

MARCONIPHONE

919

HMV III2

Four-valve, plus rectifier, superhet covering two short wavebands and medium waves. Suitable for 200-250v. A.C. supplies. Marketed in January, 1942, by the Gramophone Co., Ltd., and the Marconiphone Co., Ltd., Hayes, Middlesex.

Circuit.—Transformer aerial input to V1, the frequency-changer, is employed on medium waves. On each of the two short bands, a grid coil is brought into use as an aerial coupler. A.V.C. is applied to V1 via R1, the condenser C1 preventing the grid coil shorting the control voltage to chassis.

The oscillator section of V1 is tuned grid and across the gang section is C25, a bi-metal temperature-frequency compensating unit. An additional frequency compensator, C22-R17, across the S.W. oscillator circuit actually draws special heating current, R17 being connected across the heater supply.

There are separate anode reaction windings on each of the three bands and the padding capacities, C2, C3 and C4, are also included in both grid and anode circuits for feed-back purposes.

V1 and V2, I.F. amplifier, and V3, the double-diode triode, are linked by two straightforward I.F. transformers with fixed capacities and adjustable iron-dust cores.

Only one diode is utilised. R15 and VR1, the volume control, constitute the load for both signal and A.V.C. purposes. A.V.C. is taken off by R5 and L.F. by C15. Grid current in the triode section develops the valve's own bias across the leak, R7.

Resistance-capacity coupling to V4, the output tetrode, includes an unusual form of local distance switch. When the local distance plug is removed, R16 and C24 come into use, and V4 is energised from the low-potential end of a potentiometer comprising R16 and R14. R10 is an oscillation stopper.

There is a variable tone circuit across the output transformer primary and a fixed tone shunt in C20.

H.T. is drawn from a full-wave rectifier in a conventional arrangement with the speaker field used as the smoothing choke in the positive lead.

GANGING

I.F. Circuits.—Tune to S.W.1 band maximum capacity and set volume fully clockwise and tone fully anti-clockwise. Insert L.-D. plug in "distat" and short circuit R2.

Inject 485 kc. between V1 signal grid and chassis via .1 mfd.

Adjust four cores of I.F. transformers for maximum on an output meter.

Keep input low to prevent A.V.C. working.

M.W. Band.—See that pointer registers

with 2° mark when gang is at minimum.

Set pointer to 5°, inject 190 m. (1,578.9 kc.) to aerial and earth via dummy aerial, and adjust T1 for maximum.

Tune to 210 m., inject 210 m. (1,428.6 kc.), and adjust T2.

Tune to 79°, inject 530 m. (566 kc.) and adjust core of L9 (by side of gang condenser).

Repeat process.

S.W.1 Band.—Set pointer to 5°, inject 30 m. (10 mc.) and adjust T3. Use peak obtained with least capacity.

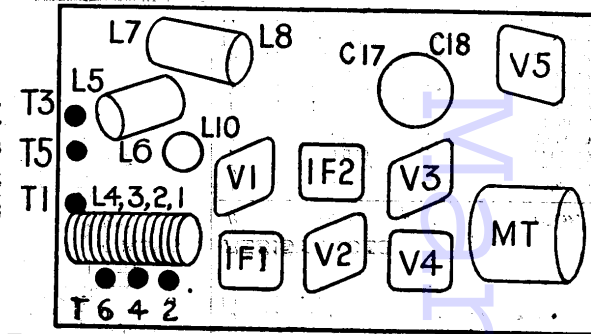
Inject 32 m. (9,375 mc.), tune in and adjust T4.

Repeat operations.

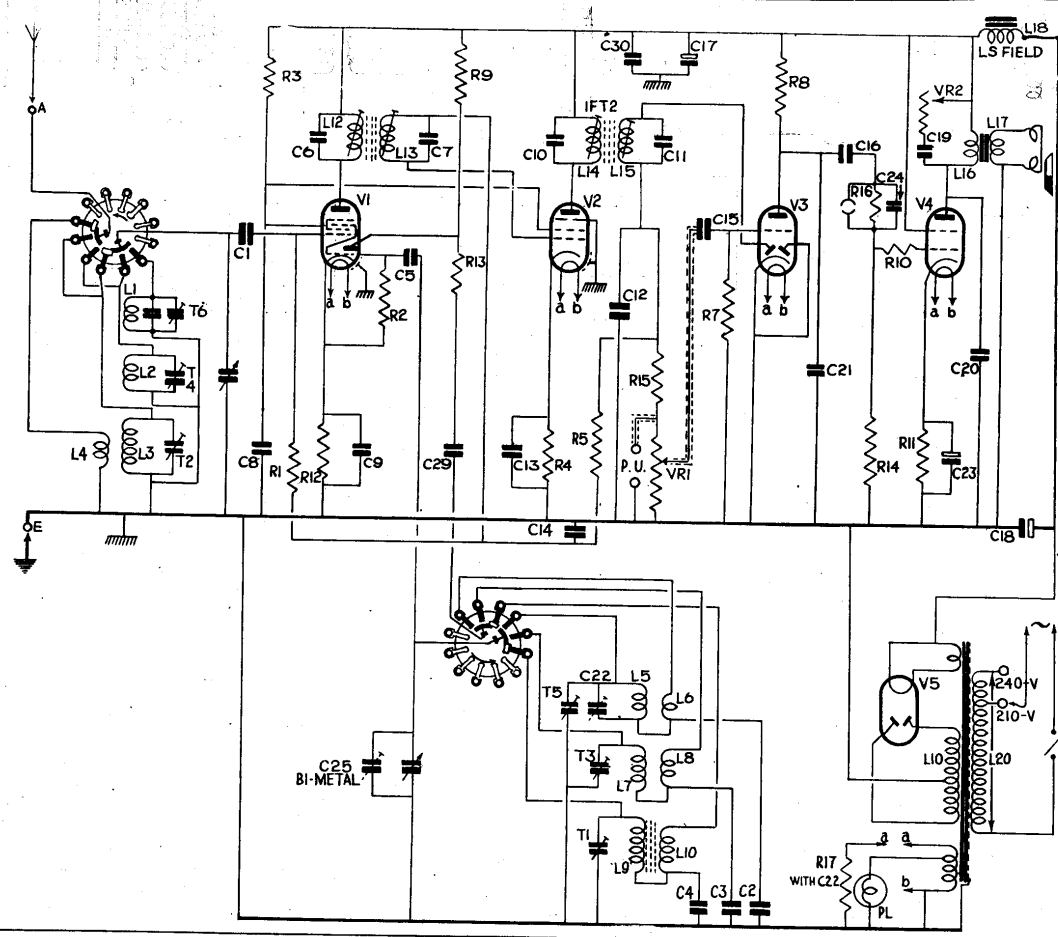
S.W.2 Band.—Set pointer to 5°, inject 13 m. (23.08 mc.) and adjust T5, fixing on lowest capacity peak.

Tune to 14 m., inject 14 m. (21.43 mc.) and adjust T6 while slightly rocking gang.

How the trimmers and other main features are located on the underside of the 919-1112 chassis.



Tune and inject 20 m. (15 mc.) and adjust loop of L1 while rocking gang. Tune and inject 30 m. (10 mc.) and adjust shape of trimming loop of L5. Repeat operations.



VALVE READINGS

V	Type	Electrode	Volt	Ma.
1	X65	Anode	250	2
		Screen	80	3.3
		Osc. anode	125	5.7
		Cathode	2.5	11
2	KTW61M	Anode	250	7.8
		Screen	80	2.2
		Cathode	3.5	10
3	DH63 or 8Q7G	Anode	65	.2
		Cathode	65	.2
4	KT61	Anode	232	41
		Screen	250	5
		Cathode	4.6	46
5	U50	Anodes	325A.C.	—
		Cathode	330D.C.	—

Pilot lamp, 6.2 v., .3 amp.

CONDENSERS

C	Mfds	C	Mfds
1	230 mmfds.	15	.0035
2	.0035	16	.005
3	.0035	17	.16
4	.005	18	.8
5	.75 mmfds.	19	.05
6	200 mmfds.	20	.0023
7	200 mmfds.	21	.00035
8	.05	22	15 mmfds.
9	.05	23	50
10	100 mmfds.	24	23 mmfds.
11	100 mmfds.	25	Bi-metal strip
12	100 mmfds.	26	.15 mmfds.
13	.05	29	.500 mmfds.
14	.1	30	.05

RESISTANCES

R	Ohms	R	Ohms
1	.5 meg.	11	100
2	.1 meg.	12	230
3	35,000	13	50
4	350	14	.5 meg.
5	2.3 meg.	15	.5 meg.
7	10	16	.5 meg.
8	.5 meg.	17	25
9	23,000	VR1	1 meg.
10	50,000	VR2	50,000

WINDINGS

L	Ohms.	L	Ohms.
1	V. low	12	5
2	.2	13	5
3	.7	14	6.5
4	.45	15	6.5
5	V. low	16	430
6	V. low	17	4
7	.2	18	1,000
8	.4	19	190+190
9	2.3	20	61.5
10	1.6		