



CONDENSERS		Values ( $\mu$ F)
C1	Ext. aerial series condenser	0-000015
C2	AVC line decoupling ...	0-1
C3	1st IF transformer fixed	0-00015
C4	trimmer condensers	0-00015
C5	V1 osc. CG condenser ...	0-000075
C6	Osc. circuit MW tracker ...	0-0005
C7	Osc. circuit LW tracker ...	0-00035
C8	Osc. circ. LW fixed trimmer	0-00005
C9	V1 SG decoupling ...	0-05
C10	2nd IF transformer fixed	0-00015
C11	trimmer condensers	0-00015
C12	IF by-pass ...	0-0001
C13*	HT circuit reservoir	8-0
C14	AF coupling to V3 triode	0-05
C15	V3 triode to V4 AF coupling	0-05
C16*	Auto GB by-pass ...	15-0
C17	Fixed tone corrector ...	0-0035
C18†	Frame aerial LW trimmer	—
C19†	Frame aerial MW trimmer	—
C20†	Frame aerial tuning ...	—
C21†	Oscillator circuit tuning ...	—
C22†	Osc. circuit MW trimmer ...	—
C23†	Osc. circuit LW trimmer ...	—
C24†	1st IF trans. pri. tuning ...	—
C25†	1st IF trans. sec. tuning ...	—
C26†	2nd IF trans. pri. tuning ...	—
C27†	2nd IF trans. sec. tuning ...	—

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

RESISTANCES		Values (ohms)
R1	V1 osc. CG resistance ...	150,000
R2	V1 osc. anode HT feed ...	7,500
R3	V1 SG HT feed ...	50,000
R4	Parts LT circuit potential	1,000,000
R5	divider ...	5,000,000
R6	V3 diode load resistances	230,000
R7	IF stopper ...	230,000
R8	Manual volume control ...	50,000
R9	V3 triode anode load ...	2,000,000
R10	V4 CG resistance ...	1,000,000
R11	V4 auto GB resistance ...	2,300,000
R12		1,000

OTHER COMPONENTS		Approx. Values (ohms)
L1	Frame aerial winding ...	0-6
L2	Aerial LW loading coil ...	8-7
L3	Osc. circuit MW tuning coil	2-6
L4	Osc. circuit LW tuning coil	7-3
L5	MW reaction coil ...	2-2
L6	1st IF trans. { Pri. ...	4-0
L7	{ Sec. ...	4-0
L8	2nd IF trans. { Pri. ...	4-0
L9	{ Sec. ...	4-0
L10	Speaker speech coil ...	3-0
T1	Output trans. { Pri. ...	540-0
	{ Sec. ...	0-4
S1-S3	Waveband switches ...	—
S4	HT circuit switch ...	—
S5	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 a new battery, the HT section of which was reading 103 V on load. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but L1 was short-circuited.

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 X14	92	0-7	47	0-9
V2 Z14	72	1-3	—	—
V3 HD14	92	1-3	92	0-3
V4 N14	15	0-03	—	—
	89	4-6	92	1-1

### CIRCUIT ALIGNMENT

When aligning the set, having removed the chassis from the cabinet, and also the back of the cabinet on which is mounted the frame (leaving the leather hinges on the back), the frame, battery and chassis must be placed on the bench in their correct relative positions. The space between the frame and the battery must be  $\frac{1}{4}$  in., and the chassis must be arranged correctly relative to both. The frame leads must also be arranged as they would be in the cabinet.

**IF Stages.**—Connect signal generator via a 0.1 $\mu$ F condenser to control grid (top cap) of V2, and chassis. Leave existing connection in place. Turn gang to minimum and volume control to maximum. Feed in a 465 KC/S signal, and adjust C27, then C26, for maximum output. Transfer signal generator to control grid (top cap) of V1, and adjust C25, then C24, for maximum output. Repeat these adjustments.

**RF and Oscillator Stages.**—With gang at maximum, pointer should be under small mark on MW scale above 570m calibration. The signal generator should be connected with its earthy lead to receiver chassis, and the "hot" lead (not more than 6 in. long) left free.

**MW.**—Switch set to MW, tune to 200m on scale, feed in a 200m (1,500 KC/S) signal, and adjust C22 for maximum output. Feed in a 225m (1,333 KC/S) signal, tune it in, and adjust C19 for maximum output. Feed in a 520m (577 KC/S) signal, tune it in, and adjust core of L3 for maximum output, while rocking the gang for optimum results. Repeat the MW adjustments.

**LW.**—Switch set to LW, tune to 800m on scale, feed in an 800m (376 KC/S) signal, and adjust C23 for maximum output. Feed in a 1,350m (222.2 KC/S) signal, tune it in, and adjust C18 for maximum output, rocking the gang slightly for optimum results. Feed in a 1,900m (158 KC/S) signal, tune it in, and adjust cores of L4 and of L2 for maximum output, while rocking the gang for optimum results. Repeat the LW adjustments.