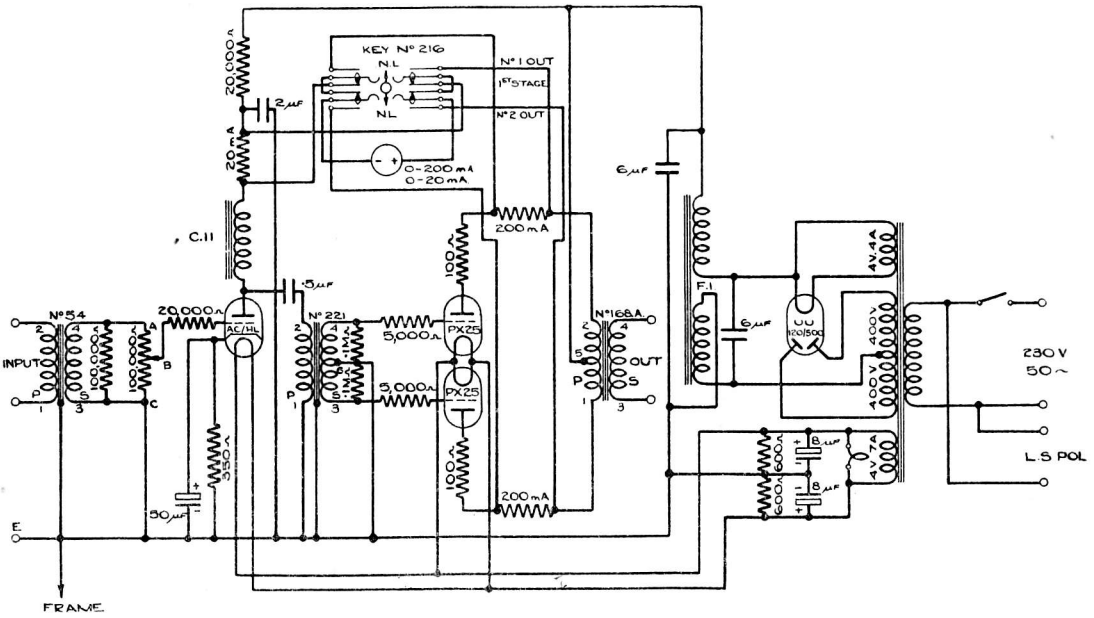
AMPLIFIER LSM/2



Drawing A.2400, Issue 3

This is an A.C. mains-operated loudspeaker amplifier used in the loudspeaker units provided in the listening halls at **London (Broadcasting House).**

Circuit

It comprises two stages of which the second employs two valves in push-pull. The volume control is connected in the grid circuit of the first stage across the loaded secondary of the input transformer and the valve is choke-capacity coupled to the screened interstage transformer.

The supplies are obtained from the mains unit, A.C. being used for heating the valves. The rectified A.C. is applied to the anodes via a smoothing filter, of which the choke has two windings on a common core, one connected in each leg of the circuit. The supply to the first stage is further decoupled in the usual manner. Milliammeter shunts are provided in the anode lead to each valve and by means of a three-position key the milliammeter provided can be connected across any of the shunts so that the anode current taken by each valve can be individually measured.

The first stage uses an indirectly-heated valve and the bias is obtained in the usual manner from a resistance connected in the H.T. return circuit. The valves in the second stage, however, have directly-heated filaments and automatic bias is provided by returning H.T. negative to the centre point of the filament. This is provided by two 600Ω resistances which are effectively paralleled in the common H.T. return circuit. The current supply to the loudspeaker for polarising purposes is A.C. since the loudspeaker incorporates its own rectifier and smoothing circuit. A red lamp provided on the front panel is lighted from the L.T. winding of the power transformer as soon as the amplifier is switched on.

Impedances

Input impedance	(approx)	4,400 ohms
Output impedance	(approx)	6.5 ohms
Normal load impedance (Loudspeaker input)	(approx)	12 ohms

Transformers

	Number	*Impedance Ratio*	*Turns Ratio*
Input	54	1/10.9	1/3.31
Interstage	221	1/2 4	1/1.55
Output	168	510/1	22.6/1

Volume Control

Continuously variable potentiometer of resistance approximately 100,000 ohms.

Supply Data

Stage	*Valve*	*Automatic Grid Bias* Volts negative	*Anode Current* mA (approx)	*Filaments* Volts	Amps
Amplifier					
1	ACHL	3.1	9	4	1
2	Two PX25	30	50 (each valve)	4	2 (each valve)
		Total	109		5
Rectifier					
	UU 120/500 or UU5			4	2.5

A.C. supply .. .. 50 c/s. 230 volts

Current drawn from A.C. mains (approximately)

Amplifier	0.4 A
Loudspeaker	0.15 A
Total	0.55 A

Working Voltage Gain

Testing Conditions

Volume Control set for maximum output.

Output loaded with 12 ohms and at a level of approximately + 12 db.

Gain at 1,000 c/s. .. .. 30 ± 2 db.