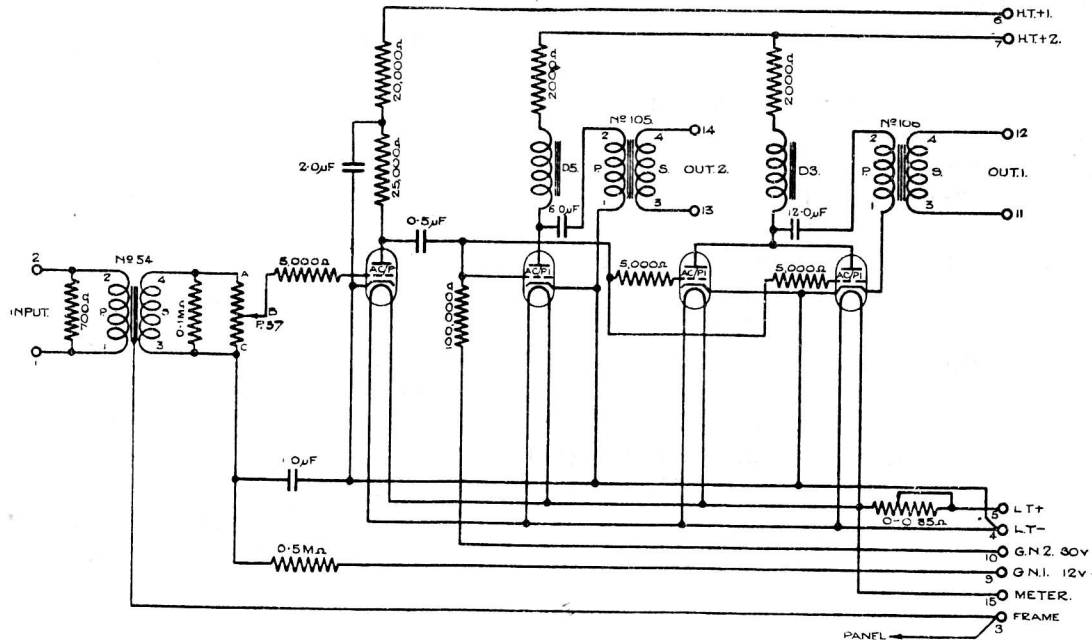


## AMPLIFIER D/4



Drawing A. 2757, Issue 2.

This amplifier is used at London (Broadcasting House).

### Circuit

It is a two-stage amplifier with screened input transformer and resistance-capacity coupling between stages. Two output stages are provided so as to enable echo to be added to the programme when required. 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

### 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

**AMPLIFIER D/4**  
 Technical Instructions  
 Item 3(D/4). May, 1938

**Volume Control**

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

**Supply Data**

Stage	Valve	Grid Bias		Anode Current		Filaments	
		Volts negative		mA (approx)		Volts	Amps
1	ACP	12		3.9		4	1
Output 1	2—ACP (in parallel)	30		35		4	2
Output 2	1—ACP 1	30		17.5		4	1
<i>Total</i>				56.4		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

Amplifier 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) .. .. .  $26 \pm 2$  db.

(Output 2) .. .. .  $24 \pm 2$  db.

Gain at 50—5,000 c/s. (Output 1) .. .. .  $\pm 0.5$  db. } Relative to gain at

5,000—9,000 c/s. ( .. ) .. .. .  $\pm 1$  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.) .. .. .  $26 \pm 2$  db.

Output 1 (loaded with 8,000 ohms and at a level of + 10 db.) .. .. .  $28 \pm 2$  db.

Output 2 (loaded with 3,000 ohms and at a level of 0 db.) .. .. .  $26 \pm 2$  db.