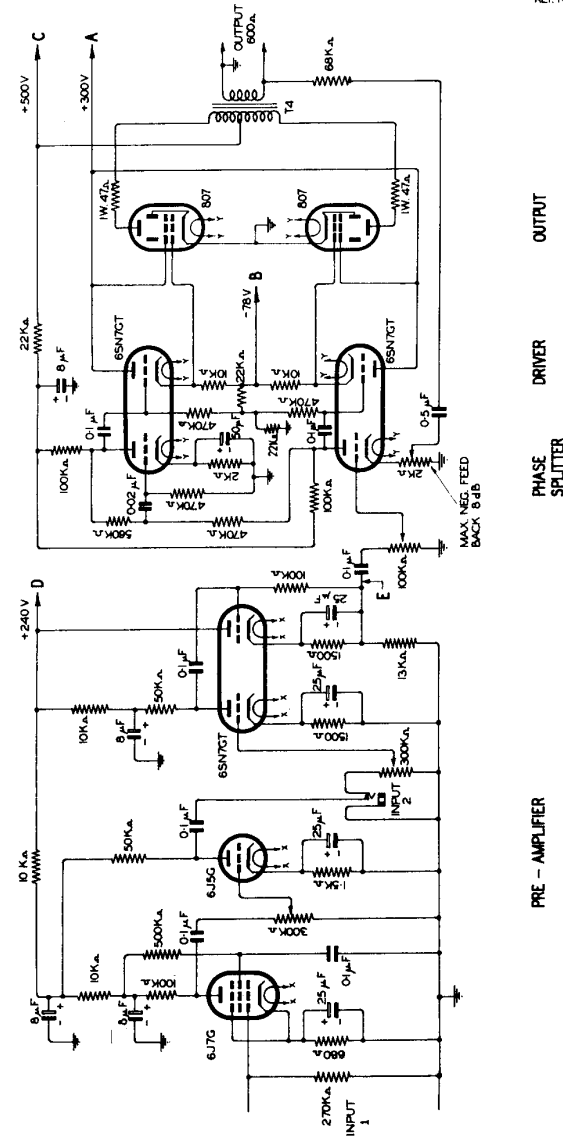




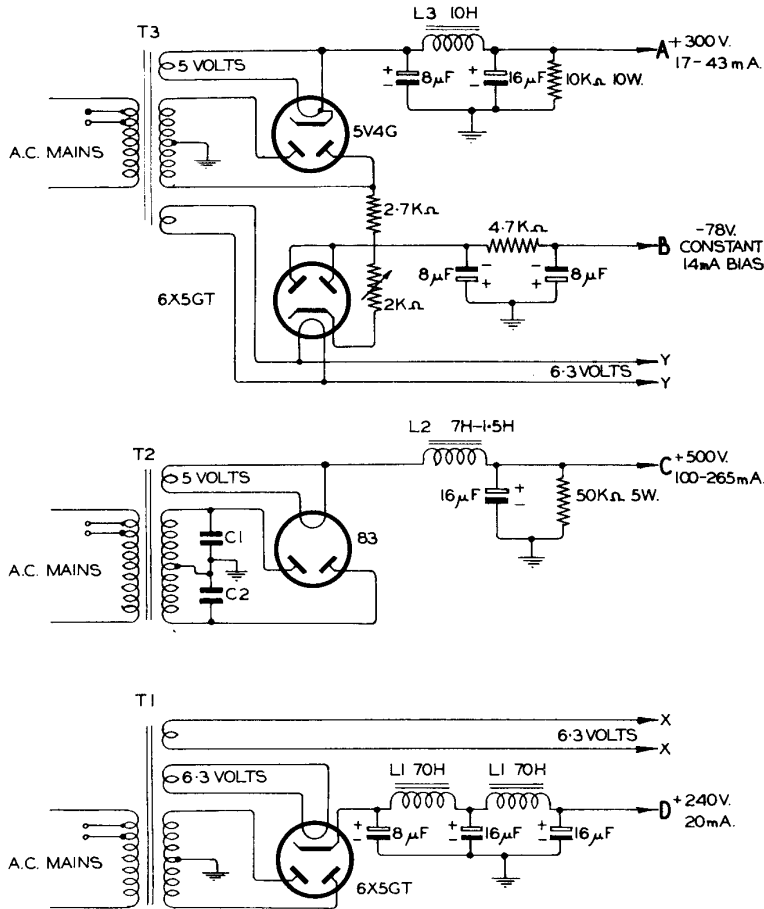
75 WATT CLASS AB2 AMPLIFIER



This same basic plan could be used with 6L6GC or 6BG6 as well. The power supply could be simplified & improved.



POWER SUPPLY FOR 75 WATT CLASS 'AB2' AMPLIFIER



C1 & C2 - 0.01 μ F 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. 2200Ω 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 1½ 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 1½ 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 1½ in. stack.

Gap spacer .005 in.

2000 turns of 24 S.W.G. enamel wire (25½ 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

401.22/1

PRE-AMPLIFIER

General:

Output load used for measurements is 10,000 ohms at 'E' (Ref. 401.20). Output voltages measured at 'E'. Measurements made at 1000 c/s.

Gain:

Input to No. 1 for 10 volts R.M.S. output = 0.5 millivolt. " " " 2 " " " " " " = 0.65 volt.

Harmonic Distortion at 1000 c/s.

Table with 3 columns: Harmonic, % at 10 volts Output, % at 20 volts Output. Rows for 2nd, 3rd, 4th, 5th harmonics.

1000 c/s injected at input 1 with distortion less than 0.01% of any harmonic.

Hum Levels:

Hum voltage on HT line: 0.05 volt R.M.S. Hum output at 'E' with first gain control of pre-amplifier at minimum and second gain control at maximum: 0.12 volt of 50 c/s; 0.06 volt of 100 c/s.

OUTPUT UNIT

Frequency Response:

Gain control at maximum. Figures taken at output level of 30 watts. Input applied at 'E' (Ref. 401.20) constant.

Table with 4 columns: Frequency C.P.S., No Shunting on Output Transformer, 5KΩ and .0015μF Shunting (plate-plate), 5KΩ and .0015μF Shunting (plate-plate)*. Rows for frequencies from 50 to 20,000.

Input at 'E' at 1000 c/s for maximum output = 4 volts R.M.S.

* Input at 'E' at 1000 c/s for maximum output = 10 volts R.M.S.

Table with 3 columns: Hum output across 600 ohm load, 50c/s, 100c/s. Rows for input levels of 0.25 volt and 0.13 volt.

* These figures apply for 8 dB negative feedback.





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

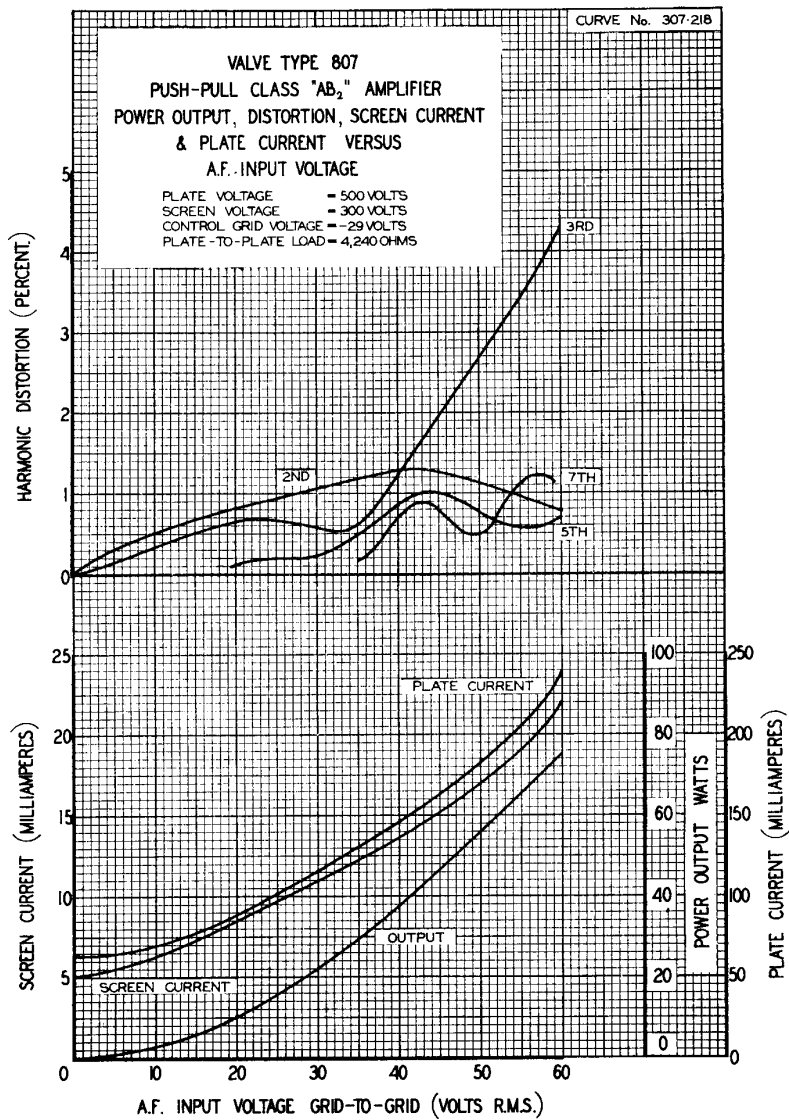
† The 25 watt, 50 watt, and 75 watt figures were taken with perfect HT and screen supply regulation.

* 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.

AN IGT
ASSOCIATE

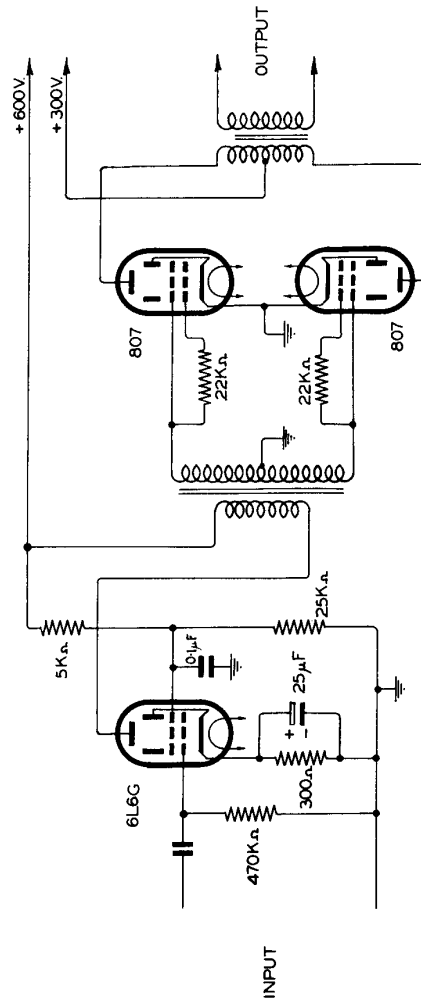




807

REF. No. 432-1

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 = 6,800 OHMS



JUNE, 1954

Standard Telephones and Cables Pty. Ltd. SYDNEY