

MARCONIPHONE

892

HMV 1404

Four-valve table model battery-operated superhet covering three wavebands and with tetrode output. Marketed by the Gramophone Co., Ltd., and the Marconiphone Co., Ltd., Hayes, Middlesex.

Circuit.—Transformer coils, with iron-dust cores on M. and L.W., couple the aerial to V1, the frequency-changer. Wave-changing is by push-button switches. The oscillator section of V1 is tuned grid with reaction provided on the long waves by the padder, C9, being common to anode and grid circuits. Iron-cored I.F. transformers with

trimmer capacities link up V2, the I.F. amplifier, and V3, the double-diode triode. The signal demodulation diode load, VR1, is also the volume control and R7 with C11 form an I.F. filter. The A.V.C. diode is energised by C13, and given a delay bias via R13. A.V.C. is fed to V1 by R17 decoupled by C3 and a smaller control voltage is passed to V2 from R12 decoupled by C17.

The output tetrode, V4, is resistance-capacity coupled and has a shunt tone condenser, C19.

R16 is an economy switch which reduces all H.T. volts when S2 is opened. Bias is developed across R15 and decoupled by C18.

Batteries.—The recommended accumulator is a 2v. type, GFG4, and the H.T. battery a 120 v. type, B498. Total H.T. consumption is 10 m.a. or 5m.a. (economy position). L.T. consumption is .6 amp.

Extension Speaker.—A 5-ohm extension speaker may be connected. The switch plug should not be removed unless an extension speaker is in use.

GANGING

I.F. Circuits.—Tune to bottom of M.W., set economy switch to maximum, volume at maximum and inject 465 kc. to V1 grid via .1 mfd.

Adjust I.F. trimmers for maximum,

reducing input to keep below A.V.C. level.

M. and L. Waves.—See that pointer registers with 192 m. with gang at minimum.

Tune to 192 m., inject 192 m. (1,562 kc.) to aerial and adjust T1.
Tune to 220 m., inject 1,363.6 kc. and adjust T2.

Tune to 530 m., inject 566 kc. and adjust cores of L10 and L4.
Repeat these operations.

Tune to 720 m., inject 416.7 kc. and adjust T3.

Tune to 1,750 m., inject 171.4 kc. and adjust L11.

Tune to 1,400 m., inject 214.3 kc. and adjust L6.

Repeat 720 m. adjustment.

Short Waves.—Tune to 50 m., inject 6 mc. and adjust loops in L8 and L2 for maximum.

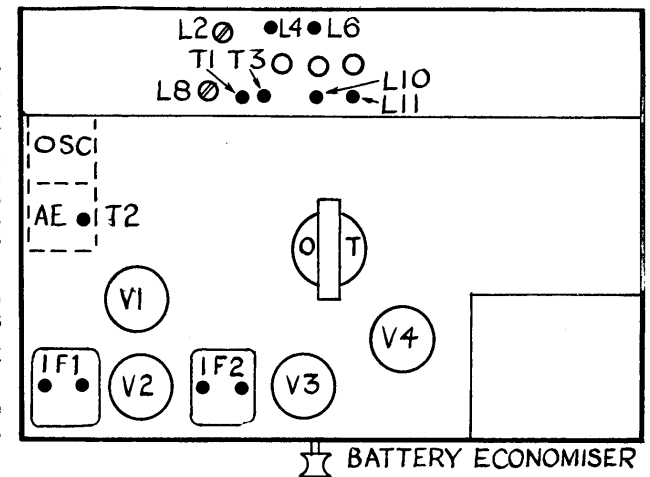
Check that receiver will tune to 16.8 m. (17.86 mc.)

WINDINGS

L	Ohms.	L	Ohms
1	.7	10	3
2	.1	11	7.5
3	.24	12	4.5
4	2.25	13	4.5
5	.59	14	4.5
6	17.5	15	4.5
7	.8	16	650
8	.1	17	4
9	1.75		

A war-time set, this model has many features in common with its main counterpart.

Access to trimmers is by holes in the front by the wave-change buttons.



The circuit is typical of up-to-date practice. Wave-changing is by three button switches, and bias is obtained automatically. Valves are two-volt types.

VALVE READINGS

Type	Electrode	Volts	Ma.
1 X24	Anode	117	.7
	Screen	70	.9
	Osc. anode	50	1.3
2 Z21	Anode	117	.9
	Screen	83	.35
	Bias	.25	
3 HD24	Anode	57	.35
	Screen	112	4.6
4 KT2	Anode	117	.9
	Bias	3.5	

Readings with 120 v. battery; aerial disconnected

RESISTANCES

R	Ohms.	R	Ohms.
1	10,000	11	2.3 meg.
2	50,000	12	.35 meg.
3	.1 meg.	13	2.3 meg.
4	50,000	14	.35 meg.
5	15,000	15	350
6	75,000	16	10,000
7	.23 meg.	17	.23 meg.
9	.15 meg.	18	2.3 meg.
10	.23 meg.		

CONDENSERS

C	Mfds.	C	Mfds.
1	35 mmfds.	11	100 mmfds.
2	500 mmfds.	12	.01
3	.05	13	100 mmfds.
4	.05	14	230 mmfds.
5	75 mmfds.	15	.05
6	.05	16	8 125v.
7	50 mmfds.	17	.05
8	.005	18	50 12v.
9	350 mmfds.	19	.0015
10	500 mmfds.		

Next Month's Article

THE alignment instructions in SERVICE ENGINEER reviews are skeletonised, some of the procedure common to all sets being omitted. An article explaining these routine steps and the principles underlying ganging procedure will appear next month.

