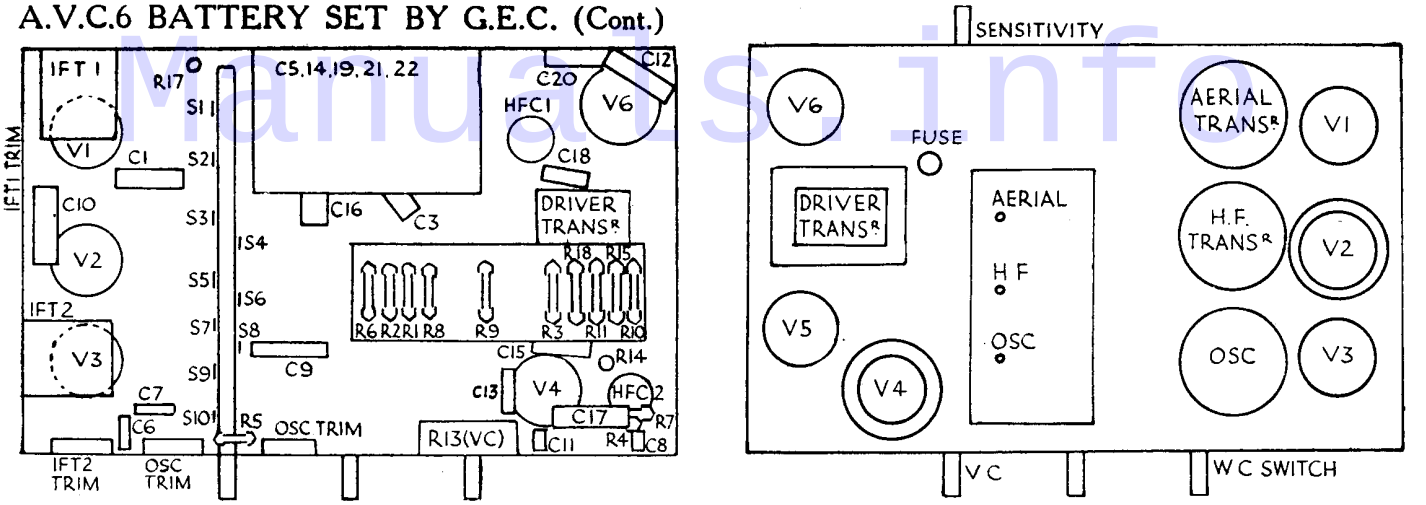
A.V.C.6 BATTERY SET BY G.E.C. (Cont.)



The only components under the block condenser (below the G.E.C. chassis) are the sensitivity switch and C 13 and C 16. Above the chassis, the fuse next the driver transformer is in the H.T.+1 lead and is a 3.5 v .15 amp. type.

The condensers in the block have leads as follows :—

C5.—Green and white.

C19.—Red.

C21 and C22.—Orange on one side, orange and white the other.

C14.—Red and white.

Bare wire is E.

If the block has to be removed, remember to replace the tag under the switch side.

The connections to the double diode triode are (compared with ordinary mains triode holder) : Grid and cathode pins, diode anodes; anode pin, anode; grid at top of bulb. The cathode pin is the A.V.C. diode anode.

Replacing Chassis.—Lay chassis inside cabinet, replace holding screws and knobs. Replace the L.T. compartment after threading the leads through the aperture.

FERRANTI GLORIA MAINS SUPERHET

Circuit.—The combined detector-oscillator valve, a VHT4 met. (V1), is preceded by a band-pass aerial tuner with second channel suppressor coupling.

Bias is partly fixed and partly obtained from the A.V.C. The tuning of the oscillator is in the grid circuit. Visual tuning is provided by a meter movement in the common H.T. lead to V1 and V2. Coupling to the next valve is by band-pass I.F. transformer (frequency 125 kc.).

The I.F. valve, VPT4 met. (V2), is also biassed by cathode resistance and A.V.C., and is coupled to the next valve by another band-pass I.F. transformer.

An H4D (V3), double diode triode valve, has the A.V.C. anode coupled to the primary of the I.F. transformer and the other anode is connected to the secondary.

The full A.V.C. potential is also used for biassing the grid of the muting valve. Bias for the triode section and delay A.V.C. is by cathode resistance R19, which is part of the H.T. potentiometer.

Coupling to the output valve, a triode LP4, is by tone-correction transformer with resistance coupling.

In the muting valve, MHL4 (V5), grid bias is applied from the A.V.C. diode, and as the carrier wave disappears the grid becomes less negative. The anode, therefore, becomes more positive than the cathode.

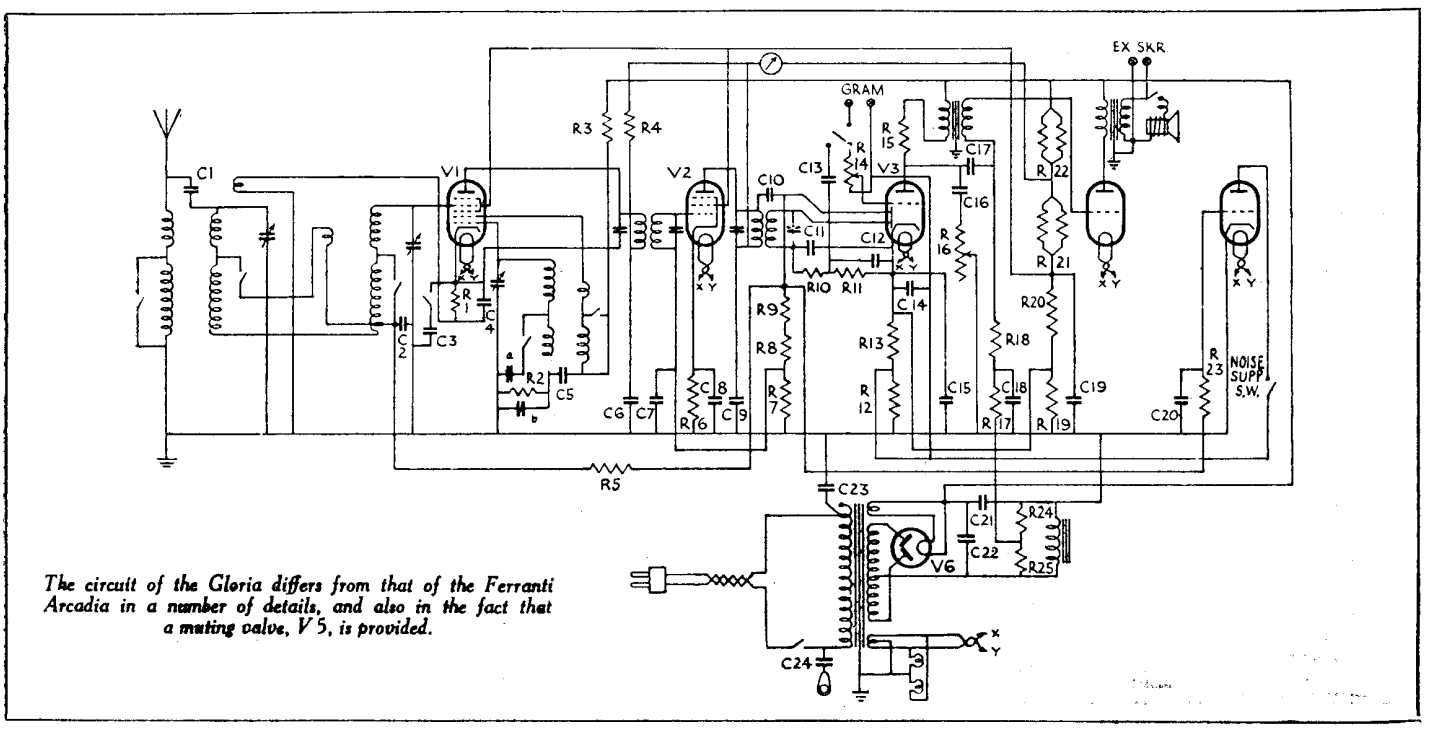
The current flowing through R13 then causes an excessive or "muting" bias on the triode section of the H4D.

Mains equipment consists of : Transformer, full-wave R4 rectifier, the L.S. field in the negative H.T. lead, with two 8-mfd. electrolytic condensers.

Bias for the directly heated output valve is provided by a potentiometer across the L.S. field.

Special Notes.—The resistances R21 and R22 are each actually two resistances in parallel. Where low readings are obtained on the screens or screens and anodes of V1

(*Continued on next page.*)



The circuit of the Gloria differs from that of the Ferranti Arcadia in a number of details, and also in the fact that a muting valve, V 5, is provided.

FERRANTI GLORIA MAINS SUPERHET (Cont.)

and V2, one of either pair of resistances should be suspected.

Pilot lamps are the 3.5 volt .3 amp. type, and only half the heater voltage is applied to each.

Quick Tests.—Between the projecting connectors in front of the terminal strip mounted on top of the mains transformer and chassis (note the polarity) :—

A.—(left, looking from back), blue, 118 v. negative.

B.—Green, 250 v. positive, V4 anode.

C.—Red, 263 v. positive, H.T. smoothed.

D.—Black, 0.

Removing Chassis.—Pull off the knobs and remove four holding screws from underneath. Disconnect L.S. leads from A, B, C and D, and lift chassis out.

General Notes.—The M.W. and L.W. tracking trimmers are on top of the oscillator coil can. The resistance R15 may be 33,000 or 40,000 ohms, and the resistance R12 may be a single 6 megohm or three 2 megohm resistances in series.

The connections to the L.S. leads are given in "Quick Tests"

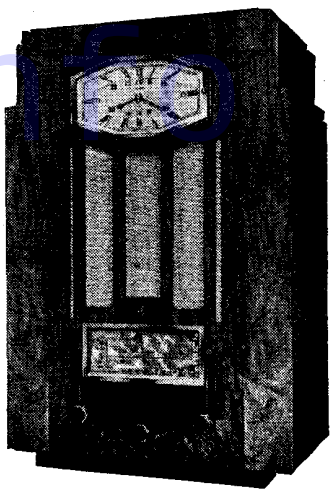
Small condensers are coded by coloured bands as follows :—

Green, .01 mfd.; yellow, .02 mfd.; white, .03 mfd.; black, .06 mfd.; blue, .004 mfd.; brown, .002 mfd.

The small condenser block at the back contains three identical .1 mfd. condensers, and that alongside the long resistance strip contains a .25 mfd. (yellow lead) and a 1 mfd. (red lead).

Replacing Chassis.—Lay chassis inside cabinet, replace holding screws, mains leads (joined to clock leads), and L.S. leads.

Replace the knobs.



A mains clock is one of the distinguishing features possessed by the Gloria receiver made by Ferranti, Ltd.

VALVE READINGS

No signal.

Valve.	Type.	Electrodes.	Volts.	M.A.
1	VHT4 met.(7)	anode ..	200	4
		screen ..	100	
		osc. anode..	80/100	1.5
2	VPT4 met. (5)	anode ..	200	5.5
		aux. grid ..	100	
3	H4D (7) ..	anode ..	150	1.7
4	LP4	anode ..	250	48
5	MHL4 ..	anode* ..		

* Only minute voltage recorded with moving coil meter.

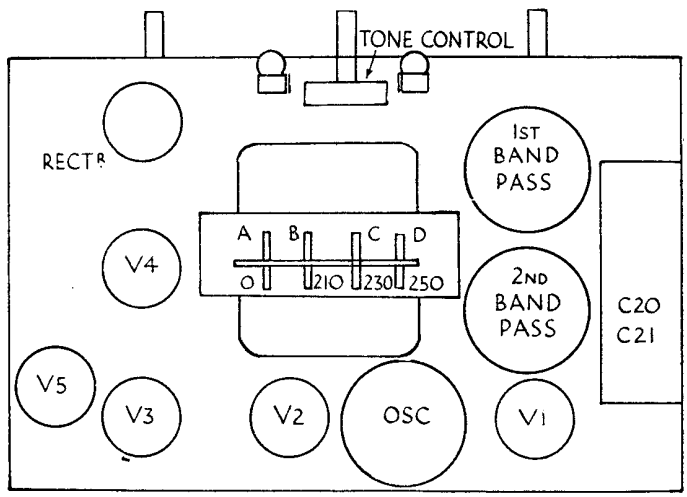
RESISTANCES

R.	Purpose.	Ohms.
1	V1 cathode bias	300
2	Across L.W. osc. coil	50,000
3	Decoupling V1 osc. anode ..	100,000
4	Decoupling V1 anode	1,000
5	Decoupling V1 grid	1 meg.
6	V2 cathode bias	450
7	A.V.C. potentiometer	1 meg.
8	" "	2 meg.
9	" "	2 meg.
10	H.F. stopper from diode ..	100,000
11	Diode load	.5 meg.
12	Supply ptr. for V5	6 meg.
13	Supply ptr. for V5	1 meg.
14	V.C.	1 meg.
15	V3 anode coupling*	40,000
16	Tone control	.5 meg.
17	V4 grid decoupling	60,000
18	V4 grid leak	.25 meg.
19	Part of H.T. ptr.	3,000
20	Part of H.T. ptr.	12,400
21	Part of H.T. ptr., two in parallel (each)	18,000
22	Part of H.T. ptr., two in parallel (each)	6,000
23	V5 grid leak	2 meg.
24	V4 bias ptr.	100,000
25	V4 bias ptr.	250,000
	L.S. field	1,600

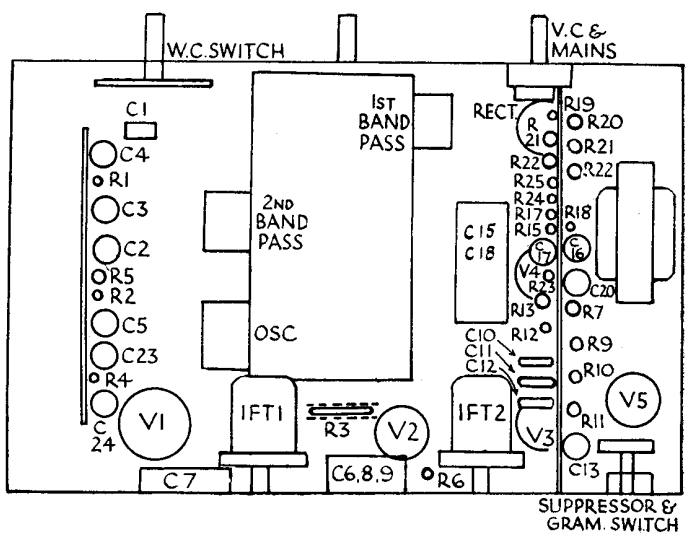
* May be 33,000 ohms.

CONDENSERS

C.	Purpose.	Mfd.
1	Filter coupling of aerial transformer	18 mmfd.
2	Decoupling V1 grid	.05
3	Additional cathode by-pass on M.W.	.02
4	V1 cathode by-pass	.03
5	Decoupling V1 osc. anode ..	.01
6	Decoupling V1 anode	.1
7	Decoupling V2 grid	.05
8	V2 cathode by-pass	.1
9	Decoupling V2 anode	.1
10	I.F. feed to A.V.C. diode ..	.00005
11	H.F. by-pass from diode ..	.00015
12	H.F. by-pass from diode lead..	.00005
13	L.F. coupling to triode section..	.02
14	Decoupling V3 grid	.25
15	V3 cathode by-pass	1
16	Tone control circuit	.05
17	V3, V4, L.F. coupling ..	.02
18	Decoupling V4 grid	.25
19	By-pass screen H.T. supply ..	.1
20	L.F. by-pass from V5 grid ..	.1
21	H.T. smoothing	8 el.
22	H.T. smoothing	8 el.
23	H.F. by-pass from mains ..	.002
24	Mains aerial	.002



On the top of the Ferranti chassis the tracking condensers of the oscillator will be found on the top of the coil can. All the I.F. trimmers are at the back of the chassis.



Certain variations in the layout of the resistance and condenser strip on the right of the Gloria chassis are described in General Notes.