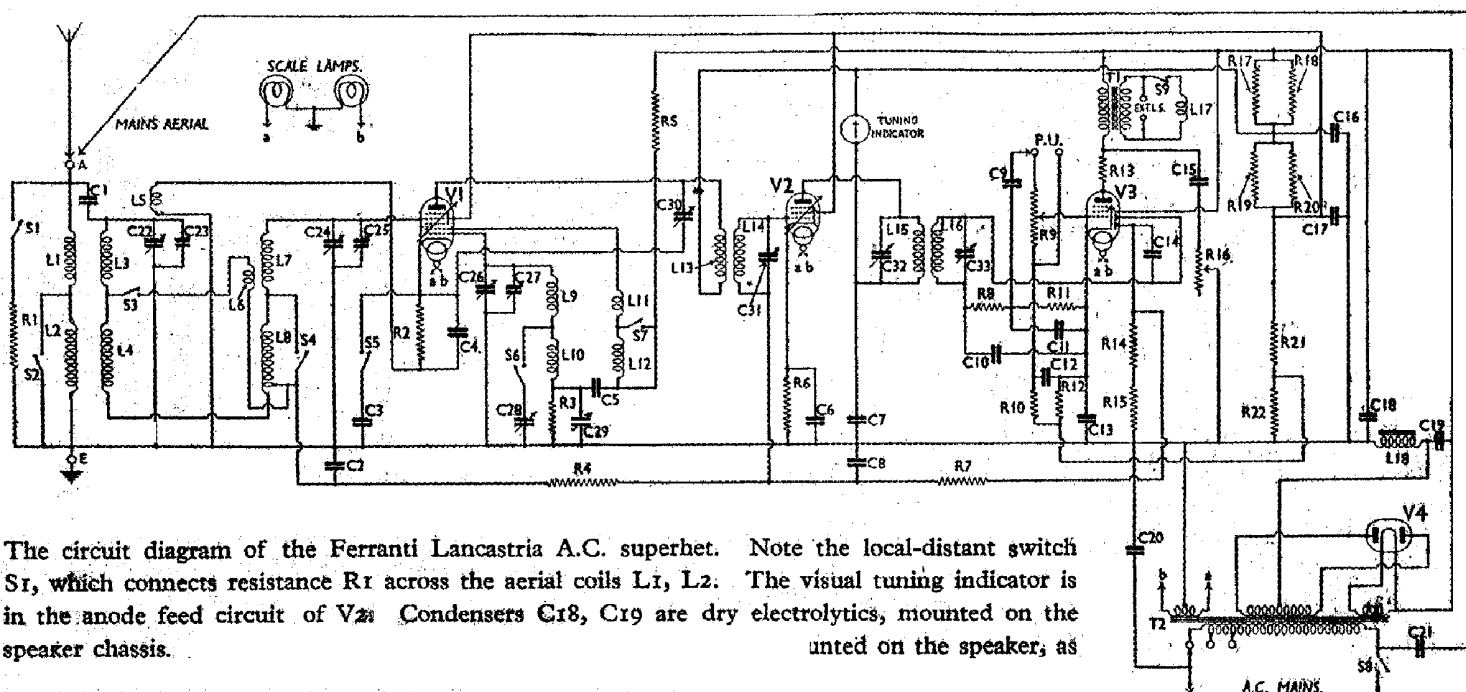


FERRANTI - Lancastria



The circuit diagram of the Ferranti Lancastria A.C. superhet. Note the local-distant switch S_1 , which connects resistance R_1 across the aerial coils L_1 , L_2 . The visual tuning indicator is in the anode feed circuit of V_2 . Condensers C_{18} , C_{19} are dry electrolytics, mounted on the speaker chassis.

COMPONENTS AND VALUES

Condensers	Values (μF)
C_1 Top coupling, L_1 , L_2 to L_3 , L_4	0.000018
C_2 Band-pass coupling	0.05
C_3 L.W. image rejector	0.02
C_4 V_1 cathode by-pass	0.02
C_5 V_1 osc. anode decoupling	0.01
C_6 V_2 cathode by-pass	0.1
C_7 V_2 anode decoupling	0.1
C_8 V_2 cont. grid decoupling	0.05
C_9 L.F. coupling to V_3	0.02
C_{10} Rect. diode reservoir	0.00015
C_{11} H.F. by-pass	0.00015
C_{12} V_3 cont. grid decoupling	0.25
C_{13} V_3 cathode by-pass, electrolytic	4.0
C_{14} A.V.C. diode coupling	0.0005
C_{15} Tone control condenser	0.05
C_{16} V_1 anode decoupling	4.0
C_{17} V_1 and V_2 S.G.'s by-pass	0.1
C_{18} } H.T. smoothing, electrolytics {	8.0
C_{19} }	8.0
C_{20} Mains H.F. by-pass	0.002
C_{21} Mains aerial condenser	0.002
C_{22} Band-pass pri. tuning	—
C_{23} Band-pass pri. trimmer, pre-set	—
C_{24} Band-pass sec. tuning	—
C_{25} Band-pass sec. trimmer, pre-set	—
C_{26} Oscillator tuning	—
C_{27} Oscillator trimmer, pre-set	—
C_{28} Oscillator L.W. trimmer, pre-set	—
C_{29} Oscillator tracker, pre-set	—
C_{30} 1st I.F. trans. pri. tuning, pre-set	—
C_{31} 1st I.F. trans. sec. tuning, pre-set	—
C_{32} 2nd I.F. trans. pri. tuning, pre-set	—
C_{33} 2nd I.F. trans. sec. tuning, pre-set	—

Resistances	Values (ohms)
R_1 Aerial shunt	1,000
R_2 V_1 fixed G.B. resistance	300
R_3 Osc. tracker shunt	50,000
R_4 V_1 cont. grid decoupling	250,000
R_5 V_1 osc. anode H.T. feed	100,000
R_6 V_2 fixed G.B. resistance	450
R_7 V_2 cont. grid decoupling	1,000,000
R_8 Part of rect. diode load	100,000
R_9 Manual volume control	1,000,000
R_{10} V_3 cont. grid decoupling	100,000
R_{11} Part of rect. diode load	500,000
R_{12} V_3 G.B. resistance	140
R_{13} V_3 anode circuit stabiliser	140
R_{14} } A.V.C. diode load {	2,000,000
R_{15} }	2,000,000
R_{16} Tone control resistance	50,000
R_{17} }	6,000
R_{18} }	6,000
R_{19} Main H.T. potential divider	18,000
R_{20} supplying V_1 and V_2 S.G.'s	18,000
R_{21} and anodes	12,400
R_{22} }	450

Other Components	Values (ohms)
L_1 } Aerial coupling coils {	17.5
L_2 }	68.0
L_3 } Band-pass primary coils {	5.0
L_4 }	41.0
L_5 Image rejector coil	1.7
L_6 Band-pass coupling coil	0.2
L_7 } Band-pass secondary coils {	5.0
L_8 }	41.0
L_9 Oscillator tuning coils	4.0
L_{10} }	24.5
L_{11} Oscillator reaction coils	6.5
L_{12} }	3.2
L_{13} 1st I.E. transformer	Pri. 120.0
L_{14} Sec.	120.0
L_{15} 2nd I.F. transformer	Pri. 120.0
L_{16} Sec.	120.0
L_{17} Speaker speech coil	4.0
L_{18} Speaker field	1500.0
T_1 Speaker input trans.	Pri. 250.0
	Sec. 0.3
T_2 Mains trans-former	Pri. total 40.0
	Heater sec. 0.05
	Rect. fil. sec. 0.1
	H.T. sec. 470.0
S_1 Local-distant switch	—
S_2 - S_7 Waveband switches	—
S_8 Mains switch (ganged R_9)	—
S_9 Internal speaker switch	—

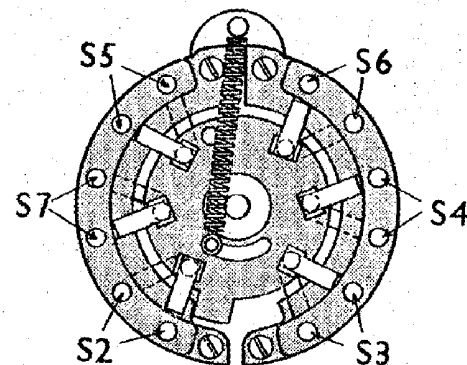
VALVE ANALYSIS

The values in the table below are average ones, measured with no signal input to the receiver. All voltages were read on the 1,200 V scale of an Avometer with chassis as negative, and the anode currents of V_1 and V_2 and the oscillator anode (G_2) current of V_1 were measured with a milliammeter inserted in the low H.F. potential ends of the circuits.

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V_1 VHT4*	200	3.0	100	4.0
V_2 VPT4	200	5.0	100	4.5
V_3 AC2/Pen DD†	240	28.0	250	8.0
V_4 R4	350‡	—	—	—

*Osc. anode G_2 , 100 V 1.5 mA. †Or Ferranti LPT4D. ‡Each anode, A.C.

S_2 , S_3 , S_4 , S_5 , S_6 and S_7 are the waveband switches, mounted in one assembly, which is indicated in the under-chassis view, and is showing diagrammatically in a separate sketch below.



Rear view of the switch assembly, carrying the six waveband switches.