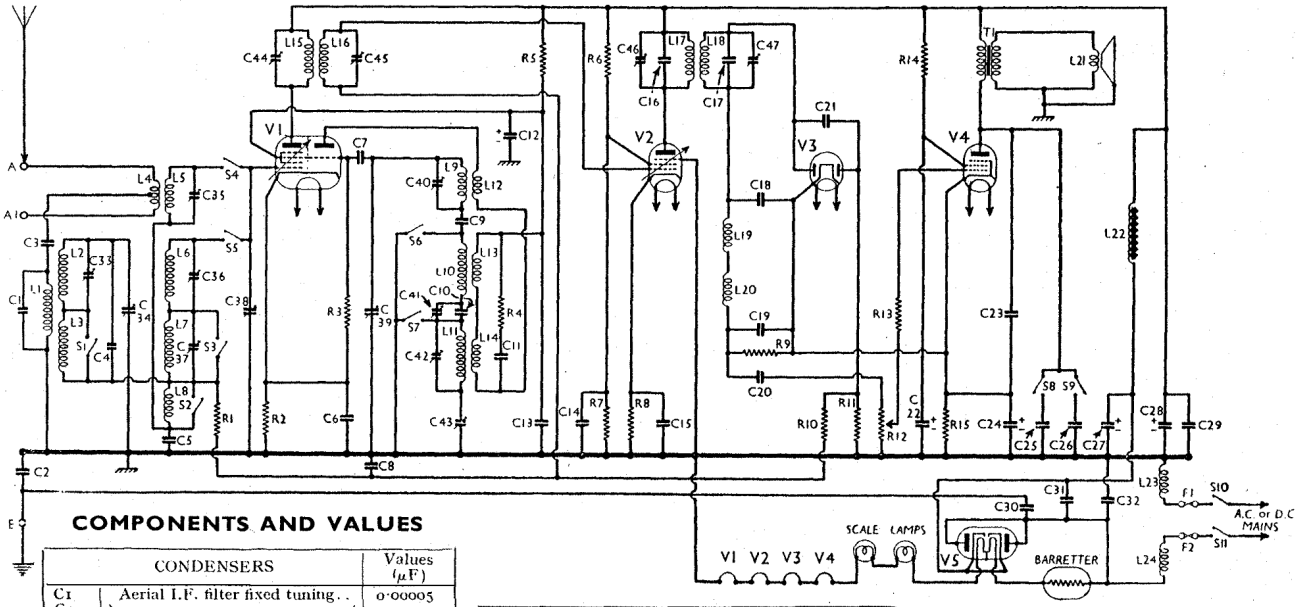
MARCONIPHONE - 382 & 392 & 395



COMPONENTS AND VALUES

	CONDENSERS	Values (μF)
C1	Aerial I.F. filter fixed tuning	0·00005
C2, C3	Mains isolating condensers	0·005, 0·001
C4	Band-pass primary fixed trimmer	0·00002 3
C5	Band-pass common coupling	0·015
C6	V1 cathode by-pass	0·1
C7	V1 osc. C.G. condenser	0·0001
C8	A.V.C. line decoupling	0·1
C9	Osc. circuit S.W. tracker	0·005
C10	Osc. circuit M.W. fixed tracker	0·00035
C11	Part of V1 osc. anode circuit stabiliser	0·00015
C12*	V1 osc. anode and S.G. decoupling	4·0
C13	V1 osc. anode and S.G. by-pass	
C14	V2 S.G. decoupling	
C15	V2 cathode by-pass	
C16	2nd I.F. trans. pri. fi trimmer	·0001
C17	2nd I.F. trans. sec-l trimmer	·0001
C18, C19	I.F. by-passes	0·0001, 0·0001
C20	A.F. coupling to V4	0·1
C21	V3 A.V.C. diode coupling	0·0001
C22*	V4 S.G. decoupling	2·0
C23	V4 anode fixed tone corrector	0·0023
C24*	V4 cathode by-pass	50·0
C25, C26	Variable tone filter condensers	0·005, 0·025
C27*, C28*	H.T. smoothing	12·0, 12·0
C29	H.T. circuit R.F. by-pass	0·1
C30	Mains R.F. filter condenser	0·005
C31	V5 anode-cathode by-pass	0·0005
C32	Mains R.F. filter condenser	0·01
C33‡	Band-pass pri. M.W. trimmer	—
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 band-pass sec. tuning	—
C39†	Oscillator circuit tuning	—
C40‡	Osc. circuit S.W. trimmer	—
C41‡	Osc. circuit M.W. tracker	—
C42‡	Osc. circuit L.W. trimmer	—
C43‡	Osc. circuit L.W. tracker	—
C44‡	1st I.F. trans. pri. tuning	—
C45‡	1st I.F. trans. sec. tuning	—
C46‡	2nd I.F. trans. pri. tuning	—
C47‡	2nd I.F. trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

	RESISTANCES	Values (ohms)
R1	V1 hexode C.G. decoupling	100,000
R2	V1 fixed G.B.	230
R3	V1 osc. C.G. resistance	50,000
R4	Part of V1 osc. anode circuit stabiliser	100
R5	V1 osc. anode and S.G. H.T. feed	35,000
R6, R7	V2 S.G. H.T. potentiometer	15,000, 23,000
R8	V2 fixed G.B.	230
R9	V3 signal diode load	230,000
R10	A.V.C. line decoupling	500,000
R11	V3 A.V.C. diode load	500,000
R12	Manual volume control	500,000
R13	V4 C.G. I.F. stopper	50,000
R14	V4 S.G. H.T. feed	5,000
R15	V3, V4 G.B. resistance, A.V.C. delay	100

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial M.W. and L.W. coupling; I.F. filter coil	8·5
L2	Band-pass primary coils	2·5
L3	Band-pass primary coils	21·5
L4	Aerial S.W. coupling coil	0·7
L5	Aerial circuit S.W. tuning coil	0·1
L6	Band-pass secondary coils	2·5
L7	Band-pass secondary coils	16·5
L8	M.W. image rejector	0·3
L9	Oscillator S.W. tuning coil	0·1
L10	Oscillator M.W. tuning coil	5·8
L11	Oscillator L.W. tuning coil	4·5
L12	Oscillator anode S.W. reaction	1·0
L13	Oscillator anode M.W. reaction	2·0
L14	Oscillator anode L.W. reaction	3·0
L15	1st I.F. trans. Pri.	5·25
L16	1st I.F. trans. Sec.	5·25
L17	2nd I.F. trans. Pri.	3·25
L18	2nd I.F. trans. Sec.	3·5
L19, L20	I.F. filter chokes	130·0, 130·0
L21	Speaker speech coil	4·0
L22	H.T. smoothing choke	240·0
L23, L24	Mains filter chokes	3·5, 3·5
T1	Output trans. Pri.	450·0
	Output trans. Sec.	0·7
S1-S7	Waveband switches	—
S8, S9	Tone control switches	—
S10, S11	Mains switches, ganged	—
F1, F2	Mains fuses	—

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 X31*	230	1·6	60	2·4
V2 W31	230	6·8	100	4·3
V3 D41	—	—	—	—
V4 N31	210	39·0	185	9·0
V5 U30†	—	—	—	—

* Oscillator anode 60 V, 2·3 mA.
† Cathode to chassis 250 V D.C.

Valve voltages and currents given in the table above are those measured in our receiver when it was operating on A.C. mains of 230 V. The receiver 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.

GENERAL NOTES

Switches.—**S1-S7** are the waveband switches, in a single rotary unit, mounted parallel to the chassis deck, and beneath it. The unit is shown in our underchassis view, the individual switches being clearly indicated. The table below gives the switch positions for the three control settings, starting from fully anti-clockwise (lever control to the left). A dash indicates open, and **C**, closed.

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

S8 and **S9** are the tone control switches, in a single rotary unit above the chassis deck, operated by a knob concentric with that of **R12.** In the fully anti-clockwise position of the control **S9** is closed, and **S8** open; in the middle position **S8** is closed and **S9** open; while in the third (clockwise) position, both switches are open.

S10 and **S11** are the Q.M.B. mains switches, ganged in a single unit which fits on the left-hand side of the cabinet.

Coils.—**L1-L3**; **L6, L7**; **L9-L14** and the I.F. transformers **L15, L16** and **L17, L18** are in five screened units on the chassis deck. Some of these units contain extra components, which are indicated in our plan chassis view. The I.F. trimmers are reached through holes at the rear of their respective cans.

L4, L5 is on an unscreened tubular unit beneath the chassis, **L5** being the thick wire winding. **L8** is on a separate tubular former, also beneath the chassis, as are the I.F. chokes **L19, L20** and the filter chokes **L23, L24. L22** is on the chassis deck.

Scale Lamps. These are two Osram M.E.S. types, rated at 6·5 V, 0·3 A.

Fuses.—There are three of these, mounted in clips at the rear of the chassis, one being a spare. They are glass tubular types, 1¼ in. long, rated at 1·25 A and coded with a yellow spot

CIRCUIT ALIGNMENT

I.F. Stages.—Switch set to M.W., turn tone control fully anti-clockwise, advance volume control fully, and turn gang condenser to minimum. Connect signal generator to top cap of **V1** via a 0·1 μF condenser, and chassis. If generator is earthed, include a 0·1 μF condenser also in series with the lead to chassis.

Feed in a 465 KC/S signal, and adjust **C44, C45, C46** and **C47,** in that order for maximum output. Repeat this.

R.F. and Oscillator Stages.—M.W.—Connect signal generator to **A** and **E** sockets, via a dummy aerial, feed in a 200 m. signal, and tune the set to it. Adjust **C36,** then **C33** for maximum output. Feed in a 550 m. signal, tune to 550 m. on scale, and adjust **C41,** rocking the gang for optimum results. Repeat these operations. Feed in a 350 m. signal, tune it in,and set the pointer to indicate 350 m. accurately.

L.W.—Switch set to L.W., feed in a 800 m. signal, tune to 800 m. on scale, and adjust **C42** and **C37** for maximum output. Feed in a 1,950 m. signal, tune to 1,950 m. on scale, and adjust **C43** for maximum output, rocking the gang for optimum results. Repeat these operations.

S.W.—Switch set to S.W., connect signal generator to **A** and **E** sockets, using a 400 Ω resistance in series with the aerial connection.

Feed in a 16·8 m. signal, tune to 16·8 m. on scale and adjust **C40** for maximum output.

Feed in a 20 m. signal, tune it in, and adjust **C35** for maximum output, rocking the gang for optimum results.

Feed in a 50 m. signal, tune it in, and adjust the inductance of **L5** by moving the loop of wire inside the **L4, L5** coil former towards or away from the chassis. Repeat these operations.