

RESISTANCES	Values (ohms)
R1 V1 heptode CG decoupling	100,000
R2 V1 SG HT feed potential divider	25,000
R3 V1 fixed GB resistance	40,000
R4 V1 osc. CG resistance	220
R5 V1 osc. reaction stabiliser	40,000
R6 V1 osc. anode HT feed	220
R7 V2 SG HT feed	10,000
R8 V2 fixed GB resistance	90,000
R9 V2 fixed GB resistance	300
R10 V3 signal diode load	40,000
R11 V3 signal diode load	500,000
R12 Manual volume control	500,000
R13 V3 triode GB; AVC delay	1,500
R14 V3 triode anode decoupling	5,000
R15 V3 triode anode load	20,000
R16 AVC line decoupling	1,000,000
R17 V3 AVC diode load	1,000,000
R18 V4 CG resistance	220,000
R19 V4 grid stopper	30,000
R20 V4 GB resistance	170
R21 V5 and surge limiter	100
R22 Heater circuit ballast	700

OTHER COMPONENTS	Approx. Values (ohms)
L1 Aerial SW coupling coil	0.7
L2 Aerial MW and LW coupling coil	36.0
L3 Aerial SW tuning coil	0.1
L4 Aerial MW tuning coil	1.5
L5 Aerial LW tuning coil	14.0
L6 Osc. circ. SW tuning coil	0.1
L7 Osc. circ. MW tuning coil	3.0
L8 Osc. circ. LW tuning coil	9.0
L9 Oscillator SW reaction	19.0
L10 Oscillator MW reaction	33.0
L11 Oscillator LW reaction	53.0
L12 1st IF trans. { Pri. ...	5.5
L13 1st IF trans. { Sec. ...	4.5
L14 2nd IF trans. { Pri. ...	9.5
L15 2nd IF trans. { Sec. ...	9.5
L16 Speaker speech coil	3.8
L17 Hum neutralising coil	0.05
L18 Speaker field coil	600.0
T1 Speaker input trans.	280.0
S1-S11 Waveband switches	0.5
S12 Mains switch, ganged R12	—

### VALVE ANALYSIS

Valve voltages and currents given in the table (col. 6) are those measured in our receiver when it was operating on AC mains of 232 V. This is no voltage adjustment.

The receiver was tuned to the lowest wavelength on the medium wave band,

CONDENSERS	Values (μF)
C1 Aerial isolating condenser	0.0002
C2 Aerial MW top coupling	0.000005
C3 V1 heptode CG decoupling	0.05
C4 V1 SG decoupling	0.1
C5 V1 cathode by-pass	0.1
C6 V1 osc. CG condenser	0.0001
C7 HT circuit RF by-pass	0.1
C8 Osc. circuit SW tracker	0.0025
C9 V1 osc. anode decoupling	0.1
C10 V2 CG decoupling	0.05
C11 V2 SG decoupling	0.1
C12 V2 cathode by-pass	0.1
C13 IF by-pass condensers	0.0005
C14 V3 cathode by-pass	0.0001
C15 AF coupling to V3 triode	25.0
C16 V3 triode anode decoupling	0.01
C17 Coupling to V3 AVC diode	4.0
C18 V3 triode to V4 AF coupling	0.00006
C19 V3 triode to V4 AF coupling	0.02
C20 Fixed tone correctors	0.005
C21 V4 cathode by-pass	0.002
C22 HT smoothing condensers	25.0
C23 V4 cathode by-pass	16.0
C24 Mains RF by-pass	16.0
C25 Aerial circuit SW trimmer	0.05
C26 Aerial circuit MW trimmer	—
C27 Aerial circuit LW trimmer	—
C28 Aerial circuit LW trimmer	—
C29 Aerial circuit tuning	—
C30 Oscillator circuit tuning	—
C31 Osc. circuit SW trimmer	—
C32 Osc. circuit MW trimmer	—
C33 Osc. circuit LW trimmer	—
C34 Osc. circuit MW tracker	0.0006
C35 Osc. circuit LW tracker	0.0003
C36 1st IF trans. pri. tuning	0.00025
C37 1st IF trans. sec. tuning	0.00025
C38 2nd IF trans. pri. tuning	0.0001
C39 2nd IF trans. sec. tuning	0.0001

\*Electrolytic. †Variable. ‡Pre-set.

and the volume control was at maximum, but 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 CCH35	200	1.7	95	2.3
V2 EF39	135	6.4	72	1.4
V3 EBC33	200	4.3	72	1.4
V4 C133	182	2.1	200	6.8
V5 CV31	188	39.0	—	—
	245†	—	—	—

† Cathode to chassis, DC.

### CIRCUIT ALIGNMENT

**IF Stages.**—Connect signal generator via a non-inductive condenser of about 0.1 μF to control grid (top cap) of V1, and via a second 0.1 μF condenser to chassis. Short-circuit C30, feed in a 470 KC/S (638.3 m) signal, and adjust C39, C38, C37 and C36 in turn for maximum output. Re-check these settings, and remove short-circuit from C30.

**RF and Oscillator Stages.**—With the gang at maximum, pointer should be horizontal. Connect signal generator via a suitable dummy aerial to the aerial side of C1, and via a 0.1 μF condenser to chassis.

**MW.**—Switch set to MW, tune to 250 m on scale, feed in a 250 m (1,200 KC/S) signal, and adjust C32, then C27, for maximum output. Feed in a 500 m (600 KC/S) signal, tune it in, and adjust C34 for maximum output while rocking the gang for optimum results. Repeat the whole procedure until no improvement can be obtained.

**LW.**—Switch set to LW, tune to 1,300 m on scale, feed in a 1,300 m (233 KC/S) signal, and adjust C33, then C28, for maximum output. Feed in a 1,900 m (158 KC/S) signal, tune it in, and adjust C35 for maximum output while rocking the gang for optimum results. Repeat the whole operation until no improvement results.

**SW.**—Switch set to SW, tune to 31 m on scale, feed in a 31 m (9.68 MC/S) signal, and adjust C31, then C26, for maximum output. There are no tracking adjustments on the SW band.

### Switch Table

Switch	SW	MW	LW
S1	—	—	—
S2	—	—	—
S3	—	—	—
S4	—	—	—
S5	—	—	—
S6	—	—	—
S7	—	—	—
S8	—	—	—
S9	—	—	—
S10	—	—	—
S11	—	—	—

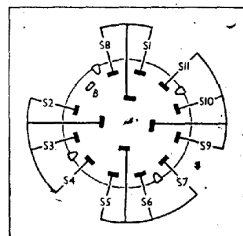


Diagram of the switch unit, as seen from the rear of the underside of the chassis.