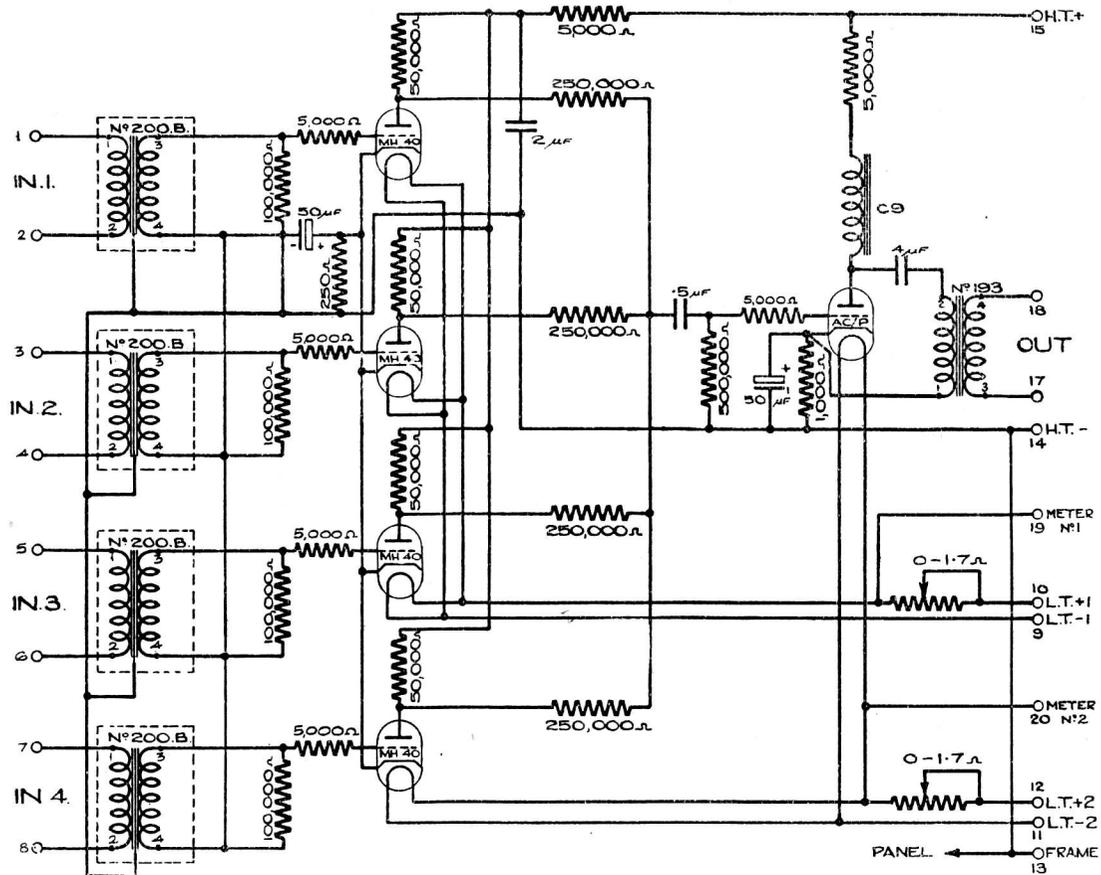


AMPLIFIER DCA/5



Drawing A.4188. Issue 2

This amplifier is used at **Belfast and Glasgow (Queen Margaret College)** in conjunction with dramatic control unit DC/7.

Circuit

It is a two-stage amplifier with four input stages coupled to a common output stage. Inputs Nos. 1 and 2 are associated with the two outputs from the direct programme group mixer and inputs Nos. 3 and 4 with the outputs of the two independent channels of the dramatic control unit. The echo output, via the Echo 'A' amplifier, is applied also to either input No. 3 or 4. The four input stages are identical and are each provided with an input transformer. A stabilising resistance is included in series with the grid in each case and the grid bias for all four valves is obtained from a resistance in the common HT return lead. Resistance-capacity coupling is used between the stages, the anodes of the four input stages being connected in parallel, via 250,000 ohm decoupling resistances and a common coupling condenser, to the grid of the valve in the second stage. This valve is operated with automatic bias and is also provided with a stabilising resistance in series with its grid. Its anode is choke-capacity coupled to the output transformer.

AMPLIFIER DCA/5

Technical Instructions

Item 3 (DCA/5). May, 1938

Impedances

| | | |
|---|---------|----------------------|
| Input impedance (all 4 stages) | | (approx) 23,000 ohms |
| Output impedance | | (approx) 310 ohms |
| Normal load impedance (B amplifier input) | | (approx) 600 ohms |

Transformers

| | <i>Number</i> | <i>Impedance Ratio</i> | <i>Turns Ratio</i> |
|----------------------|---------------|------------------------|--------------------|
| Input (all 4 stages) | 200B | 1/4.4 | 1/2.1 |
| Output | 193 | 16/1 | 4/1 |

Supply Data

| <i>Stage</i> | <i>Valve</i> | <i>Automatic Grid Bias</i> | | <i>Anode Current</i> | | <i>Filaments</i> | |
|---------------------|--------------|----------------------------|---------|----------------------|---------|--|-------------|
| | | <i>Volts negative</i> | | <i>mA (approx)</i> | | <i>Volts</i> | <i>Amps</i> |
| | | 250V HT | 300V HT | 250V HT | 300V HT | | |
| 1 (each stage) | MH 40 | 1.7 | 2.1 | 1.7 | 2.1 | 4 | 1 |
| 2 | ACP | 9.6 | 13.0 | 9.6 | 13.0 | 4 | 1 |
| | | <i>Total</i> | | 16.4 | 21.4 | | 5 |
| High Tension Supply | | .. | .. | .. | .. | 250 Volts rectified A.C. or 300 volts battery | |
| Low Tension Supply | | .. | .. | .. | .. | 6 Volts (adjusted to 4V by series resistances) | |

600 Ohm Test Gain

Testing Conditions

Loss Pads key set at 60 db.

T.M.S. sending level zero

Gain at 1,000 c/s. 30 ± 2 db.

Gain at 50—5,000 c/s. ± 0.5 db. } Relative to gain

Gain at 5,000—9,000 c/s. ± 1.0 db. } at 1,000 c/s.

Working Voltage Gain

Testing Conditions

Output loaded with 600 ohms and at approximately - 5 db.

Gain at 1,000 c/s. 24 ± 2 db.