

"TRADER" SERVICE SHEET

1785

PHILIPS L2G43T
"Trieste"

Portable Radio Receiver

HOUSED in a moulded case finished in padded leather-cloth, and utilizing six transistors and one crystal diode, Philips L2G43T is a 9V battery powered, portable radio receiver.

Waveband ranges are 200–535m (m.w.), 180–214m (bandsread m.w.) and 1,215–2,000m (l.w.). An internal ferrite rod aerial is fitted and a socket provided for the connection of a car-type aerial.

500mW audio output is handled by a 15Ω 5in by 4in elliptical loudspeaker which is muted on insertion of the earphone plug into the earphone socket.

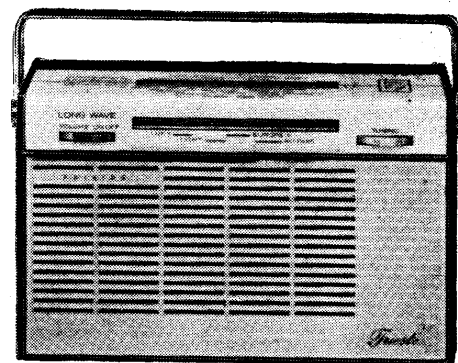
The circuit features a transistor detector in place of the more usual crystal diode.

TRANSISTOR ANALYSIS

Transistor voltages given in the table in column 3 were taken from data supplied by the manufacturers and were measured on a 100,000Ω/V meter under no signal conditions. All readings are negative with respect to chassis.

CIRCUIT ALIGNMENT

Equipment Required.—An a.m. signal generator; an audio output meter with an impedance to match 15Ω, or alternatively a 0–2.5V a.c. voltmeter with a 15Ω resistor wired in parallel; a length of insulated wire for r.f. coupling; a 0.047μF isolating



capacitor and a suitable non-ferrous trimming tool.

During alignment the signal input level should be adjusted to maintain receiver output at 50mW with the volume control at maximum (1V on a.c. voltmeter).

For alignment purposes, the chassis should be removed from the case as described under "General Notes".

1.—Switch on signal generator and allow to warm up for 15 minutes, then connect the output via a 0.047μF isolating capacitor to the aerial side of C7. Connect the audio output meter (or the a.c. voltmeter and 15Ω) resistor in place of the loudspeaker.

2.—Switch receiver to m.w. and set tuning gang to minimum capacitance. Turn the volume control to maximum. Feed in a 470kc/s signal and adjust the cores of L13, L10 and L9 for maximum output. Repeat as necessary.

3.—Check that, with the tuning gang at maximum, the cursor lines up with the notch in the scale backplate. Then with

(Continued overleaf col. 1)

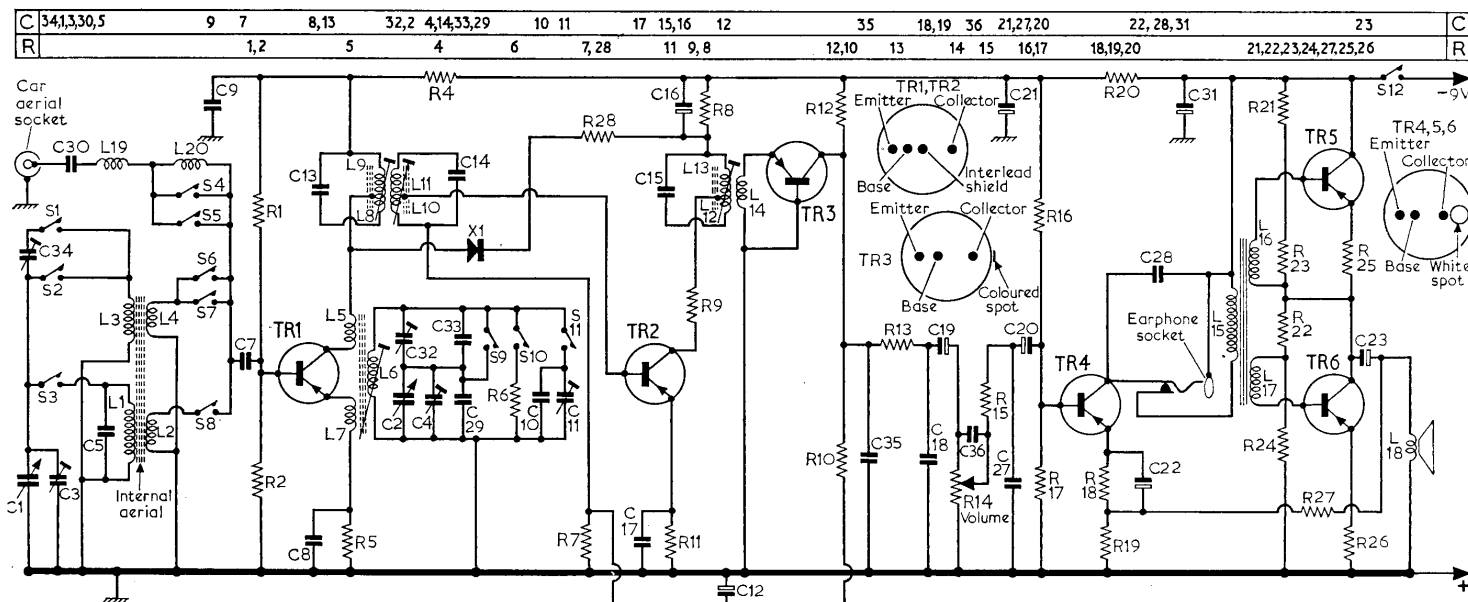
Transistor Table

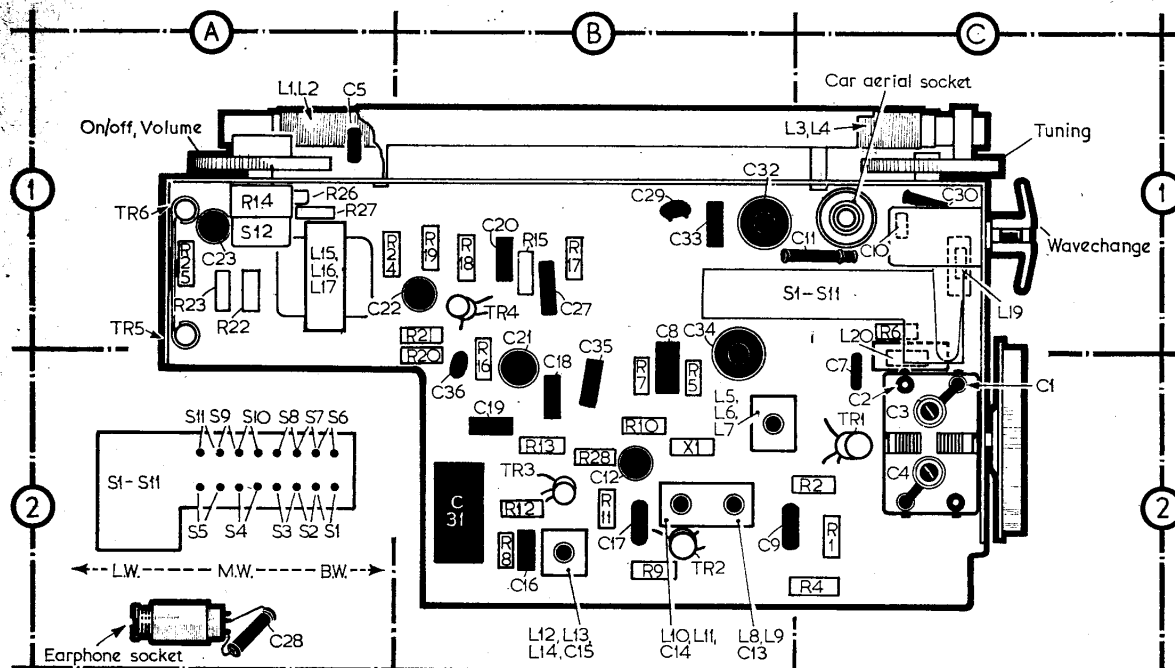
Transistor	Emitter (V)	Base (V)	Collector (V)
TR1	AF117	0.95	1.05
TR2	AF117	0.6	0.85
TR3	OC71	—	—
TR4	OC81D	2.2	2.3
TR5	OC81	4.5	4.7
TR6	OC81	—	0.15

Resistors			Coils*		
R1	33kΩ	C2	L1	6.5	A1
R2	6.8kΩ	C2	L2	—	A1
R4	1.5kΩ	C2	L3	1.5	C1
R5	1kΩ	C2			
R6	82kΩ	C1			
R7	10kΩ	B2			
R8	1.8kΩ	B2			
R9	180Ω	B2			
R10	47kΩ	C2			
R11	270Ω	B2			
R12	27kΩ	B2			
R13	4.7kΩ	C3			
R14	47kΩ	A1			
R15	470Ω	B1			
R16	39kΩ	B2			
R17	18kΩ	B1			
R18	1kΩ	B1			
R19	15Ω	B1			
R20	270Ω	B2			
R21	2.2kΩ	B1			
R22	2.2kΩ	A1			
R23	82Ω	A1			
R24	82Ω	A1			
R25	3.3Ω	A1			
R26	3.3Ω	A1			
R27	2.2kΩ	A1			
R28	820Ω	C2			
Capacitors			Coils*		
C1	—	C2			
C2	—	C2			
C3	—	C2			
C4	—	C2			
C5	56pF	A1			
C7	0.01μF	C2			
C8	0.018μF	B1			
C9	0.1μF	B2			
C10	180pF	C1			
C11	100pF	C1			
C12	25μF	B2			
C13	200pF	B2			
C14	200pF	B2			
C15	91pF	B2			
C16	10μF	B2			
C17	0.1μF	B2			
C18	3,900pF	B2			
C19	4μF	B2			
C20	4μF	B2			
C21	160μF	B1			
C22	80μF	A1			
C23	160μF	A1			
C27	4,700pF	B1			
C28	0.01μF	A2			
C29	3pF	B1			
C30	0.01μF	C1			
C31	640μF	B2			
C32	30pF	B1			
C33	18pF	B1			
C34	30pF	B1			
C35	3,900pF	B1			
C36	2,200pF	B2			
Miscellaneous			Coils*		
X1	OA79	B2			
S1-S11	—	A2			
S12	—	A1			

† Speaker
* Approximate d.c. resistance
in ohms.

Below: Circuit Diagram
of PHILIPS
L2G43T.





View of the component side of the printed panel showing component locations. Waveband switch connections, viewed from the foil side, are shown inset in location ref. A.2.

Circuit Alignment—continued

- gang at maximum, feed in a 535kc/s signal and adjust L6 for maximum output.
- 4.—Turn tuning gang to minimum, feed in a 1,500kc/s signal and adjust C4 for maximum output.
- 5.—Loosely couple the signal generator to the receiver by looping a length of insulated wire around the receiver and connecting the signal generator output to the ends of the loop. Feed in a 600kc/s signal and tune receiver to this signal (500m). Adjust L3 for maximum output.
- 6.—Feed in a 1,300kc/s signal and tune receiver to this signal (230m). Adjust C3 for maximum output.
- 7.—Switch receiver to l.w., reconnect signal generator output via a 0.047 μ F capacitor to the aerial side of C7. Turn tuning gang to maximum and feed in a 145kc/s signal. Adjust C11 for maximum output.
- 8.—Transfer signal generator output to the r.f. coupling loop and feed in a 190kc/s signal. Tune the receiver to this signal (1,579m) and adjust L1 for maximum output.
- 9.—Switch receiver to bandsread and turn tuning gang to maximum. Connect the signal generator output via a 0.047 μ F capacitor to the aerial side of C7 and feed in a 1,400kc/s signal. Adjust C32 for maximum output.
- 10.—Transfer the signal generator output to the r.f. coupling loop and feed in a 1,438kc/s signal, tune the receiver to this signal (209m) and adjust C34 for maximum output.

GENERAL NOTES

Dismantling.—To remove the chassis from the case, first remove the back of the case by laying the receiver, speaker grille down, on a soft surface and releasing the two captive screws.

Withdraw and disconnect the battery, then pull off the outer knob of the waveband switch, which is a spring fit into the inner knob.

Release the earphone socket by undoing its retaining nut and remove the two chassis fixing screws located one on either side of the printed panel.

Ease the chassis out of the case to the extent of the loudspeaker leads, which will provide access to both sides of the printed panel, controls, tuning drive and loudspeaker.

Tuning Scale Replacement.—To replace the tuning scale, remove the case back, then release the spring clip securing the centre lug of the scale to the case top. The scale may now be hinged on its front flange and the flange released by exerting finger and thumb pressure between the lug and the front lower centre of the scale.

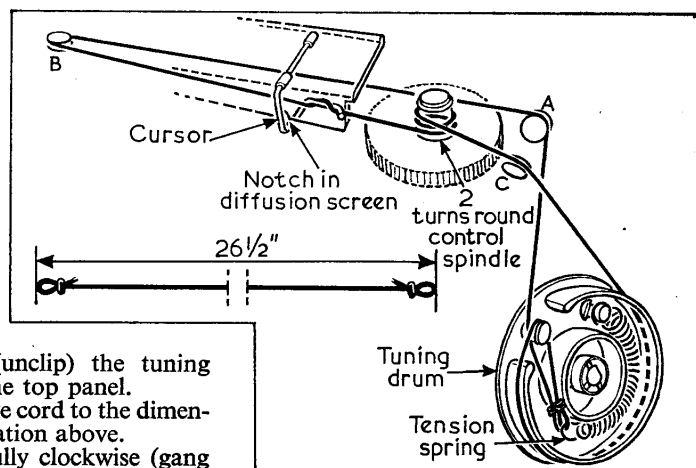
Drive Cord Replacement.—To fit a replacement drive cord, first remove the

back across the top of the chassis to two complete turns wound anti-clockwise from back to front around the hub of the tuning control. Then lead cord around pulley "C" and holding the cord taut, winch the cord around the hub of the tuning drum (turn anti-clockwise) until the tension spring is extended halfway round the inner periphery of the drum.

Trap the cord at pulley "C" to maintain tension, then lead the free end three quarters of a turn clockwise around the outer periphery of the drum, around the guide pillar in a clockwise direction and hook the loop of the free end of the cord onto the extended spring.

Allow the spring to take up any slack and check that no slipping occurs when the tuning control is operated.

Right: Drive cord assembly shown with the tuning gang at maximum.



chassis, then detach (unclip) the tuning scale backplate from the top panel.

Make up the new drive cord to the dimension given in the illustration above.

Turn tuning drum fully clockwise (gang at maximum), attach one end of the cord to the tension spring and hook spring to the anchor lug within the drum.

Lead the cord and spring half a turn clockwise round the inner periphery of the drum, over the guide pillar and out through the aperture in the outer periphery. Take the cord on round pulley "A", across the top of the chassis, round pulley "B" and

Fit the cursor as in the illustration, then clip the tuning scale backplate in position. Turn tuning control fully anti-clockwise and adjust cursor to line up with the notch in the backplate.

Battery.—9V Ever Ready PP7, or equivalent.