

Intermediate frequency 465 KC/S.

COMPONENTS AND VALUES

CONDENSERS	Values (μF)
C1 Aerial circuit shunt, L.W.	0.000035
C2 Band-pass coupling	0.0075
C3 V1 hexode C.G. decoupling	0.023
C4 V1 A.V.C. line decoupling	0.1
C5 V1, V2 S.G.'s by-pass	0.1
C6 V1 hexode anode decoupling	0.1
C7 V1 cathode by-pass	0.1
C8 V1 osc. C.G. condenser	0.00005
C9 Osc. L.W. trimmer	0.000023
C10 Osc. S.W. tracker	0.00285
C11 Osc. M.W. tracker	0.00035
C12 Osc. reaction stabiliser	0.00015
C13 Osc. anode decoupling	1.0
C14 V2 C.G. decoupling	0.1
C15 V2 anode decoupling	0.1
C16 V2 cathode by-pass	0.1
C17 I.F. by-pass	0.0001
C18 A.F. coupling to V4	0.1
C19 V3 cathode by-pass	0.1
C20 V3 A.V.C. diode feed	0.0001
C21 V4 anode decoupling	1.0
C22* V4 cathode by-pass	25.0
C23 T.C. condenser	0.0023
C24 V5 C.G. decoupling	0.1
C25 V4 to V5 A.F. coupling	0.1
C26 T.C. condensers	0.0015
C27 V5 aux. grid by-pass	0.005
C28 V5 aux. grid by-pass	1.0
C29 Fixed tone corrector	0.001
C30 Speaker field shunt	0.1
C31 H.T. smoothing	8.0
C32 Mains aerial coupling	4.0
C33 Aerial circuit trimmer	0.00035
C34 Band-pass primary tuning	—
C35 Aerial circuit S.W. trimmer	—
C36 Band-pass sec. M.W. trimmer	—
C37 Band-pass sec. L.W. trimmer	—
C38 Aerial S.W. and B.P. sec. tuning	—
C39 Osc. circuit tuning	—
C40 Osc. circuit S.W. trimmer	—
C41 Osc. circuit M.W. trimmer	—
C42 Osc. circuit M.W. tracker	—
C43 Osc. circuit L.W. trimmer	—
C44 Osc. circuit L.W. tracker	—
C45 1st I.F. trans. pri. tuning	—
C46 1st I.F. trans. sec. tuning	—
C47 2nd I.F. trans. pri. tuning	—
C48 2nd I.F. trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 220 V, using the 211-230 V tapping on the mains transformer. The set was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, chassis being negative.

If V2 should become unstable when measurements are made in its screen circuit, as in our case, it can be stabilised by connecting a non-inductive 0.1 μF condenser from anode or grid to chassis.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 X41*	210	1.3	60	1.9
V2 VMP4G	170	3.4	60	2.7
V3 D41	—	—	—	—
V4 MH4	90	2.2	—	—
V5 MPT4	210	29.0	200	5.1
V6 U12	350†	—	—	—

* Oscillator anode, 120 V, 4.5 mA.

† Each anode, A.C.

Circuit diagram of the Marconiphone 556 3-band A.C. superhet. Features include an input circuit for ordinary or dipole aeriels and a special 2-point tone

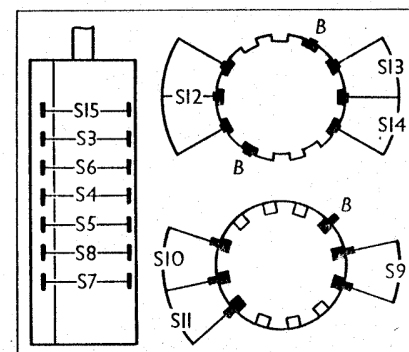
RESISTANCES	Values (ohms)
R1 V1 hexode C.G. decoupling	100,000
R2 V1 hexode C.G. resistance	3,500,000
R3 V1 and V2 S.G.'s H.T.	23,000
R4 potential divider	23,000
R5 V1, V2 anodes decoupling	3,500
R6 V1 fixed G.B. resistance	230
R7 V1 A.V.C. line decoupling	500,000
R8 V1 osc. C.G. resistance	50,000
R9 V1 osc. anode decoupling	23,000
R10 V1 osc. reaction stabiliser	100
R11 V2 C.G. decoupling	500,000
R12 V2 anode decoupling	10,000
R13 V2 fixed G.B. resistance	230
R14 I.F. stopper	50,000
R15 V3 signal diode load	230,000
R16 V3 A.V.C. diode load	500,000
R17 Manual volume control	500,000
R18 V4 C.G. I.F. stopper	150,000
R19 V4 G.B. and A.V.C. delay	350
R20 voltage resistances	350
R21 V4 anode decoupling	35,000
R22 V4 anode load	35,000
R23 V5 C.G. resistance	100,000
R24 V5 C.G. decoupling	350,000
R25 V5 G.B. potential divider	50,000
R26 V5 G.B. potential divider	500,000
R27 V5 C.G. I.F. stopper	50,000
R28 V5 aux. grid H.T. feed	5,000
R29 Hum neut. coil shunt	1.0
R30 Hum control	48.5

OTHER COMPONENTS	Approx. Values (ohms)
L1 Band-pass primary coils	3.75
L2 Modulation hum suppressor	14.0
L3 Aerial S.W. coupling coil	72.0
L4 Aerial S.W. tuning coil	0.7
L5 Band-pass secondary coils	0.25
L6 Osc. S.W. tuning coil	13.3
L7 Osc. S.W. reaction coil	0.1
L8 Osc. S.W. tuning coil	1.0
L9 Osc. M.W. tuning coil	18.0
L10 Osc. M.W. reaction coil	2.5
L11 Osc. L.W. tuning coil	18.0
L12 Osc. L.W. reaction coil	2.0
L13 1st I.F. trans. Pri.	5.0
L14 1st I.F. trans. Sec.	6.0
L15 2nd I.F. trans. Pri.	5.0
L16 2nd I.F. trans. Sec.	5.0
L17 T.C. choke	270.0
L18 Speaker speech coil	4.0
L19 Hum neutralising coil	0.4
L20 Speaker field coil	2,620.0
L21 Speaker input trans. Pri.	570.0
L22 Speaker input trans. Sec.	0.6
T1 Mains trans. Pri. total	29.0
T2 Mains trans. Heater	0.1
T3 Mains trans. Rect. fil. sec.	0.1
T4 Mains trans. H.T. sec. total	520.0
S1-8 Waveband switches	—
S9 Radio muting switch (gram.)	—
S10-11 Radio gram. switches	—
S12-14 Tone control switches	—
S15 Speaker muting switch	—
S16 Mains circuit switch	—

GENERAL NOTES

Switches.—S1-S8 and S15 are the waveband and muting switches, in two units, ganged together. S1 and S2 are attached to the front of the chassis, while the remainder are in the unit behind the front of the chassis. These are indicated in the diagram on page VIII. The table (page VIII) gives the switch positions for the three control settings, starting from the fully anti-clockwise position. O indicates open, and C closed.

Switch	S.W.	M.W.	L.W.
S1	C	O	C
S2	O	C	O
S3	C	O	O
S4	O	C	O
S5	O	C	C
S6	O	C	O
S7	C	O	O
S8	C	O	O
S15	O	O	O



S15, of course, closes only between each final switch position.

S9-S11 are radio-gram switches, in a rotary unit at the back of the chassis. These are shown in the diagram on this page, where they are seen looking at the underside of the chassis, from the front. Note that only five tags are used, an extra one being blank and the remainder cut off. On radio S9 and S10 are closed and S11 is open. On gram. S9 and S10 are open and S11 is closed.

S12-S14 are the tone control switches, in a rotary unit at the front of the chassis. They are shown in the diagram on this page, where they are seen looking at the front of the chassis, the chassis being upside down. Six tags are used, and two extra ones are blank. In the anti-clockwise position of the control all switches are open; in the central position S12 and S13 are closed, and S14 open; in the clockwise position S12 and S14 are closed, and S13 open.

S16 is the Q.M.B. mains switch, mounted on the front of the chassis.