

RESISTANCES		Values (ohms)
R1	V1 hexode CG decoupling	500,000
R2	V1 SG HT feed potential divider resistances	20,000
R3	Part V1 fixed GB resistance	30,000
R4	V1 osc. CG resistance	130
R5	V1 osc. anode HT feed	40,000
R6	V2 SG HT feed	30,000
R7	V2 anode HT feed	120,000
R8	IF stopper	5,000
R9	Manual volume control	50,000
R10	V3 signal diode load	500,000
R11	V3 triode grid stopper	120,000
R12	V3 triode CG resistance	1,500,000
R13	V3 triode GB; AVC delay resistances	750
R14	V3 triode anode load	1,000
R15	AVC line decoupling	60,000
R16	V3 AVC diode load	3,000,000
R17	Variable tone control	1,500,000
R18	V4 CG resistance	250,000
R19	V4 grid stopper	500,000
R20	V1, V2 fixed GB and V4 GB potential divider resistances	150,000
R21	V1-V3 heater circuit pot., total	7,000
R22	V4 heater circuit pot., total	75,000
R23		170,000
R24		25*
R25		25*

\* Centre-tapped.

CONDENSERS		Values (μF)
C1	Aerial series condenser	0.0005
C2	Aerial IF rejector tuning	0.000225
C3	V1 hexode CG decoupling	0.05
C4	V1 SG decoupling	0.05
C5	V1 SG HT feed	0.000225
C6	1st IF transformer fixed tuning condensers	0.000225
C7	V1 osc. CG condenser	0.0001
C8	V1 cathode by-pass	0.01
C9	HT circuit RF by-pass	0.1
C10	Osc. circuit LW fixed trimmer	0.00005
C11	Osc. circuit MW tracker	0.000638
C12	Osc. circuit LW fixed tracker	0.00014
C13	V1 osc. anode coupling	0.0005
C14	V2 CG decoupling	0.05
C15	V2 SG decoupling	0.05
C16	V2 anode decoupling	0.1
C17	2nd IF transformer fixed tuning condensers	0.00006
C18		0.000075
C19	IF by-pass condensers	0.00005
C20		0.00005
C21	V3 cathode by-pass	50.0
C22	AF coupling to V3 triode	0.005
C23	Coupling to V3 AVC diode	0.00005
C24	Part of variable tone control	0.01
C25	V3 triode to V4 AF coupling	0.01
C26	V4 CG decoupling	10.0
C27	Speaker field shunt	0.05
C28	HT smoothing condensers	8.0
C29		8.0
C30	Aerial circuit SW trimmer	—
C31	Aerial circuit MW trimmer	—
C32	Aerial circuit LW trimmer	—
C33	Aerial circuit tuning	—
C34	Oscillator circuit tuning	—
C35	Osc. circuit SW trimmer	—
C36	Osc. circuit MW trimmer	—
C37	Osc. circuit LW trimmer	—
C38	Osc. circuit LW tracker	—

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial IF rejector coil	4.0
L2	Aerial SW coupling coil	0.5
L3	Aerial MW coupling coil	25.0
L4	Aerial LW coupling coil	150.0
L5	Aerial SW tuning coil	Very low
L6	Aerial MW tuning coil	2.0
L7	Aerial LW tuning coil	15.0
L8	Osc. circuit SW tuning coil	Very low
L9	Osc. circuit MW tuning coil	5.6
L10	Osc. circuit LW tuning coil	18.0
L11	Oscillator SW reaction	0.1
L12	Oscillator MW reaction	2.4
L13	Oscillator LW reaction	6.0
L14	1st IF trans. Pri.	4.0
L15	1st IF trans. Sec.	4.0
L16	2nd IF trans. Pri., total	18.0
L17	2nd IF trans. Sec., total	18.0
L18	Speaker speech coil	2.0
L19	Hum neutralising coil	0.15
L20	Speaker field coil	1,000.0
L21	Speaker input Pri.	170.0
T1	trans. Sec.	0.15
T2	Pri., total	27.0
	V1-V3 heat. sec.	0.1
	V4 heater sec.	0.1
	Rect. heat. sec.	0.2
	HT sec., total	240.0
S1-S13	Waveband switches	—
S14	Speaker switch	—
S15	Mains switch	—

#### VALVE ANALYSIS

Valve voltages and currents given in the table (col. 2) are those measured in our receiver when it was operating on mains of 225 V, using the 220 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the MW 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.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 41STH	273	1.8	100	4.5
V2 MVS Pen B	238	6.5	112	1.2
V3 DDT	119	2.1	—	—
V4 2P	265	45.2	—	—
V5 48IU	305.1	—	—	—

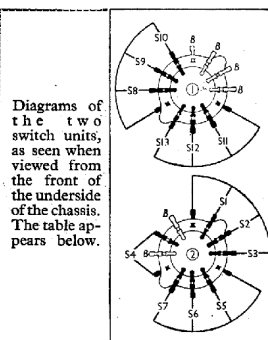
† Each anode, A.C.

#### CIRCUIT ALIGNMENT

**IF Stages.**—Connect signal generator via a 0.1 μF condenser to control grid (top cap) of V2 and chassis, feed in a 465 KC/S (645.2 m) signal, and adjust the cores of L16 and L17, softening the wax by the application of a warm screw-driver. Transfer signal generator to top cap of V1, and similarly adjust cores of L14, L15. The existing lead to each top cap should be left in position, and the response curve of the IF stages should be symmetrical, with a perceptible flat top when viewed on an oscilloscope.

**IF Rejector.**—Connect signal generator to A and E leads, tune to top of MW band, feed in a strong 465 KC/S signal, and adjust core of L1 for minimum output.

**RF and Oscillator Stages.**—With gang at maximum, pointer should cover the short horizontal lines at the extreme right-hand ends of the scales. Connect signal generator to A and E leads, via a suitable dummy aerial.



Diagrams of the two switch units, as seen when viewed from the front of the underside of the chassis. The table appears below.

Switch Table

Switch	SW	MW	LW
S1	o	o	o
S2	o	o	o
S3	o	o	o
S4	o	o	o
S5	o	o	o
S6	o	o	o
S7	o	o	o
S8	o	o	o
S9	o	o	o
S10	o	o	o
S11	o	o	o
S12	o	o	o
S13	o	o	o

**LW.**—Switch set to LW, and tune to 1,200 m on scale. Feed in a 1,200 m (250 KC/S) signal, and adjust C37, then C32, for maximum output. Feed in a 1,375 m (160 KC/S) signal, tune it in, and adjust C38 for maximum output, while rocking the gang for optimum results. Repeat the LW adjustments.

**MW.**—Switch set to MW, and tune to 214 m on scale. Feed in a 214 m (1,400 KC/S) signal, and adjust C36, then C31, for maximum output. Tracking is fixed.

**SW.**—Switch set to SW, tune to 18 MC/S on scale, and feed in an 18 MC/S (16.67 m) signal. Adjust C35, then C30 for maximum output. C35 must be adjusted to the peak involving the smaller trimmer capacity.

