

COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	V1 fixed G.B. resistance	200
R2	V1 C.G. decoupling	30,000
R3	V1 gain control	10,000
R4	V1 anode and S.G. H.T. feed	2,000
R5	V1 S.G. H.T. feed	2,000
R6	M.W. and L.W. reaction damping	1,000
R7	V2 grid leak	2,000,000
R8	V2 anode decoupling	10,000
R9	V2 anode load	30,000
R10	V2 anode R.F. stopper	5,000
R11	Part of fixed T.C. filter	20,000
R12	V3 automatic G.B.	1,000
R13	V3 potential divider	380

CONDENSERS		Values (μF)
C1	A2 aerial series condenser	0.001
C2	Aerial S.W. series condenser	0.00003
C3	Band-pass bottom coupling	0.05
C4	Band-pass top coupling	0.000003
C5	V1 S.G. decoupling	0.1
C6	H.T. circuit by-pass	1.0
C7	V1 anode decoupling	0.1
C8	V2 C.G. condenser	0.00003
C9	V2 anode decoupling	1.0
C10	V2 anode R.F. by-pass	0.0003
C11	Fixed tone corrector	0.001
C12	V2 to V3 A.F. coupling	0.1
C13	Part of fixed T.C. filter	0.01
C14	Automatic G.B. decoupling	25.0
C15	Band-pass pri. M.W. trimmer	0.00003
C16	Band-pass pri. L.W. trimmer	0.00003
C17	Band-pass primary tuning	0.00044
C18	Band-pass sec. M.W. trimmer	0.00003
C19	Band-pass sec. L.W. trimmer	0.00003
C20	Band-pass sec. and S.W.1, S.W.2 aerial tuning	0.00044
C21	Reaction control	0.00075
C22	V1 anode circ. L.W. trimmer	0.00003
C23	V1 anode circuit tuning	0.00044

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial M.W. coupling	0.3
L2	Aerial L.W. coupling	15.0
L3	Band-pass primary coils	1.3
L4	Aerial S.W.1 coupling	15.0
L5	Aerial S.W.2 coupling	0.3
L6	Aerial S.W.1 tuning coil	0.7
L7	Aerial S.W.2 tuning coil	0.05
L8	Band-pass secondary coils	0.3
L9	S.W.1 reaction coil	1.3
L10	S.W.2 reaction coil	15.0
L11	M.W. reaction coil	0.4
L12	L.W. reaction coil	0.7
L13	V1 anode S.W.1 tuning coil	3.5
L14	V1 anode S.W.2 tuning coil	0.05
L15	V1 anode M.W. tuning coil	0.25
L16	V1 anode L.W. tuning coil	1.3
L17	V2 anode R.F. choke	15.0
L18	Speaker speech coil	35.0
L19	Intervalve transformer, total	2.25
T1	Output trans. { Pri. Sec. }	5,000.0 1,000.0
T2	Waveband switches	0.2
S1-S25	L.T. circuit switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with an H.T. battery reading 130 V, on load. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but the reaction control was at minimum. There was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VP2*	112	1.5	110	0.4
V2 PM2HL	62	1.0	—	—
V3 PM2A	111	5.4	117	1.0

CIRCUIT ALIGNMENT

S.W.1. and S.W.2.—There are no trimmers for the S.W.1 and S.W.2 ranges, alignment being effected at the works by the disposition of the anode coil wiring at the lower ends of the wavelength scales, and by moving the top turn of **L15** and **L16** at the higher ends of the wavelength scales. The top turns of **L7** and **L8** are also adjusted at the higher ends of the wavelength scales, using critical reaction.

Normally these adjustments will not be necessary.

M.W.—Switch set to M.W., feed a 250 m. signal into **A1** and **E** sockets, tune to 250 m. on scale, and adjust **C15** and **C18** for maximum output.

L.W.—Switch set to L.W., feed in a 1,200 m. signal, tune to 1,200 m. on scale,

GENERAL NOTES

Switches.—**S1-S25** are the waveband switches, in three rotary units beneath the chassis. These are indicated in our under-chassis view, and shown in detail in the diagrams on page 14, where they are seen looking from the rear of the underside of the chassis.

The table (p. 14) gives the switch positions for the four control settings, starting from fully anti-clockwise. A dash indicates open, and **C** closed.

S26 is the Q.M.B. L.T. circuit switch, ganged with gain control **R3**.

Coils.—**L1-L4**; **L9**, **L10** and **L13**, **L14**, **L17**, **L18** are in three screened units on the chassis deck. The S.W. coils **L5**, **L6**, **L8**; **L11**, **L15** and **L12**, **L16** are on four tubular formers beneath the chassis; and are unscreened. The choke **L19** is also beneath the chassis.

The auto-transformer **T1** is in a screened unit on the chassis deck.

Scale Lamps.—These are two Osram M.E.S. types, rated at 2.5 V, 0.2 A.

External Speaker.—Two sockets are provided on a panel at the right of the back of the cabinet for a low impedance (2-3 Ω) external speaker.

Condenser C4.—This is a small capacity coupling between the top of **C17** and the top of **C20** in our chassis. In the makers' diagram it is from the top of **L3** to the top of **L9**, and so is only in circuit on M.W.

The coupling is shown on our diagram as a single condenser, but it actually consists of a tinned copper wire, with a few turns at each end taken round the insulated leads from **C17** and **C20** respectively. It is marked in our under chassis view.

Condensers C6, C9.—These are two 1 μF paper types in a rectangular metal case beneath the chassis. The tag nearest the front of the chassis is common to both condensers. Of the others, that going to **R9** and **R8** belongs to **C9**, and that connected to **R3** and **R4** belongs to **C6**.

Switch Table

Switch	L.W.	M.W.	S.W.2	S.W.1
S1	—	—	—	C
S2	—	—	—	—
S3	—	C	C	—
S4	C	—	—	—
S5	—	C	C	—
S6	—	C	—	—
S7	—	C	—	—
S8	C	—	—	—
S9	—	—	—	C
S10	—	C	C	—
S11	—	C	—	C
S12	—	—	C	—
S13	—	—	C	—
S14	—	C	—	—
S15	C	—	—	—
S16	—	—	C	C
S17	—	—	C	—
S18	C	C	—	C
S19	—	—	C	—
S20	—	C	C	—
S21	—	C	—	—
S22	—	—	C	C
S23	—	—	—	—
S24	—	C	—	—
S25	C	—	—	—

and adjust **C22**, then **C19** and **C16** for maximum output.

For optimum results on M.W. and L.W., the receiver should be maintained just short of oscillation.

Switch Diagram

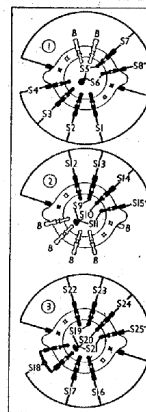


Diagram of the three switch units, as seen from the rear of the underside of the chassis. Tags marked **B** are blank.