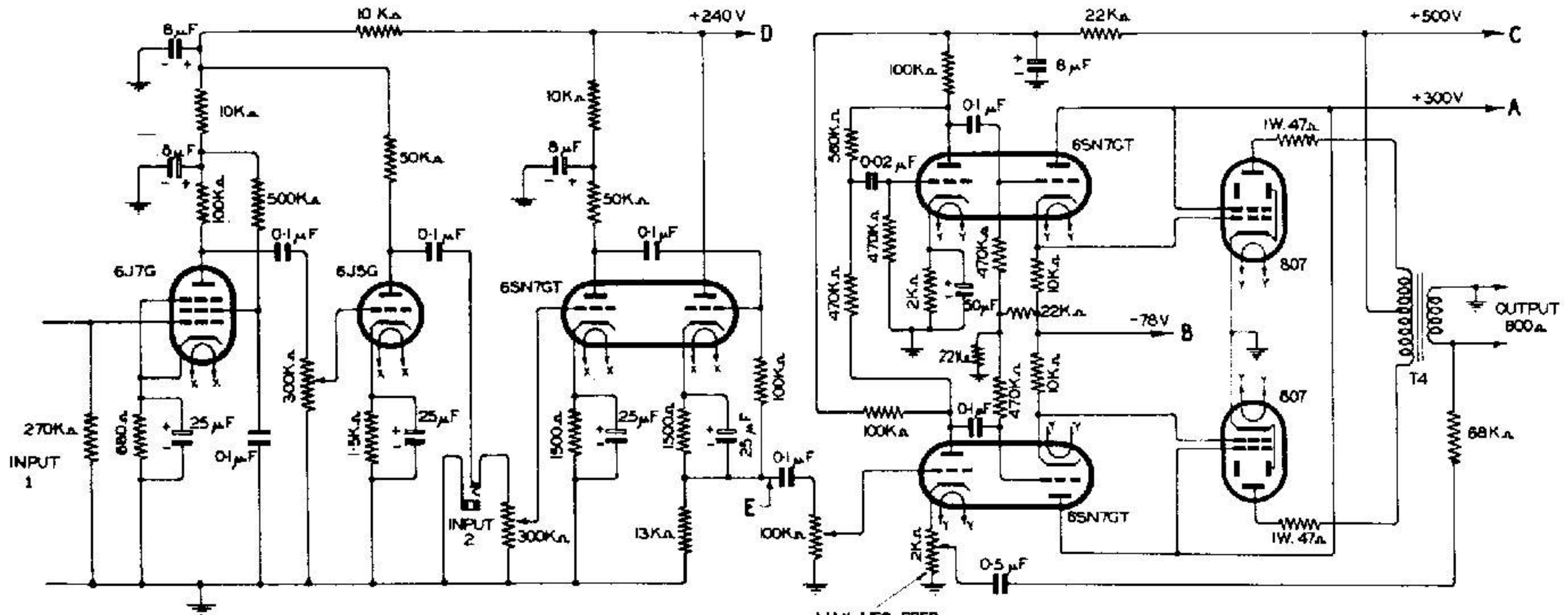


75 WATT CLASS 'AB2' AMPLIFIER

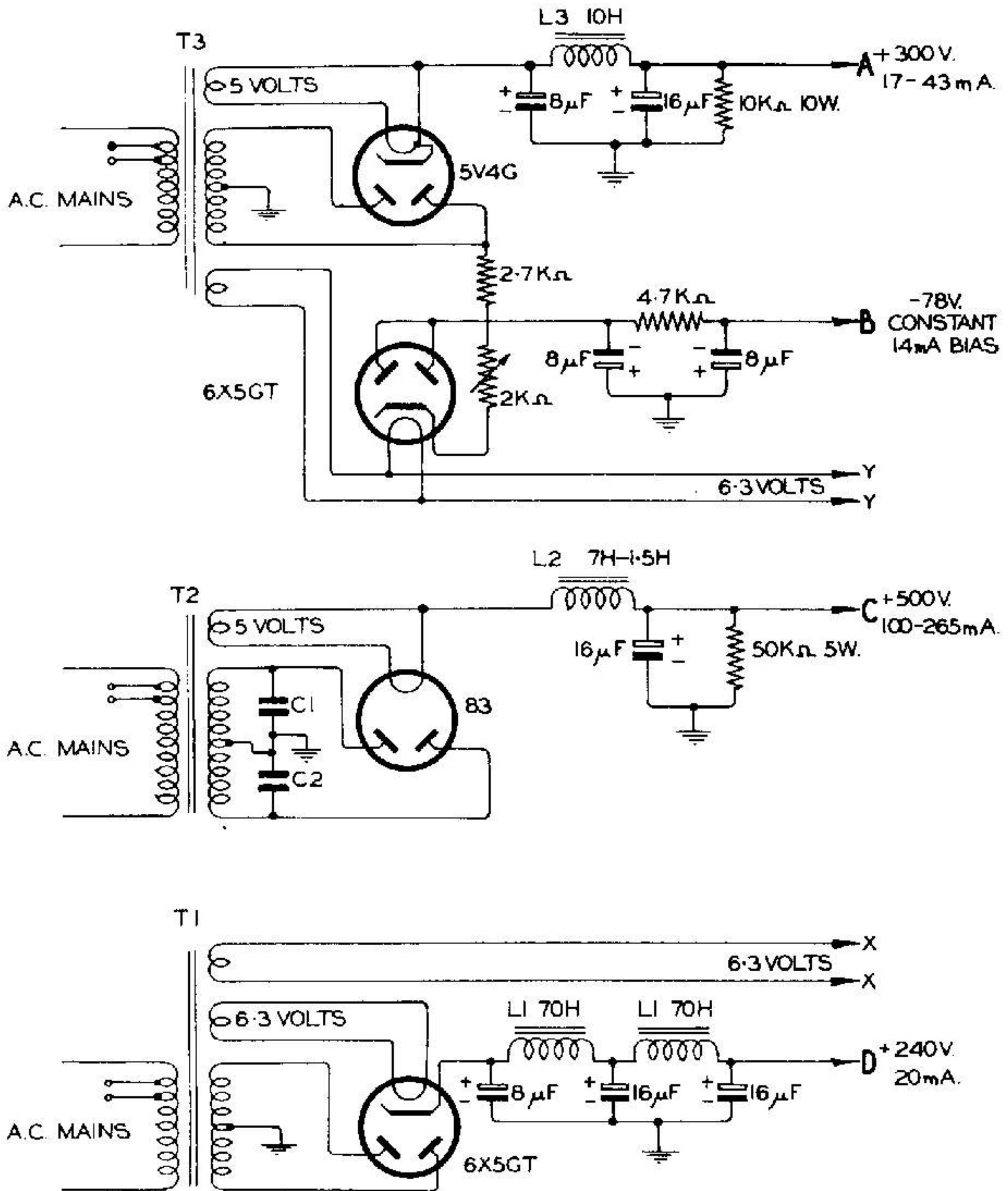


PRE - AMPLIFIER

PHASE
SPLITTER

DRIVER

OUTPUT

POWER SUPPLY FOR 75 WATT CLASS 'AB₂' AMPLIFIER

C1 & C2 = 0.01μF 2,200V. D.C. WORKING.

TRANSFORMER AND CHOKE DATA FOR 75 WATT AMPLIFIER

401.21/1

Mains Transformer T1 (Ref. 401.20)

Secondary:

260-0-260 volts 20 mA; 6.3 volts 1.5 amperes and 6.3 volts 0.3 ampere.

Laminations:

Sankey No. 4A Stalloy 1 in. stack.

Primary winding for 200, 220, 240 volts:

1640 + 180 + 180 turns of 30 S.W.G. S.S.E. wire, DC resistance 58 ohms.

Secondary winding:

(a) 2300 + 2300 turns of 36 S.W.G. S.S.E. wire, DC resistance 470 ohms total.

(b) 60 turns 22 S.W.G. enamel.

(c) 56 turns 22 S.W.G. enamel.

Magnetising current: 36 mA.

Chokes L1 (Ref. 401.20)

70 Hy at 20 mA DC. 2200 Ω DC resistance.

HT voltage at output of filter 240 volts DC.

Mains Transformer T2 (Ref. 401.12)

Secondary:

600-0-600 volts 260 mA and 5 volts 3 amperes.

Laminations:

Sankey No. 28A Stalloy 1 $\frac{3}{4}$ in. stack.

Primary winding for mains voltages 200, 220, 240 volts:

800 + 80 + 80 turns of 22 S.W.G. enamel (8 ohms resistance).

Secondary winding:

(a) 5000 turns centre tapped, 28 S.W.G. S.S.E. wire (205 ohms resistance).

(b) 21 turns 18 S.W.G. enamel.

Magnetising current: approx. 100 mA.

Mains Transformer T3 (Ref. 401.12)

Secondary:

270-0-270 volts 90 mA, 5 volts 2 amperes and 6.3 volts 3.6 amperes.

Laminations:

Sankey No. 4A Stalloy 1 $\frac{1}{2}$ in. stack.

Primary winding for mains voltages 200, 220, 240 volts:

1200 + 120 + 120 turns of 28 S.W.G. S.S.E. wire (37 ohms resistance).

Secondary winding:

(a) 3300 turns centre tapped, 34 S.W.G. S.S.E. wire (320 ohms).

(b) 36 turns 20 S.W.G. enamel.

(c) 43 turns 18 S.W.G. enamel.

Magnetising current: approx. 50 mA.

Swinging Choke L2 (500 volts supply) (Ref. 401.12)

Laminations:

Stalloy No. 4A Stalloy 1 $\frac{1}{2}$ in. stack.

Gap spacer .005 in.

2000 turns of 24 S.W.G. enamel wire (25 $\frac{1}{2}$ ohms resistance).

Inductance:

Approx. 7 Hy with 50 mA DC.

2 Hy with 250 mA DC.

TRANSFORMER AND CHOKE DATA FOR 75 WATT AMPLIFIER (*continued*)

Smoothing Choke L3 (300 volts supply)

Laminations:

Sankey No. 4A Stalloy $1\frac{1}{2}$ in. stack.

Gap spacer .015 in.

3400 turns of 26 S.W.G. enamel wire (95 ohms resistance).

Inductance:

Approx. 11 Hy with no DC.

8 Hy with 100 mA DC.

Output Transformer T4 (75 watts)

Laminations:

Sankey No. 28A Stalloy $1\frac{3}{4}$ in. stack.

Gap spacer .015 in.

Ratio 2.74 : 1 to match 4500 to 600 ohms.

(Max. out of balance current 20 mA).

(Peak AC 250 mA).

Primary winding:

Two sections of 1500 turns each, of 26 S.W.G. D.S.C. wire (73 ohms).

Secondary winding:

Three sections of 370 turns each, of 22 S.W.G. enamel wire (11 ohms) sandwiched with primary sections.

Leakage inductance: less than 0.3%.

Primary inductance:

Approx. 12 Hy with no DC.

12 Hy with 50 mA DC (through both primary sections).

PERFORMANCE DATA

FOR 75 WATT AMPLIFIER (*continued*)

Operating Voltages and Currents^{**}:

	807 Plates	807 Screen Grids	Each 807 Cathode	300 volts HT Line	78 volts Bias Line	Bias
No drive	volts 508	volts 300	mA 47	mA 17	mA 14	volts -78
Max. output	475	280	125	43	14	-78

Harmonic Distortion at 1000c/s (5K Ω and .0015 μ F on output transformer):

Harmonic	25 watts Output†		50 watts Output †		75 watts Output†		70 watts Output*	
	Zero	Max.	Zero	Max.	Zero	Max.	Zero	Max.
2	1.0	.34	1.1	.5	.9	.45	1.0	.92
3	.9	.25	1.3	.62	7.5	5.0	6.0	2.9
4	.13	.05	.25	.12	.7	.23	.9	.93
5	.3	.14	.45	.28	2.7	4.0	3.2	6.0
7	.16	.07	.66	.22	.15	.8	.13	2.0
9	.05	.02	.32	.15	.5	.2	.16	.65

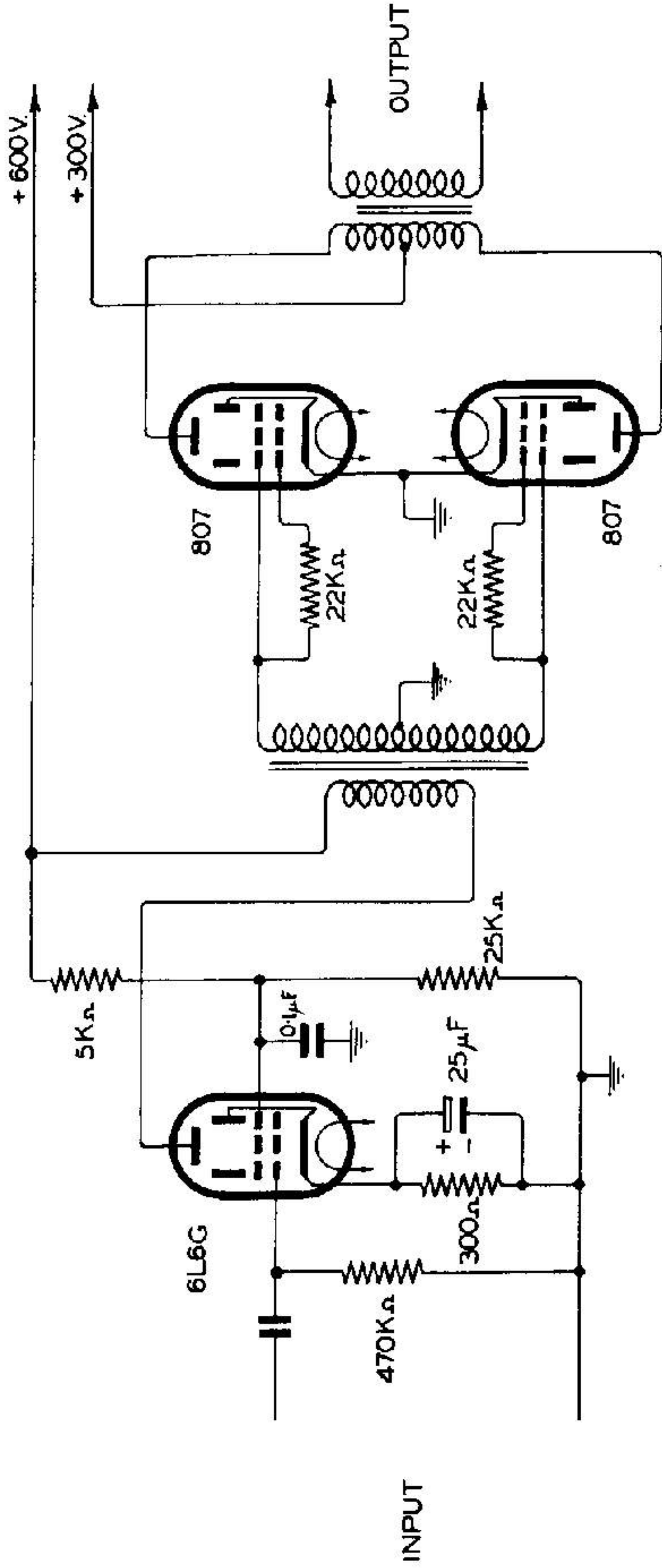
† The 25 watt, 50 watt, and 75 watt figures were taken with perfect HT and screen supply regulation.

* The 70 watt figures were obtained at maximum output with the regulation given above.

Distortion figures at 100c/s were slightly higher than at 1000c/s averaging 1.1—1.2 times more.

Maximum output at 100c/s was 68 watts.

MODIFIED ZERO BIAS CLASS 'B' AMPLIFIER



DRIVER STAGE

PLATE LOAD IMPEDANCE = 4200 OHMS

OUTPUT STAGE

- GRID-TO-GRID INPUT VOLTAGE = 554 VOLTS
- GRID-TO-GRID INPUT POWER = 5.3 WATTS
- GRID-TO-GRID INPUT IMPEDANCE = 7,100 OHMS
- PLATE-TO-PLATE LOAD IMPEDANCE = 6,600 OHMS