



COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	V1 CG decoupling	510,000
R2	V1 SG HT feed	51,000
R3	V1 anode HT feed	11,000
R4	V2 CG resistance	2,100,000
R5	V2 GB filament pot.	1,500
R6	V2 anode decoupling	41,000
R7	V2 anode load	31,000
R8	V3 CG resistance	1,100,000
R9	V3 CG RF stopper	110,000
R10	V3 anode load	51,000
R11	V4 CG RF stopper	110,000
R12	V4 auto GB potential divider	1,000
R13	V1 gain control, ganged C15	450
R14	V1 fixed GB	5,000
R15	V1 fixed GB	2,100

CONDENSERS		Values (μF)
C1	V1 CG decoupling	0.1
C2	V1 SG decoupling	0.1
C3*	V1 anode decoupling	2.0
C4	V2 CG condenser	0.0001
C5*	V2 anode decoupling	2.0
C6	V2 anode RF by-pass	0.0003
C7	V2 to V3 AF coupling	0.1
C8	V3 CG RF by-pass	0.0001
C9	V3 anode RF by-pass	0.001
C10	AF coupling to T1	0.01
C11	Fixed tone corrector	0.0035
C12*	Auto GB by-pass	50.0
C13†	Frame aerial circuit tuning	—
C14†	Frame aerial MW trimmer	—
C15†	Reaction control, ganged R15	—
C16†	V1 anode circuit tuning	—
C17†	V1 anode MW trimmer	—

§ One 0.002 and one 0.001 in parallel.

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Frame aerial windings	1.75
L2	Reaction coils, total	30.0
L3	V1 anode circuit tuning coils	2.75
L4	Speaker speech coil	13.0
L5	Intervalve trans. (Pri.)	2,000.0
L6	Intervalve trans. (Sec.)	8,000.0
L7	Speaker input trans. (Pri.)	1,000.0
T1	Speaker input trans. (Sec.)	0.2
S1, S2	Waveband switches	—
S3	LT circuit switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with a new HT battery reading 91V, on load. The receiver was tuned to the lowest wavelength on the medium band and the combined volume and reaction control was set so that the potentiometer slider had just reached the end of the element but the vanes of the reaction condenser were not in mesh. There was no signal input, the frame aerial connections being shorted.

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 K50N	70	0.9	53	0.3
V2 K30K	46	0.5	—	—
V3 K30K	48	0.6	—	—
V4 K70B	80	3.2	84	0.5

GENERAL NOTES

Switches.—S1, S2 are the waveband switches, and S3 the LT circuit switch, ganged in a single unit beneath the control panel, and identified in our under-chassis view. S1 and S2 are closed on MW and open on LW, while S3 is only open in the "off" position.

Coils.—L1 and L2 are the frame aerial windings, incorporated in the cabinet, the three connections being brought out to tags inside the left-hand side of the cabinet. These connections are numbered 1 to 3 in our circuit diagram, and the wires are colour-coded.

L3-L6 are in a screened unit projecting through the valve platform, and shown in both our chassis illustrations.

Components R15, C15.—The gain and reaction controls are combined in a single unit, so arranged that only after the gain has reached its maximum is the reaction increased.

Condenser C11.—This consists of two units in parallel in our chassis.

Batteries.—J.T. Ever Ready J203 2V 20 AH celluloid-cased jelly-acid cell. HT, Ever Ready Portable No. 61 90 V HT battery. GB is automatic.

Battery Leads and Voltages.—Black lead, spade tag, LT negative; red lead, spade tag, LT positive 2 V; black lead and plug, HT negative; red lead and plug, HT positive 90 V.

CIRCUIT ALIGNMENT

With gang at maximum, the pointer should cover the horizontal line at 2,100 m.

Couple the output from the signal generator loosely to the frame aerial windings by one or two turns of wire wound round the outside of the cabinet.

Switch set to MW, tune to 250 m on the scale, feed in a 250 m (1,200 KC/S) signal, and adjust C17 and C14 for maximum output, keeping the combined gain and reaction control just short of the oscillation point.

Finally, readjust C14 slightly if necessary on an actual station of low power.

