

Western Electric Company

No. 109-B AMPLIFIER

COMMERCIAL PRODUCTS
APPARATUS REFERENCE SHEET

NO	1-13
AMPLIFIER	
109 B	
1-5-39	

ELECTRICAL CHARACTERISTICS

GAIN - - - - - 61 DB (MAX) WHEN WORK-
ING BETWEEN A 200-OHM
GENERATOR AND A 500 OR
8-OHM LOAD. FIG. 1.

OPERATES FROM - - - - - 0-500 OHMS

INTERNAL INPUT IMPEDANCE - 500 OHMS

OPERATES INTO - - - - - 8 OR 500 OHMS

INTERNAL OUTPUT IMPEDANCE- 1/2 OF LOAD IMPEDANCE

OUTPUT POWER - - - - - 12 WATTS OR +33 DB
(0 LEVEL - .006
WATTS). 5% TOTAL HAR-
MONIC DISTORTION.
FIGS. 2 & 3.

OUTPUT NOISE - - - - - (-) 40 DB UNWEIGHTED
(0 LEVEL - .006 WATTS)

POWER SUPPLY - - - - - 105-125 VOLTS, 45-65
CYCLES, 100 WATTS.
FUSE FOR 1.25 AMPS.

GAIN CONTROL - - - - - 500-OHM POTENTIOMETER
(40 DB CONTINUOUS VA-
RIATION).

EQUIPMENT CHARACTERISTICS

PANEL DIMENSIONS - - - - - 19" X 7"

DEPTH - - - - - 7-1/2"

WEIGHT - - - - - APPROX. 20 LBS.

MOUNTING - - - - - STD. 19" RELAY RACK OR
SUITABLE CABINET

NOTE: THE 109B AMPLIFIER MAY BE ORDERED WITH
DIFFERENT MAT FINISHES AS FOLLOWS:

CODE NO.	FINISH
109B-3	RUBBER FINISH BLACK JAPAN
109B-15	ALUMINUM GRAY FINISH
109B-24	ALUMINUM LACQUER FINISH

VACUUM TUBES

	METAL	GLASS
FIRST STAGE - - - - -	TWO - 6J7	OR TWO - 6J7G
SECOND STAGE - - - - -	TWO - 6L6	OR TWO - 6L6G
RECTIFIER - - - - -	ONE - 5Z4	OR ONE - 5V4G

REFERENCES

ESR-612476 - ASSEMBLY

ESR-612478 - WIRING DIAGRAM

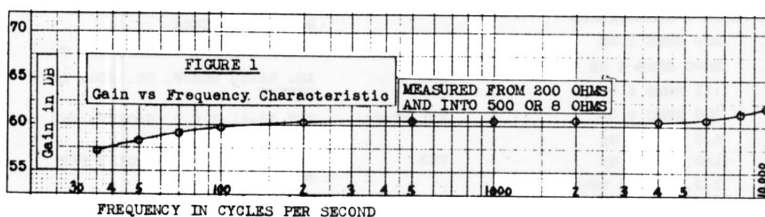
ESO-612477 - SCHEMATIC

ES-743720 - GAIN VS FREQUENCY CHARACTERISTIC

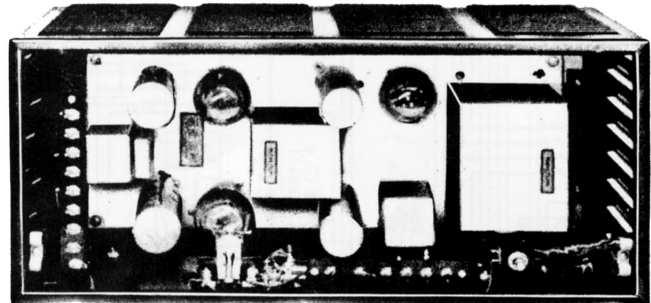
ES-743672 } - POWER OUTPUT VS TOTAL HARMONIC DISTORTION

ES-743673 }

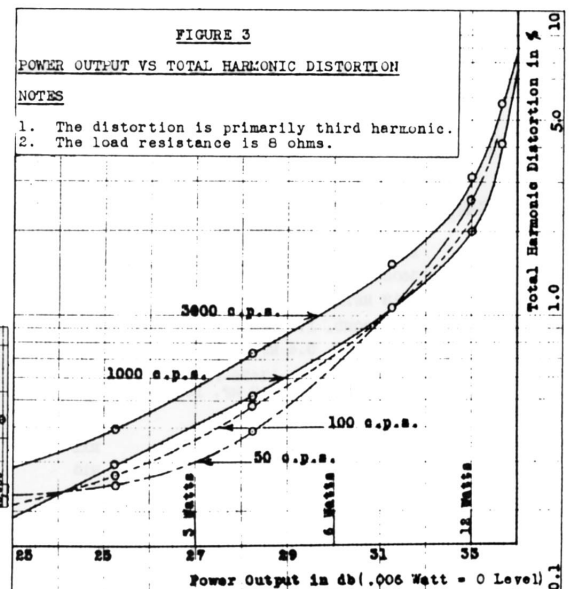
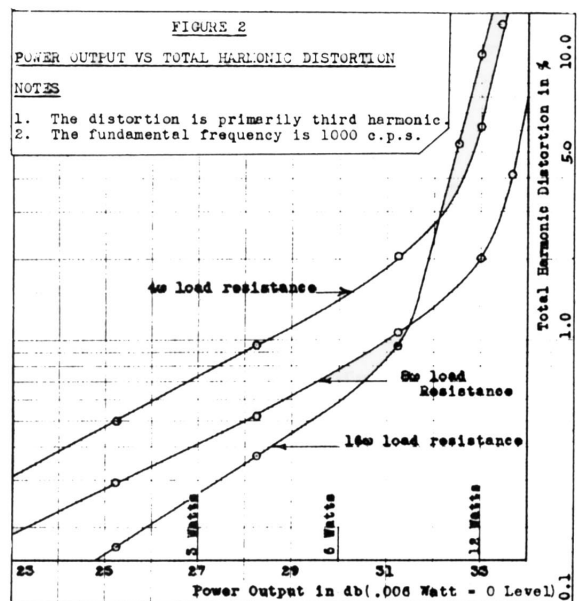
NOTE: THE 109B AMPLIFIER IS SIMILAR TO THE 94C
AMPLIFIER EXCEPT THAT IT HAS A LOWER INPUT IMPE-
DANCE, HIGHER GAIN, A POTENTIOMETER FOR CONTROL-
LING THE GAIN OF THE AMPLIFIER AND A POWER SWITCH.
THE CONTROL ELEMENTS EXTEND THROUGH THE MAT FOR
OPERATION FROM THE FACE OF THE AMPLIFIER.



FOR WIRING DIAGRAM AND SCHEMATIC SEE REAR OF THIS SHEET

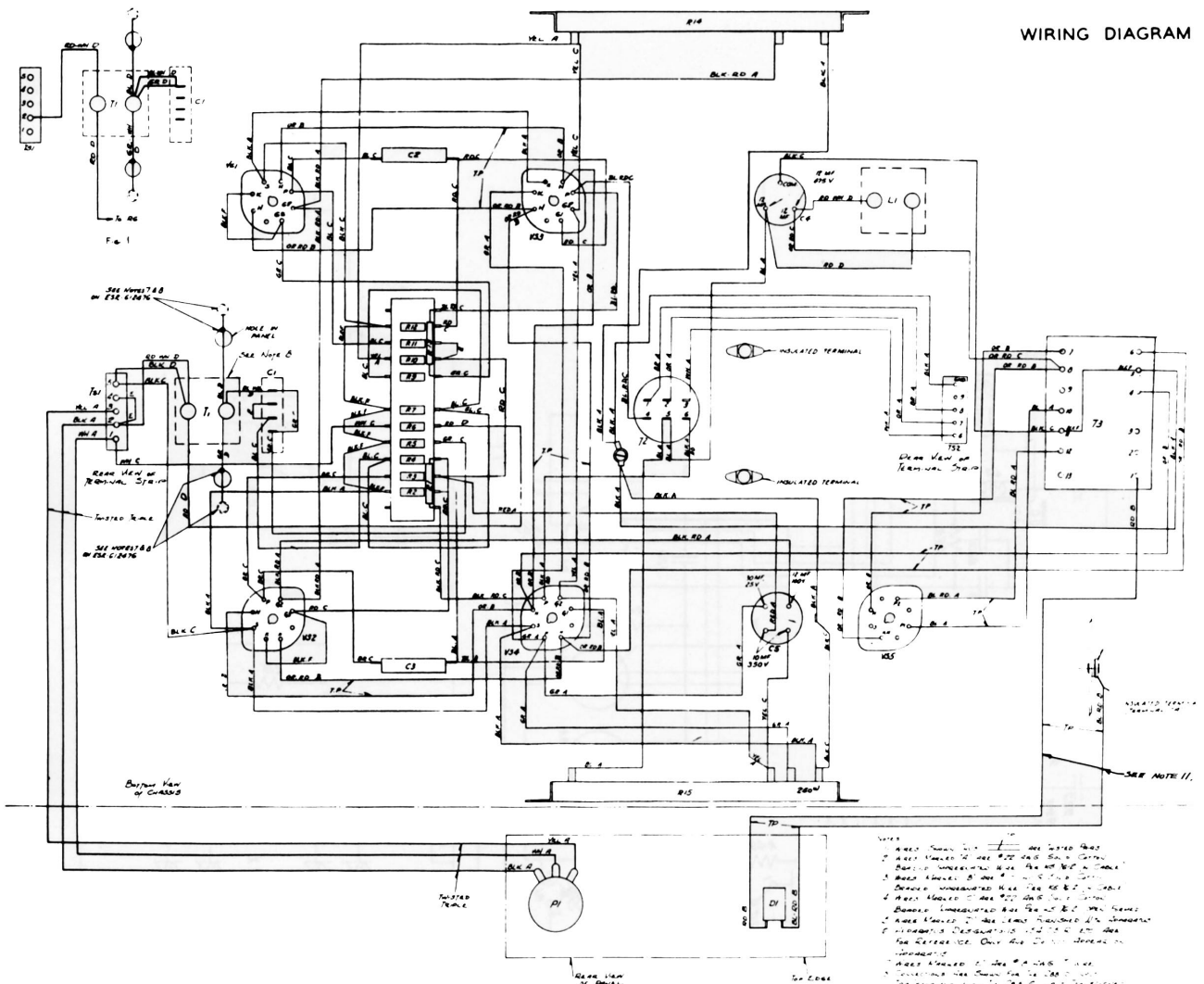


109B AMPLIFIER IN METAL CABINET OF 103B AMPLIFIER



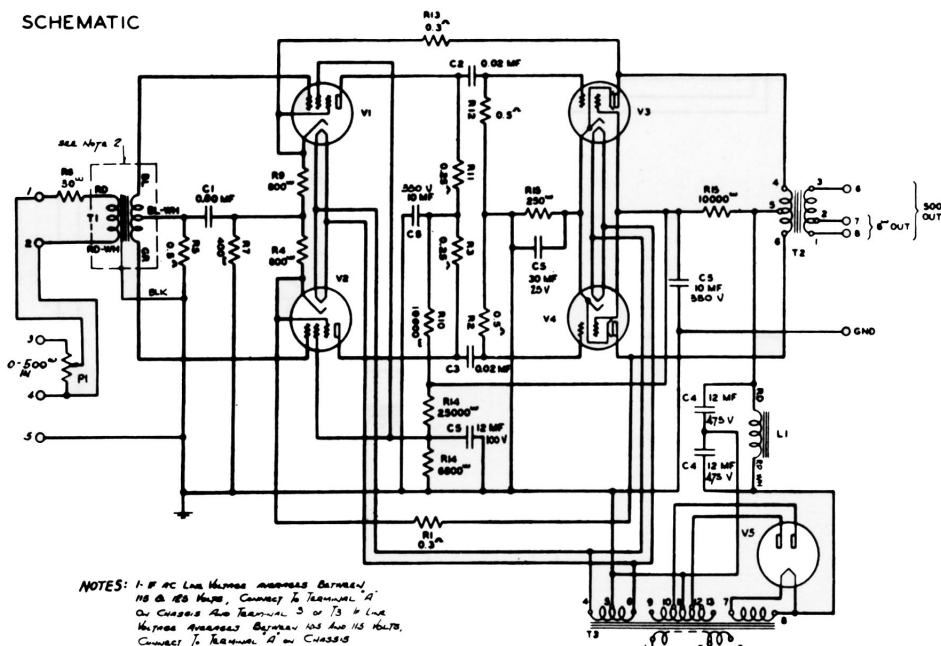
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WIRING DIAGRAM



NOTES: CONT'D.
11. INSURE WIRES PASS THRU HOLE IN SHIELD THEY SHALL BE INSULATED WITH TWO LAYERS OF FRICITION TAPE & THEN GIVEN ONE COAT OF ORANGE SHELLAC.

SCHEMATIC



NOTES: 1. IF AC LINE VOLTAGE APPROXIMATES 240V, R1 & R2 MUST BE CHANGED TO TERMINAL 1.
2. CHASSIS AND TERMINAL 3 OF T1 & LINE VOLTAGE APPROXIMATES 240V, R1 & R2 MUST BE CHANGED TO TERMINAL 1.
3. EXTERNAL GROUND MAY BE CONNECTED TO THE 'GND' TERMINAL OR TO TERMINAL 5. ONLY ONE GROUND SHOULD BE USED.

4. TERMINAL 1 IS MTD. ON THE METAL BARRIER NEAR THE POWER TRANS. THE DESIGNATION '1' DOES NOT ACTUALLY APPEAR ON THE AMP.

DESIGN.	DESCRIPTION
C1	0.001 CONDENSER
C2, C3	0.001 CONDENSER TYPE 50 150V 500V
C4	0.001 CONDENSER TYPE 50 150V 500V
C5	0.001 CONDENSER TYPE 50 150V 500V
C6	0.001 CONDENSER TYPE 50 150V 500V
C7	0.001 CONDENSER TYPE 50 150V 500V
C8	0.001 CONDENSER TYPE 50 150V 500V
L1	250-0-250V 100VA
R1, R2	100K
R3, R4	100K
R5, R6	100K
R7, R8	100K
R9, R10	100K
R11, R12	100K
R13, R14	100K
R15, R16	100K
T1	250-0-250V 100VA
T2	171 B OUTPUT TRANSFORMER
T3	322 A TRANSFORMER
V1, V2	TYPE 6X4 OF 6X4'S
V3, V4	TYPE 6X4 OF 6X4'S
V5	TYPE 6X4 OF 6X4'S
D1	N.A. #2505E TUBULAR SWITCH WITH 1/2" LEADS
P1	100-0-100V 100VA

