



COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	V1 S.G. H.T. potential divider	10,000
R2	V1 fixed G.B. resistance	110,000
R3	V1 gain control	200
R4	V1 anode H.T. feed	21,000
R5	V2 grid leak	5,000
R6	V2 S.G. H.T. potential divider	510,000
R7	V2 anode decoupling	50,000
R8	V2 anode load resistance	30,000
R9	V2 anode R.F. stopper	20,000
R10	V2 anode R.F. stopper	40,000
R11	V2 anode R.F. stopper	21,000
R12	V3 C.G. resistance	260,000
R13	V3 C.G. R.F. stopper	26,000
R14	V3 G.B. resistance	200

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

If **V2** becomes unstable when measurements are being made in its anode circuit, as in our case, it can be stabilised by temporarily connecting a non-inductive condenser of about 0.1 μ F from that electrode to chassis.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 5A0P	200	9.1	195	3.7
V2 5A0B	165	1.6	80	0.6
V3 A70D	225	31.0	250	5.1
V4 A11D	370†	—	—	—

† Each anode, A.C.

CONDENSERS		Values (μ F)
C1	Aerial series condenser	0.0002
C2	Droitwich rejector tuning	0.0003
C3	V1 S.G. decoupling	0.1
C4	V1 cathode by-pass	0.1
C5	V1 anode decoupling	0.1
C6	V2 C.G. condenser	0.00005
C7	V2 S.G. decoupling	0.1
C8	V2 anode decoupling	0.5
C9	V2 anode R.F. by-passes	0.0002
C10	V2 to V3 A.F. coupling	0.0005
C11	Fixed tone corrector	0.1
C12	V3 cathode by-pass	0.0025
C13*	V3 cathode R.F. by-pass	50.0
C14	V4 anode R.F. by-pass	0.01
C15	Tone control condenser	0.01
C16*	H.T. smoothing	8.0
C17*	H.T. smoothing	16.0
C18†	Aerial circuit S.W. trimmer	—
C19†	Aerial circuit M.W. trimmer	—
C20†	Aerial circuit tuning	—
C21†	Anode circuit tuning	—
C22†	Anode circuit M.W. trimmer	—
C23†	Reaction control	—

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Droitwich rejector coil	21.0
L2	Aerial S.W. coupling coil	0.8
L3	Aerial M.W. and L.W. coupling coil	39.2
L4	Aerial S.W. tuning coil	0.05
L5	Aerial M.W. tuning coil	2.15
L6	Aerial L.W. tuning coil	10.35
L7	Anode circuit S.W. tuning coil	Very low
L8	Anode circuit M.W. tuning coil	2.6
L9	Anode circuit L.W. tuning coil	12.5
L10	S.W. reaction coil	0.3
L11	M.W. and L.W. reaction coil	4.7
L12	Speaker speech coil	1.85
L13	Hum neutralising coil	0.25
L14	Speaker field coil	3,000.0
T1	Output trans.	780.0
T2	Mains trans.	0.5
S1-S7	Waveband switches	—
S8	Tone control switch	—
S9	Mains switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table (col. 3) are those measured in our receiver when it was operating on mains of 230 V, using the 216-235 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.

GENERAL NOTES

Switches.—**S1-S7** are the wavechange switches, ganged in a single unit beneath the chassis. All the switches are clearly marked in our under-chassis view. Note that one set of contacts is not used. The table below gives the switch positions for the three control settings, starting with S.W., and proceeding in a clockwise direction. A dash indicates open, and **C** closed.

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

S8 is a 2-position switch at the rear of the chassis for tone control. In the anti-clockwise position it is closed, and brings **C15** into circuit.

S9 is the Q.M.B. mains switch, in a moulded unit fitted to the side of the cabinet.

Coils.—**L1** is in two sections on a tubular former beneath the chassis. **L2-L6** and **L7-L11** are in two screened units on the chassis deck. The first of these contains the trimmers **C18, C19**, while the second contains, besides the trimmer **C22**, the components **C6** and **R6**.

Scale Lamps.—These are two Ever Ready M.E.S. types rated at 6.2 V, 0.3 A.

Condensers C16, C17.—These are two dry electrolytics in a single carton beneath the chassis, with a common negative (black) lead. The yellow lead is the positive of **C16** (8 μ F) and the red the positive of **C17** (16 μ F).

Aerial Connections.—There are two aerial sockets, and the use of **A2** brings into action the fixed-tuned Droitwich rejector, **L1, C2**.

Mains Transformer T2.—This has an extra winding which is not used in this set. The two tags belonging to it (next to those of the heater winding) are blank.

Connect signal generator to **A1** and **E** sockets, feed in a 202 m. signal and adjust **C19** and **C22** in turn for maximum output.

Switch the receiver to S.W., set pointer to 16 MC/S on the scale, feed in a 16 MC/S signal, and adjust reaction until the receiver is just short of oscillation, with the volume control at maximum. Now adjust **C18** for maximum output, rocking the gang slightly for optimum results, and if necessary re-adjusting reaction to keep the receiver just short of oscillation.

CIRCUIT ALIGNMENT

Rotate the gang until the pointers are at the higher wavelength ends of the scales. Push a flat ended rod against the vanes, which are accessible from the open side of the gang, at the same time rocking the vanes of the rotor until it can be felt that they are fully in mesh. If the pointers do not coincide with the horizontal line dividing the scale, release the centre fixing screw, and adjust them to this position.

Rotate the gang until the pointers are at the lower wavelength ends of the scales, and switch the set to M.W. Turn the volume control to maximum, and reaction to minimum. Set the pointer to minimum wavelength.