

CONDENSERS	Values (μF)
C1	Aerial IF filter tuning ... 0.0004
C2	Part aerial MW coupling ... 0.000006
C3	Aerial MW and LW coupling condensers ... 0.1
C4	Aerial SW fixed trimmer ... 0.004
C5	L6 muting on MW ... 0.00002
C6	V1 SG decoupling ... 0.001
C7	1st IF transformer fixed trimmers ... 0.1
C8	V1 osc. CG condenser ... 0.00005
C9	HT circuit RF by-pass ... 0.00005
C10	Osc. circuit SW tracker ... 0.0001
C11	Osc. circuit MW tracker ... 0.0035
C12	Osc. circuit LW tracker ... 0.0005075
C13	Osc. circuit LW tracker ... 0.000168
C14	Osc. circ. LW fixed trimmer ... 0.00005
C15	V1 osc. anode coupling ... 0.0001
C16	V2 CG decoupling ... 0.1
C17	AVC line decoupling ... 0.01
C18	V2 SG and anode decoupling ... 0.1
C19	1F by-pass condensers ... 0.0001
C20	Coupling to V3 AVC diode ... 0.0001
C21	Part of tone control ... 0.001
C22	AF coupling to V3 triode ... 0.01
C23	V3 cathode by-pass ... 50.0
C24	V3 cathode by-pass ... 0.015
C25*	Parts of feed-back feed ... 0.01
C26	V3 triode to V4 AF coupling ... 0.005
C27	Part of feed-back feed ... 50.0
C28	V4 cathode by-pass ... 0.002
C29	Fixed tone corrector ... 16.0
C30*	HT smoothing condenser ... 0.01
C31	V5 cathode RF by-pass ... 16.0
C32*	HT smoothing condenser ... 0.002
C33	Mains RF by-pass ...
C34*	Aerial circuit MW trimmer ...
C35	Aerial circuit LW trimmer ...
C36†	Aerial circuit SW trimmer ...
C37†	Osc. circuit MW tuning ...
C38†	Osc. circuit LW tuning ...
C39†	Osc. circuit SW tuning ...
C40†	1st IF trans. pri. tuning ...
C41†	1st IF trans. sec. tuning ...
C42†	2nd IF trans. pri. tuning ...
C43†	2nd IF trans. sec. tuning ...

OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial IF filter coil ... 2.1
L2	Aerial SW coupling coil ... 0.3
L3	Aerial MW coupling coil ... 18.5
L4	Aerial SW tuning coil ... Very low
L5	Aerial MW tuning coil ... 2.0
L6	Aerial LW tuning coil ... 21.0
L7	Oscillator SW reaction ... 0.4
L8	Osc. MW and LW reaction ... 2.9
L9	Osc. circuit SW tuning ... Very low
L10	Osc. circuit MW tuning ... 2.3
L11	Osc. circuit LW tuning ... 9.0
L12	Variable selectivity coil ... 0.4
L13	1st IF trans. (Pri. ... 11.0
L14	1st IF trans. (Sec. ... 11.0
L15	Variable selectivity coil ... 0.4
L16	2nd IF trans. (Pri. ... 11.0
L17	2nd IF trans. (Sec. ... 11.0
L18	Speaker speech coil ... 2.5
L19	Hum neutralising coil ... 0.15
L20	Speaker field coil ... 1,000.0
T1	Speaker input (Pri. ... 280.0
	trans. (Sec. ... 0.25
	Pri., total ... 31.0
T2	Mains Heater sec. ... 0.05
	trans. Rect. heat. sec. ... 0.1
	H.T. sec., total ... 330.0
S1-S16	Waveband switches ...
S17, S18	Variable selectivity switches ...
S19	Tone control switch ...
S20	Negative feed-back control switch ...
S21	Press-button muting switch ...
S22	Mains switch, ganged R14 ...

### VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 230 V using the 240 V tapping on the mains transformer. The receiver was tuned to the lowest wave-length 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 TH41	207	1.6	57	3.6
	(62)	(3.8)		
V2 VP41	190	9.0	190	2.0
V3 HL41DD	102	2.1	—	—
V4 Pen45	206	31.0	218	5.5
V5 U6	256†	—	—	—

† Each anode, AC.

### CIRCUIT ALIGNMENT

**IF Stages.**—Connect signal generator between control grid (top cap) of V1 and chassis, and feed in a 465 KC/S signal. Adjust C44, C45 and C46, C47 in turn for maximum output. Re-check these settings.

Transfer signal generator leads to A and E clips, feed in a strong 465 KC/S signal, and adjust L1 core for minimum output.

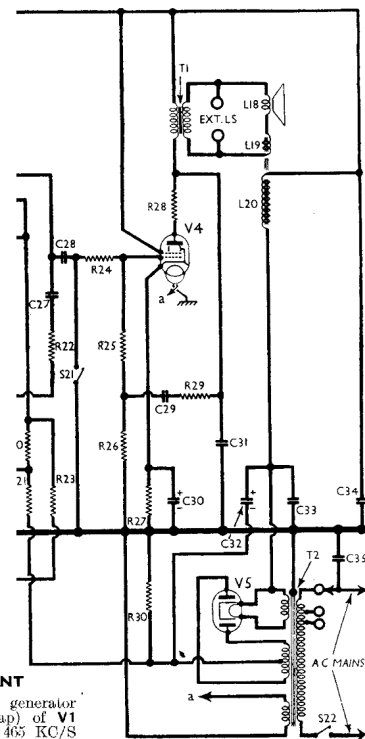
**RF and Oscillator Stages.**—With gang at maximum, pointer should be horizontal. Connect the signal generator to the A and E clips, via a suitable dummy aerial.

**SW.**—Switch set to SW, turn gang to minimum, feed in an 18.5 m (16.2 MC/S) signal and adjust C43 for maximum output. Feed in a 19.6 m (15.3 MC/S) signal, tune to 19.6 m on scale, and adjust C39 for maximum output.

**MW.**—Switch set to MW, turn gang to minimum, feed in a 190 m (1.580 KC/S) signal, and adjust C40 for maximum output. Tune to 214 m on scale, feed in a 214 m (1.400 KC/S) signal, and adjust C36 for maximum output.

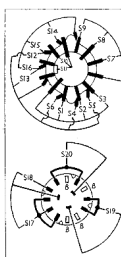
**LW.**—Switch set to LW, tune to 1,100 m, feed in a 1,100 m (273 KC/S) signal, and adjust C41, then C37 for maximum output.

There are no tracking adjustments, as tracking is fixed on all bands.



\* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES	Values (ohms)
R1	Aerial circuit shunt ... 2,000
R2	V1 heptode CG decoupling ... 500,000
R3	V1 SG HT feed ... 40,000
R4	V1 SG stabiliser ... 40
R5	V1 osc. CG resistance ... 50,000
R6	V1 osc. CG stabiliser ... 100
R7	Oscillator MW and LW reaction stabiliser ... 2,000
R8	V1 osc. anode HT feed ... 40,000
R9	V2 CG decoupling ... 500,000
R10	V1 HT feed resistance ... 1,000
R11	V2 anode and SG HT feed ... 2,500
R12	1F stopper ... 50,000
R13	Diode output limiter ... 500,000
R14	Manual volume control ... 1,000,000
R15	Feed-back coupling ... 15,000
R16	V3 signal diode load ... 500,000
R17	V3 triode GB and AVC delay resistances ... 1,300
R18	V3 triode anode load ... 1,800
R19	V3 triode anode load ... 50,000
R20	V3 AVC diode load ... 500,000
R21	resistances ... 500,000
R22	Part feed-back feed ... 40,000
R23	AVC line decoupling ... 500,000
R24	V4 CG potential divider ... 100,000
R25	resistances ... 500,000
R26	Feed-back coupling ... 25,000
R27	V4 fixed GB ... 180
R28	V4 anode stopper ... 50
R29	Part feed-back feed ... 250,000
R30	V1, V2 fixed GB resistance ... 40



Diagrams of the switch units. Top, the S1-S16 unit seen from the rear of the underside of the chassis. Bottom, the S17-S20 unit, seen from the rear of the top of the chassis.

### SWITCH TABLES

SWITCH	SW	MW	LW
S1	1	1	1
S2	1	1	1
S3	1	1	1
S4	1	1	1
S5	1	1	1
S6	1	1	1
S7	1	1	1
S8	1	1	1
S9	1	1	1
S10	1	1	1
S11	1	1	1
S12	1	1	1
S13	1	1	1
S14	1	1	1
S15	1	1	1
S16	1	1	1

Switch	Flt.	Norm.	Boas.	Foreign.
S17	1	1	1	1
S18	1	1	1	1
S19	1	1	1	1
S20	1	1	1	1