

LISSEN FOUR-VALVE PORTABLE

Circuit.—The H.F. valve, S.G.2V., met. (V1) is preceded by a frame aerial, of which the long wave section is short circuited during use on the medium waveband. An additional winding is included to give the necessary selectivity when an external aerial is used.

Bias for the valve is used to control volume by means of a potentiometer across the G.B. section of the battery. This control is ganged to the reaction condenser. H.F. coupling is by choke capacity filter to the grid coil of the following valve.

The detector valve HL2 met. (V2) operates as a leaky grid with reaction, and is coupled to the next valve by parallel-fed L.F. transformer, with anode decoupling.

The driver valve, L2 (V3), has an additional H.F. stopper in its grid circuit, and is followed by a typical driver transformer.

A BB220A (V4) class B valve is tone compensated by a condenser between the anodes and one between each anode and earth, the former acting as a tone control by means of a wander lead which connects it into circuit.

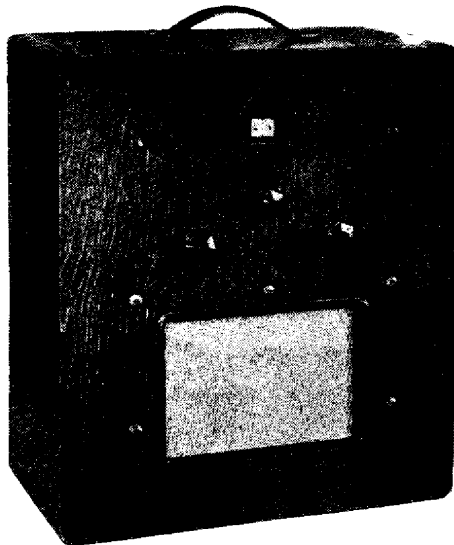
Special Notes.—The H.T. battery is a straight type, and the H.T.— and L.T.— lead is connected to the 9 volts positive socket so as to allow the requisite bias voltages.

Connections are: pink lead, H.T.+, 120 v.; mauve, 60 v.; black, 9 v.; white, 6 v.; yellow, H.T.—.

Note that the H.T.— is actually providing 9 volts negative bias.

Removing Chassis.—The most convenient method is to remove the frame, speaker and chassis in one unit. Remove the nuts from the six screws holding the front wooden frame to the cabinet. (These bolts have shaped heads on the outside.)

Remove the nuts from the supports at the back of the chassis, and those from the feet



The four-valve battery portable, made by Lissen Ltd.

of the frame aerial which are on the base of the cabinet.

Remove the control knobs (grub screw), and lift the assembly out.

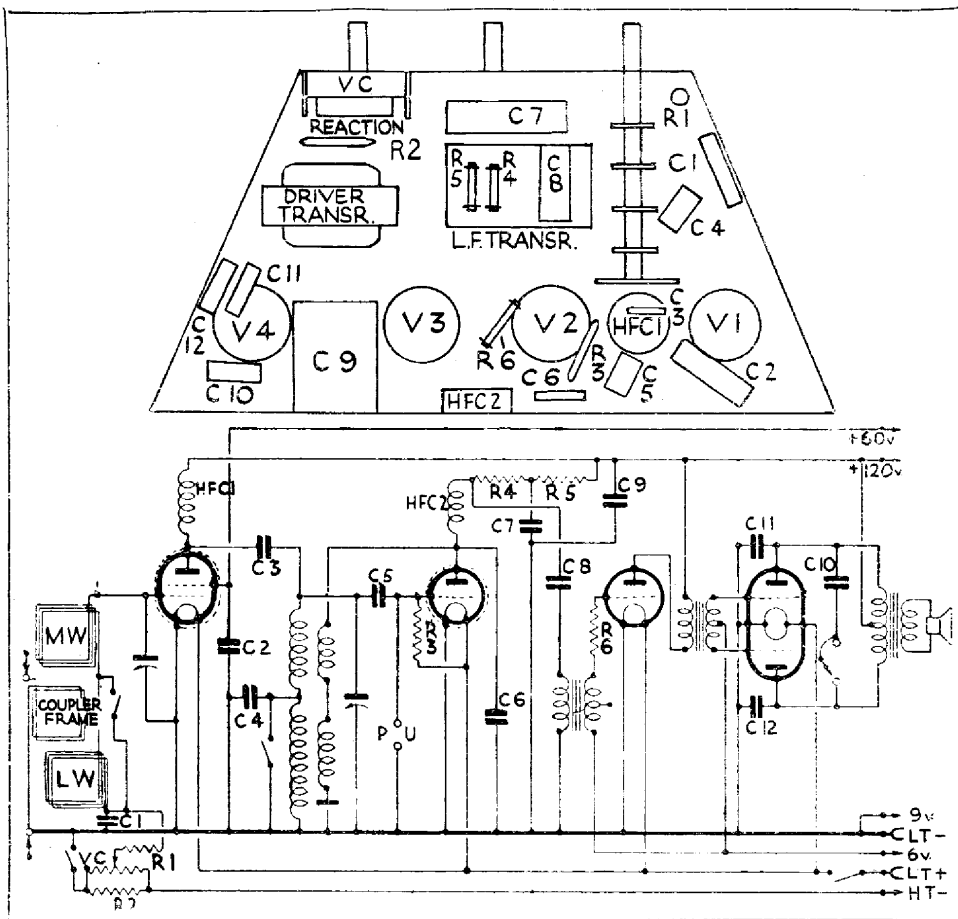
General Notes.—In handling this set take care that the windings of the frame aerial are not disturbed. In any case it is advisable to regang the tuning condensers.

Replacing Chassis.—Stand assembly inside cabinet, replace rear bolts, and then those in front. Replace those in the base of the cabinet, and fix the control knobs.

VALVE READINGS				
V.C. max. but no reaction. No signal.				
Valve.	Type.	Electrode.	Volts.	M.A.
1	S.G.2.V met (4)	anode ..	115	1.2
		screen ..	60	
2	HL2 met (4) ..	anode ..	43	1.6
3	L2 (4) ..	anode ..	113	1.9
4	BB.220A.(7)	each anode	113	2.5

RESISTANCES		
R.	Purpose.	Ohms.
1	Decoupling V1 grid ..	10,000
2	In shunt with V.C. ..	2,000
3	V2 grid leak ..	2 meg.
4	V2 anode coupling ..	30,000
5	V2 anode decoupling ..	20,000
6	H.F. stopper in V3 grid ..	100,000
V.C.	..	5,000

CONDENSERS		
C.	Purpose.	Mfd.
1	Decoupling V1 grid ..	.1
2	Decoupling V1 screen ..	.1
3	H.F. coupling to V2 grid coil ..	.0001
4	L.W. pad on H.F. coil ..	.00001
5	V2 grid reservoir ..	.00005
6	V2 anode, H.F. by-pass ..	.0003
7	Decoupling V2 anode ..	.5
8	L.F. coupling to L.F. trans- former ..	.1
9	Across H.T. battery ..	1
10	Tone control ..	.005
11	V4 tone compensating ..	.002
12	V4 tone compensating ..	.002



A straightforward circuit is utilised in the Lissen portable. The chassis diagram above shows the set with frame aerial detached.