

# COSSOR - 57

## CIRCUIT ALIGNMENT

**IF Stages.**—Switch set to MW, connect signal generator leads to control grid (top cap) of V1 and chassis, feed in a 465 kc/s (645.16 m) signal, turn the volume control to maximum, and adjust the cores of L9, L11, L8 and L10 in that order for maximum output.

**MW.**—Transfer signal generator leads to A and E sockets, tune to 214 m on scale, feed in a 214 m (1,400 kc/s) signal, and adjust C31, then C27, for maximum output.

**SW.**—Switch set to SW, tune to 16 m on scale, feed in a 16 m (18.75 Mc/s) signal, and adjust C30, then C26, for maximum output.

Tracking is fixed, but a check should be made at several points on each band.

## VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 6K8G	140	1.5	80	3.0
V2 6K7G	76	2.5	110	1.5
V3 6Q7G	140	5.0	—	—
V4 25A6G	50	Very low	—	—
V5 25Z6G*	130	20.0	110	3.0

\* Cathode readings 210 V, 33.0 mA, DC.

## OTHER COMPONENTS

Component	Approx. Values (ohms)
L1	Aerial SW coupling coil ... 1.0
L2	Aerial SW tuning coil ... Very low
L3	Aerial MW (frame) coil ... 0.5
L4	Osc. SW tuning coil ... Very low
L5	Osc. MW tuning coil ... 6.0
L6	Osc. SW reaction coil ... 0.1
L7	Osc. MW reaction coil ... 1.5
L8	1st IF trans. { Pri. ... 19.0
L9	
L10	2nd IF trans. { Pri. ... 19.0
L11	
L12	Speaker speech coil ... 2.0
T1	Output trans. { Pri. ... 550.0
	Sec. ... Very low
S1-S8	Waveband switches ... —
S9, S10	Mains circuit switches ... —

## RESISTORS

Resistor	Value	Value (ohms)
R1	V1 hex. CG decoupling ...	500,000
R2	V1 SG HT feed ...	8,000
R3	V1 osc. CG resistor ...	50,000
R4	V1 osc. anode HT feed ...	10,000
R5	IF stopper ...	50,000
R6	Manual volume control; V3 signal diode load ...	500,000
R7	V3 triode CG resistor ...	2,000,000
R8	IF stopper ...	100,000
R9	V3 triode anode load ...	500,000
R10	AVC line decoupling ...	2,000,000
R11	V3 AVC diode load ...	1,000,000
R12	V4 CG resistor ...	500,000
R13	V4 grid stopper ...	100,000
R14	V3 triode and V4 GB; V1 V2 fixed GB; and AVC delay pot. divider ...	75
R15		40
R16		500
R17	HT smoothing resistors ...	2,000
R18		3,000
R19	Scale lamp shunt ...	50
R20	Heater ballast ...	83
R21	Line cord heater ballast ...	447

## CAPACITORS

Capacitor	Value	Value (μF)
C1	Earth isolator ...	0.05
C3	Aerial SW series ...	0.0005
C3	Aerial MW series ...	0.000005
C4	V1 hex. CG decoupling ...	0.05
C5	V1 SG decoupling ...	0.05
C6	1st IF transformer tuning capacitors ...	0.000065
C7		0.000075
C8	V1 osc. CG capacitor ...	0.00005
C9	Osc. circ. SW tracker ...	0.005177
C10	Osc. circ. LW tracker ...	0.000638
C11	V2 CG decoupling ...	0.05
C12	V2 SG decoupling ...	0.05
C13	2nd IF transformer tuning capacitors ...	0.00006
C14		0.000075
C15	AVC diode coupling ...	0.00001
C16	Osc. circ. SW tracker ...	0.00005
C17	IF by-pass capacitors ...	0.00005
C18	V3 triode CG capacitor ...	0.005
C19	AF coupling to V4 ...	0.005
C20	Fixed tone corrector ...	0.005
C21*	V4 CG decoupling ...	25.0
C22		8.0
C23	HT smoothing capacitors ...	16.0
C24		16.0
C25	Mains RF by-pass ...	0.01
C26†	Aerial circ. SW trimmer ...	—
C27†	Aerial circ. MW trimmer ...	—
C28†	Aerial circuit tuning ...	—
C29†	Oscillator circuit tuning ...	—
C30†	Osc. circ. SW trimmer ...	—
C31†	Osc. circ. MW trimmer ...	—

**Chassis Divergencies.**—A 15 μF (0.000015 μF) capacitor may be found connected between V1 hexode anode and chassis as additional capacitance across L8. In the makers' diagram the valve heater sequence, from HT negative to R20, was V1, V2, V3, V4, V5, so that V1 and V2 are transposed as compared with our sample.

Small differences in component values may be found in some chassis, but these are such as not to affect the performance seriously. In our sample R15 was 47 Ω, and C25 was 0.05 μF, but departures are due to supply difficulties, and we quote the original values in our tables.

**Line Cord Replacement.**—In view of possible difficulty in obtaining line cords, the makers have prepared a suitable wire-wound replacement unit, in a strong perforated metal shroud, which can easily be fitted externally to the back cover.

The unit has three coloured connecting leads, and the instructions are as follows:

Mount the unit vertically, taking care that the fixing screws do not foul the frame winding. Disconnect R21 (white fluffy lead) from R20, cut it back to mains lead and tape up.

Connect the orange (or yellow) lead from the replacement unit to R20, and the blue lead to the mains side of S10. The red lead is superfluous, and should be cut off and discarded.

The resistance of the replacement unit is a little higher than that of the original line cord, but this appears to have no adverse effect on the performance, and it is of some advantage when the set is working on mains voltages near the upper ends of the two adjustment positions.

## Intermediate frequency 465 kc/s.

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

