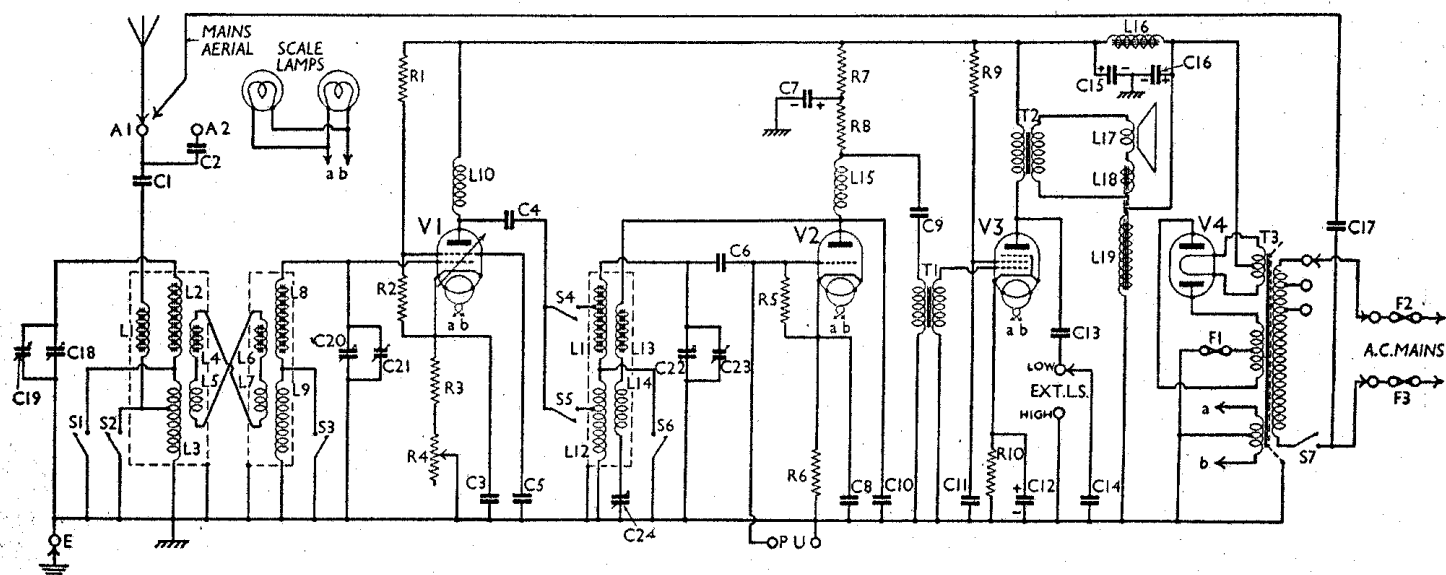


LISSEN - 8093



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)
R <sub>1</sub>	} V <sub>1</sub> S.G. pot. divider .. {	30,000
R <sub>2</sub>		15,000
R <sub>3</sub>		100
R <sub>4</sub>		5,000
R <sub>5</sub>		500,000
R <sub>6</sub>		600
R <sub>7</sub>		25,000
R <sub>8</sub>		25,000
R <sub>9</sub>		10,000
R <sub>10</sub>		300

Condensers		Values ( $\mu$ F)	
C1	} Aerial series condensers {	0.0005	
C2		0.00005	
C3		V <sub>1</sub> cathode by-pass .. ..	1.0
C4		H.F. coupling to L <sub>11</sub> , L <sub>12</sub> .. ..	0.0001
C5		V <sub>1</sub> S.G. by-pass .. ..	1.0
C6		V <sub>2</sub> grid condenser .. ..	0.00004
C7		V <sub>2</sub> anode decoupling, electro- lytic .. ..	4.0
C8	V <sub>2</sub> cathode by-pass .. ..	0.1	
C9	L <sub>2</sub> F. coupling to T <sub>1</sub> .. ..	0.1	
C10	V <sub>2</sub> anode H.F. by-pass .. ..	0.001	
C11	V <sub>3</sub> aux. grid by-pass .. ..	1.0	
C12	V <sub>3</sub> 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)
L <sub>1</sub>	M.W. aerial coupling coil	1·0
L <sub>2</sub>	Band-pass primary coils	2·0
L <sub>3</sub>		20·0
L <sub>4</sub>		
L <sub>5</sub>	Band-pass link coupling coils	Very low
L <sub>6</sub>		
L <sub>7</sub>		
L <sub>8</sub>	Band-pass secondary coils	2·0
L <sub>9</sub>		20·0
L <sub>10</sub>		V <sub>1</sub> anode H.F. choke
L <sub>11</sub>	Tuned-grid H.F. coils	450
L <sub>12</sub>		2·0
L <sub>13</sub>		20·0
L <sub>14</sub>	Reaction coils	0·6
L <sub>15</sub>	V <sub>2</sub> anode H.F. choke	4·0
L <sub>16</sub>	H.T. smoothing choke	450
L <sub>17</sub>	Speaker speech coil	400
L <sub>18</sub>	Hum neutralising coil	2·0
L <sub>19</sub>	Speaker field winding	0·1
T <sub>1</sub>	Intervalve trans.	10,000
		{ Pri. 1,200
		{ Sec. 7,500
T <sub>2</sub>	Speaker input trans.	730·0
		{ Pri. 0·5
		{ Sec. 30·0
T <sub>3</sub>	Mains trans.	{ Heater sec. 0·1
		{ Rect. fil. sec. 0·2
		{ H.T. sec. 300·0
Sr-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)
V <sub>1</sub> AC/SGV	250	6.0	75	0.5
V <sub>2</sub> AC/HL	70	4.0	—	—
V <sub>3</sub> AC/Pen	230	32.0	190	5.5
V <sub>4</sub> 6U4I	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.
S <sub>1</sub>	Closed	Closed	Open
S <sub>2</sub>	Closed	Closed	Open
S <sub>3</sub>	Closed	Closed	Open
S <sub>4</sub>	Closed	Closed	Open
S <sub>5</sub>	Open	Open	Closed
S <sub>6</sub>	Closed	Closed	Open