

CONDENSERS		Values (μF)
C1	V1 hexode CG decoupling	0.1
C2	HT circuit RF by-pass	0.1
C3	V1, V3 filaments RF by-pass	0.1
C4	V1 osc. anode coupling	0.00025
C5	V1 SG decoupling	0.1
C6	V2 CG decoupling	0.02
C7	IF by-pass condensers	0.0001
C8		0.0001
C9	AF coupling to V3 triode	0.001
C10	IF by-pass	0.0001
C11	V3 triode to V4 AF coupling	0.001
C12*	Heater circuit by-pass	40.0
C13	Fixed tone corrector	0.001
C14*	HT smoothing condensers	16.0
C15*		32.0
C16	Mains RF by-pass	0.01
C17†	Frame aerial LW trimmer	0.000016
C18†	Frame aerial MW trimmer	0.000046
C19†	Frame aerial tuning	—
C20†	Oscillator circuit tuning	—
C21†	Osc. circuit MW trimmer	0.00014
C22†	Osc. circuit LW trimmer	0.000046
C23†	Osc. circuit MW tracker	0.00029
C24†	Osc. circuit LW tracker	0.000132
C25†	1st IF trans. pri. tuning	—
C26†	1st IF trans. sec. tuning	—
C27†	2nd IF trans. pri. tuning	—
C28†	2nd IF trans. sec. tuning	—

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

RESISTANCES		Values (ohms)
R1	V1 osc. CG resistance	250,000
R2	V1 osc. anode HT feed	25,000
R3	V1 SG HT feed	50,000
R4	2nd IF trans. pri. shunt	500,000
R5	V3 diode load resistance	500,000
R6†	IF stopper	250,000
R7	V2 AVC feed potential divider resistances	4,000,000
R8		4,000,000
R9	V1 AVC feed potential divider resistances	4,000,000
R10		4,000,000
R11	Manual volume control	2,000,000
R12	V3 triode anode load	1,000,000
R13	V4 CG resistance	1,000,000
R14	V1-V4 heater circuit ballast	2,200
R15	HT smoothing resistance	5,000
R16	Line cord; V5 heater circuit ballast	870†

† Tapped at 580 ohms from V5 heater end.

OTHER COMPONENTS		Approx. Values (ohms)
L1	External aerial coupling windings	0.1
L2		0.7
L3	Frame aerial windings	1.0
L4		16.0
L5	Osc. circuit MW tuning coil	2.0
L6	Osc. circuit LW tuning coil	5.0
L7	Oscillator reaction coil	0.8
L8	1st IF trans.	{ Pri. ... 17.0
L9		{ Sec. ... 17.0
L10	2nd IF trans.	{ Pri. ... 17.0
L11		{ Sec. ... 17.0
L12	Speaker speech coil	2.5
Relay	Speaker input trans.	{ Pri. ... 500.0
		{ Sec. ... 0.3
S1-S4	Magnet winding	1,000.0
S5-S7	Waveband switches	—
S8	Mains/battery change-over switches (Relay operated)	—
		—
S9	Battery on/off switch	ganged
		mains on/off switch

### VALVE ANALYSIS

Valve voltages and currents given in the tables below are those measured in our receiver when it was operating with (a) a new HT battery reading 90 V on load (see battery table); and (b) AC mains of 232 V (see mains table). 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, as the frame aerial plug was withdrawn and short-circuited.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

#### Battery Table

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 DK1	{ 90 Oscillator	{ 0.3 —	81	0.3
V2 DF1	90	1.2	90	0.3
V3 DAC1	15	0.03	—	—
V4 DL1	88	2.1	90	0.5

#### Mains Table

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 DK1	{ 105 Oscillator	{ 0.75 —	93	0.4
V2 DF1	77	0.7	—	—
V3 DAC1	105	1.9	105	0.5
V4 DL1	17	0.04	—	—
V5 1D5	103	3.7	105	0.7
	{ 145* 154†	—	—	—

\* Cathode to chassis, DC. † Anode to chassis, AC

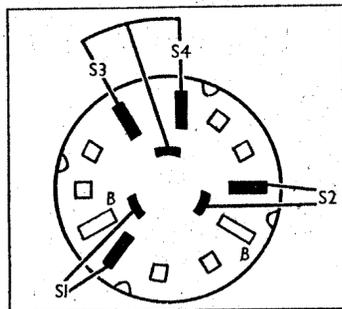
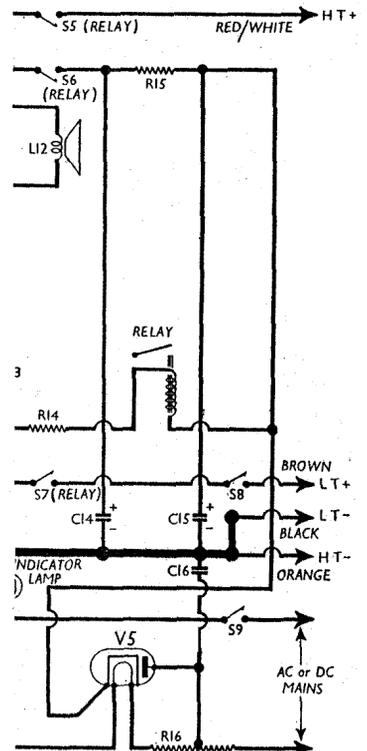


Diagram of the waveband switch unit as seen from the rear of the underside of the chassis.



### CIRCUIT ALIGNMENT

**IF Stages.**—Connect the signal generator leads via a 0.1 μF condenser to control grid (top cap) of V1 and chassis, and short-circuit the C20 section of the gang. Feed in a 470 KC/S (638.5 m) signal, and adjust C28, C27, C26 and C25 in that order for maximum output. Repeat these adjustments, and remove short-circuit from C20.

**RF and Oscillator Stages.**—With the gang at maximum, the pointer should be horizontal. For the rest of the alignment, the chassis should be in the cabinet, the back cover should be in position, and the batteries should be in their compartment connected ready for use. By inverting the receiver, the trimmers and trackers can now be reached through a slot in the floor of the carrying case.

Connect the signal generator to a length of wire, and couple this to the receiver by winding it once or twice round the carrying case.

**MW.**—Switch set to MW, tune to 214 m on scale, feed in a 214 m (1,400 KC/S) signal, and adjust C21, then C18, 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. Repeat the 214 m adjustments.

**LW.**—Switch set to LW, tune to 1,250 m on scale, feed in a 1,250 m (240 KC/S) signal, and adjust C22, then C17, for maximum output. Feed in a 2,000 m (150 KC/S) signal, tune it in, and adjust C24 for maximum output, while rocking the gang for optimum results. Repeat the 1,250 m adjustments.