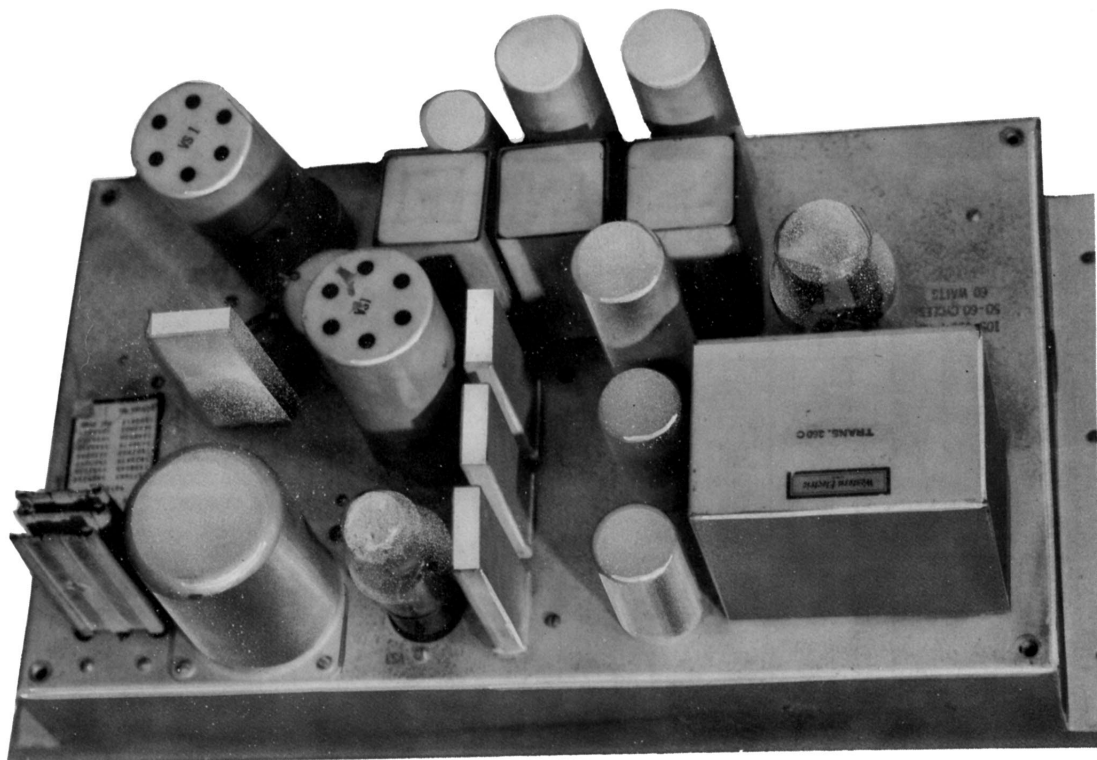


Western Electric Company

No. 105-A AMPLIFIER



Western Electric Company

No. 105-A AMPLIFIER

NO. 105A AMPLIFIER

Apparatus List

<u>Designation No.</u>	<u>Apparatus</u>
T1	285L Input Transformer
T2	185A Output Transformer
T3	360C Transformer
L1, L2	221H Retardation Coils
L3	221A Retardation Coil
C3	D-95423 Condenser, 0.1 Microfarad
C5, C6, C7	230A Condensers, 0.4 Microfarad
C1, C8	Cornell Dubilier Corp. Type MA-13358-PE Electrolytic Con- densers, 50 Microfarads, 25 Volt D-C. Working Voltage
C2.1, C2.2 C9.1, C9.2 C10.1, C10.2	Cornell Dubilier Corp. Type MA-13257-PE Electrolytic Con- densers, 8-8 Microfarads, 450 Volts D-C. Working Voltage
C4	Cornell Dubilier Corp. Type MA-13438-PE Electrolytic Con- denser, 100 Microfarads, 12 Volts D-C. Working Voltage
C11	Cornell Dubilier Corp. Type 1W3S1 Cond. .01MF
R17	18GF Resistances - 800 - Ohms
R18.1, R18.2 R19.1, R19.2	19FG Resistances- 100-100 Ohms
International Resistance Company Type BT-1 Resistances	
R1	100,000 Ohms $\pm$ 10%
R2	4,000 Ohms $\pm$ 5%
R4	60,000 Ohms $\pm$ 10%
R6	0.5 Megohm $\pm$ 10%

All apparatus is Western Electric unless otherwise specified.

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Sheet 1 of 3 Sheets

Western Electric Company

No. 105-A AMPLIFIER

Apparatus List

<u>Designation No.</u>	<u>Apparatus</u>
R11	1.0 Megohm $\pm$ 5 %
R12	0.25 Megohm $\pm$ 10%
R13	0.25 Megohm $\pm$ 10%
R16	15,000 Ohms $\pm$ 10%
International Resistance Company Type. BW-1 Resistances	
R3	111 Ohms $\pm$ 5%
R7	500 Ohms $\pm$ 2%
R8	2,000 Ohms $\pm$ 5%
R9	111 Ohms $\pm$ 5%
R14	300 Ohms $\pm$ 5%
R15	5 Ohms $\pm$ 5%
R22	160 Ohms $\pm$ 5%
International Resistance Company Type WW-3 Resistances, provided with terminal lugs.	
R5	100,000 Ohms
R10	140,000 Ohms
R20	6,200 Ohms
R21	2,600 Ohms
R23	1,620 Ohms
P1	Daven Potentiometer, 75,000 Ohms, per ESA=612056, "Pot. No. 1."
D1	Hart and Hegeman Type 20994-DQ Switch with 1/2" Mounting Sleevs, provided with 2 hexagonal nuts.
R24, R25	Clarostat Mfg. Co. Series
R26	FX Flexible Resistor 25 Ohms $\pm$ 10% 3 in. Fabric Length

All apparatus is Western Electric unless otherwise specified.

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Printed in U.S.A

Sheet 2 of 3 Sheets

Western Electric Company

No. 105-A AMPLIFIER

Apparatus List

<u>Designation No.</u>	<u>Apparatus</u>
D2, D3, D4	Yaxley Manufacturing Co. 2004 Push Button Switches
E1, E2, E3	Mazda #44 Pilot Light Lamps, 6-8 Volts
ES1, ES2, ES3	Mallory Yaxley Cat. No. B303AR Bayonet Type Socket
VS1, VS4	Eby 33-11-AA Vacuum Tube Sockets per KS-7741
VS2, VS3	Eby 33-11-c Vacuum Tube Sockets per KS-7741
M1	KS-8442 or KS-8443 Volume Indicator Meters
M2	KS-10003 Meter
F1, FM1	Bussman Mfg. Co. D01 Fuse Receptacle .5 amp. Fuse

All apparatus is Western Electric unless otherwise
specified

ESL-611824, 5 Sheet 3 Issue
Sheet 3 of 3 Sheets

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No. 105-A AMPLIFIER

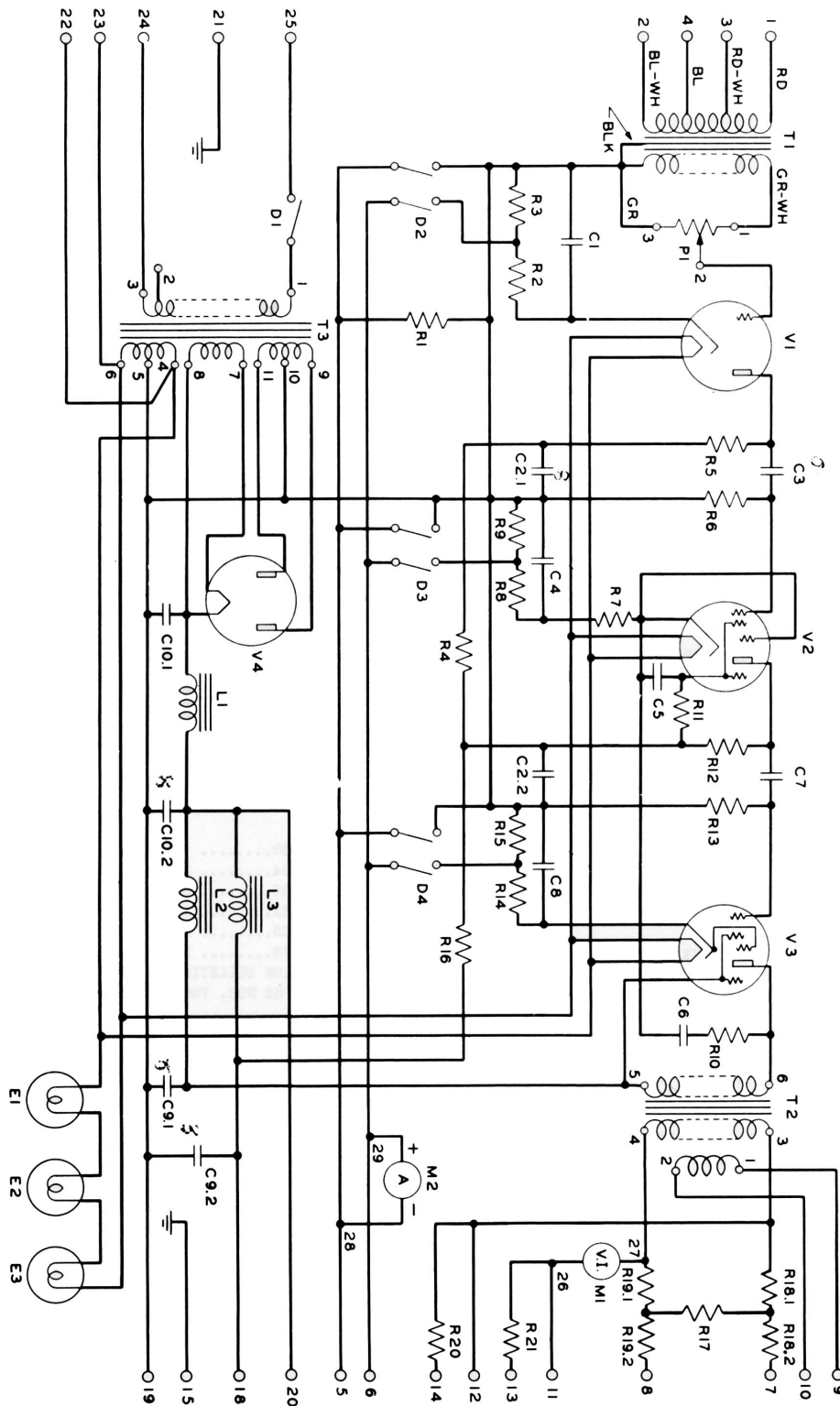


Figure 1—Schematic

Western Electric Company

No. 105-A AMPLIFIER

COMMERCIAL PRODUCTS APPARATUS REFERENCE SHEET

NO	1-52
AMPLIFIER	
105A	
2-6-39	

GENERAL

A GENERAL PURPOSE, THREE-STAGE, HIGH GAIN, PROGRAM AMPLIFIER WITH SELF-CONTAINED AC POWER SUPPLY INTENDED FOR USE AS THE MAIN AMPLIFIER IN STUDIO SPEECH INPUT EQUIPMENTS FOR RADIO TELEPHONE BROADCASTING. IT IS CAPABLE OF AMPLIFYING THE OUTPUT OF A SINGLE DYNAMIC MICROPHONE, OR MICROPHONE MIXING SYSTEM USING 104 TYPE AMPLIFIERS, TO A LEVEL SUFFICIENT FOR USE WITH A RADIO TRANSMITTER OR TELEPHONE LINE.

ELECTRICAL CHARACTERISTICS

GAIN..... APPROX. 70 DB (76 DB IF ISOLATION PAD IN OUTPUT CIRCUIT IS REMOVED).
GAIN CONTROL..... 19 STEPS (2 DB EACH) AND "OFF".
OPERATES FROM..... 30 OHMS, TERM'S. 3-4. 500-600 OHMS, TERM'S. 1-2.
INTERNAL INPUT IMPEDANCE... 30 OR 600 OHMS.
OPERATES INTO..... 600 OHMS, TERM'S. 7 AND 8.
INTERNAL OUTPUT IMPEDANCE. 600 OHMS.
OUTPUT POWER..... APPROX. 151 MW. (+ 14 DB LEVEL) FOR LESS THAN 1% TOTAL HARMONIC DISTORTION WITH 6 DB PAD IN CIRCUIT (0 DB = 6 MW.)
NORMAL OUTPUT LEVELS..... +4, 0 & -6 DB (+10, +6 & 0 DB, PAD REMOVED)
OUTPUT NOISE..... APPROX. -65 DB W/T'D., -55 DB UNW'T'D.
MONITOR OUTPUT..... SEE SCHEMATIC. VOLTAGE APPROX. 20 DB BELOW MAIN OUTPUT AT INPUT TO PAD. INTERNAL INPUT IMPEDANCE APPROX. 40 OHMS.
POWER SUPPLY..... 105-125 V. 50-60 CYCLE AC. MAX. 52 WATTS.
FUSE FOR 3/4 TO 1 AMP.

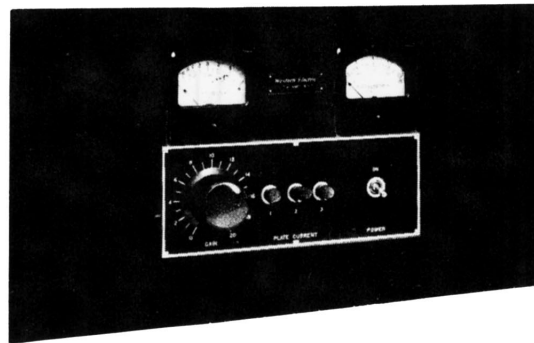
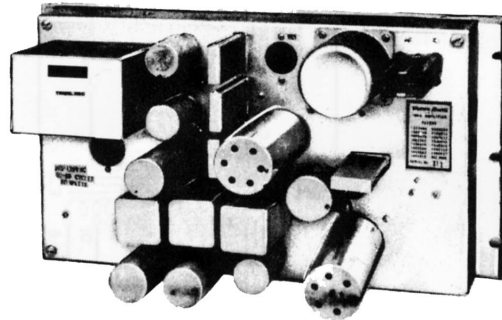
NOTE: THIS AMPLIFIER WILL SUPPLY FILAMENT POWER AND FILTERED PLATE CURRENT FOR THE OPERATION OF 6 - 104 TYPE AMPLIFIERS. IN ADDITION 10 MA. UNFILTERED PLATE CURRENT AT 275 V. IS AVAILABLE.

VACUUM TUBES (MUST BE ORDERED SEPARATELY)

FIRST STAGE... 1-262B VACUUM TUBE THIRD STAGE... 1-336A VACUUM TUBE
SECOND STAGE.. 1-310B VACUUM TUBE RECTIFIER..... 1-274A VACUUM TUBE

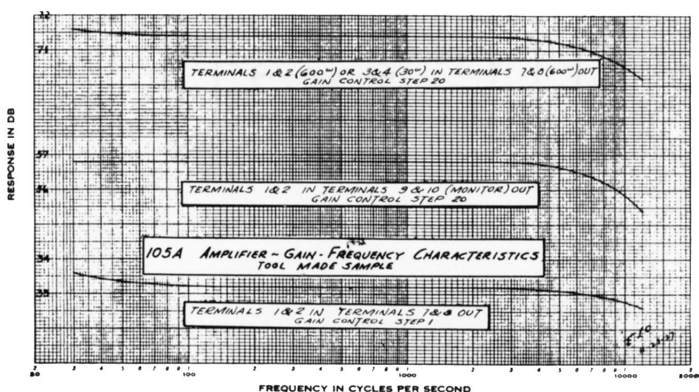
EQUIPMENT CHARACTERISTICS

WEIGHT..... APPROX. 28 LBS.
CONSTRUCTION.. RECESSED TYPE STEEL PANEL WITH REMOVABLE MAT.
SIZE..... MAT 19-1/8" W. X 10-1/2" H. APPARATUS EXTENDS MAX. 8" FROM REAR AND 1-3/4" FROM FACE OF MAT. MAT 3/32" THICK.
MOUNTING..... STD. RELAY RACK OR EQUIPT. CABINET (MTG. SCR'S. FURNISHED).
FINISH..... CHASSIS - ALUMINUM LACQUER. MAT - REAR, ALUMINUM LACQUER; FRONT AND EDGES, BLACK JAPAN (CODED 105A-3 AMPLIFIER) OR ALUMINUM GRAY LACQUER (CODED 105A-15).
METERS..... A VOLUME INDICATOR AND A PLATE CURRENT METER ARE FURNISHED UNLESS OTHERWISE SPECIFIED. APPARATUS BLANKS ARE AVAILABLE WHEN THESE METERS ARE NOT REQUIRED. THESE MAY BE ORDERED AS FOLLOWS: 2 - COVERS PER ESO-611812-4 (GRAY FINISH) OR ESO-611812-5 (BLACK FINISH).



REFERENCES

ESR-611433..... ASSEMBLY
ESR-611434..... PANEL ASSEMBLY
ESO-611786..... SCHEMATIC
ESX-611831..... WIRING DIAGRAM
ESA-743565..... GAIN VS. FREQUENCY CHARACTERISTICS.
ESA-743578..... POWER OUTPUT VS. DISTORTION
INSTRUCTION BULLETIN NO. 878
PHOTOGRAPHS NOS. 78827, 78613, 78614, 78615



FOR WIRING DIAGRAM AND SCHEMATIC SEE REAR OF THIS SHEET

