

No. 103-B AMPLIFIER

FOR IMMEDIATE
REFERENCE ONLY
NOT FOR DESIGN

COMMERCIAL PRODUCTS
APPARATUS REFERENCE SHEET

NO 1-12
AMPLIFIER
103B
1-5-39

ELECTRICAL CHARACTERISTICS

GAIN - - - - - 61 DB (MAX) WHEN WORKING
BETWEEN A 200-OHM GENER-
ATOR 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 HARMONIC DISTOR-
TION. 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. 14-60
VOLTS DC IS REQUIRED TO
OPERATE THE RELAY.

GAIN CONTROL - - - - - 500-OHM POTENTIOMETER
(40 DB CONTINUOUS VARI-
ATION).



EQUIPMENT CHARACTERISTICS

WIDTH - - - - - 20-1/4 INCHES

HEIGHT - - - - - 9 INCHES

DEPTH - - - - - 11-1/4 INCHES

WEIGHT - - - - - APPROX. 40 LBS.

MOUNTING - - - - - TABLE

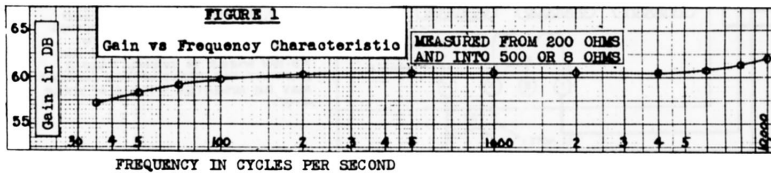
VACUUM TUBES

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

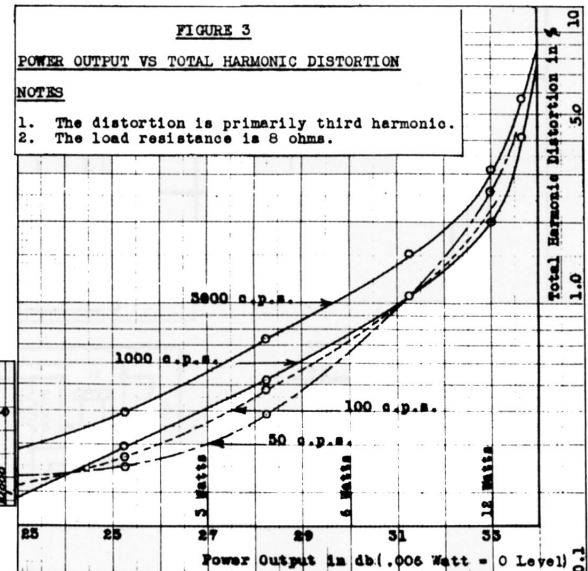
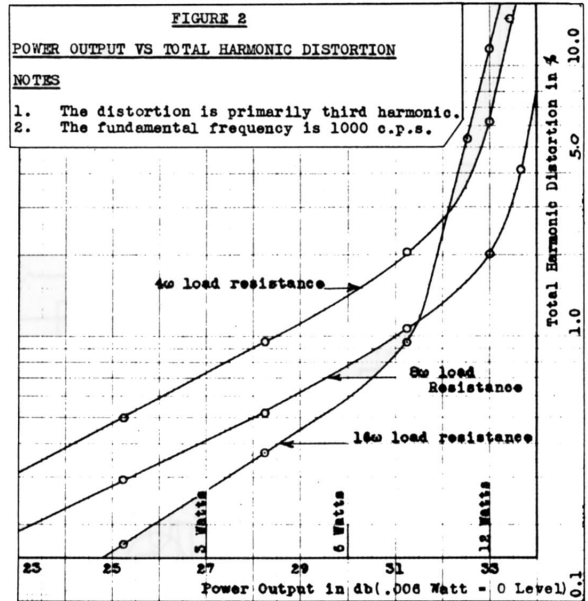
REFERENCES

- ESR-612452 - ASSEMBLY
- ESO-612453 - SCHEMATIC
- ESO-612454 - WIRING DIAGRAM
- ES-743721 - GAIN VS FREQUENCY CHARACTERISTIC
- ES-743672 } - POWER OUTPUT VS TOTAL HARMONIC
- ES-743673 } - DISTORTION
- PHOTOGRAPHS - NOS. 81292 AND 81295

- NOTES:
1. THE 103B AMPLIFIER CONSISTS OF A 109B AMPLIFIER AND THE NECESSARY EQUIPMENT FOR STAND-BY OPERATION, MOUNTED IN A METAL CABINET.
 2. FACILITIES ARE PROVIDED IN THE 103B AMPLIFIER FOR MOUNTING A 152A REPEATING COIL.

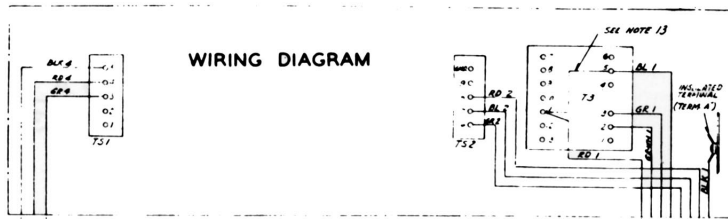


FOR WIRING DIAGRAM AND SCHEMATIC SEE REAR OF THIS SHEET



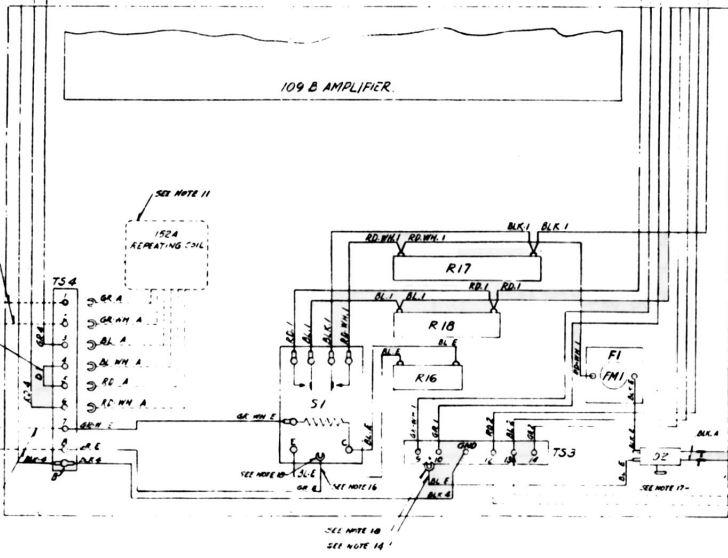
Western Electric Company

No. 103-B AMPLIFIER



SEE NOTE 19

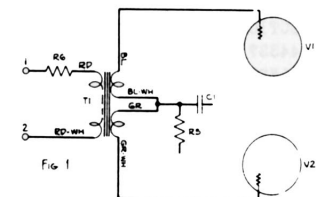
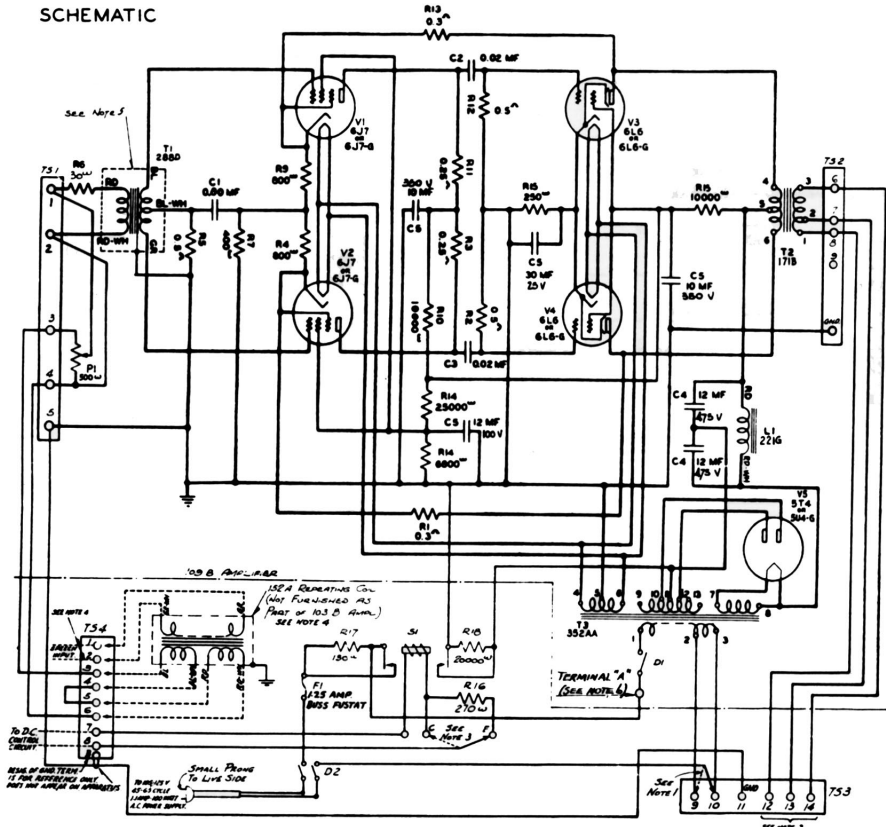
SEE NOTE 19



DESIG	APPARATUS
D2	N.H. #5592 DOOR SWITCH
FM1	BRYANT #4-715 PONY CLEAR RECEPTACLE
R16	I.R.C. #MWS RESISTOR, 270 OHMS
R17	I.R.C. #MWS RESISTOR, 130 OHMS
R18	I.R.C. #MWS RESISTOR, 20,000 OHMS
S1	W.L. #K-40756 MIDGET RELAY
TS3	TERMINAL STRIP ESO-61855-W
TS4	TERMINAL STRIP ESO-61850-E
	109 B AMPLIFIER
F1	125 A BUSS FUSISTAT #412 (BUSMAN MFG. CO.)

- 1- WIRES MARKED 'X' ARE TERMINAL LEADS FURNISHED WITH APPARATUS.
- 2- WIRES MARKED 1, 2, 3 OR 4 INDICATE CABLE IN WHICH WIRES ARE RUN.
- 3- WIRES MARKED 'D' ARE STRAPS OF #18 AWG. T WIRE.
- 4- ALL WIRES ARE #22 AWG. SOLID WIRE PER KS 7612 UNLESS OTHERWISE SPECIFIED.
- 5- WIRES MARKED 'E' ARE OPEN FORM.
- 6- CORD AND PLUG ASSEMBLY, 6 FT. LONG, PER KS-7993.
- 7- NOT FURNISHED AS PART OF THE 109B AMPLIFIER.
- 8- APPARATUS DESIGNATED TS3, TS1 AND TS2 ARE PART OF THE 109B AMPLIFIER.
- 9- ALL SOLDERING SHALL BE MADE IN ACCORDANCE WITH KS-507-10 "D".
- 10- "S" CONNECTION TO BE MADE UNDER THE SCREW HEADS WITHOUT SOLDERING.
- 11- NOT A PART OF THE 109B AMPLIFIER IF REQUIRED, SHALL BE INSTALLED AND CONNECTED IN THE FIELD.
- 12- TERMINAL DESIGNATIONS SHOWN BUT NOT APPEARING ON APPARATUS ARE FOR REFERENCE ONLY.
- 13- REMOVE STRAP BETWEEN TERMINALS 5 AND 11 OF TS3.
- 14- IF AC LINE VOLTAGE AVERAGES BETWEEN 118 AND 128 VOLTS, CONNECT TO TERMINAL 10 ON TS3. IF AC LINE VOLTAGE AVERAGES BETWEEN 128 AND 135 VOLTS, CONNECT TO TERMINAL 9 ON TS3. IF AC LINE VOLTAGE AVERAGES BETWEEN 135 AND 150 VOLTS, CONNECT TO TERMINAL 8 ON TS3. REMOVE CONNECT TO TERM. 10. THIS LEAD TO BE APPROX. 6" LONG.
- 15- IF 8 OHM OUTPUT IS DESIRED, CONNECT TO TERMINALS 12 AND 13 ON TS3. IF 500 OHM OUTPUT IS DESIRED, CONNECT TO TERMINALS 12 AND 14 ON TS3.
- 16- IF D.C. SUPPLY IS FROM 28 TO 60 VOLTS, CONNECT TO TERMINAL 12 ON S1. IF D.C. SUPPLY IS FROM 14 TO 30 VOLTS, CONNECT TO TERMINAL 13 ON S1. STRIPPED CONNECT TO TERM. 12 LEAD APPROX. 12 IN. CORD AS PER NOTE 6 SHALL BE SPLICED TO THE REPEATING COIL, S1, AND EACH SPLICE SHALL BE COVERED WITH ONE LAYER OF INSULATING RUBBER TAPE. THE TWO LEADS SHALL THEN BE COVERED WITH ONE LAYER OF BLACK FRICTION TAPE, AND GIVEN ONE COAT OF ORANGE SHELLAC.
- 18- ZIERICK #76 TERMINAL, 1REQ.
- 19- WHERE WIRES PASS THRU HOLES IN CHASSIS THEY SHALL BE COVERED WITH ONE LAYER OF INSULATING RUBBER TAPE & THE 2ND LAYER OF BLACK FRICTION TAPE & THEN GIVEN ONE COAT OF ORANGE SHELLAC.

SCHEMATIC



- Notes
- 1- IF AC LINE VOLTAGE AVERAGES BETWEEN 118 AND 128 VOLTS, CONNECT TO TERMINAL 10 ON TS3. IF AC LINE VOLTAGE AVERAGES BETWEEN 128 AND 135 VOLTS, CONNECT TO TERMINAL 9 ON TS3.
 - 2- 8 OHM OUTPUT IS DESIRED, CONNECT TO TERMINALS 12 AND 13 ON TS3. IF 500 OHM OUTPUT IS DESIRED, CONNECT TO TERMINALS 12 AND 14 ON TS3.
 - 3- IF D.C. SUPPLY IS FROM 28 TO 60 VOLTS, CONNECTION SHOULD BE MADE TO TERMINAL 12. IF D.C. SUPPLY IS FROM 14 TO 30 VOLTS, THE CONNECTION SHOULD BE MADE TO TERMINAL 13.
 - 4- THE AMPLIFIER MAY BE USED WITHOUT THE 152A REPEATING COIL WHEN SO USED THE INPUT IMPEDANCE IS 200 OHM AND CONNECTIONS SHOULD BE MADE TO TERMINAL 9 AND 6 ON TS3. WHEN THE 152A REPEATING COIL IS USED IT MAY BE CONNECTED FOR 600 OHM INPUT AS SHOWN, OR REVERSED FOR 67 OHM INPUT BY CONNECTING THE 60 AND 50 OHM WIRES TO TERMINALS 9 AND 6 RESPECTIVELY AND THE 60 AND 50 OHM WIRES TO TERMINALS 11 AND 12 RESPECTIVELY. LEADS FROM TRANSMITTER CURRENT SUPPLY MAY BE CONNECTED TO TERMINALS 4 AND 3 AFTER REMOVING THE STRAP.
 - 5- CONNECTIONS ARE SHOWN FOR THE 280 V. WATT TRANSFORMER WHEN THE 200 V. WATT TRANSFORMER IS USED. CONNECTIONS SHALL BE FIG. 1.
 - 6- TERMINAL 'A' IS MOUNTED ON THE METAL BARRIER NEAR THE POWER TRANSFORMER. THE DESIGNATION 'A' DOES NOT ACTUALLY APPEAR ON THE AMPLIFIER.