

On the left is shown the layout of the components mounted on the top of the chassis of the Pye P/B battery receiver. Most of the smaller parts are situated beneath the chassis as shown on the right.

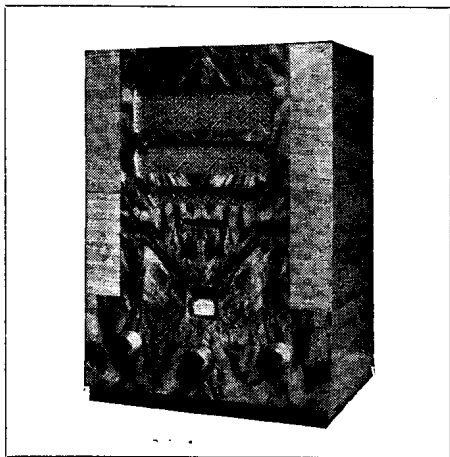
FERRANTI A.C. LANCASTRIA PARVA

Circuit.—A band-pass tuner is used in the control grid circuit of the heptode first detector oscillator V1 (VHT4). Oscillator anode is coupled to the oscillator grid by oscillator transformer. The first I.F. transformer (I.F. 125 kc.) is directly in the anode circuit of V1, with H.F. decoupling, and couples it to grid of the I.F. valve V2 (VPT4). A similar transformer IFT2 couples V2 to the paralleled anodes of the diode section of the double diode triode V3 (H4D). Gramophone P.U. connections are to grid of triode section. Triode anode is coupled to grid of directly heated triode output valve V4 (LP4) by resistance capacity, and the grid of the output valve is decoupled.

Full-wave rectification is used and the L.S. field with two 8 mfd. electrolytic condensers is used in the negative H.T. lead as smoothing. A hum-bucking coil is connected in series with the speech coil.

External speaker of 10 ohms impedance across terminals on L.S.

Special Notes.—Remember that the ter-



The Ferranti five-valve Lancastria Parva superhet. Below are given the chassis layouts for the top (left) and underneath (right).

minals on the tops of the heptode and double diode triode valves are grid terminals.

Volume control is obtained by varying the bias of both V1 and V2 through a potentiometer R16 across the bias resistor for V4, which is part of the potentiometer across the L.S. field.

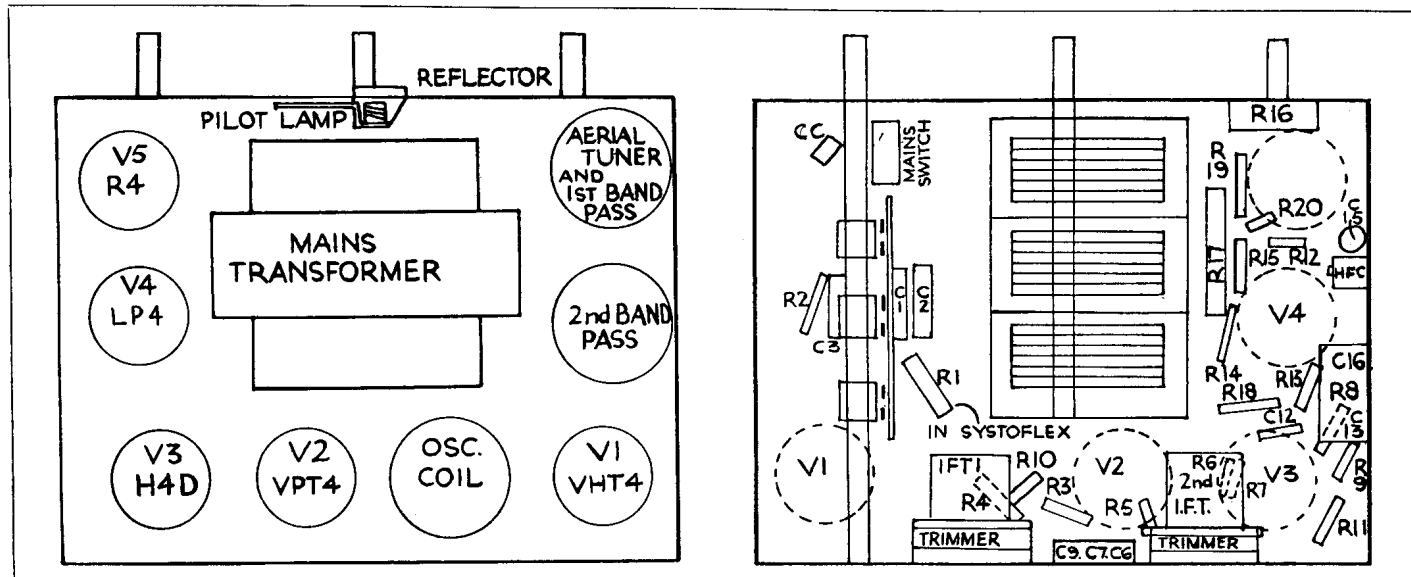
Colour Codes.—The wires are of different colours, but this does not indicate a definite colour code.

- Resistances are coloured in R.M.A. code.
- Condensers are "spotted" as follows:—
- Red, .05 mfd.
- Yellow, .02 mfd.
- Black, .06 mfd.
- Blue, .004 mfd.
- Green, .01 mfd.

Pilot Lamp.—3.5 volts, .15 amp.

Removing Chassis.—Pull off the spring knobs. Undo four holding screws from underneath. Remove nuts from bolts on speaker frame. (One requires a long 4BA box spanner.) Lift chassis out, taking care of the

(Continued on next page.)



FERRANTI LANCASTRIA PARVA (Contd.)

rubber washers. The speaker leads need not be disconnected.

Special circuit values.—Field coil, 1,600 ohms, speech coil 7 ohms : D5 speaker.

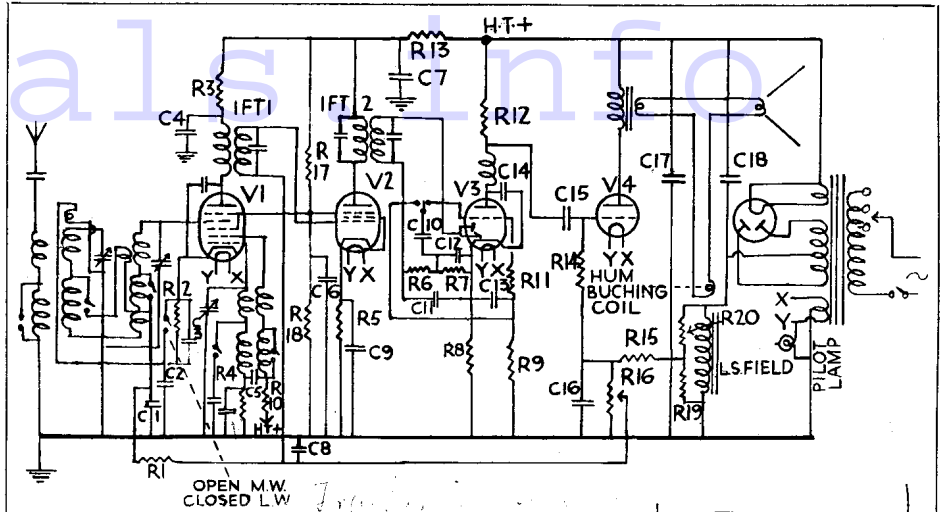
General Notes.—The centre pin on the rectifier valveholder is used merely as an

CONDENSERS

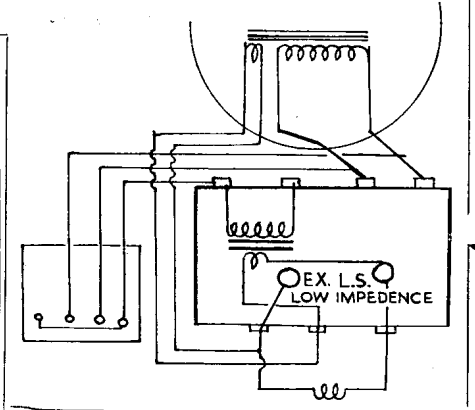
	Purpose.	Mfd.
C 1	Band pass coupling	.05
C 2	Cathode, V 1	.02
C 3	Part of suppressor circuit	.02
C 4	Anode decoupling, V 1	.1
C 5	Coupling osc. and reaction, V 1	.01
C 6	Decoupling SG's	.1
C 7	Decoupling anodes, V 1 and V 2	.1
C 8	Decoupling grid, V 2	.05
C 9	Cathode, V 2	.1
C 10	Coupling to triode grid, V 3	.01
C 11	HF by-pass to cathode, V 3	.00015
C 12	HF by-pass to cathode, V 3	.00015
C 13	Decoupling grid, V 3	.25
C 14	Anode by-pass triode of V 3	.0003
C 15	LF coupling condenser, V 3, V 4	.02
C 16	Decoupling grid, V 4	.25
C 17	(Electrolytic) smoothing	8
C 18	(Electrolytic) smoothing	8

RESISTANCES

	Purpose.	ohms.
R 1	Decoupling grid, V 1	.5 meg.
R 2	Bias resist, V 1	300
R 3	HF decoupler anode, V 1	1,000
R 4	In osc. coil circuit	50,000
R 5	Bias resist, V 2	450
R 6	HF stopper to triode grid	100,000
R 7	Part of diode output pot. with R 6	
R 8	Bias resist, V 3	.5 meg.
R 9	Decoupling grid of V 3	3,500
R 10	Voltage dropping to osc. anode	100,000
R 11	Triode section grid leak, V 3	1 meg.
R 12	Anode coupling resist, V 3 to V 4	100,000
R 13	Anode decoupling of V 1 and V 2	10,000
R 14	Grid leak, V 4	.25 meg.
R 15	Decoupling grid, V 4	.2 meg.
R 16	VC pot. for HF bias across bias pot.	1 meg.
R 17	Upper part of SG pot.	20,000
R 18	Lower part of SG pot.	30,000
R 19	Bias pot. across LS field	120,000
R 20	Bias pot. across LS field	250,000
D 5	Field coil	1,600
	Speech coil	7



Above, the circuit of the Ferranti Lancastría Parva and, right, the connections to the output transformer, field coil and electrolytic condensers.



anchorage. The resistances are suspended in the wiring, and all the important ones are accessible. When the wiring has to be moved to reach a component it should be replaced in its original position. This is important, as stray unbalanced capacities and unwanted couplings may be created.

Switch contacts are easily cleaned and are opposite the bases of their respective coils. The wiring to the electrolytic condenser block on the speaker is coded, but it is immaterial to which end of the L.S. field either black lead is connected.

If calibration is wrong, remove chassis only and move pointer and reflector to correct setting. These swivel on one rivet.

The tuning of this set is very critical, and attempts to improve efficiency by adjusting the small trimmers should not be made.

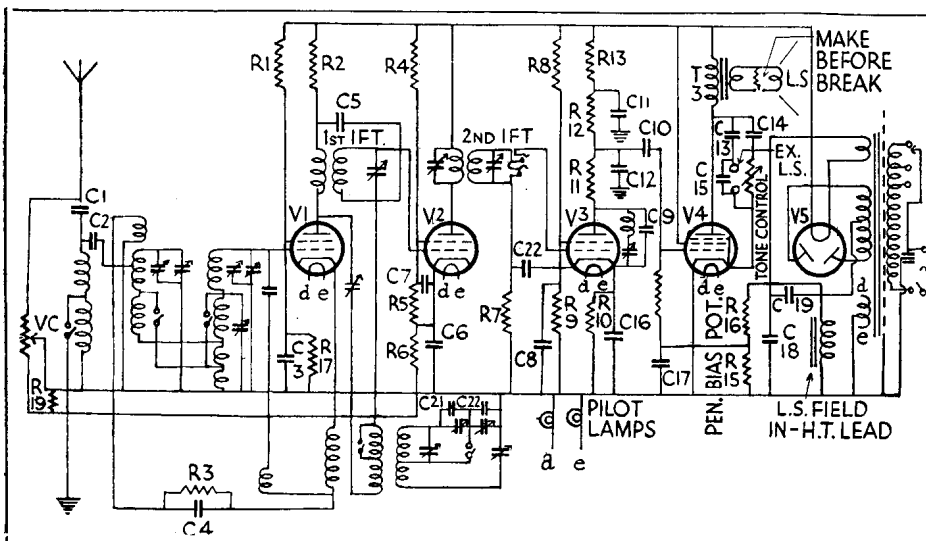
Replacing Chassis.—Replace speaker first, tightening the four bolts. Replace the rubber washers and place the chassis carefully on them and insert the four holding screws. Replace the knobs.

VALVE READINGS

Volume Control at Max.

Valve.	Connection.	Volts.	M.A.
V1 (VHT4)	anode	160	1.3
	osc. anode	60	1.
	screen	80	
V2 (VPT4)	anode	172	2.9
	screen	80	
V3 (H4D)	anode	80	2.5
	anode	200	52.

A.C. MAINS "SUPERHET FIVE" BY G.E.C.



The first valve is the combined-detector oscillator in the G.E.C. Superhet Five.

Circuit.—The combined oscillator first detector-frequency changer valve V1 (MS4B) is preceded by an inductively coupled band-pass filter, and the aerial is coupled to the first band-pass coil partly by inductance and partly by capacity C2. The volume control R21, besides damping the aerial coil in series with R19 and C1, also increases bias on V2. Anode-grid reaction is used through a coupling coil in the cathode circuit at the oscillator frequency, and a second-channel suppressor circuit is taken to the grid and to a small coupling coil in the first band-pass circuit. The anode circuit is decoupled by R2, C5.

The I.F. valve VMS4 (V2) is coupled by a band-pass intermediate transformer T2 to the grid of the second detector. Pick-up connection by means of jack short circuits the secondary and connects P.U. between earth and grid. Intermediate frequency 107 kc.

Second detector MS4B (V3).—Anode bend detector with automatic bias has an additional second-channel suppressor filter in the anode circuit and an H.F. stopper R11. Coupling to the output valve is by R12 and C10. The anode decoupling is R13, C11.