

COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	Aerial circuit SW damping ..	23
R2	V1 hexode CG decoupling ..	1,500,000
R3	V1 fixed GB resistance ..	350
R4	1st IF trans. sec. shunt ..	1,000,000
R5	V1 osc. CG resistance ..	50,000
R6	Auto osc. circuit damping ..	5,000
R7	V1 osc. anode stabiliser ..	150
R8	Osc. circuit MW damping ..	2,300
R9	Osc. LW reaction damping ..	1,000
R10	V1 osc. anode decoupling ..	23,000
R11	V1 osc. anode HT feed ..	23,000
R12	V2 CG decoupling ..	1,500,000
R13	V1 and V2 SG's HT feed ..	35,000
R14	V2 fixed GB resistance ..	350
R15	V3 signal diode load resistances ..	100,000
R16	Manual volume control ..	2,000,000
R17	V3 triode GB and AVC delay ..	2,300
R18	V3 triode anode decoupling ..	50,000
R19	V3 triode anode load ..	150,000
R20	V3 AVC diode load ..	2,300,000
R21	Variable tone control ..	2,000,000
R22	V4 CG resistance ..	500,000
R23	V4 grid stopper ..	10,000
R24	V4 GB resistance ..	400
R25	Tr sec. artificial loading ..	50
R26	Hum neut. coil shunt ..	0.4

CONDENSERS		Values (μF)
C1	Part aerial SW coupling ..	0.000015
C2	Part LW image rejector ..	0.00035
C3	Aerial circuit SW trimmer ..	0.0000075
C4	V1 hexode CG decoupling ..	0.05
C5	1st IF transformer fixed trimmers ..	0.00005
C6	V1 osc. CG condenser ..	0.00005
C7	V1 cathode by-pass ..	0.1
C8	HT circuit RF by-pass ..	0.1
C9	Osc. auto circuit fixed tuning condenser ..	0.00015
C10	Osc. circuit SW tracker ..	0.005
C11	Osc. circuit MW tracker ..	0.00055
C12	Osc. circuit LW tracker ..	0.00023
C13	Osc. circuit LW fixed trimmer ..	0.000075
C14	V1 osc. anode decoupling ..	4.0
C15	V1 osc. anode coupling condensers ..	0.005
C16	V2 CG decoupling ..	0.005
C17	V2 and V2 SG's decoupling ..	0.05
C18	V2 cathode by-pass ..	0.1
C19	2nd IF transformer fixed trimmers ..	0.00013
C20	Radio muting on gram ..	0.05
C21	IF by-pass ..	0.0001
C22	AF coupling to V3 triode ..	0.00023
C23	Coupling to V3 AVC diode ..	0.000075
C24	V3 cathode by-pass ..	50.0
C25	V3 anode decoupling ..	4.0
C26	IF by-pass ..	0.001
C27	V3 triode to V4 AF coupling ..	0.1
C28	Part of variable tone control ..	0.001
C29	V5 cathode by-pass ..	10.0
C30	Fixed tone corrector ..	0.0035
C31	HT smoothing condensers ..	16.0
C32	Aerial circuit MW trimmer ..	8.0
C33	Aerial circuit LW trimmer ..	—
C34	Aerial circ. manual tuning ..	—
C35	Aerial circuit LW auto tuning trimmers ..	—
C36	Aerial circuit MW auto tuning trimmers ..	—
C37	Osc. circ. manual tuning ..	—
C38	Osc. circuit MW trimmer ..	—
C39	Osc. circuit LW trimmer ..	—
C40	1st IF trans. pri. tuning ..	—
C41	1st IF trans. sec. tuning ..	—
C42	2nd IF trans. pri. tuning ..	—
C43	2nd IF trans. sec. tuning ..	—

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial LW image rejector coils ..	18.0
L2	Aerial SW coupling coil ..	10.0
L3	Aerial LW coupling coil ..	5.5
L4	Aerial MW coupling coil ..	0.6
L5	Aerial LW tuning coil ..	4.0
L6	Aerial SW tuning coil ..	0.1
L7	Aerial MW tuning coil ..	2.0
L8	Aerial LW tuning coil ..	9.5
L9	Oscillator circuit LW auto tuning coils ..	10.5
L10	Oscillator circuit MW auto tuning coils ..	5.0
L11	Osc. circuit SW tuning coil ..	5.0
L12	Osc. manual MW coil, total ..	5.0
L13	Osc. manual LW coil, total ..	4.0
L14	Osc. circuit LW fixed trimmer ..	4.0
L15	Osc. circuit SW tuning coil ..	0.1
L16	Osc. manual MW coil, total ..	4.5
L17	Osc. manual LW coil, total ..	11.0
L18	Osc. circuit LW fixed trimmer ..	0.6
L19	1st IF trans. Pri. Sec. ..	6.0
L20	2nd IF trans. Pri. Sec. ..	6.0
L21	Speaker speech coil ..	3.0
L22	Hum neutralising coil ..	0.5
L23	Speaker field coil ..	1,600.0
L24	Output trans. Pri. Sec. ..	0.6
L25	Output trans. Pri. Sec. ..	30.0
L26	Mains Rect. heat. sec. ..	0.1
L27	HT sec., total ..	630.0
T1	Aerial circuit waveband switches (manual tuning) ..	—
T2	Aerial circuit auto tuning selector switches ..	—
T3	Oscillator circuit waveband switches (manual tuning) ..	—
T4	Osc. circuit auto tuning selector switches ..	—
T5	Speaker muting switch ..	—
T6	Mains switch ..	—

* Electrolytic. † Variable. ‡ Pre-set.
§ Two 0.000075 μF in parallel.

VALVE ANALYSIS

Valve voltages and currents given in the table (col. 3) are those measured in our receiver when it was operating on mains of 231 V, using the 224-255 V tapping

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 X65	260	1.7	88	3.9
V2 KTW63	110	5.2	88	1.5
V3 DH63	260	6.1	—	—
V4 KT63	248	40.0	260	6.2
V5 U50	337†	—	—	—

† Each anode, AC.

GENERAL NOTES

Switches.—All the switches are associated with the press-button unit. **S1a, b, x** to **S22a** are of the normal press-button type, those with **a, b**, or **c** suffixes closing when their button is pressed, and those with **x, y** or **z** suffixes opening when their button is pressed.

All these switches are indicated in the diagrams of each side of the press-button unit in cols. 5 and 6.

S23 is the speaker muting switch (shown in the lower of the two diagrams) which is normally open, but closes whilst any one of the press-buttons is being operated.

S24x is the QMB mains switch operated by the press-button numbered 1 ("Off"). It opens when the button is pressed, and switches the set off. Operation of any other button causes this switch to close, and switch the set on.

Coils.—**L1, L2; L3, L6; L4, L7** and **L5, L8** are in four pairs beneath the chassis, to the right of our under-chassis view. **L9-L16** are the eight permeability-tuned oscillator auto coils, in a row above the press-button unit. **L17, L20; L18**

and **L19**, which are the oscillator manual coils, are in the same row, at the right-hand end in the under-chassis view. **L9-L16** and **L18, L19** all have adjustable iron cores.

The IF transformers **L21, L22** and **L23, L24** are in two screened units on the chassis deck, with their associated trimmers, and certain other components.

Scale Lamps.—These are two Osram MES types, rated at 6.5 V, 0.3 A. They have tubular bulbs.

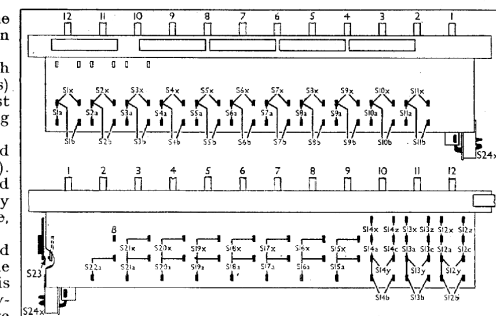
Press-Button Ranges

The wavelength ranges of the eight station buttons are given in the table below, the buttons being numbered in accordance with the moulded numbers on the escutcheon.

Button Nos.	Wavelength Ranges
2, 3	1,200—2,100 m
4, 5, 6	310—500 m
7, 8, 9	195—340 m

The setting of each button involves two tuning adjustments, one (above, and

slightly to the right) for the aerial circuit trimmer, and the other (directly below) for the oscillator coil core.



Diagrams of the press-button unit. The lower one is drawn as seen from beneath the chassis, while the upper one shows the switches on the reverse side of the unit.

CIRCUIT ALIGNMENT

IF Stages.—Press LW button, turn tone control fully anti-clockwise, and turn gang condenser and volume control to maximum. Short-circuit **C47**, and connect signal generator, via a 0.1 μF condenser, to control grid (top cap) of **V1** and chassis, leaving existing top cap connection in place.

Feed in a 405 KC/S signal, and adjust **C50, C51, C52** and **C53** in turn for maximum output. Check these settings.

RF and Oscillator Stages.—Turn gang to maximum and see that the pointer registers accurately on the small mark below the LW calibration line at the bottom right-hand corner of the scale. If adjustment is necessary, slacken the two grub screws securing the drive disc to the condenser spindle. Connect signal generator to **A** and **E** sockets via a suitable dummy aerial, set tone control fully anti-clockwise, and volume control to maximum.

SW.—Switch set to SW, feed in a 50 m (6MC/S) signal, tune to 50 m on scale and adjust loop of wire inside **L17** for maximum output. Feed in a 30 m (10 MC/S) signal, tune to 30 m on scale, and adjust loop of wire inside **L6** for maximum output. Repeat these adjustments.

MW.—Switch set to MW, and tune to 233 m on scale. Feed in a 225 m (1,333.3 KC/S) signal, and adjust **C48**, then **C49**, for maximum output. Tune to 530 m on scale, feed in a 530 m (560 KC/S) signal, and adjust the cores of **L18** and **L7** for maximum output. Unless these coils have been changed, little adjustment should be necessary. Repeat the MW adjustments.

LW.—Switch set to LW, tune to 850 m on scale, and feed in an 850 m (352.9 KC/S) signal. Adjust **C40**, then **C37**, for maximum output. Tune to 1,900 m on scale, feed in a 1,900 m (157.9 KC/S) signal, and adjust cores of **L19** and **L8** for maximum output if necessary. Repeat the LW adjustments.

Press-buttons.—Adjustments to the press-button trimmers should always be made after IF alignment and after any adjustments to the MW and LW aerial coils. Final press-button adjustments must be made on the aerial on which the set is to work.