

COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	V1 hexode CG decoupling	250,000
R2	V1 SG HT feed	25,000
R3	V1 fixed GB resistance	100
R4	V1 osc. CG resistance	30,000
R5	Osc. reaction SW stabiliser	200
R6	V1 osc. anode HT feed	25,000
R7	V2 fixed GB resistance	150
R8	IF stopper	50,000
R9	V3 signal diode load	500,000
R10	Manual volume control	500,000
R11	V3 GB resistance	150
R12	AVC line decoupling	500,000
R13	V3 AVC diode load resistances	250,000
R14	V3 AVC diode load resistances	500,000

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 TH4A	212	3.6	82	6.7
	Oscillator			
	95	5.0		
V2 VP4B	212	11.0	212	3.6
V3 Pen4DD	225	33.0	212	7.8
V4 DW4/350	310†			

† Each anode, AC.

Valve voltages and currents given in the table above are those measured in our receiver when it was operating on mains of 230 V, using the 220 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 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-S11 are the waveband switches, in a single rotary unit beneath the chassis. It is indicated in our under-chassis view, and shown in detail in column three. The table (column two) gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates open, and C, closed.

S12 is the QMB mains switch, ganged with the volume control R10.

Coils.—L1, L3 are in an unscreened unit beneath the chassis, L3 being the thick wire winding. L2, L4, L5; L6-L11; and the IF transformers L12, L13 and L14, L15 are in four screened units on the chassis deck, with the associated trimmers, in the case of the last three. The L6-L11 unit also contains C7.

Scale Lamps.—These are two Osram MES types, rated at 6.2 V, 0.3 A.

External Speaker.—Two terminals are provided on T1 terminal panel for a high resistance external speaker.

Condensers C17, C18.—These are two 6 µF dry electrolytics in a single carton beneath the chassis, with a common negative (black) lead. The red lead to V4 valve-holder is the positive of C17 and the red lead to V3 holder is the positive of C18.

V3 Connections.—Note that in the Pen4DD valve the connections of anode and cathode are transposed, compared with other valves of similar type.

Resistance R5.—This is given as 100 Ω by the makers, but was actually 200 Ω in our chassis.

Trimmer C19.—The makers' diagram shows this returned to AVC line, but in our set it was returned to chassis.

TABLE AND DIAGRAM

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

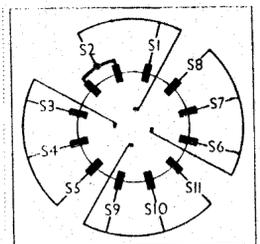
CIRCUIT ALIGNMENT

IF Stages.—Connect signal generator to control grid (top cap) of V1 and chassis, leaving existing connection in place. Switch set to LW and turn gang and volume control to maximum. Feed in a 465 KC/S signal, and adjust C31, C30, C20 and C28 for maximum output. Re-check these settings.

RF and Oscillator Stages.—Connect signal generator to A and E sockets via a suitable dummy aerial. Turn volume control to maximum.

MW.—Switch set to MW, tune to 200 m on scale, feed in a 200 m (1,500 KC/S) signal, and adjust C26,

Switch diagram, looking from the rear of the underside of the chassis.



then C21, for maximum output. Feed in a 500 m (600 KC/S) signal, tune it in, and adjust C23 for maximum output, while rocking the gang for optimum results.

LW.—Switch set to LW, tune to 1,200 m on scale, feed in a 1,200 m (250 KC/S) signal, and adjust C27, then C19, for maximum output. Feed in a 1,900 m (158 KC/S) signal, tune it in, and adjust C24 for maximum output, while rocking the gang for optimum results.

SW.—Switch set to SW, tune to 17 m on scale, feed in a 17 m (17.65 MC/S) signal, and adjust C25 for maximum output.

CONDENSERS		Values (µF)
C1	Aerial MW and LW series	0.0002
C2	Aerial MW coupling	0.000005
C3	V1 hexode 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	Osc. circuit SW tracker	0.0005
C8	V1 osc. anode decoupling	0.1
C9	V2 CG decoupling	0.05
C10	V2 cathode by-pass	0.1
C11	IF by-pass	0.0001
C12	AF coupling to V3 pentode	0.005
C13	IF by-pass	0.0001
C14	Coupling to V3 AVC diode	0.0002
C15	Fixed tone corrector	0.005
C16*	V3 cathode by-pass	25.0
C17*	HT smoothing	6.0
C18*	HT smoothing	6.0
C19†	Aerial circuit LW trimmer	0.00003
C20	Aerial circuit tuning	—
C21†	Aerial circuit MW trimmer	—
C22†	Oscillator circuit tuning	—
C23†	Osc. circuit MW tracker	0.0006
C24†	Osc. circuit LW tracker	0.00025
C25†	Osc. circuit SW trimmer	0.00003
C26†	Osc. circuit MW trimmer	0.00003
C27†	Osc. circuit LW trimmer	0.00003
C28†	1st IF trans. pri. tuning	—
C29†	1st IF trans. sec. tuning	—
C30†	2nd IF trans. pri. tuning	—
C31†	2nd IF trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial SW coupling coil	0.2
L2	Aerial MW and LW coupling	50.0
L3	Aerial SW tuning coil	Very Low
L4	Aerial MW tuning coil	1.75
L5	Aerial LW tuning coil	14.0
L6	Osc. circuit SW tuning coil	0.05
L7	Osc. circuit MW tuning coil	3.4
L8	Osc. circuit LW tuning coil	7.5
L9	Oscillator SW reaction	24.0
L10	Oscillator MW reaction	30.0
L11	Oscillator LW reaction	45.0
L12	1st IF trans. Pri.	2.7
L13	1st IF trans. Sec.	2.7
L14	2nd IF trans. Pri.	2.7
L15	2nd IF trans. Sec., total	2.7
L16	Speaker speech coil	1.8
L17	Hum neutralising coil	0.1
L18	Speaker field coil	1,000.0
T1	Speaker input trans. Pri.	320.0
	Speaker input trans. Sec.	0.3
	Pri., total	46.0
T2	Mains trans. Heater sec.	0.05
	Rect. heat. sec.	0.1
	HT sec., total	450.0
S1-S11	Waveband switches	—
S12	Mains switch, ganged R10	—