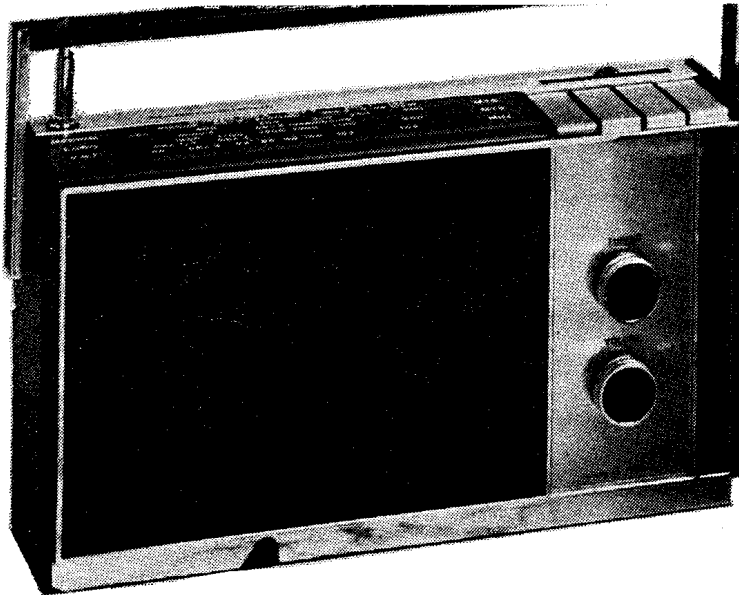


# ERT

## SERVICE CHART

### 1969

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# Marco

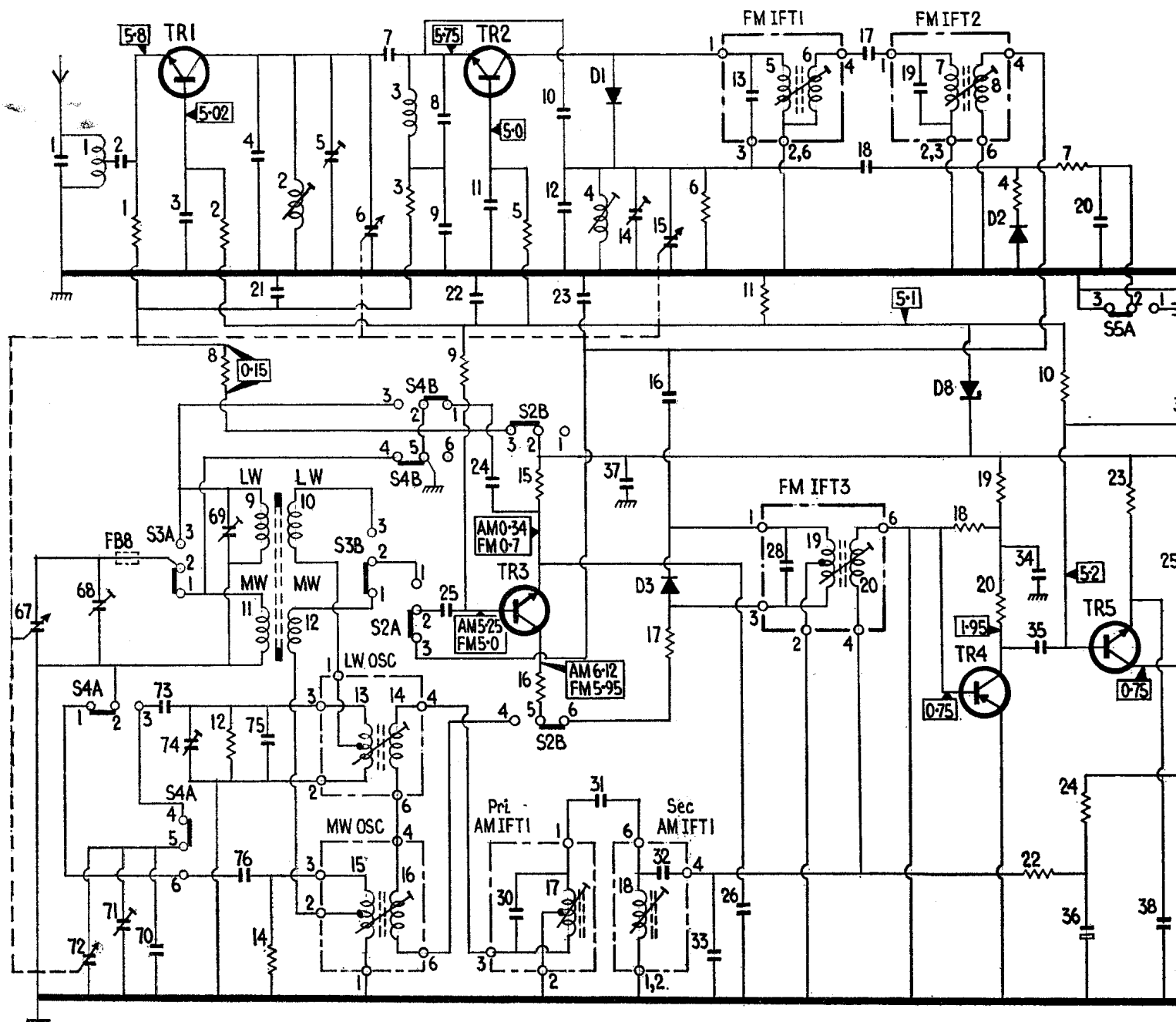
## 4153

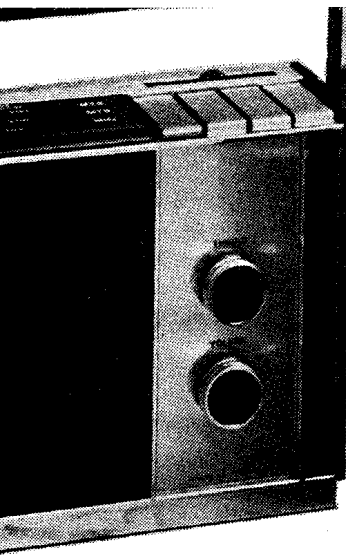
### mains/b

### radio

### (Ultra 6

R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
C	67	72	68	71	70	73	74	69	76	75	25	24	30	23	14	15	16	33	26	28	13	17	18	19	34	35	36	38																
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				





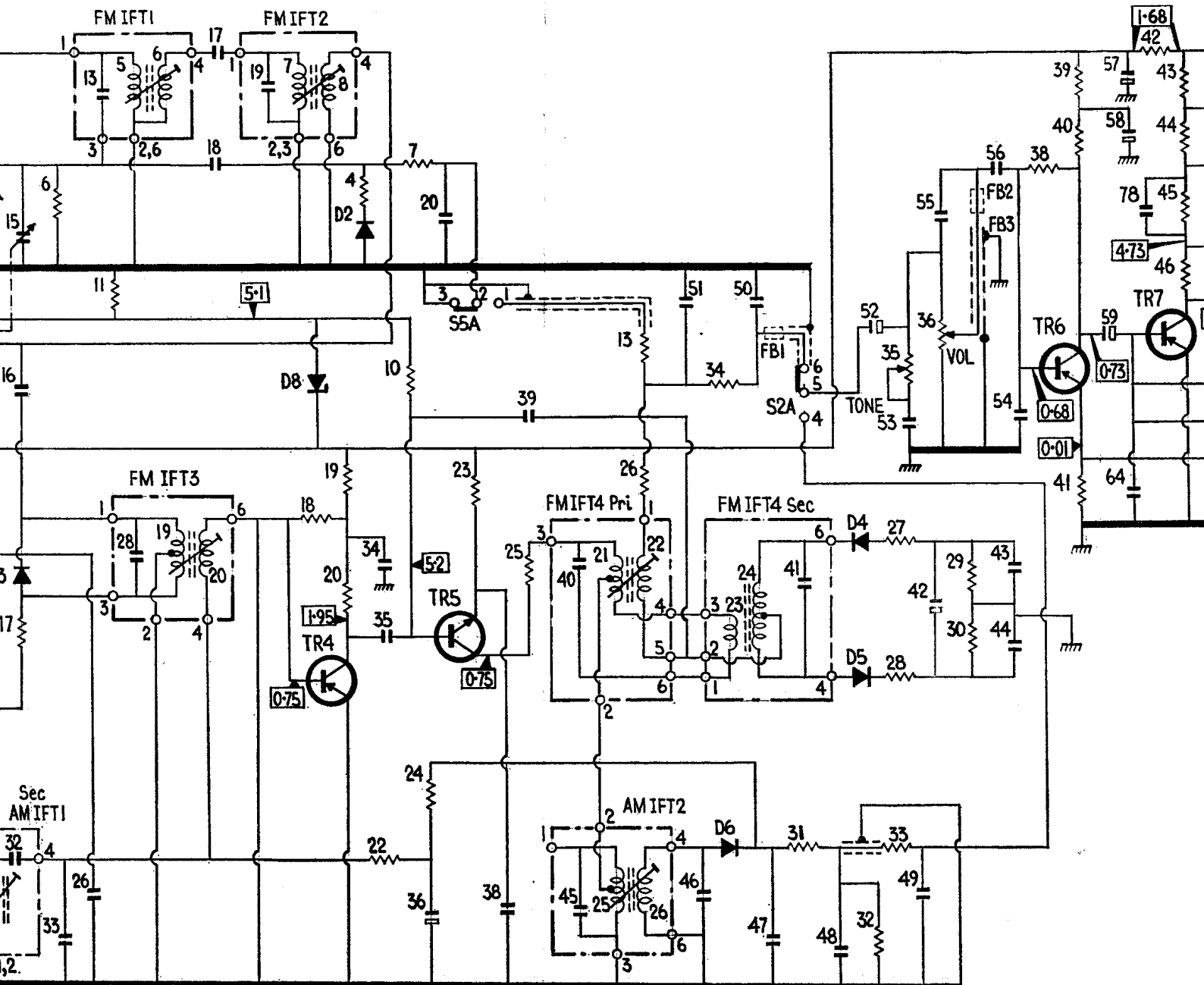
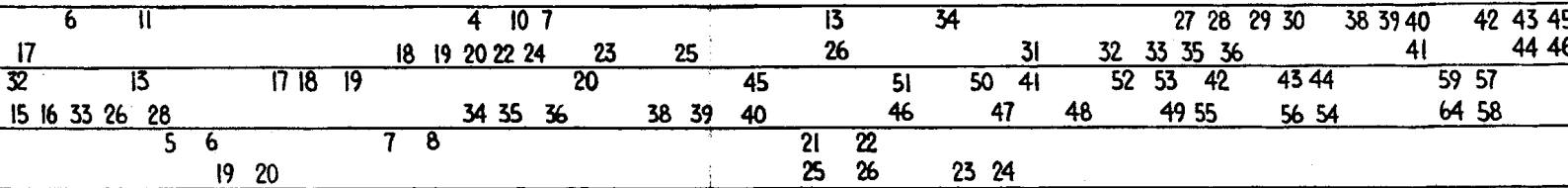
# Marconiphone

## 4153

### mains/battery AM/FM radio

*(Ultra 6153 is similar)*

RESISTORS		CAPACITORS	
R1	470	2A	R33
R2	5K6	2A	R34
R3	1K	2A	R35
R4	47	2A	R36
R5	5K6	2A	R38
R6	2K7	2A	R39
R7	560K	2A	R40
R8	100	3A	R41
R9	10K	3A	R42
R10	10K	2A	R43
R11	2K7	2A	R44
R12	180K	2B	R45
R13	820K	2A	R46
R14	270K	3B	R47
R15	820K	3A	R48
R16	390K	3A	
R17	560	3B	
R18	56K	—	
R19	1K	2B	C1
R20	820	2B	C2
R22	5K6	2B	C3
R23	470	2A	C4
R24	15K	—	C5
R25	560	2A	C6
R26	82	2A	C7
R27	1K2	1A	C8
R28	1K2	1A	C9
R29	5K6	1A	C10
R30	5K6	1A	C11
R31	3K3	2B	C12
R32	15K	2B	C13

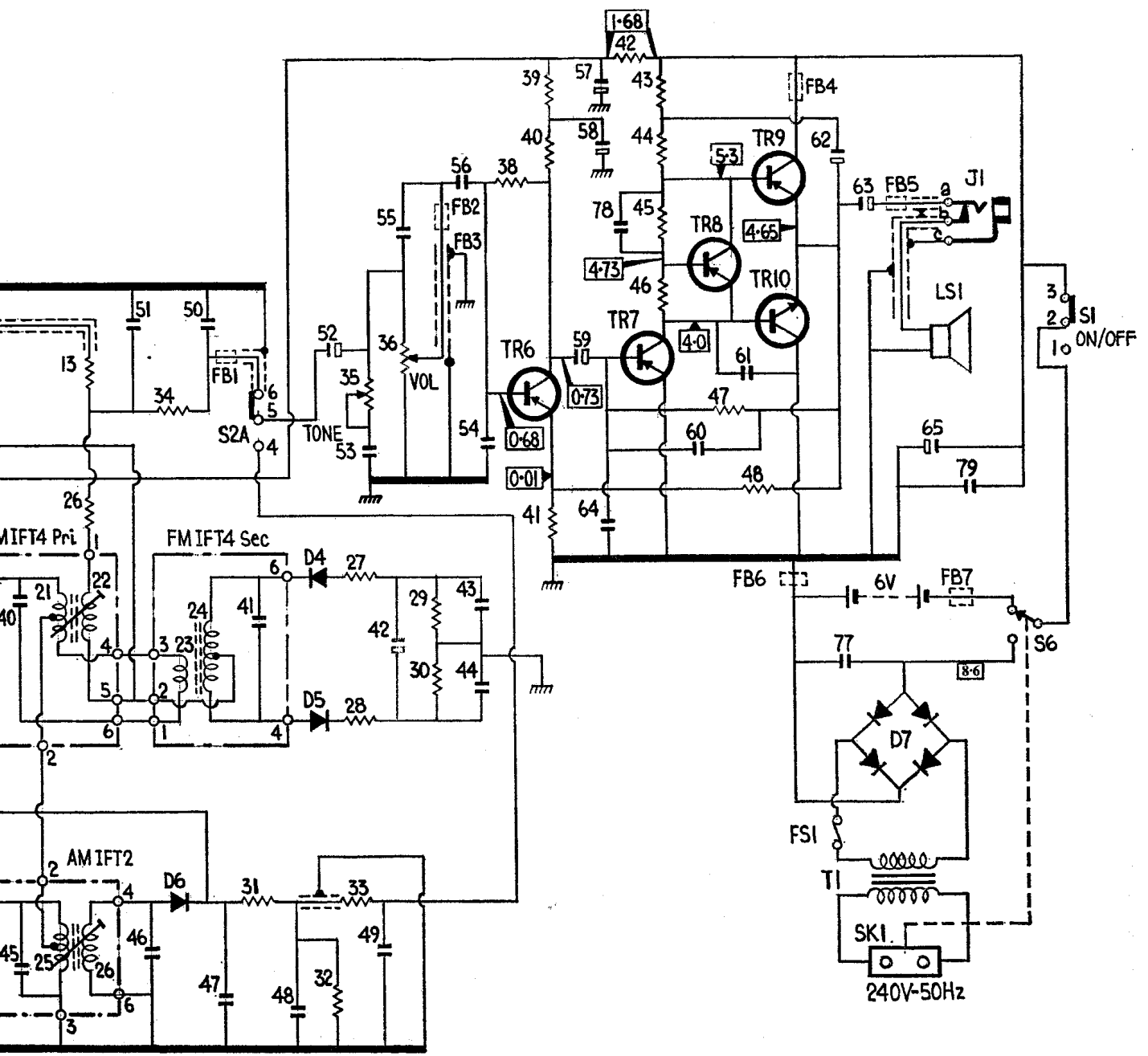
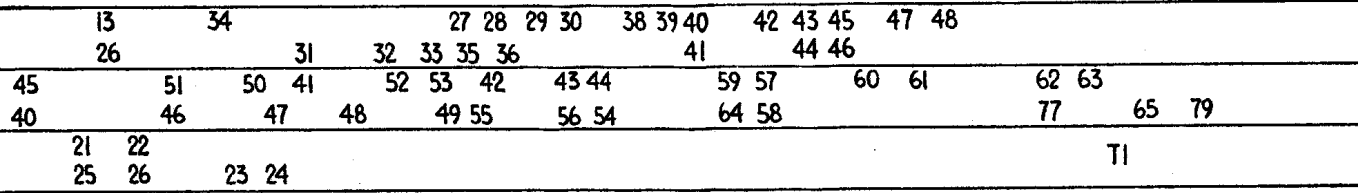


# Marconiphone

## Battery AM/FM

### (4153 is similar)

RESISTORS		CAPACITORS	
R1	470	C1	50pF
R2	5K6	C2	100pF
R3	1K	C3	1000pF
R4	47	C4	37pF
R5	5K6	C5	5pF
R6	2K7	C6	20pF
R7	560K	C7	3pF
R8	100	C8	25pF
R9	10K	C9	680pF
R10	10K	C10	3pF
R11	2K7	C11	1000pF
R12	180K	C12	22pF
R13	820K	C13	50pF
R14	270K	C14	5pF
R15	820K	C15	20pF
R16	390K	C16	1pF
R17	560	C17	3pF
R18	56K	C18	10pF
R19	1K	C19	50pF
R20	820	C20	0.05μF
R21	5K6	C21	0.05μF
R22	470	C22	0.05μF
R23	15K	C23	330pF
R24	560	C24	0.05μF
R25	82	C25	0.01μF
R26	1K2	C26	0.01μF
R27	1K2	C28	50pF
R28	5K6	C29	330pF
R29	5K6	C30	180pF
R30	3K3	C31	25pF
R31	15K	C32	180pF
R32	15K	C33	0.015μF
R33	1K5	C34	0.05μF
R34	4K7	C35	0.01μF
R35	100K	C36	4.7μF
R36	100K	C37	0.05μF
R38	560K	C38	0.05μF
R39	560	C39	1.5pF
R40	4K7	C40	30pF
R41	10	C41	90pF
R42	220	C42	10μF
R43	100	C43	470pF
R44	330	C44	470pF
R45	270	C45	180pF
R46	390	C46	100pF
R47	82K		
R48	10K		



**ERT SERVICE CHART**

**1969**

**Marconiphone 4153**

**C**OVERING the long, medium and VHF wavebands, the Marconiphone 4153 (with similar model, the Ultra 6153) is equipped with a ten transistor circuit incorporating push/pull output giving 300mW into a 3in. 8ohm speaker.

Reception is via a ferrite rod aerial for AM, and telescopic aerial for FM.

Power can be derived from its own internal batteries or from a mains 240V AC supply.

Cabinet has end panels in simulated teak with black slotted speaker grill, inset aluminium control panel, full width tuning scale on top of the receiver and push-button wavechange switches.

A full width carry handle is also supplied together with a personal listening earphone.

**Batteries.** 6V 4 x SP11.

**Mains.** 240V AC 50Hz.

**Wavebands**

MW	186-576m (520-1620KHz)
LW	857-2055m (146-350KHz)
FM	87.5-104MHz

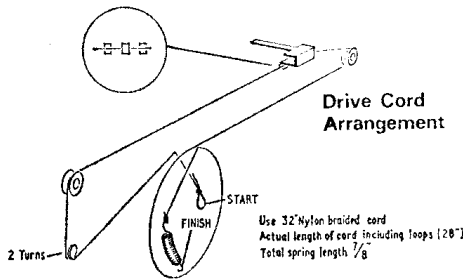
**Diodes**

D1	FM overload diode	CDG00
D2	AFC diode	IS85
D3	FM overload diode	CDG00
D4	FM ratio detector	IN60
D5	FM ratio detector	IN60
D6	AM detector	IN34
D7	Supply rectifier	B30C 300-1

**Transistors**

TR1	FM RF amp	CS9016E
TR2	FM osc. and mixer	CS9018F
TR3	AM osc. and mixer and FM IF amp	CS9018F
TR4	FM/AM IF amp	CS1312G
TR5	FM/AM IF amp	CS9018G

TR6	AF amp	CS1312H
TR7	AF amp	CS1312I
TR8	Bias stabiliser	CS1312F
TR9	Push/Pull output	LM1404
TR10	Complementary pair	LM1403
<b>Inductors</b>		
L1	FM aerial coil	
L2	FM RF amp	
L3	Part 10.7MHz rejector	
L4	FM oscillator	
L5/6	FM IFT1	
L7/8	FM IFT2	
L9/12	Ferrite rod aerial	
L13/14	L10 osc. coil	
L15/16	MW osc. coil	
L17	AM IFT1 primary	
L18	AM IFT1 secondary	
L19/20	FM IFT3	
L21/22	FM IFT4 primary	
L23/24	FM IFT4 secondary	
L25/26	AM IFT2	
T1	Mains transformer	
<b>IF</b>		
AM	470kHz	
FM	10.7MHz	
<b>Aerials</b>		
AM	Ferrite rod	



**FM Telescopic rod Speaker.** 3in. diameter 8ohm impedance.  
**Output.** 300mW at less than 5 per cent THD  
**Outputs.** J1—earphone socket.  
**Inputs.** Mains input socket.  
**Dimensions.** 9½ x 3 x 5¼in.  
**Price.** £18.75.  
**Manufacturer.** Thorn Consumer Electronics, 284 Southbury Road, Enfield, Middx. EN1 1TJ.

**Service Depts:**

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

Manchester: Thorn House, Derby Street, Cheetham, Manchester M8 8HD. Tel: 061-832 2499.

Glasgow: 155 Shieldhall Road, Glasgow G51 4DH. Tel: 041-882 4512.

**Dismantling**

Remove battery cover. Take out batteries, three screws from cabinet base, two from inside battery compartment and one countersunk 4BA adjacent to front panel.

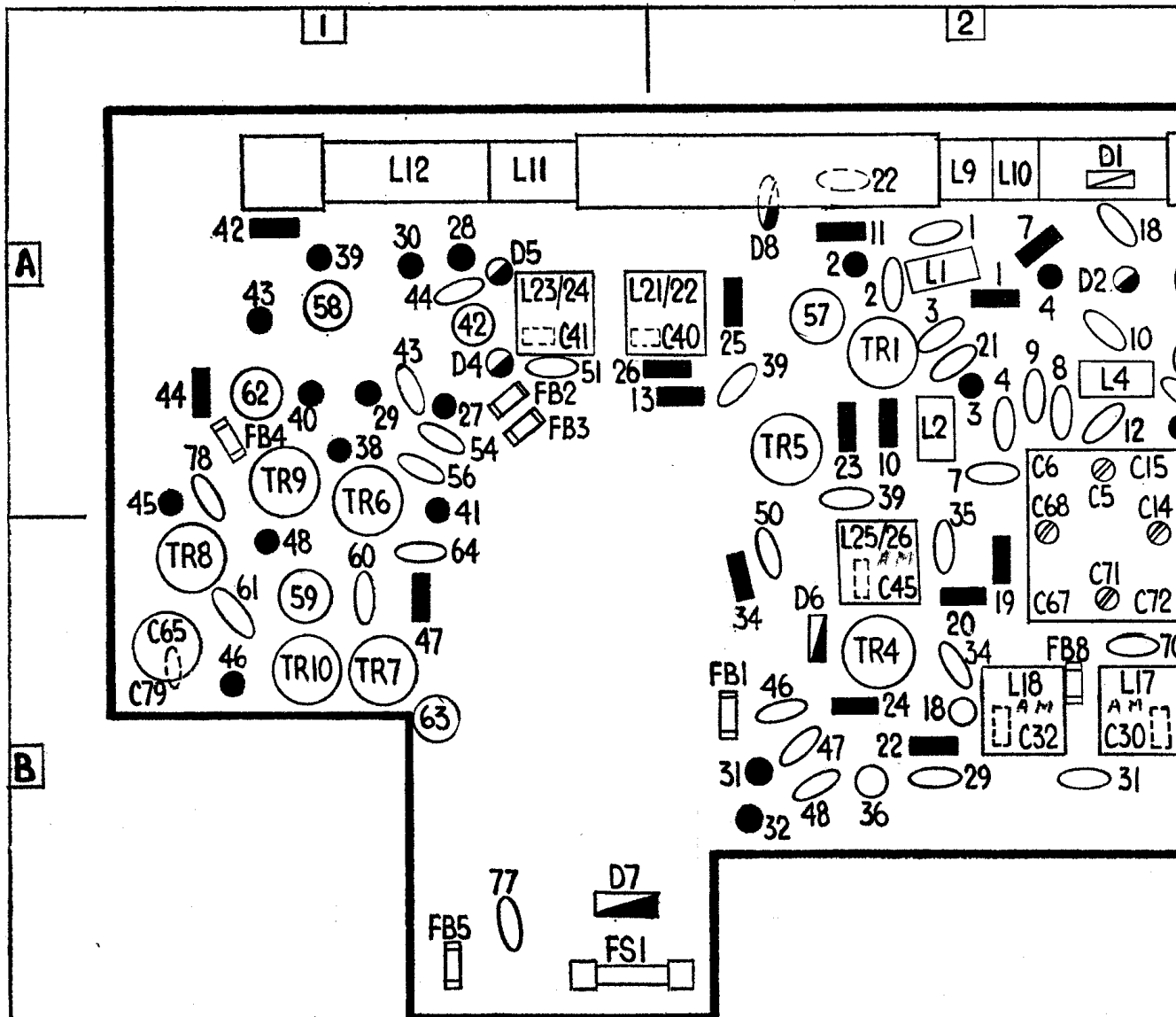
Remove tuning and volume knobs, and from back of cabinet remove two recessed screws.

Take away front panel to extent of leads.

Now unclip telescopic aerial lead and remove four self-tapping screws marked (A) in diagram opposite.

Lift out printed circuit board and if necessary unsolder battery and power supply connections from points also shown in diagram opposite.

Note colours and make sure when refitting that the masking piece is in position on the AFC switch.



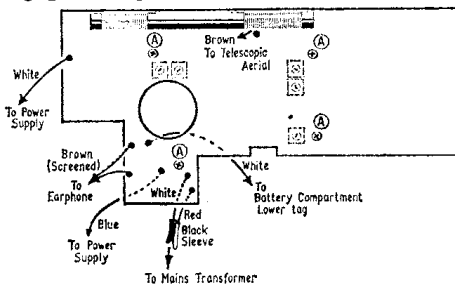
FM Telescopic rod  
**Speaker.** 3in. diameter 8ohm impedance.  
**Output.** 300mW at less than 5 per cent THD  
**Outlets.** J1—earphone socket.  
**Inputs.** Mains input socket.  
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 Lift out printed circuit board and if necessary unsolder battery and power supply connections from points also shown in diagram opposite.  
 Note colours and make sure when refitting that the masking piece is in position on the AFC switch.

### Handle removal

The handle pivots on studs at each end of the cabinet; push handle down to its fullest extent and lift each end off its pivot. To refit, place handle over pivot studs and pull each end firmly upwards to engage with pivot studs.



### Alignment

Connect an output meter of 8ohms impedance in place of the speaker. Throughout alignment process, the signal input level should be adjusted to maintain an audio output of approximately 50mW. The volume control should be set to maximum in order to avoid alignment error due to AGC action.  
**AM IF**  
 Switch to MW and tune gang to maximum capacitance. Apply a 470kHz (30 per cent max.) signal via a 0.1µF capacitor across C67 (AM section of tuning gang).  
 Now adjust AM IFT2, AM IFT1 secondary and AM IFT1 (primary) for maximum output.  
 Repeat in same order until no further improvement is obtainable.

### AM RF

Inject signal into a loop loosely coupled around the ferrite rod aerial, switch to MW, adjust cursor position to the 500m mark and inject a 600kHz signal. Adjust L15/16 and L11/12 for maximum output.  
 Now reposition cursor to 200m mark, inject a 1500kHz signal to the loop and tune for optimum output, C74 and C68.  
 Switch to LW adjust cursor to 2000m and inject 150kHz. Align L13/14 and L9/L10 for optimum output.  
 Finally align cursor with the 1000m mark and inject a signal of 300kHz. Align C74 and C69.

Repeat until no further improvement can be obtained.

### FM IF

Switch to VHF, inject 10.7MHz signal (25kHz deviation) via a 0.01µF capacitor between TR2 emitter and chassis.

Adjust FM IFT4 (primary), FM IFT3, and FMIFT1/2 for maximum output.

Switch signal generator to 10.7MHz AM (30 per cent modulated) and adjust FM IFT4 (secondary) for minimum AM output. Repeat adjustments until calibration cannot be improved upon.

### FM RF

FM signal (25kHz deviation) should be injected between telescopic aerial and chassis. Adjust cursor to 88MHz signal generator to 88MHz and adjust L4 and L2 (by closing coil turns) for maximum output.

Readjust cursor now to the 100MHz mark, signal generator also to 100MHz. Tune C14 and C5 for optimum output.

Repeat until no further improvement can be obtained.

