

1449

# 'ERT' SERVICE CHART

ROBERTS R300

**T**WO-waveband battery portable employing six transistors and three diodes. Bias stabilised output stage maintains high quality reproduction throughout useful battery life.

**Battery.** Ever Ready PP9, Vidor VT9, Drydex DT9 or equivalent.

**Consumption.** 12mA with volume control at minimum and no signal input, 20mA average listening volume.

**Wavebands.** MW 192-555m (1562-540kc/s), LW 1168-2000m (255-150kc/s).

**Transistors.** AF117 oscillator mixer, AF117 first IF amplifier, AF117 second IF amplifier, OC81D audio driver, OC81(2) push-pull output.

**Diodes.** OA90 detector, OA79 AGC, AA129 output stage bias stabiliser.

**IF.** 470kc/s.

**Speaker.** 6 x 4in. 3ohms high-flux elliptical.

**Output.** 500mW.

**Aerial.** Internal ferrite rod for MW and

LW. Socket for car radio aerial.

**Manufacturer.** Roberts Radio Co. Ltd. Molesey Avenue, West Molesey, Surrey. Tel.: Molesey 7474.

### DISMANTLING

Lay receiver face down on protected surface. Turn gang fully clockwise. Remove two screws through bottom of case. This will permit withdrawal of wedges securing chassis at each end. Ease tuning scale and panel out of recess in the top of the case. Complete chassis can now be lifted out.

### SERVICE NOTES

**Printed circuit.** When removing or inserting a component on the printed board avoid excessive pressure which may cause the copper to separate from the base material.

**Soldering.** Iron with small diameter bit should be used. Apply bit to joint only long enough for solder to flow then remove quickly.

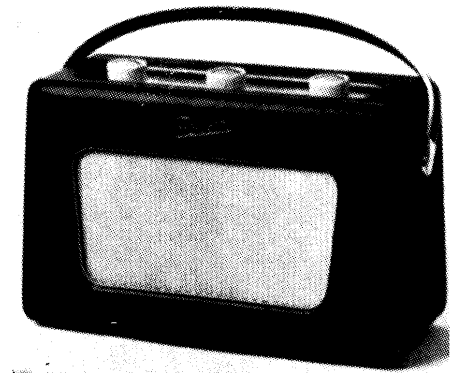
**Transistors.** Transistors may be damaged by

incorrect polarity or too high a voltage. Care should be taken when making continuity tests with high-ohms range of multi-range meter as applied voltage may be too high for transistors.

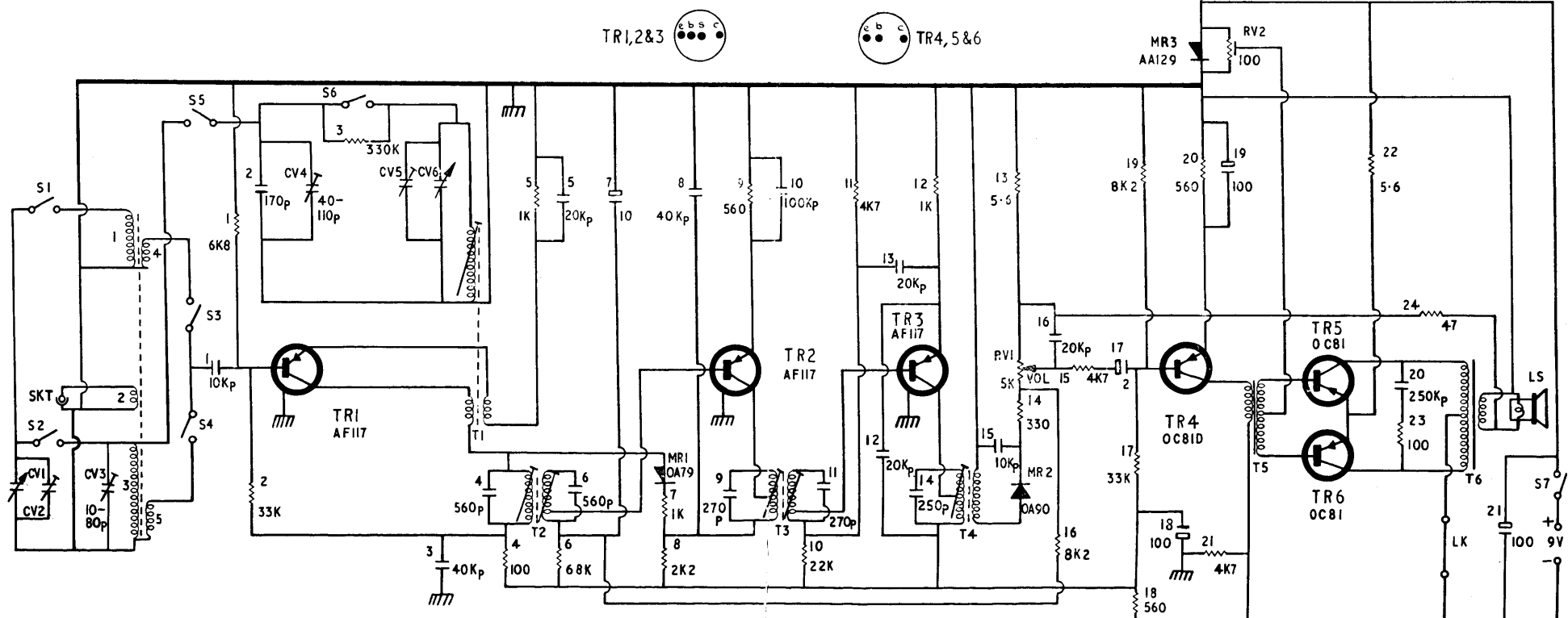
**Output stage bias.** Preset RV2 is adjusted to give output stage quiescent current of 4mA at 20 degrees C. No further adjustment should be required unless output transistors or stabilising diode is changed.

**Output transistors.** TR5 and TR6 are matched pair. Should one become faulty both should be replaced with a new matched pair.

**Circuit diagram.** To cut down the number of decimal points, and so reduce the possibility of error, the letter K or M is inserted in place of the point in some component values. Examples: 470ohms previously written 4.7K becomes 4K7 and 2.2megohms is shown as 2M2.



Wood cabinet is rexine-covered in choice of scarlet, green, tan or navy



# Speedy Dependable Servicing

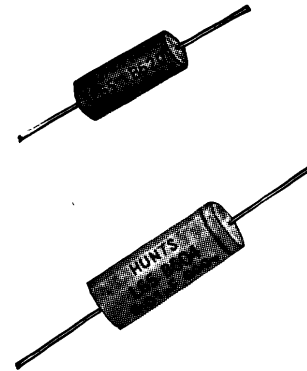
## Type L65 for A.C. Operation

A range of Foil and Paper Tubular Capacitors housed in waxed cardboard tubes, intended for applications where the major part of the applied voltage is A.C. or transient. Type L65 is suitable for operation up to +70°C.

Type L65.  
Temperature Range:  
-30°C. to +70°C

TYPE L65 FOR A.C. OPERATION				
Cap. $\mu$ F.	List No.	Dimensions		List Price
		L.	D.	s. d.
350 Volts A.C. Wkg. 750 Volts D.C. Wkg. 2250 Volts D.C. Test.				
0.01	B594	1 1/2"	7/16"	1 6
0.02	B595	1 3/4"	7/16"	1 7 1/2
0.05	B596	1 3/4"	7/16"	1 7 1/2
0.1	B597	1 3/4"	7/16"	2 1 1/2
0.2	B598	2 1/4"	7/16"	2 9
0.5	B599	2 1/4"	1 1/16"	4 6
400 Volts A.C. Wkg. 1000 Volts D.C. Wkg. 3000 Volts D.C. Test.				
0.001	B619	1 1/2"	7/16"	1 6
0.002	B620	1 3/4"	7/16"	1 6
0.005	B621	1 3/4"	7/16"	1 6
0.01	B618	1 3/4"	7/16"	1 6
0.02	B622	1 3/4"	7/16"	1 9
0.05	B623	1 3/4"	7/16"	1 9
0.1	B624	2 1/4"	7/16"	2 6
0.2	B642	2 1/4"	7/16"	3 3
600 Volts A.C. Wkg. 4 kV D.C. Test.				
0.001	B627	1 1/2"	7/16"	1 9
0.0025	B600	1 3/4"	7/16"	1 9
0.005	B602	1 3/4"	7/16"	1 9
0.006	B603	1 3/4"	7/16"	1 9
0.007	B632	1 3/4"	7/16"	1 9
0.008	B631	1 3/4"	7/16"	1 9
0.01	B604	1 3/4"	7/16"	2 0
0.02	B605	2"	7/16"	2 0
0.04	B606	2 1/4"	7/16"	2 3
0.05	B607	2 1/4"	7/16"	2 3
0.1	B608	2 1/4"	7/16"	2 9

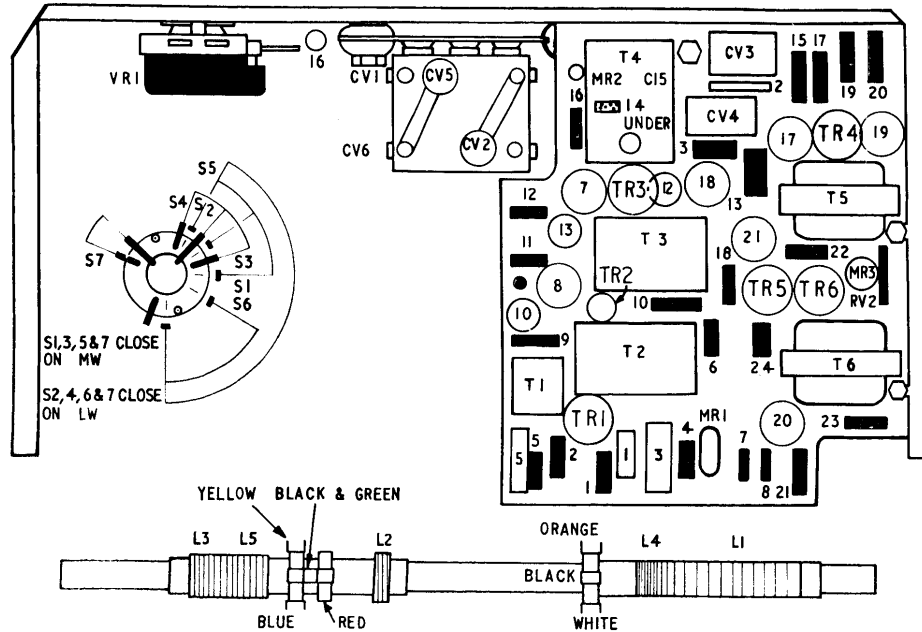
Type L65 is available also for 300 Volts and 800 Volts AC Working.



THE TRADE MARK OF RELIABILITY

If not already in your possession apply for the latest Service Trade Catalogue for full details of Dry Electrolytics, Miniature Metallised Paper, Foil and Paper, Stacked and Silvered Micacs, etc.

**A. H. HUNT (Capacitors) LTD., WANDSWORTH, LONDON, S.W.18** Tel: **VANDyke 6454**  
Factories also in Surrey and North Wales Telex **25640**



For indicating capacities the term Kp (a thousand pFs) is used for values from .001mF (1,000pF) which becomes 1Kp to .999mF which is 999Kp. Examples: 3,000pF is 3Kp and .04mF is 40Kp.

**Component numbering.** Component numbers used in E R T charts conform to the ones in manufacturers' manuals.

### ALIGNMENT

**Equipment required.** Modulated signal generator covering 150-1,600kc/s, output meter 3ohms or AC voltmeter, coupling coil consisting of about 14 turns of 18swg wire wound on 1in. diameter former, trimming tools.

Connect output meter in place of speaker, or AC voltmeter on low range across speaker. During alignment output should be kept low, by reducing signal input, to avoid AGC action masking adjustments. Generator output should be fed into receiver via coupling coil placed approximately 6in. from ferrite rod aerial.

Check that with gang at maximum the pointer coincides with high wavelength end of tuning scale.

**IF.** Switch receiver to MW. Turn gang to quiet spot near HF end of scale. Feed in

470kc/s modulated signal from generator via coupling coil. Adjust T2, T3 and T4 in that order for maximum output. Repeat until no further improvement obtained.

**RF.** Calibration marks are printed on scale at 221 and 517m. Switch receiver to MW. Set pointer to 517m and feed in 580kc/s from generator. Adjust T1 and L1 for maximum output. L1 is adjusted by sliding along ferrite rod. Change receiver tuning to 221m and generator to 1,360kc/s. Adjust CV5 and CV2 for maximum output. Repeat last two operations.

Switch receiver to LW and set pointer to 221m calibration mark. Feed in 245kc/s and adjust CV4 and CV3 for maximum output. Change pointer to 517m mark and generator to 155kc/s. Adjust L3 by sliding along ferrite rod for maximum output. Repeat last two operations for maximum results.

Switch back to MW and set pointer to 517m. Alter generator to 580kc/s and adjust L1 by sliding along ferrite rod for maximum results. Turn pointer to 221m and inject 1,360kc/s from generator. Adjust CV5 and CV2 for maximum output. Switch receiver to LW and with pointer still on 221m calibration mark feed in 245kc/s. Adjust CV4 and CV3 for maximum output.