

COMPONENTS AND VALUES

RESISTANCES	Values (ohms)
R1	A2 aerial feed potentiometer
R2	V1 pent. C.G. decoupling (M.W. and L.W.)
R3	V1 pent. C.G. decoupling (S.W.)
R4	V1 osc. C.G. resistance
R5	V1 osc. anode M.W. and L.W.
R6	H.T. feed
R7	V2 C.G. decoupling
R8	V2 S.G. H.T. feed
R9	V3 signal diode load
R10	I.F. stopper
R11	Manual volume control
R12	V3 triode anode load
R13	V3 A.V.C. diode load resistances
R14	A.V.C. line decoupling
R15	V4 C.G. resistance
R16	G.B. battery discharge resistance
R17	4

CONDENSERS	Values (μF)
C1	Aerial S.W. coupling condenser
C2	V1 pent. C.G. decoupling (M.W. and L.W.)
C3	Aerial circuit S.W. tracker
C4	V1 osc. C.G. condenser
C5	V1 osc. anode M.W. and L.W. R.F. by-pass
C6	V1 S.G. decoupling
C7	V2 C.G. decoupling
C8	V2 S.G. decoupling
C9	I.F. by-pass condensers
C10	A.F. coupling to V3 triode
C11	Coupling to V3 A.V.C. diode
C12	V3 triode to V4 A.F. coupling
C13	Fixed tone corrector
C14	H.T. reservoir condenser
C15	Band-pass pri. M.W. trimmer
C16	Band-pass pri. L.W. trimmer
C17	Band-pass pri. tuning
C18	Aerial circuit S.W. trimmer
C19	Band-pass sec. M.W. trimmer
C20	Band-pass sec. L.W. trimmer
C21	Band-pass sec. and S.W. aerial tuning
C22	Oscillator circuit tuning
C23	Osc. circuit S.W. trimmer
C24	Osc. circuit M.W. trimmer
C25	Osc. circuit L.W. trimmer
C26	Osc. circuit M.W. tracker
C27	Osc. circuit L.W. tracker
C28	1st I.F. trans. pri. tuning
C29	1st I.F. trans. sec. tuning
C30	2nd I.F. trans. pri. tuning
C31	2nd I.F. trans. sec. tuning
C32	—

† Variable. ‡ Pre-set.

OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial M.W. and L.W. coupling
L2	Band-pass primary coils
L3	Aerial S.W. tuning coil
L4	Band-pass secondary coils
L5	Osc. circuit S.W. tuning coil
L6	Oscillator S.W. reaction
L7	Osc. circuit M.W. tuning coil
L8	Osc. circuit M.W. reaction
L9	Osc. circuit L.W. tuning coil
L10	Oscillator L.W. reaction
L11	1st I.F. trans. { Pri. ...
L12	{ Sec. ...
L13	2nd I.F. trans. { Pri. ...
L14	{ Sec. ...

Feed in a 7.5 MC/S (40 m.) signal, tune it in, and adjust end turn of L4 to give maximum output. Return to 15 MC/S, and re-adjust C24 and C19 carefully.

OTHER COMPONENTS (Continued)	Approx. Values (ohms)
L15	2nd I.F. trans. { Pri. ...
L16	{ Sec. ...
L17	Speaker speech coil
T1	Speaker input trans. { Pri. ...
S1	{ Sec. ...
S11	Waveband switches
S12	L.T. circuit switch
S13	G.B. circuit switch

VALVE ANALYSIS

Valve voltages and currents given in the table (col. 3) are those measured in our receiver when it was operating with a new H.T. battery reading 139 V overall, on load. 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.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 K80B	134	0.6	48	2.1
V2 K50N	50	1.4	35	0.5
V3 K23B	134	1.6	—	—
V4 K70B	85	0.8	134	1.0

GENERAL NOTES

Switches.—S1-S11 are the waveband switches, and S12, S13 the battery circuit switches, ganged in two rotary units beneath the chassis. These are indicated in our under-chassis view, and shown in detail in the diagrams on page IV, where they are as seen looking from the rear of the underside of the chassis.

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

Coils.—L1-L6 are in a tubular un-screened unit beneath the chassis, while L7-L12 are in a screened unit on the chassis deck.

The I.F. transformers L13, L14 and L15, L16 are in two further screened units on the chassis deck, with their associated trimmers.

External Speaker.—Two sockets are provided at the rear of the chassis for a high impedance (16,000 Ω) external speaker.

Trimmers and Trackers.—With the exception of those of the I.F. transformers, all the trimmers and trackers are adjustable through holes in the chassis deck. There are ten of these in all.

S.W.—Tune to 15 MC/S (20 m.) on scale and feed in a 15 MC/S signal. Screw C24 fully in, then carefully unscrew until the first peak is reached (with C24 at the higher capacity). Then adjust C19 for maximum output.

CIRCUIT ALIGNMENT

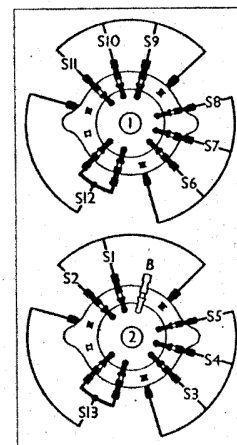
I.F. Stages.—Short circuit C23, then connect signal generator to control grid (top cap) of V1 and chassis and feed in a 455 KC/S signal. Adjust C32, C31, C30 and C29 in that order for maximum output. Re-check these settings, then remove short from C23.

R.F. and Oscillator Stages.—With gang at maximum, pointer should register with the horizontal line at the right-hand side of the scale. Connect signal generator to A1 and E sockets.

M.W.—Set C27 about two-thirds in

SWITCH TABLE AND DIAGRAM

Switch	Off	S.W.	M.W.	L.W.
S1	—	—	C	C
S2	—	—	—	—
S3	—	C	—	—
S4	—	—	C	—
S5	—	—	—	C
S6	—	C	—	—
S7	—	—	C	—
S8	—	—	—	C
S9	—	C	—	—
S10	—	—	C	—
S11	—	—	—	C
S12	—	C	C	C
S13	—	—	C	C



Diagrams of the two switch units, as seen looking from the rear of the underside of the chassis. They include the battery switches (S12, S13).

and tune to 214 m. on scale. Feed in a 214 m. (1,400 KC/S) signal, and adjust C25, then C20 and C16, for maximum output.

Tune to 500 m. on scale, feed in a 500 m. (600 KC/S) signal, and adjust C27 for maximum output. Repeat adjustments on 214 m., then return to 500 m. and see that pointer is on 500 m. mark when receiving the signal; if it is not, re-adjust C27 slightly. Check calibration at 214 m., 300 m. and 500 m.

L.W.—Set C28 about one-third in, and tune to 1,200 m. on scale. Feed in a 1,200 m. (250 KC/S) signal and adjust C26, then C21 and C17, for maximum output.

Tune to 1,700 m. on scale, feed in a 1,700 m. (176 KC/S) signal, and adjust C28 for maximum output. Repeat adjustments at 1,200 m., then return to 1,700 m. and see that pointer is on 1,700 m. mark when receiving the signal; if it is not, re-adjust C28 slightly. Check calibration at 1,200 m. and 1,700 m.