SERVICE INFORMATION FOR THE

PHILIPS

RADIO RECEIVER

TYPE — L3G45T

OFFICIAL SERVICE AGENT :—

AMALGAMATED ELECTRIC SERVICES LTD.

WADDON FACTORY ESTATE CROYDON SURREY

Telephone: CROydon 7722 Telex: 262308

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(Please quote AES 428 when ordering further copies)

The L3G45T is a M.W./L.W. battery operated portable radio receiver. Six transistors and three crystal diodes are used. Sockets are provided for the connection of a car radio aerial, earphone and tape recorder. A "Power Boost" switch enables a choice of high or low output from the receiver, with increased battery life in the "Min" position. The padded cabinet is styled in either two-tone beige or two-tone blue.

SPECIFICATION

Semi-conductors and their functions

T1	AF117	Mixer and oscillator.
T2	AF117	I.F. amplifier.
T3	AF117	I.F. amplifier.
T4	OC81D	Audio amplifier and driver.
T5	OC81	Push-pull output.
T6	OC81	
X1	OA79	Damping diode.
X2	OA70	Detector.
X3	AA129	Stabilisation diode.

Loudspeaker	6″ × 4″ elliptical (30 Ω impedance).
Battery	9 volts - PP9 or equivalent.
Output	1 watt - full output. 400 mW - economy output.
Consumption	15 mA. average (no signal).
Waveband ranges	M.W. 187 - 555 metres. L.W. 1215 - 2000 metres.
Dimensions	Height 7¼″. Width 11½″. Depth 3½″.
Weight	5¼lbs. (including battery).

DISMANTLING

Removing the cabinet

Place the receiver face down on a soft cloth, release the two captive retaining screws in the back, then lift off the backplate. The plastic cabinet centre is now held only by the four corner screws. To detach the chassis from the front moulding, pull off the tuning knob, and remove the two larger screws securing the socket plate assembly, also the two chassis securing screws, one of which is situated near the wavechange knob and the other near the power boost switch. Unsolder the loudspeaker leads. The printed panel may be released from the chassis by detaching the two fixing screws and withdrawing the panel from the slots in the rod aerial rubber mounting brackets.

MECHANICAL ADJUSTMENTS

Replacing the drive cord

Make up the new cord to the dimensions shown in Fig. 2. Turn the tuning drum to the fully clockwise position (gang condenser closed), then hook one of the ends of the cord through the tension spring. Lead the cord clockwise round the drum to pulley A, then up to the tuning spindle and 2½ turns anti-clockwise from front to back. Feed the cord over pulley B, then across to pulley C, passing ½ turn round and back to the tuning drum, securing the end of the cord on the tension spring.

Pointer setting

Turn the tuning knob to the fully clockwise position (gang condenser closed), then set the pointer to the end of the slot in the chassis as shown in Fig. 2. This should correspond to the two dots at the low-frequency end of the tuning scale.

TRIMMING INSTRUCTIONS

General

(a) Output should be observed with an output meter set for 30 Ω load, trimming level 50 mW. Alternatively an A.C. voltmeter (2.5v. range) with a 30 Ω resistor in parallel may be used, trimming level 1-1.5v. Disconnect the loudspeaker and set the volume control to maximum.

(b) When trimming the aerial circuits, a convenient coupling between the signal generator and the receiver may be made by looping a piece of insulated wire around the receiver.

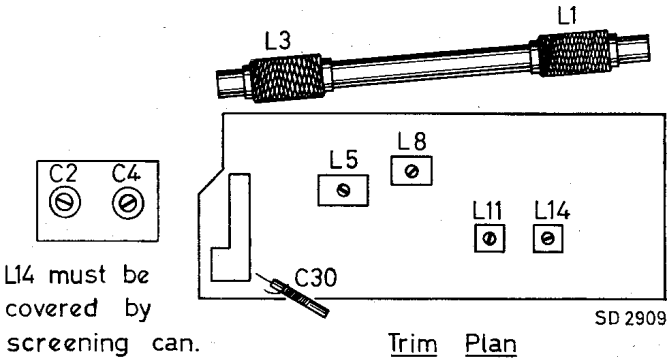

Fig. 1

Note: An alternative type of gang condenser may be fitted on later chassis. The positions of C2 and C4 as shown in Figs. 1 and 3 should then be reversed.

ELECTRICAL ADJUSTMENTS

Adjustment of R23

Should output transistors or associated components require replacement, the collector current must be adjusted by means of R23 in the following way.

Insert a D.C. milliammeter between points A and B on the printed panel (see Fig. 3). A link which is situated on the component side of the panel near the output transformer, must be disconnected for this adjustment. It is important that a temperature check be taken near the printed panel, and that R23 is adjusted to give a meter reading according to the table given below.

Temperature	*Collector current setting*
18°C (64.4°F)	4.5 mA.
24°C (75°F)	5.3 mA.
30°C (86°F)	6.0 mA.

Switch to	Set gang to	Injection point	Sig. Gen. Freq.	Adjust
I.F. Alignment				
M.W.	Minimum	Aerial side of C6 via a 470Kpf capacitor	470 Kc/s	L14-max. output Refit screening can
„	„	„ „	468 Kc/s	L11— „ „
„	„	„ „	472 Kc/s	L8— „ „
M.W. Alignment				
M.W.	Maximum	„ „	550 Kc/s	L5— „ „
„	Line up pointer to L.H. scale marker	„ „	1610 Kc/s	C4— „ „
„	600 Kc/s	Via coupling loop	600 Kc/s	L1— „ „
„	1300 Kc/s	„ „	1300 Kc/s	C2— „ „
Repeat as necessary				
L.W. Alignment				
L.W.	Maximum	Aerial side of C6 via a 470Kpf capacitor	145 Kc/s	C39— „ „
„	185 Kc/s	Via coupling loop	185 Kc/s	L3— „ „
Repeat as necessary				

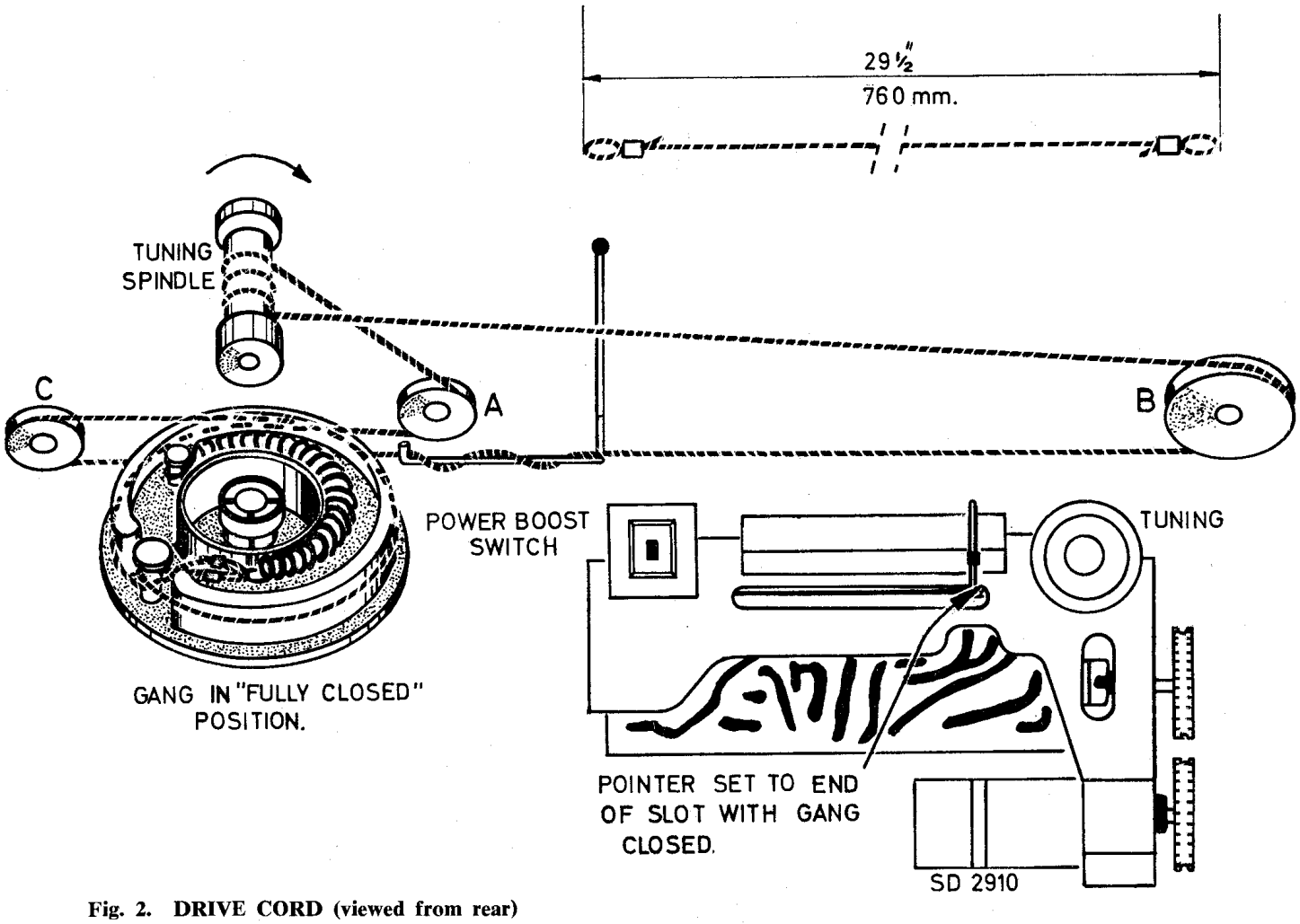

Fig. 2. DRIVE CORD (viewed from rear)

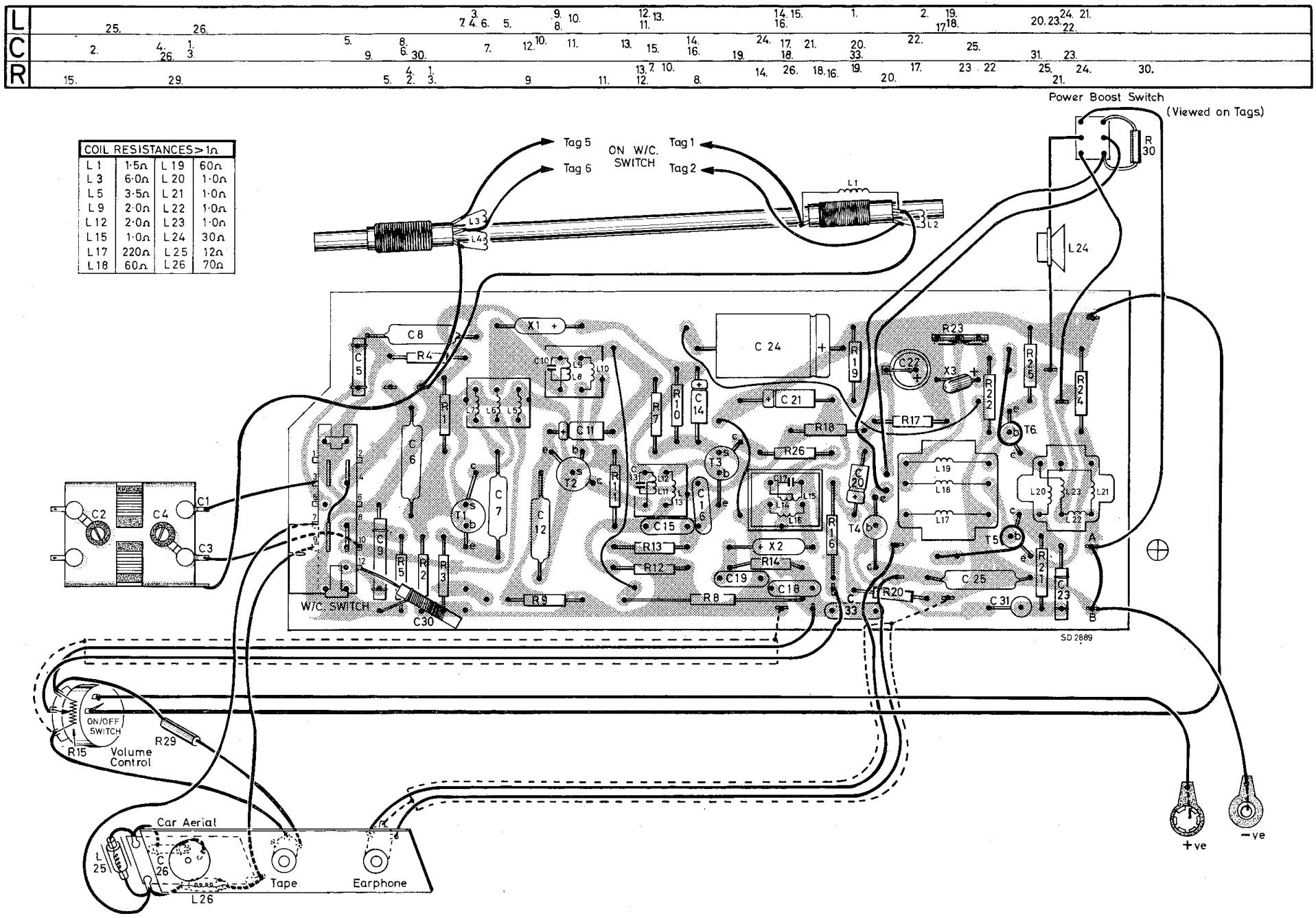

Fig. 3. PRINTED PANEL (component side)

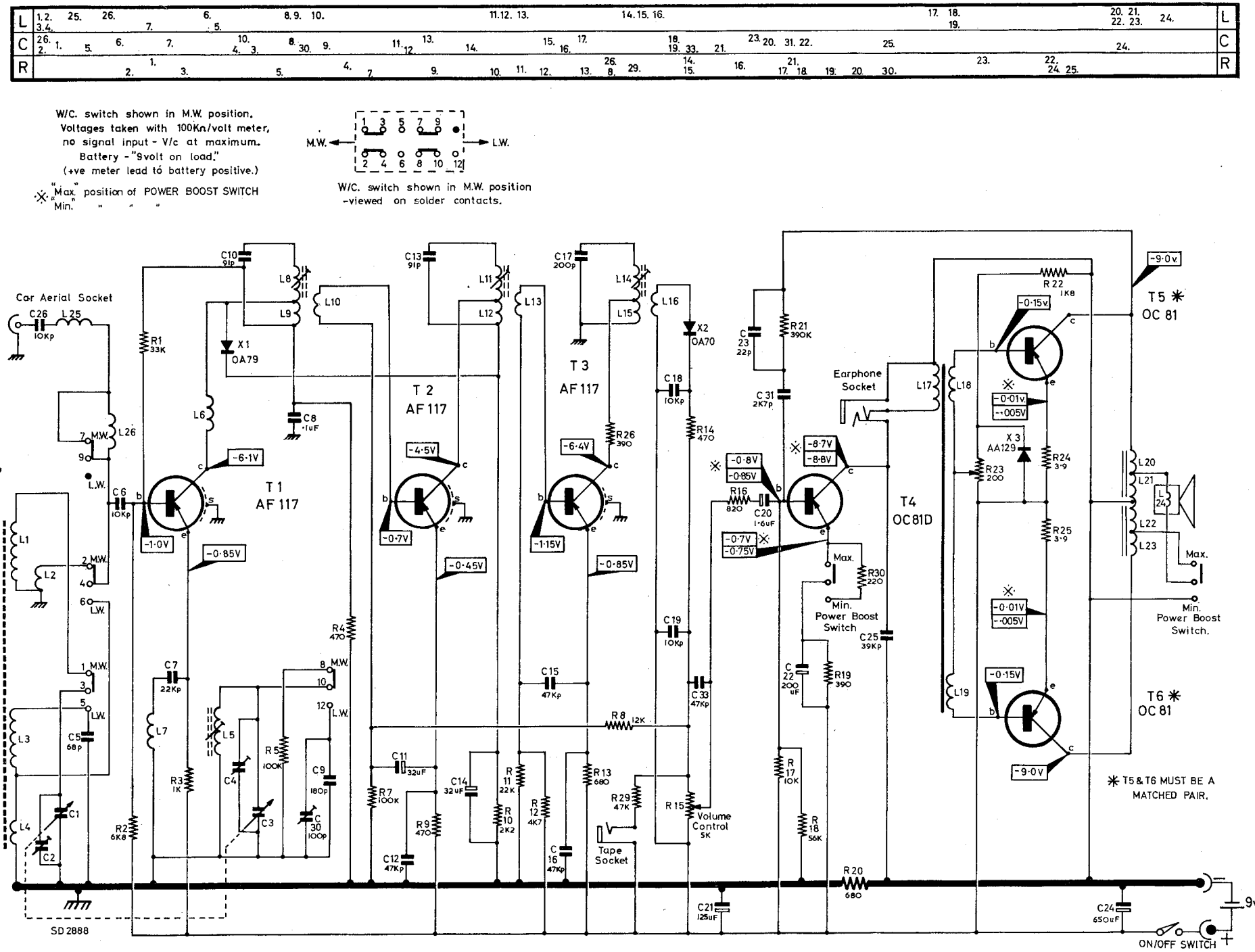

Fig. 4. CIRCUIT DIAGRAM

SPARE PARTS LIST

CABINET ASSEMBLY

Cabinet—centre (beige)	3113.108.00450
Front moulding assembly (beige)	HY.114.65
Cabinet—centre (blue)	3113.108.05290
Front moulding assembly (blue)	HY.114.73
Screw for above	B.070.AD/8N×⅜
Handle assembly	3113.105.10080
Pin (2)	MK.841.74
Outer spire fix (2) for handle	MK.451.64
Inner locking ring	3113.101.00170
Indicator plate for sockets	3113.105.10050
Fixing clip for speaker (4)	MK.751.68
Foam strip (2)	MK.684.01
Foam pad for battery	MK.965.78
Type plate	MK.706.42
Battery label	MK.708.87
Indicator plate—wavechange	3113.105.10020
Indicator plate—volume	3113.105.10030
Window	3113.104.00250
Trim—top of scale	3113.105.10190
Trim bottom of scale	3113.105.10200
Backplate assembly	3113.108.00460
Screw (2)	3113.101.60170
Circlip (2)	3113.104.01370

CONTROL KNOBS

Volume	MK.858.78
Tuning	3113.108.00470
Waveband	MK.858.77
Clip for knobs (2)	MK.752.00

POINTER DRIVE ASSEMBLY

Scale (for beige set)	3113.105.00080
Scale (for blue set)	3113.105.00410
Diffusion screen	MK.996.93
Screw for above (2)	B.070.AD/5N×¼
Pointer assembly	3113.108.00530
Drive cord	K.299.ZZ/923
Cord loop grips (2)	B.002.AF/3×5
Tension spring for cord	MK.740.56
Drive drum	MK.963.15
Tuning spindle	3113.101.60130
Bracket	MK.042.12
Screw for tuning spindle	B.054.ED/3×5
Lockwasher	B.053.BD/3
Pulley—small (2)	A3.680.02
Pin (2) for pulley—small	A3.602.31
Circlip (2)	B.108.AF/1.9
Pulley—large	P4.120.08
Pin for pulley—large	MK.616.18
Fixing bush	B.002.AG/3×0·3×3
Screw (3)	B.808.AD/4N×⅝
Washer (3) gang mounting	B.050.ED/3
Grommet (3)	08.008.73
Distance piece (3)	B.001.AC/4.1×6×3·5
Pointer holder (some sets only)	MK.914.55

WAVECHANGE SWITCH ASSEMBLY

Wavechange switch complete	3113.108.00520
Spindle	MK.996.92
Pressure washer for spindle	B.046.AA/4
Operating pin for spindle	B.074.AF/2×16
Bracket and lever assembly	MK.838.74
Torsion spring on bracket assembly	MK.740.65
Screw for lever assembly	B.070.AD/5N×¼

PLUGS AND SOCKETS

Socket plate assembly	3113.108.00510
Rubber buffer on socket plate	MK.725.91
Fixing screw for socket plate	B.070.AD/5N×¼
Earphone socket only	MK.967.67
Tape socket only	MK.967.62
Plug for sockets	HY.129.70
Battery connector—positive	MK.966.85
Battery connector—negative	MK.966.84

PRINTED PANEL ASSEMBLY

Plastic mounting pillar	MK.963.35
Screw	B.054.ED/3×6
Screw (2)	B.070.AD/5N×⅝
Heat sink (2)—for T5 and T6	MK.991.47
Solder tags (13)	A3.320.38
Sleeving	K.558.LB/size
Screen can for L14—16	MK.242.46

MISCELLANEOUS

Nut for v/c	MK.927.05
Support for rod aerial (2)	MK.949.49

TRANSISTORS AND DIODES

T1	AF117
T2	AF117
T3	AF117
T4	OC81D
T5	OC81
T6	OC81
X1	OA79
X2	OA70
X3	AA129

COILS AND TRANSFORMERS

L1 —L4	Rod aerial	MK.820.90
L5 —L7	Oscillator coil	MK.571.61
L8 —L10	1st I.F. coil	MK.571.50
L11—L13	2nd I.F. coil	MK.571.51
L14—L16	3rd I.F. coil	MK.570.18
L17—L19	Driver transformer	MK.516.55
L20—L23	Speaker transformer	MK.516.56
L24	Loudspeaker	ND.2346.HX
L25	Aerial choke	MK.550.29
L26	Long wave choke	MK.550.50

CORES FOR COILS

L1—L4	MK.425.06
L5—L7, L8—L10, L11—L13, L14—L16	K5.120.00

ACCESSORY

Earphone—complete	AF.9120/10

RESISTORS

	Type	Value	
R1		33,000	48.426.10/33K
R2		6,800	48.426.10/6K8
R3		1,000	48.426.10/1K
R4		470	48.426.10/470E
R5		0·1M	48.426.10/100K
R7		0·1M	48.426.10/100K
R8		12.000	48.426.10/12K
R9		470	48.426.10/470E
R10		2,200	48.426.10/2K2
R11		22,000	48.426.10/22K
R12		4,700	48.426.10/4K7
R13		680	48.426.10/680E
R14		470	48.426.10/470E
R15	Volume control	5,000 Log	MK.812.67
R16		820	48.426.10/820E
R17		10,000	48.426.10/10K
R18		56,000	48.426.10/56K
R19		390	48.426.10/390E
R20		680	48.426.10/680E
R21		0·39M	48.426.10/390K
R22		1,800	48.426.05/1K8
R23	Preset	200	E.097.AC/200E
R24		3·3	MK.771.29
R25		3·3	MK.771.29
R26		390	48.426.10/390E
R29		47,000	48.426.10/47K
R30		0.22M	902/220K

CAPACITORS

	Type	Value	
C1—C4	Gang		MK.211.33
C1—C4	Gang (later versions)		MK.211.34
C5	Ceramic	68	C.304.GH/C68E
C6	Polyester	10,000	906/L10K
C7	Polyester	22,000	906/L22K
C8	Polyester	0·1uF	906/L100K
C9	Ceramic	180	HT.930.17/A180E
C10	Ceramic	91	B1.664.93
C11	Elco	32uF	C.426.AM/A32
C12	Polyester	47,000	906/L47K
C13	Ceramic	91	B1.664.93
C14	Elco	32uF	C.426.AM/A32
C15	Foil	47,000	C.280.AA/A47K
C16	Foil	47,000	C.280.AA/A47K
C17		200	In L14/16
C18	Foil	10,000	C.280.AA/A10K
C19	Foil	10,000	C.280.AA/A10K
C20	Elco	1·6uF	C.426.AM/H1.6
C21	Elco	100uF	C.426.AM/E100
C22	Elco	200uF	C.426.CE/C200
C23	Ceramic	22	C.304.GH/A22E
C24	Elco	640uF	C.435.AL/D640
C25		39,000	906/L39K
C26	Ceramic	10,000	904/10K
C30	Trimmer	100	C.015.AB/100E
C31	Ceramic	2,700	C.322.DA/P2K7
C33	Foil	47,000	C.280.AA/A47K