

RESISTANCES		Values (ohms)
R1	V1 pentode CG resistance	470,000
R2	V1 osc. CG resistance	22,000
R3	Osc. SW reaction damping	27
R4	Osc. MW reaction damping	330
R5	V1 osc. anode SW HT feed	27
R6	V1 osc. anode MW HT feed	47,000
R7	V1, V2 SG's HT feed	39,000
R8	IF stopper	47,000
R9	AVC feed potential	2,200,000
R10	divider resistances	3,900,000
R11	V3 signal diode load	1,000,000
R12	Manual volume control	2,000,000
R13	V3 triode anode load	68,000
R14	V4 CG resistance	2,200,000
R15	V4 grid stopper	270,000
R16	Variable tone control	100,000
R17	Auto GB and AVC delay resistance	330

CONDENSERS		Values (μF)
C1	Aerial IF rejector tuning	0.0005
C2	Aerial SW fixed trimmer	0.00002
C3	V1 pentode CG condenser	0.0005
C4	1st IF transformer tuning	0.000092
C5	condensers	0.000092
C6	Osc. SW reaction coupling;	0.0002
C7	V1 osc. CG condenser	0.006
C8	Osc. circ. SW tracker	0.025
C9	AVC line decoupling	0.05
C10	V1 osc. anode MW de-	0.0007
C11	coupling	0.05
C12	Osc. circ. MW tracker	0.000092
C13	V1, V2 SG's, decoupling	0.000092
C14	2nd IF transformer tuning	0.0001
C15	condensers	0.0001
C16	IF by-pass condensers	0.002
C17	AF coupling to V3	0.003
C18	V3 triode to V4 coupling	0.01
C19	Part variable tone control	0.003
C20*	Fixed tone corrector	50.0
C21*	Auto GB by-pass	8.0
C22†	HT reservoir condenser	—
C23†	Aerial circ. MW trimmer	—
C24†	Aerial circuit tuning	—
C25†	Aerial circuit SW trimmer	—
C26†	Osc. circuit MW trimmer	—
C27†	Oscillator circuit tuning	—
C28†	Osc. circuit SW trimmer	—

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial IF rejector coil	3.3
L2	Aerial SW coupling	0.15
L3	Aerial MW coupling	0.8
L4	Aerial circ. SW tuning	Very low
L5	Aerial circ. MW tuning	2.0
L6	Oscillator SW reaction	Very low
L7	Oscillator MW reaction	1.4
L8	Osc. circ. SW tuning coil	Very low
L9	Osc. circ. MW tuning coil	0.8
L10	1st IF trans. Pri.	8.0
L11	Sec.	8.0
L12	2nd IF trans. Pri.	8.0
L13	Sec.	8.0
L14	Speaker speech coil	4.0
T1	Output trans. Pri.	0.4
	Sec.	700.0
S1-S10	Waveband switches	—
S11	External speaker switch	—
S12	Internal speaker switch	—
S13	HT circuit switch	—
S14	LT circuit switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with an HT battery reading 106 V on load.

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.

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

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 TP25	103	0.6	56	0.5
	30	1.2	—	—
V2 VP23	103	1.8	56	0.6
V3 HL23DD	46	0.7	—	—
V4 Pen 25	101	3.0	103	0.8

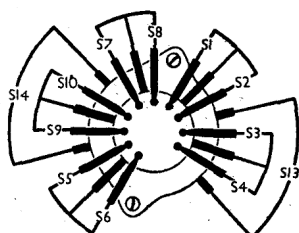


Diagram of the B89S switch unit.

Switch Table

Switch	Off	MW	SW
S1	○	—	○
S2	○	—	○
S3	○	—	○
S4	○	○	○
S5	—	○	○
S6	—	○	○
S7	○	—	○
S8	○	—	○
S9	○	—	○
S10	○	—	○
S13	—	○	○
S14	—	○	○

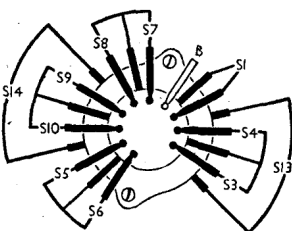
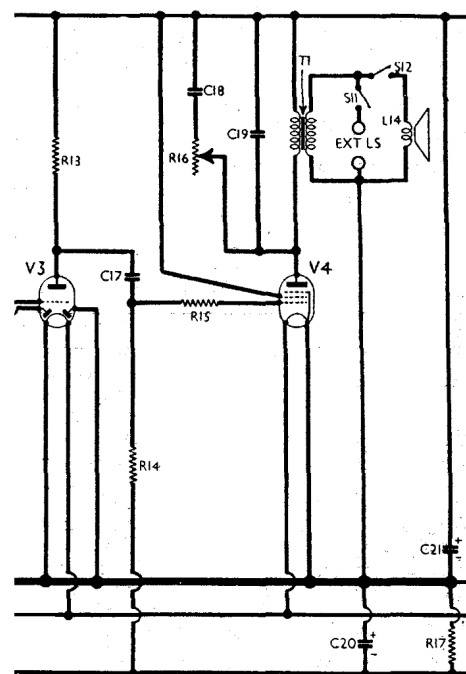


Diagram of the B89 switch unit.



B89 CIRCUIT ALIGNMENT

IF Stages.—The procedure here is exactly the same as for the B89S. The adjustment of the IF rejector circuit is also similar, except that in the B89 the receiver should first be switched to LW.

RF and Oscillator Stages.—Adjust calibration as for B89S, connect signal generator to A and E sockets via the usual dummy aerial, and turn the volume control to maximum.

MW.—Switch set to MW, tune to 220 m on scale, feed in a 220 m (1,360 KC/S) signal, and adjust C27, then C24, for maximum output. Tune to 500 m on scale, feed in a 500 m (600 KC/S) signal, and adjust the cores of L8 and L3 for maximum output. If the movement is large, repeat the MW alignment.

LW.—Switch set to LW, tune to 1,000 m on scale, feed in a 1,000 m (300 KC/S) signal, and adjust C25 for maximum output. Tune to 1,900 m on scale, feed in a 1,900 m (158 KC/S) signal, and adjust the cores of L9 and L4 for maximum output. If the movement is large, repeat the LW alignment.