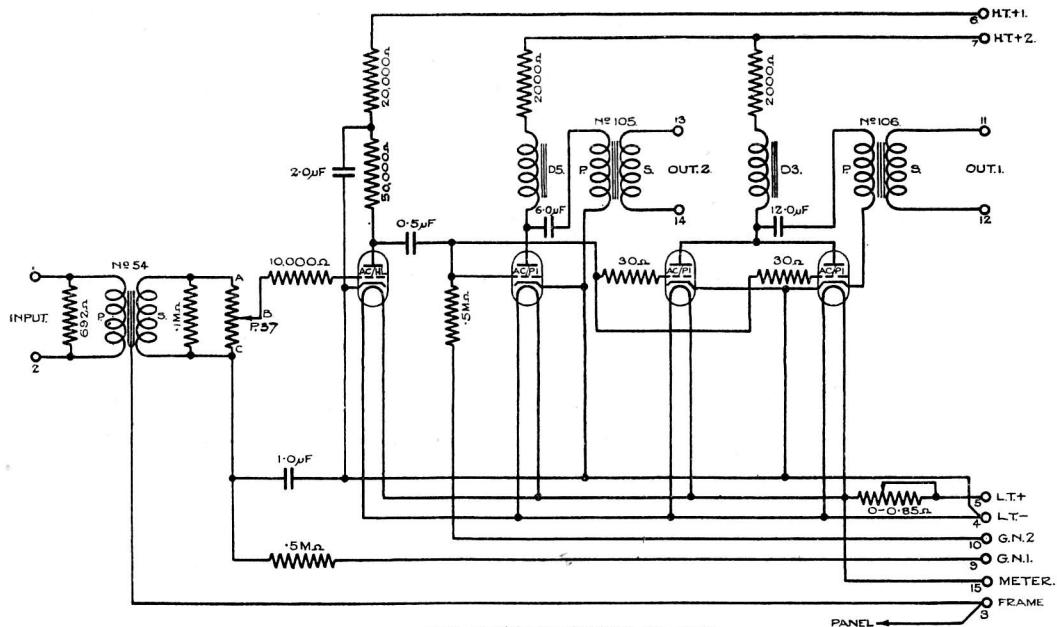


AMPLIFIER D/5



Drawing A.2928, Issue 3.

This amplifier is used at **Birmingham, Bristol, Cardiff, Edinburgh, Leeds, Manchester and Newcastle.** The D/2 and D/3 amplifiers originally installed at certain of these stations have all been modified to this circuit.

Circuit

It is a two-stage amplifier with screened input transformer and resistance-capacity coupling between the stages. It has two output stages designed to enable echo to be added to the programme when required, and the output stages are choke-capacity coupled to the output transformers. The main output stage comprises two valves in parallel.

Impedances

Input impedance	..	..	..	..	..	(approx) 600 ohms
Output 1 impedance	..	..	..	..	..	(approx) 180 ohms
Output 2 impedance	..	..	..	..	..	(approx) 180 ohms
Normal load impedance						
Output 1 ('B' amplifier input)	..	..	..	..	..	(approx) 600 ohms
('C' and programme meter amplifier inputs)	(approx) 8,000—17,000 ohms
Output 2	(approx) 3,000 ohms

AMPLIFIER D/5
 Technical Instructions
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Transformers

					<i>Number</i>	<i>Impedance Ratio</i>	<i>Turns Ratio</i>
Input	54	1/10.9	1/3.31
Output 1	106	10/1	3.16/1
Output 2	..	..	..	..	105	20/1	4.47/1

Volume Control

<i>Type</i>	<i>Total Resistance</i>	<i>No. of Studs</i>	<i>Loss per Stud</i>	<i>Loss on Lowest Stud</i>
P.37	100,000Ω	21	2 db.	Infinite

At some stations the 'D' amplifiers have a potentiometer P.10 with only 10 studs and a loss of 4 db. per stud. At these stations a two-decibel resistance pad, which can be switched in or out of circuit by suitable operation of a key, is provided in the input circuit so as to enable the gain to be adjusted in two decibel steps.

Supply Data

<i>Stage</i>	<i>Valve</i>	<i>Grid Bias Volts</i>	<i>Anode Current mA (approx)</i>	<i>Filaments</i>	
				<i>Volts</i>	<i>Amps</i>
Input	ACHL	2	2.6	4	1
Output 1	2—ACP 1 (in parallel)	30	32.0	4	2
Output 2	ACP 1	30	17.5	4	1
	<i>Total</i>		52.1		4
High Tension Supply	H.T. + 1 (Stage 1)	..	300 volts		
	H.T. + 2 (Output Stages)	..	300 volts		
Low Tension Supply	..	..	6 volts (adjusted to 4V by a series resistance)		

600 Ohm Test Gain

Testing Conditions

Volume control set for maximum output.

Loss Pads key set at 30 db.

T.M.S. sending level zero

Gain at 1,000 c/s. *Output 1* 36 ± 2 db.

Output 2 38 ± 2 db.

Gain at 50—5,000 c/s. (*Output 1*) .. ± 0.5 db. } Relative to gain at
 5,000—9,000 c/s. (,, 1) .. ± 1.0 db. } 1,000 c/s.

Working Voltage Gain

Testing Conditions

Amplifier volume control set for maximum output.

Gain at 1,000 c/s.

Output 1 (loaded with 600 ohms and at a level of 0 db.) 36 ± 2 db.

Output 1 (loaded with 8,000 ohms and at a level of + 10 db. 38 ± 2 db.

Output 2 (loaded with 3,000 ohms and at a level of 0 db.) 40 ± 2 db.