

**COMPONENTS AND VALUES**

CONDENSERS		Values (μF)
C1	Aerial MW top coupling ..	0.000005
C2	Aerial LW top coupling ..	0.00001
C3	Band pass bottom coupling ..	0.025
C4	Small coupling ..	Very low
C5	V1 SG decoupling ..	0.1
C6	V1 cathode by-pass ..	0.5
C7	1st IF trans. pri. fixed trimmer ..	0.00015
C8	1st IF trans. sec. fixed trimmer ..	0.00015
C9	V1 osc. SW CG condenser ..	0.0001
C10	V1 osc. MW and LW coupling ..	0.001
C11	AVC line decoupling ..	0.004
C12	Osc. circuit SW tracker ..	0.00006
C13	Osc. circuit LW fixed trimmer ..	0.0001
C14	V1 osc. anode coupling ..	0.05
C15	V2 CG decoupling ..	0.1
C16	V2 SG decoupling ..	0.1
C17	V2 cathode by-pass ..	0.00015
C18	2nd IF trans. pri. fixed trimmer ..	0.00015
C19	2nd IF trans. sec. fixed trimmer ..	0.0002
C20	Coupling to V3 AVC diode ..	0.01
C21	AF coupling to V3 pentode ..	0.0002
C22	IF by-pass ..	50.0
C23*	V3 cathode by-pass ..	8.0
C24	Fixed tone corrector ..	16.0
C25*	H.T. smoothing ..	—
C26*	Band-pass pri. MW trimmer ..	—
C27†	Band-pass pri. LW trimmer ..	—
C28†	Band-pass pri. tuning ..	—
C29†	Aerial circuit S.W. trimmer ..	—
C30†	Band-pass sec. MW trimmer ..	—
C31†	Band-pass sec. LW trimmer ..	—
C32†	Band-pass sec. and SW aerial tuning ..	—
C33†	Osc. circuit SW trimmer ..	—
C34†	Osc. circuit MW trimmer ..	—
C35†	Osc. circuit LW trimmer ..	—
C36†	Osc. circuit M.W. tracker ..	—
C37†	Osc. circuit L.W. tracker ..	—
C38†	Oscillator circuit tuning ..	—
C39†	—	—

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

RESISTANCES		Values (ohms)
R1	V1 hexode CG decoupling ..	25,000
R2	V1 SG HT feed ..	20,000*
R3	V1 SG anti-parasitic resistance ..	60
R4	V1 fixed GB resistance ..	165†
R5	V1 osc. CG resistance ..	25,000
R6	V1 osc. reaction stabiliser ..	60
R7	V1 osc. anode H.T. feed ..	40,000
R8	V2 C.G. decoupling ..	1,000,000
R9	V2 SG HT feed ..	3,000
R10	V2 fixed GB resistance ..	30
R11	IF stopper ..	10,000
R12	Manual volume control ..	1,000,000
R13	V3 pent. CG RF stopper ..	1,000
R14	V3 signal diode load ..	500,000
R15	V3 pent. GB and AVC delay ..	138
R16	voltage resistances ..	138
R17	V3 pent. anode RF stopper ..	60
R18	V3 AVC diode load resistances ..	250,000
R19	—	750,000
R20	AVC line decoupling ..	1,000,000

\*May be 30,000 Ω. †May be 480 Ω.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial MW coupling coil ..	15.0
L2	Aerial LW coupling coil ..	70.0
L3	Band-pass primary coils ..	1.5
L4	—	19.0
L5	Aerial SW coupling coil ..	0.25
L6	Aerial SW tuning coil ..	0.05
L7	Band-pass secondary coils ..	1.6
L8	—	18.0
L9	Oscillator grid SW reaction ..	7.0
L10	Oscillator grid MW reaction ..	1.0
L11	Oscillator grid LW reaction ..	1.2
L12	Osc. circuit SW tuning coil ..	0.05
L13	Osc. circuit MW tuning coil ..	5.5
L14	Osc. circuit LW tuning coil ..	9.5
L15	1st IF trans. Pri. ..	4.0
L16	— Sec. ..	4.0

The radiograms are similar, except that the pick-up is fed into V2, which is made to operate as an AF amplifier on gram. This is fully explained in General Notes.

**VALVE ANALYSIS**

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 AC/TH1	248	2.9	89	7.7
V2 AC/VP2	68	3.8	—	—
V3 AC/2Pen/DD	248	16.0	230	5.3
V4 UU4	230	30.0	248	6.5
	350†	—	—	—

† 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 227 V, using the 220-240 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-S19 are the waveband, and S20-S22 the radio to gram. switches, ganged in four rotary units beneath the chassis. The units are indicated in our under-chassis view, and are shown in detail in the diagrams in column 3 where they are drawn as seen looking from the rear of the chassis in the case of the first unit, and from the front of the chassis in the case of the other three units.

The table below gives the switch positions for the four control settings, starting from fully anti-clockwise. A dash indicates open and C closed.

Switch	Gram	LW	MW	SW
S1	—	—	—	C
S2	—	—	—	—
S3	—	C	C	—
S4	—	—	—	C
S5	—	—	C	C
S6	—	—	C	—
S7	—	C	C	C
S8	—	—	—	C
S9	—	—	C	C
S10	—	—	C	—
S11	—	—	—	C
S12	C	C	—	—
S13	—	—	—	—
S14	—	—	C	—
S15	—	—	—	C
S16	—	C	—	—
S17	—	—	—	C
S18	—	—	C	—
S19	—	C	C	—
S20	—	C	C	C
S21	C	—	—	—
S22	—	C	C	C

S23 is the QMB mains switch, ganged with the volume control R12.

**Coils.**—All the coils, with the exception of the first IF transformer, are beneath the chassis, and are in small screened and unscreened units inside three box-like assemblies which carry the trimmers and the switch units, and also contain many of the other components.

The second IF transformer, L17, L18, is beneath the chassis, behind the front member, and the inductance trimmers

(iron cores) can be reached for adjustment through holes in the front of the chassis.

The first IF transformer, L15, L16, is on the chassis deck, and its inductance trimmers are reached through holes in the side of the can.

**Scale Lamps.**—These are two Osram MES types, rated at 4.5 V, 0.3 A.

**CIRCUIT ALIGNMENT**

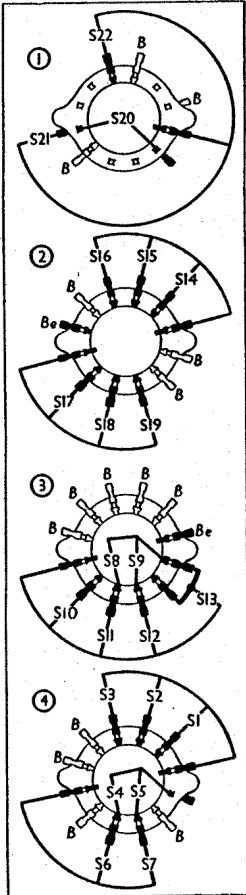
**IF Stages.**—Connect signal generator to control grid (top cap) of V1, and chassis, feed in a 456 KC/S signal, and adjust iron cores of L18, L17, L16 and L15, in this order, for maximum output.

In early models, where the IF rejector is used, feed the 456 KC/S signal into A and E sockets, and adjust core of the filter coil for minimum output.

**RF and Oscillator Stages.**—Connect signal generator to A and E sockets. Switch set to MW, tune to 200 m on scale, feed in a 200 m signal and adjust C35, then C31 and C27, for maximum output. Feed in a 500 m signal, tune it in, and adjust C37 for maximum output, rocking the gang for optimum results. Repeat.

Switch set to LW, tune to 1,500 m on scale, feed in a 1,500 m signal and adjust C36, then C32 and C28, for maximum output. Feed in a 1,700 m signal, tune it in, and adjust C38 for maximum output, while rocking the gang. Repeat these LW adjustments.

Switch to SW, tune to 17 m on scale, feed in a 17 m signal, and adjust C34, then C30, for maximum output. Check at 30 m and 51 m.



Switch diagrams, looking from the underside of the chassis in the directions of the arrows in the under-chassis view.