

COSSOR - 546

Transistor		Collector		
		Emitter V	V	mA
TR1	OC44	0.7 ¹	5.4 ²	0.77 ³
TR2 ⁴	OC45	0.17	5.65	0.78
TR3 ⁴	OC45	0.42	5.65	0.9
TR4 ⁴	OC71	1.0	8.8	2.4
TR5 } TR6 }	OC72s	*	*	2.0 ⁵
X1	OA70 or OA79			

* No reading quoted.

¹ 0.7 to 0.92V

² 5.4 to 5.5V } Varies with setting of tuning

³ 0.77 to 0.82mA } gang and wave band switch.

⁴ Readings for no signal input.

⁵ Quiescent condition (temperature 20 deg C) current for each transistor. Each current should not differ by more than 0.1mA.

Capacitors

C1	180pF	A1
C2	10pF	C1
C3	0.04μF	C2
C4	—	C1
C5	—	C1
C6	0.01μF	C2
C7	350pF	C1
C8	—	C1
C9	—	C1
C10	—	C1
C11	0.01μF	C2
C12	400pF	C1
C13	200pF	C1
C14	0.01μF	C1
C15	6.4pF	B1
C16	0.04μF	C1
C17	0.01μF	B1
C18	400pF	B1
C19	200pF	B1
C20	32μF	C2
C21	0.04μF	B1
C22	0.04μF	A2
C23	30pF	B1
C24	200pF	A1

Resistors

R1	100kΩ	C2
R2	22kΩ	C2
R3	1kΩ	C2
R4	470kΩ	C2
R5	82kΩ	C2
R6	220kΩ	L1
R7	10kΩ	.31
R8	220kΩ	B1
R9	27kΩ	B1
R10	3.3kΩ	B1
R11	2.2kΩ	B1
R12	470kΩ	A2
R13	4.7kΩ	B2
R14	5kΩ	A1
R15	27kΩ	A2
R16	6.8kΩ	B2
R17	1kΩ	A2

R18	390Ω	A2
R19	220Ω	A2
R20	220Ω	A2
R21	4.7kΩ	A2
R22	4.7kΩ	A2

Other Components

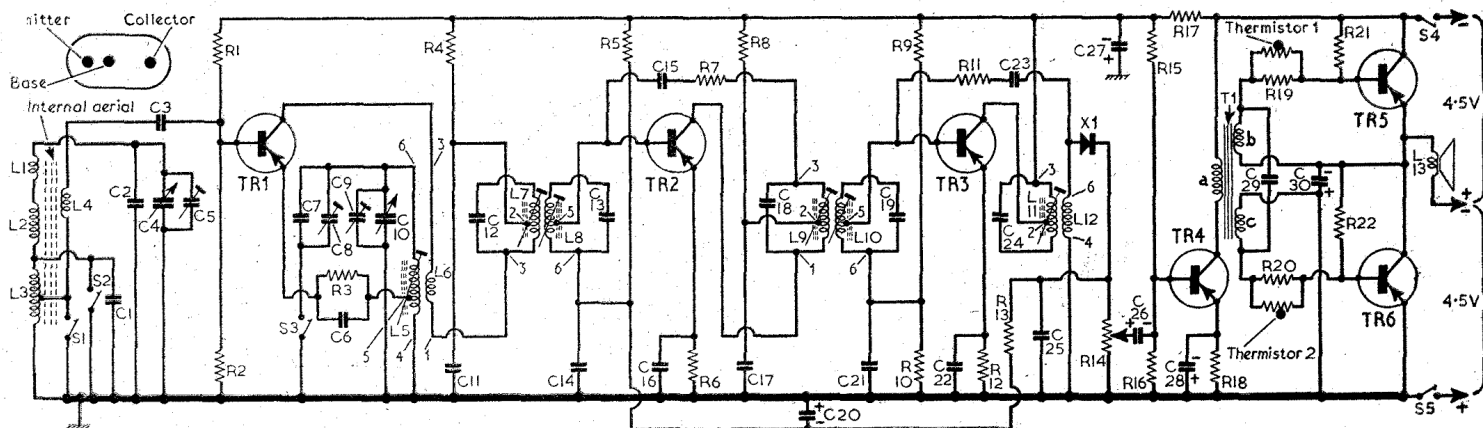
L1	0.5	C1
L2	0.25	B1
L3	11.0*	A1
L4	—	B1
L5	3.75	C2
L6	1.0	C2
L7	4.5*	C1
L8	0.25†	C1
L9	4.5*	B1
L10	0.25†	B1
L11	2.5†	A1
L12	0.75	A1
L13	27.0	—
TI	a 160.0	A2
	b 34.0	A2
	c 34.0	A2
X1	Mullard OA79	A1
S1-S5	—	A1

* Total. † Measured between tags 5 and 6 on printed circuit.

‡ Measured between tags 2 and 3 on printed circuit. § Approximate D.C. resistance in ohms.

Warning.—Continuity of inductances and transformers must NOT be checked whilst component is still in the circuit or damage to associated transistor may result.

Intermediate frequency 470 kc/s.



CIRCUIT ALIGNMENT

Set tuning capacitor to minimum capacitance and see that scale cursor position coincides with (MIN) calibration mark on scale.

Where TR2 or TR3 have been replaced there is no need to adjust neutralizing capacitors in addition to re-alignment. Reason for this is given under "Circuit Description." When making any adjustment to the I.F. or R.F. cores all cores should be set to the peak nearer to the adjustment end of coil former. After adjustment all cores and trimmers should be sealed with wax. The adjustments for L7 and L9 are made from the bottom and those for L8, L10 and for L11 are made from the top of the respective coil cans.

Connect an output meter of 30Ω impedance (set to 100mW range) in place of loudspeaker, or an A.C. voltmeter across the loudspeaker. Use of an output meter is essential as output levels must be limited to 50mW or 1.2V (dependent upon the meter used) to prevent the A.G.C. circuit from operating. If the A.G.C. becomes operative the correct adjustment peaks are very difficult to locate.

When making connections to the printed circuit it is advisable to solder direct to transformer or component tag rather than a transistor connection. If it is necessary to solder directly to a transistor lead a heat shunt must be used to avoid damage to transistor.

I.F. Alignment

Switch receiver to L.W., set tuning gang to maximum capacitance and set volume control to maximum clockwise position. Carry out alignment as follows.

- 1.—Connect signal generator via 0.1μF capacitor to junction of L10 and R11 (marked tag 5 on printed circuit) and chassis. Feed in a 470kc/s signal and adjust core of L11/L12 for maximum output.
- 2.—Transfer live signal generator lead to junction of L8 and C15 (marked tag 5 on printed circuit) and adjust cores of L9 and L10 for maximum output.
- 3.—Transfer live signal generator lead to base of TR1 and adjust cores of L7 and L8 for maximum output. Re-check adjustments to L9 to L12, as there may be slight interaction between first and second I.F. stages.
- 4.—Switch receiver to M.W., rotate tuning gang to bring pointer to (M) (near mark (MAX)) on tuning scale and adjust C5 carefully to maxi-

mum capacitance. Connect signal generator loosely, by laying its leads near ferrite rod aerial. Feed in a 575kc/s signal and adjust core of L5 to give a reading on output meter.

5.—Rotate tuning gang to (M) (near (MIN)) mark on tuning scale and feed in a 1,450kc/s signal. Adjust C9 and C5 for maximum output.

6.—Reset tuning gang and signal generator as for operation 4. Adjust core of L5 for maximum output, then adjust position of L1 on ferrite rod for maximum output.

7.—Repeat operations 4 to 6 for optimum response and then seal all cores and trimmers.

8.—Switch to L.W., rotate gang to (L) mark on tuning scale. Connect signal generator by laying its leads near the ferrite rod aerial and feed in a 260kc/s signal. Adjust C8 for maximum output. Adjust position of L3 for maximum output.

9.—Repeat operation 8 for optimum response and seal cores and trimmer.

Detector Circuit.—The relative positions of X1, L11, L12 and C26 should not be altered during servicing. Owing to the circulating currents present, and the I.F. harmonics present in this current, alteration of the positions of these components will cause radiations which will be picked up by the ferrite rod aerial and result in instability and whistles particularly at 950 Kc/s.