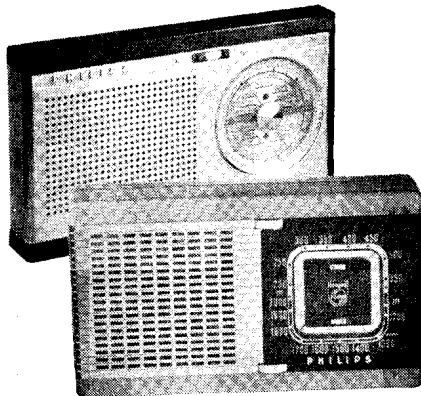


"TRADER" SERVICE SHEET

1569

A PART from being fitted with tuning gangs which have opposite direction of rotation necessitating a change in the tuning scale, Philips LOG90T and LOG90T/01 have the same external appearance. Our circuit diagram is of the LOG90T/01. Three minor circuit changes in the LOG90T associated with the change



Appearance of Philips LOG90T (top) and LOG90T/01 pocket receivers.

in tuning gang are stated in the component table footnotes.

The LOG91T is the same as the LOG90T/01 in all respects except external styling.

Tuning is continuous over the Medium and Long wavebands with ranges of 185-570m (M.W.) and 1,150-2,000m (L.W.). High impedance headphones may be connected to special sockets which mute the output from the internal loudspeaker when the earphone plug is inserted. Release dates and original prices: LOG90T, June, 1960 £12 0s 7d. LOG91T, April, 1962 £9 15s 6d. Purchase Tax extra.

PHILIPS LOG90T & LOG91T

TRANSISTOR ANALYSIS

Transistor voltages given in the table below were taken from information supplied by the manufacturers. They were measured on a 20,000Ω/V meter and are negative with respect to battery positive (not chassis).

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 OC44 ..	0.65	0.80	3.9
TR2 OC45 ..	0.50	0.30	3.9
TR3 PC45 ..	0.70	0.85	3.9
TR4 OC71 ..	0.65	0.75	1.5
TR5 OC71 ..	1.40	1.50	4.0
TR6 OC72 ..	0.02	0.20	4.5
TR7 OC72 ..	0.02	0.20	4.5

CIRCUIT ALIGNMENT

Equipment Required.—An A.M. signal generator; an audio output meter with a 10Ω load resistor connected in parallel; a 10kΩ damping resistor; a 0.03μF capacitor; a length of insulated copper wire to form an R.F. coupling loop and a slotted type trimming tool for use with the I.F. transformer cores. A suitable trimming tool can be made by cutting a slot in the end of a number 10 plastics knitting needle.

During alignment the level of output should be maintained at about 50mW.

- 1.—Disconnect the loudspeaker and connect in its place the output meter with the 10Ω resistor in parallel.
- 2.—Turn the volume control to maximum output and the tuning gang to minimum capacitance (fully open). Switch to M.W. and short-circuit L3.
- 3.—Connect the signal generator via the 0.03μF capacitor to the base of TR1.
- 4.—Feed in a 470kc/s modulated signal and adjust L14/L15 (location reference D4) for maximum output.
- 5.—Feed in a 468kc/s signal and a 472kc/s signal in turn, and adjust L11/L12 (D4)

(Continued col. 1 overleaf)

Resistors

R1	8.2kΩ	C1
R2	1.5kΩ	C1
R3	2.2kΩ	C1
R4	150kΩ	C2
R5	560Ω	C2
R6	15kΩ	C2
R7	4.7kΩ	C2
R8	1kΩ	C2
R9	15kΩ	C2
R10	1kΩ	C2
R11	10kΩ	B2
R12	10kΩ	B1
R13	56kΩ	B2
R14	1.2kΩ	B1
R15	8.2kΩ	B1
R16	1.2kΩ	A2
R17	220Ω	A2
R18	2.2kΩ	A2
R19	100Ω	A2
R20	10Ω	B2
R21	4.7kΩ	A1
R22	270Ω	B2

Capacitors

C1	—	D3
C1a	—	D3
C2	—	D3
C2a	—	D3
C3	163pF [†]	C1

C4	61pF [‡]	C1
C5	0.047μF	C1
C6	0.01μF	C1
C7	—	†
C8	91pF	C2
C9	3.2μF	C2
C10	0.047μF	C2
C11	91pF	C2
C12	64pF	C2
C13	0.047μF	C2
C14	0.047μF	C2
C15	91pF	C2
C16	30pF	C2
C17	80pF	B2
C18	4,200pF	C2
C19	4,200pF	C2
C20	3.2μF	B2
C21	220pF	B2
C22	20μF	B1
C23	20μF	A2
C24	0.047μF	B2
C25††	4.7pF	C1

Coils*

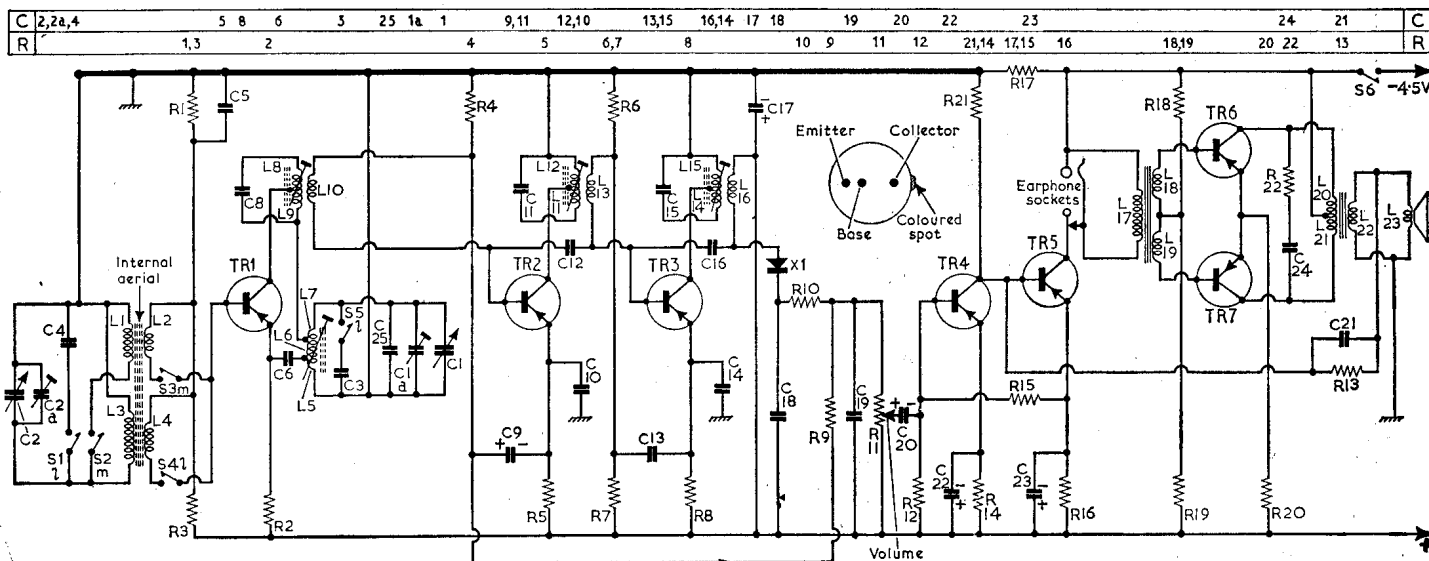
L1	1.4	D3
L2	—	D3
L3	8.6	E3
L4	—	E3
L5	—	—
L6	—	—
L7	3.6	D3

L8	—	—
L9	1.6	D4
L10	—	—
L11	—	—
L12	1.6	D4
L13	—	—
L14	—	—
L15	1.5	D4
L16	—	—
L17	340.0	—
L18	115.0	A2
L19	115.0	—
L20	4.2	—
L21	4.2	B2
L22	—	—
L23	—	E3

Miscellaneous

X1	OA70 [‡]	C2
S1-S5	—	D3
S6	—	B2

*Approximate D.C. resistance in ohms.
†No component.
††Omitted in LOG90T.
‡56pF in LOG90T.
‡‡66pF in LOG90T.
‡‡‡OA85 in some LOG90T receivers only.



Circuit diagram of LOG90T/01 and LOG91T. Insertion of the earphone plugs automatically mutes the output stage.

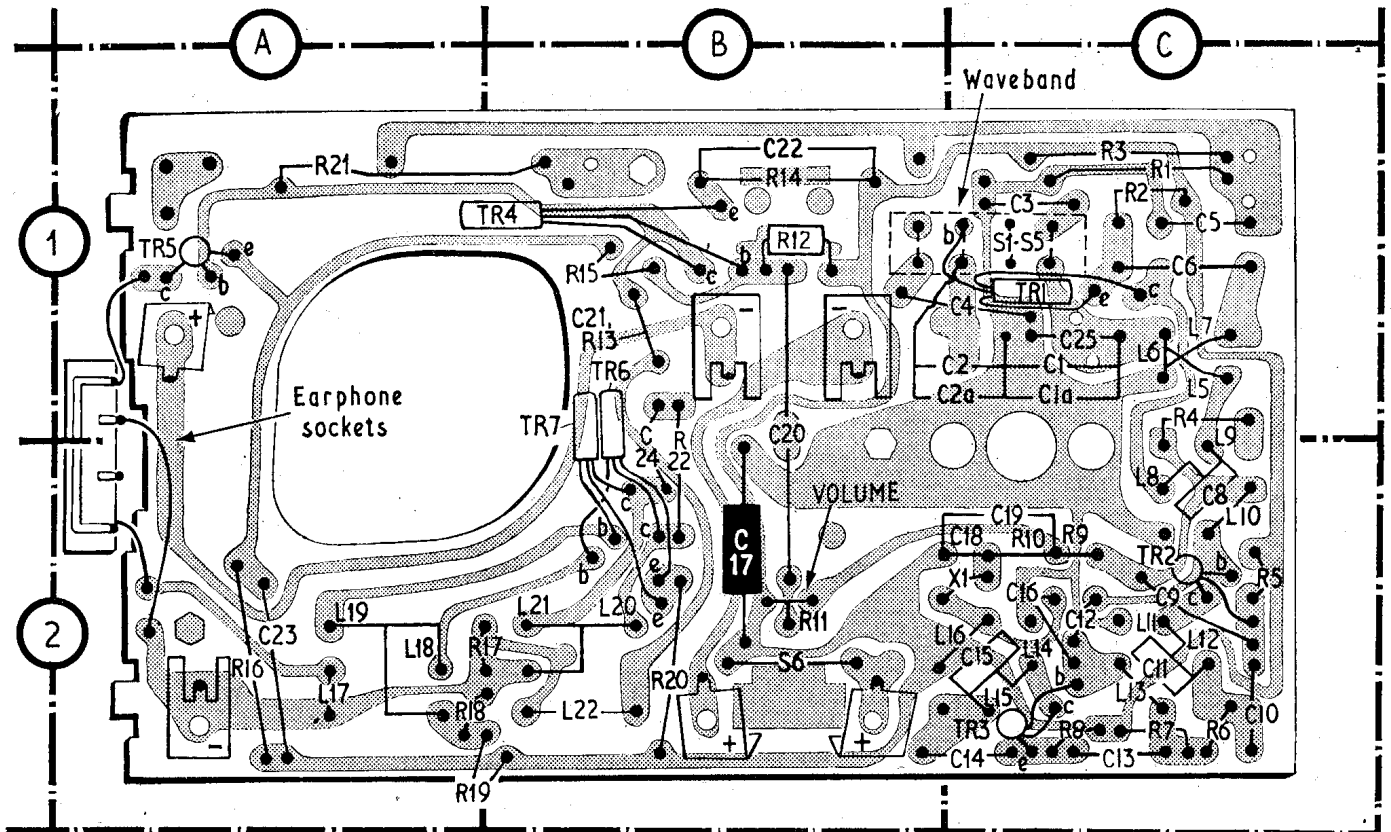


Illustration of the foil side of the printed panel showing component connections. The component side giving alignment adjustments is shown in the drawing below.

Circuit Alignment—continued

- for maximum output at the frequency which gives the greatest output.
- 6.—Re-adjust the signal generator to the frequency not used in operation 5 and adjust L8/L9 (D4) for maximum output. Disconnect the signal generator from TR1 and remove the short-circuit from L3.
- 7.—Loosely couple the signal generator to ferrite rod aerial by winding 2 or 3 turns of insulated wire round the centre of the rod and connecting the signal generator output leads to the ends of the wire.

- 8.—Switch to L.W., turn the volume control to maximum output and the tuning gang to maximum capacitance (fully meshed).
- 9.—Set trimming capacitors C1a and C2a (D4) to the half-open position. Damp L3 with the 10kΩ resistor.
- 10.—Feed in a 148kc/s modulated signal and adjust L5/L6/L7 (D3) for maximum output.
- 11.—Switch to M.W. and turn the tuning gang to minimum capacitance.
- 12.—Feed in a 1,635kc/s signal and adjust C1a for maximum output.

- 13.—Repeat operations 10, 11 and 12 as necessary.
- 14.—Switch to L.W., feed in a 170kc/s signal and tune the receiver to this signal. Remove the 10kΩ damping resistor and adjust L3 for maximum output.
- 15.—Switch to M.W. and replace the 10kΩ damping resistor across L3.
- 16.—Feed in a 600kc/s signal and tune the receiver to this signal. Remove the damping resistor and adjust L1 for maximum output.
- 17.—Feed in a 1,500kc/s signal and tune the receiver to this signal. Adjust C2a (D4) for maximum output.

Batteries.—Three 1.5V batteries are required of any of the following types: Ever-Ready D14, Ever-Ready U12, Vidor V0030 or Vidor V0028.

GENERAL NOTES

Dismantling (LOG90T and LOG90T/01).
—Four small lips on the rear section of the case engage with grooves in the front section. Apply slight pressure on the top or bottom of the front section to separate the two sections.

Remove the knurled knob in the centre of the tuning scale then remove the tuning knob, washers and scale.

Remove the fixing screw under the scale and slide the receiver out of the case.

Dismantling (LOG91T).—Pry off the tuning scale panel by inserting a thumb nail in the tuning control slot.

Remove the indicator disc, large toothed wheel, spacing washers and tuning knob bracket complete with tuning knob.

Detach the case rear section (coin slotted screw) and remove the chassis mounting bolt. Ease the chassis out of the cabinet by first pushing it towards the earphone socket.

When assembling, ensure that the chassis mounting bolt is properly seated and locked.

