

CONDENSERS		Values (μ F)
C1	Part of MW aerial coupling	0.000006
C2	V1 heptode CG decoupling	0.1
C3	1st IF transformer fixed	0.0001
C4	tuning condensers	0.0001
C5	V1 cathode by-pass	0.1
C6	Gram PU shunt	0.005
C7	V1 osc. CG condenser	0.00015
C8	Osc. circuit MW fixed trimmer	0.00002
C9	Osc. circuit LW fixed trimmer	0.00026
C10	Osc. circuit SW1 tracker	0.005
C11	Osc. circuit SW2 tracker	0.0013
C12	Osc. circuit MW and LW tracker	0.000657
C13	V1 osc. anode coupling	0.005
C14	V1, V2 SG's decoupling	0.1
C15	2nd IF transformer fixed	0.0001
C16	tuning condensers	0.0001
C17	V2 cathode by-pass	0.1
C18	IF by-pass condensers	0.00015
C19	IF by-pass condensers	0.00015
C20	Part of tone compensator	0.005
C21	AF coupling to V3 pentode	0.005
C22	Coupling to V3 AVC diode	0.00002
C23*	V3 cathode by-pass	20.0
C24	Part of tone control	0.05
C25*	HT smoothing condensers	8.0
C26*	HT smoothing condensers	8.0
C27	Mains aerial coupling	0.001
C28†	Aerial circuit SW1 trimmer	0.00003
C29†	Aerial circuit MW trimmer	0.00003
C30†	Aerial circuit tuning	0.000554
C31†	Osc. circuit MW trimmer	0.00003
C32†	Osc. circuit LW trimmer	0.00003
C33†	Osc. circuit SW1 trimmer	—
C34†	Oscillator circuit tuning	0.000554

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial SW1 coupling coil	0-3
L2	Aerial SW2 coupling coil	0-8
L3	Aerial MW and LW coupling	65-0
L4	Aerial SW1 tuning coil	Very low
L5	Aerial SW2 tuning coil	0-3
L6	Aerial MW tuning coil	3-6
L7	Aerial LW tuning coil	13-3
L8	Oscillator SW1 reaction	34-0
L9	Oscillator MW reaction	6-6
L10	Oscillator LW reaction	10-0
L11	Osc. circuit SW1 tuning coil	12-0
L12	Osc. circuit SW2 tuning coil	Very low
L13	Osc. circuit MW tuning coil	1-0
L14	Osc. circuit LW tuning coil	2-0
L15	Osc. circuit LW tuning coil	3-0
L16	1st IF trans. {Pri. ...	6-5
L17	1st IF trans. {Sec. ...	6-5
L18	2nd IF trans. {Pri. ...	9-0
L19	2nd IF trans. {Sec. ...	9-0
L20	Speaker speech coil	1-8
L21	Hum neutralising coil	0-15
L22	Speaker field coil	2,000-0
T1	Output trans. {Pri. ...	270-0
	Output trans. {Sec. ...	0-15
	Output trans. {Pri., total ...	24-0
	Output trans. {Heater sec., total ...	0-15
	Output trans. {Rect. heat. sec. ...	0-1
	Output trans. {HT sec., total ...	700-0
S1-S11	Waveband switches	—
S13-S24	Gram pick-up switches	—
S12, S25	Tone control switches	—
S26, S27	Mains switch, ganged R9	—
S28	Mains switch, ganged R9	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES		Values (ohms)
R1	V1 heptode fixed GB resistance	150
R2	V1 osc. CG resistance	18,000
R3	Osc. SW1 reaction stabiliser	47
R4	V1 osc. anode HT feed	18,000
R5	V1, V2 SG's HT feed	47,000
R6	V2 fixed GB resistance	330
R7	IF stopper	47,000
R8	Part of tone compensator	47,000
R9	Manual volume control	1,000,000*
R10	V3 pentode CG stopper	100,000
R11	V3 signal diode load	470,000
R12	V3 pent. GB and AVC delay potential divider	150
R13	V3 pent. GB and AVC delay potential divider	330
R14	AVC line decoupling	1,000,000
R15	V3 AVC diode load	1,000,000
R16	Parts of tone control filter	3,300
R17	Parts of tone control filter	10,000

* Centre-tapped.

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 233 V, using the 216-235 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium wave 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 ECH3	274	2.5	84	2.8
V2 EF9	135	5.6	84	1.4
V3 EBL1	274	4.5	274	4.8
V4 AZ1	262	37.0	—	—
	330†	—	—	—

† Each anode, AC.

CIRCUIT ALIGNMENT

IF Stages.—Only the first IF transformer will need adjustment, the second being fixed-tuned at the works. Connect signal generator, via a 0.1 μ F condenser, to control grid (top cap) of V1 and chassis. Connect a 100,000 Ω resistor between control grid and chassis. Switch set to LW, and turn gang to maximum.

Feed in a 465 KC/S signal, and adjust cores of L16, L17 for maximum output. Remove the condenser and resistor.

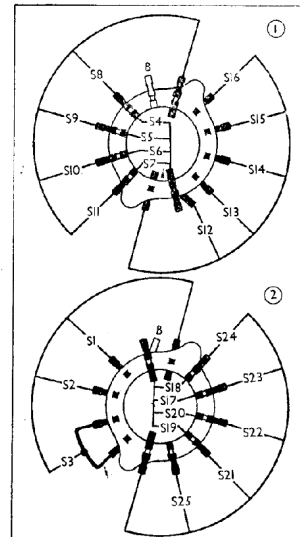
RF and Oscillator Stages.—With gang at maximum, pointer should cover the right-hand ends of the clear sections of the scales. Connect signal generator, via a suitable dummy aerial, to A and E sockets.

MW.—Switch set to MW, tune to 200 m on scale, feed in a 200 m (1,500 KC/S) signal, and adjust C31, then C29, for maximum output. Check at 550 m.

LW.—Switch set to LW, tune to 1,200 m on scale, feed in a 1,200 m (250 KC/S) signal, and adjust C32 for maximum output. Check at 2,000 m.

SW2.—There are no adjustments on this band.

SW1.—Switch set to SW1, feed in a 14 m (21.4 MC/S) signal, and tune it in accurately. Adjust C33, then C28, for maximum output. Check at 50 m.



Diagrams of the two switch units, as seen from the rear of the underside of the chassis.

Switch Table					
Switch	Gram	SW1	SW2	MW	LW
S1	o	o	o	o	o
S2	o	o	o	o	o
S3	o	o	o	o	o
S4	o	o	o	o	o
S5	o	o	o	o	o
S6	o	o	o	o	o
S7	o	o	o	o	o
S8	o	o	o	o	o
S9	o	o	o	o	o
S10	o	o	o	o	o
S11	o	o	o	o	o
S12	o	o	o	o	o
S13	o	o	o	o	o
S14	o	o	o	o	o
S15	o	o	o	o	o
S16	o	o	o	o	o
S17	o	o	o	o	o
S18	o	o	o	o	o
S19	o	o	o	o	o
S20	o	o	o	o	o
S21	o	o	o	o	o
S22	o	o	o	o	o
S23	o	o	o	o	o
S24	o	o	o	o	o
S25	o	o	o	o	o