H.M.V. - 360, 370

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VMS4B	170	4·0	70	0·6
V2 MH41	65	1·0	—	—
V3 N41 ...	170	42·0	200	10·0
V4 U12	330*	—	—	—

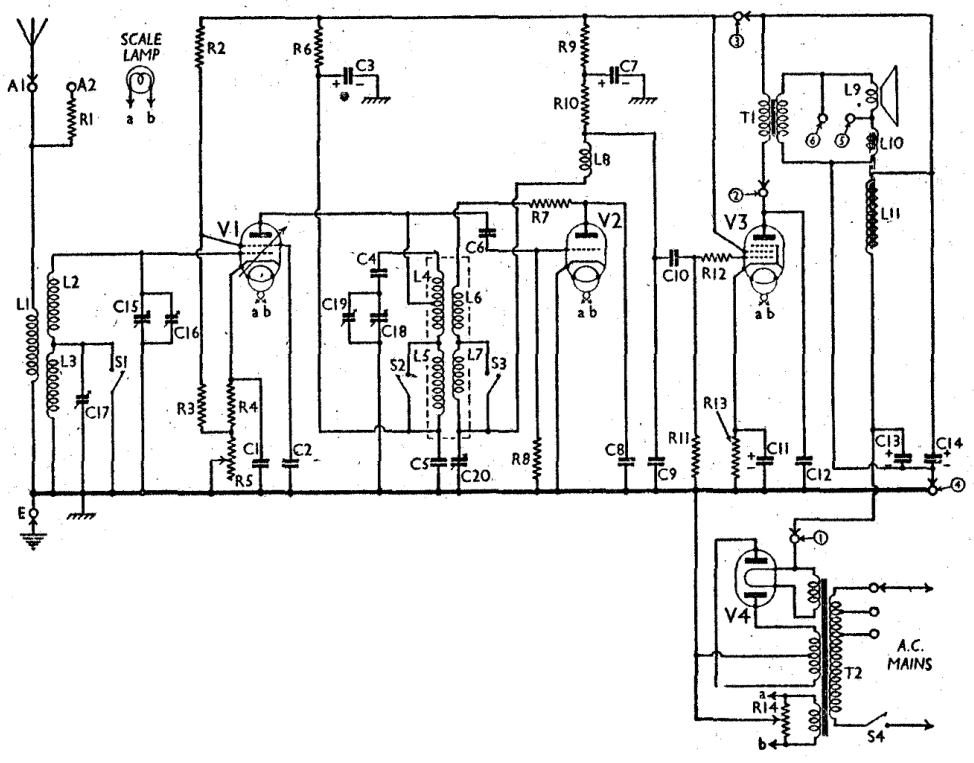
* Each anode. AC.

CONDENSERS		Values (μF)
C1	V1 cathode by-pass ...	0·1
C2	V1 SG decoupling ...	0·5
C3*	V1 anode decoupling ...	2·0
C4	Blocking condenser ...	0·05
C5	V1 anode decoupling ...	0·1
C6	V2 CG condenser ...	0·000075
C7*	V2 anode decoupling ...	1·0
C8	RF by-pass condensers ...	0·00075
C9	RF by-pass condensers ...	0·00075
C10	AF coupling to V3 ...	0·1
C11*	V3 cathode by-pass ...	25·0
C12	Fixed tone corrector ...	0·002
C13*	HT smoothing condensers	8·0
C14*	HT smoothing condensers	8·0
C15†	Aerial circuit tuning ...	—
C16‡	Aerial MW trimmer ...	—
C17‡	Aerial LW trimmer ...	—
C18†	V1 anode tuning	—
C19‡	V1 anode MW trimmer ...	—
C20†	Reaction condenser ...	0·0008

* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values (ohms)
R1	Aerial series resistor ...	23,000
R2	V1 SG pot. divider ...	35,000
R3	V1 SG pot. divider ...	23,000
R4	V1 fixed GB resistor ...	230
R5	V1 gain control	14,000
R6	V1 anode decoupling ...	5,000
R7	Reaction stabiliser ...	100
R8	V2 grid leak	2,300,000
R9	V2 anode decoupling ...	100,000
R10	V2 anode load	50,000
R11	V3 CG resistor	230,000
R12	V3 grid stopper	100,000
R13	V3 GB resistor	50
R14	Hum control	48·5

OTHER COMPONENTS		Values (ohms)
L1	Aerial coupling coil ...	12·0
L2	Aerial tuning coils ...	3·0
L3	Aerial tuning coils ...	24·0
L4	V1 anode tuning coils ...	3·0
L5	V1 anode tuning coils ...	24·0
L6	Reaction Coils	0·75
L7	Reaction Coils	2·0
L8	V2 anode RF choke ...	90·0
L9	Speaker speech coil ...	1·75
L10	*Hum neutralising coils* ...	0·5
L11	Speaker field winding ...	2,000·0
T1	Speaker input trans. Pri. ...	750·0
T1	Speaker input trans. Sec. ...	0·2
T2	Mains *trans.* Pri., total ...	29·0
T2	Mains *trans.* Heater sec. ...	0·1
T2	Mains *trans.* *Rect. fil. sec.*	0·1
T2	Mains *trans.* H.T. sec., total	680·0
S1-S3	Waveband switches ...	—
S4	Mains switch	—



CIRCUIT ALIGNMENT

MW.—Connect signal generator leads, via a 0.0002 μF condenser, to **A1** and **E** sockets. Connect the output meter, which may be a 0-2 V AC voltmeter, to tags 4 and 6 on the speaker chassis terminal panel.

Unscrew **C16** and **C19** to minimum. Insert chassis into cabinet, and tune condenser to exactly 200 m on the scale. Carefully remove chassis without disturbing condenser. Feed in a 200 m (1,500 kc/s) signal, set receiver volume control **R5** to maximum, and reaction control **C20** just short of oscillation. Adjust **C19** for maximum output, reducing signal generator output progressively so that the reading on output meter is below 0.5 V. Similarly adjust **C16.** Readjust **C19,** then **C16** again if necessary.

LW.—Place chassis in cabinet, tune to 1,400 m on scale. Remove chassis carefully. Set wavechange switch to LW and feed in a 1,400 m (214 kc/s) signal. Set reaction control just short of oscillation, and adjust **C17** for maximum output.

MODIFICATIONS

Droitwich Models

Marconiphone 237 and 238, and the remaining "A" models in Marconiphone (240A, 245A), HMV (360A, 370A) and Columbia (359A) ranges, employ a modified circuit as compared with the 235.

The primary difference is in the substitution of a Droitwich rejector in place of the **A2** socket resistor **R1,** but several other differences occur as well. **V1** anode is connected via two switches (MW or LW) to tappings on **L4** or **L5,** with a 0.000023 μF condenser shunted across **L5.**

The reaction circuit is changed considerably. **C20** becomes a pre-set condenser, fitted on the rear chassis member, and it is shunted by a 3,000 Ω variable potentiometer which acts as the reaction control. Switch **S3** is omitted, and **R7** is replaced by an RF choke and a 0.0005 μF isolating condenser, connected in series. The bottom of **L8** is connected directly to **V2** anode instead of to **L7.** **R9** becomes 50,000 Ω, and **R13** becomes 100 Ω.

The controls are rearranged, **S4** taking the place of **C20,** and the reaction control potentiometer spindle projecting from the rear of the chassis, just beside **C20** adjustment. All the "A" models have a screened mains transformer, and some of them have a 0.0023 μF RF by-pass condenser between one side of the mains and chassis. The 237 is housed in a leatherette cabinet, like the 235; all the other models have walnut cabinets.

Radiogram Modifications

The Marconiphone 245, 245A and HMV 370, 370A are radiograms, with the following modifications as compared with the table models.

A radio muting switch is introduced between **C10** and **R11,** opening on gram. The pick-up is connected across a 500,000 Ω potentiometer, one side of which goes to chassis, and the slider goes via a second switch to the top of **R11.** The potentiometer is ganged with **R5.** In the "A" models, a third switch connects **V1** anode directly to the HT circuit, short-circuiting **V1** output on gram. In addition, a 0.05 μF condenser is connected across the speaker field (tags 1 and 3 on connecting panel).