

# MARCONIPHONE 257 BATTERY SET

**Circuit.**—The combined first detector oscillator, X21 (V1), is preceded by a single-tuned aerial coupling with special morse filter and image suppressor circuits.

Coupling to the next valve is by band-pass I.F. transformer (frequency 456 kc.), and bias is obtained from the A.V.C. line.

The I.F. valve, VS24 (V2), is also biased by A.V.C. and is followed by a second band-pass I.F. transformer. Reaction is applied to I.F.T.1 from the secondary. The second detector valve, HD21 (V3), is used in the conventional manner for A.V.C. and L.F., the volume control forming the L.F. diode load. The following coupling is a parallel-fed tapped secondary driver transformer.

The output valve, QP21 (V4), is a double pentode, and is operated with bias.

**Special Notes.**—Battery voltages (2 x 84 volt). H.T. : red lead, 159 v.; mauve, 72 v. G.B. : grey, 9 v.; blue, 1.5 v.

The pink lead should be inserted into the voltage corresponding to the lettering on the

bulb, as follows: W, 138 v.; X, 144 v.; Y, 151.5 v.; Z, 157.5 v.

The valves are graded so that the overall emissions are the same.

In the filter circuits, TC1 adjusts the suppression of morse interference at the top of the M.W. waveband, and TC2 the second channel.

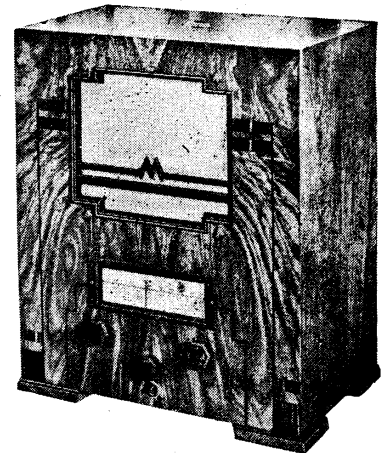
**Quick Tests.**—Total H.T. current should be 9 to 9.5 ma., measured in H.T. — lead.

**Removing Chassis.**—Remove the knobs (self-threading grub screws), unscrew the small escutcheon round the local distance switch.

Remove two octagonal screws from underneath, release L.S. leads from the cleat and lift chassis out.

**General Notes.**—The L.F. trimmers are a new type, consisting of a nut and a central screw. The nut adjusts the primary trimmer, and the screw the secondary. The screening

(Continued on opposite page.)



The Marconiphone 257 is a four-valve battery superhet with class B output.

## RESISTANCES

R.	Purpose.	Ohms.
1	For local distance switching	75,000
2	V.1 osc. grid-leak	50,000
3	Decoupling osc. anode	23,000
4	Decoupling A.V.C. line	.5 meg.
5	A.V.C. diode load	.5 meg.
6	V.3 grid-leak	1 meg.
7	H.F. stopper	23,000
8	V.3 anode L.F. coupling	50,000
9	V.3 anode decoupling	7,500
10	V.4 grids stabiliser	.23 meg.
V.R.1	Volume control, diode load	.5 meg.

## CONDENSERS

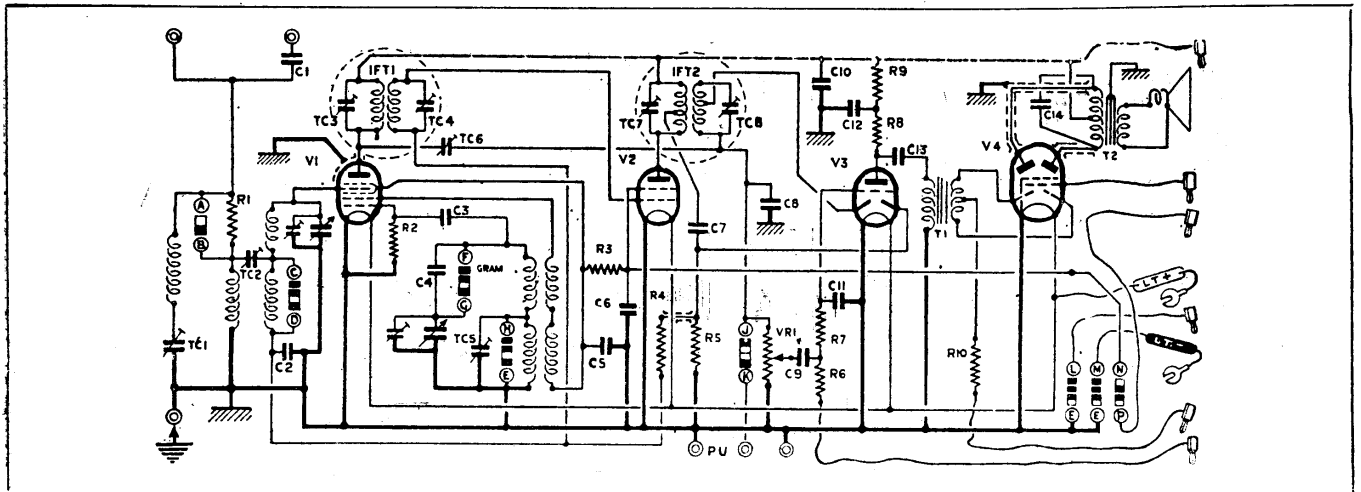
C.	Purpose.	Mfd.
1	Series with A.2 lead	.0005
2	Decoupling V.1 grid	.1
3	Osc. grid	.00023
4	Osc. tracking	.0005
5	Decoupling osc. anode	.1
6	V.2 screen by-pass	.1
7	I.F. feed to A.V.C. diode	.00023
8	V.2 screen by-pass	.1
9	L.F. coupling to triode grid	.1
10	Across H.T.	.1
11	H.F. by-pass from V.3 grid	.0001
12	V.3 anode decoupling	.2
13	Filter coupling to driver trans.	.1
14	Tone compensating V.4 anodes	.001

## VALVE READINGS

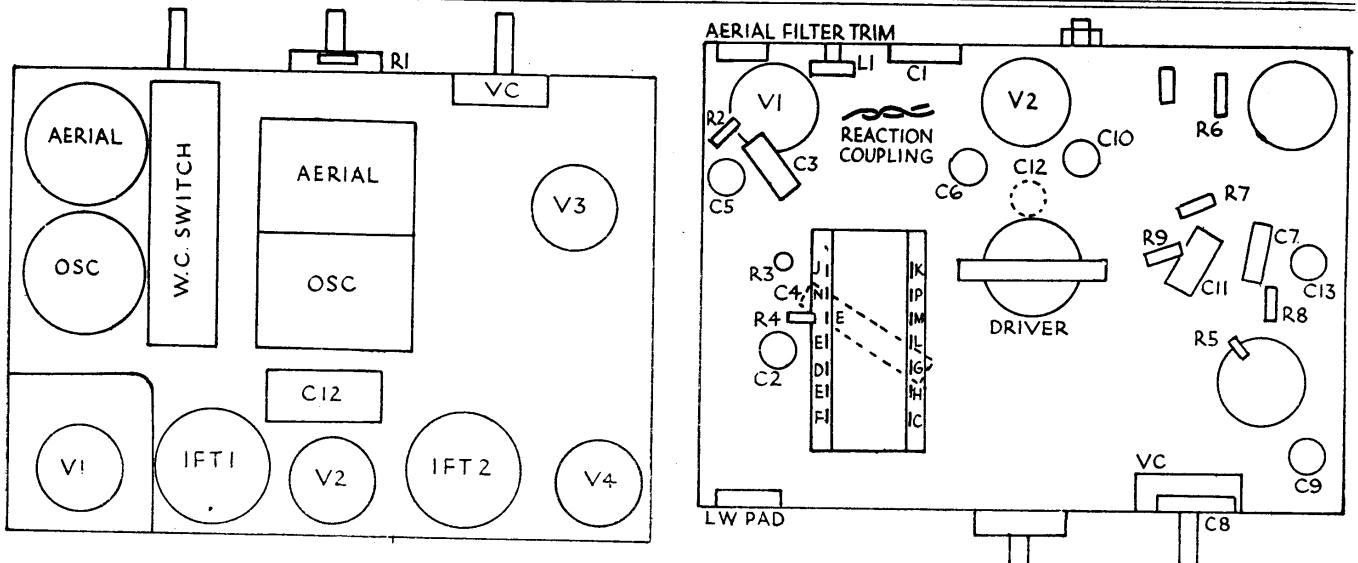
Valve.	Type.	Electrode.	Volts.	M.A.
1	X.21 (7)	anode	159	.35
		screen	30**	
		osc. anode	30**	
2	V.S.24 (5)	anode	159	3.5
		screen	72	
		osc. anode	159	
3	H.D.21 (5)	anode	70/100**	1
		screen	159	
4	Q.P.21	each anode	159	1.8-2.8
		screen	*	

\* According to tapping.

\*\* High values of resistance in circuit.



There are a number of refinements in the Marconiphone 257 including a local-distance switch and a reaction sensitivity control.



The switch contacts are accessible from above the Marconiphone chassis. When working on the underside care should be taken not to disturb the twisted wire reaction coupling.

cans are fixed by two nuts underneath and by press springs which project at the side. To remove the can, twist the ends projecting underneath the chassis so that they clear the slots, remove the nuts and lift off while pressing the springs inwards.

secondary and I.F.T.1 primary. The adjustable condenser TC6 is mounted on the back of the chassis, and the coupling condenser consists of twisted wire, as shown in the lay-out diagram. This should not be disturbed.

tacts are easily accessible from above the chassis. **Replacing Chassis.**—Lay chassis inside the cabinet, replace holding screws, clip the L.S. leads and replace the knobs—making sure that the W.C. and battery knob corresponds to the small "on-off" plate above the dial.

Reaction is applied between I.F.T.2

The switch is also a new type, and the con-