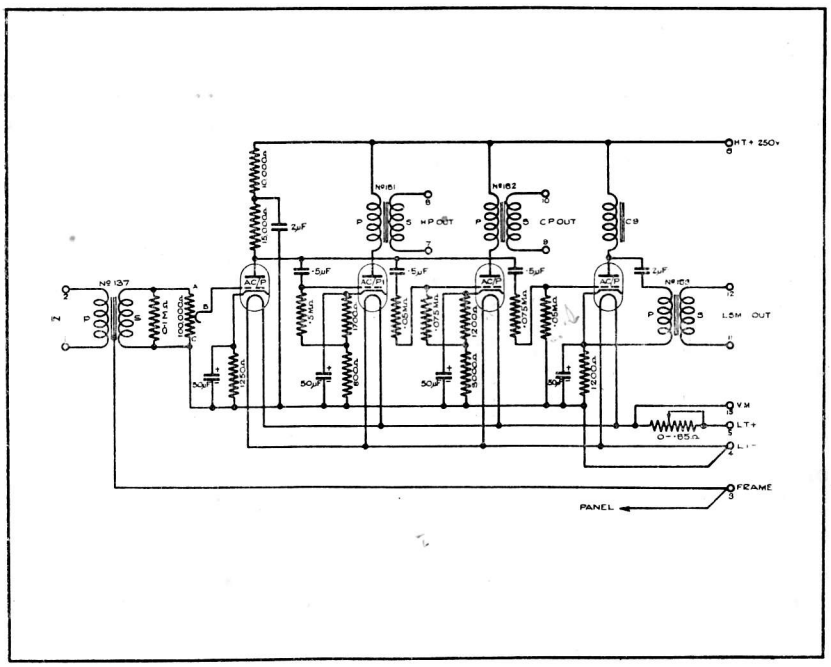
AMPLIFIER TV/8



Drawing A.2820, Issue 2.

Function—This trap valve amplifier is used at **Maida Vale** and is connected in the output of the ' B ' amplifier. It has three independent outputs feeding checkphones, housephones and loudspeaker circuits respectively. The maximum load for which each of these circuits is designed is as follows :—

Checkphones	2 pairs of headphones.
Housephones	10 ,, ,, ,,
Loudspeakers	14 LSM/1 amplifiers.

Circuit—It is a two-stage amplifier with three output stages fed in parallel via a resistance capacity coupling from the output of the first stage, which is transformer coupled to the ' B ' amplifier output. Simple transformer coupling is used for the headphone and checkphone outputs, but the loudspeaker output is choke-capacity transformer coupled. The grid bias for all stages is automatic. In the case of the loudspeaker output stage the biassing resistance and the C.9 choke together provide the necessary anode dropping resistance, but in the case of the H.P. and CP outputs, the D.C. resistance offered by the primaries of the output transformers is fairly small and additional resistances in series with the biassing resistances in the H.T. negative lead are, therefore, included for the purpose. The series resistances included in the grid coupling circuits of the CP and loudspeaker output stages

serve to adjust the volume at which the programme is applied to these stages and so dispense with the need for individual volume controls. The anode circuit of the first stage and the grid circuits of all the stages are decoupled.

Impedances

Input impedance	13,500 ohms.
CP Output impedance	1,350 ,,
H.P. ,, ,, ...	142 ,,
L.S. ,, ,, ...	103 ,,

Transformers

	Number	*Impedance Ratio*	*Turns Ratio*
Input	137	1/4	1/2
H.P. Output	181	23.5/1	4.85/1
CP. ,,	182	4.4/1	2.1/1
L.S. ,,	183	44.9/1	6.7/1

Volume Control

Continuously variable potentiometer of resistance 100,000 ohms approximately.

Supply Data

Stage	*Valve*	*Anode Feed* mA. (approx.)	*Filament* Volts	Amps
1	AC/P	6	4	1
2 H.P.	AC/P1	18	4	1
CP	AC/P	12	4	1
L.S.	AC/P	12	4	1
Total		48		4

High Tension Supply	250 volts.
Low Tension Supply	6 volts (stepped down to 4V. by a series resistance).

Test Data

Maximum Voltage Gain at 1,000 c/s.

H.P. Output (loaded with 200 ohms.)	16.5 ±2 db.
CP. ,, (, ,, 2,000 ,,)	25.0 ±2 db.
L.S. ,, (,, ,, 300 ,,)	13.0 ±2 db.
Output level for test purposes, in each case	**0 db.**