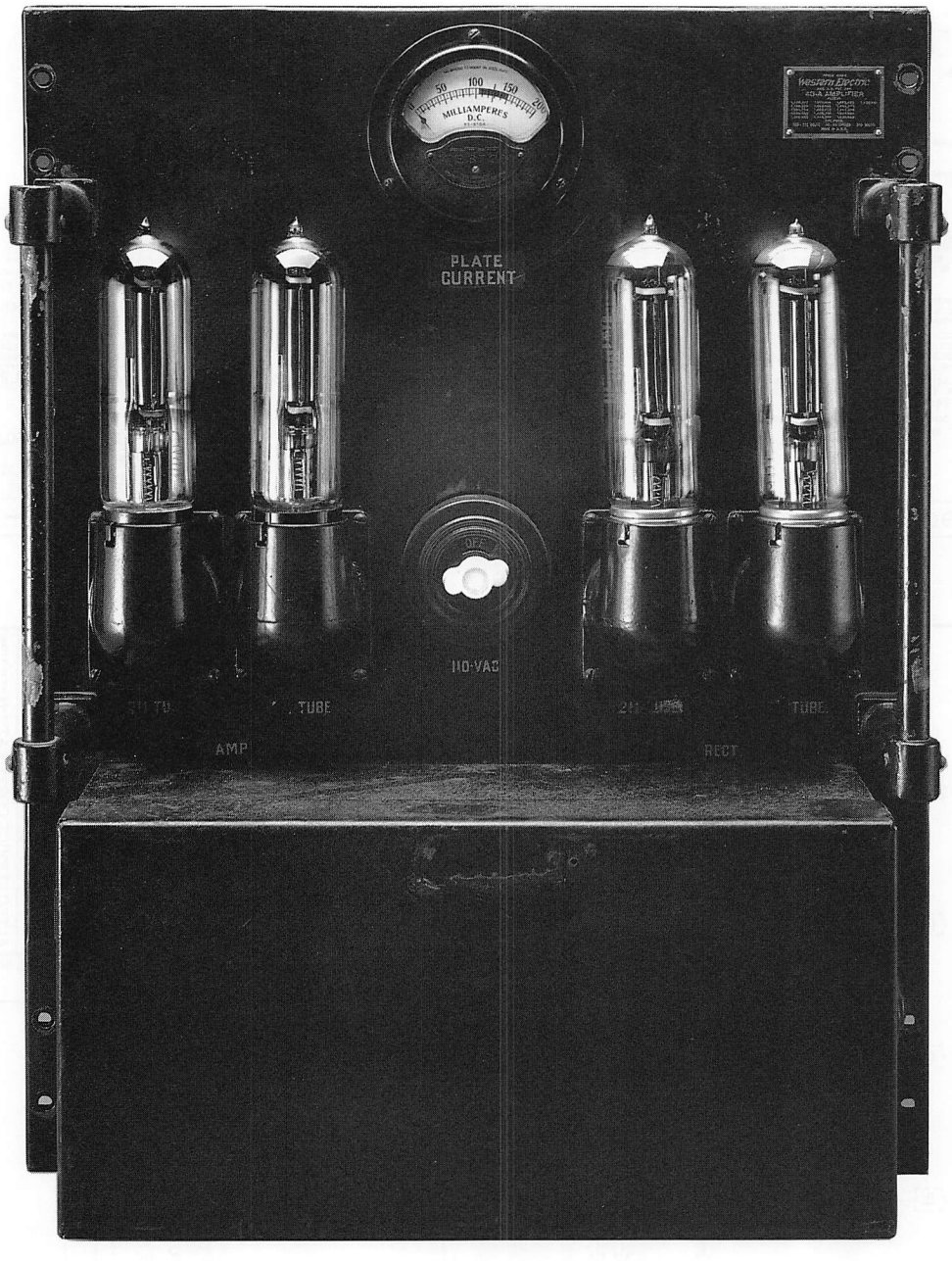
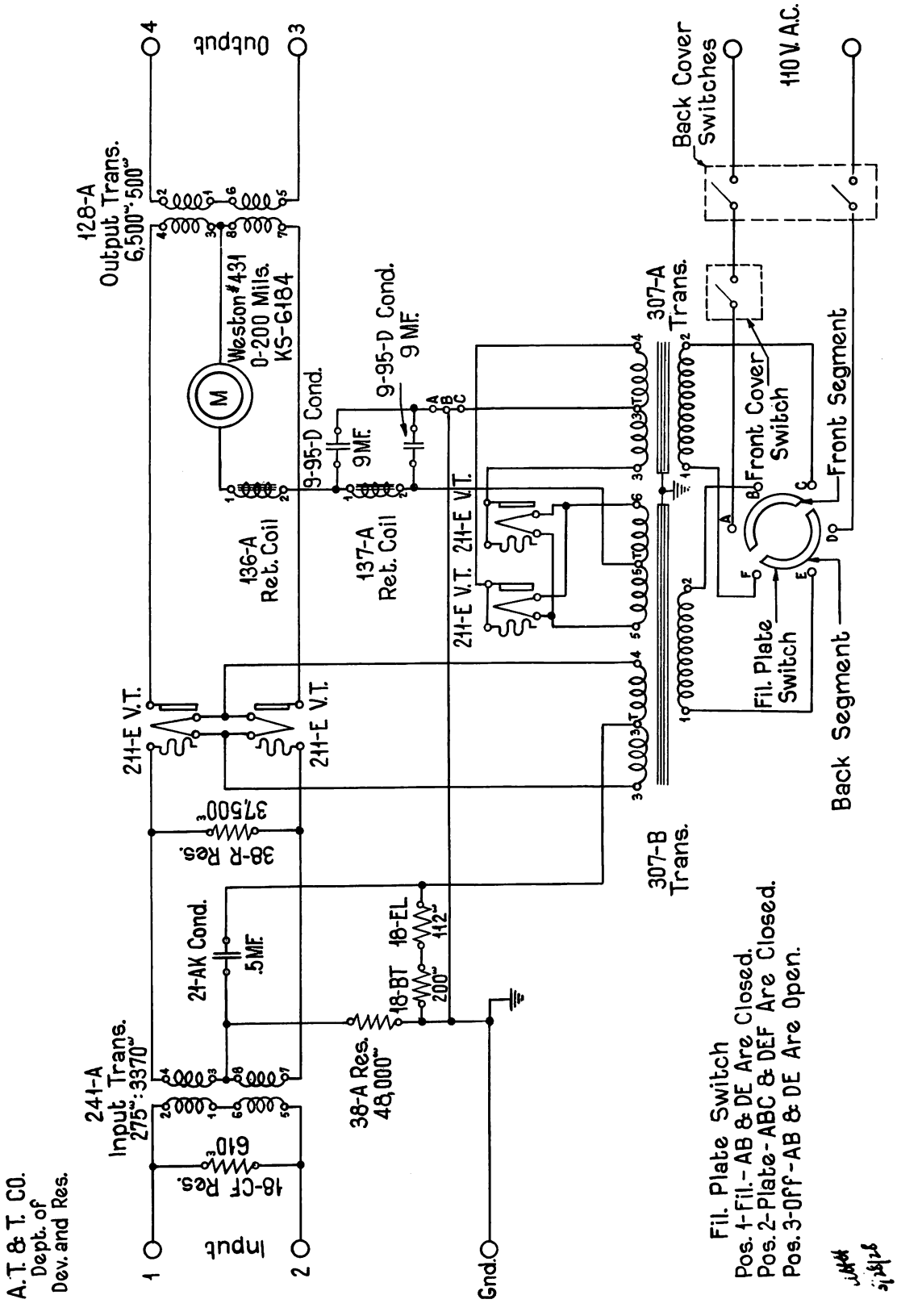
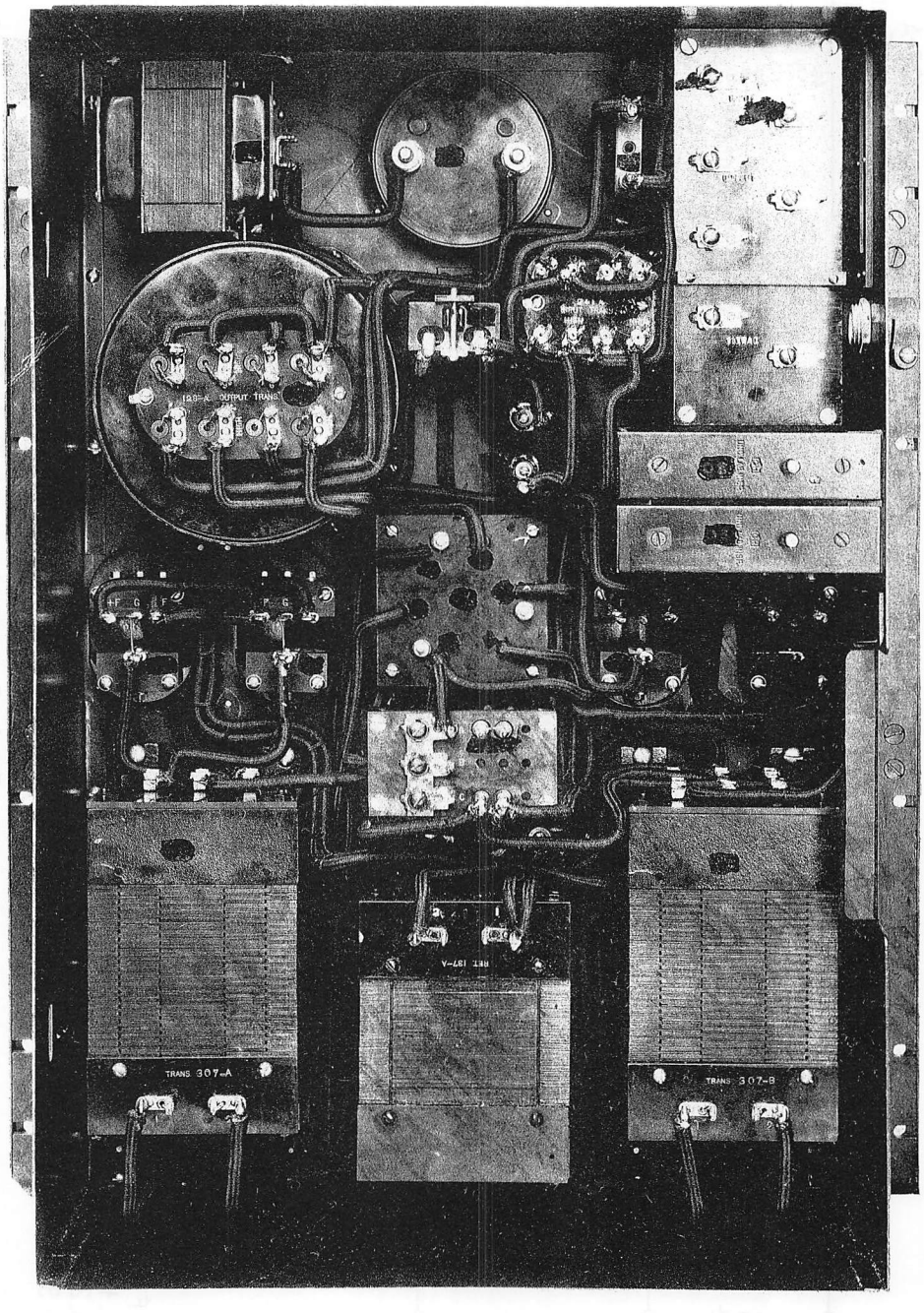
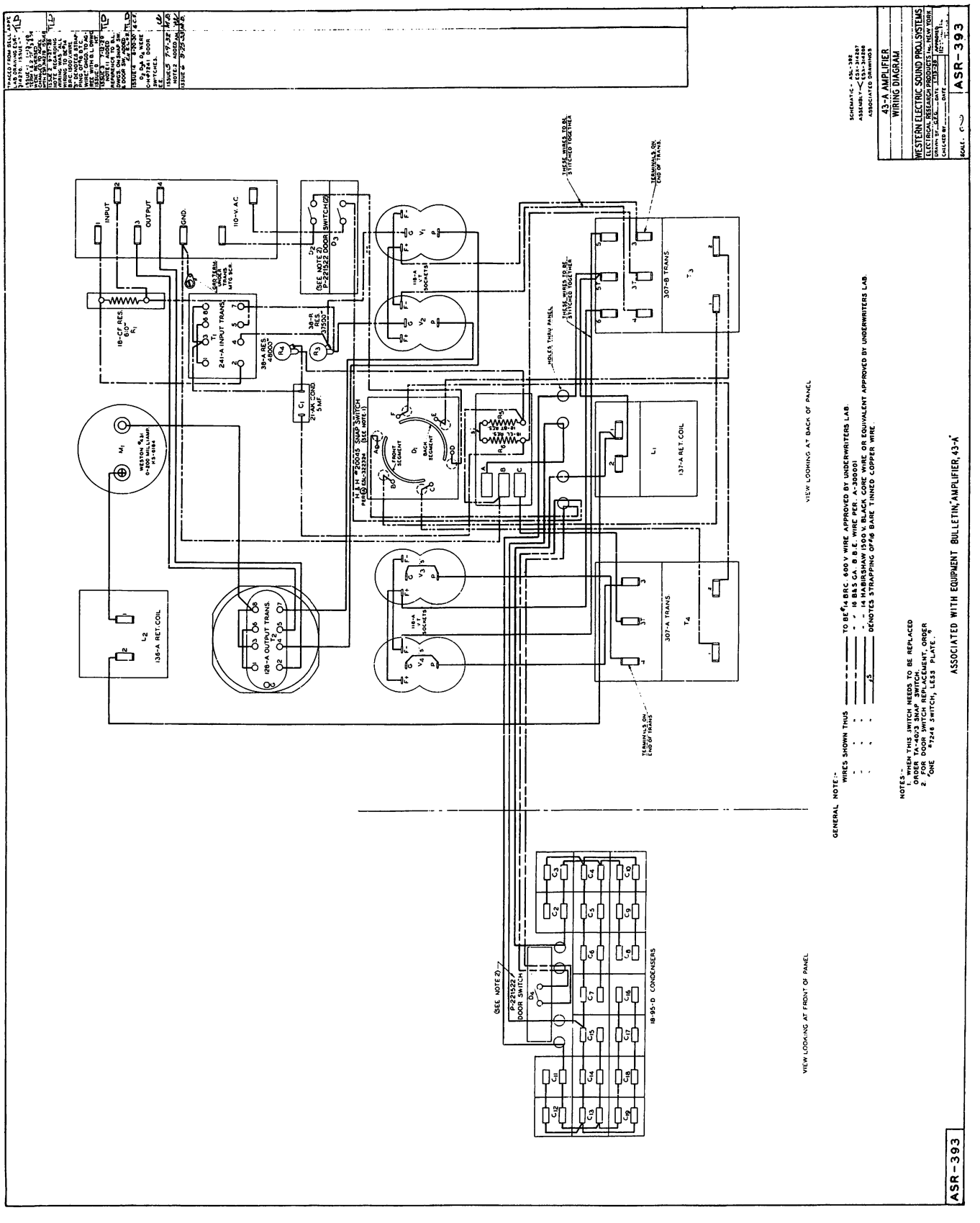
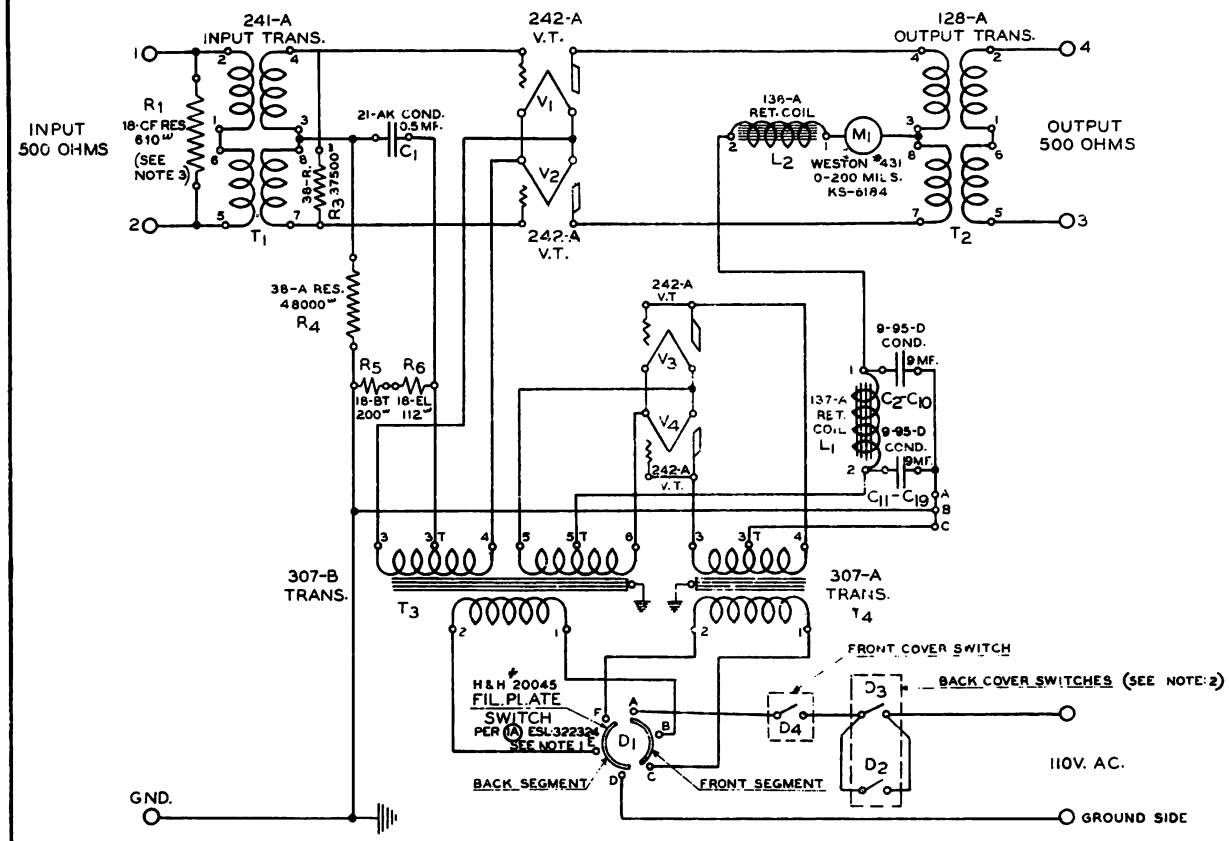

50
100
150
MILLIAMPERES
D.C
PLATE
CURRENT
OFF
110-VAC
AMP
RECT


A.T. & T. CO.
Dept. of
Dev. and Res.
Input
Output
Gnd.
241-A
Input Trans.
275~: 3370~
18-CF Res.
610~
21-AK Cond.
.5MF.
38-A Res.
48,000~
18-BT
200~
18-EL
112~
38-R Res.
37,500~
211-E V.T.
211-E V.T.
136-A
Ret. Coil
137-A
Ret. Coil
9-95-D Cond.
9MF.
9-95-D Cond.
9 MF.
211-E V.T.
211-E V.T.
Weston #431
0-200 Mils.
KS-6184
128-A
Output Trans.
6,500~: 500~
307-B
Trans.
307-A
Trans.
Back Cover
Switches
110 V. A.C.
Front Cover
Switch
Fil. Plate
Switch
Front Segment
Back Segment
Fil. Plate Switch
Pos. 1-Fil.- AB & DE Are Closed.
Pos. 2-Plate- ABC & DEF Are Closed.
Pos. 3-Off- AB & DE Are Open.

REAR VIEW- COVER REMOVED




43-A AMPLIFIER
WIRING DIAGRAM
WESTERN ELECTRIC SOUND PROJ. SYSTEMS
ELECTRICAL RESEARCH PRODUCTS INC. NEW YORK
ASR-393
ASSOCIATED WITH EQUIPMENT BULLETIN "AMPLIFIER, 43-A"
VIEW LOOKING AT BACK OF PANEL
VIEW LOOKING AT FRONT OF PANEL
GENERAL NOTE:-
WIRES SHOWN THUS ——— TO BE #14 B&S C. 600 V WIRE APPROVED BY UNDERWRITERS LAB.
- - - - - - " " #18 B&S GA. B.B.E. WIRE PER. A-300001
- . - . - . " " #14 HABIRSHAW 1500 V. BLACK CORE WIRE OR EQUIVALENT APPROVED BY UNDERWRITERS LAB.
J5 DENOTES STRAPPING OF #16 BARE TINNED COPPER WIRE.
NOTES:-
1. WHEN THIS SWITCH NEEDS TO BE REPLACED ORDER TA-40173 SNAP SWITCH.
2. FOR DOOR SWITCH REPLACEMENT, ORDER ONE 47246 SWITCH, LESS PLATE.
INPUT
OUTPUT
GND.
110-V. A.C.
241-A INPUT TRANS.
128-A OUTPUT TRANS.
135-A RET. COIL
137-A RET. COIL
307-A TRANS
307-B TRANS
118-A SOCKETS
18-CF RES. 60 OHMS
35-A RES. 40000 OHMS
35-R RES. 32500 OHMS
21-AK COND. 5 MF.
WESTON #31 0-200 MILLIAMP. M.I. METER
SEE NOTE 2
P-221522 DOOR SWITCH
18-95-D CONDENSERS
TERMINALS ON END OF TRANS.
THESE WIRES TO BE STITCHED TOGETHER
TERMINALS ON REAR OF PANEL



TRACED FROM BELL LAB. DRAWING ESL-314275 ISSUE-6	APP'D
ISSUE-1 1-10-28 TERM. 1 & 2 OF T3 & T4 WERE SHOWN REVERSED. CHANGED TO AGREE WITH ESL-314275 ISSUE 6	T.L.
ISSUE: 2 9-27-28 NOTE 1 ADDED W.J.A.	T.L.B. T.L.B.
ISSUE 3 9-12-30 NOTE: 2 ADDED. A.M.	G.C.S.
ISSUE: 4 10-9-33 SWITCHES D_2 & D_3 WERE NOT STRAPPED. LEAD FROM "D" ON SW. D_1 WAS SHOWN CONNECTED TO SW. D_2	M.B.
ISSUE: 5 8-9-34 VACUUM TUBES WERE 211-E. NOTE 3 ADDED.	H.J.W.
ISSUE: 6 5-16-35	M.B.

FIL. PLATE SWITCH
POSITION 1 - FIL.-AB & DE ARE CLOSED.
POSITION 2 - PLATE-ABC & DEF ARE CLOSED.
POSITION 3 - OFF-AB & DE ARE OPEN.

NOTE: 1
WHEN THIS SWITCH NEEDS TO BE REPLACED ORDER TA-4023 SNAP SWITCH.
2. FOR DOOR SWITCH REPLACEMENT, ORDER "ONE #7246 SWITCH, LESS PLATE."

3. WHERE TWO 43-A AMPLIFIERS ARE OPERATED IN PARALLEL, THE 610Ω RESISTANCE R_1 SHOULD BE DISCONNECTED ON ONE OF THEM (PREFERABLY ON THE UPPER AMPLIFIER).

WIRING DIAGRAM-ASR-393
ASSEMBLY ESX-314267, ESX-314268
ASSOCIATED DRAWINGS

43-A AMPLIFIER
SCHEMATIC

WESTERN ELECTRIC SOUND PROJ. SYSTEMS

[illegible] C.F.G. 1-10-28

ASL-392

ASL-392

ASSOCIATED WITH EQUIPMENT BULLETIN, "AMPLIFIER, 43-A"

No. 43-A AMPLIFIER

Instructions for Use

For public address systems in halls, churches, large auditoriums, or wherever amplification of voice frequencies to high power is needed, one or more Western Electric No. 43-A Amplifiers will provide any requisite volume level with a quality of reproduction limited only by other parts of the system such as the microphones or the loud speakers.

This amplifier, as illustrated on Figure 1 and shown schematically on Figure 2, is of the single-stage, "push-pull" type, designed to amplify electrical impulses at voice frequencies so as to operate loud speaking telephones at high energy levels. It is primarily used with the No. 41-A and No. 42-A Amplifiers but may be operated from other circuits where the energy level is sufficiently high. In cases where the set-up is such that more power is required than should be taken from one No. 43-A Amplifier, two or four No. 43-A Amplifiers may be used in parallel as described under "EXTERNAL CONNECTIONS".

The amplifier is designed to operate from an input impedance of 500 ohms and has an output impedance of 500 ohms. It is entirely AC operated and may be used on power supplies of 105-115 volts at 50-60 cycles.

The apparatus of which this amplifier is composed is mounted upon a panel approximately 19 inches wide and 24½ inches high and is arranged so that it may be mounted upon a relay rack.

The amplifier employs four No. 211-E Vacuum Tubes, two of which are used in a "push-pull" arrangement as amplifiers and two as a full-wave rectifier in conjunction with a filter for supplying the plate potential of the amplifier tubes. These four vacuum tubes are mounted vertically in sockets provided for them on the front of the panel. The tubes are protected against breakage by means of two steel bars at the sides of the panel which also serve as handles to facilitate handling the amplifier. A milliammeter for indicating the total plate current of the amplifier tubes and a three-position snap switch for controlling the power supply are also mounted on the front of the panel. A bank of condensers is mounted on the panel below the tubes and is protected by means of a detachable hinged cover. This cover, when opened, releases a switch in the power circuit and shuts off the amplifier, thus removing the voltage from the exposed metal terminals of the apparatus with which a person might come in contact. The apparatus mounted on the rear of the panel is covered by a detachable hinged cover and is similarly protected.

The No. 43-A Amplifier gives an amplification of 15 db. Its load carrying capacity of single-frequency energy is approximately 12 watts or + 33 db. The power consumed at 115 volts, 60 cycles, is approximately 325 watts at 355 volt-amperes.

EXTERNAL CONNECTIONS

The terminals for making connections to the amplifier are mounted on a terminal strip arranged as shown on Figure 3 which is located on the back of the panel inside the cover. The external connections necessary for placing the amplifier in operation are as follows:

Connect a 110-volt AC power supply to the terminals so designated and a ground connection to the terminal marked "GND". When this amplifier is used with a No. 42-A Amplifier the terminals marked "INPUT 1 AND 2" should be

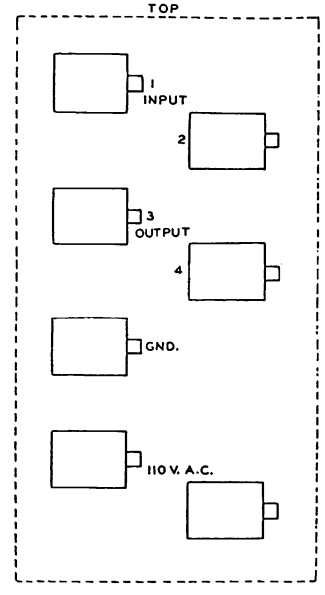


Fig. 3—Terminal Arrangement of No. 43-A Amplifier

connected to the terminals of the No. 42-A Amplifier marked "500 OHMS OUT". The No. 43-A Amplifier may be operated from any source which has an impedance of 500 ohms and from which an energy level of + 18 db or more may be taken. Figure 4 shows the connection necessary for using a No. 42-A Amplifier with one No. 43-A Amplifier.

When two No. 43-A Amplifiers are used in parallel connect the input terminals and output terminals respectively of the two No. 43-A Amplifiers in parallel, the

correspondingly numbered terminals being connected together. When this combination is operated from a No. 42-A Amplifier the input terminals should be connected to the terminals of the No. 42-A Amplifier marked "250 OHMS OUT". This combination of two No. 43-A Amplifiers may also be operated from any other source

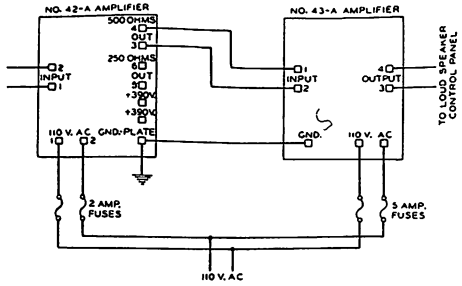


Fig. 4—Connections for Using One No. 43-A Amplifier with One No. 42-A Amplifier

which has an impedance of 250 ohms and from which an energy level of + 21 db or more may be taken. The output impedance of the two No. 43-A Amplifiers connected in parallel is 250 ohms. The output and input connections for using two No. 43-A Amplifiers with a No. 42-A Amplifier are shown in Figure 5. In places where it is desired to operate four No. 43-A Amplifiers from one No. 42-A Amplifier, similarly numbered input terminals of the No. 43-A Amplifiers should be connected together and should be connected to the 250-ohm output terminals of the No. 42-A Amplifier. The 610-ohm resistance which normally shunts the input transformer in each No.

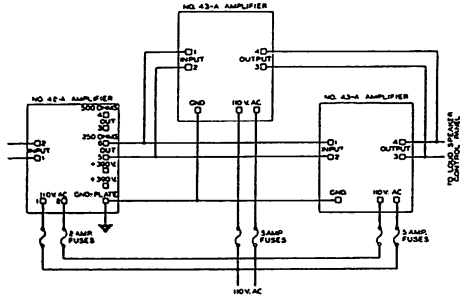


Fig. 5—Connections for Using Two No. 43-A Amplifiers with One No. 42-A Amplifier

43-A Amplifier should be disconnected in three of the amplifiers, the remaining amplifier being left as originally connected. The output circuits of the No. 43-A Amplifier should, where possible, be used separately, but may be connected in parallel where necessary, taking care to connect like numbered terminals together. Eight No. 43-A Amplifiers may be operated from two No. 42-A Amplifiers by connecting them in two groups, each group having one No. 42-A Amplifier and four No. 43-A Amplifiers connected as indicated above and shown on Figure 6.

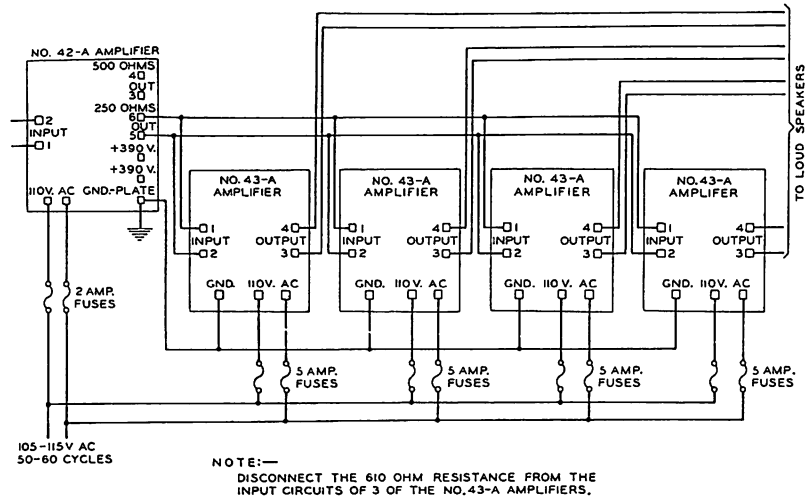


Fig. 6—Connections for Using Four No. 43-A Amplifiers with One No. 42-A Amplifier

OPERATION

After the above connections have been made, the amplifier may be placed in operation as follows:

Insert four No. 211-E Vacuum Tubes in the sockets provided for them on the front of the panel and make sure that both the front and rear covers are located in position so that the safety switches are closed. Then operate the snap switch on the front of the panel to the position marked "FIL" and allow it to remain in this position for ½ to 1 minute so as to heat the filaments of the vacuum tubes. Then advance the switch to the "PLATE" position and leave it there during the period of operation of the amplifier.

The total plate current of the amplifier tubes as indicated on the milliammeter on the panel should be within the limits 105-150 milliamperes as shown by the red sector on the scale of the meter. The amplifier will operate satisfactorily on AC power supplies where the voltage is between 105 and 115 volts. If the voltage is outside of these limits an adjusting device such as the Western Electric No. 707-A Control Cabinet should be employed, since, with a line voltage greater than 115, the filament and plate potential of the tubes become excessively high, materially decreasing the life of the vacuum tubes and with a line voltage less than 105, the level carrying capacity of the amplifier is appreciably reduced.

MAINTENANCE

If the amplifier fails to function when placing it in operation as previously described, the following points should be checked:

If upon operating the snap switch to "FIL", the filaments of the vacuum tubes do not light, inspect the connections to the 110-volt supply to insure that the voltage exists at the terminals of the amplifier. If the power supply is found to be satisfactory the trouble may be in the vacuum tubes. Replace the vacuum tubes, one at a time, by new ones. Failure of this procedure to cause the filaments of the tubes to light indicates that the trouble exists in the wiring of the amplifier.

If an inspection of the wiring does not disclose the trouble the best procedure is to use as a guide the circuit diagram which will be found pasted inside of the cover of the amplifier and, if possible, trace the trouble to its source by a process of elimination.

In checking circuits do not use a DC buzzer as there is danger of magnetizing the coils. The best method of testing the continuity or discontinuity of circuits is to use the test circuit shown in Figure 7. Condenser tests should be made by connecting the condenser to be tested across terminals "A", and strapping terminals "B". If a tone is heard in the receiver the condenser is short circuited. Continuity tests of coils and wiring should be made by connecting the circuit to be tested across terminals "B" and strapping terminals "A". If no tone is heard in the receiver the circuit is open. When testing a piece of apparatus it should be temporarily disconnected. A condenser can be tested for high resistance leakage by disconnecting it and charging it from a DC source of 110 or 220 volts and then, after about one minute, discharging it by short circuiting the terminals. If no spark is obtained the condenser is probably defective. The DC source used for charging a condenser should be protected by suitable fuses.

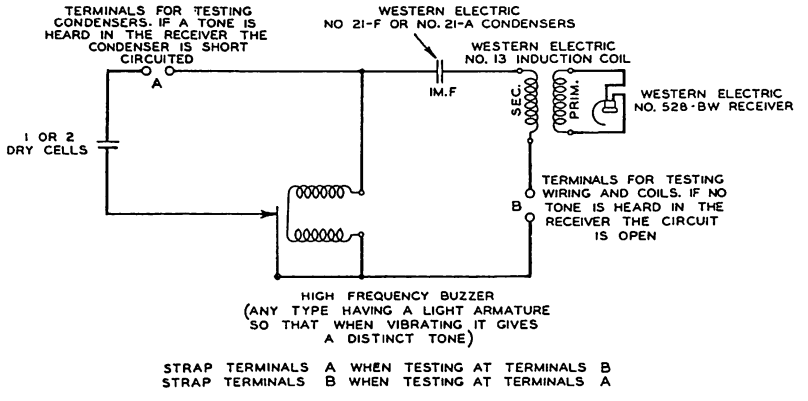


Fig. 7—Circuit for Continuity and Discontinuity Tests

If it is impossible for the operator to locate the cause of the trouble and the customer desires to avail himself of the engineering services of the Western Electric Company, the matter should be taken up with the nearest distributor.

The vacuum tubes constitute the only element in this amplifier which are likely to require replacement with use. These tubes should be replaced if the plate current as indicated by the milliammeter is not within the prescribed limits when the supply voltage is 110.

In case replacements are required, they should be ordered as follows from the distributor from whom the equipment was purchased.

NAME OF PART	HOW TO ORDER
Vacuum Tube	No. 211-E Vacuum Tube (Intended for use in No. 43-A Amplifier)
Plate Current Meter	No. KS-6184 Meter

NOTE: IF A PART OTHER THAN ANY OF THE ABOVE IS REQUIRED FOR REPLACEMENT, IT SHOULD BE ORDERED BY GIVING A DESCRIPTION OF THE PART AND ITS FUNCTION IN THE AMPLIFIER.

1. Reason for Reissue

1.1 To specify new capacity limits for the rectifier filter condenser bank and to state the conditions under which 95-D Condensers may be removed from the rectifier filter circuit without replacement.

1.2 To incorporate and replace Addendum #1, dated 3/26/31.

1.3 To incorporate and replace S.B. #60.

2. Associated Drawings

ASL-392, Schematic
ASR-393, Wiring Diagram

3. Description

3.1 The 43-A Amplifier is used as the last stage power amplifier in the following sound systems: - 1U-41, 3UX-41, 1A-41 and 3AX-41. Refer to E.B., "Amplifiers, General" for table of general information on this amplifier.

4. Operation

4.1 To operate the amplifier proceed as follows:

(a) Install four 211-E or 242-A Tubes
(b) Make sure that both back and both front covers of the panel are completely closed, and turn on 110 AC supply to amplifier.
(c) Turn snap switch to "FIL" and allow tubes to warm for a 10 or 15 minute period.
(d) Turn snap switch to "PLATE", the amplifier is then ready for use.
(e) The total plate current should be between 105-150 milliamperes.

5. Maintenance

5.1 Filter Condenser Replacements: The filter requirements in the rectifier filter circuit have been decreased from 18 mfd to 14 mfd capacity. This makes it possible to disconnect defective 95-D Condensers from this circuit without replacing them. However, there must be at least 7 mfd (7 - 95-D Condensers) in each condenser bank. Any 95-D Condenser disconnected under the above condition is not to be removed from the amplifier. Instead, its terminals should be unsoldered from the wiring and then clipped close to the condenser case. The bare portion of the wire, resulting from the removal of terminals, should be thoroughly insulated with rubber and tape. Repaired amplifiers may be received in the field modified in this manner with total capacity varying from 14 to 18 mfd. The 95-D Condensers will be replaced by 14 - 180-A Condensers in the future production of 43-A Amplifiers. When it is found necessary to replace one of these condensers, one of the same type should be ordered as the 95-D and 180-A are not physically interchangeable.

5.2 Vacuum Tubes: The V.T's. used in amplifier sockets V_1 and V_2 should be selected for approximately equal plate to filament impedance, as follows: Insert several tubes, one at a time, in socket V_1 with socket V_2 vacant. Choose two tubes whose indicated plate currents differ by not more than 10 mils. Turn off the amplifier while changing the tubes.

5.3 Tube and Socket Contacts: Poor or dirty contacts introduce noise in the system and may also cause unbalanced tube operation. The vacuum tube contacts and socket contacts should be cleaned at least every three months with an eraser on the end of a lead pencil. If the surfaces cannot be made shiny by this means, a fine file should be used.

5.4 Fusing: The following paragraphs will serve as a guide for fusing the 110V AC supply to 43-A Amplifiers -

(a) Present installation practise requires a separate 5 ampere fuse in the 110V AC supply to each amplifier.
(b) In older installations where the 42-A Amplifier and one or two 43-A Amplifiers are supplied in parallel from the same line, proper fusing is as follows:

One 42-A and one 43-A on same AC line - 6 ampere fuse
One 42-A and two 43-A on the same AC line - 10 amp. fuse

(c) Where the customer so desires, and at his expense, the primary of the 307-A (PLATE) Transformer may be fused separately as follows:

Install a single fuse cut-out base inside the amplifier on the near side of the 137-A Retard Coil (L1). This is done by removing the fibre strip on the bottom of the coil and fastening the cut-out base to it. Replace the fibre strip. Disconnect wire from terminal #1 (ungrounded side) of 307-A Transformer and connect it to one side of the cut-out base.

Connect other terminal of the cut-out base to terminal #1 of transformer, using #14 BRC Wire. Install two ampere fuse.

Material required: One Single Pole Fuse Plug Cut-out Base #62569 (Bryant or G.E.) or equivalent, short length of #14 BRC, one two ampere fuse (plug spares), all to be purchased locally.

6. Merchandising

6.1 The 43-A Amplifier became available early in 1928. Order it as:

"One 43-A Amplifier"

Replacing Addendum #1 dated 6/12/33

0. REASON FOR REISSUE

0.1 To include information on C-43-A Amplifier (Sect. 4) and TA-7302 Guard (Sect. 5).
0.2 To bring information up-to-date.

1. ASSOCIATED DRAWINGS

ASL-392 & ASR-383 - Schematic & Wiring, 43-A Amplifier
ASL-2533, Schematic, B-43-A Amplifier
ASL-2782, Schematic, C-43-A Amplifier

2. DESCRIPTION

2.1 Refer to E.B. "Amplifiers, General", File 4.03, for tabulated data.

3. MODIFICATION - 43-A AMPLIFIER TO B-43-A (TA-166)

3.1 General: The B-43-A Amplifier is standard equipment in 1W and 2W Systems, and is specified for existing systems converted to EW Wide Range, in cases requiring additional output power. It is modified in the Stores Division in all cases except where an existing 43-A Amplifier at the installation is to be converted to B-43-A, in which case the conversion parts are shipped. The modification to B-43-A provides:
(a) A greater output capacity, by increasing the plate voltage to approximately 1050 volts, and the plate current to approximately 70 milliamperes per tube, giving a rated output of 36 db or 24 watts.
(b) An output impedance which is suitable for operating directly (without 200-A or 209-A Panel) into the TA-7284 Control Cabinet or similar network, and is adjustable to match various loudspeaker load impedances. Four 242 type Vacuum Tubes and one TA-7302 Guard (see Sects. 5 and 8) are required for operation of this amplifier; 211 type Vacuum Tubes cannot be used.

3.2 Required Material:
1 - Set of ASP-903 Conversion Parts, consisting of:-
1 - D-95659 Output Transformer
1 - D-95557 Transformer
1 - 18-BT Resistance
1 - K-40330 Resistor
1 - Copy of Schematic & Circuit Label per ASL-2533
1 - Set of Designation Labels per ASP-816

3.3 Procedure:-
(a) Replace 307-A Transformer T4, and 128-A Output Transformer T2, by a D-95557 and D-95659 Output Transformer respectively, and the 18-EL Resistance R6 by an 18-BT Resistance. For disposition of removed transformers, refer to O.B. #4, F.R. 3.68.
(b) Drill a .180" diameter hole (#15 drill) in the bottom wall of the amplifier housing, 2-1/2" in from the outer edge midway between L1 and T3, and install the K-40330 Resistor in this location.
(c) Wire in accordance with ASL-2533.
(d) Check wiring to the cover switches D2 and D3. Instructions given in a previous issue of this E.B. specified that these switches be wired in parallel in the ungrounded (live) side of the 110V. AC line. If they are not so wired, the change should be made at this time. (See Sect. 7.3.)
(e) Affix designation labels "242 type Tube" per ASP-816, directly over the existing designations "211 Tube" on the front of the panel.
(f) Affix a copy of ASL-2533, directly over the existing circuit label.
(g) With pen and ink print the following note on the wiring diagram circuit label:-

"REFER TO THE SCHEMATIC FOR
REVISED WIRING OF AMPLIFIER"

(h) Change code marking per E.B. "Equipment Modifications, General", F.R. 4.01.

4. MODIFICATION - 43-A AMPLIFIER TO C-43-A (TA-219)

4.1 General: The C-43-A Amplifier is used in 3W Systems and may also be used when additional amplification is required in 46 type Systems being converted to Wide Range. This modification will be made in the Stores Division. It results in the replacement of the 128-A Output Transformer by a D-95659 Output Transformer to provide an output impedance which is suitable for operating directly with the TA-7284 Control Cabinet or similar network, and is adjustable to compensate for various loudspeaker load impedances. Four 242 type Vacuum Tubes are required for operation of this amplifier.

5. INSTALLATION

5.1 Modify if necessary, and install per Systems Drawings (see ASXX-5328). Insert four 242 type Vacuum Tubes in the sockets, and where required, attach a TA-7302 Guard.

NOTE: The TA-7302 Guard prevents nitrate film from coming in contact with the vacuum tubes. It consists of a perforated metal case, open at the back and bottom, and fitted with spring clips for engagement with the amplifier handles. A small opening in front permits access to the amplifier switch. When available (see Sect. 8), this guard should be attached to all B-43-A Amplifiers, and in localities where it is required by local ordinance, to other 43-A type Amplifiers. It may also be installed, at the discretion of the Div.Oper.Mgrs. where the hazard of contact between nitrate film and the vacuum tubes is particularly great owing to the location of the amplifier.

6. OPERATION

6.1 To operate the amplifier proceed as follows:-
(a) Make certain that four 242 type Vacuum Tubes are in the sockets, and that both the back and front covers of the panel are completely closed.
(b) Turn on 110V AC supply to amplifier, turn snap switch to "FIL" and allow tubes to become warm.
(c) Turn snap switch to "PLATE"; the amplifier is then ready for use.

7. MAINTENANCE

CAUTION: Before attempting any work on the 43 type Amplifier after the 110V supply has been switched off, make certain that the condensers in the rectifier filter circuit are completely discharged. This may be done by grounding either terminal of the 137-A Retard Coil, L_1.

7.1 Filter Condenser Replacements: The required condenser capacity in the rectifier filter circuit has been decreased from 18 mfd to 14 mfd. This permits disconnection of 4 defective 95-D Condensers from this circuit without replacement, provided there are at least 7 mfd (7 - 95-D Condensers) in each Condenser Bank. Any 95-D Condenser disconnected under the above condition is not to be removed from the amplifier. Instead, its terminals should be clipped close to the condenser case and unsoldered from the strap wire. The portion of the wire thus made bare should be thoroughly insulated with rubber and tape. Repaired amplifiers may be received in the field modified in this manner with total capacity varying from 14 to 18 mfd.

7.2 Vacuum Tubes: The tubes used in amplifier sockets V_1 and V_2 should be selected for approximately equal plate to filament resistance as follows: Insert several tubes one at a time, in socket V_1 with socket V_2 vacant, turning off the amplifier each time when changing the tubes. Choose two tubes whose indicated plate currents differ by not more than 10 mils.

7.3 Cover Switches: At least every six months, the front and rear cover switches of all 43 type Amplifiers should be treated as follows:-
(a) Remove cover switch cover plate and inspect contact arm and spring.
(b) Clean springs and contact arm with sandpaper, if necessary.
(c) Increase tension of springs on contact arm, if required.
(d) Apply a light coating of vaseline to the switch contacts.
NOTE: If the rear cover switches D2 and D3 have not previously been wired in parallel in the live side of the 110V AC line, the change should be made (see Drawings).

7.4 Tube and Socket Contacts: Poor contact between vacuum tube prongs and socket springs may introduce noise in the system or cause unbalanced tube operation. Clean the contacting portion of the prongs and springs at least every three months using the ASP-844 Tool. Rebuilding of the contacts with TA-7258 Solder may be required (see E.B.'s "Solder, TA-7258", File 8.34; and "Vacuum Tubes, General", File 4.44).

7.5 Fusing: The following will serve as a guide for fusing the 110V AC supply to 43-A Amplifiers:-
(a) Present installation practice required a separate 5 ampere fuse in the 110V AC supply to each amplifier.
(b) In older installations where the 42-A Amplifier and one or two 43-A Amplifiers are supplied in parallel from the same line, proper fusing is as follows:-
One 42-A and one 43-A on same AC line - 6 ampere fuse
One 42-A and two 43-A on same AC line - 10 ampere fuse

8. MERCHANDISING

8.1 The 43-A Amplifier became available early in 1928. Order as "One 43-A Amplifier".
8.2 The B-43-A Amplifier became available by (a) Field modification in June, 1933, and (b) Stores Division modification in June, 1934.
For new installations order as:- "One B-43-A Amplifier".
For existing installations it is available through field modification only.
Order Conversion Parts (see Sect. 3.2) as: "One Set of ASP-903 Conversion Parts".
8.3 The C-43-A Amplifier became available in the Stores Division July, 1934.
Order as:- "One C-43-A Amplifier".
8.4 The TA-7302 Guard (see Sect.5) will become available in the Stores Division in September, 1934. It is required for all B-43-A Amplifiers including those in existing installations, and in special cases for other 43-type Amplifiers. It should be ordered on S.D. order as: "One TA-7302 Guard" and charged to Charge Classification #1096.

This Reissue Does Not include Addendum #1, dated 10/31/34

0. REASON FOR REISSUE

0.1 To state that TA-7262 (or TA-7313) Panel should be ordered with the Conversion Parts for modifying a 43-A Amplifier to B-43-A.

1. ASSOCIATED DRAWINGS

ASL-392 & ASR-383 - Schematic & Wiring, 43-A Amplifier
ASL-2533, Schematic, B-43-A Amplifier
ASL-2732, Schematic, C-43-A Amplifier

2. DESCRIPTION

2.1 Refer to E.B. "Amplifiers, General", File 4.03, for tabulated data.

3. MODIFICATION - 43-A AMPLIFIER TO B-43-A (TA-166)

3.1 General: The B-43-A Amplifier is standard equipment in 1W and 2W Systems, and is specified for existing systems converted to EW Wide Range, in cases requiring additional output power. It is modified in the Stores Division in all cases except where an existing 43-A Amplifier at the installation is to be converted to B-43-A, in which case the conversion parts are shipped. The modification to B-43-A provides:
(a) A greater output capacity, by increasing the plate voltage to approximately 1050 volts, and the plate current to approximately 70 milliamperes per tube, giving a rated output of 36 db or 24 watts.
(b) An output impedance which is suitable for operating directly (without 200-A or 209-A Panel) into the TA-7284 Control Cabinet or similar network, and is adjustable to match various loudspeaker load impedances. Four 242 type Vacuum Tubes and one TA-7302 Guard (see Sects. 5 and 8) are required for operation of this amplifier; 211 type Vacuum Tubes cannot be used.

3.2 Required Material:-
1 - Set of ASP-903 Conversion Parts, consisting of:-
1 - D-95659 Output Transformer
1 - D-95557 Transformer
1 - 18-BT Resistance
1 - K-40330 Resistor
1 - Copy of Schematic & Circuit Label per ASL-2533
1 - Set of Designation Labels per ASP-816
NOTE:- The TA-7262 (or TA-7313) Panel should ordinarily be ordered with the Conversion Parts (see 8.2 below).

3.3 Procedure:-
(a) Replace 307-A Transformer T4, and 128-A Output Transformer T2, by a D-95557 and D-95659 Output Transformer respectively, and the 18-EL Resistance R6 by an 18-BT Resistance. For disposition of removed transformers, refer to O.B. #4, F.R. 3.68.
(b) Drill a .180" diameter hole (#15 drill) in the bottom wall of the amplifier housing, 2-1/2" in from the outer edge midway between L1 and T3, and install the K-40330 Resistor in this location.
(c) Wire in accordance with ASL-2533.
(d) Check wiring to the cover switches D2 and D3. Instructions given in a previous issue of this E.B. specified that these switches be wired in parallel in the ungrounded (live) side of the 110V. AC line. If they are not so wired, the change should be made at this time. (See Sect. 7.3.)
(e) Affix designation labels "242 type Tube" per ASP-816, directly over the existing designations "211 Tube" on the front of the panel.
(f) Affix a copy of ASL-2533, directly over the existing circuit label.
(g) With pen and ink print the following note on the wiring diagram circuit label:-

"REFER TO THE SCHEMATIC FOR
REVISED WIRING OF AMPLIFIER"

(h) Change code marking per E.B. "Equipment Modifications, General", F.R. 4.01.

4. MODIFICATION - 43-A AMPLIFIER TO C-43-A (TA-219)

4.1 General: The C-43-A Amplifier is used in 3W Systems and may also be used when additional amplification is required in 46 type Systems being converted to Wide Range. This modification will be made in the Stores Division. It results in the replacement of the 128-A Output Transformer by a D-95659 Output Transformer to provide an output impedance which is suitable for operating directly with the TA-7284 Control Cabinet or similar network, and is adjustable to compensate for various loudspeaker load impedances. Four 242 type Vacuum Tubes are required for operation of this amplifier.

5. INSTALLATION

5.1 Modify if necessary, and install per Systems Drawings (see ASXX-5328). Insert four 242 type Vacuum Tubes in the sockets, and where required, attach a TA-7302 Guard.

NOTE: The TA-7302 Guard prevents nitrate film from coming in contact with the vacuum tubes. It consists of a perforated metal case, open at the back and bottom, and fitted with spring clips for engagement with the amplifier handles. A small opening in front permits access to the amplifier switch. When available (see Sect. 8), this guard should be attached to all B-43-A Amplifiers, and in localities where it is required by local ordinance, to other 43-A type Amplifiers. It may also be installed, at the discretion of the Div.Oper.Mgrs. where the hazard of contact between nitrate film and the vacuum tubes is particularly great owing to the location of the amplifier.

6. OPERATION

6.1 To operate the amplifier proceed as follows:-
(a) Make certain that four 242 type Vacuum Tubes are in the sockets, and that both the back and front covers of the panel are completely closed.
(b) Turn on 110V AC supply to amplifier, turn snap switch to "FIL" and allow tubes to become warm.
(c) Turn snap switch to "PLATE"; the amplifier is then ready for use.

7. MAINTENANCE

CAUTION: Before attempting any work on the 43 type Amplifier after the 110V supply has been switched off, make certain that the condensers in the rectifier filter circuit are completely discharged. This may be done by grounding either terminal of the 137-A Retard Coil, L_1.

7.1 Filter Condenser Replacements: The required condenser capacity in the rectifier filter circuit has been decreased from 18 mfd to 14 mfd. This permits disconnection of 4 defective 95-D Condensers from this circuit without replacement, provided there are at least 7 mfd (7 - 95-D Condensers) in each Condenser Bank. Any 95-D Condenser disconnected under the above condition is not to be removed from the amplifier. Instead, its terminals should be clipped close to the condenser case and unsoldered from the strap wire. The portion of the wire thus made bare should be thoroughly insulated with rubber and tape. Repaired amplifiers may be received in the field modified in this manner with total capacity varying from 14 to 18 mfd.

7.2 Vacuum Tubes: The tubes used in amplifier sockets V_1 and V_2 should be selected for approximately equal plate to filament resistance as follows: Insert several tubes one at a time, in socket V_1 with socket V_2 vacant, turning off the amplifier each time when changing the tubes. Choose two tubes whose indicated plate currents differ by not more than 10 mils.

7.3 Cover Switches: At least every six months, the front and rear cover switches of all 43 type Amplifiers should be treated as follows:-
(a) Remove cover switch cover plate and inspect contact arm and spring.
(b) Clean springs and contact arm with sandpaper, if necessary.
(c) Increase tension of springs on contact arm, if required.
(d) Apply a light coating of vaseline to the switch contacts.
NOTE: If the rear cover switches D2 and D3 have not previously been wired in parallel in the live side of the 110V AC line, the change should be made (see Drawings).

7.4 Tube and Socket Contacts: Poor contact between vacuum tube prongs and socket springs may introduce noise in the system or cause unbalanced tube operation. Clean the contacting portion of the prongs and springs at least every three months using the ASP-844 Tool. Rebuilding of the contacts with TA-7258 Solder may be required (see E.B.'s "Solder, TA-7258", File 8.34; and "Vacuum Tubes, General", File 4.44).

7.5 Fusing: The following will serve as a guide for fusing the 110V AC supply to 43-A Amplifiers:-
(a) Present installation practice required a separate 5 ampere fuse in the 110V AC supply to each amplifier.
(b) In older installations where the 42-A Amplifier and one or two 43-A Amplifiers are supplied in parallel from the same line, proper fusing is as follows:-
One 42-A and one 43-A on same AC line - 6 ampere fuse
One 42-A and two 43-A on same AC line - 10 ampere fuse

8. MERCHANDISING

8.1 The 43-A Amplifier became available early in 1928. Order as:- "One 43-A Amplifier".

8.2 The B-43-A Amplifier became available by (a) Field modification in June, 1933, and (b) Stores Division modification in June, 1934.
For new installations order as:- "One B-43-A Amplifier". For existing installations it is available through field modification only. Order Conversion Parts and associated TA-7262 (or TA-7313) Panel as:- "One Set ASP-903 Conversion Parts", and "One TA-7262 (or TA-7313) Panel".

8.3 The C-43-A Amplifier became available in the Stores Division July, 1934.

8.4 The TA-7302 Guard (see Sect. 5) became available in the Stores Division in September, 1934. It is required for all B-43-A Amplifiers including those in existing installations, and in special cases for other 43 type Amplifiers. It should be ordered on S.D. order as: "One TA-7302 Guard" and charged to Charge Classification #1096.

1. ABSTRACT

1.1 This addendum covers:
(a) The installation of a one-megohm resistor across the filter condensers in all 43 type Amplifiers in use, to drain the high voltage charge from the condenser bank, when the amplifier is turned off, thus eliminating the hazard of shock to a person working on the amplifier with the covers removed (Section 2);
(b) The disconnection of the 610 ohm resistance across the amplifier input, on one of two 43 type Amplifiers connected in parallel (Section 3);
(c) The elimination of the front cover switch, and addition of screw to front cover (Section 4).

1.2 It is being reissued to add (c) above.

2. INSTALLATION OF RESISTOR ACROSS FILTER CONDENSERS

2.1 General: This change is to be made in all 43 type Amplifiers in the field, including those in Emergency Stock. The purpose of the change is outlined above. The resistance discharges the condenser bank to 3 or 4 volts in about 10 seconds. The current drain thru the resistor when amplifier is in operation is from .9 to 1.3 mils. and this makes no perceptible change in the reading of the plate milliammeter.

2.2 Material Required for Each 43 type Amplifier

1 - Allen Bradley, one megohm, type F, 2 watt Resistor.

NOTE:- These resistors were distributed to Branch Offices about November 1, 1934.

2.3 Procedure: Install the resistor by soldering its leads to the positive terminal of C-11, and the negative terminal of C-15, respectively, in the condenser bank located on the front of the amplifier. It will be adequately held in position by its leads. Mark the circuit and wiring labels accordingly. This change involves no recoding of the amplifiers.

3. TWO 43-A AMPLIFIERS IN PARALLEL

3.1 In all cases where two 43-A type (including B-43-A, C-43-A, etc.) Amplifiers are operated in parallel, the 18-OF Resistance (610 ohm) across the input of the upper one should be disconnected, and suitable indication of this made on the circuit and wiring labels. Care should be taken to avoid interchanging the covers of the two amplifiers after the change in the labels has been made. Should the amplifier so changed be later removed from the parallel arrangement for any reason, the resistance connection and the corresponding label indication should be restored.

4. ELIMINATION OF FRONT COVER SWITCH

4.1 To prevent trouble due to deterioration of the contacts of the front cover switch, this switch is to be removed from the amplifier, on all 43 type Amplifiers in use. Since the Underwriters' specifications applying to this cover require that it either have a cover switch or that it can be opened only by use of a tool, advantage is being taken of the latter alternative by adding a screw through the cover, and threaded into one of the existing switch brackets. Accordingly, all 43 type Amplifiers should be modified as follows:-

(a) Remove the door switch and its metal container completely from the amplifier.
(b) Permanently close the circuit by taking the wire which runs from "A" of switch D-1 to the door switch D-4 and re-route it so that it runs from "A" of D-1 to switches D-2 and D-3 (already parallel by previous modification).
(c) Thread a .125"-40x1" black R.H.I.M. screw in the right-hand hole of the door switch mounting bracket, threading the screw in until its head protrudes approximately 1/4" out beyond the open edge of the condenser compartment. Then close the condenser compartment cover so that it strikes the head of the screw and scars the inner surface of the cover. Using the scar mark as a location, drill a 3/16" hole through the cover.
(d) After the above modification, the condenser compartment cover is to be closed in the normal manner and held "permanently" shut by the .125"-40x1" screw inserted through the hole in the cover and threaded into the hole in the door switch mounting bracket.
(e) Attach to the front of the condenser compartment cover just below the .125"-40x1" screw, a caution label cut from ASP-816 (E.B. "Equipment Modifications, General", File 4.01), reading:

"CAUTION - DO NOT REMOVE COVER
WHILE AMPLIFIER IS OPERATING".

(f) No recoding is required for this modification.

NOTE:- A quantity of .125"-40x1" R.H.I.M. screws will be sent to each District Office for the above purpose, in the near future.

WIDE RANGE Westinghouse Electric SOUND SYSTEM

4.03

EQUIPMENT BULLETIN — AMPLIFIERS, 43 TYPE ADDENDUM #1

1. ABSTRACT (* denotes item new in this issue)

1.1 This addendum covers:
*(a) A rearrangement of the output circuit of 43-A Amplifiers (not C-43-A or B-43-A) to prevent overloading.

1.2 The information covered in Issue #2 of this Addendum is being added on associated drawings and is no longer included herein.

*2. REARRANGEMENT OF 43-A AMPLIFIER OUTPUT

2.1 At all installations having one 43-A Amplifier (only) and a loudspeaker load impedance of 10 ohms or less, proceed as follows:-

(a) Reconnect secondary of 128-A Output Transformer for 125 ohms instead of 500 ohms, by disconnecting terminals 1 and 6, and strapping 2 and 6, also 1 and 5 (see associated drawing ASL-392).
(b) Reduce the switch setting or strapping on the Horn Panel by three steps. If the existing setting is so low as not to permit this, use the setting or strapping corresponding to tap 2 on the 7-A Auto-Transformer.

For convenience, the impedance index table given under E.B. "Panels, 200-A" File 4.27, is shown below revised for 125 ohm amplifier output.

Tap on 7-A Auto Transf.	Switch Setting on 200-A Panel	Panel "Transformer" Term. No. on 209-A Panel	Impedance Index (125 ohm Output)
2	0	0	.25
3	2	2	.16
4	4	4	.10
5	6	6	.063
6	8	8	.04
7	10	10	.025
8	12	12	.016
9	14	14	.010
10	16	16	.0063
11	18	18	.004
12	20	20	.003

2.2 At installations having "blasting" trouble (see Note below) and which are equipped with either

One 43-A Amplifier, with load impedance exceeding 10 ohms,
or,
Two 43-A Amplifiers in parallel;

and where such "blasting" cannot be traced to other parts of the system, the condition will be improved by converting the Amplifier(s) to C-43-A and eliminating the 7-A Auto-Transformer. This conversion requires "One Set of ASP-6219 Conversion Parts" (includes a D-95659 Output Transformer) for each amplifier. Make output connections per ASL-2782.

NOTE: "Blasting" may be roughly defined as a forced or disrupted effect in the sound, often accompanied by noise similar to radio static. It may be caused, among other things, by excessive voltage on the 7-A Auto-Transformer.

NOTE: Changes and additions designated by asterisk (*).

1. REARRANGEMENT OF 43-A AMPLIFIER OUTPUT TO AVOID OVERLOAD OF ASSOCIATED 7-A AUTO-TRANSFORMER

1.1 At all installations having one 43-A Amplifier and a loudspeaker load impedance of 10 ohms or less, or two 43-A Amplifiers in parallel and a loudspeaker impedance of 5 ohms or less, proceed as follows:

(a) Reconnect secondary of 128-A Output Transformer for 125 ohms instead of 500 ohms, by disconnecting terminals 1 & 6, and strapping 2 & 6, also 1 & 5.

*(b) Reduce the switch setting or strapping on the Horn Panel by three steps. If the lowest switch setting (or "Transformer" terminal connection) is #4 or less, making a three step reduction impossible, this setting should be reduced to "0" (1 or 2 steps) and all other settings (or connections) reduced the same number of steps. This maintains the original load distribution between loudspeaker groups. The horn panel impedance index, revised for 125 ohm amplifier output, follows:

Tap on 7-A Auto-Transf.	Switch Setting on 200-A Panel, or "Transformer" Term. of 209-A Panel	Imped. Index (125 ohm Out.) 1 - 43-A	Imped. Index (125 ohm Out.) 2 - 43-A's in parallel
2	0	.25	.13
3	2	.16	.08
4	4	.10	.05
5	6	.063	.03
6	8	.04	.02
7	10	.025	.01
8	12	.016	.01
9	14	.010	-
10	16	.0063	-
11	18	.004	-
12	20	.003	-

1.2 If "blasting" (see note) is experienced in systems having 1 - 43-A Amplifier with a load impedance exceeding 10 ohms, or 2 - 43-A Amplifiers in parallel with load impedance exceeding 5 ohms, and it cannot be traced to other parts of the system, the condition will be improved by modifying the amplifier (s) to C-43-A (sections 2 and 3 below), eliminating the 7-A Auto-Transformer and connecting the output per ASL-2782.

NOTE: "Blasting" may be roughly defined as a forced or disrupted effect in the sound, often accompanied by noise similar to radio static. It may be caused, among other things, by excessive voltage on the 7-A Auto-Transformer.

2. MODIFICATION OF 43-A AMPLIFIER TO C-43-A (TA-219)

2.1 Material required:
1 set ASP-6219 Conversion Parts, including
1 - D-95659 Output Transformer
3'- #14 BRC Wire
1 - Cct. Label per ASL-2782
1 - Copy ASP-816

2.2 Procedure
(a) Replace 128-A Output Transformer by a D-95659 Output Transformer, using the same mounting holes and screws.
(b) Wire the new output transformer per ASL-2782.
(c) Affix designation labels "242-A Tube" per ASP-816 over all existing designations "211 Tube".
(d) Affix a copy of the circuit label per ASL-2782 over the existing circuit label and print the following note on the wiring label: "REFER TO THE SCHEMATIC FOR REVISED WIRING OF AMPLIFIER".
(e) Recode per E.B. "Equipment Modifications, General", File 4.01.

3. MERCHANDISING

3.1 The C-43-A Amplifier is furnished with Wide Range installations where required. For existing installations (regardless of the type of contract), the ASP-6219 Conversion Parts may be ordered in the regular manner on a "Full Price" basis. Order as:-

"1 set of Conversion Parts per ASP-6219".

1. MODIFICATION C-43-A AMPLIFIER TO B-43-A

1.1 General - In modernizing existing installations for Mirrophonic Systems, 43-A and C-43-A Amplifiers may be modified to B-43-A to provide an output level of 36 db and power of 24 watts. (For modification of 43-A Amplifier to B-43-A, refer to Section 3, E.B. "Amplifiers, 43 Type", Issue #5). 211 type Tubes cannot be used in the B-43-A Amplifier.

A TA-7302 Guard is required for use with the B-43-A Amplifier. If the existing 43 type Amplifiers are not so equipped, a guard should be ordered with each set of conversion parts. (Refer to Section 5.1, E.B. "Amplifiers, 43 Type".)

1.2 Material Required to Convert C-43-A to B-43-A

One Set ASP-8242 Conversion Parts, consisting of:-

1 - D-95557 Power Transformer
1 - 18-BT Resistor
1 - K-40330 Resistor
1 - Copy of Schematic Circuit Label, per ASL-2533
1 - Set Designation Labels, per ASP-816

1.3 Procedure

(a) Replace the 307-A Power Transformer T-4 by a D-95557 Power Transformer, and the 18-EL Resistor R-6 by an 18-BT Resistor. For disposition of replaced transformer, refer to O.B. #4, File 3.68.
(b) Drill one .180" diameter hole (#15 Drill) in the bottom wall of the amplifier housing, 2-1/2" in from the outer edge, mid-way between L-1 and T-3 and install the K-40330 Resistor R-7 in this location.
(c) Wire in accordance with ASL-2533.
(d) Check wiring to cover switches D-2 and D-3. Instructions previously given specified that these switches be wired in parallel on the non-grounded side of the 110 volt AC line. If they are not so wired, the change should be made at this time. (See Section 7.3 of E.B. "Amplifiers, 43 Type".)
(e) Affix designation labels "242 type Tube" per ASP-816, directly over any existing designations "211 Tube" on the front of the panel.
(f) Affix copy of ASL-2533 directly over the existing circuit label.
(g) Print the following note in ink on wiring diagram circuit label:-

"REFER TO SCHEMATIC FOR REVISED WIRING OF AMPLIFIER"

(h) Do not change the external code marking of the 43-A Amplifier, but affix B-43-A marking label inside the rear cover as near as possible to the schematic circuit label.

1.4 Merchandising - The ASP-8242 Conversion Parts became available October, 1936. Order as:-

"One Set ASP-8242 Conversion Parts".

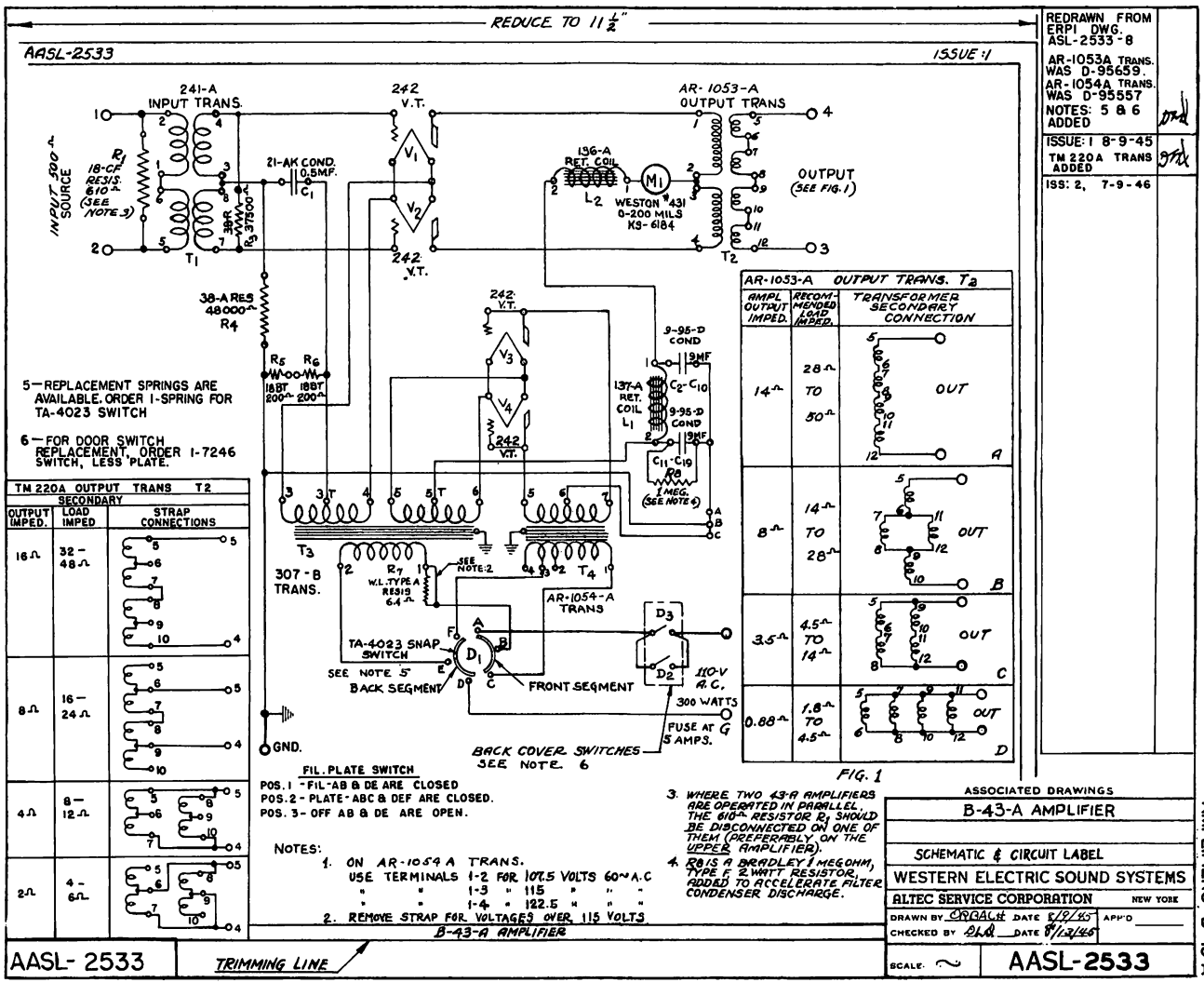
2. FUSING OF 43 TYPE AMPLIFIERS

For protection of 307-A or D-95557 Power Transformer when amplifiers are not separately fused:

2.1 Mount a single fuse cut-out block, porcelain cleat receptacle or equivalent, inside the amplifier on the near side of the 137-A retard coil L-1. Remove the fibre strip on the bottom of this coil, fasten the cut-out block to it with screws and nuts, and replace the strip. Disconnect the wire from Terminal #1 (ungrounded side) of transformer T-4, and connect it to one side of the cut-out. Connect the other side of the cut-out to terminal #1 of the transformer, using #14 BRC wire.

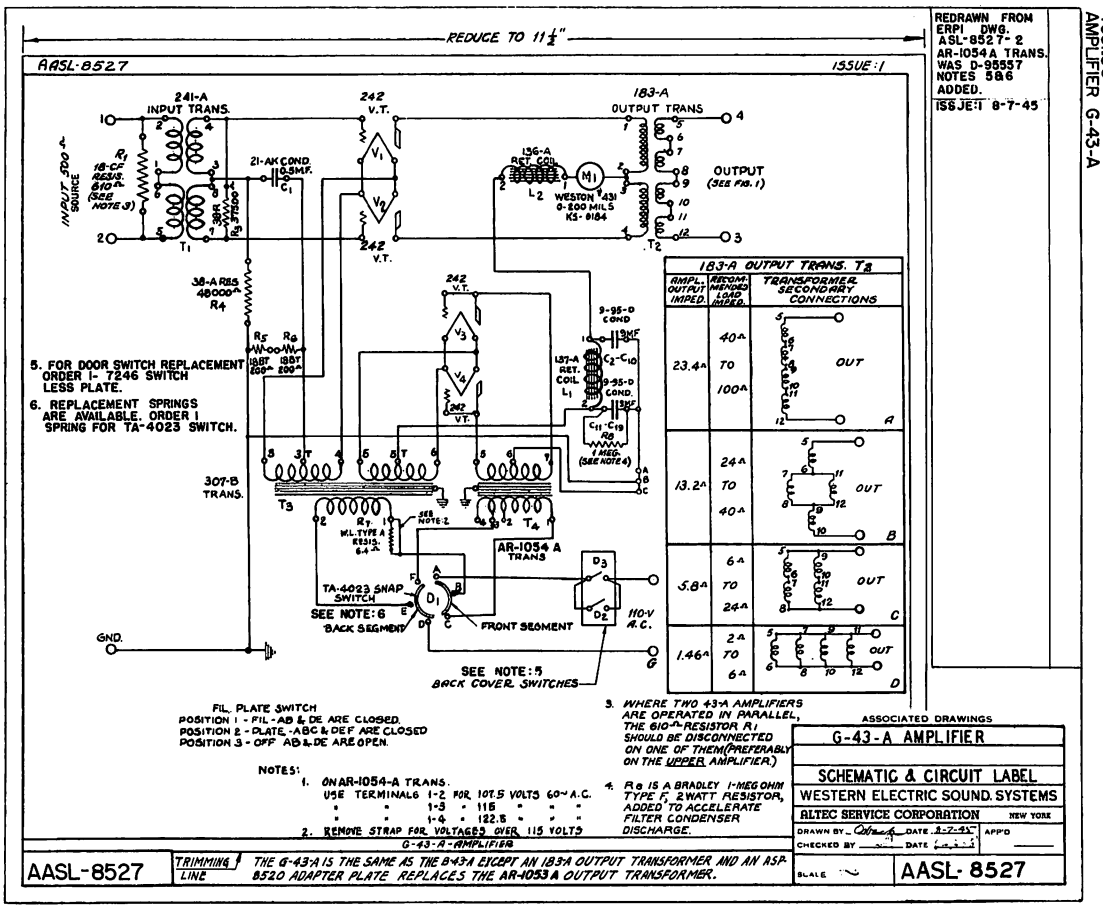
2.2 Use 2 ampere fuses (not fusetron) for 307-A transformers and 3 ampere fuses (not fusetron) for D-95557 transformers.

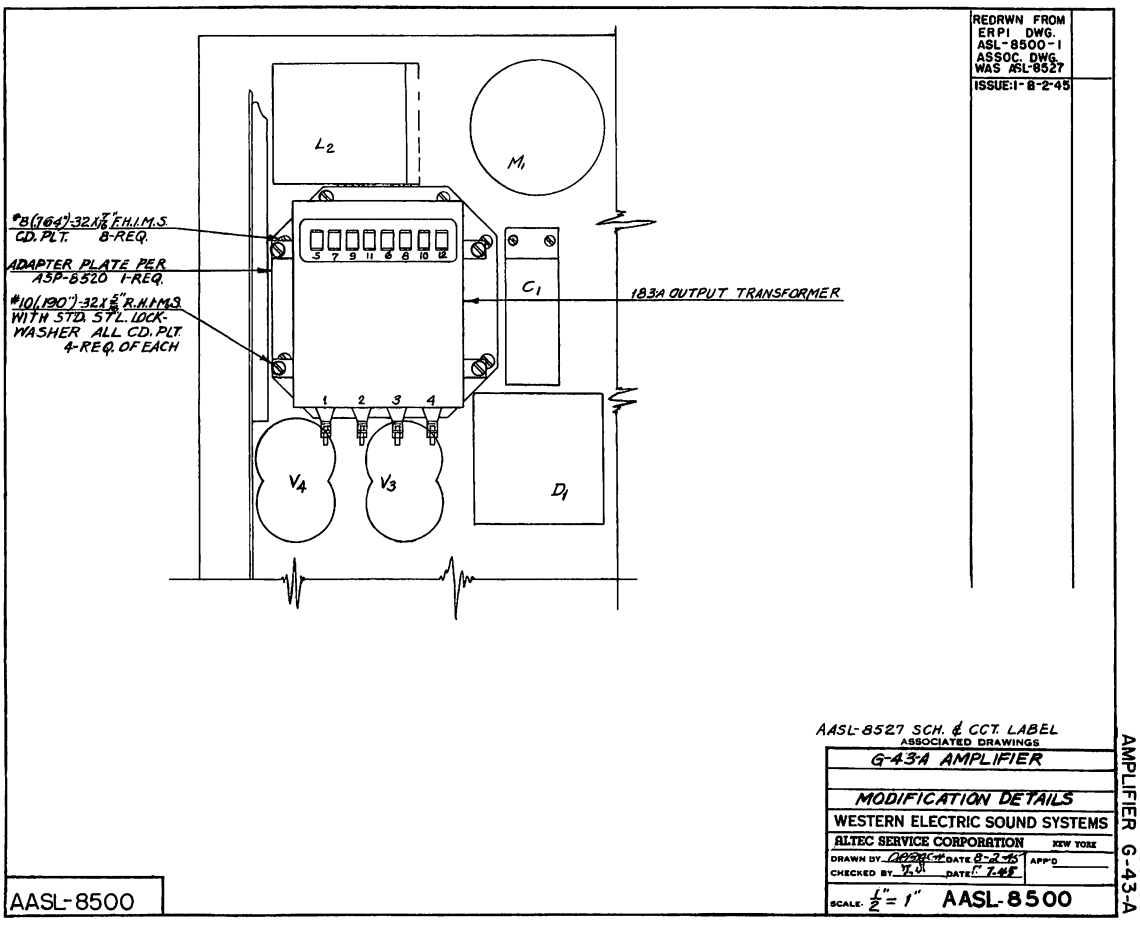
2.3 The above fusing should be installed only when specifically requested by the Exhibitor, who should supply the fuses, fuse block and labor required.



Amplifier Type	Gain (1000~) DB **	Gain Control Steps	Gain Control DB	Input Source Impd. (ohms)	Input Term. Impd. (1000~) (ohms)	Input Trans.	Output Recom. Load Impd. (ohms)	Output Term. Impd. (ohms)	Output Trans.	Recom. Test Load (ohms)	VI Corr. ##	Power Output Watts 1000 cps	Power Output DB **	Power Output DBM **	Unweighted Noise Level DB **	Unweighted Noise Level DBM **	Vacuum Tubes Type	Vacuum Tubes Stage	Vacuum Tubes If (amps) (each)	Vacuum Tubes Ip(ma) each tube	Vacuum Tubes +Eg (volts	Power Required ~	Power Supplied
43-A	15	- 1	-	500	500	241-A	125 500	125 500	128-A	125 500	+6.8 +0.8	9.5	32	39.8			242 242	PP RR	3.25 3.25	52.4-75	32.8-46.8	105-115V AC 50-62-1/2~ 300 W	
B-43-A	15	-	-	500	500	241-A	1.8-4.5 4.5-14 14-28 28-50	0.88 3.5 8.0 14.0	D-95659 or AR-1053-A	2.8 7.8 19.8 36.8	+23.3 +18.9 +14.8 +12.1	24	36	43.8			242 242	PP RR	3.25 3.25	70	56	"	
C-43-A	15	-	-	500	500	241-A	1.8-4.5 4.5-14 14-28 28-50	0.88 3.5 8.0 14.0	D-95659 or AR-1053-A	2.8 7.8 19.8 36.8	+23.3 +18.9 +14.8 +12.1	9.5	32	39.8			242 242	PP RR	3.25 3.25	52.4-75	32.8-46.8	"	
G-43-A	15	-	-	500	500	241-A	2-6 6-24 24-40 40-100	1.46 5.8 13.2 23.4	183-A or AR-1053-A	3.5 12 31 63	+22.3 +17 +12.9 +9.8	9.5	32	39.8			242 242	PP RR	3.25 3.25	52.4-75	32.8-46.8	"	

5-26-47


REDUCE TO 11½"
AASL-8527
ISSUE:1
241-A INPUT TRANS.
242 V.T.
183-A OUTPUT TRANS
OUTPUT (SEE FIG. 1)
INPUT 500Ω SOURCE
21-AK COND. 0.5MF.
136-A RET. COIL
WESTON 431 0-200 MILS K5-8184
38-A RES. 48000Ω R4
9-95-D COND
L37-A RET. COIL L1
307-B TRANS.
AR-1054 A TRANS
TA-4023 SNAP SWITCH
SEE NOTE:6
BACK SEGMENT
FRONT SEGMENT
110-V A.C.
GND.
SEE NOTE:5
BACK COVER SWITCHES
183-A OUTPUT TRANS. T2
AMPL. OUTPUT IMPED.
RECOM. MISMAT. LOAD IMPED.
TRANSFORMER SECONDARY CONNECTIONS
23.4Ω
40Ω TO 100Ω
13.2Ω
24Ω TO 40Ω
5.8Ω
6Ω TO 24Ω
1.46Ω
2Ω TO 6Ω
OUT
A
B
C
D
5. FOR DOOR SWITCH REPLACEMENT ORDER 1- 7246 SWITCH LESS PLATE.
6. REPLACEMENT SPRINGS ARE AVAILABLE. ORDER 1 SPRING FOR TA-4023 SWITCH.
FIL. PLATE SWITCH
POSITION 1 - FIL.-AB & DE ARE CLOSED.
POSITION 2 - PLATE.-ABC & DEF ARE CLOSED
POSITION 3 - OFF AB & DE ARE OPEN.
NOTES:
1. ON AR-1054-A TRANS. USE TERMINALS 1-2 FOR 107.5 VOLTS 60~ A.C.
" " 1-3 " 115 " " "
" " 1-4 " 122.5 " " "
2. REMOVE STRAP FOR VOLTAGES OVER 115 VOLTS
3. WHERE TWO 43-A AMPLIFIERS ARE OPERATED IN PARALLEL, THE 610Ω RESISTOR R1 SHOULD BE DISCONNECTED ON ONE OF THEM (PREFERABLY ON THE UPPER AMPLIFIER.)
4. R6 IS A BRADLEY 1-MEGOHM TYPE F, 2 WATT RESISTOR, ADDED TO ACCELERATE FILTER CONDENSER DISCHARGE.
G-43-A-AMPLIFIER
AASL-8527
TRIMMING LINE
THE G-43-A IS THE SAME AS THE B-43-A EXCEPT AN 183-A OUTPUT TRANSFORMER AND AN ASP-8520 ADAPTER PLATE REPLACES THE AR-1053-A OUTPUT TRANSFORMER.
REDRAWN FROM ERPI DWG. ASL-8527-2 AR-1054-A TRANS. WAS D-98557 NOTES 5&6 ADDED.
ISSUE:1 8-7-45
ASSOCIATED DRAWINGS
G-43-A AMPLIFIER
SCHEMATIC & CIRCUIT LABEL
WESTERN ELECTRIC SOUND SYSTEMS
ALTEC SERVICE CORPORATION NEW YORK
DRAWN BY Otto A DATE 8-7-45 APP'D
CHECKED BY DATE
SCALE AASL-8527
403I-56 AMPLIFIER G-43-A


L2
M1
C1
V4
V3
D1
1 2 3 4
3 7 9 11 6 8 10 12
*8(164")-32 x 7/16" F.H.I.M.S. CD. PLT. 8-REQ.
ADAPTER PLATE PER ASP-8520 1-REQ.
#10(.190")-32 x 5/8" R.H.M.S. WITH STD. STL. LOCK-WASHER ALL CD. PLT. 4-REQ. OF EACH
183-A OUTPUT TRANSFORMER
REDRWN FROM ERPI DWG. ASL-8500-1 ASSOC. DWG. WAS ASL-8527
ISSUE:1-8-2-45
AASL-8527 SCH. & CCT. LABEL
ASSOCIATED DRAWINGS
G-43-A AMPLIFIER
MODIFICATION DETAILS
WESTERN ELECTRIC SOUND SYSTEMS
ALTEC SERVICE CORPORATION NEW YORK
DRAWN BY DATE 8-2-45 APP'D
CHECKED BY DATE
SCALE 1/2" = 1" AASL-8500
AASL-8500
403I-55 AMPLIFIER G-43-A