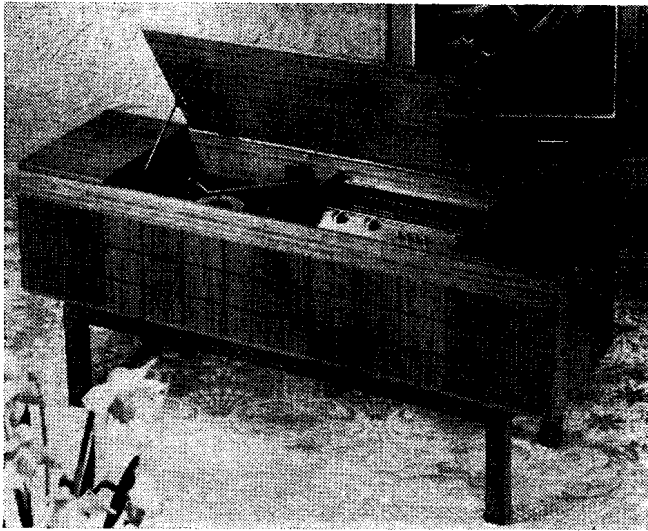


# E R T SERVICE CHART 1892



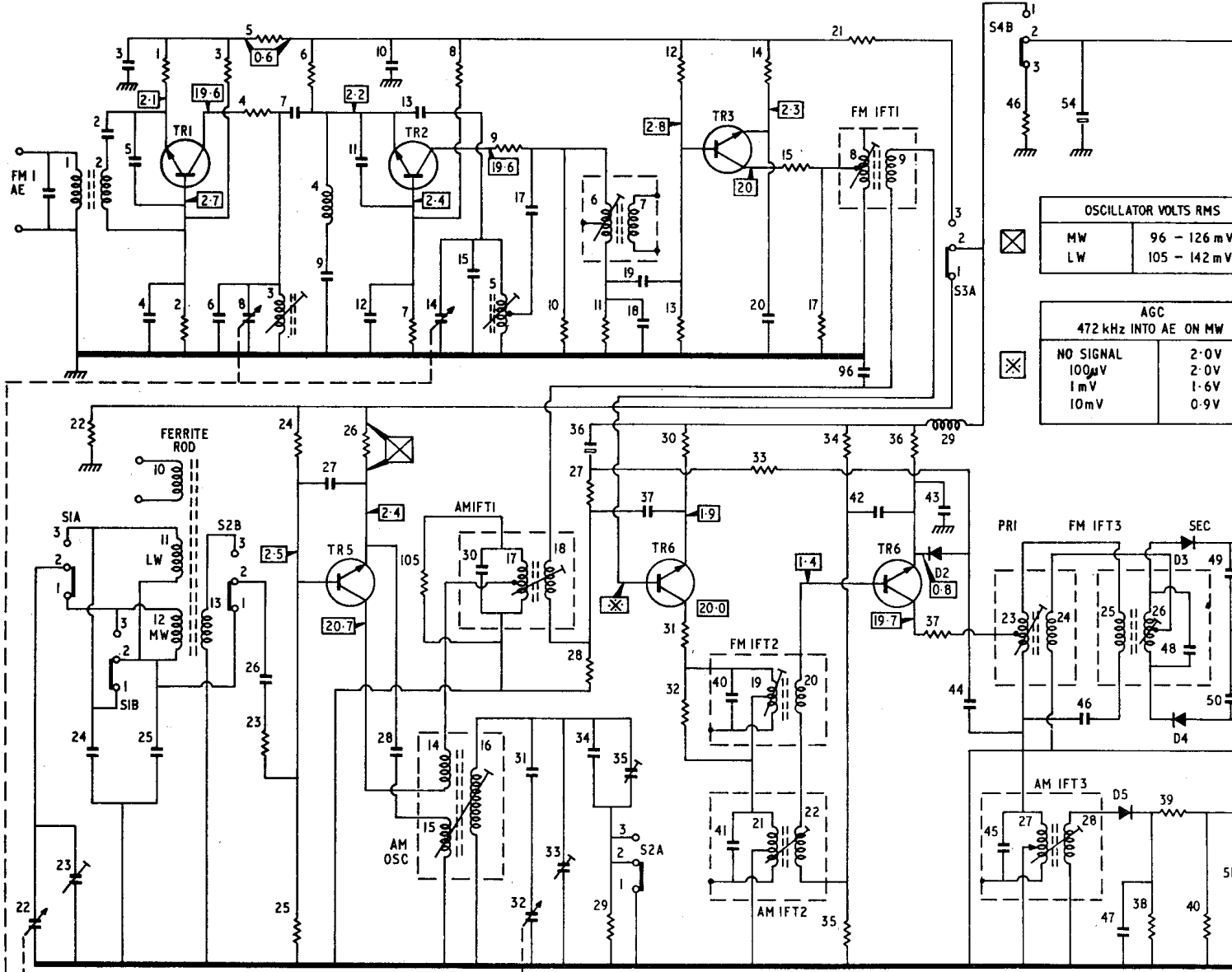
# Marconiphone 4355 stereogram

BRC models using the 72 series tuner/amplifier chassis are:  
 HMV 2355 Marconiphone 4452  
 Ferguson 3362 Marconiphone 4355  
 Ferguson 3363 Marconiphone 4362  
 Ultra 6337

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R	22	1	2	3	4	5	24	6	26	7	8	9	10	27	11	12	30	32	33	14	15	17	34	21	36	37	46	38	39	40				
C	22	1	23	24	2	5	25	6	8	26	7	9	27	11	10	13	15	17	37	33	36	35	19	37	40	42	43	44	45	54	47	48	49	51
L	1	2	10	11	12	13	3	4	14	15	16	5	6	7	19	20	8	9	29	23	24	27	28	25	26									



OSCILLATOR VOLTS RMS	
MW	96 - 126 mV
LW	105 - 142 mV

AGC	
472 kHz INTO AE ON MW	
NO SIGNAL	2.0V
100µV	2.0V
1 mV	1.6V
10 mV	0.9V

# Marconiphone 4355 stereogram

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in part

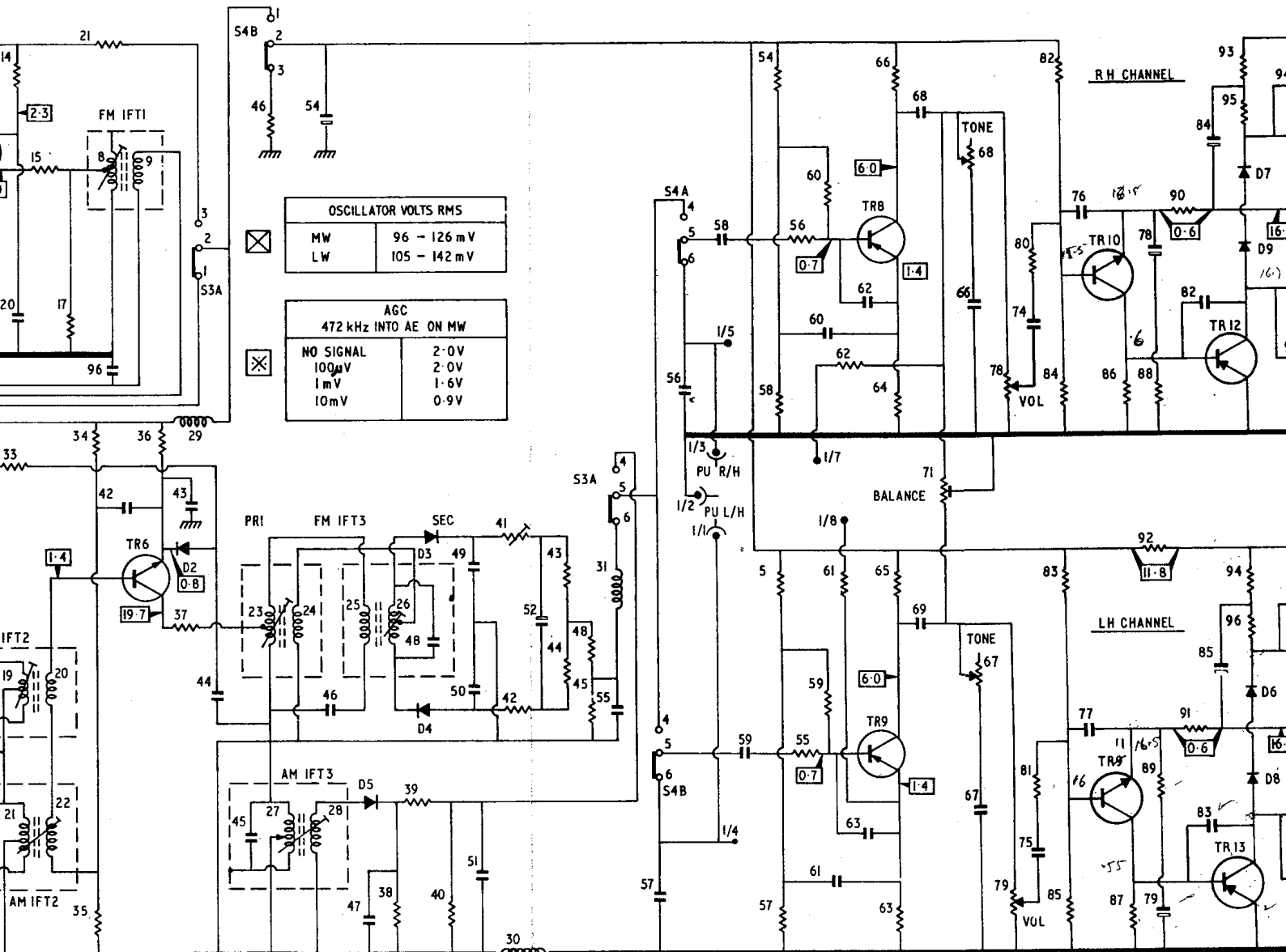
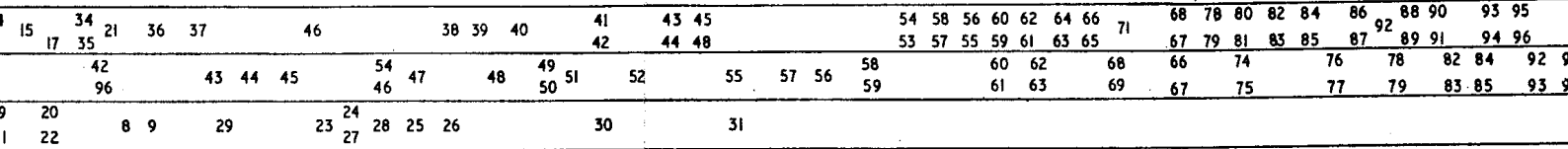
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Stamford Street, London SE1 9LU.

## RESISTORS

R1	2K2	2A	R37	470	2B	R84	220K	1A
R2	68K	2A	R38	5K6	2B	R85	220K	1A
R3	12K	2A	R39	12K	2B	R86	1K5	1A
R4	100	2A	R40	3K3	2A	R87	1K5	1A
R5	470	2A	R41	4K7	2B	R88	22	1A
R6	2K2	2B	R42	2K2	2B	R89	22	1A
R7	68K	2B	R43	5K6	2B	R90	1K5	1B
R8	12K	2B	R44	5K6	2B	R91	1K5	1A
R9	100	2B	R45	3K3	2B	R92	1K5	1A
R10	12K	2B	R46	3K3	2A	R93	820	1B
R11	470	2B	R48	2K2	2B	R94	820	1A
R12	12K	2B	R53	180K	1B	R95	820	1B
R13	68K	2B	R54	180K	2B	R96	820	1A
R14	2K2	2B	R55	2K2	2A	R101	4.7	1B
R15	470	2B	R56	2K2	2A	R102	4.7	1B
R17	5K6	2B	R57	22K	1A	R103	4.7	1B
R21	100	2A	R58	22K	2B	R104	4.7	1B
R22	8K2	2A	R59	100K	2A	R105	56K	2B
R23	100	2A	R60	100K	2B			
R24	12K	2A	R61	100K	1B			
R25	68K	2A	R62	100K	2B			
R26	2K2	2A	R63	2K2	1A			
R27	5K6	2B	R64	2K2	2B			
R28	180K	2B	R65	22K	1A			
R29	68K	2A	R66	22K	2A			
R30	2K2	2B	R67/8	100K log	1A			
R31	470	2B	R71	100K	1A			
R32	2K2	2B		preset lin				
R33	12K	2B	R78/9	100K log	1A			
R34	5K6	2B	R80	1K	1A			
R35	68K	2B	R81	1K	1A			
R36	470	2B	R82	82K	1A			
			R83	82K	1A			

## CAPACITORS

C1	15pF	2A
C2	60pF	2A
C3	0.01µF	2A
C4	1000pF	2A
C5	47pF	2A
C6	12pF	2A
C7	3.3pF	2B
C8	11.5pF	2A
C9	600pF	2B
C10	0.01µF	2B
C11	47pF	2B
C12	0.01µF	2B
C13	3.3pF	2B



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**RESISTORS**

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R9	100	2B
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R11	470	2B
R12	12K	2B
R13	68K	2B
R14	2K2	2B
R15	470	2B
R17	5K6	2B
R21	100	2A
R22	8K2	2A
R23	100	2A
R24	12K	2A
R25	68K	2A
R26	2K2	2A
R27	5K6	2B
R28	180K	2A
R29	68K	2A
R30	2K2	2B
R31	470	2B
R32	2K2	2B
R33	12K	2B
R34	5K6	2B
R35	68K	2B
R36	470	2B

R37	470	2B
R38	5K6	2B
R39	12K	2B
R40	3K3	2A
R41	4K7	2B
R42	2K2	2B
R43	5K6	2B
R44	5K6	2B
R45	3K3	2B
R46	3K3	2A
R48	2K2	2B
R53	180K	1B
R54	180K	2B
R55	2K2	2A
R56	2K2	2A
R57	22K	1A
R58	22K	2B
R59	100K	2A
R60	100K	2B
R61	100K	1B
R62	100K	2B
R63	2K2	1A
R64	2K2	2B
R65	22K	1A
R66	22K	2A
R67/8	100K log	1A
R71	100K	1A
R78/9	preset lin	1A
R80	1K	1A
R81	1K	1A
R82	82K	1A
R83	82K	1A

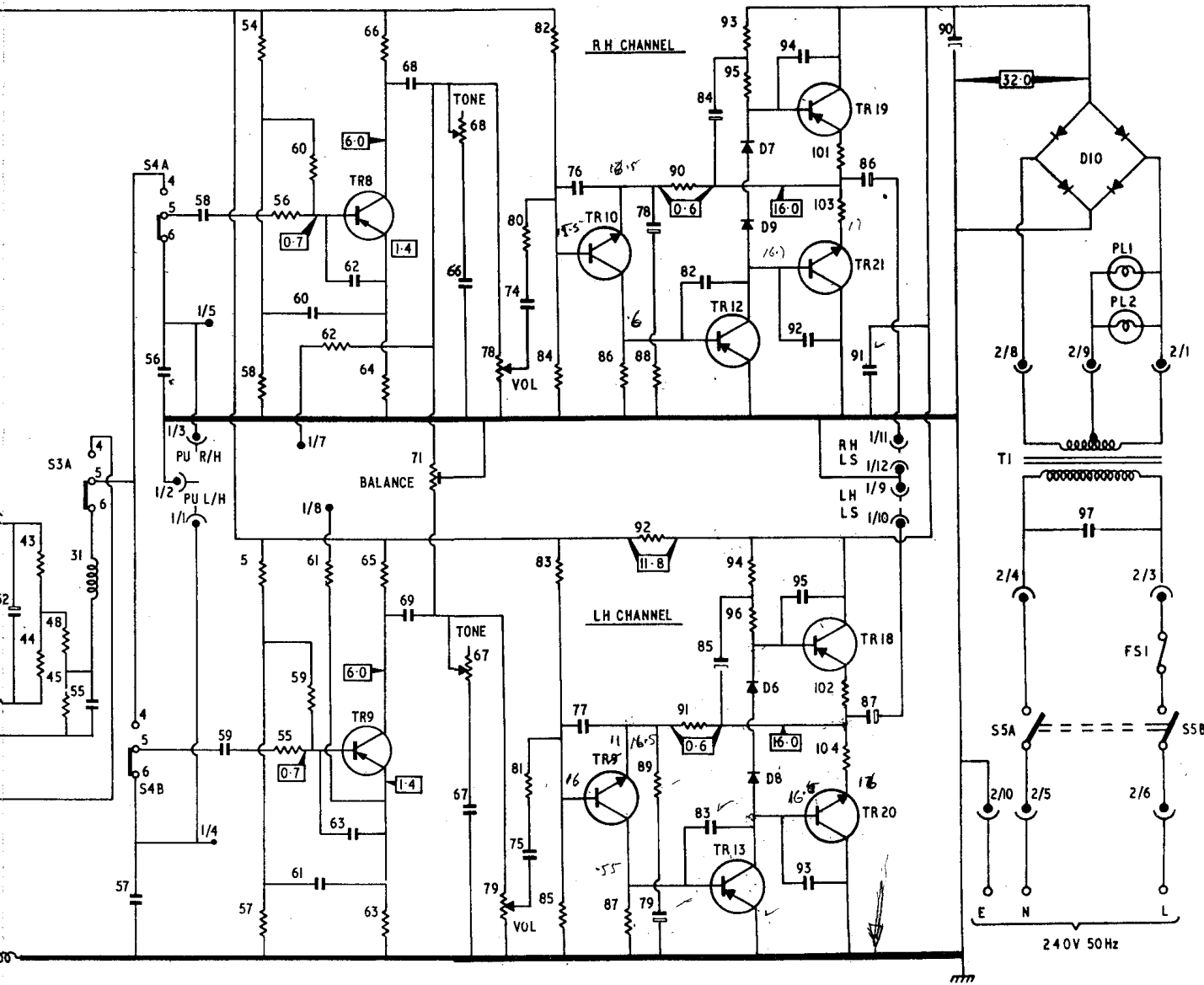
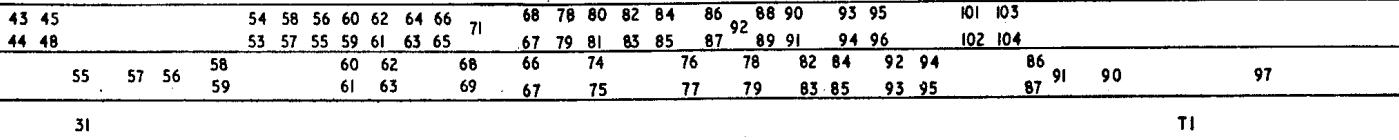
R84	220K	1A
R85	220K	1A
R86	1K5	1A
R87	1K5	1A
R88	22	1A
R89	22	1A
R90	1K5	1B
R91	1K5	1A
R92	1K5	1A
R93	820	1B
R94	820	1A
R95	820	1B
R96	820	1A
R101	4.7	1B
R102	4.7	1B
R103	4.7	1B
R104	4.7	1B
R105	56K	2B

**CAPACITORS**

C1	15pF	2A
C2	60pF	2A
C3	0.01µF	2A
C4	1000pF	2A
C5	47pF	2A
C6	12pF	2A
C7	3.3pF	2B
C8	11.5pF	2A
C9	600pF	2B
C10	0.01µF	2B
C11	47pF	2B
C12	0.01µF	2B
C13	3.3pF	2B

C14	11.5pF	2B
C15	8.2pF	2B
C17	47pF	2B
C18	1000pF	2B
C19	5000pF	2B
C20	0.02µF	2A
C22	380pF	2B
C23	4.5-26pF	2A
C24	85pF	2A
C25	2000pF	2A
C26	5000pF	2A
C27	100pF	2A
C28	0.02µF	2A
C30	180pF	2B
C31	265pF	2B
C32	320pF	2B
C33	4.5-26pF	2B
C34	260pF	2B
C35	4.5-26pF	2B
C36	10µF	2A
C37	0.02µF	2B
C40	50pF	2B
C41	180pF	2B
C42	2000pF	2B
C43	0.02µF	2B
C44	100pF	2B
C45	180pF	2B
C46	30pF	2B
C47	0.01µF	2B
C48	90pF	2B
C49	600pF	2B
C50	600pF	2B
C51	5000pF	2B

C52	10µF	2B
C54	300µF	1A
C55	0.01µF	2B
C56	0.01µF	2A
C57	0.01µF	2A
C58	0.047µF	2A
C59	0.047µF	2A
C60	0.22µF	2B
C61	0.22µF	2B
C62	600pF	2B
C63	600pF	2B
C66	0.022µF	1A
C67	0.022µF	1A
C68	0.022µF	1A
C69	0.022µF	2A
C74	0.1µF	1A
C75	0.1µF	1A
C76	200pF	1B
C77	200pF	1B
C78	300µF	1B
C79	300µF	1A
C82	200pF	1B
C83	200pF	1B
C84	50µF	1B
C85	50µF	1A
C86	300µF	1B
C87	300µF	1B
C90	2200µF	1B
C91	0.02µF	1B
C92	200pF	1B
C93	200pF	1B
C94	200pF	1B
C95	200pF	1B
C96	2000pF	2B
C97	0.01µF	—



UTILISING the BRC series 72 tuner/amplifier chassis, this model from Marconiphone is in the mid-priced range for stereograms.

With a three waveband radio including VHF, a four speed automatic record changer, twin 8 x 5in. speakers, and an amplifier rated at 3 watts per channel, the total harmonic distortion is less than 5 per cent.

The cabinet can be either teak or walnut finish, with push buttons for wave change and gram selection.

Mains. 220-250 volts, 50Hz.

**Wavebands**

- LW 148-268kHz (1120-2027 metres).
- MW 525-1630kHz (184-571 metres).
- FM 87-104MHz.

**Transistors**

TR1	FM RF amp	RF9
TR2	FM osc./mixer	RF9
TR3	FM IF amp	RF7
TR5	AM osc./mixer	RF7
TR6	AM/FM IF amp	RF7
TR7	AM/FM IF amp	RF7
TR8	AF preamp	AF1
TR9	AF preamp	AF1
TR10	AF amp	AF3
TR11	AF amp	AF3
TR12	driver	AF1
TR13	driver	AF1
TR18	push-pull	OP5A
TR20	output	OP5B
TR19	push-pull	OP5A
TR21	output	OP5B

**Diodes**

D2	AM AGC	D1
D3	FM ratio Det.	D1
D4	FM ratio Det.	D1
D5	AM Det.	D1
D6/7/8/9	Output stage bias Stabilisers	D26
D10	rectifier	3B211P

**Inductors**

L1/2	FM aerial coil	03D1-149
L3	FM RF tuning coil	03D1 314
L4	10.7MHz filter choke	03D8 002
L5	FM osc. tuning coil	03D1 313
L6/7	FM IF output	03D0 086
L8/9	FM IFT1	03D0 055
L10/11/12/13	ferrite rod ass.	03F0 102
L14/15/16	AM osc.	03D1 302
L17/18	AM IFT1	03D0 036
L19/20	FM IFT2	03D0 055
L21/22	AM IFT2	03D0 037
L23/24	FM IFT3 pri.	03D0 086
L25/26	FM IFT3 sec.	03D0 051
L27/28	AM IFT3	03D0 038
L29	IF DC supply filter	03D8 003
L30	DC filter supply	03D8 003
L31	FM IF filter	03D8 003
T1	mains transformer	03M3 668

Fuses. F1 300mA.

Pilot Lamps. PL1 12 volt 2.2 watt.  
PL2 12 volt 2.2 watt.

Decoder. Not fitted.

Speakers. 8 x 5in. elliptical, 30ohms impedance.

Audio output. 2 watts RMS at less than 2 per cent total harmonic distortion into 30ohms. 3 watts speech and music into 30ohms.

Aerials. AM ferrite rod (internal).  
FM socket for external connection.

Inputs. Tape playback (where applicable) 5 pin DIN.

Outlets. Tape record (where applicable) 5 pin DIN.

Record unit. 4 speed automatic player.

Cartridge. Stereo crystal.

Styli. Dual tipped sapphire.

Price. £78.00.

Manufacturer. Thorn Consumer Electronics  
284, Southbury Road, Enfield, Middlesex. Tel: 01-366 1155.

Service Dept. London PO Box 121, Lea Valley Trading Estate, Edmonton N18 3BP. Tel: 01-807 3060. Spares: 01-807 0791. Recordercall: 01-807 6332. Manchester: Thorn House, Derby Street, Cheetham, Manchester 8. Tel: 061-832 2499. Glasgow: 155 Shieldhall Road, Glasgow SW1. Tel: 041-882 4512.

**DISMANTLING**

As the Marconiphone 4355 incorporates the BRC series 72 tuner-amplifier chassis, the method for dismantling varies from model to model.

However, when the chassis is removed all components are readily accessible and the connecting leads are normally of sufficient length to enable the chassis to be operated outside the cabinet.

It is recommended that the left-hand pilot lamp assembly be unclipped from the front moulding when removing the volume and on/off switch control.

**SERVICE NOTES**

DC voltages shown in rectangles, were taken relative to each transistor emitter supply line (except where otherwise stated) under quiescent conditions, with a 20K ohm/volt meter.

In some models C56 and C57 are 5000pF.

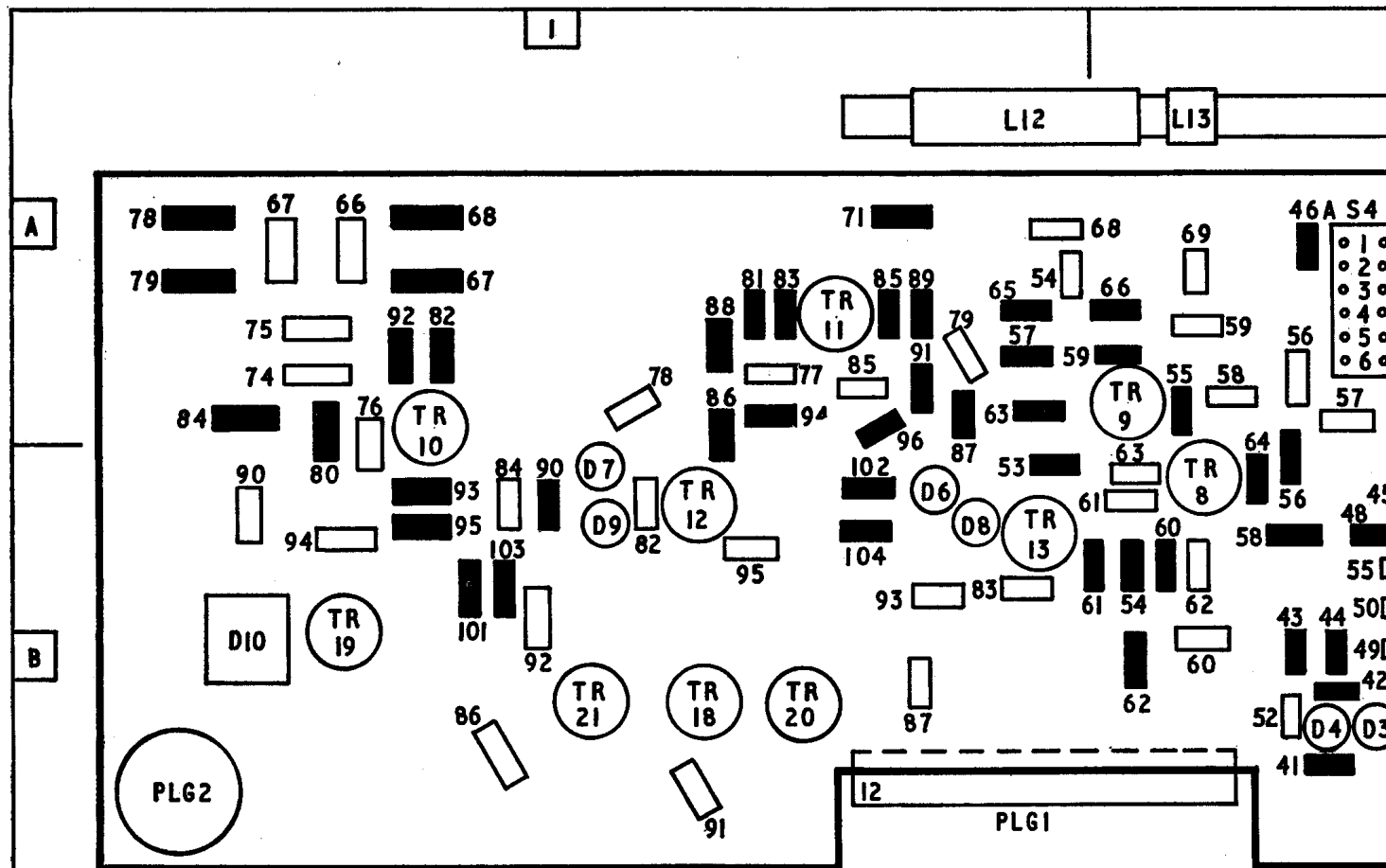
**Audio Checks**

Connect a 30ohm impedance output meter in place of each speaker system or alternatively, examine the output waveform, which should be clean and symmetrical on an oscilloscope connected across each speaker.

**Output Check**

Switch to VHF. Set volume control

Below: Main board layout



Styli. Dual tipped sapphire.

Price. £78.00.

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#### Audio Checks

Connect a 30ohm impedance output meter in place of each speaker system or alternatively, examine the output waveform, which should be clean and symmetrical on an oscilloscope connected across each speaker.

#### Output Check

Switch to VHF. Set volume control

to maximum, and tone control to its mid-position.

Inject 1kHz audio signal from a suitable signal generator at contact 6 of S3A, adjusting signal generator input to provide 2 watts output per channel (input level should be approximately 40mV and only slight adjustment of the balance control should be necessary for equal output from each channel).

#### Tone Control Check

With the test conditions as above, adjust the volume control to produce 200mW output.

Inject a 10kHz audio signal into contact 6 of S3A and turn tone control from minimum to maximum; this should produce an overall variation of 20dB.

#### ALIGNMENT

A calibration strip is attached to the top of the chassis front moulding.

Connect a 30ohm impedance output meter in place of either the right or left-hand speakers. Set the volume control to maximum and the tone control to its mid-way position.

During alignment never exceed 200mW output.

#### AM IF

Switch to MW and tune the gang for maximum capacitance. Inject a 472kHz (30 per cent mod.) signal to contact 2 of S1A (i.e. across C22, aerial section of tuning gang).

Adjust coils AM IFT3, AM IFT2 and AM IFT1 in that order for maximum output. Repeat if necessary.

#### AM RF

With the tuning gang at maximum capacitance, check that the cursor coincides with the zero marker at the left-hand end of the calibration strip. Slide cursor carriage along drive cord to correct any error.

With a loop loosely coupled around the

ferrite rod aerial, switch tuner to MW and inject a 600kHz signal to the loop. With the cursor on the PAD marker adjust L16 and L12.

Now with the cursor on the trim marker, inject a 1500kHz signal and adjust C33 and C23 for maximum output.

Switch now to the LW band and move the cursor to the 220kHz marker. Inject a signal of 220kHz and adjust C35 and L11, for maximum output.

Note. L12 and L11 are adjusted by sliding the coil along the ferrite rod and then sealing with wax. Repeat until no further improvement can be made.

#### FM IF

Connect a centre zero meter with a 33k ohm resistor in series, between pin 6 of S3A and chassis. Switch the receiver to VHF, allow the set 10 minutes to warm up.

Inject a signal of 10.7MHz (25kHz deviation) via a 0.01µF capacitor to the junction of C11/R8 and ground. Adjust L23, L19, L8 and L6 for maximum output.

Increase signal input by 20dB (to ensure limiting) and decrease the volume to obtain an output of approx. 200mW. Adjust L26 to obtain a reading of zero on the centre-zero meter.

With a signal of 10.7MHz AM (30 per cent modulated), adjust R41 for minimum output at the speaker terminals.

A check of balance can be made by swinging the signal generator either side of 10.7MHz when the centre zero meter should show a similar deflection to both positive and negative.

#### FM RF

Check that the cursor coincides with the zero marker at the left-hand end of the calibration strip.

With the signal generator connected to the FM aerial socket, and the receiver tuned to the 92MHz mark on the calibration strip, inject a 92MHz FM signal and adjust L5 and L3 for maximum output.

Repeat at 88MHz and 96MHz.

