

## COMPONENTS AND VALUES

R2 and C20 are ganged. S5 is a jack switch.

RESISTANCES		Values (ohms)
R1	V1 CG resistance	5,000,000
R2	V1 gain control, ganged C20	100,000
R3	V1 SG HT feed	60,000
R4	V1 anode HT feed	10,000
R5	V2 SG HT feed	1,000,000
R6	V2 CG resistance	5,000,000
R7	V2 anode decoupling	100,000
R8	V2 anode load	100,000
R9	V3 CG resistance	500,000
R10	V3 CG RF stopper	100,000
R11	V3 anode load	250,000
R12	V4 CG RF stopper	250,000
R13	V4 CG resistance	500,000
R14	V3, V4 auto GB potential	400
R15	divider resistances	150

## VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 210SPT	92	1.9	47	0.5
V2 220LPT	18	0.5	12	0.1
V3 210HL	42	0.2	—	—
V4 220OT	110	3.6	116	0.8

our receiver when it was operating with an HT battery reading 120 V, on load. The receiver was tuned to the lowest wavelength on the medium band and the combined volume and reaction control was advanced to a point just short of oscillation but there was no signal input as the frame connections were shorted.

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

## GENERAL NOTES

**Switches.**—S1, S2 are the waveband switches, and S3, S4 the battery circuit switches, ganged in a single unit beneath the control panel and shown in detail in the diagram in col. 3.

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

SWITCH	Off	MW	LW
S1	—	C	—
S2	—	C	—
S3	—	C	C
S4	—	C	C

S5 is the internal speaker jack switch associated with one of the external speaker sockets.

**Coils.**—L1 and L2 are the frame aerial windings on a separate wooden framework inside the cabinet. The connections are brought out to a terminal panel in the framework and the connecting leads to the chassis are colour-coded, the

colours being given in our circuit diagram.

L3-L5 are in a single screened unit on the chassis deck, this also containing C5.

**Components R2, C20.**—The gain and reaction controls are combined in a single unit, so arranged that only after the gain has reached its maximum is reaction increased.

**Component C1.**—The external aerial coupling condenser C1 is mounted in the frame aerial assembly and is thus not shown in our chassis pictures.

**External Speaker or Phones.**—Two sockets are provided at the back of the set for a high impedance (20,000 Ω) extension speaker or a pair of phones. When the plug is fully pushed home the internal speaker is cut out by the jack switch S5.

**Fuse F1.**—This is an Osram MES lamp bulb rated at 3.5 V, 0.15 A, and screws into a holder on the chassis deck.

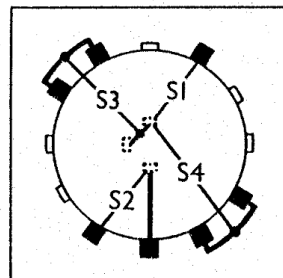
**Batteries.**—LT, Sterling 5005 2V 20 AH celluloid-cased free-acid cell. HT, Sterling 2005 120 V battery. GB is automatic.

**Battery Leads and Voltages.**—Blue lead, spade tag, LT negative; red lead, spade tag, LT positive 2 V; blue lead, black plug, HT negative; red lead, black plug, HT positive 120 V.

## CIRCUIT ALIGNMENT

The only adjustments provided are for trimming at the bottom of the MW band. These adjustments should be carried out with a non-metallic screwdriver long enough to reach from outside the cabinet

Switch diagram, looking from the knob end of the control spindle.



in order to prevent hand capacity effects.

The batteries should be in position, as their presence affects calibration.

Tune the receiver to a reasonably strong signal at the bottom of the MW band and adjust C19, and then C22, for maximum output. Check that the scale pointer indicates the correct wavelength.

CONDENSERS		Values (μF)
C1	External aerial coupling	0.00001
C2	V1 CG condenser	0.001
C3	V1 SG RF by-pass	0.1
C4	V1 anode decoupling	0.1
C5	V1 anode LW trimmer	0.00001
C6	V2 CG condenser	0.000025
C7	V2 SG decoupling	0.1
C8	V2 anode decoupling	0.1
C9	V2 anode RF by-pass	0.0002
C10	V2 to V3 AF coupling	0.003
C11	V3 CG RF by-pass	0.0001
C12	V3 anode RF by-pass	0.0001
C13	V3 to V4 AF coupling	0.001
C14*	HT circuit reservoir	2.0
C15	V4 CG RF by-pass	0.0001
C16	Fixed tone corrector	0.003
C17*	Auto GB by-pass	20.0
C18†	Frame aerial circuit tuning	—
C19†	Frame aerial MW trimmer	—
C20†	Reaction control, ganged R2	—
C21†	V1 anode circuit tuning	—
C22†	V1 anode MW trimmer	—

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

OTHER COMPONENTS		Approx. Values (ohms)
L1	Frame aerial windings	1.5
L2	Reaction coil	8.5
L3	V1 anode circuit tuning coils	10.8
L4	Speaker speech coil	7.5
L5	Speaker input trans.	28.2
L6	Speaker input trans.	2.0
T1	Speaker input trans.	575.0
S1, S2	Waveband switches	0.2
S3	HT circuit switch	—
S4	LT circuit switch	—
S5	Internal speaker switch	—
F1	HT circuit fuse	—