

COSSOR 81

Four-valve, plus rectifier, three waveband table model superhet with mechanical push-button tuning for six stations, and suitable for A.C. mains. Made by A. C. Cossor, Ltd., Highbury Grove, London, N.5.

Circuit.—Transformer coils on each of the three bands couple the aerial to V1, the frequency-changer. The triode oscillator section has tuned grid coils with separate anode coupling

windings. Permeability-tuned intermediate frequency transformers lead to V2, the I.F. amplifier, and V3, the double-diode-triode.

One diode is used for automatic volume control and the other for demodulation. The volume control forms part of the diode load and the L.F. voltages developed across it are tapped off through the isolating condenser C32 to the triode grid, R12 tying-down the grid.

A tone control circuit is connected across V3, which is resistance and capacity coupled to V4, an output triode.

The speaker field, which is used for smoothing, is connected in the negative H.T. lead. The voltage developed across it is tapped off by the R21, 22, 23 potentiometer for bias purposes. V5 is a conventional full-wave rectifier.

Wavebands: 16-52.5, 195-560, 810-2,085 metres.

Provision for P.U. and 3,000 ohm extension speaker. Both speakers can be used if the plug is not more than half-way in.

Mains consumption: 65 watts.

The receiver is constructed on two chassis, the smaller of which carries the mains transformer, the rectifier valve and electrolytic block, the bias resistor potentiometer and the output valve.

The circuit diagram is divided into the corresponding sections

GANGING

I.F. CIRCUITS.—Adjust the I.F. cores for maximum at 465 kc.

M.W. BAND.—Verify pointer is at end of scale with gang at maximum.

Inject 1,400 kc. (214 m.) and adjust T1, T2. Padding is fixed.

L.W. BAND.—Inject 250 kc. (1,200 m.) and adjust T3, T4.

Adjust paddler, T5, at 160 kc. (1,875 m.), rocking gang slightly.

S.W. BAND.—Inject 18 mc. and adjust T6, T7 while rocking gang. There is no padding.

I.F. FILTER.—Inject strong 465 kc. signal to aerial and adjust core of L1 (near A-E leads) for minimum.

BUTTON ADJUSTMENT

As push-button tuning is solely by mechanical means, there are no special electrical features to mention in this connection. The buttons can be set to any M. or L.W. stations.

Tune manually to the required station. Turn push-button knob slightly anti-clockwise, depress knob as far as possible and tighten. Check the adjustment.

VALVE VOLTAGES

V.	Type.	Electrode.	Volts.	Ma.
1	41 S.T.H.	Anode	275	2.8
		Screen	110	6.1
		Osc. anode	105	6.7
2	M.V.S./Pen.B.	Cathode	1.55	15.6
		Anode	248	4.3
		Screen	120	1.45
3	D.D.T.	Anode	137	2.5
		Cathode	3.55	—
4	2 X.P.	Anode	268	53
		Cathode	320 A.C.	—
5	43 I.U.	Anode	320 A.C.	—
		Cathode	355 D.C.	77

(All Cossor.)

Dial lights, 6.5 v., .3 amp., M.E.S

WINDINGS

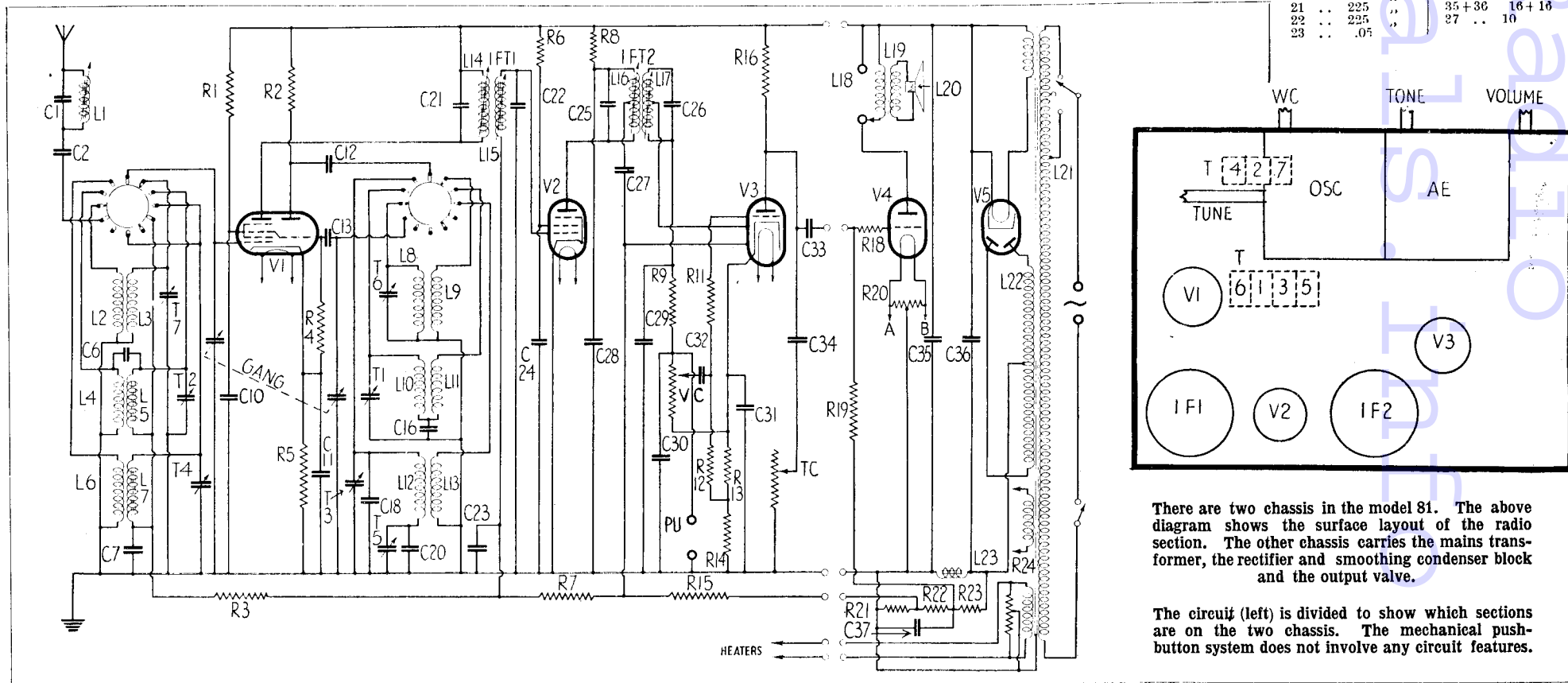
L.	Ohms.	L.	Ohms.
1	4	12	14
2	5	13	6.5
3	.5 low	14, 15	3.5
4	25	16, 17	17.5
5	2	18	17
6	145	19	.17
7	17	20	2
8	V. low	21	28
9	V. low	22	260
10	7	23	1,000
11	2.3		

RESISTANCES

R.	Ohms.	R.	Ohms.
1	30,000	14	1,000
2	30,000	15	1 meg
3	.5 meg.	16	50,000
4	40,000	18	.1 meg.
5	130	19	.5 meg.
6	100,000	20	.25
7	3 meg.	21	7,000
8	5,000	22	90,000
9	50,000	23	.15 meg.
11	.1 meg.	24	.25
12	2 meg.	VC	.5 meg.
13	750	TC	.1 meg.

CONDENSERS

C.	Mfds.	C.	Mfds.
1	225 mmfds.	24	.1
2	500 "	25	60 mmfds.
6	9 "	26	75 "
7	.05 "	27	50 "
10	.05 "	28	.1
11	.1 "	29	50 mmfds
12	.0002 "	30	50 "
13	.0001 "	31	50 "
16	516 mmfds.	32	.01
18	50 "	33	.01
20	140 "	34	.03
21	225 "	35+36	16+16
22	225 "	27	10
23	.05 "		



There are two chassis in the model 81. The above diagram shows the surface layout of the radio section. The other chassis carries the mains transformer, the rectifier and smoothing condenser block and the output valve.

The circuit (left) is divided to show which sections are on the two chassis. The mechanical push-button system does not involve any circuit features.