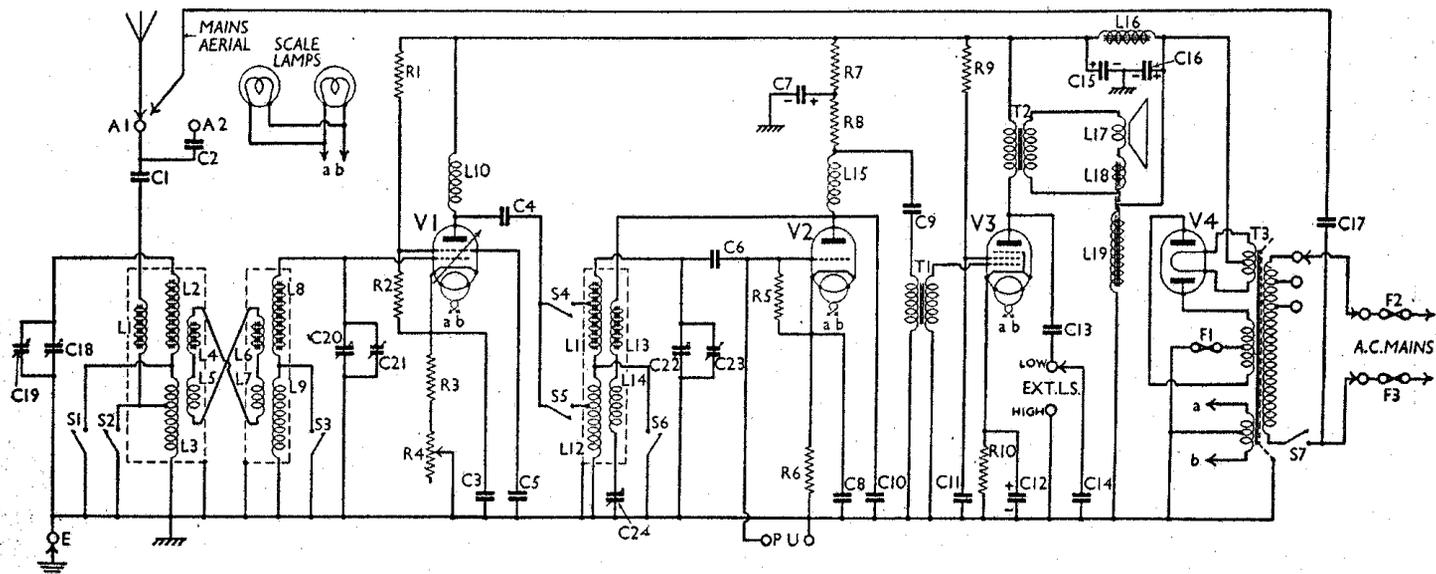


# LISSEN - 8093



The circuit of the Lissen Model 8093 A.C. receiver. Note that the M.W. coils are iron-cored. The dotted enclosures indicate the screening cans. L19 is the speaker field, and L16 is the smoothing choke. C24 is the reaction condenser, and is combined with R4 to form a dual volume and reaction control. Note the three fuses, F1, F2, F3.

### COMPONENTS AND VALUES

Resistances		Values (ohms)
R1	V1 S.G. pot. divider ..	30,000
R2		15,000
R3	V1 fixed G.B. resistance ..	100
R4	Gain control, variable ..	5,000
R5	V2 grid leak ..	500,000
R6	V2 G.B. resistance ..	600
R7	V2 anode decoupling ..	25,000
R8	V2 anode resistance ..	25,000
R9	V3 aux. grid H.T. feed ..	10,000
R10	V3 G.B. resistance ..	300

Condensers		Values (μF)
C1	Aerial series condensers	0.0005
C2		0.00005
C3	V1 cathode by-pass ..	1.0
C4	H.F. coupling to L11, L12 ..	0.0001
C5	V1 S.G. by-pass ..	1.0
C6	V2 grid condenser ..	0.00004
C7	V2 anode decoupling, electrolytic ..	4.0
C8	V2 cathode by-pass ..	0.1
C9	L.F. coupling to T1 ..	0.1
C10	V2 anode H.F. by-pass ..	0.001
C11	V3 aux. grid by-pass ..	1.0
C12	V3 cathode by-pass, electrolytic	15.0
C13	Coupling to ext. speaker ..	1.0
C14	Tone control condenser ..	0.01
C15	H.T. smoothing, electrolytics	4.0
C16		4.0
C17	Mains aerial condenser ..	0.005
C18	Band-pass pri. tuning ..	0.0005
C19	Band-pass pri. trimmer, pre-set	—
C20	Band-pass sec. tuning ..	0.0005
C21	Band-pass sec. trimmer, pre-set	—
C22	H.F. tuning ..	0.0005
C23	H.F. trimmer, pre-set ..	—
C24	Reaction condenser, variable ..	0.0005

Other Components		Values (ohms)
L1	M.W. aerial coupling coil ..	1.0
L2	Band-pass primary coils	2.0
L3		20.0
L4		20.0
L5	Band-pass link coupling coils	Very low
L6		
L7		
L8	Band-pass secondary coils	2.0
L9		20.0
L10	V1 anode H.F. choke ..	450
L11	Tuned-grid H.F. coils	2.0
L12		20.0
L13	Reaction coils	0.6
L14		4.0
L15	V2 anode H.F. choke ..	450
L16	H.T. smoothing choke ..	400
L17	Speaker speech coil ..	2.0
L18	Hum neutralising coil ..	0.1
L19	Speaker field winding ..	10,000
T1	Intervalve trans. ..	Pri. 1,200
		Sec. 7,500
T2	Speaker input trans. ..	Pri. 730.0
		Sec. 0.5
T3	Mains trans. ..	Pri. total .. 30.0
		Heater sec. .. 0.1
		Rect. fil. sec. .. 0.2
		H.T. sec. .. 300.0
S1-S6	Waveband switches, ganged	—
S7	Mains switch ..	—
F1	H.T. circuit fuse ..	—
F2-F3	T3 primary fuses ..	—

### VALVE ANALYSIS

The voltage and current readings given in the table below were obtained from an average chassis working with no aerial or earth connected, and with the gain control set at maximum (about half a turn of the combined volume and reaction control). All voltages were measured on the 1,200 V scale of an Avometer with the chassis as negative.

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V1 AC/SGV	250	6.0	75	0.5
V2 AC/HL	70	4.0	—	—
V3 AC/Pen	230	32.0	190	5.5
V4 UU4r	280*	—	—	—

\* Each anode, A.C.

**Switches.**—There are six waveband switches, S1-S6, in one assembly, and these are indicated in the under-chassis view. The remaining switch, S7, is a Q.M.B. mains switch, also shown in the under-chassis view, and operated by a striker on the wave-change switch spindle. There is no radio-gram switch. The table below shows the open and closed positions of the waveband switches.

Switch	Off	M.W.	L.W.
S1	Closed	Closed	Open
S2	Closed	Closed	Open
S3	Closed	Closed	Open
S4	Closed	Closed	Open
S5	Open	Open	Closed
S6	Closed	Closed	Open