



## COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	V1 C.G. stabiliser ..	50
R2	V1 anode and S.G. H.T. feed, fixed G.B. and gain control potentiometer ..	5,000
R3		50,000
R4		10,000
R5		150
R6	Reaction circuit stabiliser ..	50
R7	V2 grid leak ..	1,000,000
R8	V2 anode decoupling ..	100,000
R9	V2 anode load ..	50,000
R10	V3 C.G. resistance ..	250,000
R11	V3 C.G. stopper ..	100,000
R12	V3 G.B. resistance ..	150

CONDENSERS		Values (μF)
C1	A1 aerial series condenser ..	0.0001
C2	Aerial blocking condenser ..	0.0005
C3	Earth blocking condenser ..	0.01
C4	V1 cathode by-pass ..	0.1
C5*	V1 anode and S.G. decoupling ..	4.0
C6	V2 anode R.F. by-pass ..	0.0001
C7	V1 anode and S.G. R.F. by-pass ..	0.25
C8	V2 C.G. condenser ..	0.00005
C9	V2 anode decoupling ..	0.25
C10	V2 anode R.F. by-pass ..	0.0002
C11	V2 to V3 A.F. coupling ..	0.01
C12	Mains R.F. by-pass ..	0.01
C13*	V3 cathode by-pass ..	50.0
C14	Fixed tone corrector ..	0.002
C15	V4 cathode R.F. by-pass ..	0.1
C16*	H.T. smoothing ..	8.0
C17*		16.0
C18†	Aerial M.W. trimmer ..	0.00003
C19†	Aerial circuit tuning ..	—
C20†	Reaction control ..	0.0005
C21†	V1 anode M.W. trimmer ..	0.00003
C22†	V1 anode circuit tuning ..	—

\* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial S.W. coupling coil ..	0.6
L2	Aerial M.W. and L.W. coupling coils ..	3.1
L3		Very low
L4	Aerial S.W. tuning coil ..	2.5
L5	Aerial M.W. tuning coil ..	18.0
L6	Aerial L.W. tuning coil ..	0.5
L7	S.W. reaction coil ..	7.0
L8	M.W. and L.W. reaction coils ..	0.05
L9		2.5
L10	V1 anode S.W. tuning ..	18.5
L11	V1 anode M.W. tuning ..	170.0
L12	V1 anode L.W. tuning ..	2.0
L13	V2 anode R.F. choke ..	0.1
L14	Speaker speech coil ..	820.0
L15	Hum neutralising coil ..	6.0
L16	Speaker field coil ..	6.0
L17	Mains filter chokes ..	460.0
L18		0.4
T1	Speaker input trans. { Pri. Sec. ..	850.0
T2	Mains { Pri. and auto. H.T. sec., total trans. Heater sec. Rect. heat. sec. ..	0.1
S1-S6	Waveband switches ..	0.3
S7	Mains switch, ganged R4. ..	—

## VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 AC/VP1	160	7.3	160	1.8
V2 AC/HL	39	1.2	—	—
V3 PenA4	205	31.0	220	5.0
V4 R2	234 (A.C.)	—	—	—

Valve voltages and currents given in the table above are those measured in our receiver when it was operating on mains of 221 V, using the 230 V tapping on the mains transformer. 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.

## GENERAL NOTES

**Switches.**—S1-S6 are the waveband switches, ganged in a unit beneath the chassis. The individual switches are indicated in our under-chassis view.

The table below gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates open, and C closed.

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

S7 is the Q.M.B. mains switch, ganged with the gain control R4.

**Coils.**—L1-L6 are in pairs in an un-screened unit on the chassis deck, while L7-L12 form a similar unit beneath the chassis. L13 is an R.F. choke, and L17, L18 are mains filter chokes, all beneath the chassis.

**Scale Lamp.**—This is an M.E.S. type, rated at 6.0 V, 0.3 A.

**External Speaker.**—No provision is made for this, but a low impedance type could be connected across the speech coil of the internal speaker, using the tags to which the speech coil leads are connected.

**Condensers C5, C16, C17.**—These are three dry electrolytics in a single carton mounted inside the cabinet. The black lead is the common negative connection; the green lead (to bearer tag 2 on T1) is the positive of C5 (4μF); the yellow lead (to lower F tag on T1) is the positive of C16 (8μF); and the red lead (to tag 3 on T1) is the positive of C17 (16 μF).

**Trimmers.**—The only two trimmers, C18 and C21 are beneath the chassis.

## CIRCUIT ALIGNMENT

With the gang at maximum, the scale pointer should be horizontal, in line with the bottom of the scale.

Switch set to M.W., tune to 200 m. on scale, connect signal generator to A1 and E sockets, and feed in a 200 m. (1,500 KC/S) signal. Adjust C21 for maximum output, keeping reaction advanced to a point just short of oscillation. Then adjust C18 similarly.

Switch set to L.W., and check calibration. If this is widely out, a compromise should be made by re-adjusting C21 slightly. After this, C18 should be re-adjusted on the M.W. band.

There are no S.W. adjustments to be made.