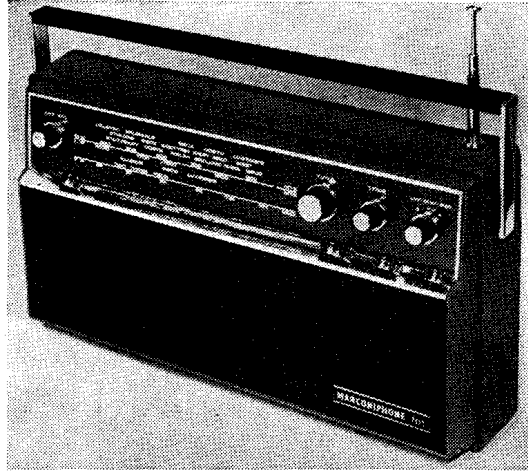


ERT

SERVICE CHART

1916



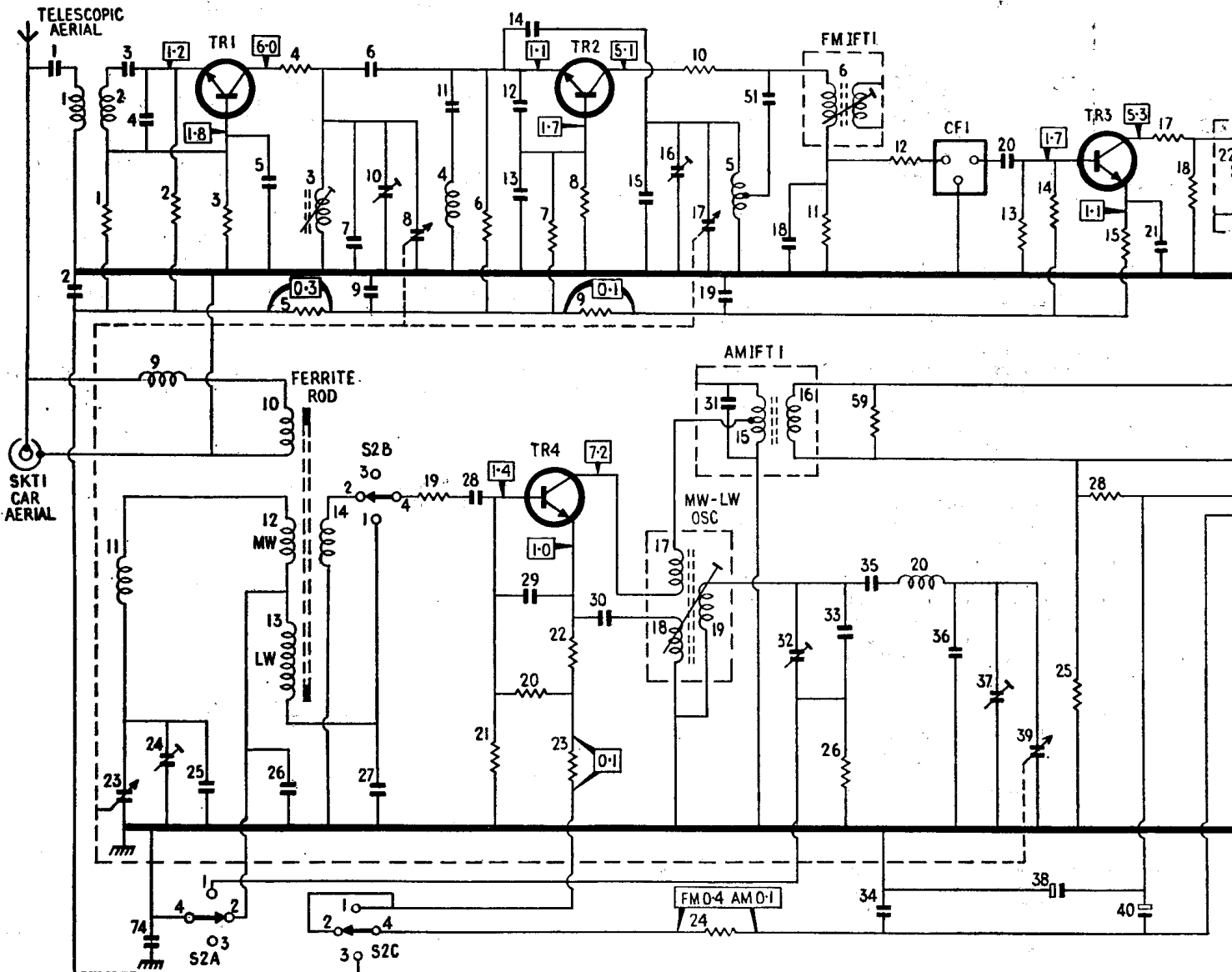
Marconiphone 4179

portable am/fm radio

Additional copies of this chart 25p, including postage. Payment with order please to ERT, Dorset House, Stamford Street, London SE1 9LU.

This service chart is copyright. It is not to be resold or reproduced, in part or in whole, without permission.

R	1	2	3	4	5	19	6	21	20	7	22	8	9	10	24	11	26	59	12	13	14	25	28	15	17	18										
C	1	2	23	25	5	26	7	6	9	10	8	11	28	12	14	30	15	16	17	19	31	51	18	32	34	35	34	36	37	20	37	38	40	21	22	
L	1	2	11	9	10	13	3	4	4	4	17	18	5	15	16	6	20																			



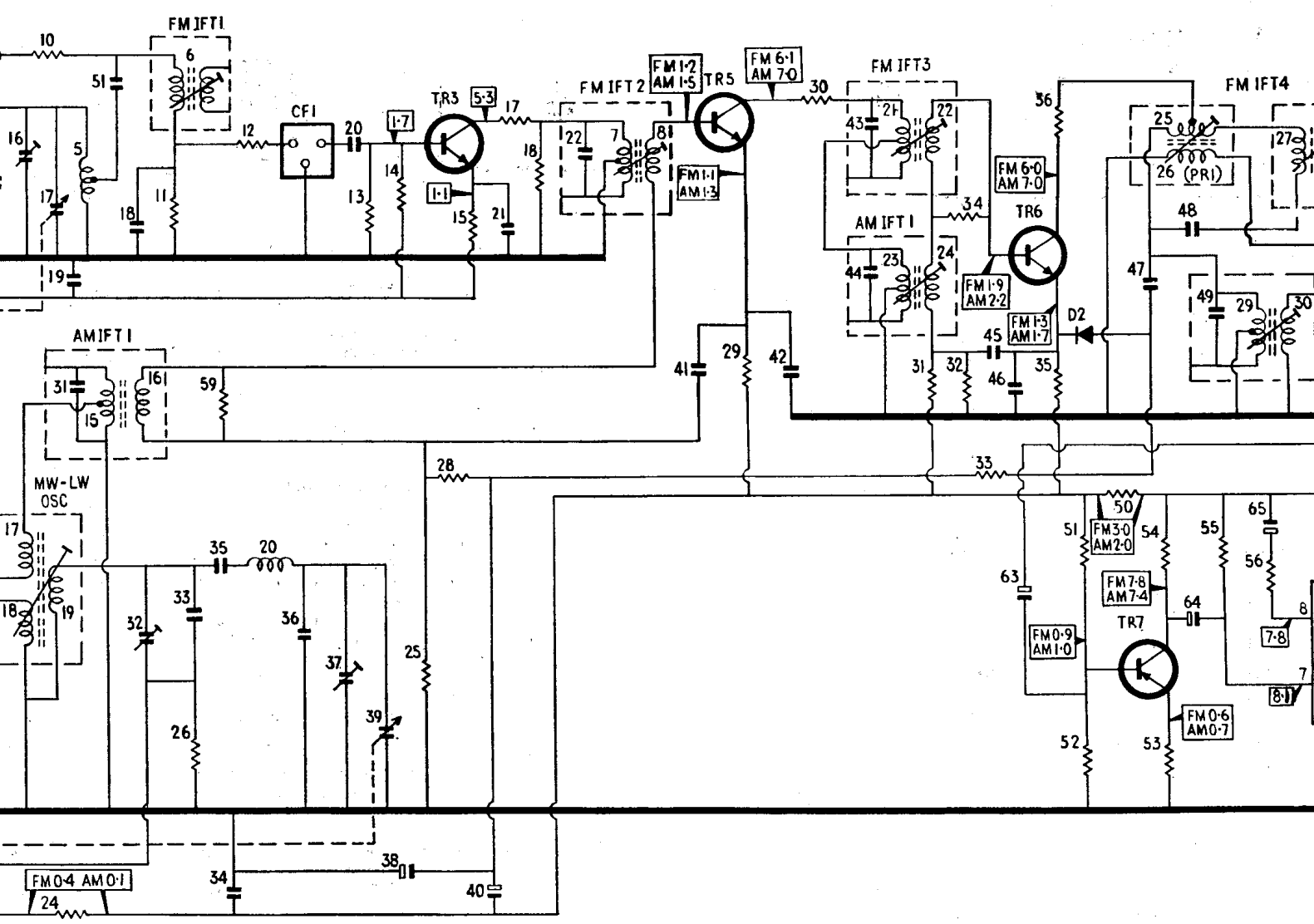
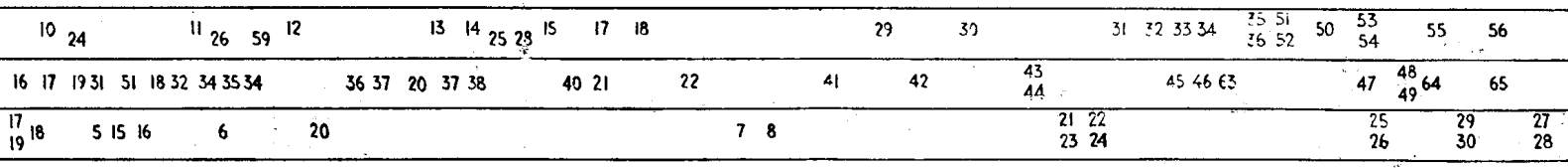


Marconiphone 4179

portable am/fm radio

light. It
ced, in
mission.

RESISTORS		CAPACITORS	
R1	5K6	C1	12pF
R2	1K5	C2	4700pF
R3	12K	C3	60pF
R4	100	C4	47pF
R5	100	C5	1000pF
R6	820	C6	3.3pF
R7	5K6	C7	30pF
R8	12K	C8	20pF
R9	100	C9	4700pF
R10	100	C10	5pF
R11	470	C11	200pF
R12	100	C12	47pF
R13	12K	C13	2000pF
R14	5K6	C14	4.7pF
R15	1K5	C15	27pF
R17	470	C16	5pF
R18	5.6	C17	20pF
R19	100	C18	600pF
R20	10K	C19	2000pF
R21	33K	C20	4700pF
R22	1K	C21	0.01μF
R23	100	C22	part of L7
R24	100	C23	266pF
R25	220K	C24	5pF
R26	100K	C25	4.7pF
R28	5K6	C26	12pF
R29	1K5	C27	2000pF
R30	470	C28	4700pF
R31	5K6	C29	100pF
R32	12K	C30	0.02μF
R33	22K	C31	part of L15
R34	100	C32	26pF
R35	1K	C33	230pF
R36	470	C34	150μF
R37	5K6	C35	265pF
R38	5K6	C36	4.7pF
R39	4K7	C37	5pF
R40	1K		
R41	5K6		
R42	5K6		
R43	560		
R44	47K		
R45	22K		
R46	22K		
R50	470		
R51	100K		
R52	22K		
R53	2K2		
R54	5K6		
R55	22K		
R56	82		
R57	10		
R59	100		
R60	5K6		



DESIGNED for the person that requires a colourful looking radio, as well as one that has good sound reproduction the 4179 is equipped to give full coverage of the AM/FM wavebands, 1W output through a large elliptical speaker and rotary controls for on/off, volume and waveband selector.

Cabinet is in "hollyberry" red with black and aluminium grill.

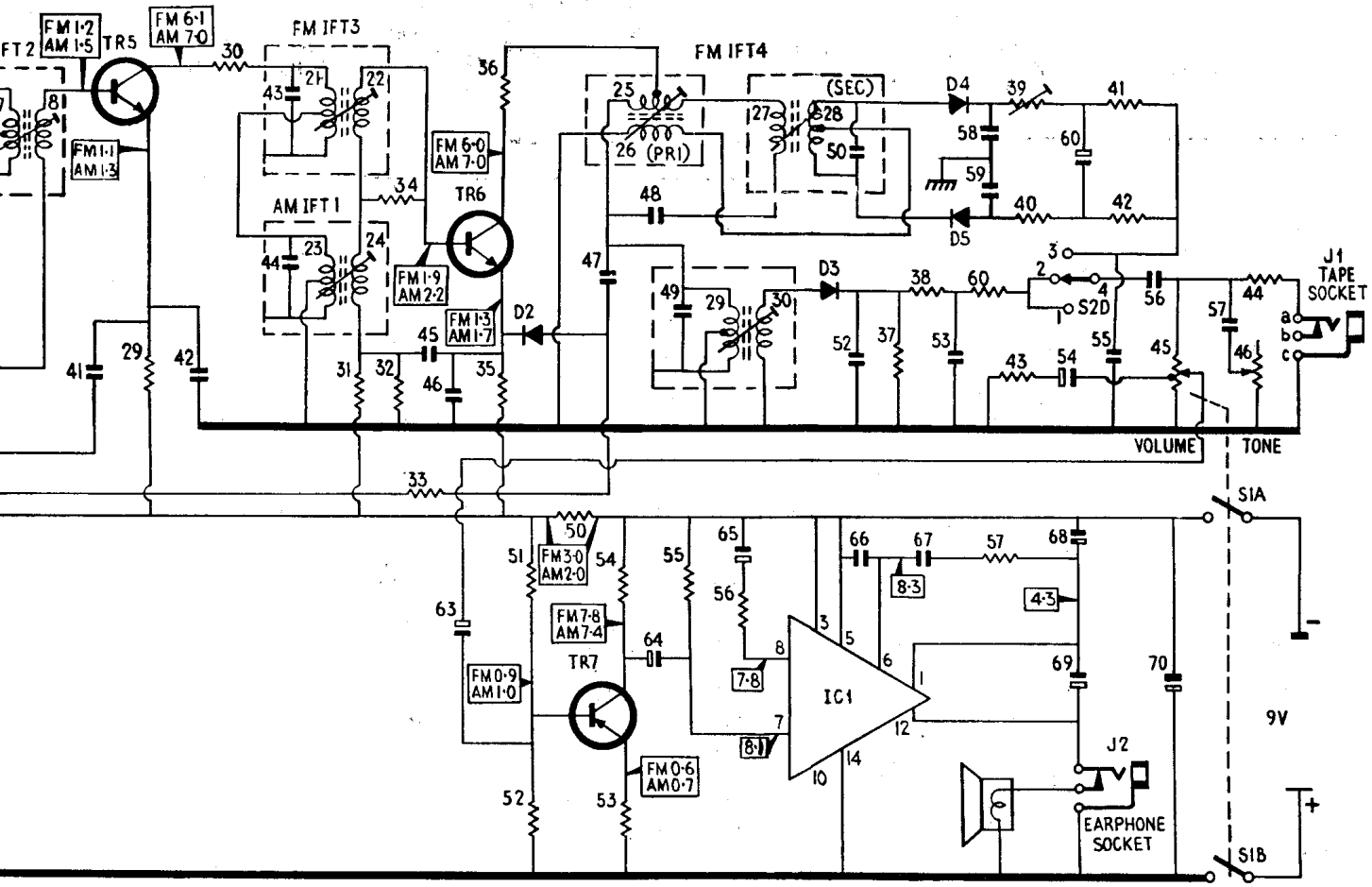
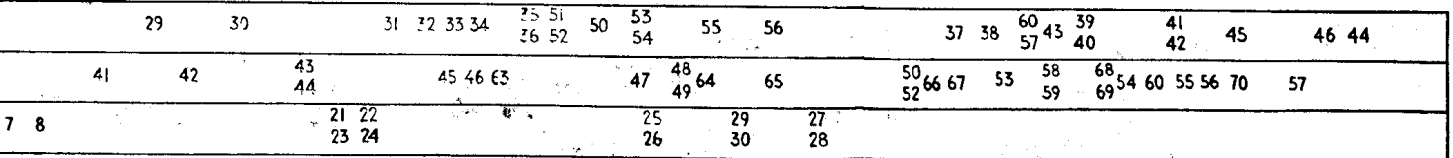
The Ferguson 3179 is similar but for a black cabinet.

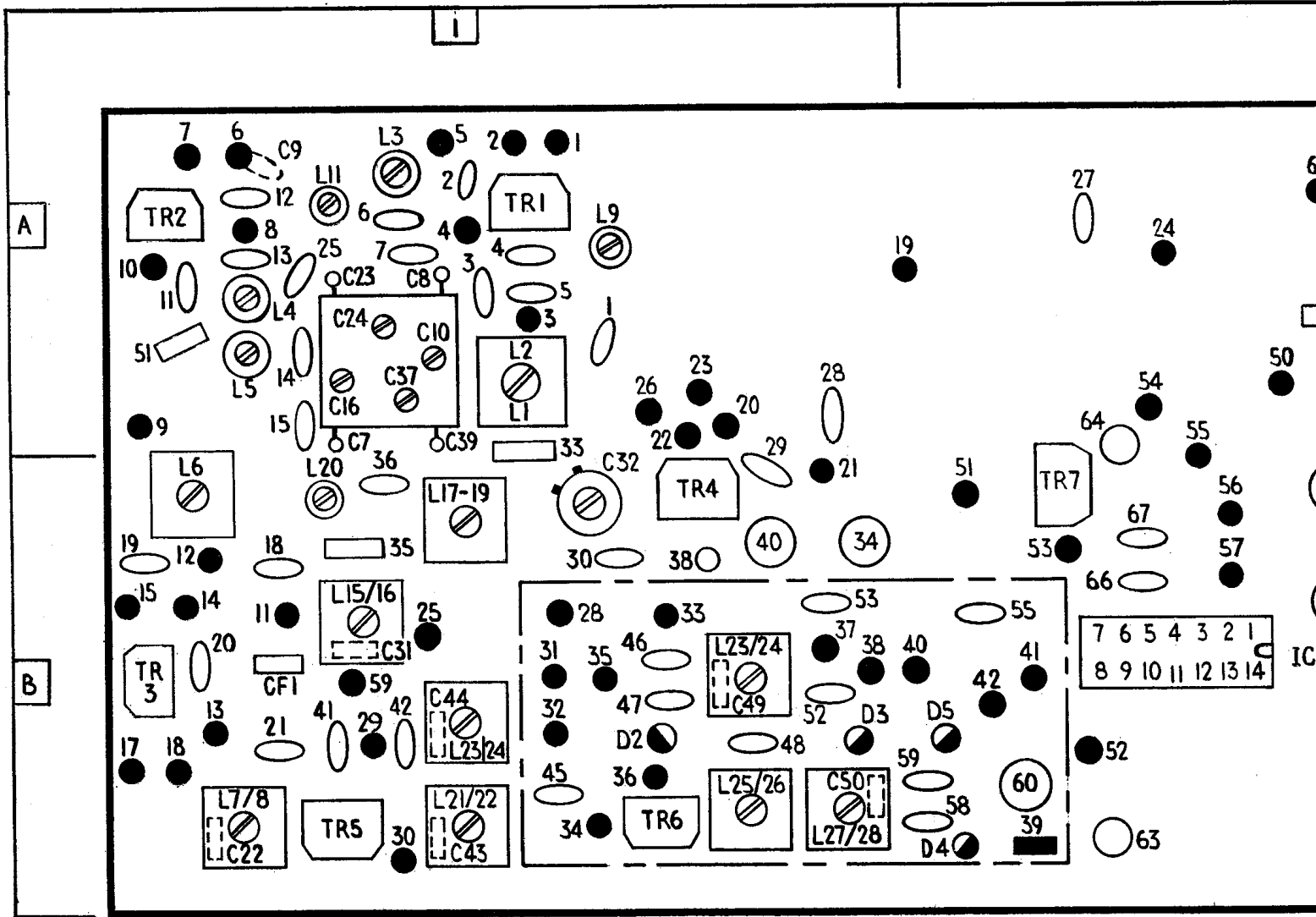
Batteries. 9V type PP9.

Wavebands
 LW 1200-2000 metres
 MW 550-200 metres
 FM 88-101MHz

Transistors
 TR1 FM RF amp BF195
 TR2 FM osc. and mixer BF195
 TR3 FM IF amp BF194
 TR4 AM osc. and mixer BF194

RESISTORS		CAPACITORS	
R1	5K6	C1	12pF
R2	1K5	C2	4700pF
R3	12K	C3	60pF
R4	100	C4	47pF
R5	100	C5	1000pF
R6	820	C6	3.3pF
R7	5K6	C7	30pF
R8	12K	C8	20pF
R9	100	C9	4700pF
R10	100	C10	5pF
R11	470	C11	200pF
R12	100	C12	47pF
R13	12K	C13	2000pF
R14	5K6	C14	4.7pF
R15	1K5	C15	27pF
R16	470	C16	5pF
R17	470	C17	20pF
R18	5.6	C18	600pF
R19	100	C19	2000pF
R20	10K	C20	4700pF
R21	33K	C21	0.01μF
R22	1K	C22	part of L7
R23	100	C23	266pF
R24	100	C24	5pF
R25	220K	C25	4.7pF
R26	100K	C26	12pF
R27	5K6	C27	2000pF
R28	1K5	C28	4700pF
R29	470	C29	100pF
R30	470	C30	0.02μF
R31	5K6	C31	part of L15
R32	12K	C32	26pF
R33	22K	C33	230pF
		C34	150pF
		C35	265pF
		C36	4.7pF
		C37	5pF
		C38	2.2μF
		C39	266pF
		C40	10μF
		C41	0.02μF
		C42	0.02μF
		C43	part of L21
		C44	part of L23
		C45	0.02μF
		C46	0.02μF
		C47	100pF
		C48	30pF
		C49	part of L29
		C50	part of L28
		C51	47pF
		C52	0.01μF
		C53	0.01μF
		C54	1μF
		C55	0.1μF
		C56	0.1μF
		C57	0.1μF
		C58	600pF
		C59	600pF
		C60	10μF
		C63	0.22μF
		C64	0.22μF
		C65	47μF
		C66	4700pF
		C67	510pF
		C68	0.33μF
		C69	1000μF
		C70	680μF
		C74	47pF





Above: IF/RF and AF printed circuit board.

TR5	FM/AM IF amp	BF194	L7/L8	FM IFT2
TR6	FM/AM IF amp	BF194	L9	RF choke
TR7	AF amp	BC159	L10	Car aerial coupling
Diodes				
D2	AGC diode	OA90	L11	RF choke
D3	AM detector	OA90	L12	MW aerial tuning
D4	FM ratio detector	OA90	L13	LW aerial tuning
D5			L14	TR4 MW aerial coupling
Inductors				
L1/L2	FM aerial coupling		L15/L16	AM IFT1
L3	FM RF amp tuning		L17/L19	AM osc. tuning
L4	Part 10.7MHz rejector		L20	Choke
L5	FM osc. tuning		L21/L22	FM IFT3
L6	FM 10.7MHz IF output		L23/L24	AM IFT2
			L25/L26	FM IFT4 primary
			L27/L28	FM IFT4 secondary
			L29/L30	AM IFT3
Integrated Circuit				
IC1	Output amp	TBA641		

IF	
AM	472kHz
FM	The FM IF incorporates a ceramic filter whose specific frequency is denoted by a coloured spot, i.e.:
Black	10.64MHz
Blue	10.67MHz
Red	10.70MHz
Orange	10.73MHz
White	10.76MHz

Aerials	
AM	Internal ferrite rod
FM	External telescopic

Speaker. 5ohms impedance, 7 × 3½in. elliptical.

Output. 1 watt at 5 per cent distortion.

Outlets. Tape recorder, private earphone,

Inputs. Car aerial.

Dimensions. 8 × 13¼ × 3½in.

Price. £18.40.

Manufacturer. Marconiphone, Thorn Consumer Electronics, 284 Southbury Road, Enfield, Middlesex.

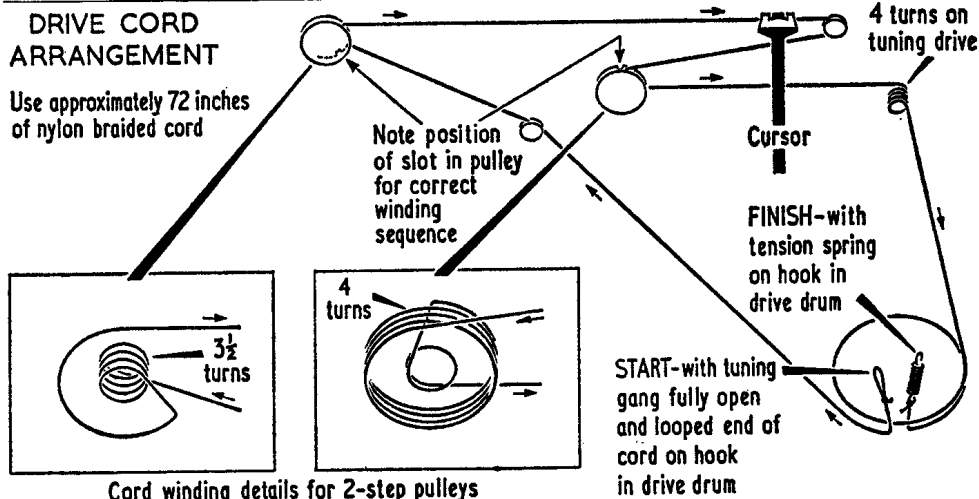
Service Depts.

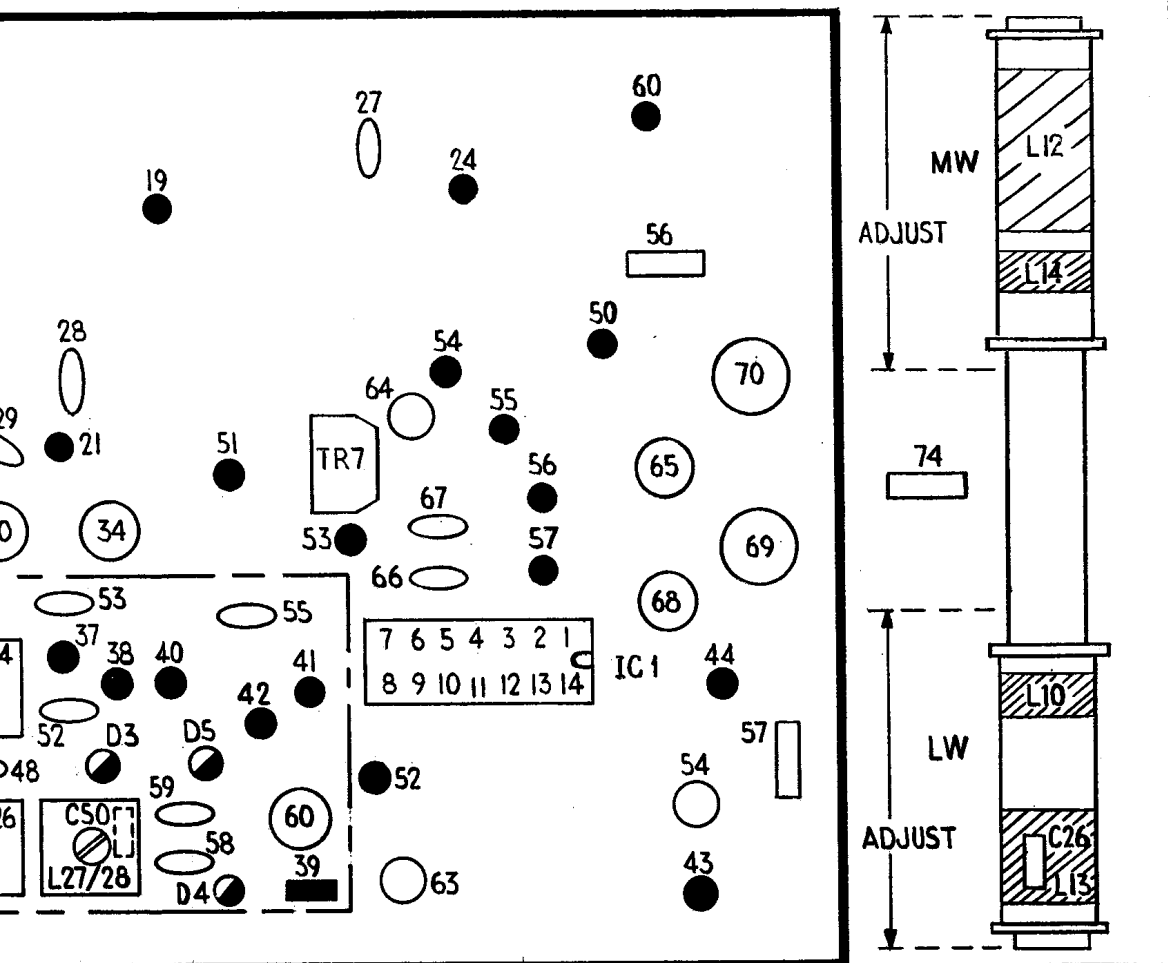
London: PO Box 121, Lea Valley Trading Estate, Angel Road, Edmonton, London N18 3BP. Tel: 01-807 3060. Spares: 01-807 0791.

Manchester: Thorn House, Derby Street.

DRIVE CORD ARRANGEMENT

Use approximately 72 inches of nylon braided cord





RF and AF printed circuit board.

IF

AM 472kHz
 FM The FM IF incorporates a ceramic filter whose specific frequency is denoted by a coloured spot, i.e.:

Black 10.64MHz
 Blue 10.67MHz
 Red 10.70MHz
 Orange 10.73MHz
 White 10.76MHz

Aerials

AM Internal ferrite rod
 FM External telescopic

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

Output. 1 watt at 5 per cent distortion.

Outlets. Tape recorder, private earphone,

Inputs. Car aerial.

Dimensions. $8 \times 13\frac{1}{4} \times 3\frac{1}{2}$ in.

Price. £18.40.

Manufacturer. Marconiphone, Thorn Consumer Electronics, 284 Southbury Road, Enfield, Middlesex.

Service Depts.

London: PO Box 121, Lea Valley Trading Estate, Angel Road, Edmonton, London N18 3BP. Tel: 01-807 3060. Spares: 01-807 0791.

Manchester: Thorn House, Derby Street.

Cheetham, Manchester 8. Tel: 061-832 2499.

Glasgow: 155 Shieldhall Road, Glasgow SW1. Tel: 041-882 4512.

DISMANTLING

Remove control knobs, battery compartment cover and batteries.

This will expose a screw securing back cover. Remove this screw, one at left-hand side and one at centre in underside of cabinet.

Lift off back cover.

To remove chassis, take out two hexagonal pillars, two threaded screws securing socket bracket and one threaded screw from bottom left-hand bracket.

Now take out three self-tapping screws—two at top of chassis and one securing bottom right-hand corner of board, pull off clip and remove telescopic aerial secured by a screw in the base of cabinet.

The chassis will now be free and may be removed to the extent of the interconnecting leads.

To lift chassis clear of cabinet and for easier access to the drive cord, unsolder speaker leads.

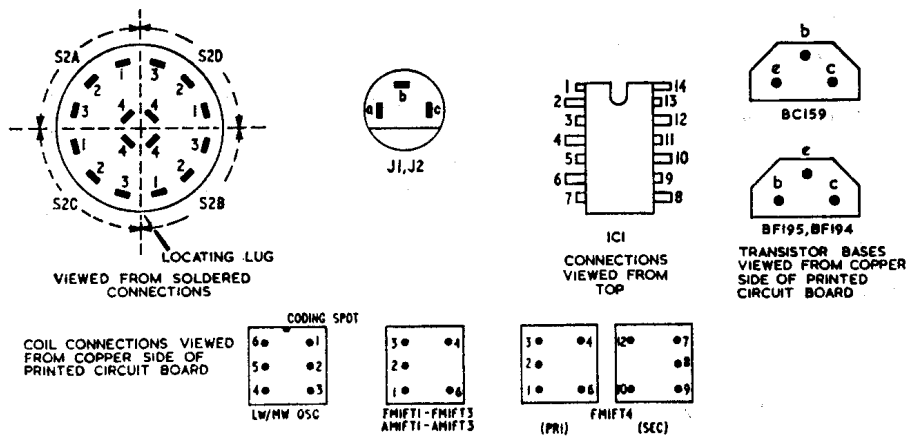
When replacing chassis, ensure that the clip for securing bottom right-hand corner of board is located in the "U" shaped section of bracket.

When replacing telescopic aerial, make sure that the slot at base engages moulded ridge inside cabinet before fitting securing screws.

ALIGNMENT

AM IF

Connect an output meter (5ohms im-



pedance) in place of the speaker, or an AVO 8 connected in parallel with the speaker.

During the alignment process the signal input level to receiver should be adjusted so as to maintain an audio output of approx. 50mW, with volume at maximum and tone at minimum to avoid alignment error due to AGC action.

Switch to MW and tune gang to maximum capacitance.

Apply now a 472kHz 30 per cent mod, signal via a 0.01µF capacitor to tags 11 and 10 (aerial section tuning gang). Tune L29/L30, L23/24 and L15/16 in that order for maximum output. Repeat in the same order until no further improvement can be obtained.

AM RF

With gang at maximum capacitance still check that the cursor coincides with "zero" mark on calibration strip, correct any error.

Align MW first, injecting all signals via a loop loosely coupled to the ferrite rod aerial.

With the cursor on the 600kHz pad marker, inject a signal of 600kHz and adjust L17/19 and L12 for maximum output. Now injecting a signal of 1500kHz, and with the cursor adjusted to the 1500kHz trim marker, adjust C37 and C24 for maximum output.

Switching now to LW, and cursor to the 220kHz pad marker, inject a 220kHz signal.

Align C32 and L13 for maximum output.

FM IF

The IF amplifier incorporates a ceramic filter and alignment is best achieved using a wobulator with AM/FM facilities and a display unit.

The wobulator output should be terminated by a 75ohm resistor across the output and a 0.01µF capacitor in series with the live lead to the injection point.

Switch receiver to VHF and display unit across volume control. Inject FM signals (frequency dependent on colour spot), 25kHz deviation between tag 4 and chassis.

Adjust L27/L28 for symmetry of signal above and below base line, L25/L26 for overall symmetry and straight line on "S" curve. L21/L22 for maximum output on upper half of response curve. L7/L8 for maximum output on lower half of response curve and L6 for minimum FM output.

Increase wobulator signal level to ensure limiting and switch to AM. Adjust R39 (AM rejection preset resistor) for minimum AM output.

Recheck FM response and readjust if necessary.

Note:

A standard FM signal generator may be used for IF alignment, but great care is required to ensure that alignment is carried out accurately at the correct frequency, and also that the response is symmetrical.

FM RF

Inject RF signals into telescopic rod and adjust as follows:

Switch receiver to FM, tune cursor to 88MHz pad marker, inject an 88MHz signal and align L5 and L3 for maximum output.

Now readjusting cursor to the 96MHz trim marker, input a signal of 96MHz and tune C16, C10 and L6 for maximum output.

Repeat until no further improvement can be obtained.

Note:

In some receivers the following differences in component values may be encountered:

C18	1000pF
C25	9pF
C36	9pF
C74	Not fitted

BE IN THE KNOW

ERT provides the latest news about products, events and technical developments in the radio and electrical industry.

Service managers and engineers can have ERT delivered to their home address each week. Annual subscription is £5.55 which includes weekly service chart supplements, servicing directory, spring and autumn price lists, hi-fi, lighting and electrical contracting sections, etc.

As ERT is supplied to the trade only, orders should be accompanied by your firm's letter head or a trade card. Send to Subscription Dept., Oakfield House, Perrymount Road, Haywards Heath, Sussex.