω ± 5% ½W carbon	
R6	180,000Ω ½W carbon	
R7	15,000Ω ± 5% ½W carbon	
R8	4,700Ω ± 5% ½W carbon	
R10	1,000Ω ½W carbon	
R11	15,000Ω ½W carbon	
R12	680Ω ½W carbon	
R13	10,000Ω potentiometer with S.P.S.T. switch	CZ.032.031
R14	10,000Ω ½W carbon	
R15	56,000Ω ½W carbon	
R17	4,700Ω ½W carbon	
R18	5,600Ω ½W carbon	
R19	22,000Ω ½W carbon	
R20	220Ω ½W carbon	
R22	220Ω ± 5% ½W carbon	
R23	500Ω ± 20% N.T.C.	B8.320.01P/500E
R24	4,300Ω ± 5% ½W carbon	
R25	10Ω ± 5% ½W carbon	
R26	22Ω ½W carbon	

All tolerances are ± 10% unless otherwise specified.

INDUCTORS

No.	D.C. Resistance (ohms)	Description	Type or Code No.
L1 L2	1.35 <0.08	Rod aerial assembly	A3.803.62
L3 L4	7.9-8.5 2.10-2.12	Oscillator coil	A3.128.65
L5 L6	6.75-8.25 <0.17	1st I.F.T.	A3.128.66
L7 L8	6.75-8.25 <0.17	2nd I.F.T.	A3.128.66
L9 L10	7.5-9.25 <0.4	3rd I.F.T.	A3.128.67
L11 L12 L13	814-660 50-61	Driver transformer	Type DR22 CZ.345.063
L14 L15 L16	18-22 <0.9	Output transformer	Type TR22 CZ.345.062
L17		Loudspeaker	Type 2C-F1

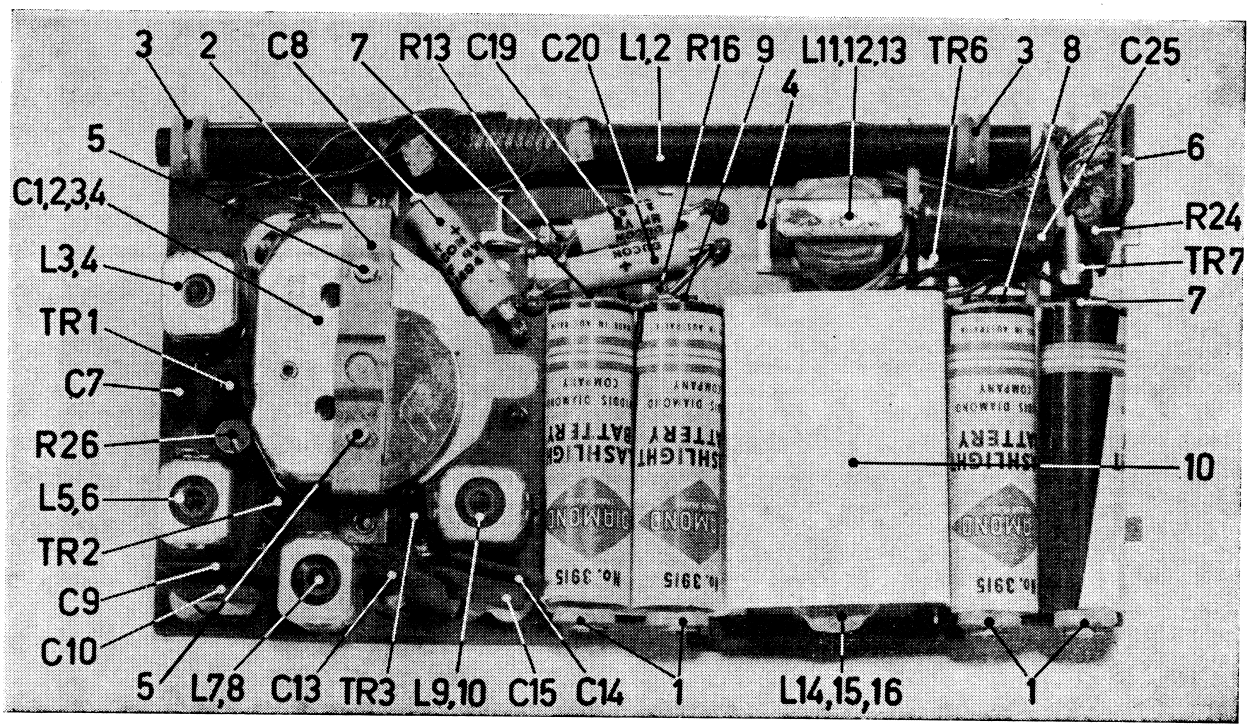
IMPORTANT! When ordering spare parts, quote CODE NUMBER of part and MODEL NUMBER of Receiver. In claiming free replacement under GUARANTEE, return defective part PROMPTLY and quote MODEL and SERIAL NUMBER of Receiver and DATE OF PURCHASE.


CAPACITOR VALUES
WHOLE NUMBERS - pF
DECIMALS - µF
TOLERANCE 20% UNLESS SHOWN.
* TOLERANCE -20% + 80%.
LAST FIGURE - D.C.V.W.
RESISTORS
½ W 10% UNLESS OTHERWISE SHOWN.
VOLTAGES MEASURED WITH A
VACUUM TUBE VOLTMETER.
TRANSISTOR TERMINALS
EARPHONE SOCKET CONNECTIONS
AERIAL COIL
LF COILS
OSC COIL
TRIMMER LAYOUT
EARPHONE SWITCH S1
EARPHONE SOCKET
ROLA 2C FICONE
ROLA TR22
ROLA DR22
Tr.1 OC44
Tr.2 OC45
Tr.3 OC45
Tr.4 OC71
Tr.5 OC75
Tr.6 OC72
Tr.7 OC72
X1 OA95
S2
6V

MISCELLANEOUS COMPONENTS

Ref. No.	Description	Code No.
	Assy, case front, signal red	CR.577.047
	Assy., case front, burgundy	CR.577.048
	Assy., case front, charcoal	CR.577.049
	Assy., case rear, signal red	CR.577.044
	Assy., case rear, burgundy	CR.577.045
	Assy., case rear, charcoal	CR.577.046
1	Assy., battery contact, x4	CR.104.603
	Badge	A3.825.33
2	Bracket, gang mtg.	A3.745.67
	Circlip, rear-case screw retg.	B108.AF/2.3
	Clip, speaker mtg.	CS.282.486
	Grille, cabinet	A3.824.58
3	Grommet, aerial rod mtg., x2	P7.060.08/514
	Knob tuning	A3.772.61
	Knob, volume	A3.772.57
	Pad, speaker (foam rubber)	P7.060.10/319
4	Plate, transformer mtg., x2	CS.241.741
	Plate, terminal	A3.777.27

Ref. No.	Description	Code No.
	Scale, dial	A3.925.69
	Screw, gang to cab., x3	BO55.ED/3x5
5	Screw, gang to mtg. brkt., x2	BO54.ZZ/106
	Screw, rear-case	A3.714.46
	Screw, tuning knob	A3.714.47
	Screw, volume knob	BO54.ED/1.7x3
6	Socket, earphones	A3.777.26
	Spacer, terminal plate mtg.	A3.714.45
7	Spring, battery contact, x2	A3.817.41
8	Spring, battery contact, R.H.	A3.817.43
9	Spring, battery contact, L.H.	A3.817.44
10	Strip, protective (batteries)	P5.280.65
	Washer, felt, (dial scale to cab.)	A3.562.78
	Washer, phenolic (pot. brkt. to chassis), x2	CH.671.066
	Washer, tension (tuning knob to screw)	BO46.AA/6



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