ERT SERVICE CHART 1661

ROBERTS R600

TRANSISTOR PORTABLE

Additional copies of this chart price 1s. 6d. post free. Payment with order please to E R T, 33-39 Bowling Green Lane, London EC1.

THREE waveband 11-transistor portable with modular IF amplifier and FM tuner, and complementary symmetry output stage.

Battery. One Ever Ready PP9 or equivalent.

Transistors. TR1 BC148 AF amplifier, TR2 BC148 AF amplifier, TR3 AC128 driver, TR4 OC44/OC45 phase changer, TR5 AC187 and TR6 AC188 complementary output. TR7-TR11 in tuner and amplifier modules.

Wavebands. MW 185-566m (1620-530kc/s), LW 1132-2000m (265-150kc/s), VHF 87.5-108mc/s.

IFs. 470kc/s AM, 10.7mc/s VHF.

Aerials. $8\frac{1}{2} \times \frac{3}{8}$in. internal ferrite rod for MW and LW, 39in. 11-section telescopic rod for VHF.

Outlets. 3.5mm miniature jack socket for external earpiece (5 ohms minimum impedance), external aerial socket (car type).

Speaker. $7 \times 3\frac{1}{2}$in. elliptical, 5ohms impedance.

Manufacturer. Roberts Radio Co Ltd.

Service department. Roberts Radio Co Ltd, Molesey Avenue, West Molesey, Surrey. Tel: 01-979 7474.

DISMANTLING

Remove battery, take out two screws securing chassis to case and one screw holding telescopic aerial. Disconnect speaker leads. Complete chassis can now be removed from top of case.

SERVICE NOTES

If fault develops in IF amplifier or FM tuner units, carefully remove faulty unit and send to manufacturer for replacement.

All setting up and adjustments should be carried out with 9V measured across C24.

Output balance and bias. (Voltmeter, milliammeter, audio signal generator and oscilloscope needed). Connect voltmeter between junction of TR5 and TR6 emitters and positive supply and with volume at minimum, adjust RV2 to give 4.7V reading.

Connect milliammeter in black flex link (LK) under printed board and adjust RV3 to give an output stage quiescent current of 3.5mA at 20 degrees C. Allow one minute and recheck this figure.

Inject audio signal to top of volume control and observe output on oscilloscope across speaker or dummy load. Adjust RV2 for symmetry at onset of clipping.

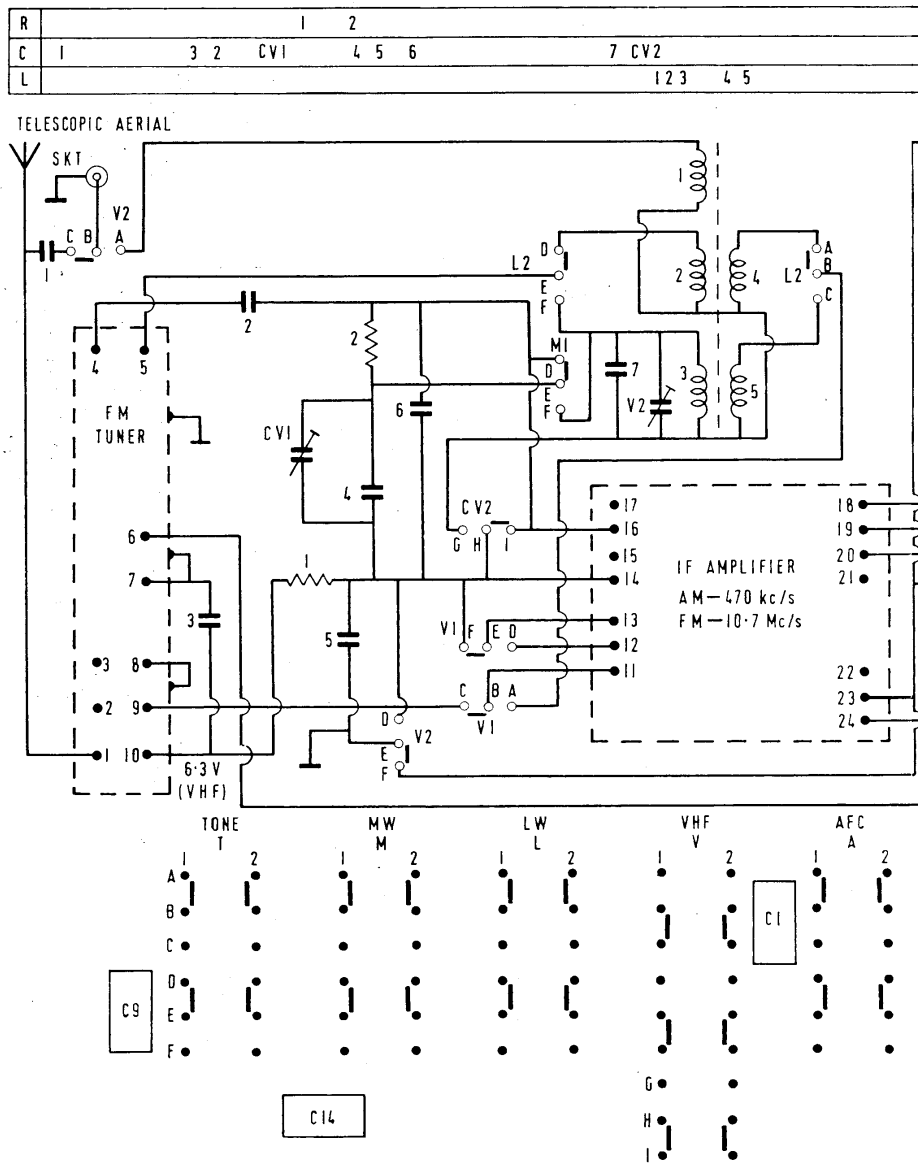
ALIGNMENT

Equipment required. Output meter or AC voltmeter, aerial coupling coil, signal generator covering 150-1500kc/s AM and 108mc/s FM, trimming tools.

AM RF. Rotate tuning control fully anticlockwise and check that pointer lines with high wavelength end of scale.

Connect output meter in place of, or an AC voltmeter across, speaker. Keep output as low as required to prevent AGC action masking alignment peaks. Feed signals via loosely coupled aerial loop to avoid disturbance to circuit.

Tune receiver to MW and set pointer to 200m calibration mark. Inject 1500kc/s



RESISTORS			R11	330	C2	RV1	20K	A3	C7	50pF	C2	C17	47KpF	C3
R1	100	B2	R12	330	B3	RV2	47K	B3	C8	10KpF	A3	C18	2.5mF	B3
R2	150K	B2	R13	68K	C3	RV3	220	B3	C9	47KpF	switch T	C19	16mF	C3
R3	8K2	A3	R14	68K	C3				C10	2K2pF	B3	C20	16mF	C3
R4	390	B3	R15	680	B3	CAPACITORS			C11	47KpF	A3	C21	200mF	C3
R5	82K	C3	R16	10	C3	C1	22pF	switch V	C12	470KpF	A3	C22	4K7pF	B3
R6	22K	B3	R17	560	B3	C2	330pF	B2	C13	10KpF	A3	C23	640mF	B3
R7	4K7	C3	R18	8K2	B3	C3	10KpF	B1	C14	33KpF	switch M	C24	200mF	B3
R8	6K8	C3	R19	12	A3	C4	220pF	B2	C15	400mF	B3	CV1	10–80pF	B2
R9	560	C3	R20	470	B3	C5	10KpF	B2	C16	2.5mF	B3	CV2	10–80pF	C2
R10	2K2	B3	R21	330	B3	C6	8.2pF	B2						

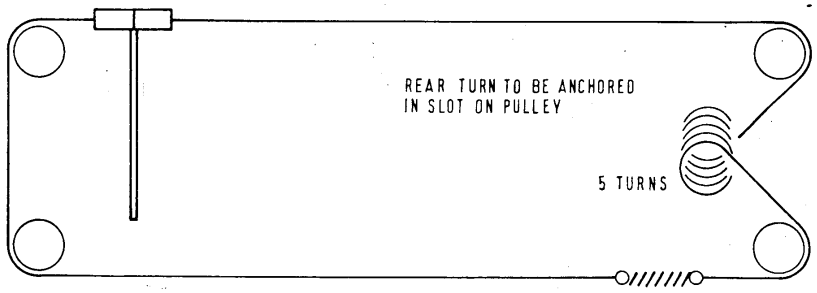
signal and adjust in turn AM OSC and AERIAL trimmers (see layout diagram) for maximum output. Set tuning pointer to 536m calibration mark and inject 560kc/s signal. Adjust in turn AM OSC COIL and L2 for maximum output.

Repeat adjustments at 1500 and 560kc/s in turn, finishing with 1500kc/s, to optimise tracking and calibration.

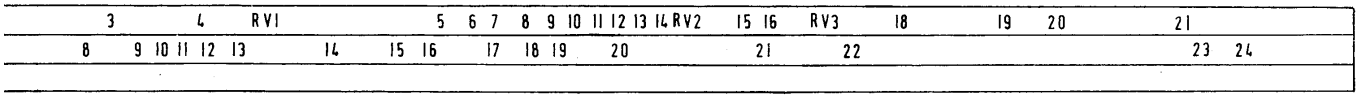
Switch receiver to LW and set tuning indicator to 200m calibration mark. Tune signal generator to 263kc/s and adjust CV1 and CV2 in turn to maximise output.

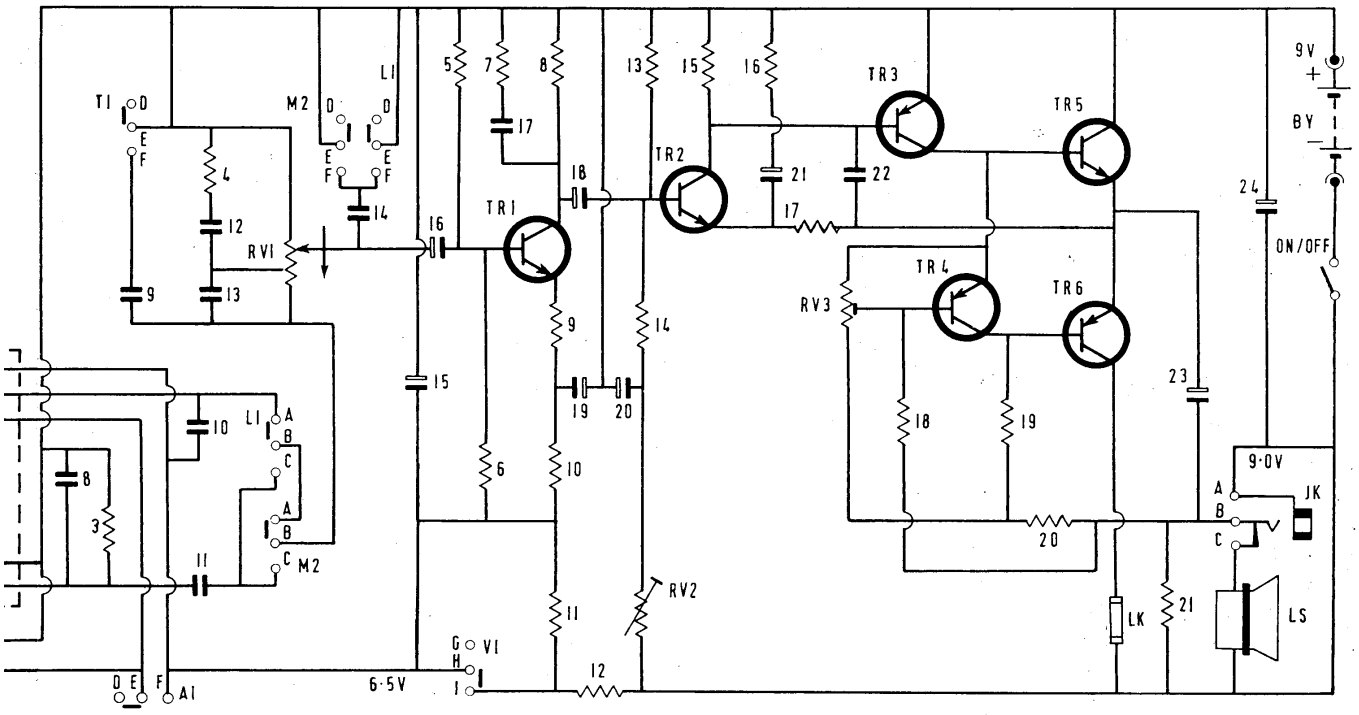
Set tuning pointer to 536m calibration mark, tune signal to 158kc/s and adjust L3 for maximum output.

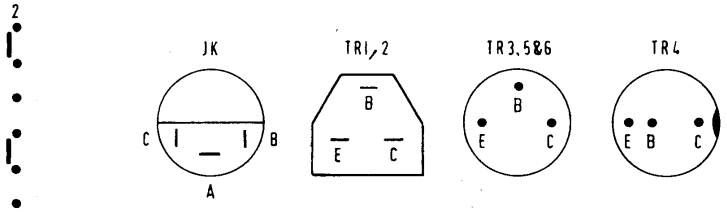
Repeat adjustments at 263 and 158kc/s in turn, finishing with 263kc/s, for optimum results. *continued over*



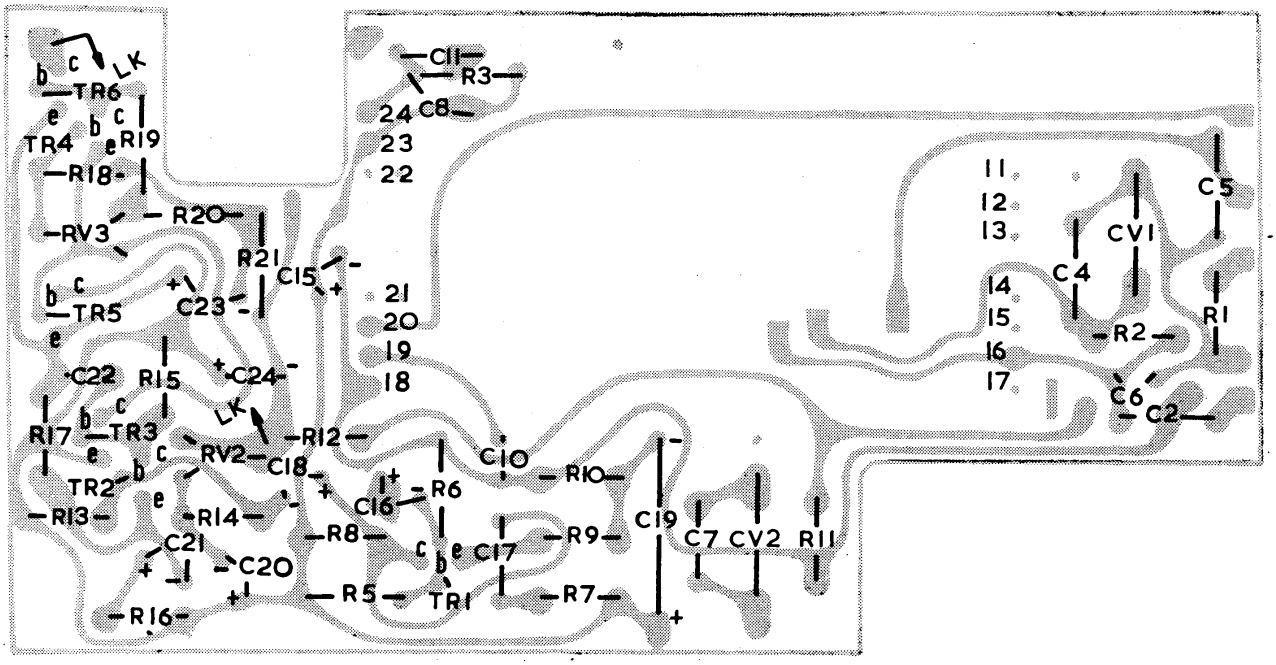
Drive cord lacing. About 31in. of cord required, looped at each end to give overall length 28⅜in



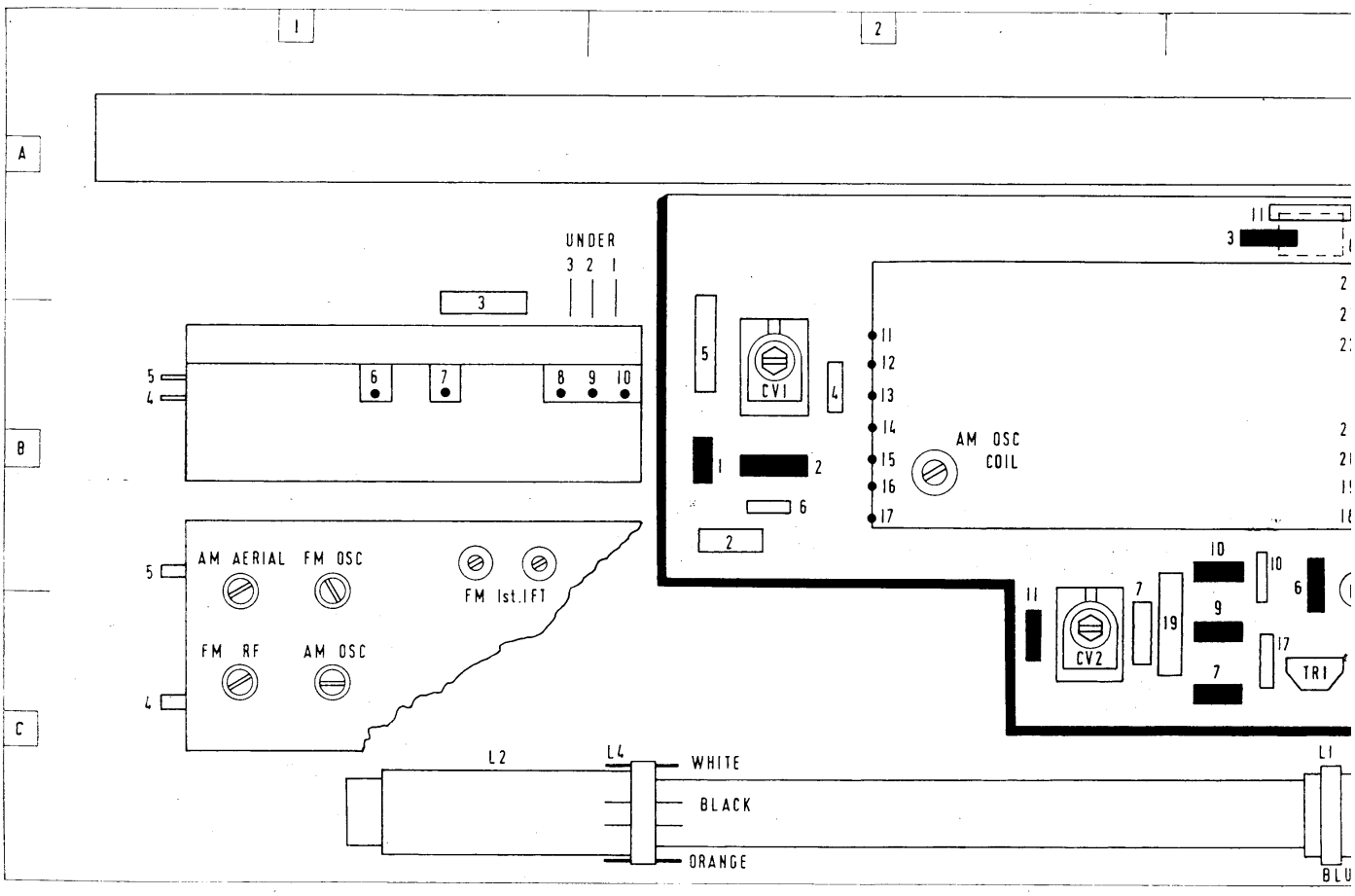




Electrical and Radio Trading, September 12, 1968



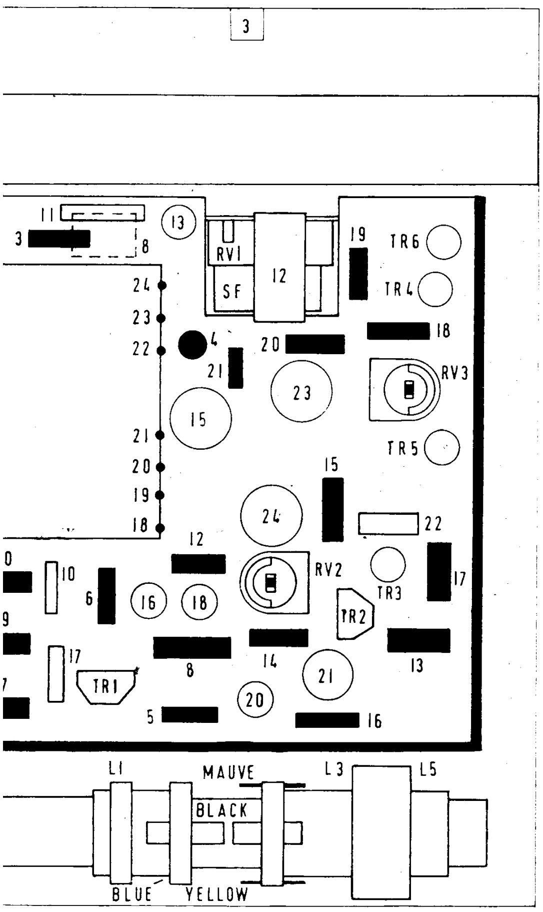
Layout of printed circuit board viewed from tin dip side, with component locations indicated



Component layout diagram showing FM tuner and IF amplifier modules, with partial plan view of tuner to show trimm

FM RF. Switch off AFC (button depressed). Rotate tuning control fully clockwise and feed in 108mc/s. Adjust FM OSC and FM RF trimmers for maximum output.

Drive cord replacement. Approximately 31in. of braided nylon cord is needed. This is looped at each end to give overall length of 28⅜in. Lacing is as shown in diagram, 5 turns taken round drive pulley and rear turn firmly anchored in slot on pulley.



to show trimmer positions