HMV 459MC
MARCONIPHONE 255MC

Six-valve, two-waveband battery portable superhet with permanent magnet moving coil loudspeaker. Aerial and earth terminals are provided for additional sensitivity. Terminals are available for pickup and high resistance loudspeaker, but a low resistance speaker may easily be connected across the internal speaker's speech coil. Marketed 1933 by Gramophone and Marconiphone Companies, Hayes, Middx.

ALTHOUGH these models are basically similar to the earlier versions (Models 459 and 255 reviewed on page v), there are sufficient differences in the circuit arrangements to cause confusion if the service data for one type of model is used when servicing a model of the other type, hence this separate review in which the various differences are specifically dealt with.

The first part of the circuit is quite straightforward, but it will be noted that the volume control, VR1, is an HT potentiometer connected in series with R4 between HT positive and chassis. The slider is connected to the screen grids of V1, V3 and V4.

Unlike the earlier models, therefore, control of sensitivity is obtained by controlling the screen grid voltages and not by applying a variable grid bias.

The IF circuits are similar to the earlier version, but the IF choke, L9, is tapped, and there is no local-distance switch across the grid leak R6.

The intervalve transformer L10, L11, is resistance capacity coupled by R7 and C11 to the anode circuit of V5, while the anode by-pass condenser, C10, is of a rather high value, .002 mfd. There is no tone correction condenser between the anode of V6 and chassis.

V3 and V6 grid circuits are taken to the grid bias negative line, which should be given a negative voltage of 3.

The output from V6 is transformer-coupled to the moving coil loudspeaker, of which the speech coil is L14. It will be noted that the speech coil is connected across only a part of the secondary—*i.e.*, terminals 1 and 2.

The extra loudspeaker sockets are in the anode circuit of V6, and any extra loudspeakers must be of the high resistance type. If desired, however, a low resistance 4-ohm speaker may be connected to terminals 1 and 2 or a slightly higher resistance speaker, say about 8 ohms, may be connected across terminals 1 and 3.

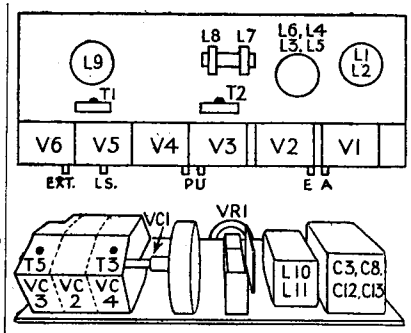
GANGING

Ganging is carried out as for the Models 255 and 459, except that it should be noted that T3 and T5 are the trimmers for the medium band and T4 for the long waveband (front of chassis, near L9).

VALVE READINGS

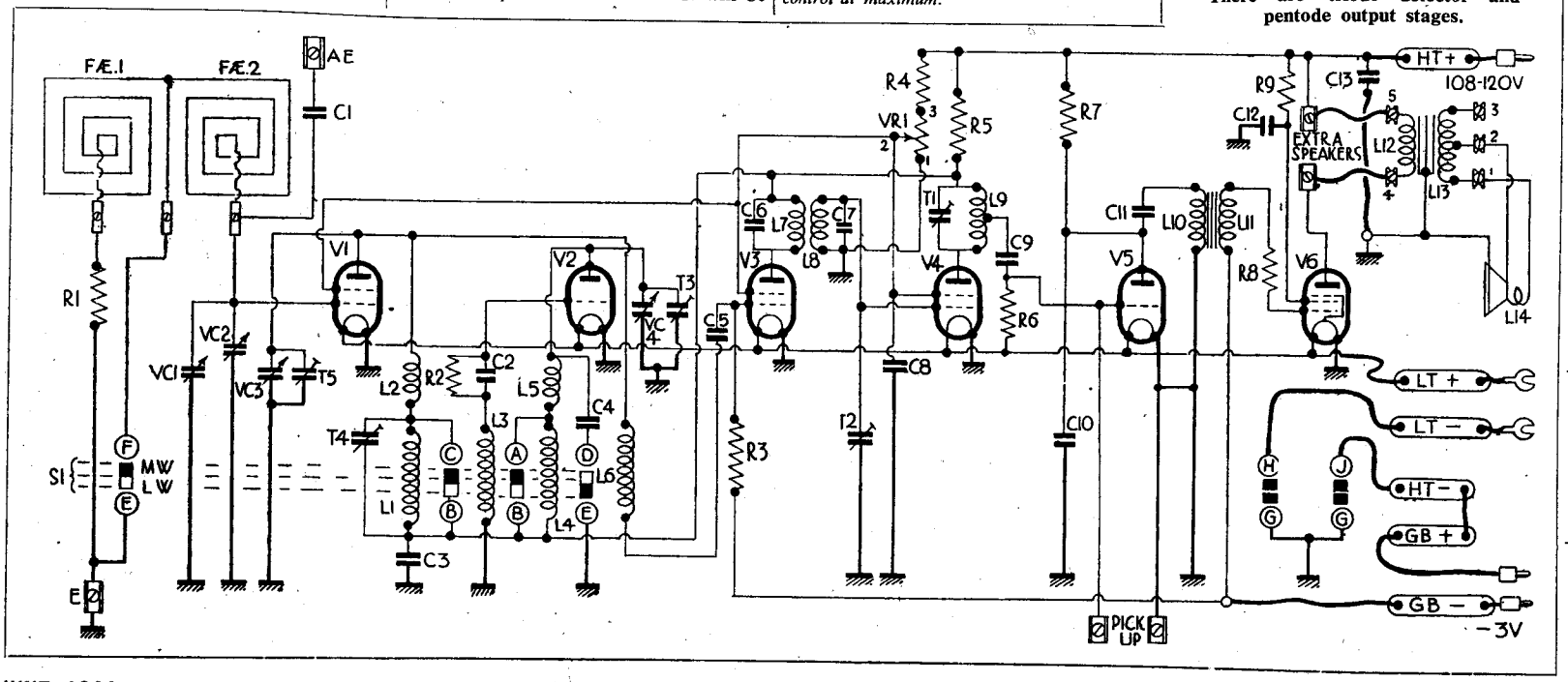
V	Type	Electrode	Volts	Ma
1	S21 (Met)	Anode	76	1.6
		Screen	40	1.2
2	HL2 (Met)	Anode	74	1.5
3	S21 (Met)	Anode	76	.8
		Screen	40	.2
4	S21 (Met)	Anode	76	.7
		Screen	40	.9
5	HL2 (Met)	Anode	25	1
6	PT2	Anode	110	3.5
		Screen	80	—

Readings taken with 114v HT battery, volume control at maximum.



Two views of the chassis of the HMV model 459MC and the Marconiphone 255MC. The upper drawing shows the underside and indicates the valve positions and some of the coils and trimmers. Below is seen the view of the top of the chassis which carries the drum-driven gang condenser.

Below, the circuit of the MC models, which are early battery-driven superhet portables. The first valve is a screen-grid HF amplifier and V2 is the triode oscillator. V3 is the mixer and V4 the IF amplifier. There are triode detector and pentode output stages.



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with the damping circuit between anode of V2 and chassis.

Adjust T1 for maximum output, keeping the input low.

With signal injected as before, connect the damping circuit between signal diode of V3 and chassis. Adjust T2 for maximum output.

Inject signal into control grid of V1 and connect damping circuit between hexode anode of V1 and chassis. Adjust T3 for maximum output.

With signal input as above connect damping circuit between control grid of V2 and chassis. Adjust T4 for maximum output.

SW Band.—Inject an 18m signal into the sensitive aerial socket *via* suitable dummy aerial. Switch to SW and tune receiver to 18m. Adjust T5 and T6 for maximum output. Check calibration at 50m.

MW Band.—Switch to MW, tune receiver to 300m and inject a 300m signal into the sensitive aerial socket. Adjust T7 and T8 for maximum output. Check calibration at 500m.

LW Band.—Switch to LW, tune receiver to 1,500m and inject a 1,500m signal into the sensitive aerial socket. Adjust T9 and T10 for maximum output. Check calibration at 1,900m.

CONDENSERS

C	Mfds	C	Mfds
1 ..	.00005	8 ..	.5
2 ..	.0002	9 ..	.0001
3 ..	.5	10 ..	.002
4 ..	.0002	11 ..	.1
5 ..	.0001	12 ..	.1
6 ..	.0005	13 ..	2
7 ..	.0003		

RESISTANCES

R	Ohms	R	Ohms
1 ..	100	6 ..	230,000
2 ..	50,000	7 ..	50,000
3 ..	1 meg	8 ..	500,000
4 ..	20,000	9 ..	5,000
5 ..	5,000	VR1 ..	100,000

WINDINGS

L	Ohms	L	Ohms
1 ..	13	8 ..	25
2 ..	4	9 ..	50
3 ..	2.5	10 ..	320
4 ..	6	11 ..	2,700
5 ..	4	12 ..	950
6 ..	2.5	13 ..	2.5+1
7 ..	25	14 ..	4
FAE1	15	FAE2	2